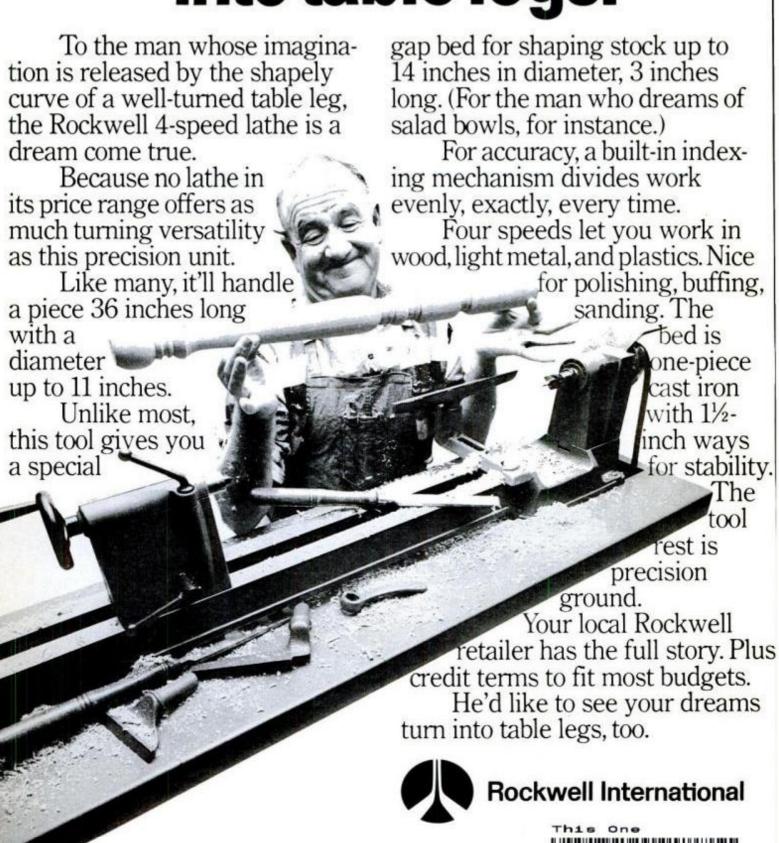




How to turn your dreams into table legs.





More and more people are doing more and more on their own car. Prices for everything being what they are, we think it's a pretty good idea.

So here's a free tip.

When you go shopping for what you need, go where the pro goes. . . your full service automotive supply house. They have more of what you need than anyplace else in town. And they have a priceless commodity you won't find at a discount outlet. Knowledge and experience. That man behind the counter knows cars and what goes into them.

When you go where the pro goes, use what the pro uses. Permatex products. Here are three, all in new do-it-yourself sizes, that show you why:

1. LOCK-NUT- Unscrew the top of this plastic tube, and you've got every size, lock nut and lock washer you'll ever need. Instantly. And Lock-Nut holds threaded parts together stronger and longer than anything else available.

 GEL GASKET- Squeeze out a bead of this hot pink gel, and you've got every size, every shape soft gasket you can use. It's easy to apply, easy to take off, and it seals better than any conventional soft gasket available.

3. INSTANT CYANOACRYLATE ADHESIVE

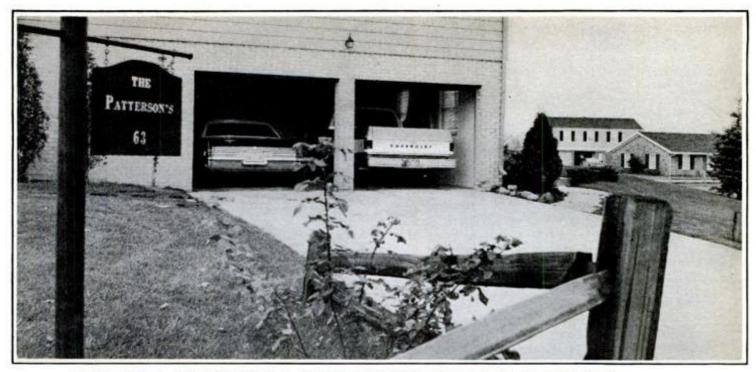
The Super Glue. Spread a drop between any two non-porous materials, and you've got a phenomenal bond in seconds. . . strong enough to hold tons.

Now you know where to shop, and what to shop for. Want to hear it again? Ask a pro. He knows.

NASCAR pros use Permatex products, too. See them at SPEED WEEKS, 1975, at Daytona International Speedway. If you'd like a couple of official Permatex decals for your machine, send us a stamped self-addressed envelope and two bits. We'll do the rest.

PERMATEX COMPANY, INC.

P.O. Box 1350, West Palm Beach, Florida 33402 Tel. 305/686-0880 Telex 513-417



IF THE SECOND CAR IN YOUR GARAGE IS A PICKUP, READ WHAT FIRESTONE'S WIDE OVAL TIRE SYSTEM CAN DO FOR YOU.

Since you use your pickup as a true suburban vehicle (big loads, small loads, no loads) it does a job for you somewhere between a truck's job and a sedan's.

So you need tires that can work for you somewhere between a truck's and a sedan's. You need Firestone's Wide Oval Tire System. Here's how it works:

On the front, you put Firestone's Transport 500 Wide Oval* truck tires. They're the steering part of The System, with a wide, wide tread designed to build stability under your pickup and help "float" it over soft stuff.

On the rear go Firestone's Traction All Season™ Wide Oval truck tires, the drive part of The System. Their treads are computer designed to behave nicely at highway speeds, but to really

dig in and move your pickup through grass, mud, dirt and snow.

See your Firestone Dealer or Store. Ask for The System. Compared to regular truck tires, it'll improve both the performance and the looks of your pickup.

The Wide Oval System



AUTOMOBILES, DRIVING

- 14 Imports and Motorsports
- 40 Detroit Listening Post
- 58 Half-pints for greater mpg: AMC's Pacer, future minis by GM and Ford
- 94 Saturday Mechanic: Service tips for the '75 cars

HOME AND YARD

- 76 Fireplace opens for party fun, is easier to build than it looks
- 97 The burglar isn't your friend don't be his
- 106 Stuck with an old house? Dozens of dramatic changes you can make yourself

SCIENCE, INVENTIONS

- 66 A new light on the legendary Leonardo
- 70 Andrea Doria and Stockholm collide: Treasure hunters dive to the Doria
- 90 Is the Chunnel (English Channel tunnel) for real?

SHOP AND CRAFTS

- 42 'Third hand' for making small boxes
- 105 Modelmaker's lathe: New low-cost
- 110 Three projects you'll want to make
 - 111 Heirloom footstool
 - 112 Pier curio shelf
 - 114 Tank-top gallery

BOATING, OUTDOORS

- 62 Waterway preview for '75
- 87 Have snowmobiles grown up? They offer new features, options, adjustments

PHOTOGRAPHY

32 Photo hints

EDITOR'S PAGE

57 Do-it-yourself: The best way to beat inflation—Beginning of a bigger PM

EVERY MONTH

- 10 Letters
- 20 Appliance Clinic
- 22 Car Clinic
- 34 Science Worldwide
- 44 The Bicycle Shop
- 51 Homeowners' Clinic
- 52 All Outdoors
- 80 It's New Now: Latest products
- and developments

WORTH WRITING FOR

Looking for more ideas and information? See page 152.

ON THE COVER

How to burglar-proof your home. Photo: Hedrich-Blessing Architect: Robert O. Brockett

Popular Mechanics

JANUARY 1975 . Vol. 143 No. 1

INTERNATIONAL EDITIONS: Australia, Caribbean, Mexico, Southern Hemisphere

SPECIAL FEATURES:

The burglar isn't your friend—don't be his! You can scare him away with locks, alarms and common sense. See page 97 for an eight-page roundup.

Waterway preview for '75. Colorful report on the faster, sleeker and safer boats the manufacturers will be sending your way this season. Page 62.

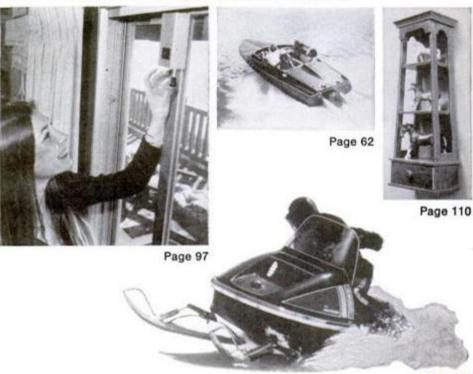
Half-pints for higher mpg. American Motors is high on its Pacer as the car of the future. GM and Ford have even smaller mini-cars on the way. Page 58.

Fireplace opens for party fun. You swing open the bottom and lower the front. It's an exciting home bar and entertainment center. Page 76.

Stuck with an old house? See what one imaginative Minnesota couple did to their weekend home when new-home prices soared sky high. Page 106.

A new light on the legendary Leonardo. Recently found notebooks reveal Da Vinci's main interest may have been in mechanical things. Page 66.

Service tips for the '75 cars. Saturday Mechanic shows you how to check emissions on cars with catalytic converters. Page 94.



Page 87

SUBSCRIPTION SERVICE: Mail all subscription orders, changes of address (with your latest label), and Postmaster notices of undeliverable copies to Popular Mechanics, P.O. Box 646, New York, N.Y. 10019, All other correspondence relating to your subscription: James Gable, Customer Service Department, Popular Mechanics, P.O. Box 1567, New York, N.Y. 10019, Please enclose your latest mailing label for quickest service when writing about your subscription.

ADDRESS ALL EDITORIAL COMMUNICATIONS TO: 224 West 57th St., New York, N.Y. 10019, For additional sources of information on the articles and products in this issue, write to the Bureau of Information, Popular Mechanics, for free "Where-to-Find-It" List.

AS A SERVICE TO READERS, Popular Mechanics publishes newsworthy products, techniques and scientific and technological developments. Due to possible variance in the quality and condition of materials and workmanship, Popular Mechanics cannot assume responsibility for proper application of techniques or proper and safe functioning of manufactured products or reader-built projects resulting from plans published in this magazine.

What does it take to build the world's smallest scientific calculator?

About three hours. And \$49.95

Designing the Sinclair Scientific was no small feat of engineering. But you don't have to be an engineer to assemble it with our kit.

Now you can put together the world's thinnest, lightest scientific calculator from eight groups of components, using only a soldering iron and a pair of cutters.

(Complete instructions are included, of course. And our Service Department will help you with any questions that come up.)

For an incredible \$49.95, look what the Sinclair Scientific can do:

sin and arcsin cos and arccos tan and arctan automatic squaring automatic doubling log and antilog (base 10) giving quick access to xy (including square and other roots) four basic arithmetic functions plus scientific notation (10-99 to 10+99).

To be a really valuable tool, a scientific calculator must provide *all* of the above.

A calculator without scientific notation severely limits the size of numbers with which you can work easily. And scientific notation without transcendental functions is little more than window dressing on an arithmetic calculator.

Less than ¾-inch thin and 3¾-ounces light, the British-made Sinclair Scientific isn't just portable. It's pocketable.

All parts are tested before shipment—and we guarantee any correctly-assembled calculator for one year. (This guarantee also applies to calculators purchased in assembled form.)

The Sinclair Scientific—or any of Sinclair's other miniature pocket calculators—may be ordered by



phone or mail. And charged to your American Express, Diners Club, Master Charge or BankAmericard account.

Just fill in the coupon and mail it to: Sinclair Radionics, Inc., 375 Park Avenue, New York 10022. Or call (800) 223-5764, toll free.



Kit Components

Coil
LSI chip
Interface chips
Printed circuit board
Keyboard panel
Electronic components
pack
Batteries, battery

pack Batteries, battery assembly and on/off switch

Specifications

Functions: 4 arithmetic

2 logarithmic 6 trigonometric Keyboard:

18 key format with 4"triple-action" function keys

Display: 5-digit mantissa 2-digit exponent (both signable) Case mouldings, with buttons, windows and light-up display in position Soft carrying wallet Comprehensive instructions Assembly time is about 3 hours.

Exponent:

200-decade range, from 10-99 to 10+99

Logic:

Reverse Polish, with post-fixed operators

Power Source: Battery operated with 4 AAA batteries Size: 438" high;

Size: 4%" high; 2" wide; 11/16" thick Weight: 33/4 oz.

SCIENTIFIC The logical choice.

| | Radionics, Inc. Avenue, N.Y., N.Y. 10022 |
|-----------------------------------|---|
| (800) 223-5764 | phone orders call , toll free. dents call (212) 688-6623.) |
| Please send me | |
| ☐ Scientific Ki ☐ Scientific (as | it @ \$49.95 ssembled) @ \$69.95 |
| | emory (assembled) @ \$79.95 assembled) @ \$39.95 |
| ☐ Cambridge ! (Plus \$3.00 per | Memory (assembled) @ \$49.95 unit for shipping and York residents add sales tax.) |
| | my check for |
| ☐ Please charg | e my credit card account. |
| Credit Card | |
| Account No | |
| Expires | |
| Master Charge | Code # (4 digits) |
| Signature | |
| Name | |
| Company | |
| Address | |
| City | |
| | Zip Code |

In the United Kingdom: Sinclair Radionics, Ltd., St. Ives, Huntingdonshire.

Henry Morgan says: "If I can learn to fix my own appliances... you can too!" "I have 10 thumbs . . . five on each hand. So fixing appliances hasn't been one of my strong points. But I saw an ad that said they could teach me all I need to know . . . at home, in my spare time. I sent for the NRI catalog on their course in Servicing Electrical Appliances . . . and it looked like a pretty good deal. Now that I'm into the course, I can tell you this: it's the only thing I've ever sent away for that

was even better than they said it was! Now I can thumb my nose at the repairman. I really can do it myself. Not just the toaster or mixer,

but the big stuff, too . . . like the washer, oven, even the lawn mower engine.

They give you everything you need. Bite-size lessons you can handle, with an experienced instructor ready if you need help. You even build the professional appliance tester that the pros use for trouble shooting and repairs.

The course is short, it doesn't cost very much, and you'll soon find yourself picking up spare time money doing repairs for other people. They even show you how to set up your own business, if you've a mind to.

Find out for yourself. Send for the free catalog. If I can do it, so can you."

Henry Morgan

RUSH COUPON FOR FREE CATALOG. No Salesman will call



Please send me your free catalog "Servicing Electrical Appliances". 600-015

(Please Print)

Approved for Career Training under GI Billcheck for information.



NRI SCHOOLS McGraw-Hill Continuing Education Center 3939 Wisconsin Avenue, Washington, D.C. 20016

Accredited Member National Home Study Council

JOHN A. LINKLETTER Editor

SHELDON M. GALLAGER **Executive Editor**

WAYNE C. LECKEY Home and Shop Editor ALVIN KIETZ

Art Director BILL HARTFORD Automotive
JOHN F. PEARSON
Science and Engineering
WM. T. McKEOWN
Boating and Outdoors
IVAN BERGER Electronics and Photography HARRY WICKS Home Workshop STEPHEN WALTON Assistant, Home and Shop MICHAEL LAMM West Coast
ROBERT LUND
Detroit Automotive
GARRY WINTER
Copy Chief
RICHARD H. FUNK Production ALFREDO VEGA Assistant, Production DON EVANS Technical Art Director DAVID KOMITAU DAVID KOMITAU
Assistant Art Director
IRA HERRICK
Assistant Art Director
DON L. MANNES
Assistant Art Director
CLIFFORD B. HICKS
Special Publications
LUDWIG ARONS
Special Projects
SOPHIE GRONOWICZ
Director Burgay of In

DANIEL J. COLEMAN Director of Advertising

Cabinetmaker

Director, Bureau of Information EVERETT JOHNSON

ADVERTISING OFFICES: New York: 224 W. 57th St., 262-4282; Chicago: 520 N. Michigan Ave., 527-2400; Detroit: General Motors Bildg., TRinity 5-8711: Cleveland: 20310 Chagrin Blvd., Shaker Heights Ohio, 283-7788; Los Angeles: 601 N. Vermont Ave., 666-6263.

JOHN A. REGINA Advertising Production Manager

Published by The Hearst Corporation FRANK MASSI President

JOHN R. MILLER **Executive Vice President**

RANDOLPH A. HEARST Chairman

RICHARD E. DEEMS President, Magazines Division

JOSEPH F. KERN Publisher

POPULAR MECHANICS IS PUBLISHED MONTHLY by the Hearst Corporation, 224 West 57th Street, New York, N.Y. 10019, U.S.A., Frank Massi, President; John R. Millier, Executive Vice President; Randolph A. Hearst, Chairman; Harrison A. Mitnick, Treasurer; Harvey L. Lipton, Vice President and Secretary. Hearst Magazines Division: Richard E. Deems, President; Gilbert C. Maurer, Executive Vice President, Operations: Raymond J. Peterson, Executive Vice President, Advertising; William S. Campbell, Vice President and General Manager; John F. D'Avolio, Vice President and Resident Controller; Albert A. Rachoi, Vice President and Director of Circulation; Joseph F. Kern, Vice President for Popular Mechanics. Single copy for the United States and Canada, 75 cents. Subscription prices: United States and Possessions, \$5.97 for one year, \$10.97 for two years; \$14.97 for three years. Canada, add \$2.00 for each year. All other countries, add \$4.00 for each year. When changing address, give old address as well as the new, with zip code, and allow six weeks for change to become effective. Second-class postage paid at New York, N.Y., and at additional mailing offices. Authorized as second-class matter at the Post Office at Mexico, D.F. Mexico, June 20, 1950. © 1974 by The Hearst Corporation. All rights reserved. Printed in U.S.A. POPULAR MECHANICS IS PUBLISHED MONTHLY

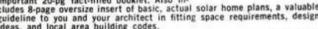
LIVE IN THE WORLD OF TOMORROW...TODAY!

And our FREE 164 PAGE CATALOG is packed with exciting and unusual values in ecological and physical science items - plus 4,500 finds for fun, study or profit ... for every member of the family.



ACTUAL WORKING SOLAR HOME PLANS

Learn all about the most fascinating possible home of the future. It can be your "now" answer to today's energy crisis in housing. Expert Dr. Harry E. Thomason tells advantages, problems, savings, and more in this important 20-pg fact-filled booklet. Also includes 8-page oversize insert of basic, actual solar home plans, a valuable guideline to you and your architect in fitting space requirements, design ideas, and local area building codes.



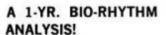
No. 9440H (Solar House Plans)

. **NEW! KIRLIAN**

PHOTOGRAPHY KIT!

Experiment in the fascinating new field of
"Kirlian" electrophotography—images obtained on film without camera or iens by
direct recording of electric charge transmitted by animate & inanimate objects. Each
"aura" differs—animate aura said to change
corresponding to physical changes. Kit incls portable darkroom, double
transformer isolated from power source; instrs.

.....\$49.95 Ppd.



........

Know for the next 12 mos, when to expect days of great energy & exactly when your physical & creative talents surface to do your best for happiness, success. Foresee

your best for nappiness, success, roresee your off days to avoid poss, errors or accidents! Personalized Bio-rhythm Chart-Report (by computer) gives you an accurate preview of your physical, emotional & intellectual high & low periods with variations, corresponding to your inner life. Send name, add., birth date (day, mo., yr).

Stock No. 19,200H

BIG 6 x 6" **OPAQUE PROJECTOR!**

Great buy! New lightweight compact enlarges any picture or print matter (up to 6x6") for big projection 30 to 144" away. True color reproduction! Feat.: optically polished glass lenses, heat-resist, plate glass mirror, curl-free slide tray, heavy duty motor, large fan. Reqs two 200w household bulbs (not incl). Steel body, 8' cord, 13 x 13½ x 7¾".

...(SUPER SHARP)..... \$129.00 Ppd.



WAR SURPLUS **ELECTRIC GENERATOR**

Brand new Signal Corps Model. Up to 90 volts by turning crank, Use in high impedance relays. Charge ground & bring up night crawlers for bait or study. 2 Alnico Magnets alone now worth more than original \$15 gov't cost.

...(2 lbs.).....\$8.50 Ppd. No. 50,225H



PRO ELECTRONIC SOUND CATCHER

.........

Parabolic mike w/ 18¾" reflecting shield & 2 l.C.'s in amplifier magnifies signals 100X that of omni-directional mikes. Catch a songbird ½ mile off; QB's huddle strategy; sounds never before heard. Super directivity

gives highest signal to noise ratio poss. Safe: auto. cuts off ear damaging noises. Earphones, tape recorder output, tripod socket. Req. two 9v trans. batt. (not incl).

H (5½ LB.) \$299.00 Ppd.
"TOY" MODEL #80,176H \$32.25 Ppd. 1649H



AUTHENTIC SCALED WINDMILLS

.....

Real-thing replicas show wind direction, wheel silently revolves on ball bearings. Give your grounds unique rural charm! Great centerpiece for planter, flowers. Use to hold yard light, house number, sign or as mailbox. For school, a fine "energy crisis" science project—does everything but pump water. Heavy gauge steel, durable outdoor finish; aluminum color w/red trim.

| No. 7 | 1.923H | | pd. |
|-------|--------|---------------------------|-----|
| | | (4½ FOOT—14 LB.)\$32.50 P | |
| | | (8 FOOT-46 LB.)\$44.95 I | FOB |
| | | | |



"FISH" WITH A MAGNET

Go treasure hunting on the bottom! Fascinating fun & sometimes profitable! Tie a line to our powerful new specially designed 150 lb. pull PVC coated Magnet—drop it overboard in bay, river, lake or ocean. Troll it along bottom—your "treasured" haul can be outboard motors, anchors, other metal valuables. Has 6 stacked ceramic magnets. Lifts more than 150 lbs. under water!

No. 71,135H (3\4x376"). \$17.50 Ppd.
No. 71,150H (118.) W/ 3 CERAMIC MAGNETS
No. 71,150H (118.) W/ 3 CERAMIC MAGNETS



SUPER 6" SPACE CONQUEROR

Superb Astronomical Reflector—Up to 576X. Capable of revealing faint stars of nearly 13th magnitude, split double stars separated by less than 1 sec. of arc. Features 48" F.L. aluminumized & overcoated 6" f/8 ground and polished parabolic mirror (Pywide field 48X Kellner, ¼" 192X Ramsden, & a Barlow to double & triple power—rack & pinion focusing mount. 474" aluminum tube. Electric clock drive w/manual slow-motion control. Setting circles. Heavy-duty equatorial mount. Pedestal base. Compares to \$350—\$400 models. No. 85,086H (Shp. Wt. 68 lbs.) \$285.00 F.O.B.

6" WITHOUT CLOCK DRIVE .. No. 85,187H ...
4\4" WITH CLOCK DRIVE ... No. 85,105H ...
4\4" WITH CLOCK DRIVE ... No. 85,107H ...
3" REFLECTOR (30X to 90X) ... No. 85,240H ...



MAIL COUPON FOR

4500 BARGAINS

opes, binoculars, magnets, ma gy and Unique Lighting items to-get surplus bargains, 100's experimenters, schools, industri

EDMUND SCIENTIFIC CO. 300 Educary Building, Barrington, H. J. 00 Please rush Free Giant Catalog "H"

State.



☐ PLEASE SEND GIANT FREE CATALOG "H"

GUARANTEE

| Add Handlin | g Chg.: \$1.00, Ord | ers Under \$5.00, 50 | Oc, Orders Over \$5.00 | _ |
|-------------------|---------------------|----------------------|------------------------|---|
| I enclose 🖂 check | | | TOTAL \$ | |



Use your SPR beat inflation with added income

part time or full time . . . own your equipment .. keep all you earn . . . start with just a small investment . . . and we help you every step of the way!

Have your own money-making business and make the kind of income you probably thought impossible. You can when you clean carpeting or upholstery or walls with Von Schrader professional cleaning equipment. Every home, every building are potential customers. And every customer can become repeat business. The de-mand for on-location cleaning is growing so fast that how much you earn depends solely on just your time and effort.

Moreover, we help you every step of the way just as we have helped thousands of others build money-making businesses for 40 years. Typical comments: "Cleaning is a very good business-have been most grateful for your advice and help. You have fine machines—can recommend them to anyone."—R. Herbst. "Never have we made this good a living and been so

You offer a service everybody needs . . . work content and happy."-N. Hanna. "Have all 3 machines and very pleased with each one."— C. Reiner. "You people sure helped me and I'll never forget it."—H. Kendall.

There are three easy-to-use Von Schrader machines. You need no special skills or education to operate them. (1) CARPET DETER-GER*. Its performance cannot be duplicated by any other cleaning machine. (2) UPHOLS-TERY DETERGER®. Using dry foam, cleans fabrics beautifully and safely. (3) WALL DETERGER®. Washes walls and ceilings 5 times faster than by hand—no dripping or streaking.

You can start with just one machine. Then, as your business keeps growing, you may want to add the other two and thus offer a complete cleaning service.

You pay no fees, royalties, sign no contracts. You own your equipment, the finest of its kind. Keep all you earn. And your investment is so small you may find it hard to believe. For complete information-without any obligation-send for booklet

Let me send you our free booklet that gives all the facts" Take the 1st step Mail coupon VON SCHRADER company eaning. er Deter 40 years of helping people earn good mo-1015 Place, Racine, Wisconsin 53403 ate. Learn how other men have become tinancially independent, how von Schrader helps you every step of the way. Fall in the coupon and send for booklet. Extral Special Recorded Message Included with booklet, Listen as Francis von Schrader talks to you personally about your growing tuture using Von Schrader Detergers. Please send complete information on /on Schrader Detergers. ------

GET INTO THE STEAM OF THINGS

This steam engine kit is an ideal project for the coming winter. Pull that UNIMAT out of the closet and get some use out of it. This kit has all the parts you'll need including complete drawings and instructions. You can build it on your kitchen table. At only \$6.95 it makes a good answer to that approaching question, "What do you want for Christmas?"

Two good books on steam are: MODEL STATIONARY & MARINE STEAM ENGINES, \$6.00 MODEL BOILERS & BOILERMAKING, \$6.00.

You will also like our CRAFTSMANSHIP CATALOG with more steam engines, more books and lots of tools-\$1.00 (FREE with any order from this ad.)



CALDWELL INDUSTRIES BOX 170 LULING, TEXAS 78648



NEXT MONTH IN PM ...

- Special 12-page boating section: Latest fun craft
- First real solar furnace
- Two rooms from one: Handsome room divider you build in a weekend
- New! Big-thrill racing in small stock cars
- Complete plans: Striking heirloom gun cabinet
- How to be a world champion fisherman

| Popular Mo 250 West 55th St., No | | | OF STREET |
|-------------------------------------|--------------------------------|-------|------------|
| 200 11001 00111 0111 | SINSCE AND | | VPM5A1 |
| YESI my | ase ente subscri POPULAI | ption | IANICS for |
| ☐ 1 year \$5.97 | | New | |
| ☐ 2 years \$10.97 | | Rene | wal |
| Payment of \$ | | is (| enclosed |
| Bill Meinitial he | ere | _ | |
| Name | | (plea | se print) |
| Address | | | |
| City | State | | Zip |

CHANGING ADDRESS?

If you're planning to move, please let us know at least six weeks before changing your address. Attach current address label and fill in your name and your new address. This will serve to insure prompt service on your subscription.

(Above prices apply in U.S. & Possessions only, Canada add \$2 per year. All other countries add \$4 per year.)

| Send old label with your name | |
|---|------|
| and new address to: OPULAR MECHANICS, Subscription | Dent |
| Box No. 646, New York, N.Y. 1001 | |
| | |

| NAME | | |
|----------|-----|----------------|
| | | (Please print) |
| NEW ADDR | ESS | |

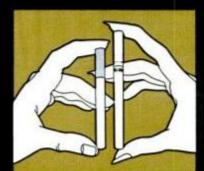
PALL MALL GOLD 100's

100'S 20 CIGARETTES

PALLMALL



FILTER TIPPED



Longer... yet milder.

19 mg "tar", 1.4 mg, nicotine av. per cigarette, FTC Report Oct. '74.

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

"EASIER LETTERS STARTS THIS WINTER!"

When cold weather chokes up your car you've got real starting problems. unless you've got a can of GUMOUT AUTOMATIC CHOKE CLEANER handy. It frees CLEANS and FREES



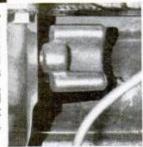


Squirt it on both ends of choke valve shaft and all the carburetor linkage. In seconds the foul-up's ended! Gum. carbon and dirt are gone!

automatic chokes

nonifold heat contri

Use GUMOUT CHOKE **CLEANER** also to free manifold heat controls bound by dirt, rust, and carbon. It works fast.





Gumout, Cleveland, Ohio 44104

TO THE EDITOR

Timer does save fuel

I recently read your article in the October issue about the dual thermostats (Save Fuel With This Thermostat Timer, page 148).

I installed the system with minor changes last January and kept a record of the degree days and the running time of the furnace (burning time only). Computing the amount of fuel burned, keeping a steady 68° F. vs. that of 68° F. from 6:00 a.m. to 10:30 p.m. and 62° F. at night, I saved 14 percent on my oil bill by reducing the temperature at night.

I made one savings by not purchasing an additional relay to operate the second thermostat by isolating the contacts in the timer from the house current and using the 115 volts for the clock portion only.

GORDON D. YOUNG ENFIELD, CONN. '55 T-Bird since it was the first of the two-place series that ran through the '57 year.

> JIM JUDGE FRANKFORT, KY.

Slip of the typewriter it was, Jim. You've got a better memory than Lund. The original T-Bird did come out in the fall of 1954, as a '55 model.

Loud noise alert

I certainly enjoyed your article Danger: Noise at Work, by Arthur S. Freese (page 140, Nov. PM). I did not realize that listening frequently to loud noises could cause temporary and total deafness. I had never really thought much about what listening to loud music or loud noises could do until I read your article.

> CRYSTAL HOLLENBECK MERIDEN, KANS.

Keep the oil flowing

The Homelite chain saw (New Chain Saw, page 162, Nov. PM) with two triggers sounds like one heck of an idea. The author said the model XL2 had an automatic chain oiler and that all saws need periodic chain oiling to keep them from dulling too fast. I always thought it was to keep the chain from wearing out the bar.

JOHN GAITHER EVANSVILLE, IND.

The reason that oil is liberally applied to any chain saw bar is to reduce friction (heat) which dulls teeth fast. You literally can't over-oil a chain; plenty of chain oil assures prolonged chain life.

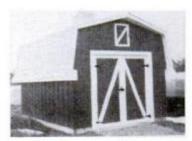
However, even with proper oiling of the chain, when you're cutting continuously, stop every two or three hours and touch up the teeth with a file.

It was an earlier Bird

I feel you made one slip of the pen when you referred to the '56 T-Bird as being one of the recent pacesetters from Ford in Robert Lund's section of Detroit '75 (page 110, Oct. PM). You probably meant to refer to the

Mini barn-with compliments

I built your Dutch Mini Barn (page 64, Aug. '72 PM') and have received many compliments. Built according



to the plans, it cost me roughly \$700. I did the labor myself, but I used ready-mix cement.

> WILFRED SETTERINGTON LEAMINGTON, ONT.

Spread the word on beans

I wish to commend PM for its splendid article The Bean That's Making Meat Obsolete (page 84, Oct. PM).

My agriculture teacher reports that he is using the article quite successfully in his pre-vocational agriculture classes. In view of the present world food crisis there is no question in my mind that the article merits

(Please turn to page 12)

ARE YOU PAYING FOR A GOOD NIGHT'S REST OR THE REST OF THE ROOM?



When you're bone-tired, you're a pushover for any motel with a vacancy sign. And you usually pay too much for a room with a monstrous bureau with six drawers you don't use, and a couple of extra tables to fall over in the dark.

We have a way to avoid that. It's the Motel 6 Directory. It shows you the locations of our more than 200 motels throughout the country. And it's free.

With one of these in your car, you can arrange your trip so you never have to pay more than \$6.95 for a good night's sleep. That's the lowest price for a single of any major motel chain in the country. It's also the one-person rate of about half of all our rooms. And the rest of our rates are just as pleasing.

For a room with one bed for two persons, it's \$8.95 a night. Two beds, two persons, \$10.95. Two beds, three or four persons, \$12.95.

That's it. No matter which Motel 6 you stay at. No matter what time of year. Our prices don't vary because every Motel 6 is run by the same people. Ourselves. So nobody can play games with our prices.

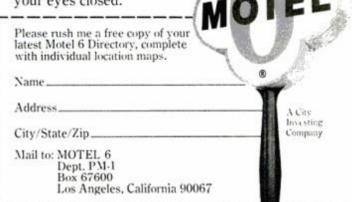
You won't be paying for a lot of unnecessary frills either. But you will have a nice, com-

fortable bed with a first-class mattress. Thick shag carpeting. Air conditioning (where it's needed). Payas-you-watch black-and-white TV. And, almost always, an alarm clock to get you going and a swimming pool in case you'd rather stick around.

Where we get fussy is where it counts. Our rooms are spotlessly clean and neat and tidy. That never changes.

Neither do our budget prices.

We're one place where you can get a good deal with your eyes closed.



RATES START AT \$6.95. THROUGHOUT THE COUNTRY, THROUGHOUT THE YEAR.

The no-compromise vacation. The only place you cut corners is on the cost.

We'd like to help you spend less money for your vacation this year. Without getting less vacation for your money.

So we've put together what's probably the most helpful vacation planning guide in America. It's full of facts about things you can do here. And you'll be surprised how many of them are free.

Even the Trip Kit is free. Just send us the coupon. And find out how far your vacation dollar can take you.



Name_____Address_____Zip____

Free South Carolina Trip Kit

Mail to South Carolina Division of Tourism, Room 748, Box 78, Columbia, South Carolina 20202.



The most incredibly authentic car model kit by Pocher d'Italia reproduces in exact 1/8 scale the classic Rolls Royce Phantom II Sedanca Coupe. 26½" long. You build it with nuts, bolts and screws. No painting, no special tools needed. Doors, hood and trunk open. Steering, crankshaft, connecting rods, gears, fan, generator operate. Windows open. Headlights turn on. 2,199 separate parts of brass, stainless steel, copper, rubber and high impact plastic. For complete details

on this and 3 other classic car kits from \$100, send for free full-color brochure.

| Deluxe Classics, 5900 Wilshire Bo Los Angeles, Ca | oulevard, Suite | 2760 | | |
|---|--------------------|--------|-----|-----|
| Please send me y | your free full-col | or bro | chu | re. |
| Name: | | | | - |
| Address: | | 4 1 | | Ä. |
| City: | 36 | | 81 | \$ |
| | | | | |

LETTERS

(Continued from page 10)

even wider attention than your circulation affords.

CHARLES F. AMADEN
PRINCIPAL
SLIGH JUNIOR HIGH SCHOOL
TAMPA, FLA.

Marijuana? Preposterous

I was shocked to find the following statement in It Was Going To Be 'A Piece of Cake,' Thought The Dope Smugglers-Until . . . (page 120, Aug. PM): "By monitoring Houltin's radio frequencies, they learned his destination-a deserted stretch of back road in the New Mexico wilderness where trucks and cars were waiting to take over his deadly cargo." If the plane had been carrying heroin it would be wrong, but perhaps excusable, to call it "deadly." However, a few sentences later it turns out that the "deadly cargo" is marijuana. This is preposterous.

Of course, pharmacology is outside *PM*'s field of expertise, but that doesn't stop you from doing your homework and getting the basic facts right.

I am enclosing a copy of the Consumers Union Report, Licit and Illicit Drugs, to which you should refer before publishing any more such articles. As the book points out, misinformation about drugs causes as much damage as any of the drugs themselves, with the possible exception of alcohol.

LYLE BURKHEAD MIDLAND, TEX.

Designing a Great Workshop

I am in the process of designing my workshop after just finishing building my house which has taken three years. I have thoroughly enjoyed your articles on Great Workshops.

When I started looking for my back issues, I've found that either they have gotten lost or misplaced. How can I obtain the articles in the Great Workshop Series for help in planning my shop.

> ROGER D. WILLIAMS TROUTVILLE, VA.

We have published eight workshops: June, 1970; June, 1971; January, 1972; June, 1972; October, 1972, October, 1973; March, 1974 and August, 1974.

Photocopies of these stories are available from PM's Reader Service Bureau, Box 1014, Radio City, N.Y. 10019. Cost is 20 cents per page. **

New Free Book Discusses

How to Go About Selling Your Invention

If you have an invention or an idea for an invention, whether patented or unpatented, that you wish to sell outright or on a royalty basis, the booklet we offer free in the coupon below may be very valuable in saving you both time and money.

We are specialists in representing inventors and submitting their inventions and ideas to manufacturers. We work continuously with scores of manufacturers seeking new products, and we have connections from coast to coast and in foreign countries. We are well informed which manufacturers may be especially interested in your particular kind of invention. Hundreds of these manufacturers have written us descriptions of the types of inventions they want.

Our service is designed to do all the many things the average inventor does not have the time or facilities for doing, or who lacks knowledge of the proper markets. When you appoint us to represent you, we prepare sales material that points up your invention, its advantages, its construction, its market potential and profit possibilities.

For presenting your invention to selected manufacturers we charge a modest fee (which is refunded if we handle the sale of the invention for you) and the customary commission. We are a Nationally known concern, with an impeccable reputation for ethics and integrity. We believe ours is the finest service offered inventors.

We are not patent attorneys. However, if you have need for a patent attorney and do not know one, write us and we will tell you how to obtain the names of all U. S. Patent Attorneys in your area, and you can make your own choice.

To encourage inventors, whether their inventions are patented or unpatented we have prepared a booklet entitled "How to Go About Selling Your Invention." This booklet contains such information as current royalty rates being paid by manufacturers, discusses various types of inventions and the markets for them, and tells the most effective methods you can use in presenting your invention for sale, whether you employ us or do it yourself.

You can obtain a copy of this booklet merely by mailing the coupon below. It will be sent to you with our compliments, free, without any obligation whatever. If you wish to write us for comments about your invention, please do so. We make no charge for consultation. But please do NOT send blueprints or models. Just describe your invention briefly, its nature and purpose.

REFERENCES: Your own bank, attorney, or Chamber of Commerce.

K. O. Kessler, President
KESSLER SALES CORPORATION
Accredited as a Corporation
Under the Laws of Ohio
FREMONT, OHIO 43420

-MAIL THIS COUPON FOR FREE BOOKLET---

Mr. K. O. Kessler, *President* Kessler Sales Corporation, Dept. D-51, Fremont, Ohio 43420

Please mail me a copy of your FREE Booklet, "How to Go About Selling Your Invention," which reveals many points about selling inventions and explains your service. It is understood that there is no charge for this booklet now or at any other time and I am not obligated in any way.

| 1 | MY | NA | ME | | | | | | | | | |
|---|------|-----|----|-------|--------|------|------|------|-----|------|------|------|
| | STRE | EET | AD | DRESS | | | | | | | | |
| | CITY | | | | S7 | CATE | | | ZIF | CODE | | |

IMPORTS AND

MOTORSPORTS



Success story continued

It's always a grand feeling looking down at the swirl of traffic from the back seat of a giant Austin diesel taxicab. London, last autumn, was hardly at a standstill-racy Scimitars shot by on the right, an occasional Humber lumbered alongside and the ubiquitous Minis spun through the roundabouts at all hours. But there was something new on the scene and it snapped this car-watcher's neck. In styling you can tell that the Capri II has the same genes as its predecessor, but, my, they're reshuffled nicely! Like the original Capri, the II was introduced first by Ford of Europe and then made available to U.S. Lincoln-Mercury dealers, where it has just arrived and is now on

Capri II is on the same wheelbase as Capri I (100.8 in.) and all dimensions are just about the same, except for width which is two inches more. It should be just as much an "in" car as the original.



Where's the rest of your car?

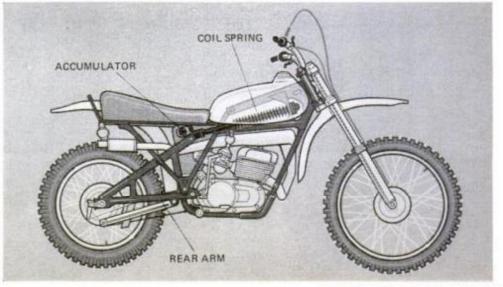
Remember the jokes about the Volkswagen Beetle? Roller skate on wheels and the like? You don't hear them anymore. That's because the joke's been on us. Oversized cars have too long been wasting valuable, finite resources. The small, economical car is the car of the future, a fact now part of our national consciousness. "Mini" car is the term used to describe the smallest of the small-those smaller than "subcompact" Pintos and Vegas. Detroit has a couple in the works (see page 58) but overseas carmakers have them on the roads right now. One that will arrive here later this year is shown above. The Renault 5 is surprisingly roomy inside, a ball to drive and

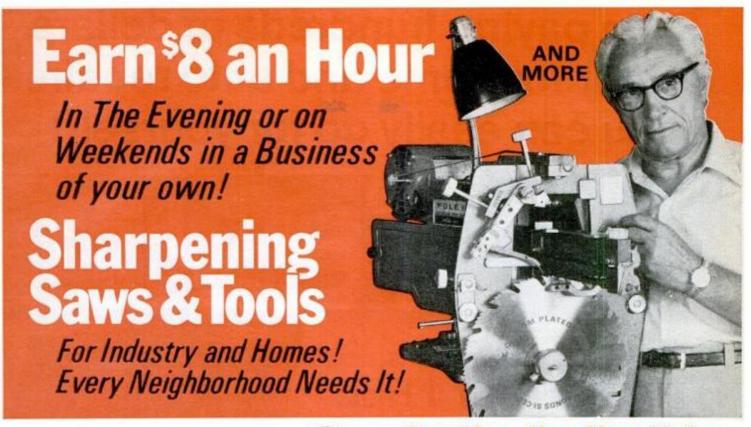


really stingy on gas. All it needs is a pet name. Too bad VW got there first . . . Renault Rabbit would have been perfect.

A new twist

When you examine Yamaha's new off-road machines for 1975, you quickly realize that four of them have no rear shocks. The MX 250B and 400B and the YZ 250B and 360B use an all-new Monocross suspension. As you can see below, a triangular member replaces the swing arm, a single shock attaches to the head stock and a gas-filled damper or accumulator is used. The system eliminates twisting of the rear swing arm and consequent lateral vibrations, and provides greater rear wheel up and down travel. A very





No Experience needed.

Here's a business of your own that lets you start earning right now. You need no experience or training. Your precision-made Foley equipment does the job for you. Simple, easy-to-understand instructions tell you how.

Sharpening is Big Business ... and Profitable Too!

All over the country, in small towns and big cities, people just like yourself are earning big money in the saw sharpening business. Industry, home handymen, professional carpenters all need their equipment sharpened. It's a business that's growing every day.

Sharpen Carbide and High Speed Tools



The tremendous growth of the use of Carbide Tipped Saw Blades and other extra hard metal tools is an extra bonus for saw sharpening shops using Foley's Carbide Grinding Equipment. It takes just 15 minutes to renovate a carbide blade... 15 minutes that pays you \$8—practically all profit, too! Customers are limitless because Carbide tipped saws are being used almost exclusively to cut metals, plastics, laminated woods, hard woods and giant logs.

Part Time Shop Now Makes \$30,000 A Year in Profits

Floyd B. of New York started his saw sharpening business in his spare time. But before long, his business made it necessary to quit his regular job and devote full time to his new business of his own. Today he has a fully-equipped saw sharpening shop. In his first year, he did over \$30,000 in business.

Foley, will finance you.

There's no need to make a huge investment or carry big inventories when you're in "business for yourself" with Foley Sharpening Equipment. All you need is the equipment and pennies worth of electricity. Foley will finance your equipment to help get you started with minimum investment. When you charge \$8 for sharpening a carbide tipped saw blade, \$7.50 is profit.

No Franchise Fees!
No Obligation Find out today how you

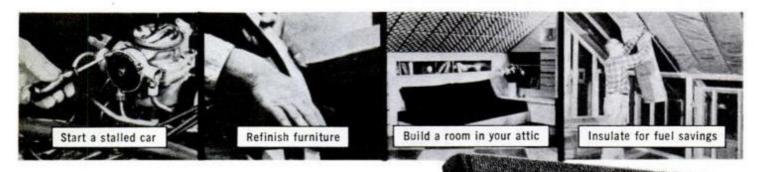
Find out today how you can earn big money in the saw sharpening business. Write today for more information. There is no obligation.

Foley

Manufacturing Company 3300 N. E. Fifth Street, Minneapolis, Minnesota 55418

| Foley Manufacturing 116-5 Foley Bldg., M | Company inneapolis, Minn. 55418 |
|---|--|
| | tion on the potential profits in a of my own and how Foley will help |
| Name | |
| Address | |
| City | |
| State | Zip |

Stop paying hundreds of dollars a year for home and auto repairs you can easily do for yourself!



Take this \$3.49 volume

ABSOLUTELY FREE

and let POPULAR MECHANICS
DO-IT-YOURSELF ENCYCLOPEDIA

show you how!

Today, a plumber gets \$10, \$15 or even \$20 to fix a stopped-up drain. TV repairmen charge \$7.50 for a house call, and parts are extra. The price quoted recently for painting a 4-room apartment: \$700! And all the while, inflation keeps cutting deeper into your paycheck.

You can't do without food—whatever the prices—and you have to pay the rent. But you can do something about the money that goes for repairs and improvements. Now, even if you're a beginner, you can do them yourself and save hundreds of dollars a year, with the help of the new POPULAR MECHANICS DO-IT-YOURSELF ENCYCLOPEDIA!

Take Volume 1 FREE and start saving right away!

We offer you this \$3.49 volume FREE so you can see how easy it is to be your own home handyman with clear step-by-step pictures and the advice of experts to guide you!

Browse through your FREE book and you'll discover how to cure 8 common car ailments yourself, with simple tools. Also how to burglar-proof your home . . . soundproof a room . . . decorate a child's room . . . and save \$1,000 or more. And that's just a small part of what's in your FREE volume . . . and in the complete set!

Turn to this complete ready reference library the moment your TV or toaster fails . . . chances are you can fix it. Build a Hi-Fi center . . . "antique" a chest . . . cane a chair . . . improve insulation to heat your home with less fuel!

You'll learn techniques for building, painting, soldering; for using power tools. You'll find detailed diagrams for cabinets, bunk beds, closets, kitchens, wiring and lighting. You even learn how to build midget cars, model planes, soundtrack your own movies.

There's all this and much more in the set . . . 16 volumes . . . 3,136 pages . . . over 10,000 illustrations . . . bound in sturdy, washable bindings to last a lifetime.

Mail the NO RISK coupon today!

We'll rush you Volume 1—absolutely FREE to keep forever—with no obligation to buy any volumes. Read details in the coupon—and mail it today!



Exclusive Bonus With FREE VOLUME

FREE VOLUME PROJECT-A-PLANS

Included in your FREE volume, Project-a-Plan lets you take even small-scale plans and, using your own projector, blow them up to full-scale working plans right in your own living room or workshop!



MAIL THIS COUPON TODAY

Popular Mechanics Books, Box 2315, F.D.R. Station, New York, N.Y. 10022

This certificate entitles you to a free gift— Volume 1 of the 16-volume Popular Mechan-

volume 1 of the 16-volume Popular Mechanics Do-It-Yourself Encyclopedia.

As a subscriber in good standing, you'll enjoy free examination of the additional volumes as you receive them. In about 6 weeks we'll send you Volume 2, and 4 weeks later Volume 3. After that, at approximately monthly intervals we'll send you shipments of Volumes 4-6, 7-9, and 10-16. (Also, you'll receive annual supplementary volumes as they are published on free 14-day approval with no purchase obligation.) This way you'll be able to complete the set in 6 months, and keep it up-to-date. You may cancel at any time or return any volume within 14 days for full credit and no more will be sent. Take as many volumes as you like—or none at all. For each volume you keep, you'll be billed just \$3.49 plus postage and handling. But you need never pay for more than 1 volume per month no matter how many you received.

| Name | (Please print) |
|----------------------|--|
| Address | |
| City | |
| State | Zip |
| Signature | |
| price. Canadian resi | in Canada at a slightly higher dents mail coupon to New York of books and all services will be |

Why don't other TV/Audio home study schools put prices in their ads?

Maybe they can't match this value!

NRI gives you complete TV/Audio service training with a big screen 25" diagonal color TV training kit, all the electronic instruments and training services you need for as much as \$650 under the next leading home study school. Only NRI gives you a choice of five ways to learn, starting as low as \$312... with convenient, inexpensive, time payment plans.

NRI pays no salesmen. We buy no outside "hobby kits" for our experiments and training kits. We pass the savings on to you...giving you the top educational value available anywhere.

Take your choice in TV/Audio Training

Only NRI gives you a choice of 5 courses in TV/Audio servicing, starting with a basic servicing program including color TV lessons. Each course features bite-size lessons, special reference texts, special engineered training kits, and service instructions for black and white TV, Color TV, FM multiplex receivers, PA systems, antennas, radios, tube, transistor and solid state circuits.

Good with 7 kits...\$312 or low terms

A completely up-to-date basic servicing course in which you build your own solid state radio, voltohmmeter, and experimental electronics lab. Course covers FM multiplex receivers; tube, transistor, digital and solid state circuitry.



Better with 11 kits and b/w TV...\$425 or low monthly terms

A complete course in black and white and color TV Servicing. You build your own solid state radio, volt-ohmmeter, electronics lab, and 12" diagonal solid state B&W portable TV.



Better yet with 11 kits and 19"

diagonal Color TV ... \$695 or low monthly terms

Color TV training with kits and experiments to build a solid state 19" diagonal color TV complete with handsome woodgrain cabinet . . . along with extra parts for performing experiments. Also includes electronics lab, and volt-ohmmeter.



Best with 14 kits and 25" diagonal Color TV...\$1,095 or low monthly terms

Master training including kits and experiments to build a 25" diagonal color TV (complete with cabinet); 5" triggered sweep oscilloscope; TV pattern generator; 3½ digit digital multimeter; solid state radio and



Plus Advanced Pro Color ... \$535

or low monthly term

Color TV servicing for experienced technicians. 18 color lessons, 5 manuals, and an NRI 18" diagonal color TV included.

AVAILABLE FOR CAREER STUDY UNDER GI BILL.

Check line on card for details.



NRI SCHOOLS

McGraw-Hill Continuing Education Center 3939 Wisconsin Avenue, Washington, D.C. 20016

APPLIANCE CLINIC

BY PAUL MANN



On the level

Since our Kenmore washing machine was installed three years ago, we have found it gets knocked out of balance constantly. A service call to this rural area is very expensive. I would appreciate it if you could tell me what I could do myself.—C. H. Steiner, Montrose, Ala.

Place a protective cover, such as an old quilt, on the floor. Disconnect the washer from electricity and water and lay it on its back. Look to the rear feet to make sure they are locked in place. If not, slide each foot down until its pin is aligned with the horizontal slot in the foot cage; then turn the foot clockwise a quarter-turn; pull the foot down as far as it will go and move the leveling link bar inside the channel to the left.

Up front, turn the locknuts well down on each front leveling foot. If you have a porcelain model, make sure that there are flat washers over each locknut. If these were inadvertently left off when the machine was installed, the level would be affected.

Stand the machine upright and reconnect it to water and electricity.
Fill the washer with water up to the
first row of holes in the basket.
Check it with a carpenter's level both
front-to-rear and side-to-side, and
adjust by turning the front leveling
feet until it is level both ways. When
you have determined that the machine is level, tighten the front-feet
locknuts securely against the bottom
of the machine.

Losing speeds

I own a 10-speed electric food mixer that's about 14 years old. It was operating satisfactorily until recently when it suddenly wouldn't work on Speed 3. Now it won't work on Speeds 1 through 4. At Speed 5, it starts. What's wrong?—Paul Chaks, Pte. Claire, Que.

The capacitor across the speed regulator has probably shorted out. To find out, first remove the capacitor; if the unit now will operate on all speeds, replace the capacitor.

If the capacitor should not be found at fault, look for bent or fused governor contacts. The governor assembly should be replaced if it has been damaged.

Iced over

I have an Admiral Imperial Duplex 20 refrigerator with a problem the Admiral people have not been able to solve. The area behind the back inside panel fills with ice. This area contains a fan which has been frozen in ice several times with the result that the motor has burned out. Can you tell me what is wrong?—Robert Eddy, Los Angeles.

The defrost heater is not going on, or not staying on long enough. There are three reasons why this will happen.

First, the defrost timer may be defective, and the defrost cycle is not being engaged. Second, the defrost thermostat may be defective and kicking the defrost timer off prematurely. Third, the heater itself may have an open circuit and, therefore, is not functioning. Since you indicate that some automatic defrosting is going on, I'd lay my money on a defective defrost thermostat.

I have trouble believing that an authorized Admiral service technician couldn't solve your problem. I suggest you contact the appliance service manager at Admiral Corp., 6565 East Washington Blvd., Los Angeles, Calif. 90022 (728-7291), to lodge your complaint—and get the name of a technician who will be able to help you.

Extra help

Regarding the September Appliance Clinic—if Jack K. Y. Hum sent his Corning coffeemaker with the broken handle back to Corning, he could get it fixed for \$4.50, instead of having to spend \$10.95 for a new bowl-and-handle unit. The company fixed mine, so I don't see why it wouldn't do the same for Jack.—Nathan Rosenbaum, Flushing, N.Y.

Let me add to your good tip that the address is Corning Glass Works, Consumer Service Dept., Corning, N.Y. 14830.

Cutting a price

We have had a General Electric cordless electric knife for about 10 months. The batteries have started leaking and won't hold a charge. I returned it to the store where I bought it, but was told the price for a new battery pack would be around \$30. This is outrageous since the knife costs little more. What goes on?—James D. Schmuck, Cabot, Pa.

The store is out of line. GE stopped making the cordless knife about five years ago, because it wasn't selling. According to a spokesman for GE, the public found the appliance too heavy and clumsy because of the size of the battery pack. But you can still get batteries, and for far less than what the store wants to charge. Send the knife with a \$11.95 check to Service Dept., General Electric, 7100 Airport Hwy., Pennsauken, N.J. 08110. If you'd prefer to trade the cordless knife for a new cord type, send the appliance and a \$10 check to the same address.

Fast belt wear

The drum belt of my gas clothes dryer has to be replaced every six months. How can I keep from incurring this expense?—E. J. Arostegui, Augusta, Ga.

Replacing a drum belt every six months is much too often. Consider three possibilities:

Are you buying cheap, old or incorrect belts? Get the belt from a dealer who sells your dryer.

Make sure the idler pulley is turning freely. If it is hanging up, greater than normal strain will be put on the belt. This will also happen if the rear main bearing is hanging up.

Examine the idler pulley to make sure it is not damaged. If the pulley has any nicks or burrs, they could be cutting into the belt and weakening it.

If you have a question about any appliance, send it to Appliance Clinic, Popular Mechanics, 224 West 57th St., New York, N. Y. 10019. Sorry, but letters cannot be answered individually. Problems of wide interest will be discussed in this column.



CAR CLINIC

BY MORT SCHULTZ



Wandering mirror

The inside rear-view mirror of my 1974 Matador won't stay on the windshield despite efforts by the dealer. It keeps falling off. Why?-Richard Doheny, Brookfield, Ill.

The dealer is doing something wrong. He should order a new bracket service kit which contains a replacement bracket and a firmsetting, two-component adhesive. The old bracket should not be used since adhesive applied to it previously has hardened. This keeps the bracket from adhering to the windshield. The special adhesive must be used; no other will do. And the windshield must be perfectly clean before the new bracket is cemented to it. A mildly abrasive household cleaner on a clean cloth that has been saturated with alcohol should be used to clean the windshield. All traces of the cleanser must then be removed by wiping the glass with paper towels that have been moistened with alcohol. Install the bracket as outlined in the instructions accompanying the kit and also in the 1974 AMC service manual on pages 17-6 and 17-7.

Wildcat gusher

Why am I losing oil from around the oil filter of my 1974 Mustang with 2300 engine? I have used different makes of filters, but each one ends up with a damaged gasket. Please help .- Larry Woodson, Arlington, Va.

Assuming that the filters are being installed properly, it's possible that excessive oil-pump pressure is blowing the gasket seal. Have the pump tested. I would also look for a burr on the oil-filter seat which is damaging the gasket. Burrs should be filed off. Finally, if the reason escapes you, the trouble may be excessive oil-pump pressure that is blowing the gasket. You may have to replace the oil pump.

Hard-to-bear distributor

am having distributor-bearing trouble in my 1970 Chevy Belair with 250-cu.-in. engine. My garage replaced distributors at 15,000, 25,000 and now at 37,000 miles. What can I do to stop this expense?—Frank Gross, Janesville, Wis.

We covered this problem a long time ago, but it bears repeating. The malfunction is probably caused by abnormal wearing of the distributor lower bushing and/or of the distributor shaft. You could also have out-of-square mounting which results in distributor misalignment. Ask your mechanic to add a shim to the outboard side of the distributor to compensate for the out-of-square mounting pad. The shim should be of .005-inch stock.

Oil boom

My dealer replaced the cam housing gasket of my Fiat 128 because oil was leaking. It's still leaking. What now?-Clarence Bender, Macon, Ga.

Have him replace the valve-cover gasket; your chances are 99 in 100 this is where the trouble lies. The dealer probably didn't take time to diagnose the leak, which involves a thorough cleaning of the engine, running the engine or driving the car, and examination. The exact spot of the leak would have been obvious.

The original valve-cover gaskets in this car have been failing; their laminations have been separating. A new one-piece gasket, part No. 4300225, should be used.

Radial tire report

My 1972 Dodge Charger needs new tires. I would like to buy steel-belted radials. Would you recommend them? Is there any reason why I shouldn't use radials?—Robert Blanford, Redding. Calif.

Dodge recently issued a technical service bulletin which gives you the answer. It lists radial tire suitability for 1968 through 1974 Chrysler cars. Suitability is given as "poor," "fair." "good" and "excellent." Your car got a "good." Chrysler says cars that get good and excellent ratings can be equipped with radial tires, but that owners with cars getting fair and poor ratings should avoid buying the radials because they will produce excessive noise, vibration and handling harshness.

Even though your car gets a "good," you should install a front sway bar, and a damper to the rear floor pan to reduce the increased noise level radials produce. Furthermore, radials have a lower profile and increased deflection, which reduces vehicle ground clearance. If your car has 14-inch wheels, they should be replaced with 15-inch ones.

An owner of a Chrysler-made car who is considering radial tires would be wise to read this service bulletin. -No. 22-01-74 (7/1/74). Ask the service manager at a dealership if you could look at his copy.

Call in the reinforcements

I have a 1973 Chevrolet Custom 10 pickup truck with 307 V8 engine and three-speed manual transmission. At 6000 miles I had to have the clutch, pressure plate and throwout bearing replaced. Now at 13,000 miles, the symptoms I experienced before have returned. The vehicle vibrates and shudders in reverse. Is this something I have to expect every few thousand miles?—James Arrasate. Westhampton Beach, N.Y.

No. Have your dealer apply a repair described in service bulletin 73-T-38. It calls for changing the geometry of the clutch linkage with a new clutch lever and shaft assembly (part No. 340607), and relocating the clutch fork push-rod springs.

Shower stall

My 1973 Pontiac LeMans with 350cu.-in. engine stalls at intermittent intervals. The engine, babied and examined by every Pontiac mechanic for 50 miles around, can't be restarted for hours after it stalls. No one, but no one knows why. Help.—Ralph Bamberger, Phoenix, Ariz.

A Kansas City reader, Gerry Brophy, reports he had this trouble. It wouldn't go away in spite of numberous tune-ups, new coil, carburetor overhaul and other things. Finally, he found that moisture had a way of collecting beneath the distributor breaker plate, which as he says, "kills the spark."

According to Gerry, the fault was

(Please turn to page 30)



Filter Kings, 16 mg. "tar," 1.1 mg. nicotine; Longs, 17 mg. "tar," 1.1 mg. nicotine, av. per cigarette, FTC Report Mar. '74



Then one day I was reading a magazine just as you now are and I saw an ad. It intrigued me. It offered me the steadily growing income I had always hoped for. It said I would have

greater security and personal independence . . . and that's what I had been wanting.

I was a little skeptical, but I said to myself, "for a postage stamp I can find out." So I mailed the coupon. In a few days, I got a letter with a booklet that gave the whole story. It opened my eyes. I could see why owning my

I'll guide you into your own

 While keeping your you like to gross \$14 or

a true story

own business was so much easier than I had always thought . . . why the day to day guidance of a successful worldwide organization could assure my own success.

I read the booklet several times. It just seemed too good to be true. I talked it over with my wife. We decided that now was the time to make the forward step . . . there was no

reason to keep postponing an income increase. So, I applied for a Duraclean dealership and I was accepted. I stayed with my job . . . ran a few ads . . . sent some mailings . . . contacted a few stores and told my friends about the superior services I was now equipped to give them. Evenings and Saturdays, I rendered the service. As the business grew, I added servicemen.

I found that I didn't have to develop a single idea myself. Every step had been prepared

for me and pre-tested. Hundreds of other men had already proven my methods successful.

It didn't take long to see that I was making three to four times (yes, 3 to 4 times) as much per hour in my own business as in my printing job. So, after only seven months with a good following of customers, I quit my job to go full time on my own. In the meantime, I had enjoyed all this extra income on top of my salary.

Each day, we realized what a serious mis-take not mailing that coupon would have been . . and how that little act that seemed so triv-

The steadily growing income brought us many things we could not afford before. My efforts were so much more productive. I scheduled my time to my own liking. When we wanted a day or two off, we took it. I worked hard but, if I wanted to be home early or quit at noon, I did.

I became so enthusiastic about this business: and so appreciative of what it had brought my family that, whenever a man opened a dealer-

ship near me, I helped him get a quick start.

The company learned about this and had each new dealer in my section of Michigan spend a day with me. One day the president of Duraclean Company asked me how I would like to move to Headquarters and spend my entire time helping dealers to increase their sales and profits.

That was good news to my ears. Since then I have worked with hundreds of our dealers in their own towns and at regional meetings, con-

step by step thriving business

present job, would \$21 profit per hour?

by Bob Ferrel

rentions and dealer group meetings.

Incidentally I sold my dealership at a good erofit. If for any reason a dealer wants to sell, we maintain a service to locate buyers and nelp him sell.

Our job here at headquarters is to show each andividual Duraclean dealer how to use his own abilities to bring him greatest success.

it's Easier than You Think To Build Your Own Business

If you've wanted to BE YOUR OWN BOSS... too become financially independent and have a most growing income, now YOU CAN. And you own a Nationally Advertised business.

You can stay at your present job while your justomer list grows...then switch to full ime, lining up jobs for your servicemen to do. One job a day brings a good starting income.

If you hire two servicemen (full or part time) while you keep your job, the national price ruide provides you a gross profit of \$14 and your on their work and this is much easier to be than you think. We show you how... tep by step. That's \$490 for a 35 hour week.

Your gross profit on three servicemen is \$21 per hour. An efficient Duraclean dealer can gross \$7 per hour on EACH serviceman plus 112 an hour on any service he himself renders. The 24 page illustrated booklet we'll mail you with no obligation) explains how most of your gross profit becomes clear net profit. Your moome is limited only by the number of servicemen you employ.

You can operate from a shop, office, or your

nome. Equipment is light and portable.

At the start, you may want to render service courself...or you can start with full or part time servicemen. This business is easy to learn ...easy to start...so easy to service that women dealers do it. We prefer you have no experience...not have to "unlearn" old ways. We are NOW enlarging this worldwide sys-

eem of individually-owned service businesses. If you are reliable, honest and willing to work become financially independent, we invite

orou to mail the coupon.

When you receive our illustrated booklet, ou will see the way we show you step by step book to quickly get customers...and still more customers from their recommendations.

You have 7 superior services that are rendered "on location" in homes, offices, hotels, theaters, clubs, motels and institutions.

These are not ordinary services. You have the prestige and endorsement of leading furniture makers and carpet mills, of National Magazine editors, of Research and Testing Laboratories.

National magazine advertising explains superior merits of your services, builds your customer confidence and brings job leads to you.

Stores, upholsterers, insurance adjustors, and decorators refer jobs to our dealers. These year 'round services are in constant demand.

Start Small, Grow Big in this Booming Business

Many men have said to us, "I can't afford to give up my job till I know I have a sure thing ... a sound business that will provide both security and a better living for my family."

That made sense to us so we worked out such a plan... and those same men are now enjoying a Duraclean dealership in many communities. You don't experiment. You use tested, proven methods. You have our backing and "know how."

Does this appeal to you? Don't decide now. Mail the coupon so you'll have the facts to decide wisely. There is no obligation. You'll then know whether this is what you want.

You can start small and grow big. A third century ago Duraclean was an idea . . . but it caught fire and spread to a world wide service.

Our first service, the care of upholstery and carpets not only cleans, it enlivens the fibers ... revives dull colors. Pile rises with new life. There's no harsh machine scrubbing. No soaking. Mild aerated foam lightly applied lifts out dirt, grease, many unsightly spots like magic. Furnishings are used again in a few hours. Government figures show service businesses

Government figures show service businesses are growing faster than industries and stores ... \$750 million yearly potential just in rug and furniture cleaning. Your 6 other services are explained in the free booklet we'll mail you.

Less than \$1500 establishes YOUR OWN business. A day's profit more than pays the monthly payments we finance for you.

It is surprisingly easy to learn this business. You can decide from the information we will send you whether to apply for a dealership. So, with no obligation whatever, mail the coupon TODAY. Cut it out NOW so you won't forget to mail it.

Mail this coupon TODAY

It may put you in business

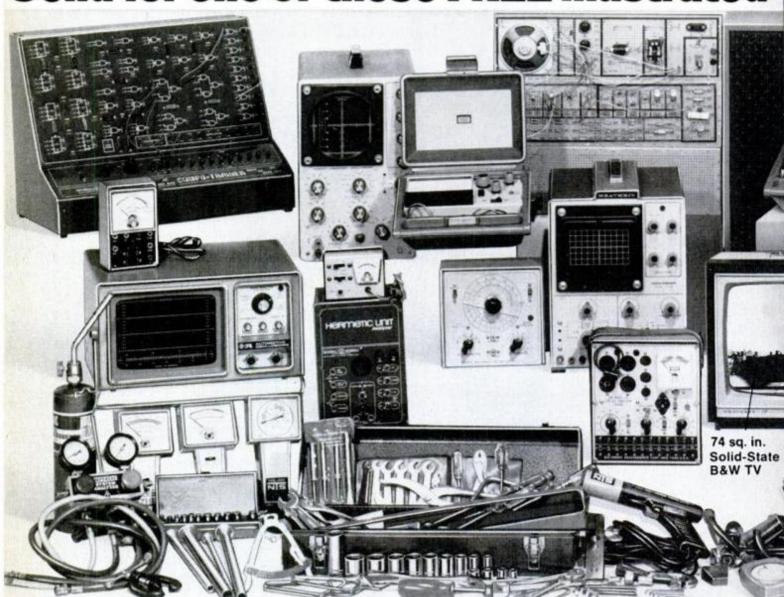
Duraclean International 5-161 Duraclean Bldg., Deerfield, III. 60015

With no obligation, mail 24 page illustrated booklet telling how and why I can quickly increase my income and family security while still employed, how you'll help finance me. No salesman will call.

| Name | |
|-------------|--|
| Address | |
| City | |
| State & Zip | |

The better the training the better you'll

Send for one of these FREE Illustrated



Build and keep some of the finest technical equipment made when you train with an NTS Project-Method home study course. And it's usually the same type of equipment you'll meet in the field and use on the job. It will help you acquire first-hand experience and skill — help prepare you better for a variety of exciting technical careers:

ELECTRONICS DIVISION: Courses include professional equipment like 5" solid-state oscilloscope, transistor and tube-tester, vector monitor scope, 74 sq. in. B&W TV, and solid-state stereo AM-FM multiplex receiver, speakers. Color TV courses feature advanced NTS/HEATH DIGITAL GR-2000 Color TV with silent varactor diode tuning; digital read-out channel selection (with optional digital clock), big 315 sq. in. screen.

MECHANICS DIVISION: Learn engine diagnostics, motor overhaul, transmissions, automotive maintenance. Courses include 9 in. solid-state automotive oscilloscope, testers, tools, mechanic's stel tool box, & more.

AIR CONDITIONING, REFRIGERATION/HEATING DIVI-SION: Learn servicing of commercial, industrial and residential heating and cooling equipment. Courses include hermetic unit analyzer, leak detector, charging testing-purging manifold set, tools and more.

HOME APPLIANCES DIVISION: Courses cover repair and maintenance of washers, dryers, ranges, smaller appliances. Equipment includes NTS Circuit-Trainer and professional multimeter. and the equipment be equipped.

Career Guides:

COMPARE OUR KITS AND LESSONS.
COMPARE OUR





LOWER TUITION FOR YOU: We employ no salesmen, pay no commissions. You receive all home-study information by mail only. Make your own decision, your own comparisons. Send card today or write for illustrated catalog in field of your choice, all details.

NO OBLIGATION. NO SALESMAN WILL CALL.

APPROVED FOR VETERAN TRAINING Get facts on new 2-year extension.

NATIONAL CONS

TECHNICAL-TRADE TRAINING SINCE 1905
Resident and Home-Study Schools
4000 So. Figueroa St., Los Angeles, Calif. 90037

| Please send FREE Color NO OBLIGATION, NO SA Electronics Division Mechanics Division | Los Angeles, Calif. 90037 Catalog and Sample Lesson. ALESMAN WILL CALL. | . 201-015 |
|--|---|-----------|
| NAME | AGE | |
| ADDRESS | | |
| CITY | STATE | |
| Please fill in Zip Code for t | fast service | |

☐ Check if interested ONLY in classroom training in Los Angeles.

The Herman Uniform Shoe



If you're on your feet all day, you can't afford less than the best. That's just what you get in every pair of Hermans. The best fit. The best shoes for your work. The best boots for your sport. Herman Uniform Shoes come in 99 individual fittings: 6D through 6EEE to 14A through 14EEE. Plus 15 and 16C, D & E. Pictured are styles #5230 dress leather oxford and #7230 chukker boot featuring non-marking, oil resistant crepe soles; and, #5225 moccasin toe oxford featuring non-marking, oil resistant

cushioned insole guarantee great comfort. Top quality materials and workmanship guarantee great wear. They're the best shoes we know how to make. And we've been making quality shoes and boots for almost a hundred years. When you're

Goodyear Chemi-gum® soles. Their perfect fit and fully

looking for quality, hunt up a pair of Hermans.

J. M. HERMAN SHOE CO., INC., DEPT. 34, MILLIS, MASS. 02054

My feet deserve the best. Send me your free catalog and the name of my nearest Herman dealer. PM-US-5-1



Address.

City-

WHAT'S HE DOING!

Making a Concrete Flower Pot! ... and

SO CAN YOU!

Make and sell your own Ornamental Concrete items. Rush \$3.00 for Book

about Aluminum Molds

with prices and production trade secrets direct from world's largest mold manufacturer. Over 350 designs to select from.

Today To →

Send \$3.00 CONCRETE MACHINERY COMPANY

P. O. BOX A99 - HICKORY, N. C. 28601

BUY GOV'T SURPLUS SAVE TO 85%







SURPLUS CENTER

CAR CLINIC

(Continued from page 22)

intermittent, erratic and hard to locate. The trouble occurred most often on cool, damp mornings or the day after running the car through an automatic car wash. The engine would start, run a few seconds and stall, then resist all efforts to start it until the moisture receded.

Brophy solved his problem by cleaning and lubricating the distributor. He also stresses that the seal on the point-adjusting door be checked for wear and damage, for that is where moisture usually works its way into the distributor.

Topless driving

My 1965 Triumph Herald 1200 convertible is in good running shape, but desperately needs a new topframe and all. We've checked the popular parts catalogs and local junkyards with no luck. Do you know where we can get what we need?-Sandy Anderson, Beaver Dam, Wis.

Try a Triumph dealer, Within 50 miles of you there's one in Fond du Lac and one in Neenah. One of the oldest Triumph dealers in the United States is in Thienville-P. J. Kaufman & Co. I'm sure it has a big parts stock and a pipeline to the main source. If dealers can't help you, try one of the major imported parts outfits I know of: Stucker Auto Parts, 7 Putnam St., Staten Island, N.Y.

SERVICE TIPS

- Capri capers: The starter drive may not be engaging the flywheel of 1972, '73 and '74 Capris with 2000-cc engines and automatic transmissions. There is an access hole adjacent to the starter through which road contaminants may be reaching the starter drive, plugging it and preventing it from engaging the flywheel. If you have trouble, clean out the starter. To prevent this trouble, close the access hole with a rubber plug (part No. D4RY-6436-A). This hole, necessary during manufacture, serves no purpose now.
- Bucking Colts. If the fuel shutoff (antidieseling) solenoid of a Dodge Colt fails, the engine can stall whenever the throttle is released. A new, stronger solenoid has been issued. Have it installed if yours fails. It can be identified by the number "367" or higher stamped on its end.

GOT A PROBLEM WITH YOUR CAR? Just ask Mort about it. Send your question to the Car Clinic, Popular Mechanics, 224 West 57th St., New York, N.Y. 10019. While letters cannot be answered individually, problems that are of general interest will be published in the column.



Coast-to-Coast Shortage of Trained Draftsmen
Opens Thousands Big Salary Jobs for Beginners!

Now you can take your pick of thousands of big salary jobs open to Draftsmen (see "help wanted" sections of metropolitan newspapers). Huge nationwide demand... U.S. Dept. of Labor reports "42% more Draftsmen needed in next 10 years—not enough applicants to fill drafting jobs available now!" Our easy "Quick-Learn" Method has helped hundreds toward good income, security and prestige as Draftsmen. Why not you?

YOU NEED NO DRAWING SKILL ... NO TECHNICAL ABILITY

Our staff of Professional Draftsmen guide you step-by-step. With our spare time home-study plan you work on actual projects. Makes learning fun—easy to remember, too. Many graduates have succeeded with only grade school training Others report good earnings drafting part time while still learning!

HIGH PAY JOB IN DRAFTING

-0

* Precision Drawing Instrument Set, Professional Drafting Board Outfit & Fingertip Tilting Drafting Table are given to you with your complete North American Course in Drafting. Big Promotion!
"18 months ago I was a laborer. Now I am foreman of 22 people in the Drafting Room, Thanks for making this possible."
S. D., Mass.
2 Raises and \$300 Bonus!

"I've had 2 boosts in salary and a \$300 bonus in 11 months. Wish I could shake hands with your staff in person." A. C., Calif.



RUSH COUPON FOR FREE KIT ..

Mail coupon today for FREE "DRAFTING CAREER KIT,"
Sample Lesson, Drafting Aptitude Test including intriguing new 5-Way Drafting Instrument & 20-page Book
"Your Future in Drafting" — jam-packed with revealing
facts on your opportunities to win top pay and job security in Drafting.

Everything
sent FREE and WITHOUT OBLIGATION. Write today!

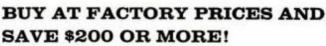
North American School of Drafting, Dept. PB0C4
4500 Campus Dr., Newport Beach, CA 92663
Rush "DRAFTING CAREER KIT" — ALL FREE!

Name _____Age ___

Address _____

A home study program in association with Cleveland Engineering Inst.

BUILD THESE BEAUTIFUL CLOCKS



Kits for you to cut and assemble in solid Cherry, Walnut and Honduras Mahogany. No plywood or plastic.

Handsome Moving Moon and "Tempus Fugit" Dials are gracefully styled in solid brass. German-made weight-powered movements play the beautiful Westminster, St. Michael and Whittington Chimes.

Send just \$1.00 for plans and instructions to build your choice of (A) Grandfather, (B) & (C) Grandmother, (D) Steeple plus information-packed catalog of movements, dials, parts and kits to build these and 14 other fine clocks. All 4 plans — \$3.50.

CATALOG ALONE - 25¢
MONEY BACK GUARANTEE
ON ALL ITEMS

MASON & SULLIVAN CO.

OSTERVILLE, CAPE COD, MASS. 02655
IN CANADA: Colonial Times, Box 2 Stn S. Toronto, Ontario M5M466



How to get rich

START YOUR OWN BUSINESS RIGHT FROM YOUR HOME-AND MAKE A FORTUNE IN MAIL ORDER!



Mail Order Beginners Get Cash by Mail!

Have you ever thought of operating a little mail order business of your own? Something you could start on a shoestring right from home in your spare time. It's a fabulous business!

Bob Carter of Newark, N.J. ran his first small mail order ad in House Beautiful mag-azine—offering an auto clothes rack. Busi-ness Week reported that his ad brought in \$5,000 in orders. By the end of his first year

\$5,000 in orders. By the end of his first year in Mail Order, he had grossed over \$100,000! Another beginner—a lawyer from the midwest, sold a mail order item to fishermen. Specialty Salesman magazine reveals, "he made \$70,000 the first three months!"

There is no other business where you can make a fortune so fast. Come up with a 'hot' new item . . . and WHAM!

It strikes like a bolt of lightning!

Millions of people read your ad and suddenly, you are swamped with cash orders from all over the country . . . MORE MONEY in 60 days than you could earn in a lifetime!

a lifetime!

Like the Vermont dealer who ran one ad in Sports Afield magazine. His ad pulled 22,000 orders—over A HALF MILLION DOLLARS IN CASH!

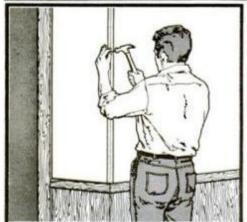
Yes, Mail Order is the fastest-growing, most profitable business in America! And now with the population explosion . . . the huge teenage market . . . and more people moving to the suburbs—we are on the verge of the BIGGEST BOOM in Mail Order history!

If you are sincerely interested in starting a lucrative business of your own ACT NOW! We can help you get rich in Mail Order just as we've helped others. Mail the coupon or send a postcard. We'll send you a free book, catalog, ads and complete facts about our offer. No salesman will call. No obligation. You don't need previous experience but you must be over 21. Write to:

Mail Order Associates, Inc., Dept. 757
Montvale, New Jersey 07645

State_

| Mail Order Associates, Inc., Dept. 757 Montvale, New Jersey 07645 | - |
|--|---|
| Please rush full details immediately. | |
| Name | |
| Address | _ |
| City | |



The perfect molding for your paneling project.

Nevamar prefinished moldings. Made of cellular vinyl, they're more durable than wood...easier to work. They cut and miter better. Accept nails within 1/4" of the edge without splitting. They bend easily around curves. They're moisture-proof. And they're available in 11 colors to blend with popular paneling...9 shapes to complete any project. See your building supply dealer for details.

CHEMICALS

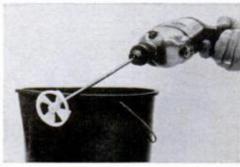
EXON EXXON CHEMICAL COMPANY USA



PHOTO HINTS

FROM READERS





Power-stir your chemicals

Mixing small amounts of chemicals is easier with a battery-powered drink mixer, says Ken Patterson of Regina, Sask. Mixing big quantities is easier with a plastic paint-mixing attachment on an electric drill and a big plastic bucket, adds M. M. Devine of Ithaca, N.Y. Plastic blades are not affected by the chemicals.



Ball assists floodlight clamp

Photoflood reflector clamps may not grip narrow objects firmly, especially if the spring has been weakened or the lamp is heavy. But forcing a sponge rubber ball between springs as shown will keep the reflector and clamp tightly in position.-Ken Patterson, Regina, Sask.

"War injuries left me severely handicapped, but I'm making a very good living in Locksmithing, thanks to your course. Word of mouth advertising has been enough to make vertising has been enough to make vertising has been enough to make my business a financial success from the start. Besides, I'm my own boss doing something I thoroughly enjoy."

says Glen Johnson, Larned, Kansas.

Earn More Enjoy Life – Be a. LOCKSMITH like lam!

Train FAST at Home-Earn While Learning Get into this booming high-profit business that's Easy to learn - Easy to do - Easy on You!

Never before have money-making opportunities been so great for qualified Locksmiths. Now, lucrative regular lock and key business has multiplied a thousandfold as millions seek more protection against ever increasing crime. Yet there's only one Locksmith for every 17,000 people! No wonder the money can roll in so FAST!

Start collecting cash profits right away - Up to \$12.50 an hour!

You're "in business" ready to earn up to \$12.50 an hour a few days after you begin Belsaw's shortcut training. Special tools, equipment and supplies plus a professional Key-Making Machine help make your special knowledge bring in CASH FEES even while learning. Many students cover the full cost of their training and SHOW A SUBSTAN-TIAL PROFIT long before they finish. So can YOU.

Learn at home this shortcut way

Prepare yourself to take advantage of this tremendous money-making opportunity for steady, year-round EXTRA INCOME in your spare time or financial independence in a fulltime, high-profit business of your own. Perfect for retirement! You don't have to be an expert

Belsaw Started Me Making

Money FAST as a LOCKSMITH

mechanic to be an ace professional in this field. Once you know Locksmithing all your worries about a job, more income, layoffs, inflation, recession, too many bosses will be gone forever.

Yours FREE - A burglar alarm and security systems course

Not for sale separately, but included with your training at No Extra Cost!

You receive the full course plus all special tools and equipment. Instructions and pictures are so clear you can't go

wrong. This rapidly expanding field goes hand-in-hand with Locksmithing. It can add even more to your profits.

Find out all about it No Obligation -NO SALESMAN WILL CALL

Discover what's in Locksmithing for YOU. Find out how Belsaw's Master-Locksmith Approved training has helped hundreds of men to EARN MORE-ENJOY LIFE MORE.

RUSH COUPON TODAY FOR

FREE BOOK Landing C "I'm MAKING OVER \$300 A MONTH in my spare time with the Belsaw Locksmith Course. Yours is the best training in America." "KEYS TO Henry Rivas, Los Angeles, Calif,

"I CLEARED \$110 LAST SATURDAY! I am doing a won-derful business thanks to your course in Locksmithing. It's a great business."

R. W. Davis, St. Louis, Missouri.

"I HAVE ALL THE LOCKSMITH WORK I CAN HANDLE. Business is so good I'm expanding to fulltime. Ed Boyle, Pittsburg, Penna.

Tells how to Make Money in Locksmithing — Spare Time or Full Time — Al-most from the Start, Mail Cou-pon NOW!

YOUR

FUTURE'



This Pro Key Machine can alone

add up to \$200 a month to your in-

come . . . and it won't cost you a penny

extra with your training.

YOURS TO KEEP!

PRO KEY MACHINE



105. Field Bldg., Kansas City, Mo. 64111



Approved for all Veteran Training.

Accredited Member National Home Study Council.

MAIL THIS COUPON-NO SALESMAN WILL CALL

BELSAW INSTITUTE, 105J Field Bldg., Kansas City, Missouri 64111

Please send me free of cost or obligation your publication "Keys to Your Future" on how Belsaw can train me to quickly make money in Locksmithing and how all tools and Key Machine are given me to keep.

| Name | | | |
|---------|------|---|------|
| | | | |
| Address | | - | |

State Check here if eligible for Veteran benefits.

100 PAGE CLOCK



CRAFT PRODUCTS

Dept. 1, Elmhurst, Illinois 60126

OWN A BICYCLE DEALERSHIP Cash In On The Bicycle Boom

Purchase \$9,000 to \$15,000 in quality inventory —well-known brands—and to those qualified we will give free training, store location, lease negotiation, set-up and ad support . . dealer development, management assistance. Send resume of phone Mr. Bond collect at (312) 593-8530.

Citation Bicycle Co., 201 Scott St Elk Grove Village, Illinois 60007 201 Scott St.





for those who are unable to climb even a few steps

PORCH-LIFT can be conveniently placed at porch lan or at side of stairway. Key operated control is we easy reach of the rider. Elevates to adjustable hel (maximum 53"). Uses 110 volt current. Comyli weather-proofed. Shipped ready to install.

WRITE FOR FREE BROCHURE AND NAME OF DEALER NEAREST YOU

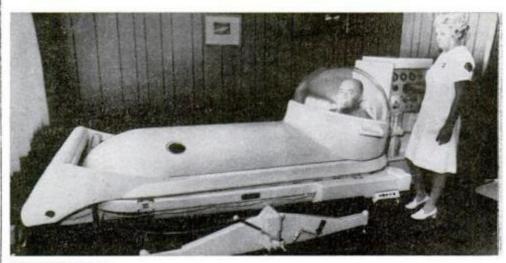
AMERICAN STAIR-GLIDE CORP.

4001 East 138th St., Dept. Grandview, Missouri 64030

PUTTING PEOPLE IN MOTION

BY JOHN F. PEARSON

SCIENCE WORLDWIDE



All systems go

The man shown above is not about to be launched into space or sent for a deep-sea dive. He's a patient at the Miami Heart Institute and is reclining in a pressure chamber as he receives hyperbaric therapy. Physicians at the Institute have found that oxygen introduced into the bloodstream at high pressure improves brain function in senile patients. The experimental therapy is used in conjunction with drugs.

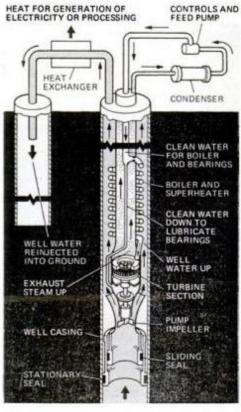
Up with the airship

Talk about lighter-than-air transportation could become more than just hot air if Goodyear Aerospace Corp. has its way. The producer of the country's only lighter-than-air vehicles-the Goodyear blimps-has proposed that the federal government finance construction of a \$25 to \$30million airship to be used as a flying test-bed for various transportation applications, Modern aircraft propulsion systems could boost the speed of airships to more than 100 mph, says a company official, and a tough fabric -developed originally as tire cordcould provide great strength if used as the skin.

Tapping geothermal energy

Hot brine deposits, located 1000 to 8000 feet below the Earth's surface. comprise a major source of energy. The problem: how to tap them efficiently, Sperry Rand Corp. researchers think they have a system that will do the trick. Unlike other proposed pumping systems, the Sperry method uses the heat of the brine itself to power a down-well pump.

Here's how it would work: A boiler, turbine and pump are placed near the end of a pipe driven down to



reach the brine. Fresh water, fed down the pipe, is converted to steam in the boiler. The steam drives the turbine, and a pump impeller on the turbine shaft pressurizes the brine and forces it up the pipe to the surface. Here the brine goes through a heat exchanger where the heat is ex-



tracted to power electrical generators. As the diagram shows, the brine is then injected back into the ground, preventing pollution of surface water. A prototype system is scheduled to be installed at a geothermal site later this year.

Value of body inflated

Back in 1936 it was estimated that the minerals and other inorganic components of the human body were worth a total of 98 cents. In 1969, Dr. Donald T. Forman, a Northwestern University biochemist, pegged the value at \$3.50. Today, he puts it at \$5.60 for a person weighing 150 pounds. Dr. Forman calculates that 5.7 percent of the body's weight constitutes ash and minerals. More than 60 percent is water, and about a third is made up of protein and fat.

High energy from new laser

Researchers at Sandia Laboratories. Albuquerque, N.M., announce they have a produced a laser beam by exciting carbon monoxide with high-energy atoms from a nuclear reaction, opening the possibility, they say, of combining nuclear reactors and lasers to produce electric power. Big advantage of using a reactor to produce laser beams is that very large amounts of energy can be delivered to large volumes of laser material.

The new laser consists of a metal cylinder lined with a thin coating of enriched uranium and filled with carbon monoxide. Neutrons from the reactor strike the cylinder and split uranium atoms, creating new atoms of high energy. They, in turn, strike gas molecules, causing them to give up excess energy in the form of photons—light particles. The photons form the laser beam.

Never too late?

The "fountain of youth" may be a bit closer to reality, according to a Michigan State University physiologist. He reports that the inactive ovaries of old rats began producing eggs after injections of L-Dopa, a compound important to nerve function in rats and humans.

Learn at home and at famous York Institute...

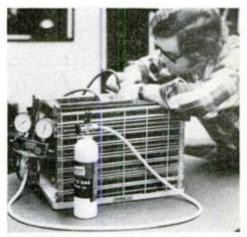
when you take NRI's Home Study Course in Air Conditioning, Refrigeration & Heating.

What's the best way to break into the booming field of air conditioning? Hold onto your present job and enroll in NRI's home training program—a comprehensive career course designed with the technical assistance of the York Division of the Borg-Warner Corporation.

You learn at your own speed, in your spare time, on such advanced training devices as the NRI Circuit Demonstrator; NRI Control Simulator; tubing and joint-making demonstrators; and a window air



All tuition and instruction material for the one week of resident training at York Institute are included at no extra charge as part of your course.



conditioner working unit for troubleshooting experiments.

Graduates of the NRI Master Course can then take optional resident training at the world-famous York Institute. Here you will receive practical experience equal to months of on-the-job work.

SEND FOR A FREE CATA-LOG. Get full details on this unique career opportunity. Find out why more than a million students have come to NRI for training.

| NRI Will | NRI SCHOOLS McGraw-Hill Continuing Educa 3939 Wisconsin Avenue, Washington, D.C. 20016 | NAME OF THE OWNER, THE PARTY OF | 1-015 |
|-----------------|---|--|--|
| R.LU) E | Rush me the NRI Catalog Air Conditioning and Refrigeration | checked below. I understand Master Course in Air Cor Refrigeration & Heating | d NO SALESMAN WILL CALL. |
| Name | (Please | | Age |
| City | | State | Zip |
| Appro GI BII | ved for career study under I. Check for facts. | | Accredited Member National Home Study Council |

If you've ever said...

"There must be a better

Send for a free Career Guidance Booklet that could start you on the road to success in a rewarding new career.

It happens to all of us, sooner or later. No matter what kind of job we have.

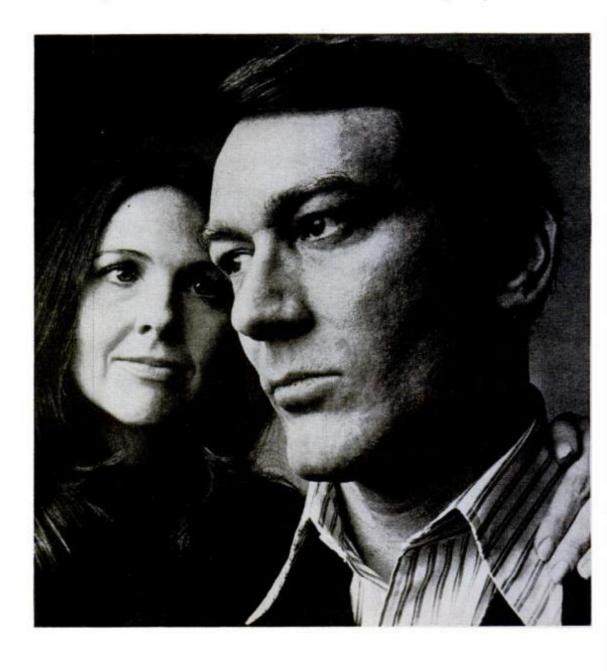
One day, it suddenly strikes home that we're going to have to work for a living, the rest of our lives. And most of us are horrified at the thought of forever being locked into the jobs we now hold.

"Surely," we tell ourselves, "there

must be a way to earn enough extra dollars each month to balance the family budget. Surely, there must be a way to get the kind of position where you don't have to worry about job security."

"Surely," in other words, "there must be a better way to earn a living!"

If you, too, have been thinking these same thoughts, you'll find one



way to earn a living..."

of our free Career Guidance Booklets very helpful at this time. We invite you to send for one.

Your free booklet will describe the opportunities for higher income and greater job security you might expect in one of the career fields listed on the coupon and card. It will also explain why ICS can prepare you for this new career field...right in your own home...in your spare time... regardless of your education or past experience.

In addition, you will receive a free "Demonstration Lesson" that lets you see for yourself why preparing for a more rewarding career—the ICS way —may be a lot easier than you think.

Please bear in mind, as you check off your career choice on the coupon or card, that ICS has a long and distinguished record of success. In fact, since 1890, more than 8,500,000 men and women have turned to ICS for career training.

Major corporations use ICS Career Training

ICS has provided training programs for various divisions and branches of companies like Ford; U.S. Steel; Chrysler; Mobil; DuPont; etc.

ICS Career Training is approved for Veterans and Servicemen under the new G.I. Bill, and is accredited by the Accrediting Commission of the National Home Study Council.

Now it's your turn to discover how ICS training can start you in a rewarding new profession. Just fill in the coupon or the attached postpaid card and mail it today for your free Career Guidance Booklet and free "Demonstration Lesson."

Mail attached postage-free card today. If card is missing, use coupon.

| International Correspon Scranton, Pennsylvania | |
|---|---|
| | dance Booklet, and a free "Demon e checked below. I understand tha |
| I am under no obligation. | e checked below. I understand tha |
| | |
| Engineering | Accounting |
| □ Civil | ☐ Business Accountant |
| ☐ Mechanical | CPA Training |
| ☐ Electrical | ☐ Income Tax Specialist |
| ☐ Chemical | ☐ Bookkeeping |
| ☐ Industrial | Air Conditioning/ |
| ☐ Surveying & Mapping | Refrigeration/Heating |
| Automotive | ☐ Air Conditioning |
| ☐ Automotive Mechanic | ☐ Refrigeration |
| ☐ Air Conditioning Specialist | ☐ Heating Specialist |
| ☐ Transmission Specialist | ☐ Interior Decorating |
| ☐ Body Rebuilding | and Design |
| ☐ Diesel/Truck Mechanic | |
| | High School |
| Business Management | ☐ ICS H.S. Diploma Program |
| ☐ Executive Mgt. | ☐ H.S. Equivalency Program |
| ☐ Industrial/Production Mgt. | Drafting |
| ☐ Data Processing Mgt. | ☐ General |
| ☐ Marketing/Advertising Mgt. | ☐ Mechanical |
| T.V. Servicing | □ Architectural |
| ☐ Color T.V. Technician | Motel/Hotel Management |
| ☐ Stereo-Hi-Fi Specialist | ☐ Motel Management |
| ☐ CATV-MATV Specialist | ☐ Hotel Executive |
| - T | ☐ Restaurant/Club Mgt. |
| Electronics | ☐ Resort Management |
| ☐ Electronics Technician | Airline/Travel |
| □ FCC Licensing | ☐ Reservations Specialist |
| ☐ Computer Servicing | ☐ Travel Agent |
| ☐ Communications/Broadcasting | ☐ Passenger Service |
| ☐ Electrician | ☐ Cargo Agent |
| ☐ Check here for special information, if | age 16 or under |
| Name | Age |
| Address | Apt |
| City | StateZip |

Approved for Veterans' Training. Eligible Institution under the Guaranteed Student Loan Program. Accredited Member National Home Study Council. Canadian residents use Scranton, Pa. address for service from ICS Canadian, Ltd. In Hawaii: 931 University Ave., Honolulu, Hawaii 96814.

DETROIT LISTENING POST



BY ROBERT LUND



GM still antiracing

Is Chevrolet returning to racing? Chevy says not, but it's a logical question to ask when you see the Monza IMSA (for International Motor Sport Assn.) pictured above. GM styling worked the car up for a wind tunnel study. That's the company pitch, anyway. "We wouldn't be surprised to see the car used in racing," a company source admits, "but it won't be under the Chevrolet banner. We have no plans to sponsor race cars or drivers."

If you want an IMSA, you'll have to do the body work yourself or hire a custom shop to do it. The company has arranged with an outside supplier to fabricate the fiberglass panels and they will be sold as an IMSA package through Chevy dealers. The price wasn't available at press time, but you can obtain it from a dealer by now.

Chrysler reworking mid-sizers

Not all cars will get lighter next year. As for Chrysler intermediates —Plymouth Fury, Dodge Charger SE and Chrysler Cordoba—the '76s will weigh slightly more than the '75s. Chrysler is going for a more solid ride and better handling. The cars will also have more inside room —an inch here and there for more elbow room.

What's the latest on Chrysler's subcompact? Officially, it's dead—at least until 1978. The powers-that-be ruled that months ago. There's still a faction in Chrysler, however, arguing that the company should go ahead with engineering a mini car, but hold up on ordering tooling to build it. Keepers of the corporate purse aren't enthusiastic about the idea, but they are weighing it.

New engine from Chrysler

Chrysler feels it's near enough to the goal post on its lean burn engine to begin talking. But information is sketchy because Chrysler doesn't want to box itself in the embarrassing position GM is in on the Wankel—saying the engine is ready to go and then having to back down. Chrysler has confirmed that the lean burn will be a standard piston engine but with an extremely sophisticated fuel flow and handling system.

An electronic device measures air and fuel and then feeds the exact mixture required into the cylinders. The result is an economical, clean-burning engine that can use leaded gas without all the plumbing—including catalytic converters—tacked on current cars. When? Chrysler won't say, but the engine could be in pilot production by next summer.

Eye-popper: A Cadillac truck!

I thought I was really onto something when I saw a Cadillac pickup truck on a Detroit expressway—a goodlooking light green job with a black vinyl top over the cab section, and Michigan plates 7646GN. This was early Sunday morning and I figured Cadillac risked taking the truck out because no one would be around to spot it at that hour of the day.

But I was wrong. I found it was a one-of-a-kind job and Cadillac had nothing to do with it. The owner had purchased a Caddy, had it cut down to the B post and a pick-up body added. Truck manufacturers aren't kidding when they say that trucks are becoming just as snazzy as passenger cars.

Rip-off racket in radials

If some guy beckons you in an alley and whispers that he has the buy of a lifetime on radial tires, don't give your name, pay by check or let him see the license plate on your car. Better yet, don't go for the deal. You could be in trouble.

Stealing radials has become a big racket. Car thieves are having a tough time these days with all the antitheft devices on automobiles. But an efficient team of tire strippers can rip the rubber off a car in two to three minutes.

Not only are the car owners being hit, but auto companies are losing thousands of radials off cars in transit to dealers. The tires are sold through gas stations and car dealers not too particular about where they buy their merchandise.

Police are beginning to get a line on shops handling the hot goods. One method they use is to watch the ads for tire outlets offering radials at bargain prices. Tire companies are required by law to keep track of serial numbers so if a bad batch of tires has to be recalled, the maker has a record—names and addresses—of where the tires were shipped. If the police suspect a shop of dealing in stolen tires, they ask to see invoices received from the tire company or distributor.

If the bootlegger keeps any sort of records, the tires can be traced from the shop to the car owner. They won't throw you in jail for buying hot tires if you didn't participate in the theft, but you will lose the tires.



'Third hand' for making small boxes

by Walter E. Burton

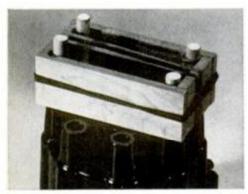
Use an old distributor cap as a box-making aid? The precisely spaced holes in an eight-cylinder cap prove to be perfect for holding dowels around which a small box can be assembled. The cap I used was taken from an old Oldsmobile engine.

It's a good technique when a number of small-size boxes are desired—you can produce multiples of similar containers without appreciable dimension variation.

If you don't have an old distributor cap in your spare-parts box, you can make a jig by boring holes in a board and driving dowels in as shown in the drawing at right. There seems to be little limit to sizes and shapes such jigs might handle.

I found that maple dowels f_6 in. in diameter fit the holes tightly enough in the Olds cap. When arranged to form a rectangle, they produce a box having inside dimensions of $1\frac{1}{2}$ x $3\frac{1}{16}$ in. This could be varied somewhat by placing sleeves around the dowels or by filing the dowels to a smaller diameter.

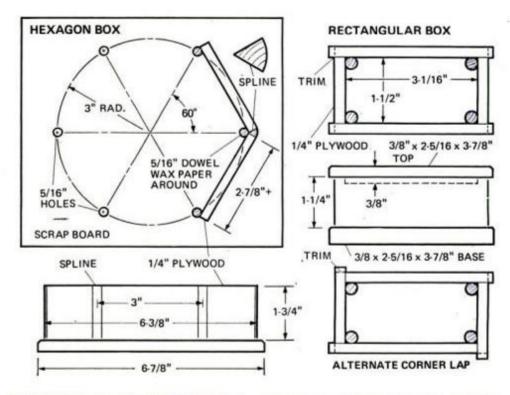
To prevent glue from adhering to the jig, wrap each peg with wax paper and seal the ends with a soldering copper. Assemble the box using white glue and rubber bands to hold the setup securely until the glue dries. The box bottom and lid are cut to the size shown; the former is fastened to the box with brads, while the top is edge-rabbeted so that its center will project ½-in. into the box opening.

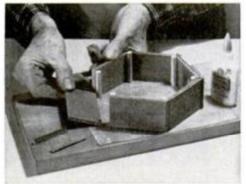


Distributor cap from an eight-cylinder Olds served as jig for gluing the parts.

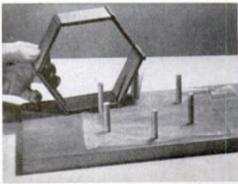


Shapes and sizes of two boxes shown above were controlled by dowel-peg jigs.





Adaptation of distributor-cap stunt—jig made by installing pegs in a scrap board.



Wax paper over board and around dowels permits easy removal of box from jig.

Good Land is Good Living!



GOOD LIVING IS . . . Having a place in the sun where you can raise your family's fresh fruits and vegetables, put your home-grown meat on the table or run to Conchas Lake and fill your creel for a fantastic fish-fry!



GOOD LIVING IS... Having a 5-acre Rancho in the fabulous recreation area of Conchas Lake in Northeastern New Mexico. Explore ghost towns... camping... every imaginable water sport or game fishing!



GOOD LIVING IS . . . Having the future secure for you and your family in a big 5-acre parcel of land (larger than 40 city lots). What is better than solid ground—after all they're not making any more of it!

Good Living is owning 5 wide-open acres at Beautiful Lake Conchas in the heart of the Great Southwest for only \$995 per acre!

A great opportunity awaits you to make your own GOOD LIFE at Ranchos Lake Conchas, Conchas Dam, New Mexico. This unspoiled ranching community in Northeastern New Mexico's year-round recreational wonderland adjoins Conchas Lake State Park featuring a 25 mile long lake noted for its great fishing, boating and water sports.

Conchas Dam, 21 miles off Interstate 40, is only 42 miles from Tucumcari, 65 miles from Las Vegas and 168 miles from Albuquerque. You'll stop running and start living . . . communing with nature, raising your own food and insuring your peace of mind as well as a long term investment for you and your family.

Your 5 acre Rancho is available for only \$995 per acre (other 5 acre Ranchos available from \$795 to \$1,995 per acre). Easy credit terms to fit your budget and a 100% MONEY BACK GUARANTEE AND EXCHANGE PRIVILEGE. Make your own GOOD LIVING . . . complete and return the coupon today!



GOOD LIVING IS... Being able to give your children the heritage they deserve. A part of the history of the old west. To let them discover the joys of the wide open spaces on the back of their own pony. Commune with nature instead of city sidewalks!



Administrative Center, Box 2008DPM, 1350 Park Street, Alameda, CA 94501

Please rush our free Ranchos Information Packet including colored brochure containing full description and pictures of Ranchos Lake Conchas, along with an overall development plan map and a little something extra to help keep America beautiful. No obligation whatsoever and no salesman will call. Offer is subject to all local, state and federal regulations.

NAME

ADDRESS

CITY

A statement and offering statement has been filed with the Department of State of New York. The filing does not constitute approval of the sale or lease or offer for sale or lease by the Department of State or any officer thereof or that the Department of State has in any way passed upon the merits of such offering. A copy of the offering statement is available, upon request from the subdivider and in addition thereto the assigned advertising number. (NYA No. 74-786)



THE BICYCLE SHOP

BY EUGENE A. SLOANE



Don't be nervous about tension

How tight should spokes be? I have heard phrases such as "very tight" but nothing definitive.—Don Rummler, Hampton, Va.

A very good question to which I do not have the answer. Experience usually dictates correct spoke tension. There is a tension gauge made for sailboat stays, and you can get a tension gauge calibrated in pounds up to 20 pounds. Even though you could measure spoke tension, though, you will find when you finish truing a wheel that some spokes will be tighter than others, such as all the spokes on the freewheel side of a rear wheel because you have to pull the wheel more to the right for "dishing." (See a discussion of wheel truing on page 449 of my book, The New Complete Book of Bicycling, \$12.50, Simon & Schuster, Inc.) And those final few spokes you have to tighten or loosen for final touchup truing will have different tension than the other spokes. The only guide I can offer is that spokes, in general, should, when you grab adjoining spokes and squeeze them together, deflect toward each other no more than 1/4 to 1/2 inch when the squeezing hurts your hand.

This is not terribly exact, but it's the best I can offer until I do some more research.

Where's that plastic bike?

Some time ago you showed a picture of an all-plastic bicycle. Whatever became of this? I cannot find it in any bike store.—Ernest Peters, Gretna, Manitoba,

The Original Plastic Bicycle Co., so far as I know, never got into volume production or broad distribution. At the present time it is either defunct or at least moribund. However, Mossberg is making a carbon-filled-frame bicycle on which we will report.

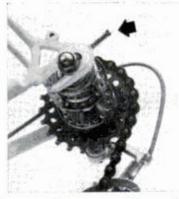
Old-timer needs new parts

I recently acquired an antique pennyfarthing high-wheeler. Where can I purchase parts, such as new solid tires, for this machine?—Norman P. Dion, Tacoma, Wash. I received many letters from readers who want to restore old bicycles and my stock answer is, first, this is not my "thing" and, second, there is an organization of antique bicycle fans who would just love to hear from you. This organization publishes a magazine and a newsletter. Suggest you join The Wheelmen, by sending \$2 for annual dues to Mrs. Donald Cottrell, 6239 Anavista Drive, Flint, Mich. 48507.

Roving rear wheel

My rear wheel seats so it is canted toward the derailleur. If I readjust the wheel so it is centered between the stays, when I pedal the wheel moves until the tire rubs on the left-hand chain stay. How can I correct this?—Jim Thomas, Stamford, Conn.

Better bicycles have adjusting screws so you can center the wheel then tighten down the screws (photo) so the wheel remains true



between stays regardless of pedal pressure.

The problem is that the pressure, transmitted from pedals to chainwheel to chain to rear gears, pulls the rear wheel from the right side, forcing it to one side. You can tighten solid axle nuts enough to lock the wheel in place, but quick-release wheels can move unless a spacer is put behind the left rear axle. You can buy such a spacer (if your bike does not have centering bolts in the rear dropouts as shown here) from any good bike store. Just fit it into the left rear dropout, tighten it down, pull the wheel all the way back until axle is snug against the spacer, align wheel between stays and tighten the quick-release skewer cam.

Just count the teeth

I am torn between the Simplex Prestige and the Campagnolo Valentino Extra derailleurs. Which do you recommend?—Sam Chin, New York.

Depends on what gear ratios you use. The Campagnolo Valentino Extra at 12 ounces is heavier than the Simplex Prestige. However, the Campagnolo model handles rear gears up to 34-tooth capacity while the Simplex goes only up to 28 teeth. The Campagnolo unit is designed for wide-ratio gears (best for hilly terrain), while the Simplex handles only low to medium-ratio gears.

Double-hitch cycling

I recently saw two bicycles joined together, side by side. Do you know where I can buy this type of rig?—Lawrence H. Huth, Emmans, Pa.

A kit of parts to attach two bicycles side by side is made by Fox Enterprises, 2238 Phillippi St., Sarasota, Fla. 33581. Only one person steers, the other set of bars is fixed.

Looking for a light

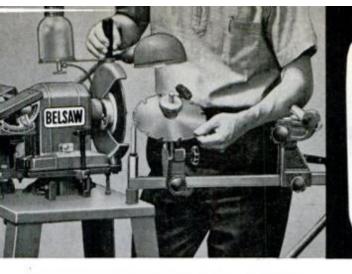
I can't find a replacement bulb for the front light of my Miller generator set. Can you help?—Mitch Gitkind, Golden Valley, Minn.

You need a six-volt, 0.5-amp. headlamp, and any good bike store should have it in stock. Rear and front lights on the Miller are not interchangeable, and the rear lamp is prefocused.

Guide me to a guide

I recently purchased a Campagnolo Nuovo Record front derailleur. At my local bike shop, I was told I'd have to get a Campagnolo double cable guide. Can you help me find one?
—Scott Douglas, Omaha, Neb.

I assume you mean the cable guide that goes on the down tube, located near the bottom bracket shell. All this bracket or cable guide does is guide the cable to the rear derail-leur and the front derailleur. If you can't find the Campagnolo guide, use the Shimano or Sun Tour guide. * * *



Makes Over \$60.00 EXTRA a Week In His Spare Time Sharpening Shop!

"My Belsaw Sharp-All made me an extra \$3,500 last year. Now I am going full time. It's great to be your own boss."

DAVID SWANSON-Utica, Michigan



Does The Belsaw Pay? YOU BET!

an hour

"On Saturdays, my big day, I take in \$45 to \$55. Other days I average less, but I figure I make between \$5 to \$6 per hour . . . and sometimes more. I am presently enlarging my shop, and thank BELSAW and their fine equipment for making it possible.

V. O. Miller Hubert, North Carolina 28539

100% Disabled

"I was disabled by an accident while employed as an iron worker. They declared me 100% disabled and said I'd never work again. I don't think I could work for anyone else but I started my sharpening business part-time and now it's turned into a full-time job with more work than I can do."

> Rex Stage Tampa, Florida 33614

Wanted Retire

"I had dreamed of retiring for years, but was afraid to quit my salaried job. I had never used this type of equipment, but the SHARP-ALL was real easy to learn. I sharpened 30 blades my first week - without advertising at all. Now, for the first time in my life, I can say that I am content."

> Farris Cornelius Wellington, Texas 79095

Had to 2uit His Job "Bought my SHARP-ALL four years ago, and it has done everything (and more) than you said it would. I never sharpened a saw in my life, but when I had to quit my regular job, I knew I had to have something to do. Now I have more work than I am able to do - I have as many as 100 saws ahead of me at a time."

> Frank Sartin Grandview, Washington 98930

Average

\$5 How "Just want to say thanks for the very fine service that you give me. Business is getting better all the time. On a part-time basis, I am averaging about \$5.00 per hour."

Robert Barrett, Jr. W. Springfield, Mass. 01089

\$4,000 a Uear

"Think the world of my SHARP-ALL. Am now grossing about \$4,000 a year part time, and hope to expand shortly. Now doing work for the State of New York, Carrier Corp., and General Motors."

Lawrence Stevenson E. Syracuse, New York 13057

No Selling, No Inventory...Year Round Cash Profits and YOU Set The Hours!

MAIL THIS HANDY POSTAGE-PAID COUPON ENVELOPE...



Let Belsaw prove YOU can do it, too! On our 30-DAY FREE TRIAL OFFFI

this offer to see how easily you can turn your spare time into big Cash Profits with your own Complete Sharpening Shop. No selling . . no pre-vious experience needed. Our famous Sharp-All and show-how instruction set you up to make \$200, \$500, \$700 a month CASH sharpening Saws, Knives, Scissors, Lawnmowers, Shop and Garden Tools . . . all cutting edges.

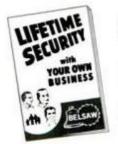
FREE FACTS!

Our Free Book tell how to start a profit able, lifetime hom sharpening business how we help you grow how we'll finance you

BELSAW SHARP-ALL CO 715J Field Bldg. Kansas City, Mo. 64111

CUT ALONG DOTTED LINES... FOLD IN HALF... SEAL AND MAIL 1

No Stamp Needed—Mail Today!



No Obligation . . . No Salesman Will Call

Please send my FREE copy of your boo "Lifetime Security" and full details o your 30-Day Free Trial Offer!

| 37/90/025 | PLEASE | PRINT | | | | |
|-------------------|--------|-------|----|------|------|---|
| ADDRESS | | | _ | | | |
| CITY-STATE-ZIP | | | | | | |
| FOLD IN HALF HERE | - | FOLD | IN | HALF | HERE | - |

FIRST CLASS **PERMIT NO. 1014** KANSAS CITY, MO.

BUSINESS REPLY MAIL

No Postage Stamp Necessary if Mailed in the U.S.

Postage will be paid by-

BELSAW SHARP-ALL CO. 715J Field Building Kansas City, Missouri 64111



CUT ALONG DOTTED LINES

IT'S HERE! FROM BELL

A fascinating learn-at-home program that includes this new generation color TV with digital features... you build it yourself!

You learn occupational skills in electronics through experiments and testing as you build a color television that's ahead of its time!

You've seen TV's that swivel, TV's with radios built in. TV's small enough to stuff in a suitcase and TV's that have remote control.

But now comes a color television with features you've never seen before. Features now possible as a result of the new applications of digital electronics ---- features that make Bell & Howell's 25-inch diagonal color TV ahead of its time! You learn about...

Channel numbers that flash big and clear right on the screen. An on-screen digital clock that flashes the time in hours, minutes and seconds with just the push of a button. An automatic channel selector that you pre-set to skip over "dead" channels and go directly to the channels of your choice.

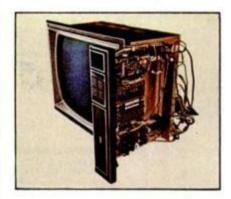
And to insure highest quality performance, this TV has silent, all-







electronic tuning, "state-of-the-art" integrated circuitry, Black Matrix picture tube for a brighter, sharper picture and 100% solid-state chassis for longer life and dependability.



Perform fascinating experiments with the exclusive Electro-Lab® electronics training system. It's yours to build.

Designed exclusively for our students, this Bell & Howell Electro-Lab* gives you up-to-date "tools of the trade," including instruments you can use professionally after you finish the program.

A digital multimeter that measures voltage, current and resistance and displays its findings in big, clear numbers. Far more readable than conventional



"needle pointer" meters that require guesswork and interpretation.

The solid-state "triggered sweep" oscilloscope is a "must" for accurate analysis of digital circuitry. Includes DC wideband vertical amplifier and "triggered sweep" feature to lock in signals for easier observation.

The design console is a valuable device for setting up and examining circuits without soldering! Features patented modular connectors, AC power supply and transistorized dual range DC power supply.

& HOWELL SCHOOLS!

Build it yourself... the perfect way to discover the exciting field of digital electronics!

It's part of a complete learn-at-home program!

Imagine spending your spare time actually building your own 25-inch diagonal color TV! It's a project you can work on right in your home. You'll enjoy the challenge...exploring the new systems of digital circuitry and performing experiments to test what you learn.

There's no travelling to classes, no lectures to attend, and you don't have to give up your job or paycheck just because you want to get ahead. When you finish this Bell & Howell Schools program you'll have learned new skills that could put you ahead of the field in electronic know-how!

You need no prior electronics background!

We start you off with the basics.





Digital electronics is changing our lives!

There's a lot more to digital electronics than just the numbers! True, that's what you see on more and more products like digital calculators, clocks and watches. But behind the numbers lies a fantastic technology that's creating higher standards of accuracy and dependability. The versatility of digital electronics has begun another industrial revolution. Its growth and applications are giving us new and better ways of doing things and spectacular products.

You'll receive a special Lab Starter Kit with your first lesson so that you can get immediate "hands on" experience to help you better understand newly-learned electronics principles. Later, you'll use your new knowledge and learn occupational skills as you build the color TV. You can take advantage of our toll-free phone-in assistance service throughout the program and also our in person "help sessions" held in 50 cities at various times throughout the year where you can "talk shop" with your instructors and fellow students.

Pick up occupational skills in electronics that could lead you in exciting new directions!

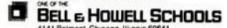
Once you complete this learn-athome program from Bell & Howell Schools, you'll have the specialized skills to service color TV's plus the knowledge that you can apply to repair a variety of home electronics equipment. No better or more practical athome training in electronics is available anywhere!

These skills could open up new opportunities for you. Of course, no assurance of income opportunities can be offered. Get the complete story on this exciting, learn-at-home program... the world's first color TV course employing digital electronics technology!

Mail card today for full details, free!

Taken for vocational purposes, this program is approved by the state approval agency for Veterans Benefits.

> If card has been removed, write: An Electronics Home Study School DEVRY INSTITUTE OF TECHNOLOGY



Electro-Lab is a registered trademark of the Bell & Howell Company.

598R8

After going 212 m.p.h., he's not about to smoke a boring cigarette.



Kings, 16 mg. "tar," 1.1 mg. nicotine, Longs, 17 mg. "tar," 1.2 mg. nicotine, ev. per cigarette, FTC Report Mar, "74

HOMEOWNERS' CLINIC

'Alligatored' paint

Paint on several siding boards of my home is rather badly cracked, or "alligatored," and I'm told I can smooth this surface with Spackle. How about this?—Robert Frey, Moline, Ill.

I've done this and it did work very well. First, it's wise to sand the surface with a coarse abrasive and then wire-brush it hard so that you will provide a "tooth" for the spackling compound.

For best results, buy this fresh off the shelf, rather than use it after it has aged in the can. Brush all loose material, particularly dust, from the surface. Then knife the compound on, spread and smooth it just a trifle above flush. Sand lightly when dry to bring the defects to a smooth, uniform surface.

Dust thoroughly and apply a first coat of paint, brushing it out uniformly. Then follow with a second coat.

The first coat may tend to be absorbed unevenly and look spotty in oblique light; the second coat will cover.

Dry-tipped maple leaves

Late last summer I noticed that tips of leaves on one side of a 3-year-old maple were dry and turning a dark color—just the tips, not the whole leaf. What could be the cause and what should be done?—Edward Day, Lansiny, Mich.

This might be due to insufficient moisture, but inasmuch as only one side of the tree appears to be affected, I would suspect the drift of a chemical herbicide from a rather distant spraying. Under certain conditions, such a drift can travel for a considerable distance. Judging from your description, this a likely cause. If so, there's nothing you can do now, but permanent harm to the tree is unlikely.

'Splicing' carpet

My carpet dealer says that my room and a small, narrow hallway are too wide for one standard width of carpet and too narrow for the next larger width; and that he can save me money by splicing on a strip to the required size. Can he make an invisible or nearly invisible splice? He insists he can, but I'm doubtful. —Benjamin Ord, Alton, Ill.

Experienced carpet installers can splice, or patch, wall-to-wall carpeting in looped, sheared or shag texture so skillfully that you'd never guess it had been done. I would assume the dealer is thinking about a saving of waste material as well as money.

The floor over which the carpet is to be laid should be in good condition, and you should insist that your dealer renail the floor all over to catch any developing squeaks while you have the chance. I'm also assuming that the left-over strip from the room is to be used to patch out the carpeting in the hallway.

Stippling technique

Years ago I remember seeing a room with stippled walls. It was a beautiful job, and I'd like to know how it was done. The figure or texture was fine spots, or dots, in a uniform pattern over a lighter base color. I know it's old-fashioned, but I'd like to do a room or two in this manner. Can you tell me how?—Robert Catton, Tulsa, Okla.

This was a common mode of decoration for painted walls in the '30s and early '40s. Judging by your description, it was done with a natural sponge, trimmed to form one flat face, which was dipped in unthinned paint. This is tricky, but if you're careful to avoid producing the sponge pattern you can carry out the job neatly. It usually looks best when two or more colors that are just slightly different in value are used, with the lighter color treated as the background.

Do you have a home maintenance or repair problem? Send it to Homeowners' Clinic, Popular Mechanics, 224 West 57th St., New York, N.Y. 10019. Letters cannot be answered individually, but problems of wide interest will be discussed in this column. For more home repair and maintenance help, get PM's Home Care Guide, \$4.45 postpaid. Send orders to PM, Dept. HA5, Box 1014, New York, N.Y. 10019.

free

The "NEW LOOK"

1975

LAFAYETTE

Radio Electronics

CATALOG



The ONLY Nationally Distributed Full-line Catalog with a Major Showing of the Newest NAME-BRAND electronics products for 1975.

→ FREE ← SEND TODAY

SAVE on exclusive Lafayette Products plus MAJOR BRANDS

Stereo and 4-Channel Systems - Tape Equipment - Car Stereo - CB and Ham Gear - Police/Public Service Receivers - Antennas - Cameras - TV - PA and Test Equipment - Musical Instruments and Amplifiers - Books - Electronic Calculators - Security Systems - PLUS PARTS, TUBES, BATTERIES, HARDWARE, MORE!

Lafayette

can't go wrong.

Dept. 15015
Lafayette Radio Electronics
111 Jericho Tpke., Syosset, L.I., N.Y. 11791
Sond mo your EREE 1975 Catalog

| Send | me your FREE 1975 | Catalog |
|--------|-------------------|---------|
| Name | | Apt |
| Street | | |
| City | State | |
| | z | ip |
| | | |

Send a 1975 Catalog to my friend

 Name
 Apt.

 Street

 City
 State

Zip

ALL OUTDOORS

What will it cost?

This coming year in particular, the best bargains in recreation are going to be out in the free, fresh air. Equipment is going up in quality—and price—but there are still plenty of places to get outdoor action, or relaxation, at minimal cost.

Best of the new season-stretchers are the improved cold-weather clothing and gear now available. Pick carefully, and you can fit out for winter camping and sports during the months when facilities are less crowded and prices are lower. Ski, snowmobile and expedition wear, plus catalytic heaters, better tents, stoves, insulated containers and sleeping bags, are making outdoor weekends and vacations possible and comfortable any month of the year.

Saving money outdoors starts with walking, and then moves up in mobility and price. Figure your budget and the time you have to spend. Then compare costs that follow:

with frames run from about \$20 to nearly \$100, but note that a price is often quoted for pack or frame alone and matching up the two will boost the cost. A large pack, however, can hold enough food for a week plus sleeping bag (\$10 to nearly \$300 depending on filling, quality and temperature range suitability) plus a small one-or-two-man pack-size tent that can range from a plastic tube for under \$2 on up to \$200 for compact models of 2 to 10 pounds. Freeze-dried camping food is expensive (what isn't?) but is a worthwhile lightweight convenience. Figure you can pack up and go at first for \$50 or under in equipment, and then learn what more expensive items to invest in as you gain experience and study other hikers' gear along the trail. Like other activities, you can save plenty if you find a place to rent and try backpacking essentials. You might even discover you the weight and cost of the tent.

Tenting, however, is the big bargain pastime outdoors this year, and many families are finding that just a few vacation days away from restaurants and motels can pay for a \$150 10x15-foot model that has room to sleep 10 on five double-decker cots. Tents carried by car don't have to be as light (hence expensive) as backpacker models. In cotton canvas they run \$15 for a two-man unscreened model up to hundreds of pounds and dollars for enclosures for a big family or small circus. Buy a \$5.95 campground guide telling where to pitch the tent and you're in business.

Boat camping can cruise you inexpensively off the beaten track, and though a canoe, inflatable or skiff may cost \$200-up for a start or three times that for a sailboat, the wind and muscle power are free. For motoring, consider \$300 a minimum



Camping North . . .

New cold-weather clothing and gear make inexpensive winter vacations and tenting possible in snow.

. . . camping South

Fishing boats like the new Chrysler Funster can trail to warmer waters, convert with canvas into a cruiser.



You can hike, of course, in any rugged clothes and shoes when the weather is mild, but cleated shoes or boots at \$20 to \$80 are better when the going gets rugged. Snowshoes will run about \$20 to \$60 with harness; figure touring skis will cost from just under \$100 with boots and bindings on up and up.

Rucksacks and daypacks in canvas or nylon can start around \$5 and go soaring up to \$60 or more for imported models but can be useful on almost any outing. Backpacks playing packhorse isn't your game.

If letting a bike roll off the miles seems like a better way to go, you can find one for \$50, or on up to \$1000 for a custom-built model. Wear your backpack, strap it onto a rack, or fit the gear into panniers and seat bags that cost \$4 to \$50. Send \$10 to American Youth Hostels, Delaplane, Va., 22025, for a year's membership, and you can overnight at their 4500 hostels around the world for \$1.50 to \$3 a night. Staying in hostels will save

for low-power boat and outboard afloat or trail bike ashore.

One step beyond a car with tent in the trunk is the van conversion, a \$5000-and-up package, or choose a tent trailer at \$500 to \$3000, travel trailers up to \$20,000, \$500 cap cover or \$1000-up slide-in camper for your pickup truck. And then there are the \$7000 to \$50,000 motor homes.

But if that's a lot, there's still the rental route—or back to the bargain pleasures of hiking.

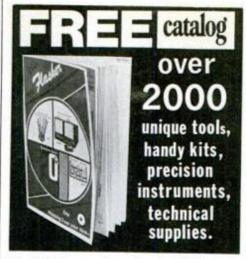
(Please turn to page 54)

IMPORTANT NOTICE **CONCERNING CERTAIN CELLULAR PLASTICS PRODUCTS**

The Federal Trade Commission believes that certain cellular plastic products may present serious hazards in case of fire. If improperly used or allowed to remain exposed or unprotected, these products may burn rapidly in a fire and produce dense smoke and toxic gas. Some of these products are polyurethane foam, polystyrene foam, polyvinyl chloride foam, ABS foam, cellulose acetate foam, epoxy foam, phenolic foam, polyethylene foam, polypropylene foam, urea foam, ionomer foam, silicone foam, and foamed latex. These products are sometimes used in building construction, particularly as insulation, and flexible foamed plastics of this type are sometimes used in furniture.

The Federal Trade Commission believes that terms such as "non-burning," "self-extinguishing" or "non-combustible" do not accurately reflect the hazards that may be presented by such products since in fires such products are not self-extinguishing and will burn rapidly if not properly protected.

You may have purchased these products from a building supply store or from a contractor or applicator, or they may have been installed in the original construction of your home. If you are uncertain how to minimize risks that may result from the improper use of these products you should consult The Society of the Plastics Industry, Inc., or the manufacturer. This Notice is distributed by The Society of the Plastics Industry, Inc., 250 Park Avenue, New York, New York 10017.



Our 22nd year of service to the World's finest craftsmen and technicians.



National Camera

Senda FREE copy of the NC Flasher

address

city

state

National Camera st Union Ave. Dopt.EA od, Colorado, 80110





Perfect Timing and Dwell never change!

The Allison OPTO-ELECTRIC System eliminates the Points and Condenser, replacing them with an OPTO-ELECTRONIC TRIGGER, using a Light-Emitting Diode and Phototransistor. Completely eliminates Point and wiper-arm "Friction" wear: The only "TRUE" Electronic Ignition...that you can buy Gives 40-times more Timing Accuracy for under \$100. than ANY system Using "Mechanical" Breaker-Points!
Unlimited RPM. Smoother running (No timing fluctuation as with Magnetic Units). All SOLID-STATE Components. UNAFFECTED by Temperature, Moisture, or Vibration! Easier Starting under any condition! Increased Horsepower. Sparkplugs last 3 to 10-times Longer. PERFECT TIMING INCREASES Engine Efficiency and Gas Mileage up to 30%! Eliminates ignition Tune-Ups forever!

> Quick and Easy Installation! * Tested and Proven reliability.

Only \$4995 • SATISFACTION GUARANTEED!

Complete.
 1-YEAR FACTORY WARRANTY.

(State Make, Year, Engine Size). (Calif. Res. add Tax).

CONVERT YOUR "C-D" UNIT TO BREAKERLESS! Opto-Electric "TRIGGER UNIT" ... Only "34.95

* Send Postcard for FREE BROCHURE Today.

ALLISON AUTOMOTIVE CO. 1269- X, East EDNA PL., COVINA, CAL. 91722

Now the most enjoyable, do-it-yourself project of your



You'll never reap greater reward, more fun and proud accomplishment, more benefit for the whole family, than by assembling your own Schober Electronic Organ.

You need no knowledge of electronics, woodwork or music. Schober's complete kits and crystal-clear instructions show you -whoever you are, whatever your skill (or lack of it) - how to turn the hundreds of quality parts into one of the world's most beautiful, most musical organs, worth up to twice the cost of the kit.

Five superb models, with kit prices from \$575 to around \$2,300, each an authentic musical instrument actually superior to most

you see in stores.

Join the thousands of Schober Organ builder-owners who live in every state of the Union. Often starting without technical or music skills, they have the time of their lives -first assembling, then learning to play the modern King of Instruments through our superlative instructions and playing courses.

Get the full story FREE by mailing the coupon TODAY for the big Schober color catalog, with all the fascinating details!

----------The Schober Organ Corp., Dept. PM-27 43 West 61st Street, New York, N. Y. 10023

- Please send me Schober Organ Catalog.
- □ Enclosed please find \$1.00 for 12-inch L.P. record of Schober Organ music.

NAME

ADDRESS.

STATE ZIP

Pick up a



Warn has a new winch, made just for you. With this "equalizer" you can go off the road just like the big guys do ... and get back safely. Want more details?

Write Dent, OM1



Warn Industries

19450 68th Ave. S. . Kent, Wa. 98031

"Want to really learn how to repair cars? Check out NRI home training"

"NRI provides the most up-to-date complete courses

in Auto Mechanics I've ever seen. I Know the importance of a good mechanic, and the opportunities out there for trained men. That's why I'm glad to see home training like the two NRI courses. It's a lot of training for a very few bucks.

Save Gas...Save on Repair Bills. NRI's Tune-Up Course will teach any homeowner all he needs to know, quickly, with hands-on experience. The course includes 8 important service items, including a Dwell Tachometer, Volt Amp Tester, and Tune-Up Tool Kit.

Become a Professional Mechanic. NRI's Master Automatic Technician Course gives you the essential training and diagnostic equipment to be a real pro. You get 10 pieces of auto service equipment, including a Dwell Tachometer, AC Power Timing Light, Volt-Amp Tester, Ignition-Analyzer Scope and a complete set of tools.

Train with the Leaders—NRI & McGraw-Hill. No other school has NRI's experience in home training, or McGraw-Hill's background in continuing education. Mail the coupon and check what they have to offer." NRI AUTOMOTIVE DIVISION, 3939 Wisconsin Ave., Washington, D.C. 20016

RUSH FOR FREE CATALOG NO SALESMAN WILL CALL.



NRI SCHOOLS

McGraw-Hill Continuing Education Center 3939 Wisconsin Avenue, Washington, D.C. 20016 HOME TRAINING A AUTOMOTIVE MECHANICS

946-015

You get all this equipment and more with the NRI Master Automotive Technician's Course...including NRI's exclusive Achievement Kit, and 70 profusely illustrated

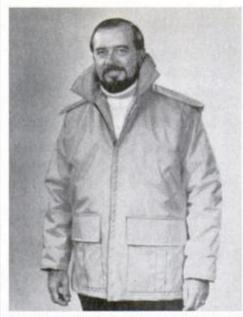
Please send me your new Automotive Servicing Catalog. I understand there is no obligation.

I am interested in Basic Master Course

| Name | | Age |
|---------|---------------------------|-----|
| | (Please Print) | |
| Address | | |
| City | State | Zip |
| | erans Benefit Send me fac | |

ALL OUTDOORS

(Continued from page 52)



Flotation jacket that helps rescuers home in is new Helmsgutt/Radarjac from Vexilar. Radar-reflective lining holds in or reflects heat as well. USCG-approved; \$129.



Cross-country racing is target of latest John Deere snowmobile, the high-performance 340/S model. Its increased base length allows the driver to sit forward while running at top speed. About \$1750.



Travelers who like to stay where they are on occasion should find Monitor's new fifth-wheel Penthouse trailer much to their liking. Two tipout rooms provide an opportunity for trailer-park luxury living.



I'd like to give this to my fellow men...

while I am still able to help!

I was young once, as you may be—today I am older. Not too old to enjoy the fruits of my work, but older in the sense of being wiser. And once I was poor, desperately poor. Today almost any man can stretch his income to make ends meet. Today, there are few who hunger for bread and shelter. But in my youth I knew the pinch of poverty; the emptiness of hunger; the cold stare of the creditor who would not take excuses for money. Today, all that is past. And behind my city house, my

summer home, my Cadillacs, my winter-long vacations and my sense of independence—behind all the wealth of cash and deep inner satisfaction that I enjoy—there is one simple secret. It is this secret that I would like to impart to you. If you are satisfied with a humdrum life of service to another master, turn this page now—read no more. If you are interested in a fuller life, free from bosses, free from worries, free from fears, read further. This message may be meant for you.

By Victor B. Mason

I am printing my message in a magazine. It may come to the attention of thousands of eyes. But of all those thousands, only a few will have the vision to understand. Many may read; but of a thousand only you may have the intuition, the sensitivity, to understand that what I am writing may be intended for you—may be the tide that shapes your destiny, which, taken at the crest, carries you to levels of independence beyond the dreams of avarice.

Don't misunderstand me. There is no mysticism in this. I am not speaking of occult things, of innumerable laws of nature that will sweep you to success without effort on your part. That sort of talk is rubbish! And anyone who tries to tell you that you can think your way to riches without effort is a false friend. I am too much of a realist for that. And I hope you are.

I hope you are the kind of man—if you have read this far—who knows that anything worthwhile has to be earned! I hope you have learned that there is no reward without effort. If you have learned this, then you may be ready to take the next step in the development of your karma—you may be ready to learn and use the secret I have to impart.

I Have All The Money I Need

In my own life I have gone beyond the need of money. I have it. I have gone beyond the need of gain. I have two businesses that pay me an income well above any amount I have need for. And, in addition, I have the satisfaction—the deep satisfaction—of knowing that I have put more than three hundred other men in businesses of their own. Since I have no need for money, the greatest satisfaction I get from life is sharing my secret of personal independence with others—seeing them achieve the same heights of happiness that have come into my own life.

Please don't misunderstand this statement. I am not a philanthropist. I believe that charity is something that no proud man will accept. I have never seen a man who was worth his salt who would accept something for nothing. I have never met a highly successful man whom the world respected who did not sacrifice something to

gain his position. And, unless you are willing to make at least half the effort, I'm not interested in giving you a "leg up" to the achievement of your goal. Frankly, I'm going to charge you something for the secret I give you. Not a lot—but enough to make me believe that you are a little above the fellows who merely "wish" for success and are not willing to sacrifice something to get it.

A Fascinating and Peculiar Business

I have a business that is peculiar-one of my businesses. The unusual thing about it is that it is needed in every little community throughout this country. But it is a business that will never be invaded by the "big fellows." It has to be handled on a local basis. No giant octopus can ever gobble up the whole thing. No big combine is ever going to destroy it. It is essentially a "one business that can be operated without outside help. It is a business that is good summer and winter. It is a business that is growing each year. And, it is a business that can be started on an investment so small that it is within the reach of anyone who has a television set. But it has nothing to do with television.

This business has another peculiarity. It can be started at home in spare time. No risk to present job. No risk to present income. And no need to let anyone else know you are "on your own." It can be run as a spare time business for extra money. Or, as it grows to the point where it is paying more than your present salary, it can be expanded into a full time business—overnight. It can give you a sense of personal independence that will free you forever from the fear of lay-off, loss of job, depressions, or economic reverses.

Are You Mechanically Inclined?

While the operation of this business is partly automatic, it won't run itself. If you are to use it as a stepping stone to independence, you must be able to work with your hands, use such tools as hammer and screw driver, and enjoy getting into a pair of blue jeans and rolling up your sleeves. But two hours a day of manual work will keep your "factory" running 24 hours turning out a product that has a steady and

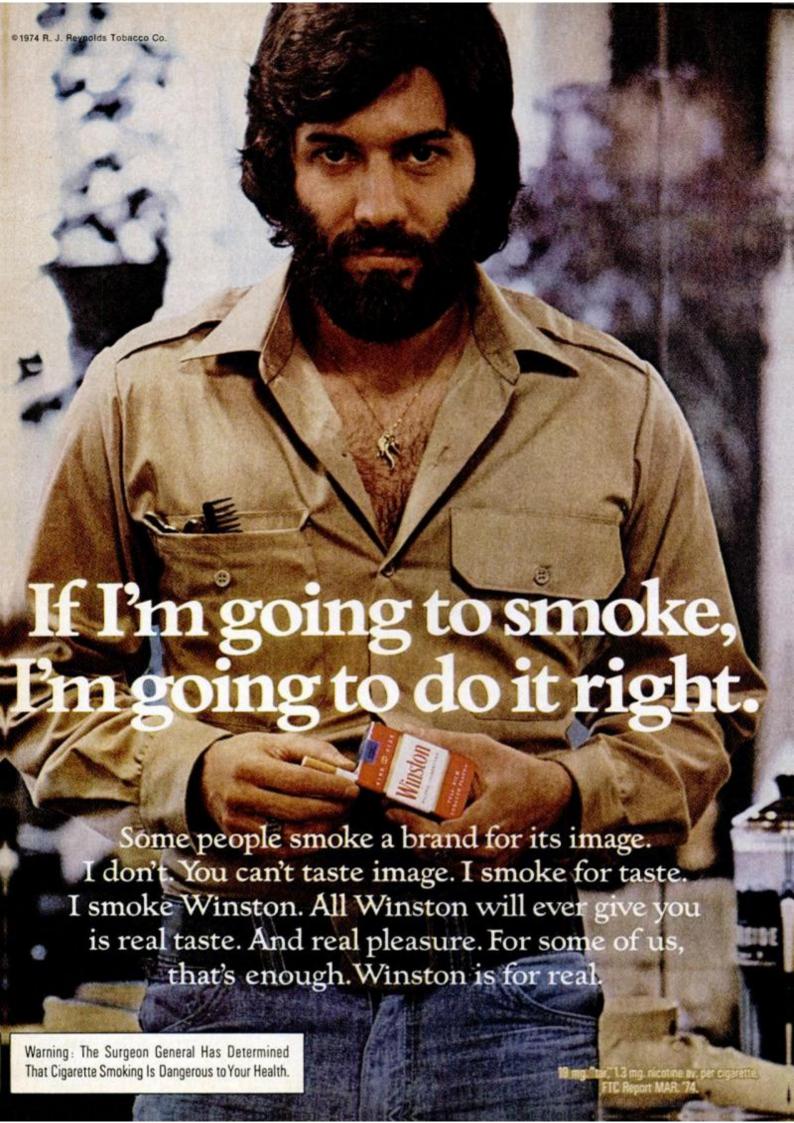
ready sale in every community. A half dollar spent for raw materials can bring you six dollars in cash—six times a day.

In this message I'm not going to try to tell you the entire story. There is not enough space on this page. And, I am not going to ask you to spend a penny now to learn the secret. I'll send you all the information, free. If you are interested in becoming independent, in becoming your own boss, in knowing the sweet fruits of success as I know them, send me your name. That's all. Just your name. I won't ask you for a penny. I'll send you all the information about one of the most fascinating businesses you can imagine. With these facts, you will make your own investigation. You will check up on conditions in your neighborhood. You will weigh and analyze the whole proposition. Then, and then only, if you decide to take the next step, I'll allow you to invest \$15.00. And even then, if you decide that your fifteen dollars has been badly invested I'll return it to you. Don't hesitate to send your name. I have no salesmen. I will merely write you a long letter and send you complete facts about the business I have found to be so successful. After that, you make the decisions.

Does Happiness Hang on Your Decision?

Don't put this off. It may be a coincidence that you are reading these words right now. Or, it may be a matter that is more deeply connected with your destiny than either of us can say. There is only one thing certain: If you have read this far you are interested in the kind of independence I enjoy. And if that is true, then you must take the next step. No coupon on this advertisement. If you don't think enough of your future happiness and prosperity to write your name on a postcard and mail it to me, forget the whole thing. But if you think there is a destiny that shapes men's lives, send your name now. What I send you may convince you of the truth of this proverb. And what I send you will not cost a penny, now or at any other time.

VICTOR B. MASON 1512 Jarvis Ave., Suite M-2-EA CHICAGO, ILLINOIS 60626



DO-IT-YOURSELF: THE BEST WAY TO BEAT INFLATION

s we start our seventy-fourth year of publication, Popular Mechanics goes to a bigger, better size. Bigger because a larger page makes possible more exciting illustrations and better presentation of drawings and plans. Better because PM will be an even more stimulating magazine both visually and in content, as our editors are eager to prove in the months ahead.

he new page size is good news for our advertisers, too, because it lets them show their tools, trucks, boats, cameras, what-have-you, bigger than ever.

s we're sure you're aware, inflation affects everybody-magazines as well as people. While improving our product, we've also been forced to raise the cover price a few cents more. Not because of the larger page size, but because increases in the cost of everything from printing, paper and postage to shoes for staff members' kids have made it necessary. We don't like it any more than you. but we believe that readers of PM know the facts of life about magazines. The cover price alone doesn't begin to pay for a magazine's costs. The support of both the reader and advertiser is needed to keep a magazine healthy and growing.

ack in 1902, Henry Windsor, an Iowa-born editor, announced that he had a great idea for a magazine he'd call *Popular Mechanics*. Today that idea is sounder than the dollar for men who want to be independent, when they choose, of hard-to-get plumbers, carpenters, mechanics and repairmen. *PM* puts it all together for anyone who wants the satisfaction of doing the job or building the thing with his—or her—own hands.

s readers have found over the years, PM pays for itself. We show you how to lick the problem and get better quality at less cost by doing the job yourself. Nothing beats inflation better—as President Ford's citizens committees have lately discovered. Do-it-yourself is as "in" as blue denim these days. Writes a Chicago suburbanite: "At \$10 an hour for a carpenter, you soon learn how to do rough carpentry." In the months ahead we'll give you dozens of inflation beaters: How you can "add a room" with a handsome, freestanding room divider.... Amazing new ways to raise vegetables How to get the bigger, better home you want by remodeling How to lick the high cost of car and appliance repairs.... A way to build furniture you can afford from ready-made components....

More "living" use from your basement. Popular Mechanics isn't a luxury; it's a survival kit in these inflated times.

ut PM isn't all work; we'll show you how to put fun in your life, too, with things like a bar that folds out of a fireplace (in this issue); a tow glider you can fly without a pilot's license; a midget "Indy" racer you can build that zips along at 35 mph—and many more exciting projects to come.

o this issue marks a beginning.
The beginning of a new editorial format you'll find more useful, more attractive, more fascinating than ever before. The beginning of a bigger Popular Mechanics—a better magazine than ever.

-The Editors

Half-pints for higher mpg

Detroit's learning how to build cars that are big inside but small outside. Next month comes American Motors' Pacer then the shrink continues as GM and Ford roll with their smallest cars yet.

by Bill Hartford AUTO EDITOR
and Robert Lund DETROIT AUTO EDITOR





Mini-cars—will they be a fad or the real thing? The only certainty is that they're on the way.

American Motors' Pacer will be small, but the cars from GM and Ford will be smaller still. That doesn't mean they won't be appealing—even exciting—automobiles.

From sources in engineering and styling within GM and Ford, illustrator Harry Bradley has drawn the Ford and "G-Mini" cars which could be on line as early as next year. The G-Mini has the dynamic, contemporary styling that has always characterized GM lines, and looks nothing like the Honda Civic which has been paving the way for acceptance of mini-cars in the United States.

On a wheelbase of 96 inches, the G-Mini should be from 145 to 155 inches long, 63 to 65 inches wide, 48 to 50 inches high and weigh around

1700 pounds. The Ford will be similar, but not as futuristic in its styling. Both cars will offer water-cooled, overhead-cam, four-cylinder, transversely mounted front engines; frontwheel drive; and incorporate disc brakes, rack-and-pinion steering and other features consistent with good automotive engineering practices. They'll have to. By the time they're in the showroom they'll be competing with the expertise of importers like Volkswagen, with its small and sophisticated Rabbit, and other minimodels from abroad.

Closer to the showroom is the AMC Pacer. The small-outside, big-inside new car from the underdog of U.S. automakers should turn heads when it's seen on the streets next month. Detroit Auto Editor, Bob Lund, has been following Project Pacer from the beginning and reports here.—B.H.

Thirteen months ago, in November 1973, an assistant department head at American Motors head-quarters in Detroit poked his head in the company's design studios during a lunch break. There were four cars on the floor—a Pantera, a Jensen, a Citroen and a Something Else.

"What's that?" asked the interloper, indicating the Something Else.

"Our new car," a draftsman explained. "Amigo."

You'll see the car in late February or early March. But it won't be the Amigo or Concepta or Metro or 800 other names AMC checked off before deciding to call it the Pacer.

Pacer is American Motors' big bet on the car of the future. Not the door-die car. The company won't go out of business if Pacer flops. And GM, Ford and Chrysler won't cave in if the car is a winner. But if Pacer is the zinger AMC expects it to be, the Big Three will feel it where it hurts—in the sales figures. If the figures are really big, Pacer could influence the size and shape of American automobiles for 5 to 10 years. That would be a case of the

tail wagging the dog—the smallest company in the business leading the way for the bigger firms.

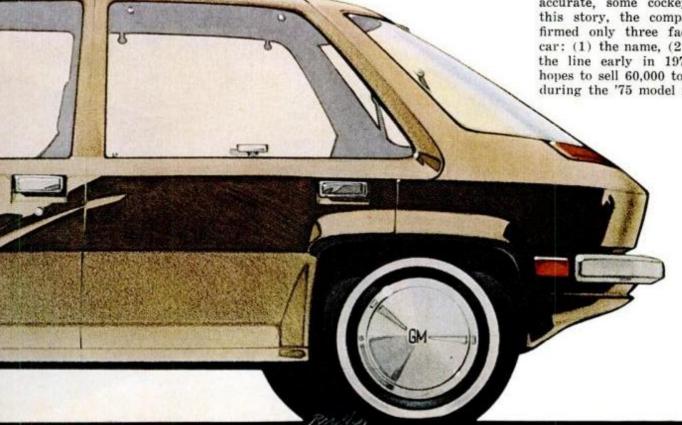
According to Pacer's advance billing, it's supposed to be the most different-looking car by a U.S. automaker since the which-way-is-it-headed Studebaker of the 1940s. You've heard that before, of course, and you would have to be pretty callow carwise not to regard it with skepticism. Detroit's always claiming the coming of a new mechanical messiah.

Pacer won't be much different from other cars mechanically. It will have a few new engineering wrinkles, but nothing spectacular. But it will look different. Guaranteed and double your money back. How different?

Imagine yourself facing a long hill a half mile away. Stretched out in a line on the crest of the hill are all cars sold in the United States—homegrowns and imports. It's coming on twilight and you can see the cars in silhouette against the setting sun. The challenge is to name them. You would recognize VW's Beetle and American Motors' Gremlin, possibly two or three others. Beyond that, you would have it tough to tell the cars apart. Pacer will be as distinguishable as the Beetle. How different? That different.

Before you get the idea this is a teaser story connived by the company to whet your interest in Pacer, let me explain how I came by my information on the car.

Bits about Pacer have been leaking out more than a year—some accurate, some cockeyed. Prior to this story, the company had confirmed only three facts about the car: (1) the name, (2) it will go on the line early in 1975, (3) AMC hopes to sell 60,000 to 80,000 copies during the '75 model run. The com-



pany denies that any published photographs or drawings of the car are the real thing. "Including the drawing Pop Mechanics published last August," a company source declares. "You made the hood too long, the beltline too high and didn't put in enough glass."

Late last summer, AMC's peppy president, William V. Luneburg, who runs the company like John Wayne playing trail boss in a western movie, issued an order to plug the leaks about Pacer. "I'll personally kick the rump of the next guy who talks about this car to outsiders," is a rough translation of what he said.

Mindful of Luneburg's reputation as Detroit's foremost rump-kicker, company officials reluctantly agreed to talk about the car in generalities, the concept behind it and the preliminaries that led up to it—but no specifics before the company's national press preview in January. I interviewed four AMC officials: Gerald C. Meyers, group v.p. in charge of AMC's product line; Richard A. Teague, v.p. of styling; Frank S. Hedge, v.p. of public relations, and Dale E. Dawkins, director of product planning.

To flesh out what I learned from company people, I talked with AMC suppliers, the head of the spy-onthe-competition department at another auto company and a former AMC employee.

The assistant department head who saw Pacer in November, 1973, is no longer with AMC. The parting was friendly and he is not out to bad-mouth the company. Here are his impressions of the car: "I didn't like it. Maybe I'd feel different if I drove it, but just looking at it, I

thought there was too much glass. "Try standing next to a dining room table top that's 30 or 35 inches off the floor. If you're average size, the top will come just about at your groin. Now imagine everything above the top of the table is glass. Everything except the B pillar. You get a spooky feeling with that much glass.

"About the other cars in the room—the Pantera, Jensen and Citroen—I couldn't see where they borrowed much from other cars for Pacer. It's an original. If you go for a lot of visibility, Pacer will have more visibility than any car except a convertible."

Sources outside the company confirm that Pacer will have more glass area than any standard production automobile, past or present; more than 5500 square inches—almost twice the glass in a Cadillac or Lincoln.

"We didn't put in a lot of glass for the sake of using a lot of glass," says group v.p. Jerry Meyers. "We did it to give the driver a panoramic view of the world around him."

Meyers is aware of the "spooky feeling" reaction to the greenhouse top on the car. "We did some research and found that about 12 percent of the people interviewed have some apprehension about being surrounded by glass. That's psychological. There's no danger. There's no engineering reason to be concerned about the amount of glass. Anyway, we still keep a steel platform over the driver's head, so there's nothing to fear."

In addition to having more glass than other cars, Pacer will have another nothing-else-like-it feature.

If you go for a lot of visibility, Pacer will have more visibility than any other car except a convertible.

The door on the passenger side will be noticeably larger than that on the driver's side. (First-year production will be limited to a two-door hatchback, but the company plans additional models later on.)

"You don't want a big door on the driver's side," Meyers explains, "because you bang the door getting in and out in parking lots. But you want the extra room on the passenger side, for loading and unloading and getting in the back seat. You'll be able to walk in—not squirm in, actually walk in—on the passenger side of Pacer. Passengers will be able to get in the back seat without the occupant of the front seat getting out of the car."

AMC says Pacer will have the best forward visibility of any car on the road. In the early stages, the company considered building a car without a hood. That didn't come off, but Pacer will have the next best thing—an extremely abbreviated hood with a rapid slope to the grille.

"It's a completely different environment when you sit in the car, front or back seat," says Dick Teague. "The glass and the short hood give you a feeling of spaciousness you don't get in any other car. You don't realize you are in a subcompact. It's a new page in the book."

Vast expanses of glass in an automobile usually lead to problems. Noise problems. Heat problems. Heat getting in, getting out.

"Noise, no problem. Heat escaping,

no problem," Meyers replies. "But with all that glass we had to pay particular attention to getting heat out of the car. You do that by where you locate the air outlets, the size of the outlets, the number of outlets and the efficiency of the airconditioner and fan. Pacer will have a cool-down system unparalleled in American automobiles."

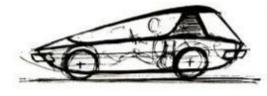
The company wouldn't disclose dimensions of the car. Other sources say Pacer will have a 100-inch wheelbase and overall length of 172 to 172.5 inches. Those numbers tie in with something AMC has confirmed—that Pacer will fall between Gremlin and Hornet in size. Gremlin has a wheelbase of 96 inches, overall length of 170.3 inches. Hornet's wheelbase is 108 inches, overall length 187.

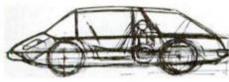
"When we started on Pacer in 1971," Meyers recalls, "we took the biggest car we had at the time, the Ambassador. We set a target for ourselves of getting that amount of space in a very small car. Front-seat room, rear-seat room, legroom, hip room, shoulder room. We wanted the roominess of Ambassador in a car smaller than Hornet but no larger than Gremlin. We achieved that objective.

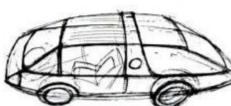
"One reason Pacer will look different than other cars on the road is its width. It will be the first wide small car. W-I-D-E," Meyers spells the word for emphasis.

"I've referred to the car as a small car, but I don't want to put that label on it. If you use interior dimensions as a yardstick, Pacer could qualify as an intermediate, maybe as a full-size car. It's that roomy inside. But if you go by wheelbase or overall length, you could call it a compact



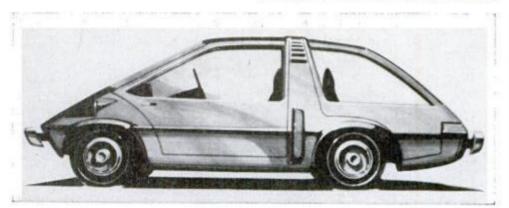












or subcompact. If you want to classify the car in a particular group, go ahead. But we aren't going to box it in a narrow compartment by hanging a label on it.

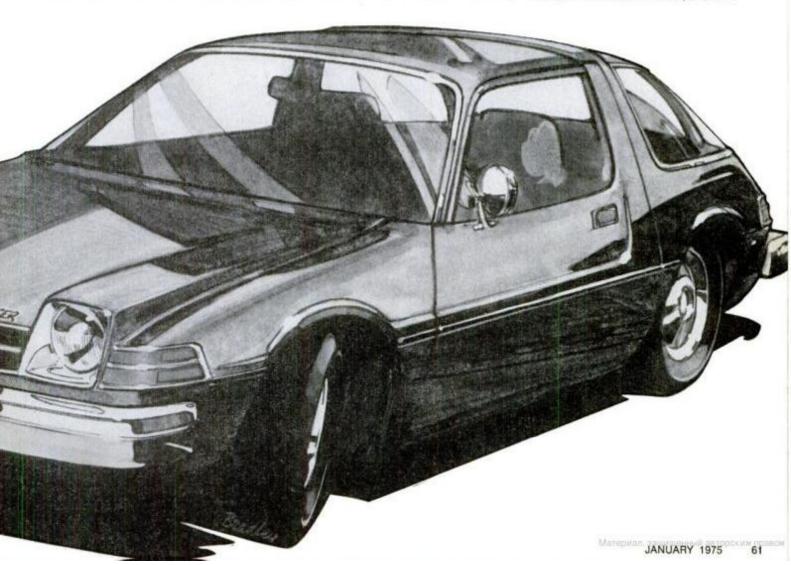
"It will be one buyer's first car, another buyer's second car."

Meyers says Pacer will have the best suspension system and be the most maneuverable small car made in the United States.

On the suspension system: "I've been with this company 12 years and this is the first time we've taken the clean-sheet-of-paper approach on front suspension. We didn't have to. We could have faked it by using an existing system, tacking it under the car and slapping some sheet metal on top. We redesigned the

(Please turn to page 129)

AMC Pacer, as illustrated below, can be compared with the actual car to be introduced in showrooms next month. The lines of the car (originally shown with this illustration on page 90, Aug. '74 PM), could be even more startling with a greater amount of glass and a more sharply sloping hood. Photos show the actual Pacer dash and full clay mock-up during preproduction stage of development. Pencil sketches and drawing at left show various approaches AMC made to mini-cars before deciding on Pacer configuration seen in concept below.



Waterway preview for 575

Faster, sleeker—and safer—the new models provide a wider choice of power options and accommodations.

by Bill McKeown

First look at this year's new pleasure boats reveals better use of inside space, improved hull lines below the waterline and sleeked-up styling above. Popular bass boats feature built-in bait wells, gear lockers, comfortable pedestal seats; fishing tournaments now require that contestants' craft do not use motors that exceed recommended horsepower ratings. More runabouts offer open foredecks for additional seating.

Many builders will include one or more small cabin models in their lines for overnighting, season-stretching and shelter during sudden showers. Trailerable hulls with eight-foot beams and lengths to about 25 feet sleep up to six, plus more in the cockpit under canvas. Almost any family with the money can find a dreamboat to fit this spring.

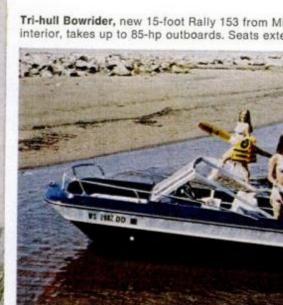
Cuddy-cabin cruisers with outdrive or outboard power, like Wynne-designed Silverline Nantucket 22VC below, offer trailerable cabin-and-cockpit hull.



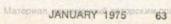


Versatile bass boats provide speed out to the fishing hole, casting in comfort and electric trolling on arrival. Glastron's BeauJack (above) handles both.





Tri-hull Bowrider, new 15-foot Rally 153 from Mirro Marine, has blue denim interior, takes up to 85-hp outboards. Seats extend into sun-lounger bunks.



For fishing or family boating, Chrysler's 16-foot C-142 Funster has options that include dinette table, a top and full curtains.



Wraparound windshields are popular and MFG Super Caprice 17-foot runabouts feature them for outboard and stern-drive models.







Cruiser 22-footer, the Starcraft Chieftain Mark IV, acted like frisky runabout under test with OMC 165-hp sterndrive.

Runabout with deep-V hull, the 187 Volera Sport, one of 20 Larson models, showed speed in tests with an OMC 170 I/O.

A hull to handle choppy water, Crestliner Crusader 19 (right) has Jim Wynne deep-V design in 17 and 23-foot runabouts, too.



Props, jets and sails provide push

With fuel more expensive and in shorter supply afloat and ashore, engine manufacturers are tuning their products for efficient performance, and a number of powercraft builders have added sailboats to their lines. New trends include a growing popularity for safe jet power in hulls used for skiers, divers and swimmers. Transom boarding platforms and permanent stern steps and ladders are also an excellent aid for getting back aboard. Twin-hulled catamarans continue to be popular sailboats. High-performance models are fast—and fun.



Designed especially for jets to 455 hp, the CV-21 Glastron/Carlson has padded sundeck, swim platform.



Fishing in high style is a feature of Checkmate's new Bassmate, a high-performance model rated up to 120 hp.





Water-jet speeds to 60 mph came from new Avenger 185 with new MerCruiser Jet 400 rated at 375 hp.



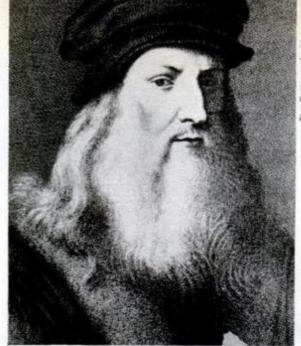
Recognize a Boston Whaler? This new Squall 9 can take motor, oars and sail.



Sailing speed of over 23 mph has been set by a Sol Cat-18 in a 22-knot-breeze test.

Popular and recommended transom swimming platform is feature of new Glasspar V-212.

A new light on the legendary



Artist, writer, sculptor. anatomist, botanist, musician, engineer, architect, inventor -Leonardo da Vinci was all these during a phenomenally productive lifetime. He was born near Florence. Italy, in 1452 and died in 1519.

It takes a stretch of the imagina-tion to appreciate the fact that the supreme artist who painted the Mona Lisa and the Last Supper was the man who invented or improved the ball bearing, worm gear, bicycle and other mechanical hardware.

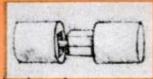
If there ever was any doubt about Leonardo da Vinci's credentials as a mechanical and engineering genius, it is dispelled by the evidence in two long-lost da Vinci notebooks.

They vanished into obscurity some time after da Vinci's death in 1519, later turning up in the possession of a sculptor who brought them to Madrid, where they finally entered the private collection of King Philip V of Spain. At the beginning of the 19th century, they were transferred to the National Library of Spain in Madrid, where—as a result of a cataloguing error-they disappeared again. They were rediscovered in the National Library in 1965.

The manuscripts-known as Codex Madrid I and Codex Madrid II-are making news because they are now available in facsimile reproduction and English translation. They were recently published in five volumes by the McGraw-Hill Book Co. at \$400 (\$750 for a limited edition). If those prices deter you, McGraw-Hill also makes available The Unknown Leonardo, which puts da Vinci's work into historical perspective for the general reader and sells for \$39.95. It contains material from The Madrid Codices and other da Vinci works.

The Madrid Codices (manuscripts)





Couplings





Valves





Cranks and rods

Engaging and disengaging gears



Pipes



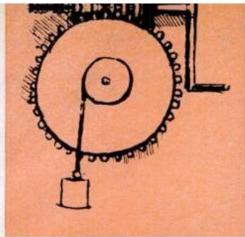
Toothed wheels

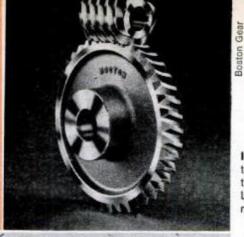


Ratchets

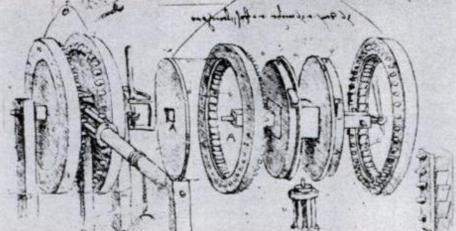


Springs

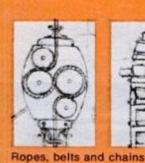


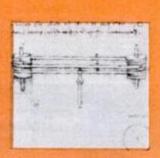


It is readily apparent that the modern worm gear (photo) is the same machine element that Leonardo drew in his notebook nearly 500 years ago.



Leonardo provided assembled and exploded views of a machine for hoisting heavy loads. He sketched many devices designed to translate reciprocating to rotary motion.



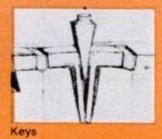








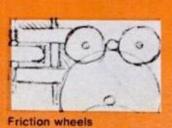
Pump cylinders and pistons





Pulleys



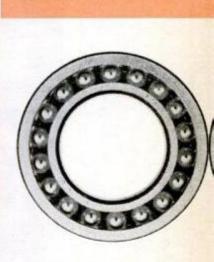


Screws



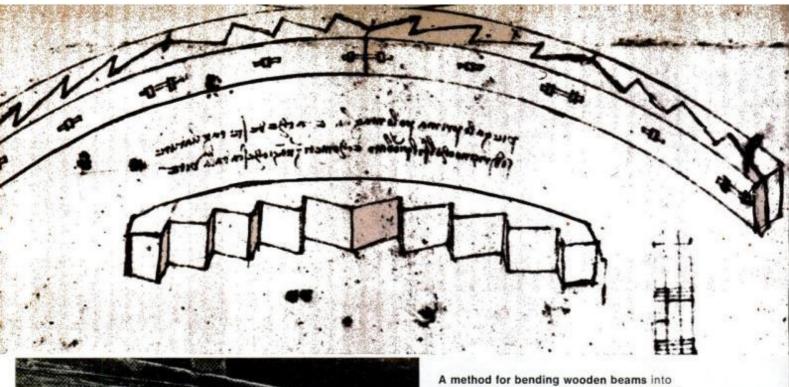


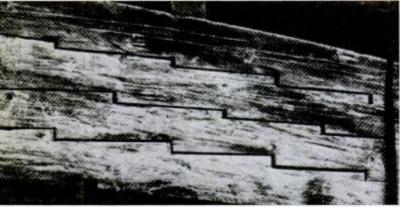
Pins, axles, shafts



Da Vinci's studies of friction led to design (top) of ball bearings contained in ring-shaped race, presaging development of modern set of ball bearings (above). Left: Drawings made by Leonardo in his study of basic elements of machines.

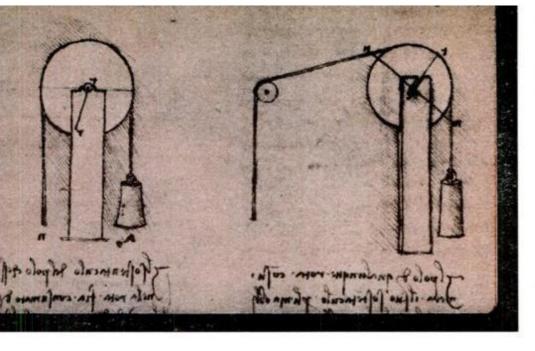
Click wheels and gears





A method for bending wooden beams into arches without splitting their wood fibers is shown in the drawing (above). Leonardo's solution was to notch the beams. This method was used more than 300 years later to build this wooden bridge (below) in Switzerland. The close-up photograph at left shows how the notched timbers interlock. The bridge, which crosses the Emme River, is about 155 feet long and has a load capacity of more than 40 tons. A larger bridge of similar construction in Switzerland spans nearly 200 feet.





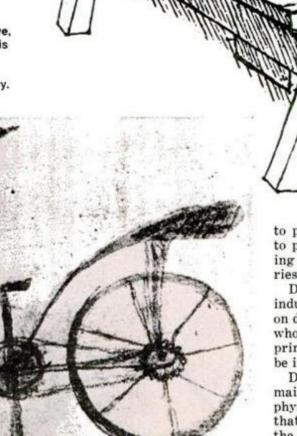
These drawings are part of Leonardo's friction studies. His accompanying notes are in "mirror" writing; he habitually wrote from right to left.

Looking like a modern lathe, the machine at right was designed by Leonardo for boring holes in logs. Adjustable chucks ensured log was centered.

Leonardo conceived bicycle chain drive, according to scholars who attribute this sketch of bicycle to young student of the master. Actual application of the drive was not to come until 19th century. come from perhaps the most productive period of Leonardo's life-from 1491 to 1505. One concept developed during this period-and illustrated in Codex I-had to be reinvented in the 20th century by the Sperry Gyroscope Co. "When we were developing our blind-flying gyro instruments in the 1920s, we had the problem of designing a ball bearing that would have absolutely no end play," explains Preston Bassett, former Sperry president. "We thought we had an innovation with our conical pivot ball bearing, but it is a dead-ringer of da Vinci's sketch."

Similarly, the invention of the worm gear is credited to an 18th century English clockmaker named Hindley. But a drawing in Codex I shows that da Vinci had conceived the gear hundreds of years earlier.

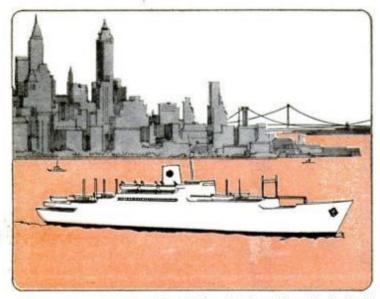
The Codex I is no mere compilation of diverse machines, but a systematic analysis of the concepts and elements of machines. Hundreds of years were



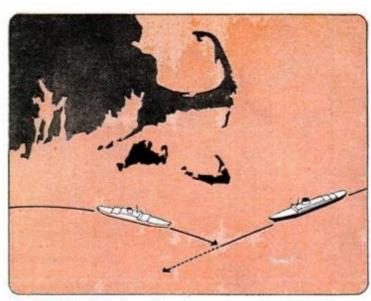
to pass before French scholars were to produce a similar analysis in laying the foundation for modern theories of mechanics.

Dr. Bern Dibner, a Norwalk, Conn., industrialist and recognized expert on da Vinci, takes issue with scholars who maintain that Leonardo was primarily an artist who happened to be interested in things mechanical.

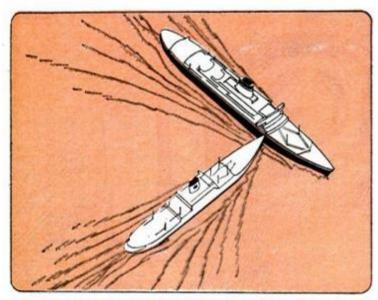
Dr. Dibner asserts that Leonardo's main interest was mechanics and the physical world. "It is my contention that painting was an avocation," says the scholar. "It even proved to be a distraction, because he reneged on any number of artistic commissions he was given."



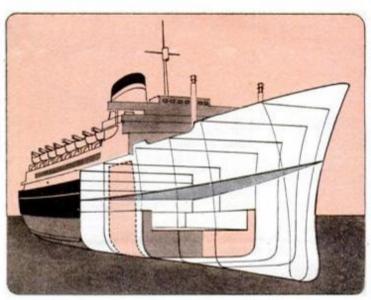
1 The Swedish liner Stockholm left her New York berth shortly before noon on July 25, 1956. The 12,165-ton ship was bound for Copenhagen with some 300 passengers.



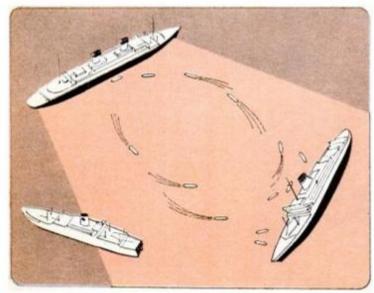
The Stockholm's eastbound course would take her into the busy summer shipping lanes. The Andrea Doria, bound for New York from Italy, was coming from opposite direction.



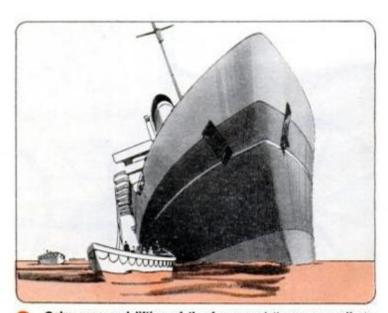
4 At 11:22 p.m., the Stockholm plowed into the starboard side of the Andrea Doria, ripping a hole extending from below the waterline up to the main deck.



5 After hull section gave way (broken lines), nearly empty starboard fuel tanks (gray tone) flooded, causing list. Then sea came in over bulkhead deck (gray) above tanks.



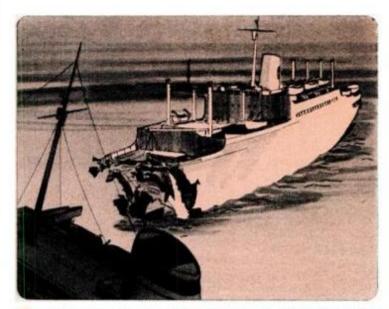
The big Ile de France (twin stacks) arrived early on morning of July 26, picking up 753 passengers from lifeboats shuttling between her and listing Andrea Doria.



Calm seas and lifting of the fog eased the rescue efforts.

Many passengers were forced to slide down ropes into lifeboats, burning hands raw. Some fell and were injured.

A heavy fog blanketed the ocean off the New England coast. About 50 miles south of Nantucket Island, a ghostly Stock-holm was suddenly seen bearing down on the Andrea Doria.



6 Bow crumpled, Stockholm backed off. When inspection showed vessel was still seaworthy, Swedish ship stood by for rescue operation. Both ships sent SOS messages.

Famous Headlines

Andrea Doria and Stockholm collide

In the 18 years since her sinking, the Andrea Doria, like the Titanic and Lusitania, has become a legend.

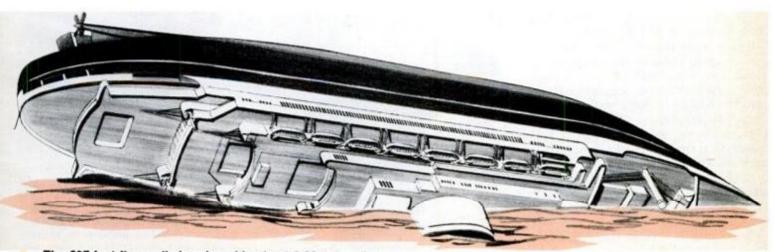
Named for a 16th-century Italian admiral, the magnificent 29,000-ton vessel was built in 1951 at a cost of \$27 million. Her walls were hung with fine paintings and silver plaques, and her salons were richly appointed.

On her last trip, the *Andrea Doria* carried 1709 passengers and crew. Her cargo manifest listed, in addition to nearly 1800 bags of mail, such items as cases of rare wines, crates of antiques and a fleet of fine cars.

At 12,165 tons and only 254 feet in length, the *Stockholm* was a more modest ship. Built eight years before for the Scandinavia-United States run, she had a heavily reinforced bow for ice-breaking in northern harbors.

On the night of July 25, 1956, the two liners were moving through a blanket of fog off the New England coast, the Stockholm eastbound and the Andrea Doria westbound, less than a day from making port in New York. This was still the era of the ocean liner—before the jet had taken over international travel—and in summer the shipping lanes across the Atlantic were alive with ships.

At 11:22 p.m., the Swedish and Italian liners collided at a point about 50 miles off Nantucket Island, According to passengers



The 697-foot liner rolled on her side about 9:30 a.m., minutes after captain had left the ship, with starboard rails under water and screws in the air. The end was now near.

aboard both ships, the vessels suddenly appeared as clusters of lights emerging from the fog.

A row of first-class cabins on the Andrea Doria was demolished by the Stockholm's prow. A man from Brooklyn, N.Y., staggered out of a bathroom to find that the cabin furnishings and his wife, who had been reading in bed, had simply disappeared through a gaping hole.

Others were more lucky. A 14year-old girl had been scooped out of her bed by the Stockholm's prow and was found injured but alive on the

deck of the Swedish ship.

The final casualty count showed 45 persons dead or missing from the *Andrea Doria* and 5 dead or missing from the *Stockholm*.

When Capt. Gunnar Nordenson had determined that the *Stockholm* was seaworthy, he dispatched lifeboats, picking up 533 survivors before heading back to New York.

SOS messages brought a number of ships to the rescue. A U. S. military transport and a destroyer escort, at sea for gunnery practice, picked up nearly 250 survivors. But the ship that really capped the rescue effort was the *Ile de France*. Headed east when the SOS arrived, she swung around and arrived at about 1:30 a.m., in time to rescue 753 persons.

At 9:30 a.m., July 26, Capt. Piero Calamai finally left the stricken ship. A Coast Guard cutter soon radioed a final report: "S.S. Andrea Doria sank

at 10:09 a.m."

Responsibility for the collision remains something of a controversy. Both ships, it was claimed, had used radar to track each other. Why this precaution had failed was never satisfactorily explained.

Capt. Nordenson, who was found blameless by his company, claimed that the Andrea Doria crew could not handle radar gear properly.

Capt. Calamai charged that the Stockholm was traveling east in a westbound shipping lane and should have been farther south.

Capt. Nordenson maintained that the Italian ship had made a lastminute panic turn right into the path of his ship. The Italian skipper denied this but could offer no proof; the course-recorder equipment and graphs had gone down with his ship.

Legal aspects of the controversy finally were resolved when both steamship lines agreed to end claims against each other for ship damage.

The Stockholm is still afloat. After repairs, she returned to service. In 1960, she was sold to East Germany and rechristened Volkerfreundshaft, which means "friendship between people." She now takes East Germans on cruises.

Treasure hunters dive to

Sculptures, silver plaques and other valuables lured two young divers to the sunken ship, sure they could unlock her treasure chest.

by Jack McKenney

Photos by the author

"How would you like to go to the Doria, Jack?" The question came from Bob Hollis, a diver friend and producer of documentary films.

"My bags are packed," I answered. I had been on one expedition to the Andrea Doria back in 1968, when an unsuccessful salvage attempt was made. Over a period of three weeks, I had made but three dives. I was eager to try again.

Bob explained that two young men in San Diego had founded a firm, called Saturation Systems, Inc., and were planning to use a diving habitat

in a new salvage effort.

Both partners, Bob said, had impressive diving backgrounds. Twenty-seven-year-old Don Rodocker was a Navy-trained diver and expert mechanic, having designed a heat-exchange system used on two record-setting dives, one to 1010 feet. He also had served as a consultant to Oceaneering International, Inc., one of the largest deep-diving companies.

Chris DeLucchi was only 22 but he'd already accomplished more than most men do in a lifetime. When he was only 13 he installed an underwater platform—a kind of minihabitat—in Monterey Bay, and at 15 designed and helped to manufacture underwater photographic equipment. Later, in the Navy, Chris became a qualified diving supervisor and, in 1972, established a new world's record—945 feet—for a saturation dive in the open sea.

Rodocker and DeLucchi had the qualifications, all right, but it remained to be seen if they could finally unlock the *Andrea Doria* treasure

chest.

A number of expeditions had attempted and failed. Some had brought up items of token value, but the majority of the treasure seekers had been forced to abandon the project because of weather and rough diving conditions.

There remained aboard the ship valuable sculptures, silver wall plaques and jewels. (The Andrea Doria had boasted several jewelry shops.) There were vintage wines, probably still in good condition, and an estimated \$1,100,000 in American and Italian currencies. No one had reached the first-class purser's safe since the sinking.

Bob Hollis, I and the other members of the photo team—John Clark, Tim



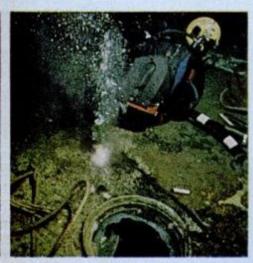


Author Jack McKenney (above) is editor of Skin Diver magazine and an expert underwater photographer. He began diving in Canada 20 years ago and spent three years as a diving program director in the Bahamas. His underwater movies have won gold medals in film competitions. Left: Don Rodocker (top) and Chris DeLucchi, organizers of the expedition.

the Andrea Doria



Kelly and Bernie Campoli-flew from San Francisco on July 15, 1973, arriving 17 hours later at the seaport of Fairhaven, Mass., which was to be our base of operations.



Don Rodocker cuts through hull into foyer area, where purser's safe is located.

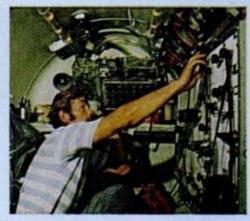
There were 26 people on the expedition. In addition to back-up divers, boat crew and diving technicians, the group also included Sue DeLucchi and Barbara Rodocker, wives of the two leaders. George Powell, a Navy master diver, was in charge of the saturation diving system.

For deep diving, a mixed-gas atmosphere—oxygen and helium—must be used. As a general rule, diving with compressed air is limited to about 200 feet. At greater depths, the diver is apt to suffer nitrogen narcosis, which affects his ability to work and may even endanger his life. Helium has no narcotic effect,

To be done efficiently, deep diving

allows the diver ample bottom time and eliminates a long decompression after each dive. He rests in a compression chamber in between dives and only decompresses (returns to surface air pressure) after his diving stint of days or weeks is over. Slow decompression is necessary to keep a man from being hit by the diving disability called the "bends."

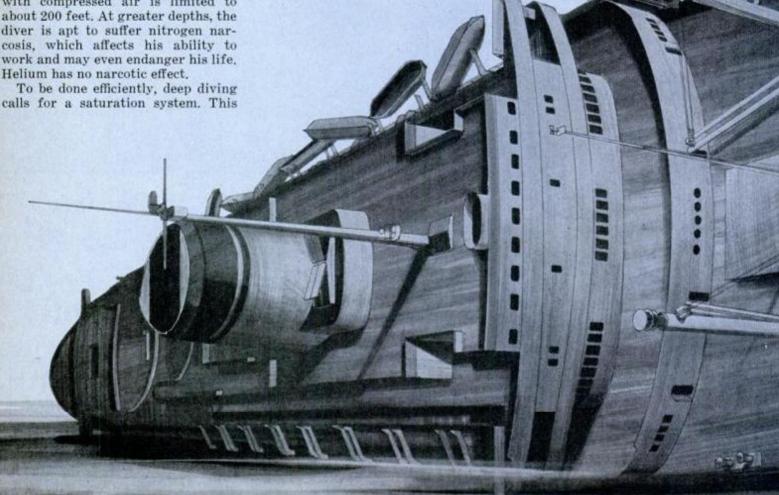
The term "saturation" refers to the diver's tissues, which become saturated with an inert gas such as helium after he has spent a while in pressurized mixed-gas atmosphere.



"Mother" gets last inspection before she is submerged and tethered to the hull.



Dives were supervised from the Main Control Center van.



"Mother," our nickname for the habitat, was the major component of the saturation system designed by Chris and Don. A steel cylinder 12½ feet long and 5 in diameter, it would be lowered to the *Doria* and tethered.

The habitat is capable of supporting three divers at a maximum depth of 600 feet for 21 days. An entry hatch at the bottom provides an exit to the sea.

An umbilical from the support ship on top can supply hot saltwater—to warm the divers' suits—electrical power, breathing and metal-cutting gases. There are audio and video communications systems linking Mother with the support ship. If all connections with the surface were severed, the habitat would be self-sustaining for at least five days.

Of necessity, life in the habitat is rugged, the only comforts being two fold-down bunks, a toilet, a food warmer and lights.

Diving operations aren't known for their creature comforts. Our support vessel, though a fine ship, proved no exception. The *Narragansett* was a fishing trawler, not a diving tender. Just about every square foot of usable deck space on the Narragansett was occupied. The MCC (main control center), a 7-by-8-foot van, housed electronic and valving equipment to monitor the saturation dive from topside. When Chris and Don were saturated there would be a man stationed in the van at all times to regulate and check on the gas flow, heating and power, and to remain in communication with the divers.

The deck also held a big shark cage, a compressor system for scrubbing used gas from the divers, a welding unit and a boiler to supply the divers with hot water. Also taking up a considerable amount of space was a decompression chamber.

During the week that we were preparing dockside, people would come down to the dock to see what was going on. One time a little old lady walked up to Bernie Campoli and George Powell during an infrequent work break and said to George, "Do you think you can get my sister's rosary beads when you're down there on the ship? She was on the Andrea Doria when it sank, you know, and it would be so nice if she could get

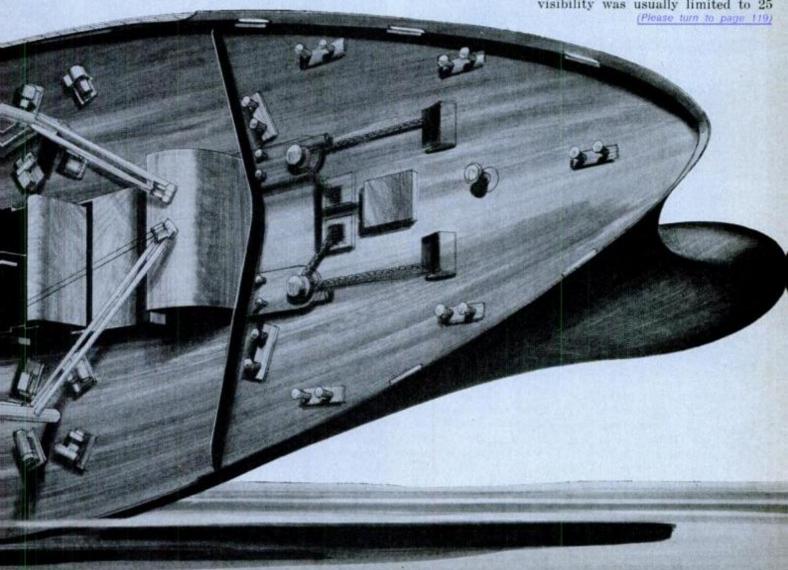
them back. She was in cabin 358 and they're in the drawer by her bed."

We left Fairhaven on Sunday, July 22, with Mother in tow behind the Narragansett and we arrived over the Doria the following day. It took us about six hours to locate the wreck and throw a grappling hook in. When it snagged, Tom Ingersoll, an ex-Navy salvage diving officer, and I made the first descent to identify and secure into the ship.

We dove on compressed air, which limited us to about 200 feet. At about 140 feet we expected to see the wreck come into view, but at 160 feet all we saw was a free swinging grappling hook. We had lost our contact with the *Doria*. Late that same day divers Don Gay and Tim Kelly managed to secure into the wreck,

This experience was typical of the things we would run into. Problems with equipment delayed us several times. We finally had Mother properly moored on the *Doria* on Aug. 7.

The diving proved formidable. It was deep—all of our working dives were between 150 and 200 feet, and in some cases dives were made to 230 feet. Currents were treacherous and visibility was usually limited to 25



Fireplace opens for party fun

As a make-believe fireplace it's a beauty. As a fun center it's a wow—all in one space-saving unit.

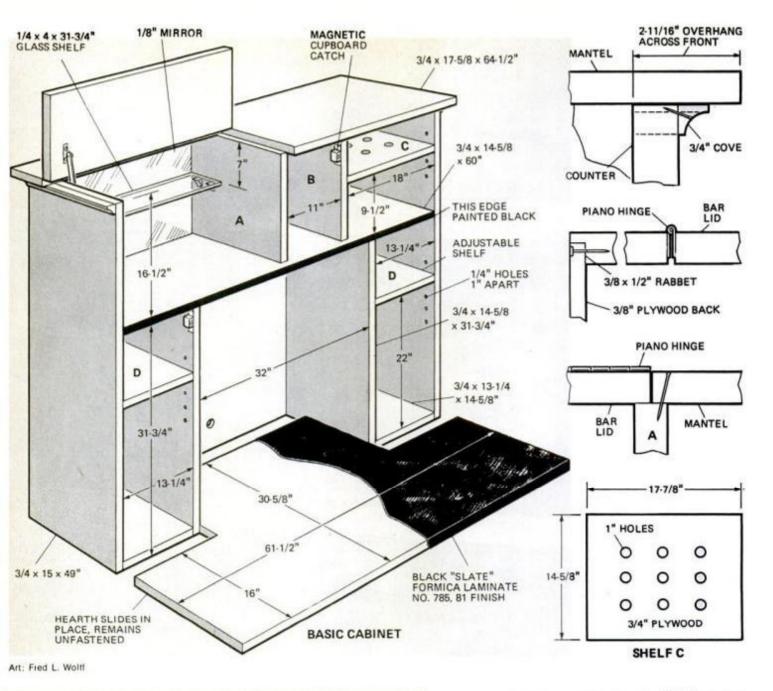
by Wayne C. Leckey, HOME AND SHOP EDITOR



When you ask your friends, "May I fix you a drink," they won't believe their eyes when you walk up to this handsome colonial fireplace, swing open the bottom and lower the front. Suddenly it's no longer just a fireplace but an exciting home bar and entertainment center. Not only does it house all the fixings for refreshments, but it contains a complete stereo and record system to put your guests in a festive party mood. It's a unique piece of furniture which masquerades as a realistic fireplace with electric glow log, andirons and all, yet opens wide to serve a dual function, making it a real space saver perfect for apartment or playroom use where every inch







GLUE-ON MOLDED **OVERLAYS** WIDTH OF END BRICKS TRIMMED 18 SOLDIER BRICKS, 3/8" MORTAR JOINTS SLIGHTLY 14-5/8" 14-5/8" 32" LEFT RIGHT BACK WALL WALL WALL FACED WITH 12 1/2" BRICK COURSES 7/8 FIRE-PIT WALLS

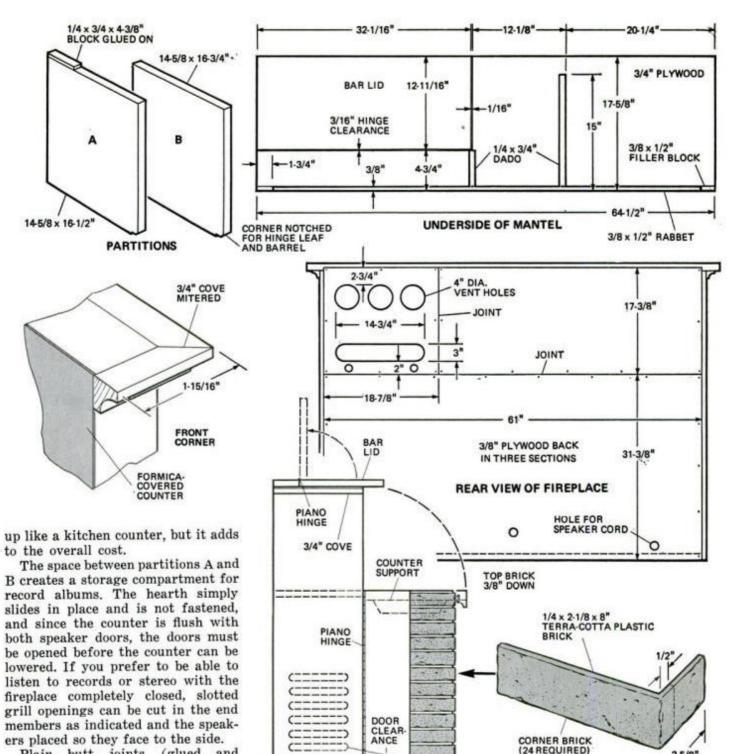
of space may count. What's more, it's one fireplace you can take with you when you move.

You'll find it less difficult to build than it looks. The basic cabinet is a simple plywood structure that's fitted with a back and divided into compartments to suit the size of your particular audio components. If yours is a General Electric system, the compartment dimensions given for the speakers, changer and stereo receiver can be followed exactly. Otherwise, you simply alter them, includ-

ing the depth.

The material you make it of depends on what you want to spend. Lumber-core plywood for the exposed surfaces gives the smoothest paint job, but it costs more than fir plywood. Likewise, the black "slate" laminate adds a realistic look to the hearth, but you can settle for a painted finish. The same can be said for the laminate on the bar counter; it makes a dandy surface that wipes

78



Plain butt joints (glued and nailed) are used for the most part in assembling the basic cabinet, the exception being the back which fits in rabbets, and dividers A and B which are housed in dadoes cut in the underside of the top. Shelves C and D are loose-fitting and adjustable, and all plywood edges which are exposed are covered with paper-thin wood veneer tape, glued and trimmed, to hide the laminations and to make the parts appear as of solid stock. The top itself is surface-nailed to partitions A and B and to the ends of the cabinet. If you prefer, you can attach the top with metal angle brackets placed on the underside. This method permits the top to be removed, along with the counter, to lessen the overall weight of the fireplace when it comes

(Please turn to page 124)



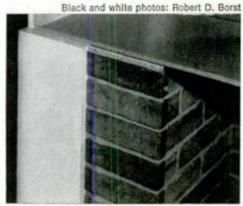
END VIEW

OPTIONAL 1" GRILL SLOTS IN EACH END FOR

SPEAKERS

HEARTH

Lifelike flickering flames of electric log (plus andirons) from Sears add to overall realism of finished fireplace.



Short returns of door-brick courses align and butt with courses applied to walls of firepit. Small knobs assist opening doors.

3-5/8"





Portable sailboat folds for toting

Folding boats aren't new, but this classy little 9-foot sailing dory promises to be one of the fastest to assemble and most versatile to operate. The 50-pound Porta-Bote goes together in minutes and collapses into a slim, flat, surfboard-like package for easy cartopping. With its sail removed, it becomes a rowboat for fishing, a small outboard or a camouflage-covered floating duck blind for hunters. Its skin is of tough, tear-resistant polypropylene with built-in foam flotation to prevent sinking. Assembly is merely a matter of unfolding two hinged halves and inserting seats that act as spreaders (facing page). For sailing, there's a slip-on rudder and pivoted leeboards that swing up out of the way for launching and beaching. \$459 complete with sail rig, \$279 without sail. K Enterprises, Box 2287, Menlo Park, Calif. 94025.

'Dolphin' breathes for divers

Snorkelers afraid of ducking their heads too far below the surface and accidentally getting an unexpected gulp of water needn't worry with this colorful swimming aid in the form of a friendly dolphin. The molded-plastic float supports a long snorkel tube above the surface (facing page), enabling a swimmer underneath to move around freely without fear of the tube submerging. Inflatable air bags inside add extra buoyancy to assure that the dolphin will stay afloat even if a diver inadvertently pulls down on it from below. With the air bags deflated, the dolphin can also be used submerged as a steering aid for divers with scuba gear (far right, facing page). Its fins and smooth gliding action are said to help a diver do exciting underwater aquabatic maneuvers like loops, rolls and banking turns, \$39.95 from Red Fin Water Sports Corp., Box 14068, Washington, D.C. 20044.



THE LATEST PRODUCTS AND DEVELOPMENTS











Dial-a-food microwave oven

First microwave oven to have variable power settings, this new 1.2-cu.-ft. Minutemaster adjusts from 65 to 650 watts to provide flexible cooking for fast roasting, slow simmering, warming, defrosting—whatever your needs. \$469, Litton Industries, 400 Shelard Plaza S.. Minneapolis, Minn. 55426.



Fast-action tripod head

For following fast action with a long telephoto lens or movie camera, this springlike tripod head flexes in any direction. Unlike conventional heads, Flex-a-Pan has no handles or knobs, freeing both hands to hold and operate the camera. \$9.95, Fluid Sculpture, Box 91699, Los Angeles, Calif. 90009.



JANUARY 1975

NOW



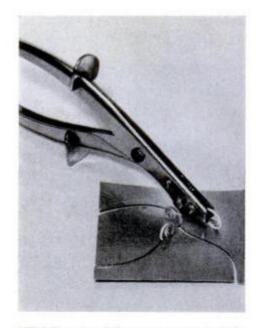
Face-warming mask

Breathing icy cold winter air is easier with this mask for skiing, snowmobiling and other outdoor activities. It protects nose and face from chill winds and raises the temperature of inhaled air to a comfortable level. Reusable and washable, it comes in packs of three for about \$2 at drug and sporting goods stores. 3M Co., Box 33600, St. Paul, Minn. 55133.



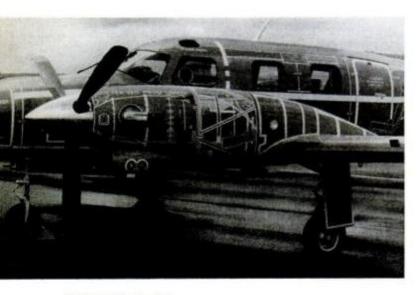
Brighter digital watch

Numbers on this new digital watch are said to be easier to read in bright light because of a special diffusing lens that heightens contrast and reduces wash-out. The Bowmar also features a time-to-change-batteries indicator. Priced \$225 to \$295 depending on finish. Bowmar, 2355 West Williams Field Rd., Chandler, Ariz. 85224.



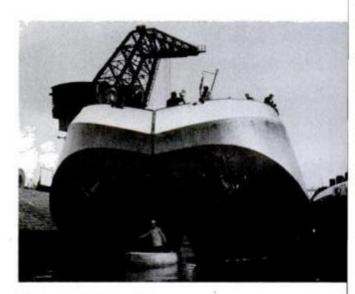
Nibbling tool for many materials

Cutting without deforming edges of cut, this nibbling tool shears material against two stationary jaws with a central moving jaw. Cuts sheet metal, tubing, plastics; can start cut in center of panel with only a ¼-inch hole. Tool is nickel-plated, has spring return and latch. Replaceable jaws are hardened tool steel. \$13.95 plus shipping from Brookstone Co., Peterborough, N.H. 03458.



Flying blueprint

When Piper unveiled the first of its new eight-passenger corporate aircraft, the company decided to let prospective customers see exactly what they were getting. The entire plane is painted blue with white markings—just like a blueprint. The markings indicate its internal structure, seating arrangement, door locations, cargo capacity and other features. The twin-turboprop Cheyenne cruises at 326 mph, sells for about \$570,000—a pretty expensive blueprint.



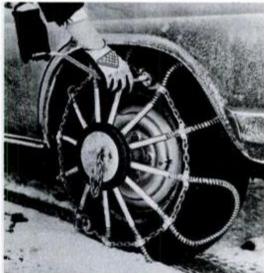
Ship does the splits

This ship unloads its cargo fast. The two halves of its hull just swing open like jaws, and out pour its contents. The unusual cargo vessel is designed to dump sand, rock or earth directly into the water for easy building of dikes, breakwaters and land fills. Its hinged halves are each sealed watertight and float when opened to keep the ship afloat. The vessel was built in Germany for a French construction firm.

Easy-on tire 'chains'

You can put on these snow "chains" without jacking up the car or crawling underneath to reach hard-to-get-at clasps on the inside of the wheel. Type shown in two top photos below has springlike loops that snap around the tire and are tightened in place from outside. It's made by the German firm of Zanetti Vertrieb, Postfach 201004, Hermann Lingg Strasse 11, 8 Munich 2, Germany. At bottom is similar device with three curved arms that clamp tightly around tire from outside. Made by A. Noble & Son, Ltd., Adelaide, Australia.











All-in-one lock guards both skis and poles from theft

The increasing theft of valuable skis brings this protective locking device to keep your equipment safe. It consists of a loop that binds skis and poles snugly together and an adjustable 4-foot-long steel cable with combination lock that can be secured to any rack, rail, post, tree or other sturdy support. Called Ski Lock, it can be used with any type of ski bindings without requiring the attachment of special fittings. For price and further information, write Master Lock Co., 2600 North 32nd St., Milwaukee, Wis. 53210.





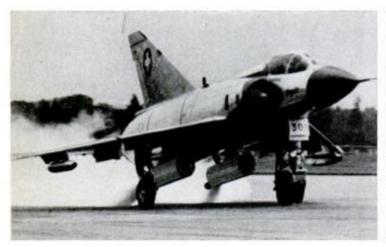
Folding bar and seats with thirst-provoking theme

There's no mistaking the purpose of this folding furniture-bar, chair and bar stool all carry the Schlitz Beer trademark printed on their 18-oz. canvas fabric. All are available with either black or white frame. Bar carries list price of \$105; director's chair, \$28; bar stool, \$45. All items fold flat for storage; bar weighs 44 pounds, chair and stool 13 and 19 pounds respectively. Also available with plain canvas or nylon fabric. For dealer location, write Gold Medal Folding Furniture Co., 1700 Packard Ave., Racine, Wis. 53403.

Did you ever think you'd see an airplane fly on steam?

Old-fashioned steam power may not be dead yet—at least not according to the Swiss. The Swiss Air Force is now experimenting with steam-powered booster jets for takeoff assists that work much like our own JATO rockets except for two things—they cost practically nothing and are safer to handle. The

super-heated steam jets, mounted under the fuselage, develop up to 8800 pounds of extra thrust to help get a plane off the ground fast where runways are short or loads are unusually heavy. The boosters are shown below being tested on a Swiss Mirage fighter (left) and a Pilatus Turbo-Porter transport (right).







One way to get rid of pigeons

Most cities try to get rid of pigeons, but not the French town of Grigny, a Paris suburb. When a new square was first opened, architect Francois-Xavier Lalanne thought it looked too bare. At his suggestion, giant 20-foot-tall pigeon "statues" were erected as decorations. Now they're a major town attraction. They also serve to scare away real pigeons that fly down to investigate, take one look at the monster replicas and flee rapidly.

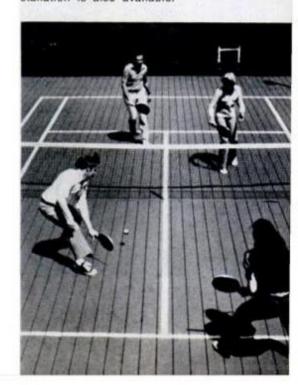


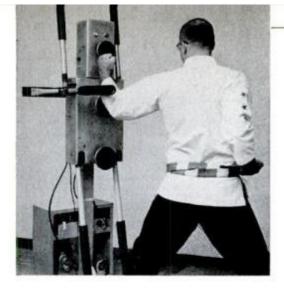
Chilling aid for wine drinkers

Wrap-around thermometer shows in illuminated numbers exactly when a wine bottle has been chilled to the proper temperature for serving. Wine-Temp principle is based on heat-sensitive liquid crystal displays that indicate temperature in direct digital readouts. \$5 with wine-serving guide. Robert Parker Research, Inc., 6700 Sierra Lane, Dublin, Calif. 94566. Wall, desk, bath and other models available.

Paddle-tennis court you build from a kit

A sport with growing popularity is platform (or paddle) tennis, played outdoors year-round on wood courts. Because the court measures 30 by 60 feet (one-fourth the size of a regulation tennis court), it can be installed in locations where tennis would be otherwise impossible. Kits for platform tennis courts are now being marketed by Richard J. Reilly, Jr., Inc., 98 Mill Plain Rd., Danbury, Conn. 06810. Prices start under \$9000; installation is also available.





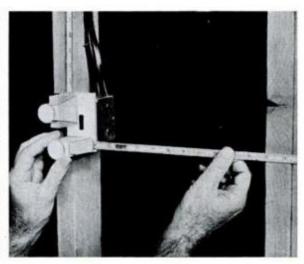
'Dummy' is no dummy

You have to be awfully fast and agile to outwit this karate expert—he's an automated robot. Spring-loaded "arms" and "legs" are programmed to strike an attacker at random so he never knows where the blows are coming from. Idea is to ward off the robot's blows and still hit designated target areas—only top karate masters can do it. The device was developed as a training aid by Laser Dynamics, Box 416, Somerville, N.J. 08876.

Instant add-on bike power eases pedaling

You can motorize any standard bicycle with this handy clampon power pack. The 17-pound, 1-hp engine attaches quickly to the handlebars and drives the front wheel through a friction roller. It runs on gasoline or alcohol, gets up to 50 miles on its 1-quart fuel tank and produces speeds from 20 to 40 mph. A self-shifting transmission senses the approach of a grade and automatically downshifts to provide added power for hill-climbing. Bike can be pedaled normally with or without power assist. Developed by makers of the famous Bensen Gyrocopter, Zip Powerpack is \$198 from Bensen Aircraft Corp., Box 2746, Raleigh, N. C. 27602.



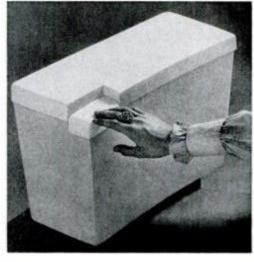


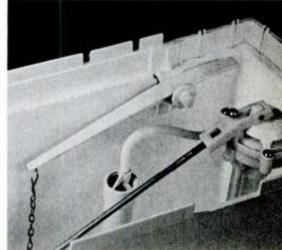
Paneling aid makes it a snap to locate cutouts

If the hole you cut for a switch or outlet box in a sheet of paneling is in the wrong place, that paneling is wasted. Panel Pal prevents such costly mistakes by making it easy to mark precise cutout locations. You place Panel Pal in outlet box, extend tapes to locations of panel edges and lock them with thumbscrews (near left). Then you transfer tool to panel and mark for cutout (far left). Adapter included permits accurate location of pipe centers, too. \$7.98, Toolco, Inc., Box 4016, San Angelo, Tex. 76901.

Lightweight toilet tank that doesn't sweat

Of ABS plastic, this toilet tank looks like china, weighs just 8 pounds and won't sweat in even the sticklest weather. Called Thermo-Tank, it has an insulating liner that prevents condensation. For a sleek appearance, a corner "flush tab" replaces the conventional lever. The tab mechanism is preassembled and preadjusted at the factory. In white, blue and gold from plumbing-supply dealers. Maker claims tank is easy to install. Universal-Rundle Corp., New Castle, Pa. 16103.





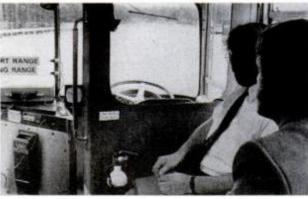
NOW



New way to build: Start at the top

Building a skyscraper from the top down used to be a joke among construction workers-but not any more. Now they're doing almost that right now with this high-rise structure going up-or downin New York City. Each floor is prefabricated on the ground, then lifted into place by eight hydraulic jacks. Two steel-andconcrete pillars serve as central supports and guides. Unusual method saves time and money by eliminating the need to haul men and materials up to high places.



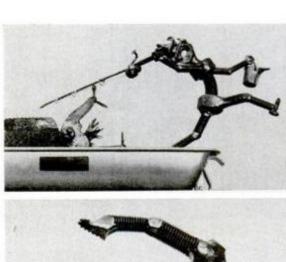


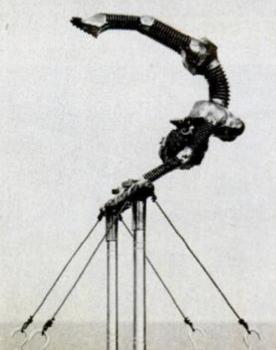
Look, Ma, no bus driver!

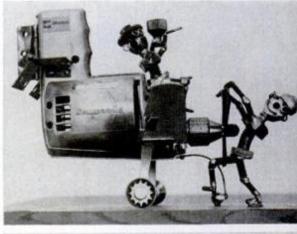
When British transportation experts tackled the problem of bus accidents caused by driver fatigue, they came up with a unique solution—eliminate the driver. As a result, they now have a fully automated experimental driverless bus that follows a cable buried in the road. Signals from the cable, plus an electronic detector on the front, control speed and braking and stop bus if an obstacle appears. How bus drivers will react to the idea is not yet known, but can be guessed.

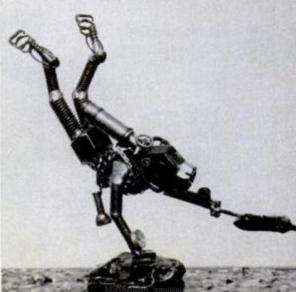
Clever metal sculptor: He's nuts about bolts

If those odds and ends in your junk box seem worthless, consider what Leonard Melsha can do with them using a little ingenuity and imagination. A retired California telephone repairman. Melsha fashions comic caricatures from nuts, bolts, springs, washers, wire, tubing, gears and other bits of common hardware. His intricate creations, each taking about 40 hours to make, have won prizes at the Los Angeles County Fair and other art shows. At near right top, a fisherman hauls in a big one from an icecube-tray boat; below, gymnast performs gracefully. At far right top, two airmen prepare to take off in electric drill fitted with hinges for a tail; below, one of Melsha's all-time favoritesa scuba diver with flippers made from old garter snaps.









Have snowmobiles grown up?

Most criticized of sport machines, they now may be outgrowing their awkward age.

by Bill McKeown outdoors EDITOR

The snowmobile now seems to be a machine coming of age—though there have been times when it appeared to have about as much chance as a snowball in a sauna.

Still a teen-ager in the mass market and possibly the most criticized vehicle ever invented, it's loved only by the millions of people who have ridden one.

Indoor types have called it noisy, unsafe, overpowered, undercontrolled, a gadget out to endanger people, fences, crops, wild animals, offer a wider variety of standard features, adjustments and options than ever. And are they better? Experienced snowmobilers will tell you the machines have been fun to ride ever since they first appeared, and the latest models merely give more styling, reliability, comfort, convenience and speed. Lights are now standard equipment for all family machines, and night runs are a pleasant part of the sport. One model has even mounted the headlight on the handlebars so that steering aims the beam.



domestic tranquility and the environment in general. All it had going for it was an ability to open up winter fun for riders all across the northlands of the continent.

Not that all criticisms have been answered, all abuses corrected. Snowmos still hit trains, cars, trees and holes in the ice, roar past quiet homes and trespass through private property. But it has been noticed that few machines get in trouble without a driver aboard, and considerable operator education has been coupled with engineering advances. Here are late developments.

Mechanically, today's snowmobiles

Electric starting, still optional on many models, seems to be becoming a desirable feature. Shock absorbers are also found as standard on many deluxe snowmos, and several companies are experimenting with foam padding in layers of varying resilience to form especially responsive seat upholstery.

Refinements under the cowl include capacitive discharge (CD) ignition on many models, larger gas tanks, lighter chassis frames for more speed and better soft-snow running. High-powered models also offer free-air cooling plus tuned carburetion and exhausts; several liquid-cooled and

Speed over the snow is still one of the satisfactions of the sport, and models like this Harley-Davidson 440 can handle 60 mph. Racing has helped develop high-performance machines now in family use.

rotary engines are options. Yamaha's autolube system that automatically adds a properly metered amount of oil into the gasoline being burned is a big convenience over the usual two-cycle premix routine. OMC, maker of the Evinrude and Johnson machines, has introduced a new accelerator pump with claims for a 58 percent increase in fuel consumption efficiency. Miles-per-gallon from modern snowmobiles seems to average about the same 10 to 25 miles delivered by cars.

Today's machines are more stable, lighter footed and easier to steer. With age, the ski-steering linkage geometry has been improved, and wider stance of the skis has increased stability. A snowmo can still snaproll out of a tight turn, but lower center of gravity and wide tracking (and more experienced drivers) make it less likely these days. Drive tracks now have more sophisticated cleating and are less likely to dig a hole while starting up in powder, spin out on ice or come apart on a trail far from home.

Options now available from most manufacturers allow an experienced driver to match his smooth track or bumpy cross-country trail conditions to slide-rail or bogie wheel suspension. Shock absorbers—some even adjustable—are becoming standard on more deluxe machines. Handlebars can be obtained with adjustments in positioning and shock dampening. Gearshifts and parking brakes are added extras. Kill switches, with lanyard snapped to your clothing, will cut off ignition if you roll off your machine.

All snowmobiles produced this year (half the brands that were around a couple years ago when snow conditions, fuel supplies and the economy were better) will also be about half as noisy as earlier machines. This is progress for the sport—if not the sportsman. The sound of gutsy power is a rewarding part of many motor sports, and we have never personally talked with a driver who complained about the noise of his machine.

Twelve years ago, in the early ages of the sport, we remember removing mufflers from machines to be sure they'd have the horsepower to get us over the Continental Divide at the top of the Colorado Rockies on a midwinter safari from Vail to Aspen. Then we bought ear plugs to block out the noise, but found them unnecessary. Helmets and knit caps also moderate the sound volume, although tests show that a driver and passenger will hear up to four times more racket than a bystander 50 feet off to one side where legal measurements are made in decibels on the A scale.



Group activities have helped the sport outdistance its growing pains. Organized open-country running gives clubs, like Evinrude owners above, a chance for action away from posted private property and critics of noise. Trail groomer towed by Ski-Doo Alpine (below) can be scheduled by clubs and communities to make trails comfortable and safe for crowds of drivers, keep them away from roads and tracks.



Bystanders and other nonriders have been the problem. They find the noise of machines roaring by their houses, back lots and ski trails annoying, and have used noise as a major complaint against the little vehicles. New laws and manufacturing improvements should silence that objection. The industry standard is 82 dBA now; it will go down to 78 dBA, as measured from 50 feet away across the snow, on Feb. 1.

Other standards formulated by the Snowmobile Safety Certification Committee, an industry group made up of 13 of the 15 major snowmobile brands, will go into effect on the same date, and machines made from February on, which meet the new code, will carry a certification seal. Worthwhile requirements will include headlights, tail and brake lights that meet S.A.E. standards of brightness, standardized control systems with the accelerator on the right and

brake on the left of any machine you drive, plus a spring-loaded throttle and cable that won't freeze.

Except for the track and sprocket system, all moving parts are to be shielded. Fuel tanks must withstand impact tests and a wide temperature range. Brakes must lock the track or stop the sled in 30 feet from a speed of 20 mph. Passenger handgrips must not come off the machine with a 400-pound pull.

Other worthwhile requirements are the 78 dBA sound-level standard, seats with "impact absorption characteristics," and an emergency engineshutoff switch next to the throttle—though we have known drivers who have turned off the ignition key or pulled the kill plug switch in an emergency, but have never met one who used the emergency button.

So mechanically, snowmobiles have aged into reliable vehicles. Manufacturers and owners have become







much more responsible. Racing deserves credit for rapid engineering advances—a role it still plays—but now industry and customers alike are working toward enlarging the areas where snowmobiling can be enjoyed. Early restrictions that banned the machines from many fields and forests threatened to stunt the growth of the sport.

Now, instead of trying to share slopes with skiers and roads with cars, snowmobilers have been forming clubs and organizing trail maintenance groups that open new snowscapes to the sport. Our last count showed 578 trail locations across the United States and Canada northlands, each offering one or more trails to total thousands of miles of driving adventure. Many communities now service their trails with grooming equipment that smooths ruts, tops off moguls and levels the bone-jarring hummocks that can washboard a well-worn path.

Safety records are also commendable for a sport now totaling an estimated 2½-million machines ridden by 8-million snowmobilers. Last year's 153 fatalities are slightly less than the two previous winters despite increased usage. Credit should probably go to driver education efforts by manufacturers, clubs, communities, states, news media and the National Safety Council, plus the much more extensive use of well-groomed trails.

Insurance for machines and extensive manufacturer warranty are much more easy to find—sure signs of a maturing sport. Similar to a service for skiers, snowmobilers in New England can call toll-free 1-800-992-3619 in Connecticut and 1-800-243-5110 for the rest of New England, New Jersey, Pennsylvania, New York and Maryland for snowmobiling information and in some cases reservations, thanks to a plan sponsored by Bombardier Ski-Doo and Moto-Ski.

For action on snow today, all it takes is a machine on a trailer, a call ahead, and a drive to new snow trails—ready and waiting.

Versatile special-purpose and multi-use machines have been developed for many activities besides hot-rodding over cold snowdrifts. Snowmos open remote lakes to ice fishermen (top) farmers, utility linemen, country doctors, school children and many others. Trailering machines has popularized winter vacation trips to snowmobile resorts, northern national parks. Recent compact design has also produced models like Polaris TC (left) that is only 27 inches high with windshield tipped down, weighs 235 pounds, claims full performance features but fits in standard station wagon.

Is the Chunnel for real?

For over 100 years the British and French have planned to link the two countries with a tunnel running under the English Channel. Digging was actually started—and abandoned—some 90 years ago. But now a new effort is under way. Or is it?

by J. A. Maxtone Graham

Only 22 miles of water separate England from the European continent. Each year, millions of people cross the English Channel and millions of tons of goods are shipped over it. It's safe to say that if 22 miles of water separated two such busy parts of the United States, some kind of fixed link would have been provided at least 50 years ago.

But the way things stand, an Englishman bent on visiting the Continent is confronted by a bewildering variety of travel meth-

parate ropean ons of hannel ds are to say arated United d link at least and, an ing the ra be-meth
DOUBLE-DECK PASSENGER

MALKWAY

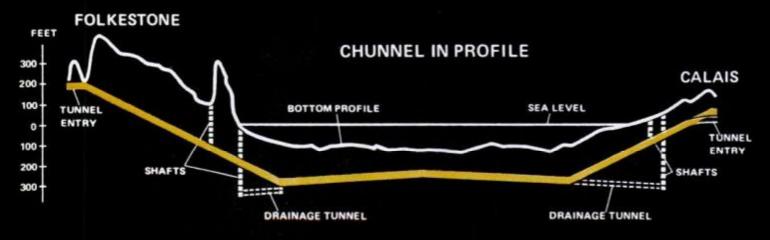
RAILWAY TUNNEL

RAILWAY TUNNEL

RAILWAY TUNNEL

RAILWAY TUNNEL

AIRTIGHT DOORS



ACCESS TUNNEL RAILWAY TUNNEL VENTILATION DUCT ACCESS TUNNEL SERVICE TUNNEL WALKWAY Proposed plans call for a Chunnel made up of three tunnels—two for trains and one from which the others could be serviced. Trains capable of carrying as many as 260 autos would shuttle between England and France, making the run in some 35 minutes. Total cost would be about \$2 billion. FLATBED CARRIER FOR LARGE AUTOS AND TRUCKS 2. Gunnell

ods, all expensive or inconvenient, or both.

Crossing methods include:

- Walking: Tiring and not available to the traveling public for the past 7000 years, ever since the sea created the English Channel by eroding the land link.
- Swimming: First achieved by Capt. Matthew Webb in 1875. Can be accomplished in about 10 hours in certain states of tide and weather.
- Water skiing: Has everything to commend it except practicability.
- Balloon: Too dependent on wind direction.
- Boat: Numerous vessels ply between various English ports and Dutch, Belgian, French, Spanish and Portuguese ports. It's a 90-minute crossing; you should book passage several months ahead and be ready to pay about \$60 for a car and two passengers. Budget another dollar for seasick pills: Dover to Calais is one of the world's choppiest short crossings.
- Hovercraft: Unbelievably quick and noisy—35 minutes and hundreds of decibels, and you are in France. Regarded as dangerous because half the world's maritime collisions occur in the Straits of Dover.
- Trains: You get into a special train (the Boat Train) at Victoria Station in London, and the train then chugs to Dover. There the train is

rolled onto a boat with tracks on its deck and you can stay in your seat while the whole contraption lurches across to France. You reach Paris about seven hours after leaving London.

■ Airplanes: Believe it or not, for several years before hovercraft service came in, people used to put cars into airplanes to avoid other methods of crossing the Channel. It was quick and efficient, but expensive. Travelers, while grateful for the service,

Perfectly workable schemes for a dry channel crossing have been on paper for well over 100 years...

couldn't help wondering why the engineering expertise of France and Britain couldn't contrive some crossing a couple of hundred feet down instead of thousands of feet up.

It is now over 170 years since some better way of crossing seemed desirable. Britons are splendid people in many ways—I happen to be one myself, so I know—and lead the world in all sorts of specialities like international finance, commodity brokerage, roof thatching and folk dancing. Unfortunately, Britons also seem to

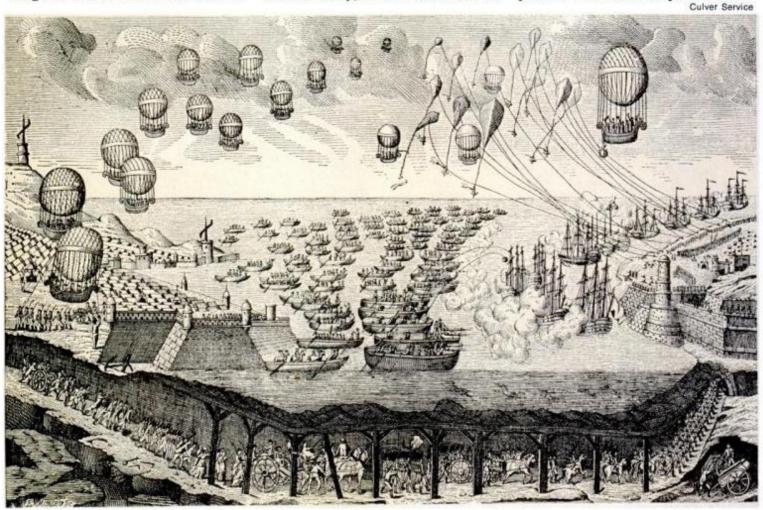
lead the world in procrastination.

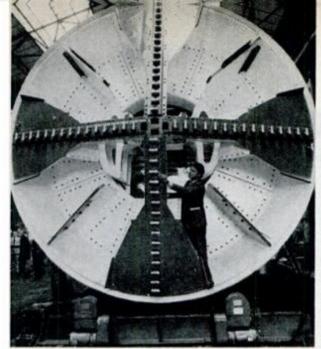
Perfectly workable schemes for a dry channel crossing have been on paper for well over 100 years, but somehow or other events have always erupted, leading to a postponement. By the time the political, social or financial climate was once again favorable, the genius behind the scheme was dead, or he, or someone else, had thought of a better idea. Then just when firm parliamentary approval was about to be given, there'd be another crisis.

Some kind of bridge or tunnel or combination of the two was pretty well fixed up in, let me see, 1856, 1870, 1881, 1907 and 1930. There's a new plan in the works today, but we hear rumors that certain officials are having second thoughts about the wisdom of proceeding.

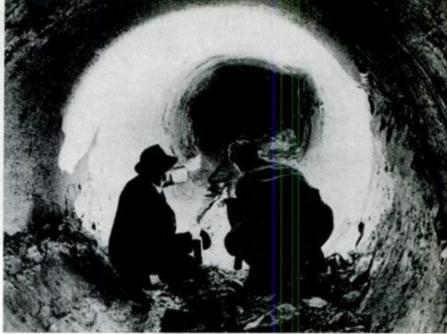
If you care to examine a condensed history of the Channel Tunnel (or "Chunnel," because you can't say Channel Tunnel too often without your tongue getting twisted), you'll see what I mean.

The first man in the field was a French mining engineer, Albert Mathieu. In 1802, he suggested to Napoleon that there ought to be a couple of 10-mile tunnels meeting on the Varne Bank, a 30-foot shallow in mid-Channel. Varne Bank would be converted into an island and important international port. It also









Some 90 years ago, digging was actually started on the British side of the Channel. Above, officials examine entrance to an abandoned tunnel. Latest effort includes use of a huge machine (left, top) to bore through chalk beneath Channel. Business end of the superborer dwarfs man inspecting it. Researcher (left) uses models of tunnel and trains for airflow studies. Opposite page: Print, published in France in 1800s, shows grandiose scheme, including tunnel, for invading England. No wonder British generals have distrusted Chunnel.

would permit the carriage horses to come up for fresh air before continuing their journey. Although Napoleon showed some faint interest, his main concern was plotting his next war against the British. The very next year, an Englishman called Mottray suggested the laying of a steel tube on the floor of the Channel.

There followed 30 barren years, during which no one gave the matter another thought. Enter a Frenchman called Thomé de Gamond, who, during the next 40 years, was to have more marvelous trans-Channel ideas than all other inventors put together. In 1836, his first year of production, de Gamond produced plans for four different kinds of bridges.

No one paid much attention to these schemes, except an eccentric French doctor named Prosper Payerne. Payerne studied de Gamond's plans, discarded them as useless, and came up with specifications for an "undersea railway." Prefabricated blocks on the seabed would first form a causeway, as much as 200 feet down. Upon this, more blocks would form a simple tunnel. The work would be performed by men in diving bells, devices which, as it happened, Dr. Payerne had just invented.

De Gamond, clearly scared at the entry of a dangerous rival, hastily produced a viaduct whose granite arches were to carry 400 tubular steel spans.

The very next year, however, de Gamond drafted plans for a circularsectioned railway tunnel, lit by gas, carrying two rail tracks. The French Emperor was impressed and showed it to a committee. (This was the first of many thousands of committees

One idea: Airshafts that would appear on the surface as turreted Gothic towers with flags and pennants.

that would become involved in Channel schemes within the next century.) The committee approved, as did the British, who offered their cooperation.

Then, a couple of years later, an Italian named Orsini tried to assassinate the French Emperor. France went to war against Italy, Britain's ally. The result: The plans were scrapped.

While de Gamond took an eight-

year rest, others came to the fore. One chap proposed an anchored steel tube that would float midway between the Channel's surface and bottom. Another fellow was even more creative; his idea involved a tunnel resting on the seabed and ventilated at intervals by airshaf.s that would appear on the surface as turreted Gothic towers decorated with flags and pennants.

By 1866, de Gamond was hard at it again. Moreover, he heard that a distinguished English engineer, William Low, was also working on a plan. Creating the first of many collaborations, amalgamations and syndicates in Chunnel history, de Gamond and Low got together to produce a "Master Plan," which was exhibited in Paris and approved by the Emperor. Everyone liked it on both sides of the water; work could have started at any time. Then, in 1870, France and Prussia went to war. As was to happen many times in the future, if there was the slightest excuse to defer the Chunnel, the Chunnel would be deferred.

In the interval, one John Hawkshaw produced an entirely different plan for a tunnel, and the Channel Tunnel Co. was formed to support

(Please turn to page 134)

Service tips for the '75 cars

by Alex Walordy

To the maze of emission gadgets and the miles of vacuum lines that crisscross your engine compartment, something new has been added, -the catalytic converter. It is supposed to be a service-free item for 50,000 miles or until it fails, whichever happens first. Hot exhaust gas travels through the catalytic converter over a large surface area coated with platinum palladium alloy. This provides the proper setting for combining carbon monoxides (CO) and hydrocarbons (HC) with oxygen from the air. The extra air is supplied to the exhaust manifold by the same type of air pump and plumbing in previous model years.

For a small \$150 initiation fee, included in the raised 1975 prices, the catalytic converter allows you to meet emissions specs. However, any chemical reaction that oxidizes HC and CO also produces heat. As a result, the exhaust may be coming into the converter at 600° or 800° F., but it will leave at a higher temperature. To cope with these high temperatures, the exhaust pipe and the converter housing are made of stainless steel.

The GM converter carries insulation both on top and on the bottom and the insulation, in turn, is enclosed in an outer housing. If this outer housing is dented or ripped, you don't have to replace the entire converter. There will be a service housing to fit the bottom of the converter. Chrysler converters will not have any insulation, but there will be a small expanded metal section under the converter "to keep from starting grass fires." Neither will Ford converters have any insulation. On models which have a heat shield between the converter and the floor pan, there will be no heat sensor. Models that don't have the heat shield will have a heat sensor in the floor pan, just above the converter. If the temperature gets too high, a vacuum-controlled valve will dump into the atmosphere the air normally supplied by Thermactor pump to the exhaust manifold. This shuts off most of the oxygen supply, stops the converter reaction and keeps your carpet from smoking!

Several things can destroy a converter. If you have one or more plugs not firing, raw fuel will be



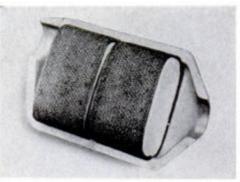
Breakerless system on GM cars has special plate on distributor to hold wires. To remove it you release two retainer straps.



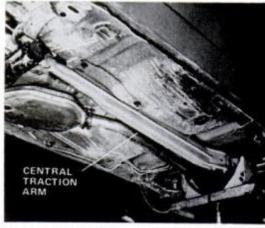
Carbon-tip center in distributor is used to make spark and ohmmeter checks since coil is packaged in the distributor cap.

burned in the converter, giving off excess heat. Failure tests have been run at the Big Three by shutting off the engine while under full power and with the catalyst at high temperature. The sudden mass-delivery of unburned hydrocarbons melts the catalyst, like cutting it with a torch. The same would happen with an intermittent engine disconnect, especially when it happens under full power. Sections of failed converters show them in very beautiful configurations like stalactites in a cavern, or just melted in a blob.

Another source of converter failure is contamination caused by leaded fuel. Chrysler engineering feels that it is not the lead but some of the scavenging compounds that cause the damage. If you use a tankful of leaded fuel in an emergency and then follow up with unleaded fuel, the converter will regain at least part of its original efficiency. Repeating the process several times will reduce the efficiency even more, though each time there will be some recovery. There is no way to make an inadvertent mistake in the choice



Catalytic converter looks like muffler. In place under a car, it is surrounded with special insulation or a heat shield.



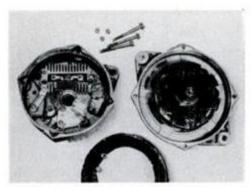
Long, central traction arm used on Monza 2+2 must be disconnected before you can remove the rear axle or transmission.

of fuel, since the filler neck of the gas tank has a deliberate obstruction to keep a regular fuel nozzle from being inserted. In a panic situation you could use a funnel.

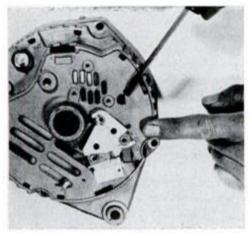
Ford and Chrysler have sealed catalytic converters on which no service is possible other than replacement. GM has a catalytic converter which is filled with small spherical cylindrical pellets, depending on the model, and there is a large access plug at the bottom of the converter. The service procedure, as outlined to me by a Pontiac engineer, is to connect a vacuum cleaner to the tailpipe and install a special vibrator under the catalytic converter housing.

Turn on the cleaner, remove the plug, add a catch bag and turn on the vibrator. You can now switch off the cleaner and the pellets will start falling out into a small collection bag. When no more pellets come out, you are ready to switch on the vacuum cleaner and let the converter draw in a fresh fill of pellets. The combined vibrator and vacuum action packs them in.

If the pellet bed has melted down



Servicing of GM alternator is easy: Three large tie bolts hold it together. Diode heat sink and regulator are easily replaced.



Regulator check is quick: Insert screwdriver through opening to ground regulator; read alternator's maximum output.

through overheating, you would still have to replace the converter. Since this procedure takes an hour, you wonder if anybody will bother to follow it, rather than just replace the unit.

Checking emissions on a '75 with converter requires a new procedure. The conventional approach would be to use an HC and CO meter. However, the converter cleans up the emissions, so it becomes difficult to second-guess whether the engine setting is correct or whether the converter is doing more than its share of the work. Chrysler solves the problem by providing an access plug ahead of the converter. This allows setting the carburetor according to the actual engine CO reading.

Ford uses a special connection at the entrance to the air cleaner to introduce a metered amount of propane. This is equivalent to enriching the air/fuel mixture. If the engine picks up between 15 and 60 rpm, the setting is correct. If engine speed picks up less than 15 rpm, you were running rich and should lean out. You can probably sail through any



Seat-belt interlock circuit is so complex Chrysler has special troubleshooting tester. Check is hard for do-it-yourselfer.



Instrument panel on Chrysler Corp. cars is accessible without dropping steering post. Handy fuse box is swing-down type.

road check with flying colors by simply going to the leanest adjustment, using a tach.

Incidentally, if you pull up for a road check, and let the engine idle, so that the converter stays hot, the numbers will be better.

For years, exhaust heat-riser valves were controlled by a thermostatic spring that never really did the job. For one thing, it was an uphill fight to keep the valve from sticking, either open or shut. The purpose of the heat-riser valve is to force exhaust through a heat-riser passage in the intake manifold, to insure a quick warm-up.

For '75, this has all been solved through a new valve. Actually it is the self-same old heat-riser valve, but it is now operated by a vacuum motor. The positive mechanical action should prevent sticking and give a more positive on-off action. When the engine is cold the vacuum supply is on and the valve closes. When the engine warms up the vacuum supply cuts off and the valve opens.

On Chevrolets, oil temperature

controls the vacuum supply. This insures that all of the engine is thoroughly warmed up rather than just the radiator. Using a vacuum motor is costly but offers a very positive control that promises to be very troublefree. There is no adjustment for the new exhaust crossover valve, but you can free the exhaust heat-riser shafts quite readily with some common spray cleaners and you can lube them with graphite. You can check exhaust crossover valve operation by applying manifold vacuum directly. If it doesn't close all the way, warm-up will be slow. If it sticks closed, you are likely to run into detonation and a power loss at the top end.

Ford offers a pair of new carburetors that represent a basic advance in the state of the art. The engine demands a richer mixture to run well at the top end; this enrichment is usually provided by a power system which senses manifold vacuum. At full power, manifold vacuum is reduced and the power valve allows a set of metering rods to rise up in a jet. Since the metering rod is tapered, fuel flow increases.

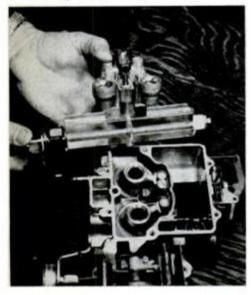
Two problems affect the accuracy of the system-production tolerances and the advent of the exhaust gas recirculation (EGR) valve. As you first open the throttle, especially if you do so very slightly, the EGR valve opens, exhaust gas enters the intake manifold, and part of the vacuum is killed. The power system now reads this false signal and enriches the mixture. Also, accurate metering depends on holding the correct spring pressure, hanger height, and rod taper values. The stack up of tolerances was acceptable a few years ago, but can't pass current standards.

For '75, instead of controlling fuel directly. Ford uses the metering rods to control the size of the high-speed air bleed. These air bleeds are used on all carburetors to emulsify the fuel (break it up into minute particles) and to control full power fuel delivery. In effect, they limit the suction available at the main jet to pull out fuel. The Ford system uses a rod with a reverse taper to reduce the amount of air coming in through those air bleeds as a means of enriching the carburetor under full power. Ford also has added an overriding throttle linkage which keeps the metering rod from rising too far. Thus, the EGR valve cannot fool



Flexible noses and tails reduce damage cost, eliminate small-nick problem. They are easily replaced by do-it-yourselfers.

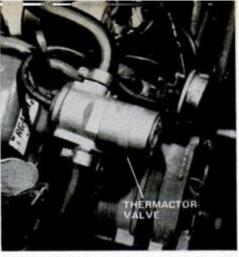
High-speed fuel control in Ford carburetors regulates high-speed air rather than fuel flow, provides much finer control.



the carburetor into thinking it is under full power, unless the throttle reaches sufficient opening. The highspeed air-bleed control is several times less sensitive than direct fuel metering, so the same production tolerances give a much finer control.

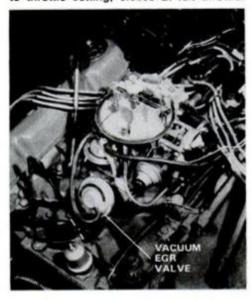
To cut down on the inordinately expensive tests EPA requires for each engine family (even a carburetor change counts as an engine family), Ford simplified its engine lineup by using four barrels only on its big 460 and 400 engines. Two barrels are used on the 351 and 302 engines. Both two and four-barrel carbs benefit from the new metering system. The only adjustment not used previously is a setting for hanger height of the metering rods.

If you are having cold-start and stalling problems, the vacuum control on the choke pull-down should be set so the choke cannot open as far. To adjust it, find a small cover with three retaining screws at the side of the choke housing. Remove the Allen screw at the center, tighten the



Thermactor dump valve in Ford cars is vacuum actuated, acts to cut oxygen supply to catalytic converter if overheating.

Exhaust gas recirculation (EGR) system uses vacuum-operated valve that adjusts to throttle setting, closes at full throttle.



center adjusting screw a bit, reinstall the Allen cover plug and test the engine. It's best to do this adjustment when the engine is cold. This, by the way, is not factory procedure, but it should work very nicely.

All carmakers now have electronic ignition straight across the board. All have gone to ignition systems of a type that provides more voltage and more spark duration; in other words, more energy released at the plug to fire those lean mixtures. Chrysler, first with electronic ignition on a production basis several years ago, has a small black box, a conventional-looking coil and a distributor with a single magnetic pickup.

GM's new distributor is one on which it had a one-year production experience at Oldsmobile, Buick and Cadillac. You can tell it by the huge distributor cap designed to space out the wire terminals, and by the fact that the coil is built into the top of the distributor cap on all engines except the Six, which didn't have room for it. Individual plug wires no longer go into towers of the distributor cap; they engage straight posts which shed water rather than trap it. To reach the wire, unsnap the retainer. This gives access to the coil and its retaining screws. To check for coil spark, the distributor cap must be removed. You can then use a test lead against the center terminal of the cap. GM technicians are very respectful of the voltages involved—"after the first time you are zapped, you remember."

The white plastic module with all the electronics is inside the distributor. There is a multiprong connector with leads for the coil and the sending units, as well as a tach connection. GM provides a set of values for different ohmmeter readings that allow checks for continuity or shorts in the coil and in the sending unit. Because of higher voltage and energy levels the conventional 7-mm ignition wire has been replaced with 8-mm wire. The higher voltages allow much lower sparkplug gaps. At GM, they vary from division to division and range between .040 and .080-in., more than double the conventional plug gap.

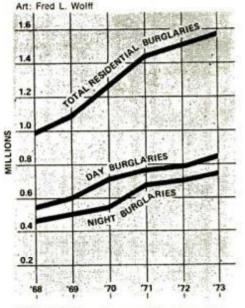
Ford's ignition unit was first production tested on a Mark IV. You do not have to set an air gap at the sending unit, since it is built in. The new coil wire connector is a onepiece item that makes it impossible for the terminals to loosen or fall off, or for that matter, to reverse polarity. There is a shortened trouble procedure over and above that used at dealerships. Generally, you should get a small signal of around two volts from any of the sending units when the engine is cranked over and you should compare coil ohmmeter values to those given in the shop manual.

Bob Rarey of Chrysler heads an engineering development area concerned with transforming service from a craft into a science. Chrysler maintains the product is now too sophisticated for the average do-it-yourselfer and he has really no way of checking a space-age device like an ignition seat-belt interlock with its built-in logic circuit, or an electronic voltage regulator. In fact, the mechanic in a dealership would also be a bit beyond his depth, if it weren't for the instruments that Chrysler is now making mandatory for all its service operations. For instance, the seat-belt interlock is checked by plugging into the control module and to the connector leading from it. Turn a dial and little lights blink as the unit self-tests. It then

The burglar isn't your friend—don't be his!

Why invite burglars when a small investment in locks, alarms, hardware and time installing them can pay off in security and peace of mind?

by Ivan Berger



FBI statistics show rapid crime rise to three homes burglarized per minute, with day thefts the most common.

It's not your fault that burglars hit a home every 20 seconds. But if a burglar hits your home instead of the one next door, you probably helped invite him there.

"Burglars look for what we call 'targets of opportunity'—easy pickings," says Detective Jon Inzalaco of New York City's Police Crime Prevention Squad. "They're not out for hard work, or they'd be working. And despite their line of work, they're cowards, avoiding risk as much as they can. So the more trouble you can give a burglar, and the

more obvious that trouble is, the more likely he is to go somewhere else."

Sending the burglar somewhere else isn't too hard, either. Locks, alarms and common sense are all you need—and all but the common sense are widely available and easy to install.

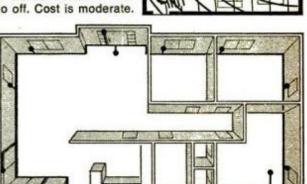
"Burglars hate noise, light or anything else that can call attention to them," says Detective Inzalaco. So an alarm can scare off a burglar when he's just started work—and knowing there's an alarm can do it even before

Three ways to protect your home electronically

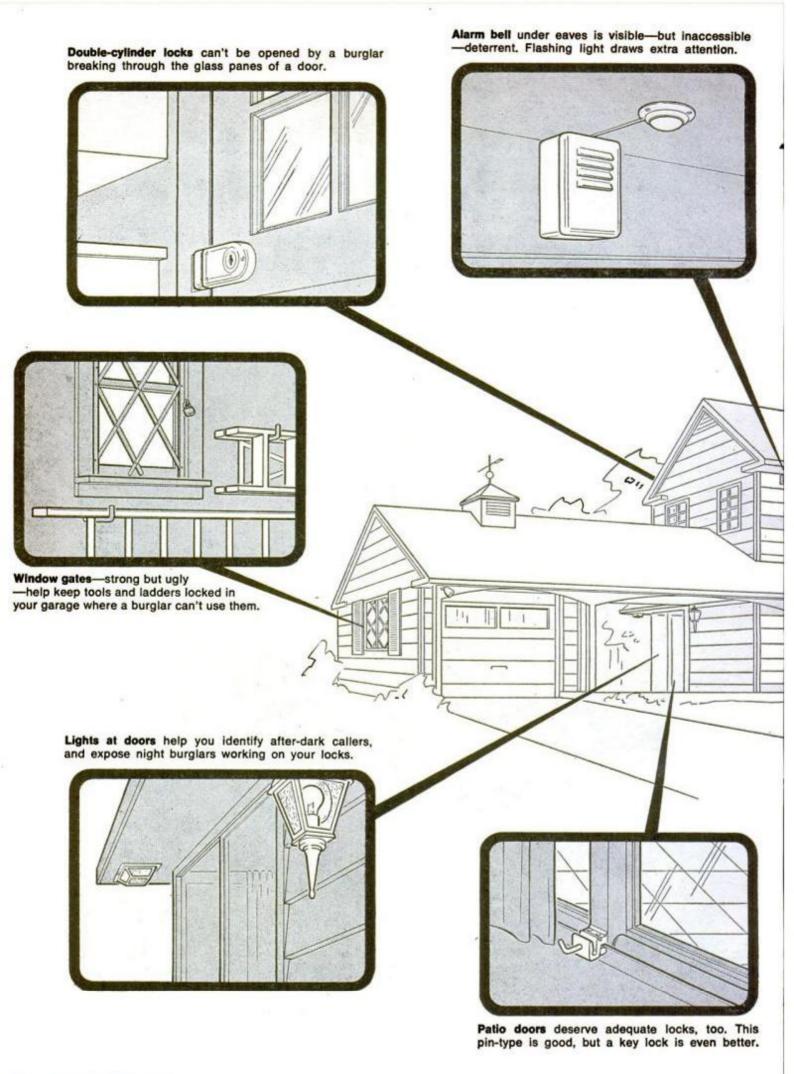


Combination self-contained alarm and patio latch made by 3M Corp costs \$26, protects entrance that's often neglected by homeowners (but not by burglars). Self-contained alarms are cheapest type, not necessarily the best or most convenient.

Motion-detector triggers alarm if its wave field should be disturbed by a moving burglar—or a pet. This is easiest type alarm to install; most cover a room at a time; intruder usually must be in house before it will go off. Cost is moderate.



Perimeter alarms give burglary warnings at as many parts or openings of the house as you like, can warn of other problems, too. "Wireless" types install easily.



Fire alarms belong in halls near bedrooms for maximum lifesaving use. Alarm sensor above door triggers when door opens. Peephole reveals callers. Basement windows should be locked. should not be screened by bushes. Lock separate from doorknob is safer; alarm sticker warns off thieves.

he's started. If he's still not scared off, the alarm can summon help to stop him.

Yet even alarms, the most sophisticated defense in your home security arsenal, are easy to buy and install yourself—and comparatively inexpensive, too. (Systems that will protect eight doors and windows—and give fire warnings as well—are available for as little as \$100 in ready-to-install form.)

There are three basic types of alarms: self-contained units that protect a single door or window, motion-sensing types that cover a single room or area, and perimeter types that can cover every critical point about your home.

The single-entry, self-contained type is a small box containing a battery, horn or siren, and some kind of triggering device; you fit one to each door or window that you want to protect. Some, in fact, are combined with door or window locks—a bargain only if both the lock and alarm are top quality.

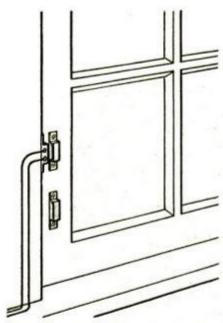
Self-contained entry alarms are the least expensive alarms you can buy, and are easy to install: Alarm/ lock combinations usually install in the same hole a normal rim-lock's cylinder would use, and door alarms usually require no keyhole (a delay lets you get in and turn them off).

But these small alarms aren't very loud-enough to warn anyone at home and possibly in the next apartment, but not enough to carry down a noisy block. And with everything right where the burglar is, they're vulnerable to any thief who can keep cool enough to silence them. (Obviously, solid construction is a must.) Cheap as they are, their cost mounts rapidly as the number of doors and windows covered increases; in a big house, it could quickly approach the cost of sophisticated systems-and you'd still have to check and set each alarm individually every time you left the house.

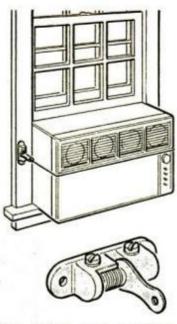
Motion-sensing alarms can be even easier to install: Just set a self-contained motion-sensor in an inconspicuous corner of the room you want to protect, turn it on, and leave the room in the few seconds before the alarm sets itself. After that, any motion within the alarm's area first turns on a light (to frighten a thief, and to remind you to shut it off when you come in), then squawks its head off seconds later. Motion-sensors vary from \$70 to \$500, some self-contained with built-in horns or sirens, others triggering remote indoor or outdoor warnings, with satellites monitoring other rooms.

Motion-sensor alarms fill the room with a pattern of waves (usually

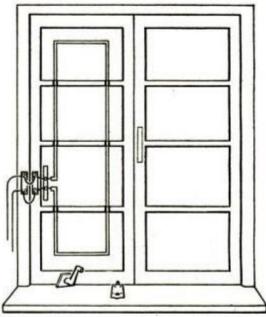
Alarms—a sophisticated defense



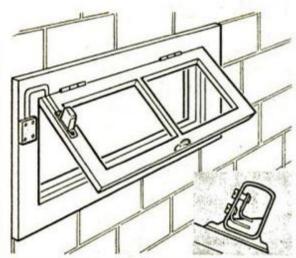
Magnetic sensor triggers when window is opened. Extra magnet lets you open it 2-3 inches for ventilation.



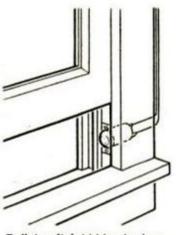
Trap switch—here guarding an airconditioning unit—triggers when string pulls tab out.



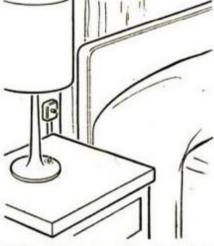
Foil tape breaks if the window's broken, setting off alarm. Plunger of tamper switch on the sill releases if the window is opened.



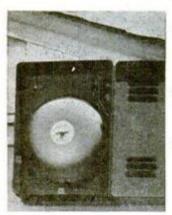
Mercury switch installed on basement top-hinged window sounds alarm when window is opened so that liquid wets both switch contacts at once.

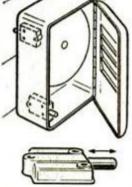


Bullet switch hidden in door or window frame has tapered plunger that sets off alarm as door or window is opened. Wiring is invisible.

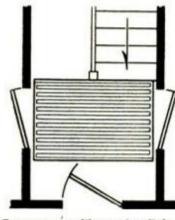


Panic button can trip alarm from bed or front door. Some alarms have separate, always-on panic circuits.





Alarm bell or siren should be mounted where it's conspicuous, easy to hear, but inaccessible to burglars. Tamper switches in box trigger alarm if box lid is opened or box is pried from wall.

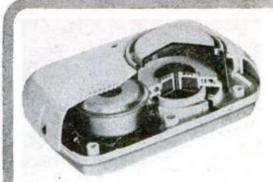


Pressure-sensitive mat switch should go where burglars are almost sure to tread on them, as in this entrance hall.



Several outfits are sold for do-ityourself installation. Eico system shown is about \$150, gives separate fire and burglary warnings. Master Lock has a similar system and Heath makes build-it-yourself kits.

Fire warning



Fire detectors come in several types, for connection to perimeter systems as well as for self-contained use. This Pyr-A-Larm Guardion is a self-contained ionization detector type priced at \$70.

INCIPIENT SMOLDERING FLAME HIGH HEAT IONIZATION DETECTOR WORKS IN ALL STAGES PHOTOELECTRIC DETECTS SMOKE ONLY

| → DETECTION → | PHOTOELECTRIC DETECTS SMOKE ONLY | |
|---------------|----------------------------------|---------|
| NO DETECTION | → 135° HEAT SENSOR | ******* |
| NO I | TECTION 190' SE | NSOR |

ultrasonic, in home models), and sense the frequency shifts when the waves are reflected back by moving objects (just as car horns shift pitch when traveling toward or away from you).

Older ultrasonics could be triggered by flapping drapes; more modern units are immune to this, but will be set off by pets within their coverage areas—or family members going for a midnight snack. The ultrasonic signals could annoy dogs, too.

"Motion-sensors are called 'intrusion alarms'," says Mel Katz, security consultant of New York's Electro-Dyne Security Corp. "because they don't go off till someone's intruded. Perimeter and door alarms go off as soon as the openings they protect are breached. Not that intrusion alarms aren't useful—they're just not our first recommendation for home use."

But they are excellent if one room requires special protection (because of valuables stored there), and for relatively untrafficked rooms, such as outbuildings or garages. There are 12-volt models for use in boats or campers.

Pros like Katz usually recommend the perimeter alarm—and not just because they make money installing them. Perimeter systems have a central control box triggered by a network of alarm sensors throughout a house and, in turn, setting off bells or other warnings where needed. (Some systems, though, combine control and bell in one box.)

Perimeter systems do the most complete overall job—they can cover every door and window, check for intruders inside the house, warn you of fire, even call the police if no one's home. They can also warn if your freezer's melting or your pipes are freezing, and if anyone falls into your pool.

Overall, the cost is high (\$100 up for do-it-yourself systems, \$300 up to the thousands if professionally installed); but when you average the cost over the number of points protected, it's a bargain.

"Their versatility—and the fact that they're usually hooked to a good, loud, remote bell or siren—make perimeter systems more effective," says Katz. "But it's even more significant that they make it easier for you to use them more effectively."

That's because they're centrally controlled. You're more likely to set one alarm when you leave the house than to check and set one for every opening. And most perimeter systems are "supervised": They tell you if you've left a door or window open (though not whether you left it closed but unlocked). You're also more likely to check and replace one battery than several, and the better systems use a battery only for a back-up, otherwise running on a.c.

Most such systems are "hard-wired," with direct connections from sensors (which come in a wide variety—see page 100) to the central control. But there are also "carrier" systems, whose sensors send signals to the control panel through your home's a.c. wiring, and RF wireless types, which send brief radio signals to the control box when breached.

Both RF and carrier systems are easier to install than hard-wired types. But carrier systems won't work if your a.c. current goes off; and RF types, which cost more, aren't "supervised," because their sensors signal only when a door or window opens—so they can't tell you one's already open when you turn them on. However, RF systems can be set to go off in a nearby neighbor's house, if you're away. (So can "carrier" types, if you and your neighbor

get power through the same transformer.)

Wired alarms also come in two types: open and closed circuit. Opencircuit systems, a trifle cheaper, trigger when their sensor switches close, completing the alarm circuit. Closed-circuit types trigger when a sensor switch opens—or when there's a break in the wires. That gives them an extra degree of self-checking, and insures against a burglar defeating them by clipping wires. (He can defeat a closed-circuit system with a jumper—but only if he knows it's a closed-circuit type, and if it's accessible.)

The more doors and windows your system covers, the better you're protected—but the more your system will cost. Install it yourself, and the additional cost is minor—about \$5 per opening for the common magnetic switches, and about \$2 per room for the additional wiring. Professional installation costs can run as high as \$40 per window or door.

So which openings should you protect? Your doors, of course—every door, including entrances to basement and garage and between garage and house. You should also protect every ground-floor window, and every window within reach of (not just directly over) porches, garage and shed roofs, fire escapes—even trees.

It's up to you whether to protect all your second-story windows; some burglars do use ladders, either by bringing their own or taking them from nearby sheds or garages (and how securely is your ladder locked up?). But such burglars are comparatively few.

On a limited budget, that extra money might be better spent on an alarm system with more features: a rechargeable back-up battery with trickle-charger, for instance, or circuits (required by some local noise pollution laws) that shut the alarm off after about 15 minutes. The latter doesn't improve your security much, but can improve relations with neighbors (who might otherwise listen all night to a bell ringing long after the burglar's gone).

Fire alarms can be part of any perimeter alarm system, simply by adding sensors that detect heat, fast temperature increases or smoke. But to avoid confusion, systems that sound separate warnings for fire and intrusion are better—and self-contained fire alarms, which don't go dead if the fire takes your power out, are better still. For fire, the emphasis

should be on inside sirens, to wake you and your family and get you out.

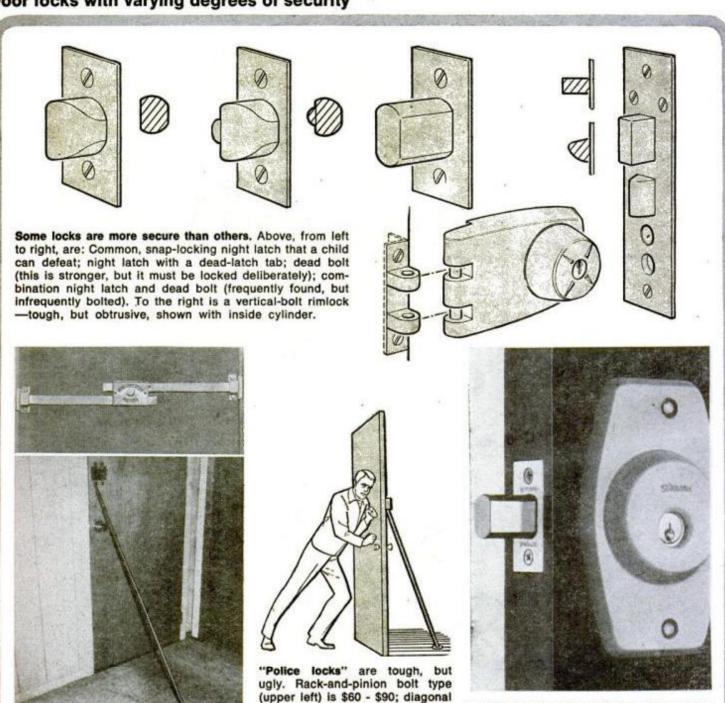
Once your door is set to trigger the alarm, how do you get back in the house? Some alarms have outside keylocks that disconnect the door's alarm so you can enter. Others have a delayed action; you can shut them off as soon as you come in (burglars, presumably, won't know where to find the switch before the delay time's up).

Delay systems require less wiring, and can't be picked from outside. But key switches do show the burglar that your alarm is real, not just a decal stuck on as a bluff. (Even the decals will make some burglars think twice before they try to break in.)

A light at the door to show the alarm's on can tell late-coming family members whether someone's come home and shut the system off. If you all come home together, it can tip you off that a burglar—who might still be inside—has come in and shut it off before you. (But if you're likely to forget to turn the alarm on, the light can tip off the burglar.)

Flashing lights added to your alarm's bell or siren can speed response, showing at a glance just which house the noise is coming from. Telephone dialers are another good (but expensive—\$180 to \$225 for professional-quality) supplement,

Door locks with varying degrees of security



bolt types, which transfer stress to

floor (above and left), about \$20.

Cylinder guard keeps burglars from prying

off lock; at least for a long, noisy while.

dialing neighbors, friends or police with a recorded trouble message when the main alarm goes off. Most good ones have two tracks; one for burglary, one for fire. Dialers are especially worthwhile for summer or isolated homes.

"But check your local laws before setting up a dialer," Katz cautions. "False alarms are common in home alarm systems because people come in on irregular schedules. So, many towns prohibit programming dialers from calling police or fire department directly."

Even better than setting off an alarm when a burglar breaks in, though, is keeping him out altogether. Sometimes it's less expensive, too. All it takes are good locks and remembering to use them.

The best time to look at your locks is right after you move; you never know who might have gotten keys from the old tenant or, if it's a new home, from the builder.

You don't have to replace the locks. Just take the cylinders to a locksmith for rekeying, or replace the cylinders with new ones. You can get pick-resistant cylinders (no key lock is pickproof) for about \$10 to \$20 more than regular ones; the Medeco, Abloy, Sargent Kesco and Duo, among others, will make a burglar spend more time than he likes working on your door. But comparatively few burglars pick locks. "The pick man is highly skilled," says Detective Inzalaco, "and expects a return for his skill. Unless you've got a lot to steal, he probably won't bother you."

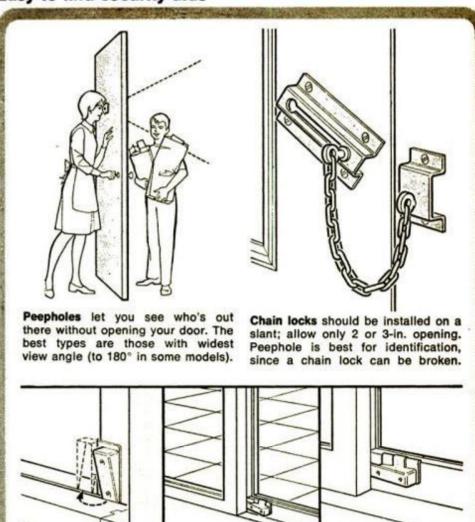
Combination locks are pickproof, but expensive, and fumbling with one can cost you precious time if you're trying to get in quickly to avoid a mugger or the rain.

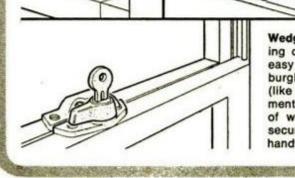
But before rekeying your lock, consider whether the lock itself might



Engraving names or identifying numbers on valuable cameras, tools and the like can help recover them, convict thieves.

Easy-to-find security aids





Wedge lock for windows and sliding doors (above) is inexpensive, easy to install, but vulnerable if burglar breaks glass. Key locks (like that shown at left as replacement for the common, swivel type of window lock) are a lot more secure, cost little. Keep keys handy in case of fire, emergency.

not need replacement or protection. A simple "night-latch" type that locks whenever it springs shut (see page 102) should definitely be replaced. Slipping a plastic credit card between the door and the frame can open it.

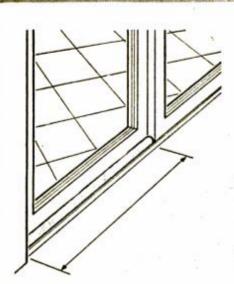
"Dead-latching" snap-locks are a slight improvement—a small tab keeps the spring latch from pushing back when the door's closed. Square-ended dead bolts that slide straight into the jamb are more secure, and the longer the bolt, the better it will hold against a burglar trying to burst or pry his way in. (But dead bolts can't lock themselves; you have to remember to use them.)

Vertical dead bolts are even more secure, since they can't be pried open. They can be pried off, though, so be sure you've fastened yours with the longest, biggest screws that will fit. If possible, the strike plate that meshes with the lock should be the type that wraps around two sides of the doorframe. An Ideal Security model has a cylinder shield that bolts to the lock for added protection.

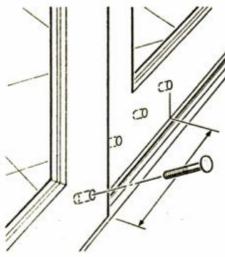
Vertical-bolt locks are "rim" types that fasten to the inside of the door and frame; this makes them easy to install, but less attractive than locks that fit within the door.

But the strongest, safest locks won't hold weak doors securely. Hollow-core, wood-veneer flush doors and cheap paneled doors are a breeze to break through; hardboard-faced flush doors and better paneled ones are stronger, but solid or metal-faced doors are safer still. Make sure the

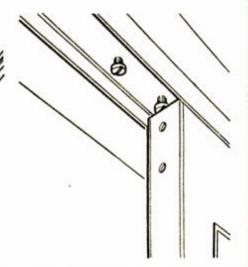
Do-it-yourself 'locks' are easy to make, inexpensive



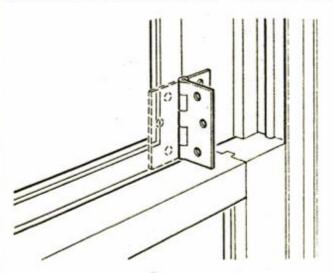
Broomstick or metal rod in patiodoor tracks keeps door from opening, even if lock is picked or broken.



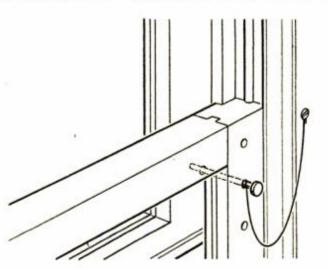
Carriage bolt or large nail in slanted holes locks patio doors together. Extra holes allow up to 6-inch opening for air.



Screws in patio door's upper track keep thieves from lifting door off; a good trick for sliding windows, too.



Door hinge makes a good folding lock to hold sash window tightly shut. Improvisation costs just pennies.



Nail or bolt "latch" trick works well for windows, too: but here you allow only 2 to 3 inches clearance for air.

door fits snugly in the frame and that the lock's bolt protrudes as far as possible into the frame.

If your door has glass panes in or near it, consider double-cylinder locks, which are opened with a key from inside, too, so a thief can't break the glass, reach in and open the lock. And where a burglar is most likely to come in a window or through a smashed-in door panel, use of double cylinder locks will limit his haul to what he can take out that way, too.

But to be sure of safe escape in case of fire, you should leave your keys in the lock's inside cylinder whenever you're home-and don't use double cylinders if you have children or elderly relatives in the house. For fire safety, it's best, then, to install "panic-proof" locks that open if you twist the inside knob either way-a feature on better locks from Schlage and others.

TO THE RESIDENCE OF THE PARTY O

And there is another way to protect glazed doors: substitute impactresistant polycarbonate (such as Lexan or Plexiglas) for the glass, or cover the glass with polycarbonate held by extra moldings,

To protect your lock from outside attack, use one whose cylinder is in the door itself, not in the knob (which can be pried off), and cover it with a cylinder guard, bolted through the

Back doors and hidden entrances need even more protection than front doors, since concealment gives burglars more time to work on them.

But windows deserve protection,

too. Standard, swiveling window latches can be opened from outside or through a broken or cut panekey locks can't (and polycarbonate panes add extra protection). But if you lock your windows, leave the keys nearby and make sure everyone knows where to find them in case of fire-it's better to be burgled than

Commercial hardware isn't your only choice, either. Some standard do-it-yourself tricks are illustrated above; you may be able to come up with others.

But whatever locks, alarms or other tricks you may have up your sleeve, you must be sure to use them. More burglars than you might think slip in through unlocked doors and past unset alarms. * * *

Modelmaker's lathe: New low-cost import

Ever think you'd like to own a little metal-turning lathe and be able to turn a brass barrel for a model cannon or machine the parts for a tiny engine that actually runs? That's what you can do, and more, with a new modelmaker's lathe I tested recently, called Sherline and made in Australia.

When I say a "little" lathe, I mean compact in size for this one measures a mere 18 in, long and has a 3½-in, swing over the bed, But it's far from being a toy in being toy-size; I found it to be a precision machine, finely made and engineered to meet the needs of hobbyists and modelmakers.

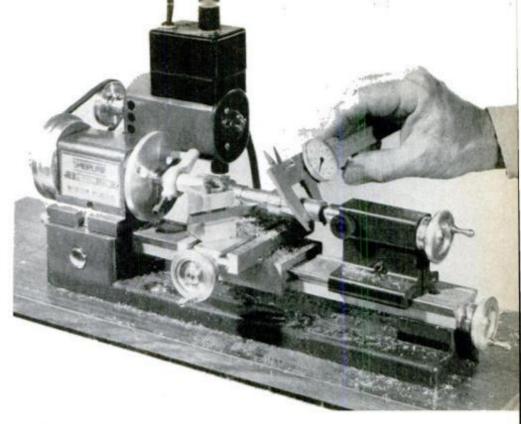
What's different about it from the conventional? First, it features an electronic variable-speed control which gives you an infinite range of low and high speeds from 100 to 4000 rpm. Taper turning is done by angling the headstock rather than the tailstock away from dead center. To make the basic tool more versatile, there are a number of attachments you can add as needed: One provides automatic feed to the carriage; another converts the machine to a screw-cutting lathe.

With the basic lathe, you get a motor and cord, speed control, face-plate and dog, two dead centers, toolpost and bit, V-pulleys, two hex wrenches and instruction booklet—everything needed to get started. The price tag for the basic lathe is \$189.50 f.o.b. For more information, write the U.S. distributor, Martin Enterprises, Box 407, San Marcos, Calif. 92069.
—Wayne C. Leckey, Home and Shop Editor

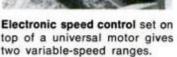
SPECIFICATIONS-Model 1000 Lathe

Swing over bed: 3½ in,
Swing over carriage: 1¾ in,
Distance between centers: 8 in,
Hole through mandrel: 0.405 in,
Mandrel nose thread: ¾-16 TPI
Mandrel nose taper: No. 1 Morse
Travel of cross slide: 2¼ in,
Travel of tailstock spindle: 1½ in,
Taper in tailstock spindle: No. 0 Morse
Headstock swivel: 360°
Protractor graduations: 0°-45° x 5°
Handwheel dial graduations: 0.001 in,
Electronic speed range: Low, 100 to 1000 rpm
High, 400 to 4000 rpm

Length overall: 18 in. Width overall: 7½ in. Height overall: 6 in. Weight: 18 lbs.

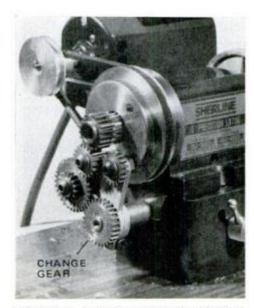




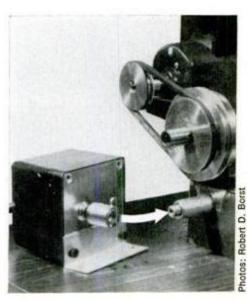




Accessories: A, steadyrest; B, 4-jaw chuck; C, 3-jaw chuck; D, tailstock chuck and key; E, live center; F, tool bits; G, power feed; H, screw-cutting attachment.



Lathe cuts threads, right and left-hand, with addition of screw-cutting attachment.

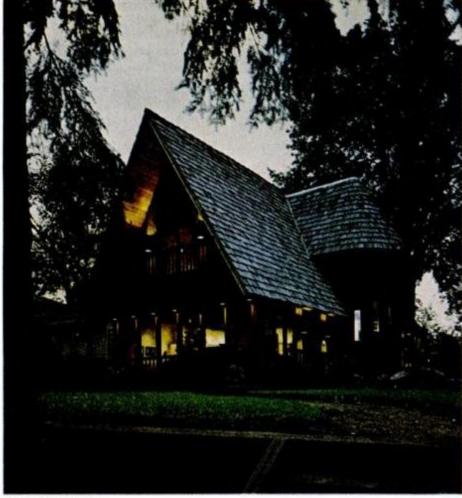


Auxiliary power feed couples to lathe lead screw to add automatic feed to carriage.

STUCK WITH AN OLD HOUSE?

Dozens of dramatic changes you can make yourself



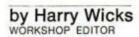


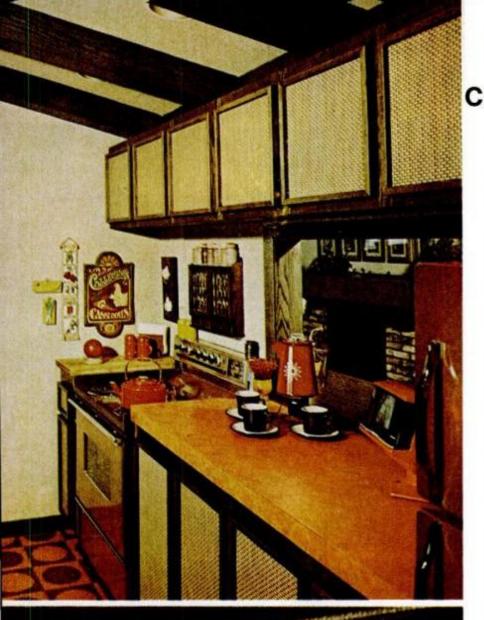
Data: Annette Sukov

Photos: Les Turnau

Owners; Mr. and Mrs. Roger Wothe









The drab-looking house on the narrow lot in the photo on the facing page was originally built to serve as a lakeside summer home.

When new home prices and mortgage money started to spiral out of sight, the owners, Mr. and Mrs. Roger Wothe of Wayzata, Minn., abandoned their search for a new home. They decided they could get more house for the money remodeling their weekend home.

The house was full of problems, almost too many to solve. The living area was inadequate for the owners and their two growing boys. And the narrow parcel of ground ruled out any expansion into the side yards. Combined, the two levels had a scant 960 sq. ft. of living space. A complete front-to-rear remodeling changed the picture.

Roger Wothe, who heads up Environments, Inc., a firm that specializes in store interiors and fixtures, designed and implemented the changes himself. Before he ever lifted a hammer, he spent one year in the planning and drawing stages.

"The floor plan was opened to all kinds of possibilities," he said, "but things started to happen when I made the decision to move the stairs outside. Until that occurred to me, I was dissatisfied with every floor plan because the stairs were in the way."

The first step was to build a new circular staircase in a round "tower." What had been a small deck in front of the living room was then enclosed to double its size. Twelve feet were added to the rear of the house and interior partitions were reshuffled.

With remodeling completed, the chalet-style boasts an impressive 1900 sq. ft. of living space laid out for a lot of living. It is chock-full of dramatic and sensible ideas. Some features can be duplicated easily; others require professional know-how. All are handsomely designed and

D









F

Construction details for vanity shown at right will be presented in the February issue of PM

uning at smile and

installed with care. Whether you are a do-it-yourselfer or prefer to hire others to make renovations, you're almost certain to spot some ideas that seem made to order for your house.

Boldface letters in the following text refer to color photos on the preceding three pages. The text describes the three dozen changes we found most exciting; if you study the photos, you'll surely find more.

A The original house as viewed from the front presented a challenging remodeling project indeed.

B Dramatic change is obvious in this "after" shot of the completed remodeling. The tower which houses the circular staircase blends well with the chalet styling, and by breaking the severe slope of the roofline adds interest and pleasing balance. It creates the impression that the whole house is wider than the original building when in fact it is not. The tower windows are insulated units manufactured by Viracon, Inc.: they're designed to be heat-absorbing and glare-reducing.

Wothe wisely made an asset of that huge expanse of exposed roof by covering it with attractive, handsplit cedar shakes. A wood preservative was applied and the shingles were left to age naturally.

The existing roof line was con-

tinued over front and rear additions to integrate the design.

The new roof was planned with energy conservation in mind, too; A 6-ft. overhang was added to the length of the house on both sides to shield it from the summer sun, which would tax the airconditioning system. But the design admits warming rays from the lower-angled winter sun to assist the heating plant.

The rough-sawn cedar siding enhances the natural beauty of the house's lakeside site. The siding was finished with Olympic's No. 714 stain and the trim with Olympic's Coffee stain.

The second-level balcony has a railing that repeats the theme of the ground-level deck. Besides affording the luxury of a private window terrace off the master bedroom, the upper deck relieves the tall, narrow look of the house with a strong horizontal line.

Rather than hide the exterior doors with storm or screen doors, Wothe installed Taylor insulated steel doors (which eliminate the need for either). Door exteriors were painted with epoxy enamel and the interiors were covered with a Formica wood-grain pattern matching the interior oak trim.

A railroad-tie retaining wall was installed (photo, page 116) to make the sloping plot more usable and the cement-block garage re-sided with rough-sawn cedar to coordinate it with the house.

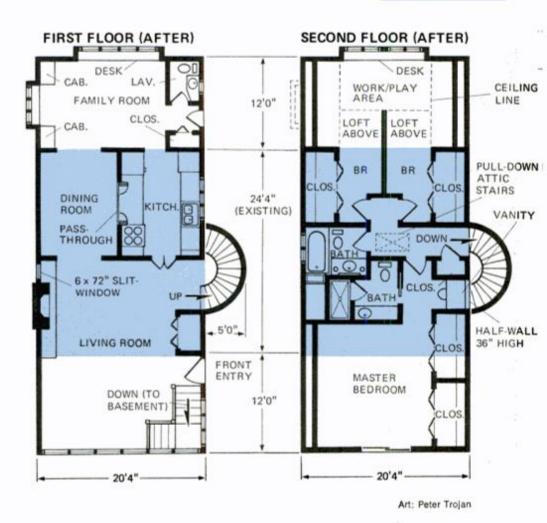
kitchen has a false A-ceiling. Space created between it and the old ceiling is used to route wiring, pipes and ductwork. Gone is the bothersome stairway that had cramped the old kitchen. In the expanded area now appears an appliance and cabinet layout that would please the fussiest of chefs. The kitchen is flooded with light; eight Lightolier recessed-can fixtures installed in the ceiling are angled to provide even, shadowless lighting.

The 6x6-in, ceiling beams are also false. Hollow and fashioned of red oak, they—like all interior trim—are finished with Pratt & Lambert's Oriental Walnut oil stain. To minimize daily upkeep, kitchen walls are treated with Jumbo Weave (by Fashon), a fabric wall covering that resists bumps, bangs and scrubbing. For underfoot comfort, the Wothes finished the floor with Dimensions, a Polyester III commercial carpeting by Viking.

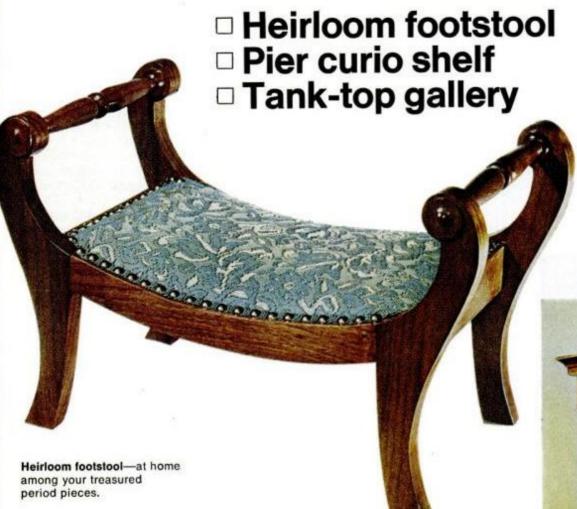
Attention is drawn to the neat, contemporary-styled cabinets. All wall hangers in the kitchen are of one height. Cabinet doors are faced

(Please turn to page 116)





Three projects you'll want to make







Pier curio shelf—a handsome decoration for any wall.

Tank-top gallery—a shelf to keep toiletries corraled.

Heirloom footstool

If you like Early American furniture, this quaint footstool will charm you. You can bring out its full beauty by giving its walnut frame a fine hand-rubbed finish and its padded upholstered top your most careful attention.

Both three-piece side frames are identical as are the end rails and turned spindles. There are two ways you can tackle the 1-in.-thick side frames: 1. Blank stock for the legs can be glued and doweled to blank rails and the assembly bandsawed as a single piece. 2. The three pieces can be laid out and cut separately and then glued and doweled together. Either way you'll first need to make a full-size cardboard leg pattern following the grid drawing. If you cut the parts individually, you'll do well to bore the 3/8-in, dowel holes in the ends of the curved rails before bandsawing so you'll have maximum support for your doweling jig.

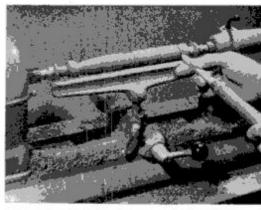
Both side and end rails require a 3/16 x 3/4-in. rabbet in the top edges for tacking the upholstery. The end-rail rabbets can be cut easily on your table saw; those in the curved side rails will require a router or shaper. If a router is used, it's used

on the flat side of the rails and with a straight router bit. A circular guide attached to the router's base is used to follow the curved edge and set the depth of cut.

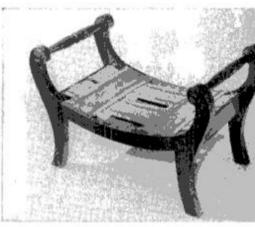
The spindles are tenoned turnings glued in ¾-in. holes that are bored completely through the side frames. Turned rosettes are used to cap the spindle holes on the face side. Both spindles and end rails must be glued and clamped in place at the same time, of course, and triangular glue blocks are added at the four corners.

All exposed wood surfaces of your footstool should be completely finished before it's upholstered. I found a beautiful finish can be obtained with a product called Wood-glo.

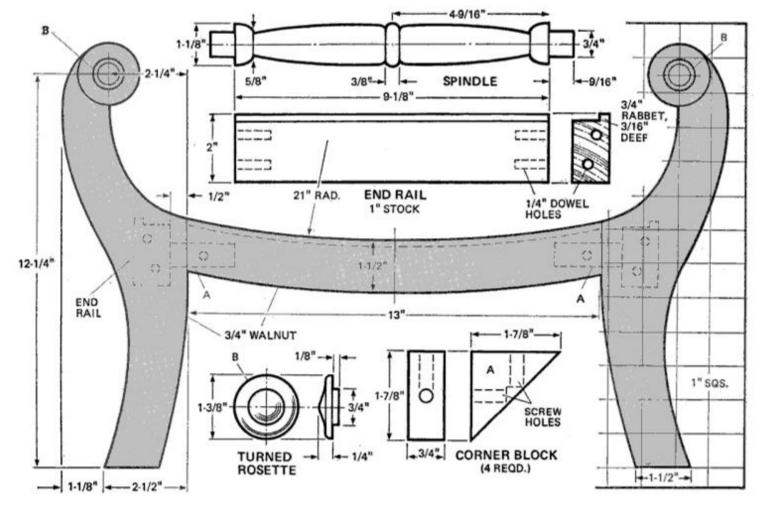
The first step in padding the top is to stretch black cambric from rail to rail and tack it in the rabbets. Then strips of furniture webbing are laced crisscross over the cambric and the turned-under ends tacked to the rabbets. A 2-in. thickness of foam rubber or other padding comes next, then the top covering. The edges of the latter are folded under and tacked neatly to the rabbets. Finally, 1/2-in.-wide braid and roundhead upholstery nails, 74 in all spaced about 34-in. apart, are used to add a finished touch to the padded top.—Elmer E. Scott



Tenons are formed at each end of turned spindles to fit % -in. holes in side frames.

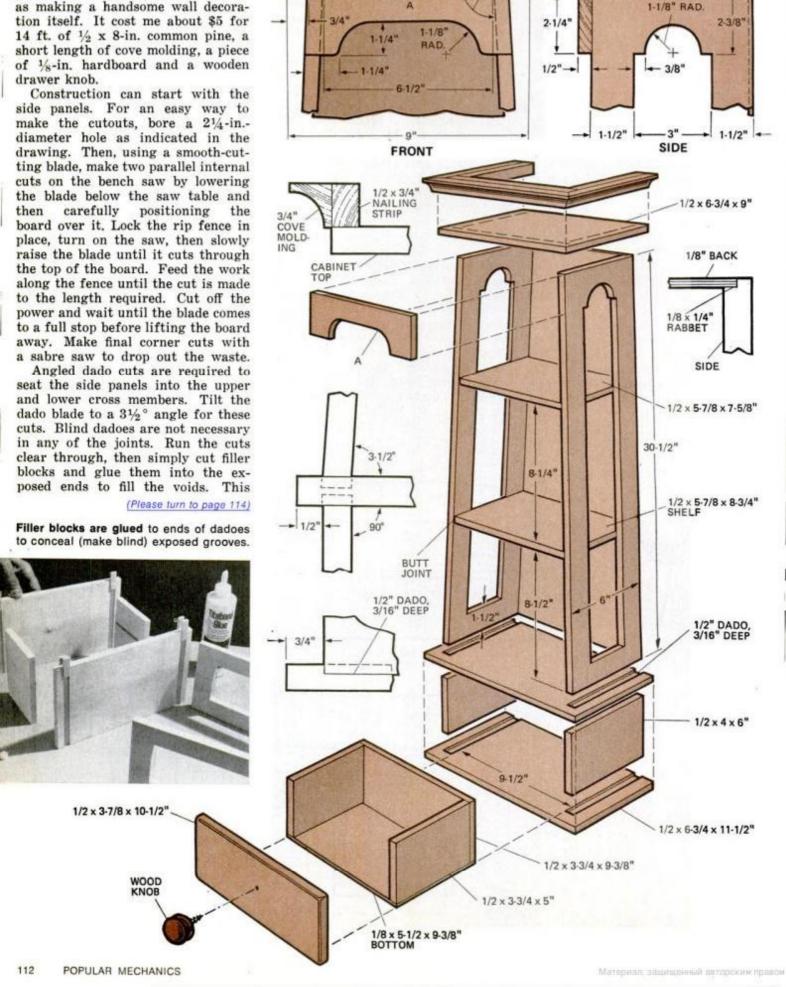


Webbing is stretched across stool frame; then foam padding is placed on top of it.



Pier curio shelf

This charming curio shelf will do wonders in showing off your prized pieces of bric-a-brac as well as making a handsome wall decoration itself. It cost me about \$5 for 14 ft. of 1/2 x 8-in. common pine, a short length of cove molding, a piece of 1/8-in, hardboard and a wooden



3/4" COVE MOLDING

3-1/2° ANGLE

1/2" DADO, 3/16" DEEP



17 mg, "tar," 1.2 mg, nicotine av. per cigarette, by FTC method.

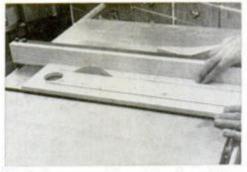
h-Proof

Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

©1974 Lordlard



Hole saw is used in your drill press to make circular cut at top of side panels.



Waste is removed by raising the rotating blade, pushing stock forward (or back).



Sabre saw is used to complete parallel cuts to very corners to drop out waste.

THREE PROJECTS TO MAKE

(Continued from page 112)

method will prove simpler and quicker than making blind dadoes. A ½ x ½-in. rabbet is required at the rear of the side panels and the top and lowermost members to form a recess for the hardboard back panel. Sand all parts before assembly.

The two open shelves need not be set into dadoes; butt joints will suffice. Cut them to length with the appropriate bevel so they will fit snugly against the sides. Use finishing nails and glue to secure them. Cove molding, 34-in., is used for

trimming the top. Since its profile does not permit direct nailing to the top, small nailing strips are added to the back of the molding. Cut 45° miters to join the molding.

The finish is optional. You can use stain, shellac, clear varnish or paint, or you may want to try a woodgraining finish. For the last, use a latex-based, woodgraining or antiquing kit of the desired tone for quick results: Coat the surfaces with the latex base coat and allow to dry (usually about one hour). Then apply the glaze coat, working one main section at a time. Run a dry brush over the still wet glaze to produce

the "grain." If the result is not quite what you want, simply wipe off the glaze and try again (you can't fail). If you want to highlight the corners as was done here, run a dry rag pad over them before the glaze dries.

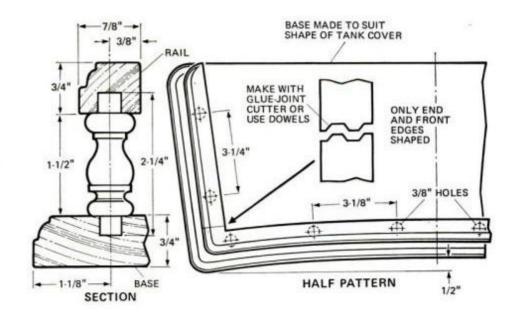
The hardboard back panel should be installed after finishing for an easier, neater job. Instead of graining the back panel, you may consider applying only the base coat to it. This will produce a neutral background which will allow your curios to stand out more clearly. Bore a hole near the top of the back panel for hanging on a screw.

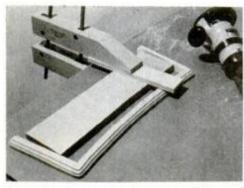
-Rosario Capotosto

Tank-top gallery

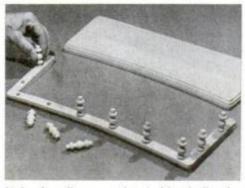
Toiletries kept on top of the tank will stay put when corraled by this smart bathroom accessory. You make it to suit the size and shape of the tank's cover—yours may be straight; mine was curved. I cut the base from ¾-in. cherry, made the spindle railing by joining three ¾ x ½-in. pieces at the corners. Here I used a glue-joint cutter, but a small dowel will do. I shaped the edges with an ogee router bit.

Yor can turn the 10 spindles, of course, but you'll be ahead if you buy them ready-turned. They'll need sanding a bit and a quick way to do it is to chuck them in your drill press. Rubber feet will keep the shelf from rocking.—Rosario Capotosto

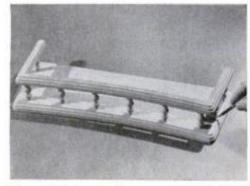




Scrap block same thickness as rail is used to support router for shaping outer edge.



Holes in rail are used to hold spindles for applying finish; they're glued afterward.



To spot holes in base, use a pencil to draw around the tenon of each spindle.

COUNTERFEIT GUNS

Authentic machined metal replicas of famous firearms disassemble like originals.

Precision ma-chined metal models look, feel, weigh, disassemble like real guns real guns— Over 30 hand finished parts, Perfectly legal finished parts, Perfectly legal —CANNOT be fired. Great for decorating den, office, rec-room. Send for free color bruchure of 28 models of famous historical to modern guns— 30 hand #200 \$28.95

REPLICA MODELS Inc.
Bept. PM-1, 610 Franklin St., Alexandria, Virginia 22314
Send #300
Add \$1.25 postage per model.
Enclosed \$ NAME ADDRESS.

PLEASE SEND FREE FULL COLOR CATALOG.



MEN/WOMEN...Start Your Own HOME IMPORT BUSINESS

I'll send you a free sample import

to prove you can make big money in your own spare/full time business. No investment in stock, World's most famous importer will guide you. Clip this ad, good for free sample and big Free Report — tells all! Offer limited to adults. Mail this ad today. MELLINGER CO., Dept. A2251, 6100 Variel Ave., Woodland Hills, CA 91364



emedial graduates. GUR same YEAR! Send g new illustrated FREE catalog. No obligation. NATIONAL SCHOOL OF MEAT CUTTING No. 01972



5.00 10 11.00

FREE BOOK **Just Pick** Here's the The Kind I want:

Broad
chest. Big
shoulders.

Powerful arms. Of Body You Want ... and you can have it tegs. Stimmer send you can have it tegs. Stimmer whist, hips. More send your name and address for Free Book to: More energy. CHARLES ATLAS, Dept. A8, 115 E. 23rd St., N.Y., N.Y. 10010



an evening in my spare time—and without ad-vertising. I know it would be bigger if I were not employed. Now it brings my family luxuries my present job does not afford.

NEW RUBBER STAMP BUSINESS THIS LITTLE TABLE TOP MACHINE MAKES EVERYTHING SIMPLE & EASY PAYS BEGINNERS #516.50 AN HR. Start at Home in Spare Time

The multi-million dollar Rubber Stamp business—once controlled by a few big companies—is now being taken over by small operators—one in each community throughout the United States. Men and Women who have this inexpensive machine can turn out huge quantities of Rubber Stamps with special wording that buyers once were forced to buy from big cities. Material costing only 27c makes a stamp that sells for \$2.75. The machine that does the work is simple and easy to operate and it turns out as many as six Rubber Stamps at a time, each with different wording such as names, addresses, notices, stock numbers, prices and other "copy" needed by offices, factories and individuals. Working full capacity, it can earn as much as \$33.00 an hour for the operator! Now you can get into the big-pay business yourself, with your own home as headquarters. You don't need experience. We supply everything, including complete instructions and eight ways to get business coming in fast. We even help finance your start! Start making up to \$16.50 an hour from the very beginning. Cash in on the profitable Rubber? Stamp business in your community, right away. We'll mail full particulars FREE and no salesman will call. Be first in your locality. Rush coupon today or send your name on postcard to:

RUBBER STAMP DIV., Dept. R-2-EA

RUBBER STAMP DIV., Dept. R-2-EA 1512 Jarvis Avenue • Chicago, III. 60626

U.S. Surplus High Speed Rotary Files, Hardened Steel For filing, drilling, milling, carving, routing any metal or wood. Cutting edges from %" to 1", shanks all %". Brand new, in air-tight G.I. packs. Export order Add \$1.00



14 Tool Set, Gil. cost \$109.00, now Save Even More, Both Sets, now 100% Guaranteed. We Pay the Texas orders add 5% tax. U. S. SURPLUS CENTER, Dept. 503 715 Camden, San Antonio, Texas 78215



POWER HACKSAW



WORKS BEAUTIFULLY WORKS BEAUTIFULLY
Easy to assemble kit of cast iron
parts. Use your own ¼ hp. motor. Drill press needed for finishing work. Moves approx. 120
strokes/min. Send \$34.95. Satisfaction guaranteed. Catalog describing 51 kits, only 50e. Write:
Struck Corp., Dept. PM15H.
Cedarburg. Wis. 53012

VENEERING MANUAL 25¢

BOB MORGAN WOODWORKING SUPPLIES. Dept. POIKIA, Box 18169, Louisville, Ry. 40218

HOW TO BECOME A LOCKSMITH



A.S. Ancele, P.O. Box 69234, Los Angeles, Ca. 90069



RUBBER STAMP DIV. FREE! 1512 Jarvis Ave., D L RZEA. Chie

se rush full par ticulars about your financing plan and the little machine the little machine that can get me started in the profitable Rubber Stamp business at home in apare time. Everything you send me is FREE and no salesman will call.

AUTOKIT

Post Box 1073

the Invader GT is the buildable VWsports car kit, Write for free color brochure Department P1 Alameda, CA 94501

AAMCO® And You Can Make It!

world's largest transmission chain is still growing strong after eleven years. Over 500 of our franchises located from coast to coast. New openings in some markets mean you too might qualify. For further information write:

AAMCO Transmissions, Dept. 116 408 E. Fourth St., Bridgeport, Pa. 19405

ClassMansShip

from Elite Enterprises



IT WORKS FOR ME- YOU! I TURN 12¢ into \$1.50 in seconds-LEARN HOW - after a few short hours!

"My Warner Engraver Shop paid for itself and gave me a healthy profit in the first six months . . ." B.G. Now you can get into this highly lucrative business,

Since 1922, Warner has enabled thousands of men and women to establish a business of their own -to reap the benefits of

their own labor and have the personal satisfaction, and independence, that comes from operating a business of their own.

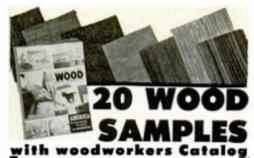
Now, a revolutionary new machine makes it possible for an Independent Business Man with no "PULL" No Big Money to Invest . . . and, No Experience—to start a business of his own, at home in his spare time. Here's what J. H. of Pennsylvania says:

\$7,280.00 in 18 months for 1 to 11/2 hours work

using your home as headquarters. No experience needed because we supply everything. The new Warner Success Program. "Engraving as a Profitable Business," is now ready for you. Send for your FREE illustrated brochure. No salesman will call. Send your name and address on the coupon or a postcard. Be first in your area to cash in on this ground floor opportunity. SEND NO MONEY

WARNER ELECTRIC CO., DEPT. E-2-EA

| 1512 Jarvis / | Ave., Chicago, III. 60626 |
|------------------------------------|---|
| Engraving Divis 1512 Jarvis Ave | ion, Dept. E-2-EA ., Chicago, III. 60626 |
| Please rush you | ur free illustrated brochure to: |
| Name | |
| Address | |
| City, State, Zip | Материал, защищенный автороки |



ENJOY woodworking more! Let this new Constantine Catalog-Manual help you build new furniture—refinish, restore beat-up cabinets, chairs, chests, tables faster, easier than ever before!

96 Picture-Packed GIANT PAGES

Find instantly whatever you need. Buy at money-saving prices—cabinet lumber, carving blocks, pipe briar, picture molding, cane, furn. hardware, clock kits, lamp parts, woodwork plans & books, etc. Needed products found nowhere else!

Catalog & Wood Samples Only \$1
Dollar Fully Refunded on First Order
Accept this offer to own fascinating set of
20 2x4 specimens of world's most glamorous
veneers—Rosewood, Satinwood, Lacewood,
Walnut, Mahogany, Purpleheart, Zebra, etc!
Compare! Then identify instantly finest woods wherever you go!



2051 Eastchester Rd., Bronx, N.Y. 10461

Enclosed \$1 for Wood Samples & Woodworkers Catalog. (\$1 Refunded)

☐ Catalog Only 50¢



For gift or use anywhere, Magnagrip Mark X

holds metal kitchen or shop tools magnetically in sight, safely, orderly. Handy, compact. Mounts easily on any surface. Styled in white. Gift boxed. For kitchens, shop, camp, trailer. Money-back guarantee. \$5.50 p.p.

Phelon Magnagrip Company, Inc. East Longmeadow, Mass. 01028

Send check or M.O. to Dept. B19

RC WELDER Plus \$3.00 Postage and Handling No Exposed Electrical Terminals Weld, braze, solder or cut most anything made of No experience necessary, Follow simple instructions kee repairs on cars, trailers, farm and lawn equipbicycles, appliances, etc. Make hundreds of valuable NOTHING ELSE TO BUY! Comes complete with ace shield, pack of welding and brazing rods, power, special electric torch attachment, ground clamp, apecial electric torch attachment, ground clamp, special electric torch attachment, ground clamp, special electric torch attachment, ground clamp, seasy-to-follow illustrated instructions, rod holder, uses standard 'k'' rods to weld iron, steel, brass, e, aluminum, other metals. New improved circuit more welding power. Gives 4 times the heat needed it toughest iron. For same-day slipment just call 682-5681 or write WEL-DEX MFG. CO., Dept. 22 Box 10776, Houston, Tex. 77018.



Lilliputian size of lot that this charming home occupies is appreciated when you know that the fence in foreground separates Wothe property from neighbor's. Railing on second level (false balcony) de-emphasizes tall look and repeats balcony detail on the house front. Generous use of wood decking creates an illusion of larger house and lot. Below: View of house from a distance shows how railroad-tie retaining walls blend with the styling.

REMODELING IDEAS

(Continued from page 109)

with Nevamar's Natural Cane plastic laminate to give them a furniturelike look. To eliminate conventional door hardware, "invisible" Tutch Latches were used on the cabinets.

D If there is a single attentiongetter in the kitchen it is the functional pass-through connecting kitchen and dining room. What used to be a doorway was closed at the bottom and neatly framed with trim. The countertop was built to create a 12-ft.-long ledge (not visible in the photo) on the dining room side for buffet-style entertaining.

Another reason for the opening was to allow better use from the dining-room area. Perched on stools, the Wothe youngsters use that side of the counter for breakfast, lunch and snacks. The dining room wall seen opposite the pass-through is clad with 1/2-in. plywood (instead of plaster or plasterboard) and covered with Fashon Jumbo Weave. The owners periodically change picture groupings-this wall lets them drive nails wherever they want without the need for patch jobs.

E The living room was doubled in size when the additions were completed. The two walls facing the lake were opened up to let in the viewbut not the heat. Fixed sash here are also of Viracon, while all operable windows are Andersen Thermopane. The owner made the frames.

The pair of "useless" fixed



windows flanking the fireplace in the original living room were closed in, and a 6x72-in, slit window was installed behind the mantel. Note that this window is the only fenestration on that sidewall. It creates a dramatic focal point as light streams in over the heavy mantel. The fireplace was enlarged and a massive, roughhewn mantel added.

Walls were clad with the same fabric covering used in the kitchen. Lightolier Lytespan traveling lights can be positioned to illuminate, paintings over the mantel or for mood lighting.

G The shower in the bath added off the master bedroom has a skylight because this was the only way

(Please turn to page 118)



I have a rather long message for the readers of POPULAR MECHANICS

but if you are interested in fuel economy and performance I urge you to take time to read it.

Hello. My name is Frank Kirmss. I am president of APO of America. I have paid for this space in order to acquaint you with a product well known elsewhere in the world but relatively unknown here.

I am so convinced it will benefit you that I offer it on an unconditional money back if not satisfied basis. I will present some arguments in favor of it in this space, but I am not trying to "sell" you.

The product is the Mk-II Vapor Injector.

Our own research, independent evaluations by recognized laboratories, tests by automotive magazine editors and reports from owners all agree that it can improve fuel economy and increase horsepower in the 4-stroke, gasoline powered engine.

It is not mechanical, has no moving parts and requires service on an average of 4 times a year at a total annual cost of \$7.80.

Let's make one thing clear: I am not a struggling inventor battling against the giant corporations trying to get something off the ground. In fiscal 1973 APO's sales were \$38,000,000 in Japan alone. (That's dollars, not Yen, by the way.) My company was awarded the title "Exporter of the Year" by the Dallas Chamber of Commerce. In other words, I'm not attempting to put you on to a completely new gadget we hope will work

The reason we have been so big in Japan is quite simple: Gasoline costs about \$2.00 a gallon. When we entered the Japanese market a few years ago you could buy all the Premium you wanted in many parts of the U.S. for under 30¢ a gallon, less if you watched for ''Gas War'' signs.

Frankly, I had no intention of even selling the Mk-II here. It's a tough market. Products in this category have often been misrepresented. Some "gas savers" are highly dubious, to say the least. And, as long as gas was plentiful and cheap, the general attitude was, "who needs it?"

With the recent energy crisis and now with zooming inflation, the picture has changed. Enough people are now concerned with what's happening to their automotive maintenance dollar to make up a sizeable group.

I believe the readers of this magazine are included. They obviously care enough about cars to inform themselves about them. Also, many have bought cars on the basis of better

Send handy coupon to office nearest you:

APO OF AMERICA DEPT. PM 3150 IRONRIDGE DALLAS, TEX. 75247 APO OF AMERICA WEST Suite D 2901 S. Main St. Santa Ana, Calif. 92707







economy or more performance for the amount of fuel consumed.

I also believe the readership of this magazine cares about air pollution and would regard any device which reduced harmful exhaust emissions without impairing economy or performance as a most worthwhile addition.

If you place yourself in either of these two categories consider this: Tests by Daigh Automotive Engineering Co., Wilmington, Ca., showed these increases in gas mileage with the Mk-II.

1972 Toyota from 24.57 to 28.35 mpg 1973 Pinto from 33.9 to 37.1 mpg 1973 Vega from 24.57 to 30.24 mpg

As to performance—at 50 mph these same cars gained 9 hp, 5 hp and 16 hp at the rear wheels with the Mk-II.

Exhaust emissions, as measured by Automotive Environmental Systems, Westminster, Ca., using the criteria of governmental agencies, were down on each of the vehicles. Greatest reduction was 73% in unburned Hydrocarbons in the Pinto. The least was 22% in the Toyota. This data is available on request.

Many 'fan' publications have reported favorably on the Mk-II including MOTOR TREND, ROAD TEST, WHEELS AFIELD, OFF ROAD and SCIENCE & MECHANICS. Also in the new HOT ROD YEARBOOK (No. 14), the editors document a remarkable gain of 24% in road horsepower on a 1967 Corvette using a Mk-II—from 96 hp to 120 hp @ 3000 rpm. These publications are responsible only to their readers, not to us. Reprints available on request.

But, I don't think you should wait. I think you should start getting more for your gasoline dollar right away.

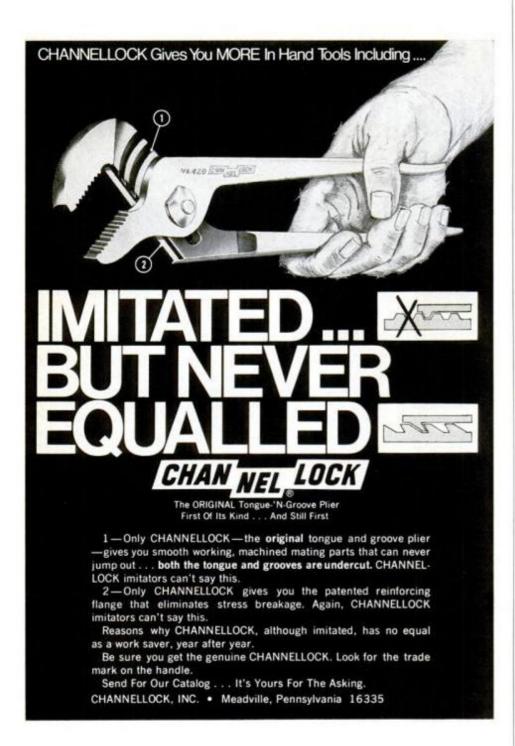
Here's my money-back offer to car owners: Send me \$39.95 (check, money order or charge card authorization) plus tax if you live in Texas. A Mk-II for your car, together with a six month supply of Econo Mix, will be shipped from the branch nearest you.

Try it. If you aren't convinced it improves your performance and economy return it in 30 days for a full refund. I don't know what else I can do to eliminate any risk on your part except to say that our business reference is: International Dept., Republic National Bank, Dallas, Texas.

Let's hear from you.

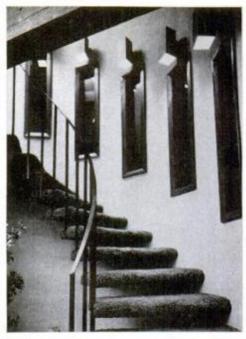
Frank Kirms

| stand I refund FRANK | can return t if I am not c | to have more | hin 30 days | s for a ful |
|----------------------------|-------------------------------|---------------------|-------------|-------------|
| | | | | |
| | | (NAME) | | |
| | | (NAME) (ADDRESS) | | |
| | (CITY) | | (ZIP) | |









Circular stairs were precut in the shop, assembled and welded on the job site.

REMODELING IDEAS

(Continued from page 116)

natural light could be brought into the room. The ceramic-tiled stall shower has a door that's framed in bronze metal to match the vanity mirror frame.

H A new look for the old bathroom was created by using drapery that matches the walls and ceiling. The pattern shown is a cotton fabric from Design Group II.

The active pattern on the walls, ceiling and drapery underscored the need for a handsome vanity design that would hold its own. Built by the owner, its luxurious sculptured look was achieved through the use of standard lumberyard moldings. Roger Wothe generously agreed to supply his drawings for the vanity so that PM readers can duplicate the look. Details for building it will be presented in a separate article to appear in the February issue.

Other good ideas

For structural reasons, the stair tower is erected on a concrete slab. Such construction provides a solid base for anchoring circular stairs. Treads are cantilevered from the wall, thus eliminating the need for a post. Because of this, the handrail runs around the inside perimeter of the treads-rather than the outside -which is typical of factory-built circular stairs.

Stair safety is assured during daylight hours because sufficient light filters through the slit Viracon windows. Lightolier Bronze Quadrille lamps, installed every other step, provide dramatic and safe lighting for evening use.

send 50¢ for handling, postage to:

WOOD SERVICE

CRAFTSMAN Dept.A-15, 2729 South Mary Street

picture kits, much more - in stock. For catalog

ANDREA DORIA

(Continued from page 75)

feet. Everyone was dog-tired from hauling cables and umbilical lines, and working 12 and 15-hour shifts. More than once everyone was brusquely awakened at 1:00 or 2:00 a.m. during a tide change to prevent the umbilical line to Mother from tangling up in the anchor line. More hauling, pulling and lifting.

We were constantly aware of blue sharks sunning themselves on the surface and a number of times, while we were working or decompressing near the surface, they'd swim to within five or six feet of us. One time I looked back over my shoulder when I got a tingling sensation at the back of my neck. Not more than three feet away a seven-foot blue was turning.

While Tim Kelly and John Clark were in the water photographing Mother at about the 30-foot level, a big blue came in and started to harass them. John was using a camera with a large dome port on it. Apparently the blue was attracted to it because the shark came in and mouthed the camera while it was in John's hands. Shortly after that, Timmy literally had to kick one of the sharks off when it advanced.

Swift underwater currents made diving on the Doria difficult-and frightening. On one excursion down to the promenade deck there was only a hint of a current flowing south over the ship. We dropped down through the opening and spent about five minutes shooting pictures.

When it was time to surface, we popped our heads up out of the promenade area. To our surprise, a rope that we had secured loosely to the hull was suddenly picked up from the deck by an invisible hand and pulled right past us. We had to fight that strong current as we ascended the anchor line.

iguring from the time of departure from San Francisco, it was almost a month before Don Rodocker and Chris DeLucchi were ready to begin cutting operations on the Doria's hull. It took another five days to cut a four-foot-square hole.

The two divers used Mother as their base and were connected to the habitat by long umbilicals that provided the helium-oxygen breathing mixture and communications with topside. Generally, one diver would make an excursion while the other, stationed in or near the habitat, acted as his tender.

Here is how Don Rodocker reported his first venture inside the Doria:

"On my descent I could see the

(Please turn to page 120)

FIX LAWN MOWERS FOR FUN & PROFIT

nating new Handbook by F. Peterson you the knowledge skilled mechanics

OVER 125 ILLUSTRATIONS show how to trouble shoot, repair carburetors, englises, balance and sharpen blades, etc. Exploded drawings are extensively used.

and rider mowers, preventive and route maintenance, how in deutify branch the maintenance, how in deutify branch maintenance, how in deutify branch maintenance, how to hop and use a mover. Friends gladly pay \$10 to \$50 to fix their lawn mowers, Try the HANDHOOK ON LAWN MOWER REPAIR, Rush only \$6,95 plus 50c handling on 10-day money-back guarantee.

uchanan, New York 10511



s. (2) s

DOERN UPHOLSTERY INSTITUTE, Box 16, - N P M. Orange, Calif. 92669



A BUSINESS OF YOUR OWN

REPAIR HYDRAULIC JACKS
Earn while you learn at home. Millions of jacks in gas stations, trucking firms, etc. need servicing. We show you HOW. Start spare time in your basement or garage. Big opportunity for mechanics. Write for folder No. PM1 and free bonus offer HYDRAULIC JACK REPAIR MANUAL CO., INC.

Drivers and Pilots Sunglasses rivers and Pilots Sunglasses that went to the moon on the "SKYMASTERS", the sunglasses that went to the moon on the Apollo missions. Millary lesse, made by American Optical Co. "True-Color" neutral-grey ground and poished impact-resistant less. 1/10 12k gold filled frame, comfort contour earpieces, with case Sugg retal 520 25 Order now at discount prices, only \$14.95 for 1 pair, or \$27.95 for 2. Postpaid, For Air Mail and 60 per pair Most orders shipped within 24

Most orders shipped within 24 hrs. under our 30 day no-risk money-back guarantee.

HIDALGO SUPPLY CO. Dept. PM, 11505 Chimney Rec HOUSTON, TEXAS 77035

Learn Profitable Profession in few months at Home

Q. P. O. BOX 3 + STATEN ISLAND, N. Y. 10314

MEN AND WOMEN, 18 TO 60

ir pay as a skilled operator in Scientific Mas-tant employment opportunities. Easy to learn come from Doctors, firepitals, Clubs and other health or recreational centers. Wooder-ful part-time prefession Low monthly payments, Write today for free Anatomy Charts and catalog. No obligation.

ANDERSON SCHOOL OF SCIENTIFIC MASSAGE Dept. A-1, Princeton, Illinois 61356

At Last a New Amazingly Simple GAS TURBINE

JET ENGINE

Build from easy to follow plans, Length 15", Dia. 8 ½", Wt. 15 lbs, Fuel: Gasolineer Kero,

"Scraming Demon" develops 20 H.P. Ideal project for serious-minded hobbyists, students; scientific and industri-al arts classes. Make on 9" metal cutting lathe with milling attachment. For use on small racing boats, midget cars, attachment. For use on small racing boats, midget cars, built of materials and abotos. Fix with critical dimensions, built of materials and abotos. Fix with critical dimensions. SAVOY SCIENTIFIC. BOX 1398, SARTA MONICA, CALIF. 90408

OR HUM A TUNE ... you can play the Musical Saw. No notes to read, no musical knowledge

required. If you are 10 or 70, you play or no pay. Musical Saw, soft hammer, how, resin and lessons mailed on 5 days' trial, Write today for details and free copy of "Sawing News of the World." picturing MUSSEHL & successful saw musicians. MUSSEHL WESTPHAL, 107 Fort St., Fort Atkins Wisconstn- 53538



FREE BLUEPRINTS and TRIAL LESSON

for your greater success in Building

Beginners, craftsmen, even foremen and superintendents, have sent for these free blueprints and trial lesson in Plan Reading as a means of trying out Chicago Tech's home-study Builders training. Learn how you can master Plan Reading—Estimating— and the practical details of all types of construction in your spare time at home. Mail coupon below today—see how you, too can prepare for a better job—higher income, or start your own contracting business.

CHICAGO TECHNICAL COLLEGE/School for Builders 2000 S. Michigan Avenue, Chicago, III. 60616

| CHICAGO TECHNICAL COLLEGE | Veterans |
|-------------------------------------|----------|
| Dept. PM-15, 2000 S. Michigan Ave., | Check |
| Chicago, III. 60616 | Here |

Please mail me a Free Trial Lesson, Blueprints and Builders Catalog. I understand there is no obligation—no salesman will call.

| NAME | | AGE |
|---------|-------|----------|
| ADDRESS | | 74.25.77 |
| CITY | STATE | ZIP |

LOCKSMITHING & Key Making

PRACTICAL UP-TO-DATE COURSE - ONLY \$7.95 se you how to pick locks, de-code, make master keys, regair, service, etc. New self-instruction lessons for every handyman, homeowner, carpenter, mechanic, service station operator, fix-it shop, hardware dealer, gunsmith. 53 easy, illustrated lessons. Full price only \$7.95 postpaid. Satisfaction or refund guaranteed. Mail order today!

Nelson-Hall Co., Dept. 6AT-2 325 W. Jackson Blvd., Chicago 60606



SEND FOR THIS CATALOG

100's of illustrations & 1000's of bargains in hydraulics, elec-1 trical, marine, automotive, hardware items...and more! A

must for hobbyists, sportsmen, machinists, in-

ı

ventors, just about everybody! Airborne's 30th

Anniversary Surplus Guide is our best ever! Send 50c to cover postage & handling. In a hurry? Send \$1 for airmail. Must include zip.

AIRBORNE SALES CO. 8501 Steller Dr. Dept. PM75 P.O. Box 2727 Culver City, Ca. 90230

Satisfying customers since 1945.

JANUARY 1975

Unadorned power tools ...they do the same job as tools costing up to 5 times as much.

We skipped the chrome to save you money . . . but we did not skip anything on performance. Actually, we skipped more than just chrome, we cut out every costly frill that wasn't absolutely Our tools are not exactly flashy. We are the first to admit it. But in articles covering test results on AMT tools, written by leading publications such as Popular Science, our tools have been praised over and over again. In spite of their low prices, our tools are full scale and offer full performance and precision.



scale and offer full performance and precision.

HERE'S NOW WE BO IT... First, we don't claim our tools should sell for five times the price! Just that our tools do the same job... with the same accuracy, ease and speed... and will last at least as long. AMT tools cost less to make and are sold direct. They are bona fide quality power tools used by serious amateurs and professionals alike and if sold in retail stores would be much higher in price. We use no magic, let's be specific:

SIMPLICITY... AMT tools are soundly engineered to eliminate every frill and gimmick—to minimize material and production costs. Machined parts are used only where they're needed. Unadorned cast iron and aluminum save you a fortune.

iron and aluminum save you a fortune.

BIRECT-FROM-FACTORY SAVINGS... You save a bundle, yet we offer a double guarantee backed by a 45-year-old company with millions of satisfied customers... and hundreds of orders pour in daily.

LARGE VOLUME... Our own foundry and large mass production facilities plus large buying power all work to keep costs down.

STANDARD PARTS... Our designs use standard hardware items wherever possible. By avioding custom-made parts we pass on tremendous savings to you.

If you are looking for power tools that perform like units costing many times our low prices, order today and you'll be one step closer to many hours of woodworking satisfaction.

Bill Monty

JOINTER-PLANER 41/6" x 22". Cast iron and steel, precision ground adjustable tables. For planning, joints, bevels, Cuts to 1/6" depth. Fence adjustable 0" to 50". Steel Knives, dual guards. Use any motor. Precision ball bearing industrial model, \$10.00 add'l. Wt. 19 lbs., f.o.b. factory.

TWO GUARANTEES

10-DAY MONEY BACK GUARANTEE
Try any of these power tools and compare it with any similar machine at any price. If not satisfied, return it for prompt, no questions asked refund, We pay the return shipping charges.

10-YR. FULL SERVICE GUARANTEE

Any part or parts of these AMT power tools (except motor which carries a one year guarantee) which become inoperative for any reason within ten years after purchase date will be repaired or replaced by the factory with no cost to the purchaser other than postage.

AMERICAN MACHINE & TOOL CO.



Brand new electric meter developing full 1 h.p. 17 lbs. (Purchased separately, \$29.85). With any AMT machine here. \$24.90

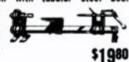
POWER SAW 8" tilt arbor saw . . . crosspound angles, dadoes, coves, moldings. Completely
assembled with ground cast iron
table, safety guard, splitter, mitre
guage. Less blade, motor. Rip
fence for easier work alignment.
\$4.50 add'l. Ball bearing model.
\$7.50 add'l. Takes ½ h.p. motor
or larger, standard blades, attachments. Wt. 26 ibs., f.o.b.



FREE OFFER, cabinet base plans,... with one piece of 34" plywood, convert your \$29.95 saw into a floor model with a huge 27" x 24" top. Takes cabi-net rip fence, \$5.50 add'l.

BELT SANDER A precision unit. It changes from horizontal to vertical in seconds. Heavy, sander includes 4" x 36" sanding belt. Uses ½ h.p. or larger motor. V-pully drive and multi-purpose drive spindle. Disc sander accessory, \$7.95 add'l. Nitre guage, \$1.95 add'l. 15 lbs., f.o.b. factory

3' WOOD LATHE ... 6" swing. Same pre-cision and speed as \$40 with tubular steel bed. units. Sturdy cast iron Lever action tail stock, two-speed pulley, fits any motor. Set of 3 high speed turning chis-els, \$6.95 add'l. 4" face plate, \$2.50 add'l. 15 lbs., f.o.b. factory



4' WOOD LATHE size, does the same job as \$75 units. Tubular steel bed rails, screw action tail stock, three-speed pulley. Use any motor. 3 high speed turning chisels, \$6.95 add'l. 4" face plate, \$2.50 add'l. 30 lbs., f.o.b. factory \$3910

DRILL PRESS Precision 32" standard features and many extras. Depth of throat up to 16". Head tilts and table stays level. Drills to center of a 32" circle. All cast iron and steel. Takes standard motor. 32 lbs., f.o.b. factory



WOOD SHAPER KIT Makes beads, coves, and-groove joints, etc. Accurate cuts at high speeds. Sealed greased-for-life ball bearings. Less wood. Takes 14 h.p. motor or larger, standard cutters. Optional hold down assembly, \$3.95 add'l. 9 lbs.,

down assembly, f.o.b. factory \$2595

| Please send me the units checked. Payment in fu | ersford, Pa. 19468 |
|--|---|
| deposit each item enclosed, balance C.O.D. I mus | Il enclosed \$ or \$ |
| 10 days for full refund. No questions asked. | t be fully satisfied or will return unit with |
| 8" Power Saw at \$29.95 Standard Rip Fence at \$4.50 Long Cabinet Rip Fence at \$5.50 Bail Bearing Spindle at \$7.50 Beit Sander at \$28.00 Disc Sander Attachment at \$7.95 Mitre Guage for Sander at \$1.95 Drill Press at \$48.80 G.E. Motor \$24.90 (with other item) \$29.8 | Jointer Planer at \$37.80 Ball Bearing Spindle at \$10.00 Wood Shaper Kit at \$25.95 Opt. Hold Down Assembly at \$3.95 5" Swing 3' Lathe at \$19.80 12" Swing 4' Lathe at \$39.10 Face Plate \$2.50 (either Lathe) Turning Chisels \$6.95 (either Lathe) (purchased separately) |

\$3780

ANDREA DORIA

(Continued from page 119)

tiled deck. Most of the tiles had fallen off and there were only a few remaining over the undercovering. I made a 10-foot excursion to either side; it looked like a disaster area and pretty dangerous to go poking around in the stuff. The water was fairly clear inside, but there was a lot of sediment on everything.

"I continued on down, playing my light over the rubble, and discovered a room still intact-also a set of stairs. The walls of this room must have been made of metal. It was the jewelry shop! I got to within 10 feet of it and could see mud circled in the corners of the windows, like snow on glass panes in the winter time. I couldn't see a thing on the inside.

"But immediately above me was a pile of debris precariously supported by only a couple of small timbers which had fallen and propped themselves against the wall. I realized that if my umbilical brushed against any of it, it could have collapsed and buried me. I couldn't get any closer than 10 feet."

The possibility that the interior of the ship was in bad shape had been discussed. But no one had imagined that it would be the scene of devastation we found,

Chris and Don had studied other liners and had found interior walls were made of metal with wood paneling on either side. (The metal would tend to contain a fire.) That was a standard method of construction.

But a new method had been used in the Doria. Her walls consisted of a nonmetallic insulation sandwiched between two wooden wall panels. When the wood disintegrated, nothing was left.

Thris and Don had anticipated ✓ salvaging at the least \$2 million from the Doria, but that would have been possible only if the interior of the ship had been in reasonably good condition. The handwriting was clearly on the wall. The entire expedition had been at sea for 23 days. We had two scheduled days left, but with a report of bad weather heading our way, George Powell wisely decided to bring Mother to the surface and call an end to the expedition. It just wasn't worth risking the divers' lives for the little they might be able to salvage in the remaining two days.

In all, very little was salvaged. The most valuable find was an intact bottle of French perfume. But I don't think it will command a price of \$150,000—approximate cost of the expedition. Diving is a risky business in more ways than one.

Sylvania goes one better.



We train you on two TV's instead of one. [You keep both]

With Sylvania's Master TV Career Program, you get not just one but two TV sets. Color and Black & White. Both solid-state.

Both designed to give you the solid, practical experience you need. Both yours to build, learn with and keep.

With all Sylvania Career
Programs you get our exclusive
Autotext method of instruction, a
modern, step-by-step approach to
learning, which gets you through the
basics of electronics quickly and easily.

An optional Cassette System, a technique that adds an extra dimension to learning. It's almost like having an instructor right in your own home. As you play the tapes, he'll guide you

through your lessons, explaining as you read, going over schematics and reinforcing everything you learn!

Plus a choice of Programs that can lead to any number of career goals. In TV, communications, automation, digital and solid-state electronics. And in fields you haven't even dreamed of.

Plus specialized advanced training and carefully-engineered Project Kits for that "hands-on" training you need to make it in the world of electronics.

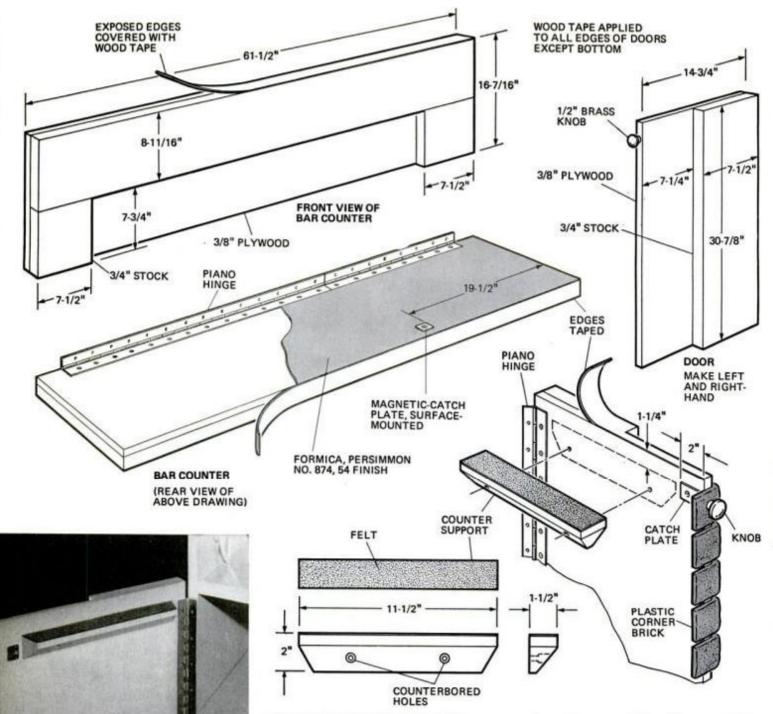
Throughout your training. Sylvania makes that extra effort to go one better.

Send the card or mail in coupon today for our FREE Catalog. And go with Sylvania.

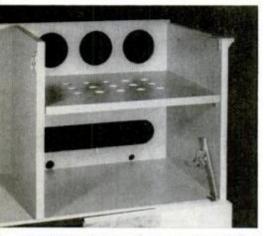
| Home Study Divis Sylvania Technica 909 Third Avenue New York, New Yo | al Systems, Inc. |
|---|------------------|
| Name | |
| Address | |
| City | |
| State | Zip |
| Age | |

SYLVANIA

SYLVANIA



Counter rests on felt-covered support attached with screws to inside of each door.



Openings at rear air compartments for changer and stereo receiver components.

FIREPLACE OPENS FOR FUN (Continued from page 79)

to moving it. Small screws are used to attach the brackets. The hinged section of the top rests midway on partition A and is fitted with an altered pivoting bracket which opens the lid simultaneously as you lower the counter. Two brackets, right and left-hand, are needed since a part of one is required to lengthen one arm of the other. Placement of the bracket in relation to the counter and lid is shown in the drawing at the top of page 128.

Note that the cove molding is not fastened to the underside of the top overhang across the front; here it's nailed and glued to the face of the counter only and returned at the ends for a distance of 11% in. as the detail shows.

I made the plywood back in three

pieces for ease of handling, particularly so I could cut the vent holes for the changer and stereo receiver compartment with a hole cutter on the drill press. Here adequate ventilation is important.

The upper face of the fireplace, which becomes a counter when lowered, consists of three \(^34\)-in. pieces glued and nailed to \(^36\)-in. plywood and then surface-hinged to the main cabinet shelf with two lengths of piano hinge. The plywood surface (plus bar area) is faced with decorative laminate (Formica), and the three exposed edges of the counter are covered with wood-veneer tape. The face side is decorated with three pressed-wood overlays I purchased from Albert Constantine and Son.

The two speaker-compartment doors are made right and left-hand,

(Please turn to page 128)

★TRAIN AT HOME TO BE A

If you like to ride a cycle for fun . . . learn how to fix it for profit! Can you imagine

a better way to earn your living? And to make it even better, the pay is great—whether you choose to work in a cycle shop for someone else or decide to start your own cycle repair business.

Now, thanks to North American, there's a fast, easy way to get the training you need . . . at home in your spare time. No need to quit school or your job. Experts show you step-by- step everything from minor tune-ups to major overhauls.

CYCLES ARE BIG BUSINESS

... AND SO IS FIXING THEM! More than 3 million cycles are registered in the U.S. today, Plus an estimated 3 million more dirt bikes. But, there are fewer than 10,000 motorcycle mechanics available to repair them. No wonder career opportunities are so great . . . and getting better every day. Rush coupon for FREE "Motorcycle Mechanic Career Kit."



Special Cycle Tools and Test Instruments included to start you fast!

Professional tools plus your North American "know-how" turn you into a skilled mechanic. We include wrenches, sockets, gauges, test instruments and more to get you started fast! Yours to use during training...yours to keep in your action-packed career as a motorcycle mechanic.

NORTH AMERICAN SCHOOL OF MOTORCYCLE REPAIR

4500 Campus Dr., Dept. PB0C4 Newport Beach CA 92663



You'll Be the Center of Attraction in Your

Circle of Friends Be the envy of friends & neighbors as they flock around to watch you tear down and tune-up all kinds

of motorcycles. And just think of the satisfaction in knowing you've got the best performing bike in town. Plus, you can make extra dollars fixing motorcycles for your friends and neighbors.

SEND FOR FREE CAREER KIT

Get all the facts now...with-out obligation. Be the first in your neighborhood to cash in on the big demand for motorcycle mechanics. Mail Coupon Now!

Careers by Home Study



■ NORTH AMERICAN SCHOOL OF MOTORCYCLE REPAIR 4500 Campus Dr., Dept. PBOC4, Newport Beach, CA 92663 Rush FREE "CAREER KIT" on how I can become an expert motorcycle mechanic. No salesman will call.

| NAME | AGE |
|---------|-----|
| ADDRESS | |
| | |

STATE

LEARN GUN REPAIR

at home in spare time Good Business - Great Hobby! 10¢ brings book, full facts. APPROVED FOR VETERANS MODERN GUN REPAIR SCHOOL Dept. PM51 4225 N. Brown Av Scottsdale, Ariz, 85251

10.000 Students Since 1946

Locate from a LONG DISTANCE! with Ultra-Sensitive DIRECTIONAL Locator SEND FOR FREE INFORMATIVE BROCHURE RESEARCH PRODUCT



CHTY_____STATE____ZIP____

...Manufacturers Need

CITY

New Products

If you have an idea for a new product, or a way to make an old product better, contact us, "the idea people." We'll develop your idea, introduce it to industry, negotiate for cash sale or licensing.

Send for our FREE "Invention Kit." It has a special "Invention Record Form," an important brochure, "Your Invention—Its Development, Protection & Marketing," and a Directory of 500 Corporations Seeking New Products. You'll learn how ideas become a reality! how ideas become a reality!

RAYMOND LEE ORGANIZATION 230 Park Avenue, New York, N.Y. 10017

I'd like to find out how to take action on my

| | co. ocilo i i | | | | |
|---------------|---------------|------------|------------|-----------|---------|
| Name | Pie | ease Print | | | |
| Address | | | | | |
| City | | State | Transite . | Second In | Zip |
| SAN EDANCISCO | LOS ANGELES | TORONTO | VANCOUVER | DENVER | CHICAGO |



Unique Sweazey System develops your watch repair skills step by step at home in spare time. No previous experience needed, Low tuttion, Free sample lesson and full information.

CHICAGO SCHOOL OF WATCHMAKING Dept. 115, Fox River Grove, III. 60021

CATALOG PRINTED at Huge Savings!

Pay as little as 4¢ apiece for 8-page catalogs; 5% for 16 pages. Similar savings on larger catalogs. You send camera-ready copy, we print and ship within 7 working days. Prices include shipping costs! Get sample catalog, layout sheets, price list, etc. Send for free kit.

Write today to Dinner & Klein Web Printers,

| Be a VETERINA | RYASSI | START | |
|-------------------------------|--------------------|--------|--------------|
| Lab Aide. Zookeeper. Pet | Shap/Kennel Ov | ener A | (B) (B) |
| MEN - WOMEN! Train at h | | | 1 2 3 |
| Send for Career I | H-ALL | FREE! | |
| Name | | -Apr | areers |
| Address | | | in. |
| North American School of Anim | al Sciences, Dept. | PBOC4 | Animai |
| | | | 1 A |

Importer to you Low Prices!

STANDARD AND ELECTRONIC



DAY HOME TRIAL -try before you buy

Buy Direct from Importer. Big selectionover 40 models in wide choice colors, sizes, switches, most wanted Famous features. makes-the favorites of students, teachers, professionals. Save middleman profit! 5 Day Trial - try before you buy! Easy terms. Trades welcome. Satisfaction assured. Write today.

Low Down Payment - EASY TERMS PEE Color catalogs and

| • | *** | _ | Difect | I HICE LIS | • |
|-----|-------------|-------|---------|--------------|------|
| | | | | | _ |
| Acc | cordion Cor | p. of | America | - Dept. R | -15 |
| | | | | ago, III. 60 | |
| Sei | nd FREE C | ATALO | GS and | Special Pr | ices |
| | o send inf | | | ., | |
| | Hohner 't | | | ons | |
| | Cordovox | | | | |
| _ | me | _ | 110000 | | |
| mai | me | | | | |
| Ad | dress | | | | |

State ☐ Check if you have a Trade-in!

JANUARY 1975

125

They satisfied then.



Warning: The Surgeon General Has Determined That Cigarette Smoking Is Dangerous to Your Health.

Filter King: 18 mg. "tar," 1.2 mg. nicotine; 101's: 19 mg. "tar," 1.4 mg. nicotine Av. per cigarette by FTC Method

Материал, зашищенный авторским право

They satisfy now.



New Chesterfield Filters.

Back in 1922, Chesterfield had a reputation for great straight cigarettes.

Our promise then: They Satisfy.

Now, Chesterfield adds a filter cigarette, with its own rich, new filter blend. A blend as full flavored as all our tobacco experience could make it.

Our promise now: They Satisfy.

So no matter what you're smoking now, it's time to try new Chesterfield Filters.

GIANT POSTER OFFER

A full color 2'x 3' reproduction of the classic 1922 Chesterfield ad on the left is available in limited quantity. Send 2 Chesterfield Filter or 101's pack bottoms and 75 cents for postage and handling to: CHESTERFIELD POSTER OFFER #1

P.O. BOX 60-1944

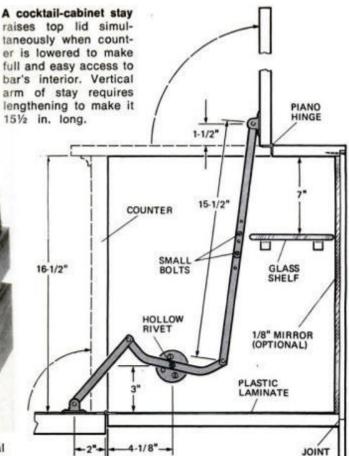
Minneapolis, Minnesota 55401.

Offer void to persons under 21 years of age. Good in U.S. only, except where prohibited, licensed, taxed or restricted by law. Offer expires June 30, 1975. Allow 4 to 6 weeks for

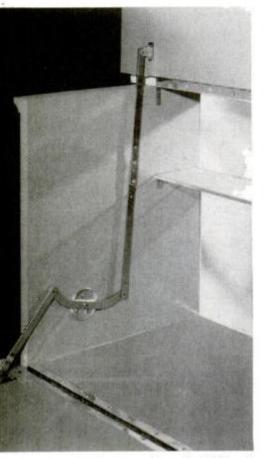
They S



Compartments in original fireplace were made to accept these General Electric audio components which include two air-suspension, three-way speakers (Model SA72), deluxe FM/AM stereo receiver (Model RA200) and three-speed automatic record changer (Model CA950.) Where other components are used, overall size of compartments is simply altered if need be to accept larger units.



Two lid stays are required since a second one is needed to extend length of one. Pair of stays is \$6.95 postpaid from Way-Mar Co., Box 164, Hartsdale, N. Y. 10530.



Length of vertical arm of standard lid-andcounter stay is extended by adding part of second stay. Rivet is removed and flat bar joined with small roundhead bolts.

FIREPLACE OPENS FOR FUN

(Continued from page 124)

14¾ in. wide, hinged along the outside edges and made to clear the hearth by ⅓ in. The inside of each door is fitted with a counter support block placed 1¼ in. down from the top. Covered with felt so they won't mar the face of the counter, the blocks support the counter at each end when the doors are swung open. Both counter and doors are held shut with regular magnetic cupboard catches.

The recessed face of the counter and the two doors, plus the firepit, are covered with terra-cotta plastic brick called Lexington, It's sold by Sears, looks and feels like real brick and is applied with a gray, gritty adhesive that, when dry, looks like real mortar. Each brick measures 1/4 x 21/8 x 8 in. and you'll need 114 plain brick-48 for the back of the firepit, 24 for each sidewall and 18 for the counter. Each door requires 12 corner brick which come with a 35%-in. return that must be cut back to 1/2 in. The plastic brick cuts easily with a fine-tooth blade on your table saw or by hand with a hacksaw.

Apply the brick to the doors first. Make a dry run without adhesive, spacing the courses 3% in. apart and marking their location for later reference. Place the bottom course even with the bottom edge of the door, the top course $\frac{3}{8}$ in. down from the top. Full instructions for cementing the brick and striking the joints come with each package. Note that there are 13 brick courses in the original fireplace. I felt this was one too many—that it made the firepit too high—so I cut it down to 12 courses as shown in the drawings.

Continue by facing the firepit with brick, first each sidewall, then the back. Use the courses on the doors to align the courses in the firepit, and keep the lower brick courses \(\frac{7}{8} \) in. up from the bottom to clear the hearth.

Stagger the mortar joints brickfashion, with the end bricks in every other course being cut in half. You may find it necessary to trim the bricks in the top courses to make the 3/8-in. mortar joints space out evenly. Trimming the width of the bricks can be done easily with a sharp hand plane.

Your completed fireplace can be painted as you like. After applying an enamel undercoater, I used Devoe's Velour semigloss alkyd enamel inside and out, painting the interior surfaces, including the underside of the bar lid, Spice 025 and the exterior Frappe S11. ***

HALF-PINTS FOR HIGHER MPG

(Continued from page 61)

whole thing. We have an isolated cross member that is truly isolated. The engine is truly isolated from the rest of the car."

On maneuverability: "We wanted superior maneuverability. So we took BMW as the target vehicle. Now there's a car that really whirls around a track. That's what we wanted. We think Pacer is going to live in the future, at least to the end of the decade and possibly into the 1980s. So we built a car that will handle like a car of the future." (Other sources say Pacer will have rack-and-pinion steering, but this has not been confirmed.)

One goal AMC was shooting for in the early development was to build the car so it could take a bump from any angle without damaging the sheet metal. Not so it would be immune to damage in a full-scale crack-up, but so it could give or take a nudge from another car without crinkling the metal.

"We didn't quite accomplish that," Dick Teague reveals. "But we came close. Something like 60 to 65 percent of the surface of the car is protected. We don't flash a lot of sheet metal that can get banged up."

What about the engine? The rumor is that Pacer was designed for a rotary. It's no secret AMC has negotiated a deal to purchase rotary engines from GM. GM has had serious problems with the engine and has delayed it twice. It is now in limbo. Where does that leave AMC? Without a rotary, the company has no choice but to use a conventional piston engine. That's trouble because a piston engine is considerably larger than the no-piston Wankel. As Pacer has virtually no hood to accommodate a large engine, does that mean the engine will project back into the passenger compartment?

Pacer is expected to carry AMC's 232 c.i.d. in-line Six. The company hasn't confirmed this, but the 232 is

the logical engine to use.

"We designed the car to accept several different powerplants," Meyers comments, "current production engines as well as engines we are working on for the future. If our plans develop on the rotary as we anticipate, it could be used in Pacer later on. I'm not saying it will be used. I'm saying it could be used."

(I've talked about the rotary with a number of AMC officials over several months, before and after GM suffered its setbacks with the engine. The impression I get is that American Motors is much more optimistic

about the engine than GM. AMC has explored the idea of buying the engine overseas. If GM dumps the rotary or delays too long, AMC might buy engines from foreign sources. It's highly unlikely AMC would tool up to produce a Wankel on its own in the face of opposition to the engine from other car firms.)

What about reports that Pacer's engine is set back so far it intrudes into the passenger compartment?

"That's just not true," Meyers replies, "and I hope you'll print this, because you'll be the only one with the straight story.

"The car was designed so that whatever engine is used, it will fit further back in the firewall. But in no way does it project into the passenger compartment. That would defeat what we set out to do-give the occupants the maximum amount of room in a small car. Why would we take that away by stealing space for the engine in the passenger section? We think the inside of a car should be for people, not to accommodate the engine."

AMC has made a big thing in recent years of its cars being easy to service and the routine maintenance the owner can do himself. Will Pacer be an easy-service car?

Dale Dawkins fielded the question. "I can't think of anything in that area on Pacer that we don't have on our other cars. But Pacer will be as friendly to mechanics and do-ityourselfers as our other cars.'

Yould Pacer become the car for A American Motors, the top seller? "It's going to be a big-volume car," Meyer predicts. "This company is beyond the time of bringing out new cars to pick up an extra 10.000 sales or an increment of 20,000. We're interested in no less than 100,000 cars a year. Maybe double that?" he adds, putting a question mark after the statement. "Sure, it could become our No. 1 car, but it's too early to predict that."

American Motors has discovered a new word to describe Pacer. The word is controversial. "It's going to be a controversial car." says everyone from board chairman Roy Chapin on down. Controversial means some people aren't going to cotton to the car. This is the first time in the history of the American auto industry that a car manufacturer has said in advance of bringing out a new product that some people may not like it.

That takes guts. That's different. That's Pacer.

JANUARY SALE BLACK WALNUT MANTEL CLOCK CASE KIT



%" & 1" Solid American Black Walnut • Precut and Sanded • No miters to cut • No Moldings to assemble • Brass Finished Hardware included • Door assembled • Illustrated Instructions.

Reg. low factory price \$61

16" x 114" x 64"

Westminster Quarter Hour Chiming, Hour Striking Brass Movements with Steel Pinions • 4 Jeweled Platform Escapement for accuracy • Completely assembled . Chime Rods, Hardware, and Hands. With Brass Moving Moon Dial (as shown in photograph)-\$94 . . . with Tempus Fugit Dial-\$79 . . . with Square Dial-\$73. Shipping and Handling Collect. Major Credit Cards Accepted. Ala. Res 4% Tax.

Free Color Brochure, But SALE ENDS JANUARY 31st SATISFACTION GUARANTEED CROWN CLOCK CO.

P.O. Drawer G-14, Fairhope, Ala. 36532





Base Kit Price 10 H.P.

8 H.P. Models from \$499.95

Shock-mounted 10 h.p. 399cc Briggs & Stratton Engine, 4-speed Peerless transaxle, geared auto-motive-type steering, and disc brake on a heavy '\(\frac{4}{5}\) thick steel frame, with towing hitch, make Yard Bronc tough. Standard electric start, floating front axle, wide 18x8.50x8 rear and 15x6.00 x6 front tires, deluxe seat and steering wheel add easy handling comfort. Step by step instructions help you assemble tractor in about 10 hours with the steel of tions help you assemble tracto hours using just regular tools.

Accessories: 36" mower deck; 42" dozer blade; snow thrower; larger muffler; chrome hub caps; and rear tire chains.

For free catalog, more information, write:

HEALD INC., Dept. PM1, P.O. Box 1148, Benton Harbor, Michigan 49022

RENT FREE-Resort Living!

BE an Apartment, Motel, Hotel Manager



Train spare-time, at home. Many positions open to trained men, wo-men, couples, retirees, in cities, at the sea shore, mountains or desert, Good salaries. FREE rent, fringe be Age no barrier. Send NOW for FREE career book. No salesman will call. Approved for Veterans Benefits.

MOTEL-HOTEL SCHOOL, Dept. PM1 6851 E. Thomas Rd., Scottsdale, AZ 85251

Print Your Own



Cards, Stationery, Advertising, labels, tickets, announcements, QSL cards, greeting, sympathy, prayer cards, etc. Save money. Print for others, good profits. Have home print shop, Pays for itself in a short time. Sold direct from factory. Easy rules sent. We supply everything. Send 25c for catalog. MELSEY PRESSES Meriden, Conn. 06450

MAIL THIS COUPON TODAY Kelsey Presses Dept. 75-BN Meriden, Conn. 06450

I enclose 25c send big catalog and free samples.

| Name | | | |
|---------|-------|-----|--|
| Address | | | |
| City | State | Zip | |



How to remodel on a shoestring.

Send for these 3 new, informationpacked books on plywood secrets to remodeling. Not run-of-the-mill solutions, but top plywood designs. At very civilized prices.

American Plywood Association Department PM-015 Tacoma, Washington 98401

- ☐ Send me all 3 books. (\$1.00)

 Send me the following: (50¢ each)
 - ☐ The Art of Adding On.
 - ☐ Some Solutions for Clutter.

☐ Easy Changes, Large and Small.

Name — Address —

City _____ State ____Zip __

AMERICAN PLYWOOD ASSOCIATION

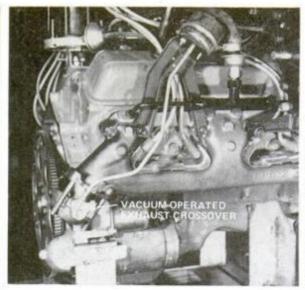




Your own doctor's prescription will be filled, or your present lenses duplicated.
The latest fashions. All types of lenses available Accuracy and perfect fit absolutely guaranteed.

SEND FOR FREE FAMILY CATALOG. TODAY!
1959

PRISM OPTICAL INC.
Dept M-38 135 West 41st St M X M X 10036



Exhaust crossover valve shown at left on new Chevrolet 262-cu.-in. V8 is vacuum-operated. Vacuum shuts valve, directing exhaust to intake manifold for quick warm-ups.

Drain plug in General Motors' catalytic converter allows for a change of pellets. Procedure is lengthy, requires use of vacuum cleaner or other suction device for pellet removal.

SERVICE TIPS FOR '75 CARS

(Continued from page 96)

cascades through a series of tests directed by a logic circuit. When it finds the defect, a red light pinpoints it. If a mechanic were to check it terminal by terminal with an ohmmeter, he'd be at it all day. There are also automatic electronic testers for ignition modules and voltage regulators. All have protection devices so that opens or shorts will not destroy them.

This is probably the best way to protect the average customer with quick diagnosis. The trouble is that the do-it-yourselfer gets left behind because the test instruments cost between \$200 and \$400 apiece, so the cure is worse than the disease. Do you feel, as a do-it-yourselfer, that you are a vanishing breed? If you do, you might, of course, want to let some of the folks at Chrysler know about it!

Chrysler has devoted considerable time and effort to making service a long-lead item rather than an after-thought. While cars are still in planning and styling stages, bucks and mock-ups are built to check service accessibility. This has led to instrument panels you can reach from the front without dropping the steering. There are also widened side fender shields and an engine that's been moved over to ease sparkplug service on the '74 and '75 C bodies (the big ones).

Now that lead-free fuel is here, Chrysler has developed an interesting approach to 50,000-mile sparkplugs, so don't let yourself be talked into frequent plug changes. The fouling path on the new plug is 0.790 inches instead of the usual 0.450. Also, the electrode tip is much smaller and thinner and better resists corrosion. A platinum tip is welded to a mild steel electrode and chrome-



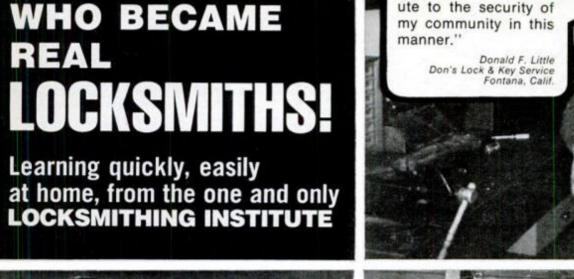
plated. Completing the weld between these two dissimilar metals turned into quite a research project.

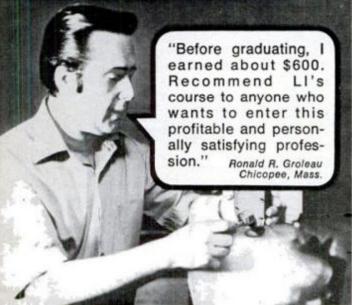
Concerning late-style GM products, where the voltage regulator is integrated into the alternator, there is no need to trade in the alternator for a "rebuilt" every time something goes wrong. You can simply remove the alternator, take out the three screws that hold it together and reach both the voltage regulator and the heat sink with the diodes. A half-moon-shaped opening in the alternator cover lets you reach and ground a voltage regulator terminal with a screwdriver. Inserting the screwdriver and momentarily revving up the engine has the effect of giving you maximum current flow by taking the regulator out of the circuit. If you had insufficient charge without doing this and you get a full-rated charge by inserting the screwdriver, replace the voltage regulator module.

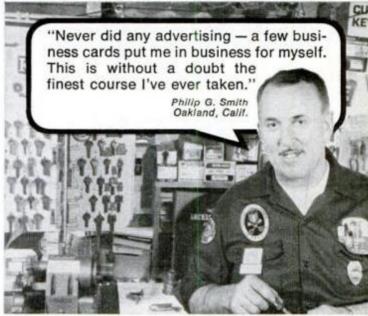
Incidentally, new 100-amp, alternators have become optional—a good item if you tow a trailer.

There's a handy new item for the Vega. The '75s have an electronic coolant level indicator built in the radiator. When it's uncovered, a light comes on and tells you to refill with coolant, saving you, and GM, a burned-out engine!

HERE ARE REAL PEOPLE WHO BECAME







"Started as a hobby. Course changed my

whole life. Am thrilled to be able to contrib-

You can have equal success -Locksmithing Institute can be the key to a highly paid successful future!

OCKSMITHING is truly the "neglected rofession." Opportunities for big ash earnings, spare time or full time, xist in all parts of the country. Almost rdless of age or education, even minor physical handicaps, you acquire professional status in an vable trade where work is fun. can be your own boss-in your business!

us send you sample lesson , full details of the home trainand, most important, complete information on the glorious opportunities for locksmiths now that the nation is so security conscious.

See for yourself the list of more than 300 parts, tools and pieces that we furnish with the course. All your files, tweezers, cylinders, assemblies, extractors, plus locks, keys and door handles are included-EVEN A FULL SIZE ELECTRIC KEY MACHINE with which you can make money at once.

Write today...no obligation.

NO OBLIGATION-NO SALESMAN WILL CALL!

We'll mail you full information so that you can examine it, without obligation, in the privacy of your home, at your leisure.

LOCKSMITHING INSTITUTE

Dept. 1110-015 Div. of Technical Home Study Schools Little Falls, New Jersey 07424

YES, rush me your free "Opportunities in Locksmithing," plus full details on moneymaking opportunities, key machine and tools, sample lesson pages, tuition and easy payment plans.

Name

Address

City

Zip Check here for information on Veterans Benefits.

Division of Technical Home Study Schools

Dept. 1110-015

Little Falls, New Jersey 07424

Licensed by State of New Jersey. Accredited Member National Home Study Council. State Approved Diploma. Approved for Veterans Training.





EARN WHILE YOU LEARN



MODERN OUTDOOR EQUIPMENT REPAIR SCHOOL

LANTERNS - STOVES - HEATERS - COOLERS TENTS - BACK PACK GERR - PROPANE CONVERSION CAS ENGINES - RODS - REELS - FISHING TACKLE

MODERN OUTDOOR EQUIPMENT
REPAIR SCHOOL DEPT. PME1
4225 N. EROWN AVE., BOX 8, SCOTTSDALE, ARIZONA 85251

WRITE TODAY! 104 BRINGS FULL FACTS

FREE CITY STATE 21P BOOK NORTH AMERICAN SCHOOL OF ACCOUNTING DF. PROCA

IS THE CHUNNEL FOR REAL?

(Continued from page 93)

it. Quickly retaliating, Low and de Gamond formed the Anglo-French Submarine Railway Co. At one moment, it looked as though Hawkshaw's tunnel would be built from the French coast, while his rivals' version would emerge from Dover, England. The two governments beinvolved in unbelievable came amounts of paperwork and treaties. Many difficulties were envisaged, important ones like which police force would do the arresting if a crime were committed in the tunnel.

By 1881, the wrangles and paperwork were over. Although de Gamond was now dead, his plan with Low won the day, and work actually started on the English side of the water, managed by a new enterprise called the Submarine Continental Railway Co. It seemed obvious that within a few years grateful travelers could shuttle between London and Paris without getting seasick.

Suddenly, in 1882, the Board of Trade in London commanded work to stop. Among a growing number of British, there was an increasing distrust of all things Continental. There were revolutionaries abroad who would find it too easy to enter Britain. Worse than that, the military risk was one which army commanders were just not prepared to take. Precise details of the threat were hard to come by, but the general impression was that one day several trainloads of Froggies, armed with muskets and sabres, would draw into the platforms of London's Victoria Station, shoot the porters and ticket collectors, and rapidly take over Buckingham Palace. The French were appalled. The following year, the Chunnel was officially abandoned.

It was more than 30 years before the next workable scheme came to light. Two first-class engineers-Sir Francis Fox (English) and Albert Sartiaux (French)-came up with a plan in which the trains would be powered by that novel force, electricity.

This approach was to solve many problems, and the public had ever reason to think that the tunnel would soon be built. But the public reckone without the top brass of England Imperial Defence Committee, wi firmly quashed the plan on th grounds of national security.

Seven years later, in 1913, th British prime minister looked at the matter again; once more, the generals turned it down. Perhaps, on this occasion, the generals were right; for within months there was war, and France was swarming with hostile German troops.

When war was over the traveling public of Britain and France might have been excused for relegating the Chunnel to the realms of science fiction; it seemed as unlikely as putting men on the moon.

The whole question was re-examined in 1924 and 1929. Each time, the generals turned it down. The year 1936 saw the advent of a trainferry between Dover and Dunkirk. A passenger could board in London and not leave his seat until he stepped off in Paris. Perhaps the need for a tunnel now seemed less urgent—although many seasick travelers would not have agreed.

Came World War II: With 300,000 Allied troops awaiting evacuation from Dunkirk, the generals showed their flexibility. They said it was a pity we didn't have a tunnel. The thought gave the War Office considerable worry. What if the Germans went to work on the 60-year-old diggings of Hawkshaw and de Gamond? Fearful that rows of spiked

Electric trains would carry regular and containerized freight, passengers and autos with passengers.

helmets might suddenly pop out of Dover's white cliffs, sensitive electronic instruments kept an ear for underground tremors during the rest of the war.

By 1947, when yet another study group started to examine the idea, no progress had been made since the embryonic diggings of 1880. The group pronounced it a jolly good idea, but nothing was actively done.

In 1957, the Channel Tunnel Co. held its seventy-sixth (would you believe it?) annual general meeting. Usually, a mere handful of despondent stockholders could be expected to turn up. This time, the hall was packed to hear financier Leo d'Erlanger give his chairman's statement. There were, he said, conversations being held with the Suez Canal company to explore the building of a tunnel under the Channel! Moreover, an American company had recently been formed to study the possibility of just such a tunnel!

Everyone there seemed happy with the news—everyone, that is, except Field Marshal Montgomery, who voiced the old military caution: "Why give up one of our greatest assets and make things easier for our enemies?"

The British government acted predictably—it formed another study group. Three years later, just to introduce further delay, officials decided to spend several million pounds on a geological survey of the proposed route. In 1968, the Minister of Transport gave a progress report: "There is no point in concealing the fact," he said, "that this has taken longer than expected."

In 1971, the French and British governments announced that if there were no further obstructions, the tunnel would be completed by 1978.

Here's how the latest version of the Chunnel shapes up:

- Cost: More than \$1 billion.
- Construction: Two main singletrack rail tunnels (about 22½ feet in diameter) on either side of a smaller service tunnel. Total length to be 31 miles—23 miles under water. Ventilation would rely on the piston effect of trains—they would push out foul air and suck in clean air.
- Trains: Electric trains would carry regular and containerized freight, passengers, and autos with passengers. In double-deck trains, passengers would either stay in their cars or wander up and down the train. Time of crossing: one hour, including loading and unloading, and customs inspections. Cost for car and two passengers: about \$45.
- Frequency of trains: Hourly passenger trains from London to Paris. In peak periods, car-ferry trains would run every four minutes. There's also talk about the possibility of a traveler rolling his car aboard a special train at some distant point, say in northern Scotland, for a continuous ride to any number of destinations on the Continent.

Oh, wouldn't it all be luvverley?

As this is written, however, there are a couple of unsettling developments to report:

- It was announced some time back that the earliest date of completion for the Chunnel has been put back two years, to 1980. This will automatically increase the cost—to an estimated \$2 billion—because of added interest costs and inflation.
- French and British government leaders recently met, conferred and announced that, in view of the parlous economic state of both countries, they "would not be averse to a slowing down of the project."

How, one wonders, can you slow down a project that already has taken 172 years not to get started? ***



Planer Molder Saw

Three power tools in one-

a real money-maker for you!

The BELSAW Planer/Molder/Saw is a versatile piece of machinery. It turns out profitable precision molding, trim, flooring, furniture...in all popular patterns. Rips, planes, molds separately...or all at once. Used by individual home craftsman, cabinet and picture framing shops, lumber yards, contractors and carpenters.

Never before has there been a three-way, heavy-duty woodworker that does so many jobs for so little cost. Saws to width, planes to desired thickness, and molds to any choice of patterns. Cuts any molding pattern you desire. Provides trouble-free performance. And is so simple to operate even beginners can use it!

30-Day FREE Trial! SEND FOR NO OBLIGATION—NO SALESMAN WILL CALL RUSH COUPON

TODAY!

SEND FOR SALESMAN WILL CALL RUSH COUPON

BELSAW POWER TOOLS CO.

905J Field Bldg.

Kansas City, Mo. 64111

| BELSAW POWER TOOLS 905J Field Bldg., Kansas City, Mo. 64111 | |
|--|--|
| Please send me complete facts about PLANER-MOLDER-SAW and details about 30-day trial offer. No obligation, no salesman will call. | The state of the s |
| NAME | 1 |
| ADDRESS | 4 |
| STATE ZIP | 5 |
| | 905J Field Bldg., Kansas City, Mo. 64111 Please send me complete facts about PLANER – MOLDER – SAW and details about 30-day trial offer. No obligation, no salesman will call. NAME |

The Bargain Hunter

iller Users!





If the tiller you've been using has its revolving bludes in FRONT and NO power to the wheels (See 'TORTURE!' above left), you won't ever be happy with it again once you try the TROY-BILT® Roto Tiller-Power Composter which has its revolving blades in the REAR and POWER DRIVEN WHEELS — and is SO EASY to use you guide it with just ONE HAND! (See 'JOY' above right). You do NOT have to walk behind it, leaving footprints! It does NOT shake you half to death! It leaves NO wheelmarks! There's NO unbearable tangling! The TROY-BILT® is now in its 14th great year. SO if you want tilling to be a JOY instead of TORTURE from now on, please clip this ad now and send today for the whole story of this wonderfully different and better design in tillers! We'll send complete details, including prices and OFF-SEASON SAVINGS now in effect for a limited time! Just ask for FREE BOOKLET. TROY-BILT® Roto Tiller-Power Composters

Dept. 50191 102nd St. & Ninth Ave., Troy, N.Y. 12180 SWITCHBLADE COMB



Amazing, new comb looks like a switchblade knife. I'ush button in handle and spring action instantly snaps out a fine quality comb! Quality all metal construction has hand-some bone like handle. 4%" closed 8%" open. Replaceable comb. Has safety lock, will not open in your pocket. Use 30 days, mency refunded if not pleased. IF BROKEN IN 10 YEARS, WE WILL REPLACE AT NO CHARGE! Great conversation piece, practical too, Only \$1.88 us pay postage. Order today, Grandpa's Shop, Dept. ('M.: 5508 0041 S. Westren, Chicago 60520. GUARANTEED 9043 S. Westren, Chicago 60020 Established 1936, Mail orders only

Full-Size FURNITURE PLAN Roll-Top DESK

Like the one Abe Lincoln used. Au-thentic double-pedestal desk. 30' x 52' x 30'. Boll top unit adds 14' x 52 x 30°. Holi top unit adds 14 to height. Both single and double curve end panel drawings included. You'll love making it. You'll love using it. A woodworkers delight! Complete plan #140 (roll top unit) and #139 (desk) . . both only \$12.00 . . Each \$6.00



FURNITURE DESIGNS, Dept. PO-19 1425 Sherman Ave., Evanston, III. 50201

TANKS

MAKE TIFFANY-TYPE LAMPS

Revolutionary new method. Cartoon design printed on molded form, matching paper patterns, instructions. Many old designs.. At most stained glass dealers. Information:

H. L. WORDEN, Granger, WA 98932



DETROIT APPROVED PICKUP

Original equipment type poly, now available in auxiliary tanks for pickups. Increase gas capacity 40 gals. Far superior to

metal, complete hidden, no body work necessary. Easy 1 hour installation-Truck discounts pay for tanks in a short time. Two tanks, brass valve, hose, complete. Meets Federal Regulations.

PICKUP EQUIPMENT CO. INC. Dept. PM-175, P.O. Drawer C Hewitt, Texas 76710 CALL TOLL FREE 800-433-2386

EXTRA MONEY

DAY

Operate a community sharpening ser-vice with an investment of \$150. Work from your basement or garage. Our manual guides you in profession-al methods of grinding, of business promotion and in pricing your work.



John Rodock says: "Thanks for shipping Model 331. It has paid for itself many times since I purchased it. Please send latest price list on grinding wheels." TREYCO P.O. Box 216-A
North Tonawanda, N.Y. 14120

START NOW...WRITE TODAY

APPROVED FOR VETERANS EDUCATION

DENTAL MECHANIC

SECURITY PRESTIGE GOOD PAY
Learn at home, in your spare time, to make Crowns,
Plates, Bridgework, etc. Dental Mechanics are employed
by Dentiats, Dental Laboratories or open your own shop,
full or spare time. FULL EQUIPMENT OF TOOLS
AND MATERIALS INCLUDED WITH COURSE, Low
tuition, Easy Terms, Write for FREE BOOK about this
ney-making profession that's not affected by automation.
THE McCARRIE SCHOOLS, INC.

132 N. 12th St., Dept. PM 15, Phila., Pa, 19105



FREEI POWERFUL MUSCLES FAST! Fantastic New Discoveries in the science of body-building. Our method will add inches of powerful muscles to arms, chest, shoulders & legs. Learn secrets on trimming the waist with ultra-modern methods-fast! Results Guaranteed! Send for free

brochure. Universal Bodybuilding Box 485 Dearborn, Michigan 48121 FREE Dept. M NAME.

PLEASE PRINT

STREET. CITY____STATE____ZIP___

110 VOLT A.C. GENERATORS

60 cycles, 3000 watts. Wt. 27 pounds, 5"x10" Fanbelt driven from car or pickup. Operates T.V. All power tools, Over 13,000 in service. This is our 24th year. Guaranteed 6 months, \$115.50 Postpaid while supply lasts, Our X1200-watt generator needs no battery. Special price—\$95.00 Postpaid.

Virden Perma-Bilt, P.O. Box 7160 PM, 2821 Mays, Amarillo, Texas 79109

SAVE ELECTRIC POWER!

Save up to 80% electrical power with this unique, inexpensive, portable, permanent and legal method applicable for shops, homes, factories, businesses, farms, sites. 100% Refund Guaranteed if not scientifically sound or if it employs gimmicks. Information \$1.00

CONSUMERTRONICS CO. Box 11373 Lexington, Ky. 40511

\$10 to \$20 in an hr!



FOR COLOR

CATALOG

INVISIBLE VINYL REPAIR

Big, fast earnings with amazing VIP Invisible Vinyl Repair. Big profits, big demand - car shops, homes, bars, motels, buses, etc. Easy, quick,

FREE details by mail. No salesman will call. VIP, 2021 Montrose, Dept. 181, Chicago 60618

woodworking benches woodcrafting lools

Danish crafted SOLID Danish Beech woodworking benches ruggedly made and finished like fine furniture.



and uniquely styled woodscrew drivers from Europe's finest tool-makers. The best the world can offer

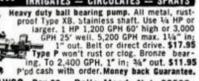
Name Address City State_ LEICHTUNG & GALMITZ, INC. 5187 Mayfield Rd. Cleveland, Ohio 44124



With this low-priced outfit you can drill your own water well at a cost of about 12¢ per foot! Also, this unit can be operated horizontally to drill free-flowing springs in hillsides. A big, fact-filled package and 24-page book "How To Drill Your Own Water Well" is just \$1.00 PPD. (Refundable) "WRITE TODAY"

DEEPROCK MFG. CO. 1001 Lafayette Pkwy., Opelika, Ala. 36801

DRAINS pools, cellars, laundry tubs IRRIGATES - CIRCULATES - SPRAYS



LABAWCO, Box 80, Belle Mead, N.J. 08502



136

PORTABLE STEAM CLEANER

CLEAN:

Engines, Air Filters, Lawn mowers. I year guarantee on fire box, coils. Uses liquid soap, propane fired. Weight 120 lbs. Auxiliary pump required on low water pressure.

WEDCO MFG. INC., Dept. M-5.



VENTRILOQUISM!

FREE INFORMATION

to learn in 60-90 days Home Study Course. RESULTS ARE GUARANTEED! Vent supplies include professionally handcrafted vent figures FULL COLOR dummy catalog: 500 FUN!

MAHER: Box 420P: Littleton Colo 80120

LICKITY SPLITTER
ENDS WOOD SPLITTING DRUDGERY
New low cost COMPACT MODEL . . . for farmers,

camps, cottagers. 10 ton ram, 2 cycles per min., splits logs 25" x 18". Carried in car trunk, placed up-295 lbs. right or hung for storage. For with gas and oil . details write: PIQUA ENGINEERING, INC., Dept. P. Box 605 Piqua, 0. 45356

Small Engines Service Manual =



or Money order with order and

Tells and Shows You How to Fix Small Gas Engines on - LAWN MOWERS, Garden Tractors and Tillers, and Power Equipment.

Tillers, and Power Equipment.

Repair your own gas engines. Make
Money repairing for others. New 10th
edition gives complete information on
repairing small gas engines under 15
kind. Information on all major menufacturers' engines. Authoritative section on gas engine fundamentals.
Trouble shooting and servicing of ignition and carburetor equipment. Illustrated with hundreds of clear and concise exploded drawings. Over 300
pages with practical down-to-earth information for mechanics, and easy
enough for a beginner to follow. Satisfaction Guaranteed or Money Back.

ECHNICAL PUBLICATIONS Div. Dept. PM-175

TECHNICAL PUBLICATIONS Div., Dept. PM-175 1014 Wyandotte, Kansas City, Mo. 64105 _

BUILD YOUR POWER TOOLS



PLANS with \$200 SHAPER SULL-SIZE 2per plan PATTERNS Deductible for 28 years.

KITS FROM \$21.99 TO \$69.99 Featured in Workbench, Popular Featured in Workbench, Popular Science, Mechanix Illustrated. Step-by-step plans, photos show how. No machining. No welding. 64,000 units in use. 5-year full-service guarantee. Send \$2 each for Plans (state tools wanted). Catalog included. Or 25¢ for Catalog! GILLIOM MFG. CO.; Dept. PM-1 St. Charles, Mo. 63301





Whatever practical skills you've been wanting to develop, Audel has comprehensive, step-by-step Guides to help you. They show you all the professional tricks of the trades

in clearly diagrammed and illustrated "howto" steps. They can save for you, over and over. Here are four of Audel's many fields . . .



CARPENTERS AND BUILDERS LIBRARY

1490 pages of the latest in-formation on modern con-struction in four volumes. They cover every phase of carpentry from foundations to linishing with easy-to-grasp, step-by-step instruc-tions. . all situstrated with thousands of diagrams, charts and photos. No. 23169 —4 Volumes—\$21.25



MASONS AND BUILDERS LIBRARY

BUILDERS LIBRARY
Two Illustrated volumes on
the science of masonry and
bricklaying. Packed with
how-to information and directions, rules, processes, definitions, formulas, diagrams,
tables, estimating. A complete and authentic trade refsrence library, 752 pages, No. erence library, 752 pages, No. 23185 — 2 Volumes — \$12.75



PLUMBERS AND

A valuable 3-volume guide to the principles, methods and short cuts of modern plumb-ing. Tools, fittings, fistures, installation, drainage, weld-ing and much more are all covered in these fully illus-trated, easy to understand volumes. No. 23155—3 Vol-umes—\$15.50

SEND NO MONEY-10-day FREE EXAMINATION



MACHINISTS LIBRARY

MACHINISTS LIBRARY
Three books covering the entire field—1216 profusely illustrated pages on practical
fundamentals of basic machines shop operations, setup
and operation of spot machines, down-to-earth data
on toolmaking procedures,
layouts, ligs and fixtures, etc.
... equally valuable for beginners and experienced
men alike. No. 23174—3 Volumes—\$19.50

□ 23169

☐ 23185

□ 23155

23174

SWITCH-BLADE COMB

9" overall length . FUN . PRACTICAL GUARANTEED

EXECUTEK 777 South Central Expressway Richardson, Texas 75080

Spring action comb snaps into place at push of button. Locks shut to avoid opening in pocket. Perfect for converion piece and practical use. Replaceable comb blades 50 cents each. Money back if not completely satisfied.

GUITAR IN 7 DAYS OR MONEY BACK

In this Special Introductory offer you get all
this: TOP GUITARIST ED NAL. 'S famous dispage Secret Nystem worth \$4.00 which shows
you how to play a beautiful song the first day
not any song by ear or note in seven days! Contains 52 botos, so finer placing charts, etc.,
plus

Timer of all the chords used in
popular music; a \$1.00 Chord
Finder of all the chords used in
popular music; a \$7.00
Guitarist Book of
Knowledge; and the
extra special \$1.00
value NEW wallet size funfor Device for funlog any
guitar by ear.

Total Value \$2.00 SEND NO

Total Value \$3.98 SEND NO SOLUTION SEND NO MONEY:

send your name and address. On delivery nay post-\$3.98 plus C.O.D. postage. Or send \$1,188 plus 50r using and handline charges with order to save C.O.D. s. (Norry, no C.O.D. outside Continental U.S.A.—re-with order.) Moter Heek Guarantee.

ED SALE Studio 134-A, Avon By the Sea, N.J. 07717

MONEY BACK **QUARANTEE**

Send no money! We'll send you any Audel Guides for 10-day FREE EXAM-INATION. If you keep them, you may use our easy payment plan. If not completely satisfied, return them for retund



THEODORE AUDEL & CO.

Division of Howard W. Sams & Co., Inc. Indianapolis, Indiana 46206

Theodore Audel & Co. -- Self Improvement Publishers since 1879 4300 West 62nd Street, Indianapolis, Indiana 46206 Please main me for 10 days. FRE EXAMINATION the books I have checked at right. I agree to mail \$3 in 10 days for each set ordered and to further mail ½, of the purchase price 30 days later, with balance plus shipping costs to be mailed within another 30 days. I may return the books for refund if not completely satisfied.

Save shipping costs. Check here : if you enclose full payment (plus sales tax, if any). We will pay postage charges. You have same return privilege.

City.

Hobbyists, Schools, Inventors, etc.
Make your own castings of any
metal from cast iron, down to lead
and zinc. Available in sizes from
1½ to 285 lbs. RED BRASS.
Complete units furnished with all sizes. Send 25¢ for circular.

KANSAS CITY SPECIALTIES CO., INC. Dept P-1, P.O. Box 193, Middleton,



PROTECT YOUR CHILD PROTECT YOUR VALUABLES

Stainless Steel Dog Tags. 26" Chain and Clip. Great for lusgage—Cameras—Pets —Ets. Send Name. Address Phone Number and \$2.00 for each Tag to:

Futura Enterprises Dept. PMJD E02 Syracure Ave. N. Massapequa N.Y. 11758

WITH FREE CAN OF PELLETS) (WITH FREE CAN OF PELLETS) # PPO IMPROVED MODEL. Built to last a Lifetime

Shoots both pellets and darts. This fine, well made .177
cal. German air pistol is just the ficket for target or
varmints. Accurate. No CO2 cartridges to replace, either,
Once in a lifetime bargain, Order several, Only \$7.95
Secret Leather Holster, \$2.95 ppd. • 600 Deluze Pellets, \$2.40 ppd.
20 Deluze .177 cal. Steel Darts, \$2.00 ppd.
AIR PISTOL. Dept. PM-1

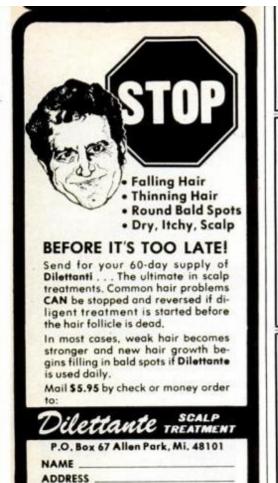
4535 Huntington Dr. So., Los Angeles, Calif. 90032

SATURDAY MORNING INCOME PLAN!

Earn \$5 to \$20 extra in spare weekend or evening hours, accepting orders from friends and neighbors for our nationally famous shoes. Just show our beautiful full color catalog of over 350 exciting styles, many exclusive comfort features! No experi-

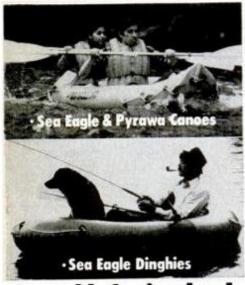
ence reeded to make extra money, earn prizes, bo-nuses—even earn SHOES FOR YOURSELF! Rush name & address for FREE Starting Outfit today.

MASON SHOE, Dept. G-388, Chippewa Falls, Wis. 54729



Quality inflatables \$49.95 to \$149.95

CITY STATE



Portable fun in a bag!

White-water rivers, ocean surf, remote streams and lakes . . . our quality inflatables are used by leading white-water schools, children's camps, the Boy Scouts of America and the 1974 5-Man Expedition to the World's Highest Waterfall— Angel Falls, Venezuela.

Perfect for fishermen, campers, river-runners and family fun! Canoes \$79.95 to \$149.95, dinghies \$49.95 to \$99.95!

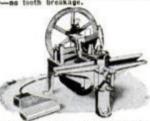
Send for free color brochure!

Leisure Imports, Inc., Dept. PM-1-75, St. James, N.Y., 11780 • phone: (516) 724-8900



AUTOMATIC SAW SET

Set saw teeth automatically-400 per minute without effort. Perfect hammer and anvil action sets teeth uniformly-no tooth breakage.



FOR HAND SAWS AND BAND SAWS

BURR MANUFACTURING CO. 8931 Venice Blvd. Los Angeles, Calif. 90034

METRIC SYSTEM MADE EASY TEACHERS-STUDENTS-PARENTS

Learn how to convert to METRIC SYSTEM Now HANDY CONVERTER teaches young and old alike how to make Conversions ILLUSTRATED—LIQUID LAMINATED

Fits any notebook only 50¢ each

ANMAR CO.
P.O. Box 19, Brooklyn, N.Y. 11202
Enclose 1 that 50¢
Save 3 charts \$1.00

Please Print

Address

City

State

"LISTEN IN" TO POLICE-FIRE RADIO CALLS IN YOUR CAR!

WORKS with ANY CAR-Portable or HOME RADIO! Just PLUGS in-No



wiring—3 minute hookupt swittens instantly from regular radio to ALL POLICE—FIRE—EMERGENCY—TAXI STATE-GOVT 2 way radio calls! Works Everywhere—Anytime! Dual Band 30-49 & 150-173 MHZ. Should last for years! Ck M.O.1 and pay SEMB ONLY \$2.00 postman \$12.99 COD post. age or send \$14.90 for PPd Del in USA. COMPLETE with Antenna and Plug in to use with ANY Home or Portable Radio! Full instructions—1 year Service Warminty—10 DAY MONEY SACK TRIAL—SOLD ONLY Direct from Factory—at this special price. WESTERN RADIO DEPT. BPM-1 KEARNEY, NEBR. 68847

"POKER & DICE PLAY"

by- Donovan

Las Vegas Gambler tells secrets of how to play! How to win! Know what the professional gambler knows. Must reading for any man. Exclusive offer on limited edition. Mail \$4.85

ROYAL PRESS

P.O. Box 2172 Loop Station, Mpls., Mn., 55421



SILVO (BRAND NAME)

TOOL CATALOG

Thousands of exciting tool values!

nley, Skil. Thor, Wen, Disston, Wiss, Wellsaw, emel. Plumb, Huot, Kennedy, Channelhock, Rock-I, Helois, Vise-Grip, Crescent, Rigid, Ponymps, Unimat, Foredom and many other Nationally rertised brands of Tools & Supplies. We ship set to Coast at prices Hard to Beat. Send \$1.00 our big 196 page tool catalog today.

Silvo Hardware Co., PM-75 107 Walnut St., Philadelphia, Pa. 19106

EASY TO INSTALL IN 10 Min. Delivers 110 voits-4000 watts D.C. from alternator, Runs ALL UNIVERSAL motors to 3.H.P. SUILDERS FARM FACTORY-GARDEN tools-appliances. RDEN tools-appliers Saws, Drills P Quik charge/start layes money and tim



SEND ONLY \$2.00 (cash Ck Mo) and pay postman \$12.00 for mid Del in USA, COMPLETE READY TO USE WITH MOTOR SPEED CONTROL ON 50 SW violtage ind FULL TO DESCRIPTION OF SPEED CONTROL ON 50 SW violtage ind FULL TO DESCRIPTION OF SPEED CONTROL ON 50 SW violtage ind FULL TO DESCRIPTION OF SPEED CONTROL OF SW VIOLENCE MARKANT - 30 DAY money back trial. Rush order today, WESTERN ELECTRONICS, Dept. PM-1, KEARNEY, Nebr. 68847

RV KITS!

BUILD YOUR OWN & SAVE \$ \$ \$ CAMPERS, COVERS, VANS, TRAVEL TRAILERS
AND 5th WHEELERS Plans & Full Size Patterns WRITE FOR FREE CATALOG

GLEN L RVS 9152P Rosecrans, Bellflower, Ca 90706

Learn CUSTOM PICTURE FRAMING For Fun Or Profit! Let Professionals sho

the trade secrets of custom portrait and picture framing. It's a fascinating, satisfying craft — yet a Framer's skills are worth \$8 to \$10 an hour or more Start a clean, quiet business you can easily manage from home in part time — we'll show you how, help you every step. Write for complete details — no obligation and no salesman will call.

obligation and no salesman will call.
FRAMECRAFTERS, Dept. NPM P.O. Box 16 1205 W. Barkley, Orange, CA 92666

GRANDFATHER CLOCKS **SAVE 50%** BUILD YOUR OWN FROM OUR SEMI-ASSEMBLED CASE KITS

We are the ONLY producer of COM-PLETELY HANDCRAFTED semi-assembled clock kits! Major assembles carefully fitted and joined by experi-enced cabinetmakers. (No power tools required.) enced cabinetmakers. (No power required.)

Highest quality imported German movements

Tubular or rod chimes

Moving moon dials

Kits for wall & mantel clocks available

Templates & case plans

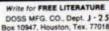
Send 50¢ for complete catalog

H. DeCOVNICK & SON,

P.O. Box 68, Dept. M-15 Alamo, Calif. 94507

FLUSH-UP

BASEMENT TOILET
thes up to existing sewer or septic
ty powerful self-contained pump
digging up floors, etc. Clog resistant
te basement into game room, bar
st room, etc. with private bath.





AMAZING NEW ELECTRIC ARC WELDER \$14



ini Multiheat. Build-repair, most any hing for cars-factory-home. Complete ready to use with kit of steel, bronze, carbon welding rods-flux-cyeshield-automatic are torch, welding instructions of experience needed, ck, Mo.) and pay postman \$12.9 pp Del in USA, Lifetime burnout guarantee—10 day mone back free triall Now, save and make money. Order your today! Midway Welder Dept, KPM-1, Kearney, Nebr. 6884



SWITCH BLADE COMB



Материал, защищенный авторским правом

41° Closed
Sensational! Just touch button
and comb first out, locks automatically
Release and comb retracts into handsome
case-aluminum on one side, black on the
other. Comes in clear simyl carrying case.
Light, strong, convenient, durable.

WESTBURY SALES CO,
P.O. BOX 434 DEPT, SBIPM WESTBURY, NEW YORK 11590



CLASSIFIED ADVERTISEMENTS

Rate: \$2.20 per word payable in advance each insertion. Bold face capitalized words—75¢ per word additional (First word set in Bold Face at no extra charge, Zip Code Free). Minimum insertion ten words. To be inserted under proper classification, copy must be in our office by the 10th of the second month preceding date of issue. The next available issue to place an advertisement in America's No. 1 Classified Section is March. The closing date is January 10th. Send remittance and order to H. E. Kappel, Popular Mechanics, 224 West 57th Street, New York, New York 10019

Please make remittance payable to Popular Mechanics.

When answering advertisements please use the zip code number

AUTOMOBILES

"BUILD Electric Car Or Welder! 400 Amp Generators \$75.00; Cenaco, B777, Bethany, OK 73008."

MARK TEN "B" IGNITIONS! Assembled-\$42.50-Post-paid. Eastwood Products, Oriskany, NY 13424.

SAVE GAS. 2-4 Miles More Per Gallon. Simple Adjust-ment. \$1.00. Andrew Di Santo, 9641 Avenue M, Chicago 60617.

ELECTRIC CAR Building Instructions. Free Informa-tion, lott Engineering, 4660 73rd, La Mesa, Cal. 92041.

33%OFF Delta Capacitive Discharge Ignitions, High Intensity Headlights, Other Savings, Free Catalog, Time Machines Inc., 29M Falmouth St., Brooklyn, N.Y. 11235.

AUTO-TRONIC Electronic deactivator prevents car theft. Impossible to beat!! Installed in minutes. Only \$6.95—Guaranteed! Win, Box 36462, 1A1, Los Angeles 90036.

STOP GAS WASTE. Save Money, Save Gas, Install a Gas Miser Kit on Your Car, Light Truck or Motor Home. Not a Gimmick. Mileage Increase Guaranteed. Free Literature. The Gas Misers, 11334 Avery Drive, Literature. The Gas Mis Jacksonville, Florida 32218.

AMERICA'S GOING METRIC—Converter Kit Adds Kilometers Per Hour to Any MPH Speedometer. Easy Installation. Send \$2, Year, Make, and Model to: SW Sales, P.O. Box 82, Savage, Minn. 55378.

RING-YALVE JOB WHILE DRIVING!! Results Guaranteed! 21ST ANNIVERSARY INTRODUCTORY OFFER— \$5.50 (2-\$10.50) AIR-MAILED! MOTALOY DIVISION, Rt 8, Box 604, Fayetteville, North Carolina 28304.

MOTALOY!! Saves-gas-oil-plugs! Details Carcare, 2532 Superior, Chicago, III. 60612.

HOW to BUY CARS WHOLESALE Complete Instruc-tions. Save Hundreds. \$2.50 prepaid. Son-Roe U.S.A. 620 East Rosalie St., Phila., Pa. 19120

DISPLAY MILES-PER-GALLON! New Easily Assembled Flowmeter—Low Cost Standard Parts—Accurate. Save Gas! Tune-Drive At Maximum M.P.G. Detailed Plans \$3.00. Guaranteed! Merrill Research (PM1), Box 3230, Boulder, Colorado 80303.

AUTO SUPPLIES & EQUIPMENT

HYDRAULIC Jack repair kits parts and supplies. Catalog 50¢ (in coin). Hydraulic Jack Packing & Tool Co., Inc., General P.O. Box 3, Staten Island, N.Y. 10314.

SHOP MANUAL BLUEBOOK, \$3.75. Book Division, Drawer 1547-PM1, Ann Arbor, Michigan 48106.

ELECTRIFY YOUR VW. Our proven control system gives dependable low cost local transportation. We can supply directions and all parts needed. T. Frizzell's Electric Transportation, Charlestown, N.H. 03603.

SPEED DRAIN—Automatic Oil Changer Saves Time, Money, Works from Underneath your Hood. State year and make of Car. Send \$14.95 to: H. Heidman's, R.R. #5, Box 273, Swanton, Ohio 43558.

SUPER Tool For VW Mechanics and Home owners who do Their Own Tune Ups. PLUG CONNECTOR TOOL Removes Connector Instantly when plug wire slips off. Now on sale for \$5 ea. Send Money Order to: Plug Connector Tool %Nic LaViska, #14 Stonehenge Rd., Londonderry, N.H. 03053.

MOTALOY Ring Valve Job while you drive. \$6.00. Two —\$11.00. Guaranteed. Andris, Box 34237, Department 2261K, San Francisco, California 94134.

BATTERY Additive. Dissolves Internal Corros \$2.00. Exserco(pm), B38, Warren, Oregon 97053.

CORVAIR Parts.—700 Different Parts, Catalog 75¢ Clark's Corvair Parts, Shelburne Falls, Mass. 01370

REVOLUTIONARY Auto Air Conditioner You can build For About \$50. SAVE GAS. FREE Detailed Information. Space Age Research Co., Dept. PM1, Box 770, Columbus, Indiana 47201.

SPEEDY SIPHON PUMP! Transfers gas from car to car, drains clogged tubs, washing machines. Send \$1.95 to: James Abruzzo, 18 Morgan Avenue, B'klyn, N.Y. 11237.

WHEEL BALANCERS. 5 Models \$14.95 to \$29.95. Free Details. Jacobsen Manufacturing, P.O. Box 6143 MN, Seattle, Wash. 98188.

CD Ignitions Discounted. Unconditional Lifetime Warranty, Gerald Products, MPO Box 474, Hicksville, NY 11802.

MAKE Radiator Anti-Freeze! Information, \$2.00. Palmer, Post Office Box 1244, Phenix City, Alabama

ACCURATELY TUNE Your Car Without Expensive Timing Equipment! \$2.00. Rogers, Parker, S.D. 57053.

SAVE GAS. Power Spark Electronically Intensifies park, \$4.95. R&M Associates, Dept. PM175, P.O. Box 7133, Alexandria, Va. 22307

LITE-A-MATIC Kit interconnects headlights, Wipers and Ignition. Headlights go off Automatically When Wipers or Ignition Turned off. Details 25¢ Refundable. Normark M12, Box 24146, Tampa, Fla. 33622.

E-Z CLEAN POLISHING CLOTH. Cleans and Polishes Virtually Everything, \$2.00 to: Chuck Hess, Box 4755, Anaheim, Ca. 92801

BOOK of Alternator/Generator Rebuilding, Write Hedelund Engineering, P.O. Box 5777, Las Vegas, NV. 89102.

INCREASE Gas Mileage in One Minute Without Tools. Power Spark also Improves Performance. Guaranteed!!! \$4.95 plus 50¢ postage. KJB, 110 Cortez, Thibodaux, Louisiana 70301

SAVE On Costly Automobile Repairs. Book Shows How. \$1.95 plus 50¢ postage, handling. HARLENE MOUSE, Div. A24, 5510 S. E. Harlene Drive, Milwaukie, Oregon 97222.

UNBELIEVABLE Results!! GAS—OIL Saver! \$6.50 postpaid. . . . (Two—\$12.00) . . . Established 1951, guaranteed! . . . MOTALOY, Grantham, Penna. 17027.

MOTORCYCLES, BICYCLES, MOTORSCOOTERS, & SUPPLIES

MAKE Your Bicycle Electric, Plans \$2.95. Kielian, 130 Drake, South San Francisco, Calif. 94080.

AMERICAN INDIAN MOTORCYCLE COMPANY, WORLDS LARGEST Supply of Parts for AMERICAN INDIANS, 213-447-4078, 119 East Huntington Drive—Monrovia, California 91016.

HONDA, \$25.00. Other Bargains. Send \$1.00 (Refundable). Motorscooter, P443, Bend, Oregon 97701.

MOTORIZE BICYCLES—PLANS!!!! Electric, \$2.00 . . . Gasoline, \$2.00 . . . Both, \$3.00 . . . Guaranteed . . . Britt, 956 Springdale, Atlanta, Ga. 30306.

GO-KARTS, Mini-Bike, 4 Wheel Bike Car, AND Ele-Bike, PLUS Learn To Weld Instructions, ALL For \$2.00. E.J. Sales, Box PMJ, 3084 Centerline, Mich. 48015.

WORLD'S FIRST Pickproof Lock! No Keyhole! No Combinations! Uses Coded Magnetic Keys. \$8.49 Guaranteed. R. Smith Company, Box 10973, Baltimore

ILLUSTRATED Catalog, 25¢. Parts and Accessories. Custom and Stock. For Most Makes and Models. Motorcycle Supply, Box 159M, Fairbury, III. 61739.

PATENTS. Consultant's Collection Includes Gar Wood's Recent Multi-Mini-Motor, Multi-Speed Electric Bike Invention, \$5.00. SMEDEROVAC, Box 2117, Eads Station, Arlington, Va. 22202.

ATV'S. Go-Karts. Engines. Wheels. Discount Catalog 25¢ Lorenco. Danville, Illinois 61832.

BICYCLE Parts. The "Handbook of Cycl-ology". 160 pages—5000 items. Foreign and domestic parts, tools, and accessories and gear tables and instruction. Send \$3.00 to: Wheel Goods, Dept. J, 14524-21st Ave. North, Minneapolis, Minnesota 55441.

AVIATION

HANGLIDER DIRECTORY: Plan Catalog: samples: magazine, newspaper: Self-Soar Association, Box 1860, Santa Monica, California 90406. \$2.00.

BUILB—One-Man Jet helicopter. Easy Inexpensive. Detailed plans, drawings—\$5.00. Helicraft, Box 7153, Baltimore, Maryland 21218.

ULTRA-LIGHT HANG GLIDERS From world's largest manufacturer. Unsurpassed quality & safety. Rogalio plans—\$5.00. Kits, Complete gliders. Free Rogalio & Icarus information. Free-Flight, 12424 Gladstone, Sylmar, California 91342.

HANG GLIDING Handbook, 200 Pages. \$5,95 postpaid. Poynter, Box 4232-S, Santa Barbara, CA. 93103.

LEARN TO FLY . . . The Cheapest Way! \$3.95 Manual will save Hundreds; Maybe Thousands! CRUSE, Suite P-4, Indian Trail, North Carolina 28079.

AIRBOAT Propellers, Engines, Hubs, Mounts, Supplies, Corvair, V-W Conversions, Removable Airdrives, Catalog \$1.00. Banks-Maxwell, Box 3301E, Ft. Worth, Texas 76105.

ALL About Ballooning. Handbook. \$3.00. Aerostation, Box 141. Long Sault, Ontario, Canada KOC 1PO.

YOUR Aircraft Design Analyzed Performance Stability Stress Reports. Hang Glider Plans. Malo, 5 Kim Ct., St. Peters, Missouri 63376

HOVERCRAFT

HOVERCRAFT Plans, All sizes; Tested designs, notos, information; \$1.00. Universal Hovercraft, 2611 182nd Place, Redondo Beach, California 90278

EFFICIENT Hovercraft Flies Two Persons Over Beach, River, Snow, Marsh On 15 HP! Plans, Instructions, \$6.00. Practical Design Guide For Hovercraft. 92 Pgs Diagrams, Pictures, Text For Homebuilder \$5.00. Palmer Aerosystems, Box 691M1, Renton, WA 98055.

AERO-CAR Amazing Hovercraft built easily with ordinary tools. Lawnower engine power. Carries one man plus. Hovers, flies forward, backward. Sideways over land/snow/water. Complete construction plans and brochure. \$5.95. Aero-Projects, Box 5118PM, Clinton, New Jersey 08809.

BOATS AND TRAILERS

BOAT KITS, HULL KITS, FRAME KITS, PLANS AND PATTERNS. World's Largest Catalog Over 300 Designs, 7 to 77 feet for the Amateur, in P.ywood, Fiberglass or Ferro Cement. SAIL-Prams, Day Sailers, Motor sai.ers, Ocean Racers, Trimarans, Catamarans. POWER-CRUIS-ERS, Trawlers, Runabouts, Fishing Boats, Kayaks. Inboard and Outboards Hydroplanes. Also Complete Boat Builders Materials, Sails, Fiberglass, etc. Send \$1 for Catalog or \$2 for Catalog Plus Boat Builders Guide to: Clark Craft, 16-P Aqua Lane, Tonawanda, New York 14150.

FIBERGLASS BUILDERS MATERIALS Lowest Factory Prices in Cloth, Matt, Roving Resin, Epoxy, Foam, Nails, Fittings. Send \$1.00 for Literature (refundable) or \$2.00 for Literature plus Booklet on Mold Making and "How To Fiberglass." Clark Craft, 16-P1 Aqua Lane, Tonawanda, New York 14150.

BOAT Kits. Molded Fiberglass, Save money-assemble yourself. Factory molded sections bond into one-piece craft. 20 models-14' to 32' Cruisers, Runabouts, Sailboats, Accessories, motors, trailers, Easy terms, Free catalog. Luger, Dept. BC-75, 3800 West Highway 13, Burnsville, Minnesota, 55337.

KAYAK KITS—Moulded Fiberglass—Wood, Canvas. Parts Precut. Complete Kits \$39.95 up. Free literature. Dedham Kayaks, Dept. PM6, Box 207, W. Lynn, Ma.

BOAT PLANS, FRAME KITS, FULL SIZE PATTERNS Especially for amateurs. Easy, proven methods, step-by-step pictorial instructions. All boat types 8' to 49'. Sail - Power - Inboards - Outboards - Jets - Houseboats - Cruisers - Hydroplanes - Trawlers - Catamarans - Ski Boats - Tunnel Hulls. Also fastenings, fiberglass, rigging, hardware, sails, spars, boat trailer plans. "How-to" Books. Send \$1.00 for HUGE NEW 120-page catalog plus FREE "Boatbuilding Supplies" brochure. Glen L, 9152MP Rosecrans, Belifiower, CA 90706.

CANDES! Kayaks! Factory Direct quality kits, from \$30.00. Many different models, Canvas, hulls, Strongest construction materials. Free literature. Sportscraft, construction materials. Free literature. Box 636-P, Allentown, New Jersey 08501.

NEW 1974 Outboards . . . Top Brands . . . 6 H.P. \$350 . . . 15 \$500 . . . 40 \$670 . . . 50 Electric \$948 . . . 70 Electric \$1150 . . . All Sizes . . . Scott-McCulloch Parts . . Handling 50¢ . . Electra Marine, 610 Merrick Road, Lynbrook, N.Y. 11563.

FREE Catalog, Kayaks, Canoes, Plans, Kits, 36 models. Outdoor Sports, Box 1213-P, Tuscaloosa, Ala

FIBERGLASS Cloth and resin. World's finest cloth and non-run resin, at direct mill prices. Complete line of plastics, silicon bronze and brass screws, save 60%. No sales tax. Boat Plans. Catalog 25¢, Freight prepaid. Stiles Boat Supply, Box 11P, Linden Ave., Mantua Heights, N.J. 08051.

NEW From QUICK DESIGN. Quick Cat 16'
CATAMARAN. Plywood with 190 Square Foot Sail, Cost
under \$250.00. Plans \$8.00. 12' under \$100.00, plans
\$5.00. Air Cushion TABLE MOCKEY plans \$3.00.
Box 4040, Grand Haven, Mich. 49417.

LIGHTS "THOUSAND-LIVES" Battery powered Cordless, RECHARGEABLE. Table-lites, Lanterns, Flashlites.
Use Nickel-Cadmium "LIFETIME" (Never buy Batteries
again".) Free Literature, Heydecker, 500K West End
Avenue, New York 10024.

300 DESIGNS, Patterns, Kits, Accessories, Books. Catalogs: Powerboat (2) 176 Pages, \$1.50, Sailboat, 70 Pages, \$1.00. Marinecraft, Box 161-M, Brighton, Mass. 02135.

(Continued from preceding page)

FIBERGLASS Canoes, Kayaks, and Duckboats. Many exciting models. Easily assembled kits. \$49.95 up. Free Literature. Riverside Canoes, Box 5595P, Riverside, Calif. 92507.

CANOE Kits-Wood Canvas, Molded Fiberglass—Free Catalog. Trailcraft, Inc., Box 60686, Concordia, Kansas

BUILD Your Own Pontoon, Lightweight, Maintenance, Free. Send \$1.00 For Information, Widmer, Box 54, Grasston, Minn. 55030.

CAMPERS AND TRAILER KITS—PLANS

HOW To Buy A Recreation Vehicle And Save. Get The Facts! Dealer Cost, Bank Financing, Kick Backs, More. Send \$3.00. RV Help. 703-F, Bridge, Charlevoix, Michigan 49720.

BUILD YOUR OWN RV with GLEN L Component Kits. Plans and Full Size Patterns. FREE CATALOG. Campers, pickup covers, fifth wheel trailers for domestic and import trucks. Travel Trailers, camping trailers, van conversions. SAVE! PREPAID FREIGHT SPECIAL! GLEN-L, 9152P, Rosecrans, Beliflower, California 90706.

CAMPING Trailer Plans And Manual \$2.00 Station Wagon Convert To Motorhome. Plans \$3.00. Kam-Craft, Box 1153P, Milwaukee, Wisconsin 53201.

MARINE EQUIPMENT & SERVICES

MARINE Engines, conversions, parts, equipment. Catalog Free! Stokes Marine Industries. Coldwater, Michigan 49036.

CONVERT Auto engines to marine. 68 Page Catalog, 50¢. Lehman Manutacturing Company, 800 Elizabeth Avenue, Linden 4, New Jersey 07036.

WILDWOOD Tents, Camping, Boating Supplies. Free Catalog. Laacke & Joys, 1439 N. Water, Milwaukee, Wisconsin 53202.

ATHLETIC AND BODY **BUILDING COURSES**

"INCREASE Height" 2-6", Free Report, Tall-Up, Box 216-PL, Athens, Ohio 45701.

WEIGHT Exercising Equipment, send 25¢ to cover ostage for illustrated catalog. Exercising Equipment, P.O. Box 662, Holyoke, Mass. 01040.

DYNAMIC Muscles Fast! No Gimmicks. Free Illus-ated Brochure. Inquire: Goliath Enterprises, Box 933f-MI, Wheeling, Illinois 60090.

ARMS, 18+ Inches in 90 days or Refund!! Revolu-tionary Arms Specialization. \$3.00-Complete! also, Dynamic KARATE!! Black Belt Equivalency in months or Refund!! Mind Technique. \$2.50-Complete. Phenoministics, Box 281E. Gresham, Oregon 97030.

GIANT, Powerful Arms!! Incredible, New 10-Week Development Specialization! \$2.95 Complete, Guaran-teed!! Bork, 2072-77th, Brooklyn, New York 11214.

KUNGFU, Karate, Judo Books, Fighting Weapons, Films Giant Brochure—\$2.00. Learn to Fight like a TIGER, Dragon, Leopard, Snake. Free section on Tai Chi—\$2.95. Both \$4.00. Orient East, 4403 Sheridan, Chicago, III. 60641.

SPORTING GOODS & EQUIPMENT

ICE FISHERMAN: Put Any Cabin-Cottage Or Umbrella Tent With Floor Size Up To 9' x 9' On The Ice Quickly. Plans \$2.00. J. L. Experimental Products, 9025 West Howard, Greenfield, Wisconsin 53228.

ARCHERY Lowest Discount Prices. All top brands. Orders shipped same day received. Money-back guarantee. World's Largest Supplier. Free catalog. Anderson Archery Corporation, Grand Ledge, Michigan 48837.

FREE CATALOG. Fishing Tackle, Archery, Hunting and imping Equipment, Lowest Prices. Cabela's Inc., Camping Equipment, Lowest Prices Dept. S30, Sidney, Nebraska 69162.

HUGE Sportmans Catalog low direct factory prices, fishing, Hunting, Archery, reloading Camping. Send \$1.00 Refundable. Herters Inc., Dept. CPM, Waseca, Minn. 56093.

PLAY POOL WITH YOUR OWN 2 PIECE CUE STICK, MANUFACTURED IN U.S.A. TO YOUR SPECIFICATIONS. DIRECT FROM DISTRIBUTOR-MONEY BACK GUARANTEE.
DETAILS 50¢- REFUNDABLE. Family Fun, 25 E. Main St.,
Smithtown, N.Y. 11787.

FISHING, TACKLE, LURES

FISHING SECRETS REVEALED 36-page 1975 Fisherman's Guide. Many hot tips, top spots, much more. Plus exciting new facts about fishing with Mepps spinners, world's most popular lure. 50¢ value. Send 25¢ with name and address to: Sheldons', Inc., Box 7531, Antigo, WI 54409.

"HOOK-RE-MUY-R"—Never Touch Fish, They Come Off Easy! Only \$1.00 postpaid. Po-Co Enterprises, Box 6691, San Antonio, Texas, 78209.

SWISS ARMY TYPE KNIFE 31/4" All Stainless Steel, 12 Tools in One, Scissors, Cap Opener, Hole Punch, Cork Screw, Fish Scaler, Screwdriver, Fish Hook Disgorger, Saw Blade, Large and Small Cutting Blade. Send \$4.75 Postpaid. Don's Products, P.O. Box 272, Carrollton, Texas 75006.

EARTHWORMS, LIVE BAIT

HOW To Make Money Raising Fishworms! Details Free, Gloworm, 3910 Elfin, Louisville, Kentucky 40207.

tails free! Oakhaven—56, Cedar Hill, Texas 75104.

HYBRID Redworms. 5000-\$15.00, Postpaid with Raising Instructions. Farms, Box 4185, Waco, Texas 76705. 20,000-\$30.00

FREE Literature. Profitable Business Raising Fishworms, Crickets. We Teach you how to Raise and Sell. Write today. Carter Fishworms, Plains, Georgia 31780.

FROGS, FISH, REPTILES

\$20,000 POSSIBLE RAISING BULLFROGS! Exciting Details Frae! Bravco-Al. Box 696, Temple, TX, 76501.

HUNTING, GUNS, DECOYS

PELLET GUNS For Fun or Serious Target Shooting Anywhere. Giant Selection. Finest Models, Satisfaction Guaranteed. New 100 Page Catalog Free (\$1 Value). Write: ARH, Dept. 15, Grantsville, WV 26147.

POULTRY & GAME BIRDS

QUAILS, Incubators, cages, supplies catalog. Marsh, 14216 Brookhurst, Garden Grove, Calif. 92643.

RABBITS, CHINCHILLAS FUR BEARING ANIMALS

RAISE Chinchillas, Guaranteed income, Illustrated catalog \$3.00, Refundable, DeShon Chinchilla, Route 2H, Roanoke, Indiana 46783.

\$500-\$1000 MONTH Plan raising rabbits for us. Free details. White's Rabbitry-PM, Huoson, Onio 44236.

RAISE Rabbits Successfully by knowing Facts. 64
Page Illustrated Book describing 25 Breeds, Housing,
Breeding, Feeding, Markets, Marketing, etc. 25 cents.
American Rabbit Association, 36 Arba Building, Bloomington, Illinois 61701.

AMAZING PROFITS!! \$10,000 Yearly Raising Rabbits for Wool and Breeding. Send \$1.00 for Details. American Angora, Malta 12, Montana 59538.

PETS-BIRDS, CATS, HAMSTERS, ETC.

EXOTIC Rainbow Lizard—Harmless \$4.95 Postpaid. COD's, Tropical Treasures, P.O. #2527, Boca Raton, No COD's, Tro Florida 33432.

PETS, Reptiles, raccoons, skunks, squirrels, Calogue 25¢. Trails End Zoo, St. Stephens, S.C. 29479.

HORSES, LIVESTOCK

"HOW TO TRAIN HORSES"-FREE Book tells how to break, train, make money with horses, Beery School, 1101 Pleasant Hill, Ohio 45359.

ELECTRICAL SUPPLIES

ELECTRIC MOTOR SUPPLIES! Equipment Pla Modequip, Box 7266, Kansas City, Missouri 64113.

ELECTRONICS

FREE! Bargain Catalog—I.C.'s, LED's, readouts, fiber optics, calculator parts & kits, semiconductors, parts. Poly Paks, Box 942PM, Lynnfield, Mass. 01940.

BATTERIES, GENERATORS

BATTERY Reconditioning Kit, includes molds, ma-terial, instructions. Apex Engineering, 3100 Ramona, Atascadero, California 93422.

ENGINES, MOTORS, MAGNETS

WINDING Data. 275 motors, \$1.25. Data Company, 512 Kensington, Kansas City, Mo. 64124.

REWIND Car Generator for 110 VAC. Power Plant Plans \$2.00. Schmauss, 1228 East Cass, Tampa 33602.

RUN Three Phase Motors On Single Phase! Three Methods! New Illustrated Manual! \$3.00 Guaranteed! Lindsay, Box 12-UM, Bradley, Illinois, 60915

TOOLS FOR SALE

DREMEL, Atlas, Maximat, Unimat, Toolkraft, X-acto, Foredom, etc. Priced For Your Pocket. Catalog \$1.00 Refundable. Tools Unlimited, Inc., Box 7PM, Brentwood,

MACHINERY, TOOLS, & SUPPLIES

SUPER TOOL—10 Products In One. Wire Cutter, Screw Driver, Wire Insulation Stripper, Cutter—Cuts Metal, etc., \$9.95 ppd. Send to: H. Heidman's, R.R. #5, Box 273, Swanton, Ohio 43558.

6 SPEED 4" Metal Cutting Lathe \$56.10 31/4" chuck \$20.80, 1/4" drill chuck \$2.80 7 pc tool bit set \$10.25, Taig, 15048 Proctor, Industry, Calif. 91746.

SANDBLASTERS, \$32.50—\$749.50. Free Catalog— Truman, 1330 Market, Youngstown, Ohio 44507.

GIANT DIRECTORY of Companies Nationwide Selling Thousands Hand And Power Tools. \$2.00. Cash Industries, Box 4804-PML, Pittsburgh, Pennsylvania

BANDSAW BLADE Complete, Welded to fit your saw. COMPETITIVE Free Literature. Tom Parker, R4-B735 Sonora, Cal. 95370.

SMALL Foundry furnaces. Supplies. Free literature. Pyramid Products. 3736 South 7th Avenue, Phoenix, Arizona 85041.

PLANS, Tube bender, Press, Break. Info., P.O. Box 56, Campo., Calif., 92006.

machine screws mixed \$6.95. Catalog 50¢. Nutty Company, 1576 SMS, Fairfield, Connecticut 06430.

1400 CATALOGS Listed and Described! Sources for EVERYTHING Imaginable! Rush \$2.00. MASTERLOG, Box 24413-VM, Oakland, California 94623.

WOODCARVERS Supply Catalog-75¢. Free on Ordering Blandford's, Woodcarving Book, \$2.00. 3112 West 28th, Minneapolis, Minn. 55416.

END Mills, Lathe Milling Attachments: Cataloge. Potter, Box 73, Cedar Rapids, Iowa 52406.

PORTABLE Sandblaster—Free brochure. Billy D. Bass, 1179 Belvedere, Gallatin, Tenn. 37066. MAXIMAT, Unimat Lathes, Attachments, Metals, Cutters, Micrometers, Catalogue \$1.00, Campbell, 1424 Barclay, Springfield, Ohio 45505.

WELDING, SOLDERING, PLATING

WELDERS. Convert To Heliarc. High Frequency Unit 0-225AMP. Plans \$4.00. Convert To DC Plans \$3.00. Information Supply Co., Box 166, College Park, MD. 20740.

ELECTROPLATING Equipment, Portable Platers, Supplies, and "Know-How." Build your own tanks for nickel, chrome, etc. Easy-to-install PVC liners. Rectifier components—all sizes. Schematics, parts lists, parts lists, lating. Guarformulas, operating instructions for all-plating, Guar-anteed to save you 25%-75%. Some good used units for sale. Free Details. Platers Service Company, 1511-PM Esperanza, Los Angeles, California 90023.

GOVERNMENT SURPLUS

GREATEST SALE ON EARTH. Get On Mailing List. Receive Advance Notice Catalogs Of Govt. Surplus Sales. Profitable. Mail \$2.00 To Thor-Pacific, Box 1183, Lake Isabella, Ca. 93240.

JEEP and Gov't. Surplus Buying Manual (Jeeps Pic-tured) 75¢. Surplus Bargain Catalogue 60¢. Both \$1.00. Surplus Bargains, Box 789PM1, York, Penna. 17405.

GOVERNMENT SURPLUS! How and Where to Buy in Your Area. WRITE TODAY! AUCTIONEERS, Box 872-PM, Anoka, Minnesota 55303.

GOVERNMENT LANDS . . . From \$7.50 Acre! Vacationing, Farming, Investment! Exclusive "Government Land Buyer's Guide" . . . plus "Land Opportunity Review" listing lands throughout U.S. Send \$2.00. Surplus Lands, Box 6588-AX, Washington, D.C. 20009.

GOVERNMENT SURPLUS, How and Where to buy in your area. Send \$2.00. SURPLUS, 30177PM HEADQUARTERS BUILDING, Washington, D.C. 20014.

GOVERNMENT Surplus. How to Buy. Complete Information. Money Back guarantee. Send \$2. Donald Davis, 918 East 8th, Ottawa, Kansas 66067.

1975 SURPLUS Army, Navy Store, 52 Page Illustrated catalog. Send \$1.00. Ruvel, 3037 North Clark, Dept. 1-J, Chicago, Illinois 60614.

JEEPS \$52.40. Airplanes \$75.01. Typewriters \$6.70. Boats \$7.50. Typical Bargains Available Nationwide. Sales Directory And Surplus Catalog \$1.00 (Refundable). Midwest Surplus, Box 401-PM, Dayton, Ohio 45401

SAYE MONEY. Buy Direct From U.S. Government for Complete Information Send \$5.00 to: Underwater Specialists, P.O. Box #400, Powell, Ohio 43065.

DIRECTIONS on How to Buy Jeeps and Other Interesting Goodies. \$1.00. Lewis, P.O. Box 198, Tiburon, CA 94920.

OFFICIAL—U.S. GOVERNMENT SURPLUS BUYING GUIDE. How, Where to Buy Any Surplus Item!!! Plus Complete Regional Directory. Bonus Offer. \$2.00. Enterprises, Box 2056, Oceanside, Calif. 92054.

JEEPS!!! PICKUPS!! 100,000 items direct from government. Your area. Latest information & surplus categories: \$2.00 MONEYBACK GUARANTEE. Order manual #144, from "Dependable Products". Box 113, Vista, California. 92083.

GOVERNMENT SURPLUS BARGAINS! Directory \$1.00. Nan Gauger, 807 Stimson, Rockwall, Texas 75087

"U.S. GOVERNMENT SURPLUS Directory." How, Where to buy 100,000 tems (including Jeeps) . . low as 2¢ on dollar! Most complete information available . . . \$2.00. SURPLUS DISPOSAL, BOX 6586-AA, WASHINGTON, D.C. 20009.

MAKE Money On Government Surplus. How and Where to Buy. Directory Of Surplus Offices. Sales Terms. Mail Order Items Send \$1.50. R. D. Bogue, 1331 145th Ave., San Leandro, Calif. 94578.

MAKE MONEY On Government Surplus. Where and How To Buy. Directory of Surplus Offices. Sale Terms. Send \$1.50: Book And Report Sales, Box 5785, Dept. 1-A, Riverside, Calif. 92507.

JEEP and GOV'T SURPLUS Buving guide (BUY DIRECT) \$1.00. Big Catalogue of SURPLUS BARGAINS \$1.00. GOV'T. SURPLUS Land Buying Manual \$1.00. All three for \$2.00. Best ever value! GOVERNMENT SURPLUS HEADQUARTERS, Box 1PM, Spring Grove, Penna. 17362.

HOBBIES AND COLLECTIONS

JEWELRY Craft Publications. Sample 25¢ (refund-able). GEMBOOKS, 501Y, Mentone, Cal. 92359.

COLLECT MILITARY MEDALS. List 50¢. Vernon, Box 387PM, Baldwin, N.Y. 11510.

AUTOGRAPHS-Letters, Documents of Famous People, Bought and Sold. Monthly Catalogues Issued, Neale Lanigan, Box 133, Fairview Village, Pa. 19409.

HOBBIES AND COLLECTIONS (Continued from preceding page)

COLLECT COINS for PROFIT! . . How To Start . . Where To Sell . . Lists Of Valuable Coins . . Send \$1.00. Harrison House, Box 1664, Sta. C, Worcester, Mass. 01607.

DECALS, EMBLEMS, PATCHES

CUSTOM Designed Embroidered Emblems, Decals. Inexpensive. Free Catalog, details. Southern Emblem, Box 8PMB, Toast, North Carolina 27049.

WHIP INFLATION—WIN Buttons Now Available, 50¢ each (Minimum Order \$1). White & Sons, P.O. Box 403, Eimhurst, III. 60126.

DECALS—Wildlife—Dogs—Horses. Send—10¢ for Free Folders. PM. Tyler, 1301 Methuen Street, Dracut, Mass. 01826.

RETAIL Stores Wanted to sell our Iron-on Heat Transfers. Beautiful Multi-colored Designs. Free Catalog. Sample \$1.00. Specialty Merchandise Wholesaler, Princeton, Iowa 52768.

STAMP COLLECTING

77 COUNTRIES—ONLY 10¢! Worth \$5.00 at catalog prices!! Incredible collection of genuine postage stamps from 77 different countries—from Afghanistan to Zambia, North to South Pole! British, French, Portuguese Colonies. Old 19th Century, New Issues, Moon and Outer Space stamps, etc. All for only 10¢! Also, other exciting stamps to examine free. Buy any or none, return balance, cancel service anytime. Plus Wonderful Free Catalog! H. E. Harris, Dept. H-55, Boston, Mass. 02117.

FREE! \$10.00 Giant Stamp Collection of 300 all different colorful, valuable postage stamps from Africa—Europe—Asia—British Empire—Worth \$10.00 —\$12.00 at catalogue prices, Also money-saving Booklet. All yours as a Get-Acquainted Gift. Adults only. Other fine stamps enclosed for your inspection. Frasek Co., Inc., PM1, White Plains, New York 10601.

NOW 50 IRAQ 10¢ with Approvals, Box 307, Goshen,

FREE! BIG Bargain Catalog—New Edition listing thousands of bargains including U.S. & B.N.A. stamps, packets, albums, accessories and supplies. Also, fine stamps from our approval service which you may return without purchases and cancel service at any time. Jamestown Stamp, Dept. E15PM, Jamestown, New York 14701.

FREE Mammoth Collection, Scott's Or Master Global Albums Given When You Buy Approvals, Bargain Stamps, Box 5345, Santa Ana, Calif. 92704.

FOREIGN Approvals! Gigantic values! 3¢ each. ABC, Dept. 3301-A, Box 6000. San Francisco 94101.

FRANCE #1100—94.95 each, Israel—1974 Jerusalem Exhibition—3-S/S \$4.00 Set Limited Quantity. Want Lists Solicited Eurone 1964 to date. Mint only. Franklin, P.O. Box 467-PM1, Jamaica, New York 11434. Money Order Only.

20 HISTORICAL U.S. Commemoratives 10¢. U.S. Approvals accompany. PINTO STAMP CO., Box 111, Park Ridge, III. 60068.

FREE Mint British Colonials from Antigua, St. Christopher, Nevis. Sarawak, Turks, Caicos. Tristan Cavmans, St. Vincent, Free with Approvals. Viking, Great Neck, NY 11021.

WOW! 110 All Different Germany 10¢. Commemoratives, Airmails, High Values, Big Catalog, bargain lists. Also, fine stamps from our approval service, which you may return without purchases and cancel service at any time. Jamestown Stamp, Dept. A15PM, Jamestown, New York 14701.

35 HUNGARY: Send 25¢, Approvals Sent, Lee Stamp b. P.O. Box 461, Cudahy, Wisconsin 53110.

"FREE Auction Catalogs, Collect Stamps The Cheapest Way. Carson, Box 5404, Lawton, Oklahoma 73501."

RARE Stamp Free! Also new packet Aden to Urundi with Kennedy, Triangles, Space, Sports, Ships, Dogs, Cats, Reptiles, plus others. All free, Send 10¢ for mailing, Empire Stamp Co., Dept. 1, Toronto, Canada.

FREE 50 Stamps Including: Cayman Island, British Honduras, Grenada. Aporovals, Moumblow, 314G, Walnut, Costa Mesa, CA 92627.

"EXOTIC Set"—10¢ with Approvals, Gorliz, Box 76457PM, Atlanta, Georgia 30328.

FREE 25 Worldwide Stamps. Request Approvals. Approvals Contain Singles, Full, Short Sets. ACE, Box 315, Lafayette, Tenn. 37083.

1500 FOREIGN \$2.00; 5000 \$4.00; 9000 \$6.00. 1000 pre-1939 USA, contains dues, revenues, commemoratives, presidentials, older issues, etc. \$4.00, 4000 \$12.00. 300 USA high values \$2.00; 700 \$4.00. No approvals. Meyers, 5321 Fleming, Richmond, Calif. 94804.

FROM FIVE CONTINENTS 110 Different Stamps, All Yours for Only a Dime! Packages of Beautiful Approvals to Buy or Return. Send 10¢ to Stampac, Box 12005, San Francisco, California 94112.

CANADA USED. 100 Different Large Commemoratives, Pictorials with Hi-Values for only \$2.00. A. Payne, Box 412, Kentville, Nova Scotia B4N 3X1.

NEW! 100 spectacular stamps from romantic Europe, exotic Orient, angry Africa, everywhere. Scarce Shah of Iran, Kennedy memorial, Space, many other issues from great empires and tiny republics. Plus stamp selections to examine. Buy any or none, return balance. Cancel service anvtime. Rush 10¢. Garcelon Co., 8PMA, Calais, Maine 04619.

FREE Stamps Send 10¢. UX Stamps, Austin, Texas 78701—Approvals.

STAMPS Cataloging \$10.00, \$1.00 with Approvals. Elsle, Port Colborne, Ontario, Canada, L3K2A6.

3PACEUPHUBIA: Komania nuoes pius 50 dimerent 10¢ with approvals. BKJ, Astor, Boston, Mass. 02123. FREE, U.N. Mint Set. Approvals, Hildebrand, Box 5645, Redwood City, California 94063.

50 YEARS Old, fifteen different United States, over fifty years old—10¢ with approvals. Jaxon, Box 145-P, Brooklyn, New York 11230.

SINGLE STAMPS 2¢ and up. Mounted in books. TRUST STAMP COMPANY, P.O. Box 100-P. Jamaica, New York 11435.

U.N. 9 Different Mint Sets \$1.00! U.S. 6 Different Commemorative Plate Blocks \$1.00! 30 Different Mint Commemoratives \$1.00! Approvals. Gordon Davison Hillsboro, New Hampshire 03244.

BREATHTAKINGLY BEAUTIFUL 50 Different mint Monaco Multicoloured Pictorial Commemoratives only \$1.50 with accompanying mint complete set approvals. Pagoda, Box 132P, Sidney, Ohio 45365.

SENSATIONAL Clearance Offer. Forty different Packets \$1.00. Norge, Wyckoff, N.J. 07481.

FREE Surprise collection sent with approvals. Gould, 1784 Union, San Francisco 94123.

FREE Worldwide Packet, Penny Approvals, Froehlich, Box 412-A, Morton Grove, III. 60053.

PENNY! Approvals! Regardless catalogue! Kloster, 4164 52nd St., San Diego, Calif. 92105.

65 DIFFERENT NUDES \$2.00. No Approvals. KEMP, 9952 Tamarack, Pacoima, California 91331.

BE A Stamp Dealer!!! Write: International, 6767LR, South Atlanta, Tulsa 74136. 50 DIFFERENT U.S. COMMEMORATIVES 25¢ Fine Used

U.S. Approvals Accompany. Craig Stamps, Box 425-N, Bellmore, New York 11710.

315 DIFFERENT Stamps From Over 30 Countries, Including Special Selection From Wild, Mysterious Mongolia. Colorful, Fascinating Stamps Picturing Animals, Sports, Flowers, Animals, Paintings, Space And Much More. Only 25¢... A Fabu'ous Bargain. Other Exciting Stamps Enclosed For Sale On Approval. Buy Some Or None, Return Balance, Cancel Anytime. The 315 Stamp Special Offer is Yours to Keep Regardless. Send 25¢ Todayl JGS, Inc., Dept. A-35, Box 525, Merrifield, Virginia 22116.

PENNY Approvals! Regardless Catalog Value! Weller, 34447 Yucaipa #28, Yucaipa, Calif. 92399.

APPROVALS 1¢ To 15¢ Kalamazoo to: Timbuctu, P.O. Box 16138, Sacto, Cal. 95816.

BUILD Large U.S. Collection Economically. Sherman, Box 15355G, Philadelphia, Pa. 19111.

MYSTERY Packet. \$9.00 Catalog Value. Only 35¢. Stamps, Box 27, Fremont, Michigan 49412.

BECOME Mailorder Stamp Dealer. (Home Goldmine!) FREE Details. Nationwide, Box 355, Greenville, South Carolina 29602.

LOOK! 50 Famous Paintings on Stamps, \$1.00 With Lists and Approvals. R-J Keehn, 1706 N. Westwood, Elkhart, Indiana 46514.

400 FINE Mixed U.S. 25¢. Wright, Box 753-M, Hagerstown, Maryland 21740.

SPECIALS no approvals US Commemoratives 225 different \$1.00, 300 \$2.00, 400 \$4.00, 500 \$8.00, 600 \$16.00, airmails, 35 \$1.00, 59 \$5.00, Regency Stamps, Box 8854, Pittsburgh, Pa. 15221.

CANADA Totem Dollar Only .25c. Approvals. Rheaum, 91 Valois, Vimont Que., Canada H7M 1A9.

FREE British or Canadian With Approvals, Stamps Unlimited, Box 2295, Kalamazoo, Michigan 49003.

500 DIFFERENT Stamps. \$1,25. Smith, 508-A Brooks. College Station, Texas 77840.

50 DIFFERENT Argentina—10¢. Appro Gobestamps, Box 402, Biddeford, Maine 04005. Approvals.

100 OLD United States between 1861 and 1939, \$1.00. Ed Roush, 423 Shepard, Mansfield, Ohio 44907.

U.S. BARGAIN, 50 Different 25c, with beautiful vorldwide, approvals. Stamp Center, Kennebunk, Maine

CANADA Sports Complete 10¢. Canadian Approvals. Harley Boardman, Little Valley, New York 14755.

RUSSIAN Space Collection 35¢, including Russian Approvals. Snedco, Waldwick, New Jersey 07463.

BIG Money in Stamp Investment, Complete Informa-tion: \$3.00. Stamp Farm, BM2, Oxford, Wis. 53952.

AJMAN "Munchen" 16 Different, 25c, No Approvals, GJ Cobb, Box 3415, Regina, Canada S4P 3J8.

APOLLO 11 MOONLANDING. Complete set, fourteen multicolored glants, from Guinea (Scott #541-7a), only 50¢—catalog value \$6.82. Topical Approvals. LeBlanc, Box 110-P12, Glen Cove, New York 11542.

EXOTIC Collection! Own over 100 Different! Only 10¢. Approvals. Stump, Box 212A3, Rosedale, New York 11422.

TEN Different Nudes: 20¢. Approvals. Stamp Farm, 2M74, Oxford, Wis. 53952.

UNBEATABLE! Terrific! 200 Worldwide Stamps 25c. Request Approvals. Sylvia Beatty, Dept. 176-PM, Eau Claire, Pa. 16030.

10 QUATAR Stamps Free—Approvals, W-B Stamps, Wilkes-Barre, Pa. 18703 Dept.PM

FREE! Amazing! 100 World Stamps with Approvals. Palm House Company, 846 Disston, Philadelphia, Penna. 19111.

3¢ APPROVALS. Write for Selection. Harold Streff, Route 3, Fort Dodge, Iowa 50501.

225 DIFFERENT Worldwde: 25¢, Approvals, Tibbets, 8675 Meadow, Downey, California 90242.

100 DIFFERENT United States Commemorative, 50¢ with Discount Price List. Shelron, Box 547C, North Miami, Fla. 33161.

BETTER GRADE U.S., Canadian Stamps for advanced collectors. Borgen, Box 645, Selad Valley, Calif. 96086.

BRITISH EMPIRE. 100 different 10¢ with packet ap-ovals. Denali, 4122-PM Woodbridge, Lansing, provals. Denali Michigan 48910.

SCARCE Guinea UN Airmails \$2.25, catalog 25c. Approvals. Stamphaus, Box 533, Salisbury, Mass.

U.S. MINT Specials! Flag Set complete \$1.25. 1¢, 2¢, 3¢ Famous Americans (21 different) \$1.25. Free List. Brooks, 2601 Avenue "U", Brooklyn, N.Y. 11229.

200 DIFFERENT WORLDWIDE 25¢. Approvals Accompany Plus Free Surprise collection With Each Order. Rush Your Order Today First With The Best In Stamps. P.O. Box 26, East Templeton, Mass. 01438.

50 SPORTS PICTORIALS. 25¢ with approvals. Arbour, 3727 Downey Dale, Randa Istown, Maryland 21133.

100 DIFFERENT British Empire 10¢. Approvals. Gibson, Box 34, Lansdowne, Pa. 19050.

FREE U.S. Used. Approvals Accompany, Chapmans, Box 487-S, Galesburg, Michigan 49053.

FREE New used Congo animal set. Approvals included. Alpaughco, Box 225, Highbridge, N.J. 08829.

"INVERTED Error" Dag Hammarskjold, 10¢ with approvals. Belmont Stamps, Washington, D.C. 20015. VIETNAM 25 Different 10¢ approval. Sam Chazen, Box 95, Ozone Park, N.Y. 11417.

"WHOLESALE" U.S.—Foreign Pricelist and catalog Free! Everything Guaranteed. Schneider, Box 1240, Grand Rapids, Michigan 49501.

FREE Catalog: 3,000 different stamp collections, packets; countries, topicals. Ullery, 1016 Meridian, Mishawaka, Indiana 46544.

WORLD Stamps 3¢ To 10¢ Each. Write For Approvals Today. Thousands To Choose From. Continental, 20929 Ventura Blvd., Woodland Hills, CA 91364.

"AROUND THE WORLD in 80 Stamps." 25¢ Approvals. Centennial, Box 17630, Philadelphia, Pa. 19135.

110 DIFFERENT U.S. Commemoratives. \$1.00. Stamps, 7607 Larchview Drive, Dallas, Texas 75240.

50 DIFFERENT Old U.S. Revenue Stamps \$1.00. Win-chester Stamps, Box 3592, Mansfield, Ohio 44907.

FREE Duplicate Exchange. 2¢ Approvals. Belden, Box 4175, Dearborn, Michigan 48126.

CANADA, 25 Different Commemoratives, 25¢. Approvals. Wilson, Box 116, Dollard des Ormeaux, Quebec, H9G-2H5, Canada.

LUXEMBOURG—25 different 25¢. Hijop Approvals, Box 505 Norristown, Pa. 19404

2¢ AND Up Packet Approvals, Dean, 508 Snow Richland, Wash. 99352.

AMAZING Value—Enormous Worldwide Collection!
Hundreds of colorful Stamps—Airmails, Commemoratives, Strange Countries, Nature's Wonders. Catalog over \$10.00, only 25¢. Approvals, buy any or none, cancel anytime. Daniel Healy, Box 1164PMQ, Arlington Heights, III. 60006.

100 DIFFERENT U.S. Commemoratives \$1.00. 325 Different \$4.00. Free U.S. Price List. Scout Stamps, 2203 Greenleaf, Allentown, Pa. 18104.

SOUVENIR Sheet Free with Approvals. Lee Hoover, Box 3594, Portland, Oregon 97208.

TRIANGLE Animals-Buffalo, Deers, Beavers—Russa's latest Commemoratives-Free! Approvals plus 101
Bonus Sets, William Deems, 226 Race, Ravenswood, West Virginia 26164.

25 US Commemoratives, Magnifier, Perforation auge—25¢. Approvals, Mixdrak, 5630 Wilson, Chicago

"PICTURE GUIDE-U.S. STAMPS—1847-1974". 25¢ (refundable). Free Price lists. Scotco, Box 470855-PMI, Miami, Fla. 33147.

MINT Stamp Cataloging \$3.00—25¢. Approvals. Rose, 104-68 Roslyn, Winnipeg, R3L 0H7.

*50 RUSSIA Pictorials 25¢ when you request 2¢ approvals. PHILMART, Box 3868, McGregor, Texas

FREE! Beautiful Nudes. Request Approvals. Summit, 1146 A-49th, Brooklyn, NY 11219.

1146 A-49th, Brooklyn, NY 11219.

YOURS FREE! 40 RED CHINA Postage Stamps banned to American collectors for a generation by U.S. Gov't. Now at last you can legally own them; and these stamps are so worth having that experienced and beginning collectors allike want them—so act fast, because supplies are strictly limited! You also get 110 other stamps from Britain's Lost Empire plus illustrated Album to keep as a Bonus should you buy \$1.00 from our Approval Selection. Or return Album and 110 stamps with selection and buy nothing. Cancel service anytime. But Red China stamps are yours to keep! Send 10¢ for mailing while supplies last. Kenmore, Milford RC-817, New Hampshire 03055.

B.W. MINT 25 Different \$1.00. Philipot. Box 111

U.N. MINT 25 Different \$1.00. Philpot, Box 111, New Berlin, Wis. 53151.

COLLECT Stamps For Profit! How To Start. Where To Sell. Complete Guide to Most Popular Hobby. \$1.50. Wm. White, 1042 Rosemont, Chicago, III, 60660.

(Continued from preceding page)

COLLECT STAMPS For Profit! How to Start. Where to Sell, Complete Guide to America's Most Popular Hobby, Only \$1.50 plus 50¢ postage and handling. East Islip Distributors, 9 Wensly Lane, East Islip, New York, 11730.

2 NUDE Sets Plus 100 Others Only 35¢, Approvals. Paschall, Agnew, Box 56, Santa Clara, Calif. 95054.

OLDER U.S., POSSESSIONS, CANADA, ON APPROVAL-ADULTS ONLY, PLEASE, SURPRISINGLY GOOD. RIVER-TOWN, BOX 188P, LOWELL, MICH. 49331.

ICELAND Collection, 25 different only \$1.00. Sandell, 701 Sherwood, St. Paul, Minnesota, 55106.

LIQUIDATING Tremendous Accumulation. Collections, Miscellaneous. Lists Free. Alatalo, Maynard, Massachusetts 01754.

LOOK: 300 Worldwide Stamps, 25¢ with Approvals. Scenic Stamps, Box 1973G, Vancouver, Wash. 98663.

OUR PLEOGE TO YOU! Quality Approvals at Fair Prices. Bonus Set with First \$2.00 Purchase. P. E. Roy, Box 9723, Dept. C, Quebec G1V 4C3, Canada.

50 DIFFERENT U.S. Stamps. Includes 1943 flag amp of occupied nations. Only 25¢. Approvals in-uded. Willett Co., Box 338-M, Yorktown Heights, stamp of

COINS, TOKENS, CURRENCY

GRAB Bag U.S. Coins \$5.00, Double Value! Bargain sts Free. Sayers, 1000 Unaka, Johnson City, Lists Free. Tennessee, 37601.

GOLD AND SILVER! Bullion type coins. Wholesale systematic monthly investments. Mexican coin experts. Brochure free. Colonial Coins, 909 Travis, Houston, Texas 77002.

\$11 PER POUND! My Trunkful of Indian & Lincoln Cents from 1880's up to World War II! Sample Sack of 25-\$3. (Add \$1 per pound for postage & handling.) Mrs. Penny Fisher, Box 1778-CC, Encino, Calif. 91316.

COINS At Discount Prices! Free Brochure. Gene Carlton, Chandler, Okla. 74834.

SILVER DOLLARS Uncirculated, 1880-81—1883-84-85 \$10.00 Ea. Catalogue 50¢. Shultz, Salt Lake City, Utah 84110.

LAOS COIN FREE With Foreign Approvals and Catalog, WRITE Lexington Coin Galleries, Dept. MP, Box 447, Lexington, Mass. 02173.

CATALOGUE 3 Lincolns \$1.10—1928S-1938S—1939D -Rongo, 1265 81 Street, Brooklyn, New York 11228.

UNCIRCULATED Silver Dollar \$8.95. \$2 Bill \$3.95 Oz. Silver Bar \$6.95. Catalog 25¢. Coin Pocket, 342 S Central, Lawrence, N.Y. 11559.

6 DIFFERENT Liberty "V" Nickels, \$3.75. Free Coin Catalog. Village Coin Shop, Dept. P, Plaistow, N.H. 03865

LARGE CENT, 2¢3¢ Coins \$3.95 each, Catalog 25¢. Edel's, Carlyle, Illinois 62231

COLLECT Coins for profit, For detailed instructions send \$1.00. B & T Enterprises, Dept 1-B, Reno, Nevada 89502

BARGAINS—Coins, Collectors' Supplies, Broks. Free Lists. Farley Coins, Metamora, Illinois 61548.

GOLD COINS Of the World. Beautiful Low Prices. Plus thousands of United States Coins. Free price list. Please send long, airmail envelope. Self-addressed, stamped. Silver Center, Box 22171-M, San Francisco, California 94122.

"S" MINT Lincoln Cents. All Wheat Backs. Not Picked. 50-\$3.75, 100-\$6.90, 500-\$29.00. "S" Mint Nickels Before 1955 50-\$7.50, 100-\$13.00. Village Coin, 20929 Ventura, Woodland Hills, CA 91364.

FREE: Lists of Thousands of Stamp and Coins. No Approvals. Bryson, 612M White, Toledo, Ohio 43605.

BRILLIANT Gem Proof Sets + 1957, 1959 Each S8.48; 1958 \$14.48; 1960 \$7.68: 1961, 1962, 1963, 1964, 1968s, 1969s, 1971s, 1972s, Each \$6.88; 1970s \$10.88: 1973s, 1974s, Each \$16.48; SPECIAL—All Fifteen \$129.89, Super-Bargain, Lists 30¢, Bebee's, Incorp. Omaha, Nebraska 68111.

SCARCE 1974-S Uncirculated Cent, Coin List 20¢, Foodbard Rev. 20 Buxard's Ray Massachusetts.

Economy, Box 92, Buzzard's Bay, Massachusetts

LINCOLNS: 21 Different 1910-40 \$1.95. Free Bargain Lists. Nayko, Box 233D, Kennedy Airport, New York

1949\$ LINCOLN AND UNC. 1970\$ LINCOLN for 20¢ and Catalog. MAC'S, Box 197, San Ramon, Cal. 94583.

MAGIC TRICKS, JOKES, VENTRILOQUISM

MAGIC! Over 50 great tricks YOU can do! Only 50¢ and stamped addressed envelope. Ascending House, 88-66 195 Place, Hollis, New York 11423.

MAGIC MAGAZINE. Tricks, News, Dealers Offerings. Monthly Since 1936. 2 sample Copies \$1.00. Genii, P.O. Box 36068M, Los Angeles, California 90036.

FABULOUS MAGICS New 1974 Catalogue 50¢. Our Specialty Orders Shipped Same Day. No Substitutes. Fabulous Magic, 3319 East Charleston, Las Vegas, Nevada 89104. Nevada 89104

NEW 68 Page Magic Magazine teaches Magic, Mind-reading, Illusions by World Famous Magicians. Sample copy \$1.00, 1 year (12 issues) \$10.00. THE MAGIC MAGAZINE, Dept. PM, 20 E. 46 St., New York, N.Y. 10017.

makers, Jokes, Tricks, Science, Sports, Hobbies, Jewel-ry, Psychedelia. Johnson-Smith, C-10, Mt. Clemens, Mich. 48043.

MAGIC Amaze, Mystify, Entertain! New 1974 Catalog 25¢. Hundreds of Best Tricks for Stage, Pocket, Parlor. Jeffries Magicland, Dept. 11, Dailas, Texas 75201.

VENTRILOQUISM! Information free. EXCITING FULL COLOR DUMMY CATALOG—25c. Maher, Box 420PM, Littleton, Colorado 80120.

CLOSE-UP Magic list. 25¢. Conjurers Craft, Box 65-M, New Hyde Park, New York 11040.

FREE Trick and Giant Magic Catalog 50¢. Magic Industries. Dept. PM. 381 Park Avenue South, New York, N.Y. 10016.

TWO! Different Magic Catalogs 25¢. Miami Magic, 9734 Bird Road, Miami 33165.

COMPLETELY Illustrated catalog. 84 pages, 25¢. Manhattan Magic, Box 334-M, N.Y.C, 10011.

FREE Bargain List. Magic Tricks, Illusions. Mental-ism. Ballinger, Aliceville, Al. 35442.

WORLD'S Finest professional magic tricks. Joker's ovelties. Giant illustrated catalog 25¢. Top Hat, Novelties. Giant illustra Evanston, Illinois 60204.

WOW! Magic, jokes. Largest selection. Amaze, mystify friends. Super Giant Catalog 25¢. Abracadabra-MP, Colonia, New Jersey 07067.

MAGICIANS—Fantastic Magic! Catalog 50¢. (Deductible from first order.) Conjurer's Cabinet, Dept. 1613, Box 7, Old Bridge, NJ 08857.

ANTIQUES, RELICS, INDIAN GOOD AND CURIOS

VALUABLE 320 page volume . . . Complete guide to FLEA MARKET Shopping . . . Lists value for thousands of Antiques . . . Collectibles. Send \$3.98. Velco, 914-PN, Main, Sabetha, Kansas 66534.

OFFICIAL GUIDE Tells at What Price to Buy and Sell Thousands of ANTIQUES, Send \$4,98 (refundable). Velco, 914-P Main, Sabetha, Kansas 66534.

EVERYBODY LIKES DIXIE GUN WORKS

TONS OF antique gun parts and supplies. All reproduction muzzle loading guns. Send \$2.00 for enlarged illustrated catalog No. 123A. Dixle Gun Works, Union City 12, Tennessee 38261.

INDIAN Relic list. Arrowheads \$4.00, dox. Folsom, \$5.00 each. C. Secrist, Deerfield, Missouri 64741.

SELLING 10,000 Indian Relics, Arrowheads, Knives, pearheads, Scrapers, Etc. List Free, Lear's, Glenwood, Ark. 71943.

6 HIDE Scrapers \$2.00, Smith, 9825 Conway Drive, Indianapolis, Indiana 46236.

10 BEAUTIFUL Arrowheads \$2.00. Guajardo's, 8713 Shaver, El Paso, Texas 79925.

MODELS—CARS, SHIPS, TRAINS, PLANES, ETC.

NEWEST, GREATEST FLYING HOBBY-ROCKETS! Zoom NEWEST, GREATEST FLYING HOBBY—ROCKETS! Zoom from Realistic Electric Launch Systems to 2,500 Feet on Safe, Thrifty, Solid-Propellant Power. Gentle Parachute Recovery For Over-and-Over-Again Flights. Tracking, Experiments, Real Miniaturized Still and Movie Cameras. Build your Own Exciting, Low-Cost Space-Age Adventure—Starting With a Big, New Full-Color Catalog of Over 80 Models (Including Ready-to-Fly). Send 25¢ to ESTES INDUSTRIES, Dept. 7E, Penrose, Colorado 81240.

MODEL SHIP AND CANNON KITS; MARINE LITHO-GRAPHS. Catalog 25¢. Studio House, Dept.-1015, Box 185, Deer Park, New York 11729.

SHIP Model Kits, fittings, plans, books, tools, engines, motors. Illustrated catalog 75¢. Mass. residents add 3% tax. James Bliss & Co., Dept. SM, Route 128, Dedham, Mass. 02026.

SHIP And Yacht model fittings: Pine construction hull kits: blueprints. Send \$1.00 for illustrated catalog, A.J. Fisher, Inc., 1002 Etowah Avenue, Royal Oak, Michigan 48067.

MODEL Airplanes-Big 220 Page Catalog \$1.00. Sig Company, Montezuma, Iowa 50171.

SHIP MODEL Kits, Plans. Fittings from our own Workshop. Big Illustrated Catalog: 75¢. Bluejacket Shipcrafters, 145-V. Water Street South, Norwalk,

SHIP And Airplane Model Kits Catalog 25¢. Scientific Inc., 340 Snyder, Berkeley Heights, N.J. 07922.

GAMES, TOYS, PUZZLES, NOVELTIES

BACKGAMMON! America's Hottest Game Sensation. Booklet reveals secrets for Successful Play. Send only \$1.50, add .50 postage. P.O. Box 161, Quitman, Ark. 72131.

MINIATURE Charms — Trinkets — Toys. (3) FREE Samples. TREASURE CHEST. 9321 PM Capeview Ave., Norfolk, Va. 23503.

BOOKS, CATALOGS, NEWSPAPERS

SELL—Books—By—Mail. Details—Write—T. Davis, Box 672—Jacksonville, Ark. 72076.

FREE Distinctive Gift Catalog. Something For Everyone. Bright Leaf Gifts, Dept. PM-1, Gretna, Virginia 24557.

publicity, advertising, promotion, beautiful books. All subjects invited. Send for Free manuscript report and detailed booklet. Cariton Press, Dept. PM, 84 Fifth Ave., NY, NY 10011.

MATIONAL Geographic Magazines, 1888-1971, any issue. Buxbaum, Box 465-PM, Wilmington, Delaware 19899.

FREE Book. Prophet Elijah Coming Before Christ. Megiddo Mission, Dept. 63, 481 Thurston Road, Rochester, N.Y. 14619.

FREE List, Low Cost Popular Books! Hirsch, Box 93, Fremont, Mich. 49412.

FREE! List of Low Cost Popular Books, 290 Titles, Gift Mart, Dept. PM-1, Box 6457, Hollywood, Fla. 33021.

"HOW TO GROW YOUR FAMILY TREE". Fascinating, Easy, Inexpensive. Book Includes Starting Kit and Instructions to Locate Your Ancestors. \$5.99. House Of York, P. O. Box 9846-M, San Jose, Calif. 95157.

SAVINGS Of 25% on our complete line of books. Free list, BOOKS, 56 W. Strathmore, Pontiac, Mich.

FREE Lists! Hundreds Interesting Inexpensive Books, oberts Gifts, 51 Institute Road, Worcester, Roberts Gifts, 51 Massachusetts 01609,

STREAMLINED Home Study Mail Order Course: 24 ssy Lessons; Send \$2.00; Guaranteed! Carolina pokco., 109 Annandale, Cary, N.C. 27511.

HUNDREDS Books. Catalog 25¢. Fleischer, 129 Walnut St., Everett, Mass. 02149.

FREE DISCOUNT BOOK CATALOG. Save Up to 70%-Fiction, Mystery, How-To. Phil-Jac, 3405 Cedar Hill Rd. Dept. B, Canal, Winchester, OH 43110.

MAKE Money With Your Ideas, Turn Your Ideas into Cash. Booklet Shows How. Anyone can do it. Just \$1.50: Stephens Enterprises, Dept. PMI, 707 South 10th. Street, Lanett, Alabama 36863.

FREE. List of Books. Amazing Variety Including "How-To". ROD-MAR, Box 261, Lorain, Ohio 44052.

FREE LIST Self improvement books. Over 800 selections, Beebe, 3136 Dixie Hwy., Erlanger, Ky. 41018.

INSTRUCTIONAL Mail-Order Publications. Free Catalog. Kulis, Box 9003, Maple Heights, Ohio 44137.

GIANT Bargains, Free Books, In Our Dynamite Book-list. Write: Bookie, Box 1732, Salisbury, N. Car. 28144.

50 LARGE Dealers Of Old, Back Issue Magazine, List .00. VanVynckt, 1325 173rd Street, Hammond, Ind.

FREE 2 Interesting BROCHURES! SELF-HELP—BOOKS
—CASSETTES—SPECIAL OFFER! Adam Enterprises,
6323 16th Avenue, Brooklyn, New York 11204 Dept.
PM1.

"BRAINPOWER" Send \$1.00 to Curtis HOOKS, Sr., P.O. Box B, Lebanon, Illinois 62254.

KNOW Your GOD-SELF And Prove All Good is Possible To You. 83 Page Book \$4.95. Dorothy Paulsen, Zoar Road, Rowe, Mass. 01367.

GAMBLER'S DIGEST. 320 8½ X 11 Pages Packed with Plain Talk from the Pros. For those who love to Gamble, but Hate to Lose. \$5.95. Malden's, Box 221, Atlanta, Georgia 30338.

GIGANTIC BOOK SALE! Huge Selection. Free Catags. Write: Saiter-B, 162 Calvert, Tonawanda, New

EXPAND YOUR MIND! Influence Others. Attract bod Luck! Free List! Unique Inexpensive Books. Bladin House, Dept. PMA, 52 Sidney, Buffalo, New York 14211.

SAVE on Over 40 Categories of Low Cost Books. emplete Information \$1.00. Widmer, Box 54, Grasston, Minn. 55030.

PLAYS, SONGS, MANUSCRIPTS

SONGWRITERS LOOKING for CO-WRITERS on 50-50 basis. HAS songs recorded by BRENDA LEE, EDDY ARNOLD, and others. SEND lyrics to: NASHVILLE CO-WRITER PLAN, BOX 1152, NASHVILLE, TENNESSEE

POEMS Set To Music—Any Style. Alltone Company, 1931 Edison Avenue, Bronx, New York 10461.

BEFORE—Spending Money Carelessly, let Professional Songwriter give some basic Answers, from Long Experience. Copy of Published Religious Song included. Send \$3.00 Currency To: "Songwriter," Box 4808, Pittsburgh, Pa. 15206.

SONGPOEMS! SONGS! Urgently Needed, Possible Recording/Publishing, 50-50 Agreement, Betty's Music Makers, 2048 Executive Building, South Pasadena, Florida 33707.

BUSINESS OPPORTUNITIES

IMPORT-EXPORT Opportunity, Profitable World-Wide, Mail Order Business From Home, without Capital or Travel Abroad. We Ship Plan for No Risk Examination. Experience Unnecessary. Free Report. Mellinger, Experience Unnecessary, Free Report, Me Dept. A2701, Woodland Hills, California 91364,

BIG PROFITS! SELL ENGRAVED METAL SOCIAL SECURITY PLATES. FREE SALES KIT! MYERS, 928-PM CRESCENTHILL, NASHVILLE, TENNESSEE 37208.

A FORTUNE IN JUNK! Learn Upholstery at home . . . Turn cast-offs into chairs, sofas worth \$100's. No experience needed. We show you how . . . even supply all tools and practical furniture kits! Veteran approved. Booklet Mailed FREE. Modern Upholstery Institute, 1205 W. Barkley, Dept.-NPM3, Box 16, Orange, Calif. 92556.

BUSINESS OPPORTUNITIES (Continued from preceding page)

VENDING Machines. No selling. Routes earn amazing profits. Big catalogue Free, Parkway Corporation, 715PBM Ensor Street, Baltimore, Maryland 21202.

SECRETS! Mail Order Success. Internationally famous expert reveals how to make home business fortunes. Beginners: Get Free report "Make Money By Mail". Discloses free advertising, profitable products. Mailco, Dept. AC701, Woodland Hills, California 91364.

PIANO Tuning Learned Quickly at home! Tremendous field! Musical knowledge unnecessary. Gl approved. Information free. Empire School, Box 450327, Miami, 33145.

HOW To Run A Mailorder Business At Minimum Cost! Free Details! Spencer (1C1), 1815-B Ashborough, Marietta, Georgia 30062.

FREE! Just examine my home/business Protection Plan—I'll send you Burglar Alarm free! Beginners start earning big money fast spare time, full time! No experience or costly equipment needed. Write Nasco, Dept. A2701, Woodland Hills, California 91364.

MAKE DOLLARS. 5000 per Month from Your Own Home. New Business. YEUTHEY HOUSE, Box 38477, Los Angeles, Cal. 90038.

MAILORDER Beginners. Get expert's help. Complete planning guide. Prevents frustration. Saves months. Dunmore, Box 2112A4, Asheville, N. C. 28802.

MAILORDER Details Free! Tested! Proven! Profitable! Reust; Box 1126PM; Huntington, Indiana 46750.

FREE One-carat simulated diamond for examining my Plan. Unique home business—others make money for you! Spare or full time, I show how. For free offer, write: Morgan, Dept. A2701, Woodland Hills, CA. 91364.

FIX, SELL, TYPEWRITERS! Book \$3.00. United Typewriters, 12429 South East Stephens, Portland, Oregon 97233.

MY New Business Can Easily Make you \$1,500 per Month. Write: Holland House, 7660 Somerville Dr., Dayton, Ohio 45424.

FREE Catalogs. Repair air conditioning refrigeration. Tools, supplies, full instructions. Doolin, 2016 Canton, Dallas, Texas 75201.

EARN Money raising fishworms for us! Write: Oakhaven-38, Cedar Hill, Texas 75104.

BECOME Our Mail Order Distributor with \$150 Investment. Free Brochure. Audit Controls, 40 Brookside Ave., Fair Lawn, New Jersey 07410.

\$100.00 DAILY Selling Information By Mail; Free Details, Clark, Box 80521-D, Atlanta, Georgia 30341.

INSTANT Money! Plastics are the wave of the future. Big profits now! At home! Spare time! Materials costing 11¢ bring back \$2.58 profits immediately! Free information. Rush name on postcard to: Warner, Room LC-2-EC, 1512 Jarvis, Chicago, IL 60626.

MAILORDER—Nationally Known MILLIONAIRE will teach you personally. Write for Informative Book. Gift Catalog, and Complete Details. EVERYTHING FREE! No Obligation. Mail Order Associates, Dept. 14, Montvale, NJ 07645.

VINYL'S Where The Money Is! Invisibly repair, refinish, recolor furniture, luggage, car tops. Quick, easy. Two small \$20 jobs a day earn you \$1,000 a month. Homes, cars, offices, restaurants, unlimited customers. Start earning after an hour's practice. Sensational details Free. VIP, 2035 Montrose, Chicago, 60618.

EARN Extra Money in Your Spare Time Mailing Commission Circulars, Rush Addressed, stamped Envelope for Free Details. Kinson Company, Box 309, Bedford, Ind., 47421.

\$300-\$700 MONTHLY. Raise Rabbits, Laboratory animals for us. We supply Equipment, Breeders, Instructions. Details 25¢. Rabbits Of Michigan MP11, Countyline Road, Pentwater, Michigan 49449.

ADVERTISING BUSINESS—You Own It! \$400 first week or money back. Action Ad Clock, Room AC-2-EC, 1512 Jarvis, Chicago, IL 60626.

CLAIM ABANDONED SILVER—\$24,000 Secret revealed! Free Information: Silverman 13, Box 548, Woodville, Texas 75979.

EXCEPTIONAL Income opportunities. Choose from thousands of easy to start highly profitable businesses. Buy anything (including name brands) below wholesale. No stock investment. Nothing left to guess work. FREE DETAILS. Fiscella Systems, P.O. Box 834, Dept. P.M., Redondo Beach, Ca. 90277.

\$400.00 MONTHLY Raising glant fishworms. Soilless method. Charlie Morgan, Bushnell, Florida 33513.

START Profitable Wholesale Business From Home. No Experience or Capital necessary. Instructions and Illustrated Catalog Only \$3.00. Stoton Merchandise Company, 101PM Ewing Drive, Stoughton, Mass. 02072.

EARN BIG MONEY. Have Your Own Money Business. No Capital Required. Free Details. Foley, Box 535-PM, Lawrence, Mass. 01842.

DELUXE SELLING 0"TFIT—35,000 Office Supplies, Machines, Furniture & Equipment. Refundable Deposit Required. Write—Oseco, 3505-PM Elston, Chicago, III.

\$10—\$20 HOUR FULL OR SPARE TIME
Filling Out Tax Returns or Bookkeeping At Home. Details Free. JEFFERSON BUSINESS INSTITUTE, 1AQ, Box
4564-GS, Springfield, Missouri 65804.

BECOME Mailorder Stamp Dealer. (Home Goldmine!)
FREE Details. NPC, Box 355, Greenville, South Carolina

"MAILORDER Beginners Library." Seven instructive books. Only \$6.50. Dealers Wanted. Neil H. Tasker, Shamokin, Pennsylvania 17872.

\$12.50 HOUR Spare Time—With Your Own Easy Vacuum Cleaner Repair—Rebuilding Business! Small Investment, "Results Guaranteed." Details Free! Baron, Box 863AB1, Portales, New Mexico 88130.

WRITE FOR PROFIT! 28 Year Guaranteed Income! Writing at Home. Economy Enterprises, Nbr. 23-P, Highland, Maryland 20777.

MAKE \$92.00 FROM Square Foot Plywood (Jigsaw or Bandsaw necessary). (Proof), details 25¢. (Refundable), Woodart, Bridgewater, Mass. 02324.

FREE 100-Page Catalog waiting to bring you Big spare-time cash commissions. Sell Advertising Book Matches. Every business a prospect . . . complete selling instructions furnished. Steady, repeat business. Dept. MX-175, Superior Match Company, 7530 South Greenwood Avenue, Chicago, Illinois 60619.

MAKE MAGNETIC SIGNS, BIG PROFITS, FREE information. Universal, Lenora, Kansas 67645.

MAKE \$7.50 to \$15.00 hourly building portable custom cases in your home. Huge demand. Get orders by mail. We supply materials, instructions—everything. Free details. Customcase, 6075 De Soto, Dept. C-20-25, Woodland Hills, California 91365.

FREE Brochures, Extra Income. Clayton's, 1415 Jefferson Heights, Pittsburgh, Pennsylvania 15235.

\$\$\$\$ MACHINE! Reproduces! Carves! Engraves! Wood! Metal! Cheap, Easily Built. Economy Enterprises, Box 23-P, Highland, Maryland 20777.

BUILD \$3,000.00 Foam Plastic Home, One Week. Sell For \$50,000.00. Costs 66% Less To Heat, Cool. Patent Pending. Drawings, Details, \$10.00 Refundable. Ark (A), Box 16046, Kansas City, Missouri 64112.

MAILORDER BEGINNERS. Success—Big Earnings— Yours if you follow Instructions from a Professional with over 40 Years Experience. Free Details. BARCLAY, Box 45PA, Halesite, N.Y. 11743.

BOOMING CATFISH FARMING, U.S. sponsored including financing. Make a Fortune, Government instructions \$2.00. Scientific Catfish Farming. Box 1089, St. Petersburg, Florida 33731.

MAILORDER Opportunity. Beginners, Established. Every business uses. Elco, 181-M, Sylvania, Ohio. 43560.

BECOME Tax consultant. Our students earn \$1,000-\$3,000 every tax season preparing returns evenings. State approved. National Tax School, Monsey 2AF, New York 10952.

\$10.00 PROFIT On Every \$15.00 Sale!!! Free Details! Millerprises (3A15), 55 Stadley Rough, Danbury, Conn. 06810.

EARN \$80.00 Daily Manufacturing Concrete Bricks-Tiles-Wooden Molds. Send Stamped Envelope, Hilmar, Route One, Box 347-DH, Valrico, Florida 33594.

\$19.95 INVESTMENT—\$100,000.00 Return. Fast-Easy-Exciting. Details \$1.00 postage-handling. Satisfaction Guaranteed. Composite, Mancelona, Michigan. 49659.

PORTABLE Sandblaster \$29.95. Distributor wanted. Free Brochure. Inka, Box 66573-A, Houston, Texas 77006.

\$1.00 LISTS You year sent to 1000 Importers, Jobbers, Mailers, our mailing year. Dixiemi, King, North Carolina 27021.

\$200.00 SPARE Time earnings with your Tablesaw. Write: Workshop Five, 3800 Harney, Vancouver, Washington 98660.

\$100.00 DAY. Manufacturing Concrete Blocks, Posts.
Semi-Automatic Block Machines. Mold Equipment
Catalog, over sixty items, \$2.00 refundable. Carlayne,
Route One, Box 95, Rapid City, South Dakota 57701.

SELL Books by mail. Complete dealer set-up—25¢. Midwest Mail Sales, Box 44R2-PM, Shawano, Wisconsin 54166.

WORLD'S Largest supply, Merchandise 25% to 40% under wholesale. Bankrupts. Closeouts 10¢ on dollar imports. Hong Kong clothes. Automobile discounts. Free details. International Buyers, Box 16386 MM, Portland, Oregon 97233.

PIANO Tuning Quickly learned with home study course, Diploma granted, American Tuning School, 17050 Telfer Dr., Morgan Hill, Calif. 95037.

\$200.00 DAILY In Your Mailbox! Opportunity To Follow Mailorder Experts. Free Details. Associates, Box 136-A, Holland, Mich. 49423.

BECOME "Mortgage Broker." Lucrative! Capital Sources. Box 640099, Uleta, Florida 33164.

MAKE years income in 8 weeks camping no selling capital or land necessary. Write Edru's, Box 46A, Gig Harbor, Wash. 98335.

EARN \$10 DAILY writing short articles. Begin immediately! Copyrighted report reveals how and where. Send \$1.00. Bradley, 589 Ridgewood Ave., Dept. 1, Bklyn, N.Y. 11208.

\$500/THO"SAND! STUFFING ENVELOPES At Home, No Limit, IMMEDIATE Earnings! Complete Beginner's Kit \$1.00. Century Corp., Box 182, Dept. R-1, New York, N.Y. 11227.

FREE Information Mail-Order Beginners Books, Box 6625, Orange, Calif. 92665.

SPARE TIME—Make Money Selling Miniature Radios, 50% to 100% Profit Possible. Send \$1.00, For Information and Wholesale Price List To: Micro Radios, P.O. Box 50208, Cicero, Illinois 60650.

26.00/HUNDRED Addressing Envelopes. Details \$1.00. Stamped Addressed Envelope. Keen, Box 9995-PM, San Diego, CA. 92109.

\$25,000. DISTRIBUTOR—General Foods. Write: Gourmet Products, 6601 Hillcroft, Suite 114, Houston, Texas 77036.

"\$300.00 PER-DAY." If I could, Why not You? Free Details, Joseph F. Petry, P.O. #406, Ishpeming, Mich. 49849.

FREE COLLECTION AGENCY Details!! \$1000.00 Monthly Possible. Master-PM, Dawsonville, Georgia 30534.

HOW TO RAISE \$100.00 to \$1,000,000.00!! Write: Capital-PM, Dawnsonville, Georgia 30534.

START Mail Order. New Product. Fun, interesting, profitable. Free Information. Toadstools, POB 1044-M1, Mason City, Iowa 50401.

EXECUTIVE TYPE MAILORDER Business. \$15,000 annually plus. Full year trial basis. Northeast Imports, Box 121M1, Fremont, N.H. 03044.

MAILORDER Millionaire helps beginners make \$500 weekly. Free report reveals secret plan! Executive (1A1,) 333 North Michigan, Chicago 60601.

MAILORDER BEGINNERS LIBRARY, Learn Professional Secrets Inexpensively! Write: HOW, Box 4457-PM1, Downey, California 90241.

I MADE \$40,000.00 Year by Mailorder! Helped others make money! Free Proof! Torrey, Box 318YY, Ypsilanti, Michigan 48197.

MAIL Baby Catalogs to New Mothers for Big Profits! Details 25¢. Volz-PM, Ypsilanti, Michigan 48197.

DEPRESSION Coming?? Guaranteed Secret Forecasts!!! Proven method!!! Used by Experts. Proof, Information, \$1.00. Databank, Box 7071-PM2, Erie, Pennsylvania 16510.

FORTUNES with FORMULAS 100 of them Shampoos-Deodorants-Polish-Plastics 96 more. \$4.95 BBN Co. Dept. D-101 P.O. Box 191, Gretna, La. 70053.

WE NEED GINSENG GROWERS! \$3,000-\$30,000 Annually! We Buy Your Crop. Send \$2 for seed sample and information. Glass's Ginseng Exchange, Box 336, Rochdale Station, Jamaica, NY 11434.

BLACK Widow Spider Ranchers Needed! Guaranteed Market! Amazing Profits! BWC, Box 503-PM, Brigham City, Utah 84302.

REPAIR, Rework, Restore, Civilian and Military Firearms, "Gunsmithing Digest." Rush \$5.95, Catalog 10¢. Oak, Box 1488, Oak Brook, Illinois 60521.

GINSENG Seeds, For planting. Roots bring over \$35. per lb. For information, price list. Write; Blueridge Ginseng, Rt. 7. Ft. Payne, Ala. 35967.

MAKE Durable Building plastic easily. Waterproof, Fireproof, Economical, Bays Laboratory, Cedaredge, Colo. 81413.

FANTASTIC PROFITS And INDEPENDENCE Can Be Yours—Protect Your Future Security Wholesale—Retail—Mailorder—Your Own Business Hundreds of Items "No Fees or Commitments" \$2.00 Brings Details and Giant Catalog. Refundable on First Order, Relm Specialty Co., 1 Arkansas Trail RD #2, Medford, N.J. 08055.

FLYING Saucer That Works, Simplified Furion Power, Levitation Gravity Motor, Permanent Magnet Self Powered Motor, 1000 Horsepower Wind Motor, 1000 Horsepower Solar Freon Motor, Make Car Get 100 Miles Per Gallon, Run Car On Alcohol-Water 12¢ Gallon, Patents Pending, Drawings, Details \$10.00 Each. All \$29.00 Refundable. Miracle Science (E), Box 16046, Kansas City, Misouri 64112.

YOU'D Better Believe It. Your Only Chance! Print, Sell Your Own 50¢ long Multicolor Comic Greeting Cards. Save 90% costs. Send Only \$98.00 For Art Masters of 20 copyrighted Designs Ready to Print (No Inquiries without \$98. Refundable) To: "Mark Cards" (T.M.I.), Box 8170, Kansas City, Missouri 64112.

OPPORTUNITY to Earn \$222 Weekly. Easy. Free details, York Consultants, 100 York St. New Haven, Ct. 06511.

SACRIFICE! \$3,000.00 Specialty Merchandise business. \$595. Cumberland Specialties, Monticello, Ky. 42633.

PERFECTED Now! Completely Solar Power Home Furnace, Air Conditioner, Appliances All Year! Quick Fortune Possible. Patents Pending. Drawings, Details \$10.00 Refundable. "Ra", Box 16046, Kansas City, Missouri 64112.

WHERE To Buy 750,000 Products Wholesale, Howard, 340-PM, Belton, South Carolina 29627.

\$800 MONTHLY—Addressing Envelopes. Details 25¢. Wanco, Box 3271-PJ, Columbus, Ohio 43210.

ABANDONED SILVER, Collector Cost Pennies, WORKS WHILE YOU SLEEP, \$2.00 For Instructions, E.J. Sales, Box PMJ, 3084 Centerline, Mich. 48015.

AMAZINGLY Simple Video Recorder, Player. Millions Possible. Patents Pending. Drawings, Details \$10.00. Refundable. Videon (V), Box 16046, Kansas City, Missouri 64112.

(Continued on next page)

143

\$19.95 PER SALE = \$16 PROFIT?? Yes! Show unique Manuals to Business-men, 5 sales gives you an \$80, morning, (Take afternoon off!) Details: Simon, 1280-LF Sawmill, Yonkers, N.Y. 10710.

Proof! Associates, Box 123-P, Wenonah, N.J. \$2,000 MONTHLY 08090

SELL How-To Books!! Big Profits, Complete Ready to Use Program. Instructions, Sample Catalog 25¢. Konkel, Dept. A1, 2128 Marie Park, Albuquerque, New Mexico 87112.

YOU TOO COULD BE EARNING \$1.00 Each Stuffing Envelopes. Starter Kit \$1.00 Stamped, Addressed, Envelope. Box 565-M, Great Bend, Kansas 67530.

STUFF Envelopes, \$250/thousand, Guaranteed Immediate earnings. Send stamped addressed envelope Bobier, RD2-188MJ, Kirkwood, N.Y. 13795.

HOW To Start and Manage Any Business . . . Free Details. Alsar, Box 184-PM, Paramus, New Jersey 07562.

MAILORDER-IMPORT Free Details, New Low Cost Method, McKinley, Box 5482, Charlotte, N.C. 28205.

RECEIVE \$250.00 Per Thousand—stuff Envelopes— arn Immediately—Details 25¢. Saffar, Box 1956-PM14, Earn Immediately—Deta Atlanta, Georgia 30301.

GREAT Profits! Hundreds of Wholesale Imports. Free Details. Straits Products, 832 Victoria, Port Angeles, Wash. 98362.

MAILORDER, COMPREHENSIVE GUIDEBOOKLET For Beginners. Includes Laws, Product, Advertising. \$1.00. Douglas, 46 State Court, Gaithersburg, Maryland 20760.

MICROGRAPHICS. Details of Unlimited Opportunities in Exciting New Industry Plus Newsletter. \$1.00 Microforms, Box 929-M1, Estes Park, Colo. 80517.

STUFF Envelopes \$250/Thousand Immediately, Free Supplies, Rush Stamped, Addressed Envelope. Sulser, P.O. Box 786, Artesia, Calif. 90701.

START Profitable Limited Production Factory. Write. Business Research, Box 5658A1, San Antonio, 78201.

\$100.00 DAILY In Your Mailbox. Plan. Plus 6 primulas, \$1.00 Complete. Hughes, Rt. #1, Senoia, Formulas, Ga. 30276.

SECRETS! MAILORDER KNOW-HOW Taught By Pro-essionals. FREE Details. Write: Library, Box 15497-AY, fessionals. FREE Details. Salt Lake City, Utah 84115.

STUFF Envelopes, \$250,00/thousand, Free Supplies, Rush Stamped, Addressed Envelope, Continental Business Service, 5157 North New Jersey, Indianapolis, Ind. 46205.

BECOME A Millonaire! Your Own Business. Success, Box 9869-B, Phila., PA. 19140.

EARN \$60.00 Daily manufacturing Concrete Fence Posts. Practically no Investment, Send stamped-ad-dressed envelope. American, Excelsior Springs, Mo.

ESTABLISH Successful mailorder business. Free mples! Mears-PM, 5363 Essex, Alexandria, Virginia 22311.

BIG Profits Addressing Envelopes 25¢. Willard, Box 1036X, Palm Springs, Cal. 92262.

\$8,000 MONTHLY SPAPE TIME! No selling! Start Immediately! Free proof. Owco, Box 665-A, Inglewood, Ca. 90307

HOMEWORKERS \$250.00 Per Thousand Addressing Envelopes! Complete Starters Kit \$1.00. Homeworkers, Box 142, Ladson, South Carolina 29456.

1000% PROFIT Bronzing Baby Shoes At FREE LITERATURE NBCPM, Gower, MO. 64454.

ADDRESSERS—MAILERS—HOMEWORKERS NEEDED! 50 firms listed. Information: Rush 25¢, Stamped, Addressed Envelope. Owco, Box 665-A, Inglewood, Ca. 90307

HOLLYWOOD CEMENTCRAFT: Offers Highly Profitable Home Business. Experience Unnecessary. Unlimited Home Business. Experience Unnecessary. Unlimited Unique Pottery Designs Easily Made Without Moulds. Birdbaths, Fountains, Wishing-Wells. Waterfalls. etc. Chemical Coloring Formulas. Marbel-glazing. FREE Illustrated Brochure. CONCRETE FACTS, 602 Athens Street, Altadena, California 91001.

NEW. Compact fire extinguisher. Fantastic profits. Exclusive territories. Norwich Chemical, Norwich, Connecticut 06397.

RECEIVE Mail Galore! National Listing. \$1.00. Sullins, 1313-M, Brunswick, GA 31520.

FREE NEWSLETTER. SELL BOOKS BY MAIL. holesale. Dropship. National Publishers, Wholesale. Dropship. National Publishers, Box 1355-C. Sioux Falls, South Dakota 57101. START Your Own Correspondence School. United Career Schools, 5820P Imperial Hyway, South Gate,

Calif. 90280.

FREE SECRET BOOK "2042 Unique Proven Enter-prises." Tiny businesses but huge profits! How Little Fellows beat inflation. Work home! Haylings, T51, Carlsbad, California 92008.

1000% PROFIT POSSIBLE. Part-full time. Operate from home. No inventory investment. Double your income in 5 months! Details free. Olympic, 744L Broad, Newark, N.J. 07102.

CLASSIFIED ADVERTISERS!! USE WEEKLY TV tabloid. Low rates; proven results. Copy, rates \$1.00. Liebig, Cold Springs Road, Huntingdon, Pennsylvania 16652.

\$5 monthly. Free details. Chicago School Watchmaking, YNA, Fox River Grove, Illinois 60021.

TIME TESTED Mail-Order Methods. Amazing Profits egardless of Experience. Details Free. Mail-Order, Regardless of Experience. Details F Box 9091, Salt Lake City, Utah 84109.

COMPLETE MAIL ORDER BUSINESS \$5.00 Enough starting supplies to NET you \$100 PROFIT. Liebig, Cold Springs Road, Huntingdon, Pennsylvania 16652.

FREE BOOKLET! "Mailorder and You". AJ, Box 295, Rancho Cordova, Cal. 95670.

\$800. MONTH. Ivory, Jade, Opal Jewelry. Sales atalog—25¢. Rings, Box 5324-PM, San Diego, Catalog-California 92105

MAKE Magnetic signs, Machineless method, Profits enormous. Write: R1B49APM, Bardstown, Ky. 40004.

\$1.60 ASSURED EACH Envelope You Mail. Details, SASE. Hunt-MC, 1340 Rice, Yellow Springs, Ohio 45387.

COLLECT Names Pay \$250.00 Thousand Send Stamped Addressed Envelope. J.R.H., Box 11, Sayreville, N.J. 08872.

MAILORDER BEGINNERS—Read "Starter's Guide" rst! Helpful, often overlooked information. Details int FAST! Adams. Room 6B1, 12128 West 70th, reads Colorade 8000. first! Helpful, ofter sent FAST! Adams. Arvada, Colorado 80004.

\$178.00 WEEKLY Working Spare Time. Free Bro-chure. FAS, Box 13703, San Antonio, Texas 78213.

TAKE Catalog orders. We drop-ship 1001 best selling specialty products. Lowest below wholesale prices. Immediate Delivery Spectacular home business opportunity. Free Book. Specialty Merchandise, Dept. 20-25, Woodland Hills, California 91365.

\$2,000.00 MONTHLY in fabulous new business. rite: Johns Mailorder, Box 412, Okla. City, Okla. 73101.

MAILORDER Dealers Wanted! Proven Executive Type Program! Details 25¢. P.W., Box 562, Royal Oak, Mich. 48073

\$200 WEEKLY! Make, Sell Bricks! Free information! Xcito Bricks, 5715 N. Mozart, Chicago, III. 60659.

MAILORDER DEALERS. Your Own Business Immediately, Everything Supplied. Free Catalog, Details. Dunes, 310-1A Southeast Parkway, Richmond, Indiana 47374.

VALUABLE Mail Order Information, Write: Capital, Dept. PM1, Box 60538, Nashville, TN 37206.

HOW TO SELL Books by mail. 800% profit! Details ee. Books—PM4D, Box 10344, Palo Alto, California 94303

START A Publishing House In Your Basement! Publish Books, Courses, Newsletters Inexpensively, Amazing Profits, Free Details, Floyd-6C3, Box 653, Newberry, South Carolina 29108.

NOW! MAKE 2-3 Times Your Cost On Hundreds Of Products. Gift Items, Novelties, Toys, Carded Merchandise. \$3.00 Brings Glant Catalog, Refunded On First Order, Magnolia House, PM-2, 2300 Hilltop, Albany, Ga. 31707.

NEW Business Opportunities. Send Card. Energy-craft, 2350 W47P, Denver, Colo. 80211.

LEARN MAIL ORDER Business With Instructive Book "Streamlined Home-Study Mail Order Course." \$2.50 Cazin, 526 Maple, Redwood City, Calif. 94063. \$2.50.

MONEY SAVING Information for small businesses and entrepreneurs. Pfeiffer, Box 7036, Long Beach, California 90807.

FREE Details. FREE Details. 100-400% profit selling books by mail. Profit, 858 Glencoe, Denver, Colorado 80220.

INCOME APARTMENTS Make Money, Free Informa-on, Sullivan (PM51), 754 Myrtle, Albany, New York 12208.

BIG PROFITS In REAL ESTATE. Copyrighted Report Tells You How And Where To Buy Land. Booklet #MO-61RE SEND \$1.50 Write. Walter Makos, 29831 NORMA, Warren, Mich. 48093.

IMMEDIATE Earnings Stuffing Envelopes. Beginners Kit \$1.00 (refundable). Central New York, Box 332-PM Utica, New York 13503.

"INTERESTING Moneymaking Opportunities, Details 10¢. Monohon, Box 99275 PM12, Tacoma, Washington 98499."

COUPLES, \$300.00 Weekly Possible working 3 hours daily. Details \$3.00. Head, Route 4, Box 38, Owensboro, Ky. 42301.

MAILORDER Dealers wanted. Earn outstanding profits using tested promotions! Executive T ness. Rutward-PF, Georgetown, Conn. 06829. Type Busi

HOMEWORKERS! \$200 WEEKLY Possible addressing for firms. BEGIN IMMEDIATELY. Details 25¢. Hodgkins, Box 10279 FM5, Fort Worth, Texas 76114.

\$12,000 EXTRA EVERY YEAR: I GUARANTEE \$12,000.00 is the MINIMUM you will make in a Busi-ness of your own. THIS IS NEW! Write for free details. DON THORN, 1406-J2 Koenig Lane, Austin, Texas 78756,

ADDRESSERS Mailers-Homeworkers Needed! 50 Firms Listed. Information: Rush 25¢, Stamped, Addressed Envelope. IHS Highway 58, Turbeville, Va. 24596.

REPAIR Hydraulic Jacks—Details Free, Write: Hydraulic Parts Supply, Box 295, Port Isabel, Texas

\$500 PER Thousand Possible Stuffing Envelopes. FREE SUPPLIES! Rush Stamped Addressed Envelope. M.J.A., 1704 Burchfield Rd., Allison Pk., Pa. 15101.

assemble our product and be local agent, experience unnecessary. May start while presently employed. Five-figure income for responsible applicant. S.K.R.M. Manufacturers. 2115 Torrance Blvd., Torrance, California 90501.

HOMEMAKERS, Need Money? \$2501 Thousand pos-sible. Rush Stamped addressed envelope: LinFlo Products, P.O. Box 215PM, Jamestown, Ind. 46147.

INFLATION-PROOF: 37 WAYS TO MAKE EXTRA MONEY! Free details. FORTUNE World, Box 4012, Foster City, California 94404.

\$250/THOUSAND IMMEDIATELY, FREE SUPPLIES. RUSH STAMPED, ADDRESSED ENVELOPE. Ross Enterprises, Box 5491, Irving, Tx. 75062.

AMAZING 50 Home Businesses You Can Start On \$50 Capital. Free details, Fortune World, Box 4012, Foster City, Calif. 94404.

STUFF Envelopes \$300/thousand Free Details. Send amped-addressed envelope. MBM Distributors stamped-addressed envelope, MBM Dis 13297 Coyle, PM1, Detroit, Michigan 48227.

3 STEPS TO INSTANT SUCCESS Send \$3.00, your Name, Address to Behr, P.O. Box 1211, Pacific Palisades, Cal. 90272.

FREE SUPPLIES STUFF ENVELOPES \$250 THOUSAND IMMEDIATELY. RUSH, STAMPED, ADDRESSED ENVELOPE. Wilmington, 1095 Garson Ave., Rochester, Name Varch 16000 New York 14609.

MAILORDER HOME STUDY COURSE. Twenty-four easy essons \$2.00. Riollano Enterprises, 1265 Gerard Ave., Bronx, New York 10452.

STUFF ENVELOPES, \$250 Per Thousand, Free Supplies, Send Stamped Addressed Envelope. C and L Distributors, Dept. 101, Box 301, Cincinnati, Ohio

MAKE 2 To 3 Times Your Cost on Hundreds of Products. Gift's, Novelties, Toys, Carded Merchandise, 1001 Others. \$1.00 Brings Giant Catalog Refundable on First Order. M. Conley Company, 508 Ohio Street, Akron, Ohio 44304.

ADDRESSERS-Mailers-Homeworkers needed! Information: Rush 25¢, Stamped, addressed envelope Suny Stage, Box 120, Brockport, New York 14420.

NEW Make \$100.00 A Day In Your Spare Time, at ome. For more information write. SDWT, Box 4738, home, For more infor San Diego, Cal. 92104.

\$1000.00 MONTHLY! Become our mailorder distribu-Everything supplied—circulars, mailing Enterprise, Box 1296-B6, Newport Virginia 23601.

SS MAKE MONEY WITH NEWSPAPER CLIPPINGS, SPARE TIME, Rush stamped-addressed Envelope. Newspaper, Box 34255-B1, Clermont, Indiana 46234.

MAKE MONEY Clipping Newspaper Items, \$2.00-\$10.00 Each . . Details Free, Clippings, Box 10344-PM 9B, Palo Alto, California 94303.

HOMEWORKERS—Mailers Wanted! Free Information, A. Allen, 2418 Lori, Santa Ana, California, 92706.

MONEYMAKING OPPORTUNITIES

SPARE TIME CASH. Sell famous Hanover Shoes. Samples, sales kit free. No experience needed. No age limit. Big commissions. Hanover Shoe, Dept. 1290, Hanover, Pa. 17331.

VENDING Machines. No selling. Routes earn amazing profits. Big catalogue Free. Parkway Corporation, 715PMM Ensor Street, Baltimore, Maryland 21202.

VINYL'S Where The Money Isl Invisibly repair, refinish, recolor furniture, luggage, car tops. Quick, easy. Two small \$20 jobs a day earn you \$1,000 a month. Homes, cars, offices, restaurants, unlimited customers. Start earning after an hour's practice. Sensational details Free. VIP, 2062 Montrose, Chicago, cost 9 60618

HUGE PROFITS in REAL ESTATE!! New report tells how—where to buy land, \$1.50 plus 50¢ postage-handling brings item 7015. Satisfaction Guaranteed. Grady Matthews, 6225 West Boehike, Miyaukee, Wisconsin 53223. Wisconsin residents add 4% tax.

YEARLY From Mail Order, Remarkably Details \$2.00. Best, 19 Finchley Road, \$40000, YEARLY From Revealing Details \$2.00 Westcliff, Essex, England.

BEAT INFLATION and be DOLLARS ahead, NEW, exclusive, informative guide tells HOW. Clear, precise explanation will help you spend less for food, clothing, housing, transportation, Guaranteed, \$1.00. Penny Assc., 263 Maplewood, San Antonio, Texas 78216.

FREE—Easy Wavs to make money selling exciting new products—Full—spare time. Send name, age for 5 months free subscription. Salesman's Opportunity Magazine, 1460 Hancock Center, Dept. 184, Chicago

MONEY Rolls in from everywhere. No merchandise handle, Instructions \$1.00. Charles Co., 42-PM, to handle, Instructio Norwood, Ohio 45212.

WORLD'S Leading Contest Magazine, 50c. Pri winner, 1315 Central, St. Petersburg, Fla. 33705.

FABULOUS Import/Export Business. Learn how to get started fast. Report reveals Foreign Suppliers. Ideal Export Items. \$1.25 Booklet AMO58E. Valley Marketing. 2315 W. Clay, St. Charles, Mo. 63301.

SWEEPSTAKES Contests. How to Win. Write for Free formation. General Contests, 1609-18 East 5th., Information, General Co Duluth, Minnesota 55812.

POKER Anyone? Be A Winner Expert Tells How. Catalog \$1.50. Gold Coast Gifts, Pacific Grove, Cal.

MONEYMAKING OPPORTURES (Continued from preceding page)

BIG PROFIT in Real Estate. New Report Tells you How and Where to buy Land. Just send \$1.50, add .50 for postage. P. O. Box 161, Quitman, Ark. 72131.

WEEKLY \$300.00 WEEKLY Possible—Stuffing envelopes. Start Immediately! Details, \$1.00, refundable. Royal-PM8, Box 36643, Los Angeles 90036. refundable.

EXTRA CASH! Show engraved, metal, Social Security Plates. FREE SALES KIT! Wright, 1075-PM Ringwood, Pompton Lakes, N. J. 07442.

MAILORDER There is Money in it. BUT—Before You Invest Investigate. \$3.00 Refundable. Prince Special-ties, 9 Roberts, Farmingdale, N.Y. 11735.

SCIENTIFIC MASSAGE: Big Earnings; uncrowded pro-ession. Learn spare time at home. Diploma awarded. ree Catalog. Write: Anderson School, Dept. A-1C, Free Catalog. Write: Ar Princeton, Illinois 61356.

HORSEPLAYERS—Free!!!!! How Turfwin Won \$300 eekly. Guaranteed! Turfwin, Box 581 PM, Port Wash-Weekly. Guarantee ington, NY 11050.

\$200.00 WEEKLY Possible Mailing Circulars. Send Stamped-Addressed Envelope. Mearian, 3565-R Albatross, San Diego 92103.

SELL Sensational Low-Cost Burglar Alarm. Excep-tional Margin. Samples for trial. Northwest Electric, Ave.924, Mitchell, South Dakota, 57301.

FANTASTIC FORTUNES In Used Books Complete De tails—\$2.00 Plus 25¢ Postage. ABCPM, Box 2511, Lubbock, Texas 79408.

CLIP. Newspaper Items \$2.00 to \$15.00 Each, Details Free. Rotunda A1, 1021 Birchmount Rd., Toronto, Canada M1K-1S2.

"ACCUMULATE WEALTH!" Even on "Your" Income! \$2.98. Productions, Box 1375, Mountain View, Calif. 94042.

BUILD Trellis for Fun and Profit. Seven Plans \$1.00 plus postage and handling, Plans, House of Hauppau Mail, 91 Bridge Road, Hauppauge, New York 11787.

HOW TO Make Money Writing Short Paragraphs. Information Free. Barrett, Dept. C-27-X1, 6216 N. Clark, Chicago 60660.

**SUB-LICENSE AVAILABLE Under U.S. Service Mark #872,332 to Own and Operate a LOST & FOUND Service In Your Area. Service Includes Sale of Serialized Identification Devices For Personal and Business Property and is Connected with Nationwide 24 Hour Security-Recovery System. Potential for Fund Raising and Revenue Sharing on National Contracts. Minimum Investment, Details \$1.00. LOST & FOUND Service, 1662 Hawksway Court, Westlake Village, Calif. 91361.

FREE Details! \$700 Weekly!!! Millionaire Reveals. Aware, Box 1248-PMD, Pacifica, Calif. 94044.

ASSEMBLE Jewelry. Jewelers Hardware Catalog 50¢. Customcraft, 493P Main, Ventura, Calif. 93001.

CLIP Newspaper Items, \$1.00-\$5.00 each, Details free, Walter, Box 1360-PA, Erie, Pa. 16512.

FREE Details! Win lifetime income from Dice, Roulette, Thoroughbred, Harness, Dog Racing, Professional shows you how, Guaranteed, Professional Research, Box 551-PM-1, Mineola, NY 11501.

SHOOT WEDDINGS Like The Pro's. 150 Pictures that make money for Professional Photographers. Earn \$300.00 on a Weekend. Information, Tips Booklet \$1.00. Studio WM, 6713 Wildwood, Westland, Michigan 48185

MAKE Big Money. We furnish everything. For details send self-addressed envelope. Enterprises, Box 4516-Z, Compton, Calif. 90224.

POWER Car And Home On Atmospheric Pressure, 100 Horse-Power Resonating Electric Power, 500 Horse-Power Wind Motor OutPerforms All Others, 1000 Horse-Power Heat Expansion Cold Contraction Motor, Practical Solar Power Now, U.F.O. That Works. Patents Pending, Drawings, Details \$10.00 Each. All \$25.00. Refundable. Spaceman (PM), Box 8170, Kansas City, Missouri 64112.

SELL Ordinary Sand \$5 Pound. I Do It, So Can You! Details Free! Sandco, Ceres, Calif. 95307.

\$12 HOUR Making Ordinary Potholders. Free Details! andco, Ceres, Calif. 95307.

LEARN, EARN Mail Order from Home Spare Time. Been telling how since 1929. Facts, Stories, Sources, Thousand Offers, Complete Course in Mail Order. Sample Copy 50¢; Year \$12. Mail Trade Magazine, Box 1302, Springfield, IL 62705.

HOMEWORKERS. Receive \$100,00 weekly lifetime income mailing six envelopes daily Gemco, B-21244A, Indianapolis, 46221. daily. Setup \$2.00.

BORROW Your way to great riches. Free data. IWSP, Bank Plaza, Merrick, New York 11566.

ADDRESSERS-Mailers-Homeworkers Needed! 50 Firms Listed. Rush 50¢, Stamped Addressed Envelope to: M.C. Enterprises, D-11, 1908 West 48th St., Chicago, 111, 60609.

HOW To Make A Fortune Through Mail Order! Send 3.95 today—Guaranteed! Albon, Box 154-E1, Bronx \$3.95 10459.

STUFF Envelopes \$250/Thousand Immediately, Free Supplies! Details 25¢, Shorvue, Drawer 2256-P, Salisbury, Maryland 21801.

EXTRA Money! Free Advertising! Become Our Mail Order Distributor. Details 20¢. Lawrence, 311P Capri, Hartwell, GA 30643.

STUFF Envelopes \$500/Thousand Free Supplies. Send Stamped Addressed Envelopes Mantor House, Dept. 8PM3, MINOA, New York 13116.

\$ILVER Start Silver Reclaiming Business For Under \$50.00 Manual \$2.00. Globe Labs, Box 802, Solana Beach, Ca. 92075.

MAIL LETTERS Featuring Real Merchandise, \$12.00 Orders Every Mail, \$8.00 Profit! Write: The A. & L. Company, P.O. Box 653-A, Owosso, Mich. 48867. RACING FANS—YES, YOU CAN PICK WINNERS!!!!
NEW, POWERFUL METHOD BRINGS YOU AMAZING RESULTS. MONEY BACK GUARANTEE, \$3.00 COMPLETE.
Island Publications, Box 334, Northport, N.Y. 11768.

STUFF ENVELOPES, \$250/THOUSAND IMMEDIATELY!!!
FREE SUPPLIES! RUSH STAMPED, ADDRESSED ENVELOPE, O. Hamblin, Box 3256-JM, University, Miss.
3867/.

STUFF ENVELOPES. Up to \$500 Thousand! Informa-tion 25¢ And Stamped Addressed Envelope. JOY, Box 936, Hyattsville, Maryland 20783.

INSTAMAIL Means Instant Cash In New Mail Order stributorship. Details: Instamail, Box 427, New Distributorship. | Castle, Pa. 16101.

250/THOUSAND IMMEDIATELY, STUFFING LOPES. Free Supplies, Send Stamped-Addressed Envelope, Henriksen, Box 6080, Minneapolis, Minn. 55406.

\$40 DAILY Possible tying fishing flies at home. Details 50¢. Flyco, Box 946-P, Albany, Oregon 97321.

ENVELOPE STUFFING FACTS, Two Systems, Stamped Addressed Envelope, Aaron-51, Box 466, Monrovia, Indiana 46157. Stamped

YOU! Can Become A 9869-M, Phila., PA. 19140. A Millionaire, Success, Box

STUFF ENVELOPES, \$250/THOUSAND IMMEDIATELY, FREE SUPPLIES, RUSH STAMPED, ADDRESSED ENVELOPE, PAUL'S, Box 96-A8, Monroe, Michigan 48161.

MAKE \$25-\$50-\$100.00 A Week Selling Engraved Metal Social Security Plates. FREE SALES KIT. Spray, Box 23-PM1, Rockford, Illinois 61105.

HOMEWORKERS! \$250.00/Thousand Stuffing Envelopes. \$500.00 Monthly Clipping Newspaper Items. Details .25¢. Price's, Box 1487, Orlando, Fiorida 32802.

SMALL Business Opportunities requiring little or no investment. Details Free. Benton, 114-P Carrier Street, Liberty, New York 12754.

ADDRESSERS-MAILERS-HOMEWORKERS NEEDED! 50 firms listed, Rush 25¢, Stamped, Addressed envelope. JW Sales, R3-192, Neosho, Mo. 64850.

ADDRESSERS-Mailers-Homeworkers-Needed! 50 Firms Listed. Rush 25c, Stamped, Addressed Envelope. Cannon Enterprises, Box 34057, Bethesda, Md. 20034.

SELL YOUR PHOTOS. Report Tells How and Where. Color Slide Markets. Only \$1.00. Sun Canyon, Dept. PM15, P.O. Box 4818, Albuquerque, N.M. 87106.

STUFF Envelopes \$250/Thousand! Free Supplies! Send Stamped Addressed Envelope. Oriol, 50-58 47th Woodside, New York 11377.

YOUR Own home addressing service; Build your own business for future; Details, Hughes, Route #1, Box 48-5, Senoia, Georgia 30276.

SPEEDOMETER REPAIR, Fascinating, Profitable! Free Brochure. Instrument Training School, 120 North Cherokee, Muskogee, Oklahoma 74401.

\$2.00 ASSURED For each envelope you mail. Also, cash for newspaper clippings. Details for 25¢ and stamped, addressed envelope. Modern Services, Box 222-PM, Upland, Calif. 91786.

STOP PAYING PROPERTY TAXES! Start Your Own Tax-Exempt Church, TOU-PM1, 6311 Yucca, Hollywood 90028.

ADDRESSING May pay off for you, When you know how! Get free details today. Andric Enterprises, 22A-P Kitchell Hill, Passumpsic, VT. 05861.

I DID IT, YOU CAN TOO! 2nd Income in your spare me. Unlimited opportunity. No investment in mer-handise. Particulars 75¢. H.D., Box 79, Denison, chandise. lowa 51442.

MAKE Statuettes, novelties, imitation marble. Sell to stores or start gift shop. Free details. Marbleizing, 41 Waverton, St. Louis, Mo. 63124.

FREE SECRET BOOK "2042 Unique, Proven Enter-ises." Largest successful collection! Fabulous Little Knowns." Work home! Haylings-T-50. Work Haylings-T-50, Carlsbad, Calif. 92008.

DISTRIBUTE Gift Catalogs To People You Know. Collect Commissions Without Selling Or Taking Orders. Details Free By Writing: Frederick's Gift Hou 600-E Sumner Avenue, Belford, New Jersey 07718.

MANUFACTURING Our New Electro-Mechanical Device Can Alone Mean \$60 Per Hour To You! We Offer National Sales Promotion. \$5.95 Investment Brings Complete Assembly Set Up. Details \$2.00. Full-Part Time. ElectroLite, Box 608, Lorain, Ohio 44052.

\$175.00 WEEKLY Correcting Pupils' Lessons! Samples, \$1.00! Castle's, 507-LP Fifth, NYC 10017.

LEARN The secrets of repairing junk batteries. "Fabulous Profits" at home. Apex Engineering, 3100 Ramona, Atascadero, California 93422.

HOW TO MAKE MONEY With Your Ideas. Get Paid For "Just Thinking." Revealing New Booklet Only \$1.50. Sterling House, PM15, Newtown, Pennsylvania

"SMALL INVESTORS, How Can They Make Money in Silver?" Free. Stagecoach, 1124 NW 40 Ave., Gainesville, Fla. 32601.

NEED MONEY? MAKE MONEY!! Moneybooks Show You How! Catalog, 25¢. Moneybooks, Box 192PM1, Griffith, Indiana 46319.

\$200.00 FROM Sheet 1/4" plywood (scrap). Details 35¢. Novelties, 610 So. 24th, Elwood, Indiana 46036.

FREE! LATEST DIRECTORY OF 500 CORPORATIONS SEEKING NEW PRODUCTS! If you have an idea for a new product—or a way to make an old product better, send for our FREE INVENTORS KIT NO. A-85. It gives vital information on developing and marketing your invention/idea for Cash/Royalty Sales to corporations nationwide. Raymond Lee Organization, 230 Park Avenue, New York, N.Y. 10017.

BIG PROFITS! SELL "PERSONALIZED" SOCIAL SE-CURITY PLATES! FREE SALES KIT! KERN, 246PJ RICHMOND, N. MASSAPEQUA, NEW YORK 11758.

MAKE MONEY, SELL YOUR IDEAS FOR CASH! Just Published Booklet Explains Easy Method. Send \$1.50. L. Dee, Box 86, Bethlehem, Pa. 18016.

AMAZING OPPORTUNITY! Turn Your Ideas Into Cash. Unique Booklet Shows How And Where To Send Them. Just \$1,50 (Refundable) Hardford House, 2102 Electric, Blasdell, New York 14219.

DO-It Yourself Ways To Riches. Details Free. Suburban Business Service, Northboro, Mass. 01532.

HOW TO SELL books by mail. 800% profit! Details ee. Books—PM4C, Box 10344, Palo Alto, California

SELL YOUR PHOTOS. Report Tells How and Where Color Slide Markets. Send \$1.00 to: John 64th Court, Tinley Park, Illinois 60477. John Ralph, 17346

MAKE MONEY WITH YOUR IDEAS. Turn Your Ideas Into Cash. Booklet Shows How Anyone Can Do It. Just \$1.50 plus postage, handling. HARLENE HOUSE Div. A23, 5510 S. E. Harlene Drive, Milwaukie, Oregon 97222.

MAIL ORDER BEGINNERS and SMALL BUSINESS LIBRARY Information from Professionals. Refundable. Write: Maphil, Box 64939PM, Baton Rouge, LA. 70806.

U.S. GOVERNMENT BENEFITS—Up to \$83,501 cash and services due you! Collect now! "Uncle Sam's Moneytree" tells how! \$1,000 within year or moneyback! Send \$3.00. Benefits, Box 6586-AA, Washington, D. C. 20008 D.C. 20009

EARN \$500.00 a Week with amazing new Mailorder Moneymaker Program. Free Details Write: Robeck, 868 Park Street, Hartford, Conn. 06106.

HOW TO WRITE MONEYMAKING "Information" Folios, Booklets, on Any Subject. Free Details. Jaycee Barnes, (B13), Box 913, Glens Falls, New York 12801.

FREE Information! How To Make Money in Your Spare Time, Out Of Your Hobbies. Be Healthier and Successful. Unusual Gift Catalog Included. Richmond Gifts, 85 Lamport Blvd., Staten Island, N.Y. 10305.

FREE Circular, Money making Books, Self Improve-ent Books, Inexpensive, CPM, Box 284, Cleveland, ment Books. Ohio 44121.

\$CASH\$ \$1.00 Per Sale!!! Sample, Details 50¢. Tony Bernatek—1774 Riverbank, Lincoln Park, Mich. 48146.

MAKE MONEY Clipping Newspaper Items. \$2.00-\$10.00 Each . . . Details Free. Clippings, Box 10344-PM 9A, Palo Alto, California 94303.

500,000 BARGAINS—3 Fabulous Catalogs Listing Amazing Below Wholesale Products For Home, Business—Many Free Items. Send \$2.00: Bargainhunters, Box 730-PM2, Holland, Michigan 49423.

CHRISTMAS TREE FORTUNE 2K-10K-3-4-Wks, Whole-salers, Supplies, \$5.00, Tree-Report, 1411 E. Mabel, Tucson, Arizona 85719.

STUFF Envelopes, \$250/Thousand Immediately, FREE Supplies, Rush Stamped, Addressed Envelope, VMB Enterprises, Box 2424, Norman, Oklahoma 73069.

USE YOUR HEAD TO MAKE MONEY IN 1975! With penuse Your HEAD TO MAKE MONEY IN 1975: With pencil, not muscle . . . gathering, distributing easily-gotten, much-needed information. Simple, no-skill sparetime/fulltime home business. (Sellout someday like author did for \$47,000.00!) No "blue-sky scheme"! Author does it, tells how, plus 24 proven projects anyone—blue/white collar men, housewives, retirees . . you can do! \$5 (refundable) from this ad; \$10 after requesting free details first. PB Publications, 3 Forest Circle, Winchester, Mass, 01890.

SELL Ordinary Sand \$5 Pound. Details Free! Sandco, Ceres, Calif. 95307.

ADDRESSORS Mailers-Homeworkers Needed 50 firms listed. Rush 25¢, Stamped, addressed envelope. Marco, Box 254PM, Belle Plains, Iowa, 52208.

\$1,000 MONTH Mailing Letters, Guaranteed, Free Details, Sandco, Ceres, Calif. 95307.

GET World's Biggest Wholesale Import Catalog. Write: World, Medina, Washington 98039.

MONEY! MONEY! MONEY! ONE MILLION DOLLARS ALL LEGAL AND TAX-FREE IN 12 MONTHS GUARANTEED. THIS SYSTEM IS THE SAME ONE USED BY HUNDRES OF MILLIONAIRES THE WORLD OVER TO SKYROCKET THEIR FORTUNES. NOW, FOR A LIMITED TIME ONLY, IT IS AVAILABLE TO THE GENERAL PLBLIC, LNCONDITIONALLY GUARANTEED TO MULTIPLY YOUR PRESENT INCOME BY 100 TIMES IN 6 MONTHS, OR RECEIVE DOUBLE YOUR MONEY BACK! THE INFORMATION CONTAINED IN THIS COURSE IS PRICELESS! BUT DUE TO THE PUBLICITY OUR COMPANY WILL RECEIVE THROUGH THE SALE OF THIS COURSE, WE HAVE DECIDED TO SACRIFICE IT AT A COST BARELY ABOVE PRINTING. FOR COMPLETE COURSE, DETAILING STEP BY STEP SYSTEM ON HOW YOU CAN SKYROCKET YOUR INCOME BY 100 TIMES, IN THE NEXT 6 MONTHS. SEND ONLY \$10.95, TO: BLAIRE, P.O. BOX 31, LINEBORO, MARYLAND, 21088. MONEY! MONEY! MONEY! ONE MILLION DOLLARS ALL

(Coutinued from preceding page)

WE Buy Newspaper Clippings of Wedding Announce-ments for \$1.00 each. Instructions \$1.00. Clippings, Box 741PM, Gatesville, Texas 76528.

EAT Free. Grow Thousands Fish, Vegetables in Basement Etc. Using Free Energy. Make Fortune. Patents Pending Drawings Details, \$10.00 Refundable. Survivai Crafts (P) Box 16046, Kansas City, Missouri 64112.

PROFITABLE OCCUPATIONS

BAKE new greaseless doughnut in kitchen. Sell stores. Free recipes. Michael Ray, Waseca, Minn. 56093

HOW TO MAKE MONEY Writing Short Paragraphs. Information Free. Barrett, Dept. C-27-X2, 6216 N. Clark, Chicago, 60660.

CREATIVE Art Of Fiberforming Newspapers. \$3 Kinney, 105 Filmore, Endicott, New York, 13760. \$3.00:

FT. SMITH Auction School, Ft. Smith, Ark. 72901. Resident & Home study. Veteran approved.

\$100.00/DAY POSSIBLE!!!! Buy Scrap Gold . . . Easy . . . Complete manual, \$4.00 Satisfaction Guaranteed . . . Brown, 956 Springdale, Atlanta, Ga. 30306.

PLASTERCRAFT!!! Profitable home business, Molds vailable. Details: Lynnette, 6251C Mentor Park, available. Details: Mentor, Ohio 44060.

BECOME A Mortgage Broker. Highly respected, in-teresting, lucrative prestige business. For complete information write: united, Box 6284-F, Marietta, Georgia 30060

BOOKKEEPING Services By Mail. Professional Com-plete Low-Cost. Inquire Free, Jemecli, P.O. Box 1755, Oakland, CA 94604.

SALESMEN—DISTRIBUTORS

HOUSEHOLD PRODUCTS ROUTE. EARN \$25 or more daily. Also Party Plan opportunities for men, women full, part time. McNess, Freeport (2615), Illinois 61032.

AUTOMATIC Fishhooks. Profitable Samples, \$2.00 efundable). Aron, 61-PM, Mastic Beach, New York 11951

BE Our Mail Order Distributor. Refundable \$15 Investment, Free detail. York Distributers, 100 York Street, New Haven, Connecticut 06511.

UNLIMITED! Income! Prospects! Good automotive Indianapolis, Indiana 46227.

FREE Sample. Full size fabulous Victory Miracle Cloth. Hot \$1.00 seller; pays 80¢ profit. Startling demonstrator. Every surface sparkles like magic. Sample, details: Barry, Dept. A4181, 1312 Washington, St. Louis, Missouri 63103.

SELL Advertising Ball Pens, Calendars, Ad-Special-ties—Build Own Repeat Business—Free Details— Fleming, Dept. A, 6535 Cottage Grove, Chicago 60637.

SELL Blue ribbon Hertel Bible; Startling cover; Full color 3-dimension Nativity. Top commission, liberal bonus. Sells itself! Liberal easy credit plan. No investment. Demonstrator furnished. Write for everything! International Book, Dept. PM, Box 118, Wichita, Kansas 67201.

SELLING KNAPP SHOES IS EASY. HIGHEST Cash com missions immediately. Enjoy a steady income with satisfied repeat customers. Your own hours. No in-vestment. Free Sales Kit. Irwin Margolis, 612 Knapp Centre, Brockton, Massachusetts, 02401.

MAKE Extra \$25 to \$75 Spare Time! Double Air Cushion Shoes. Men's, Women's Line. Dress, Work, Play. Highest Commissions. Shoes for Yourself. Outfit Free. Bronson, Dept. HX-15, Minneapolis, Minnesota

AGENTS WANTED

SPARE TIME CASH. Sell famous Hanover Shoes. Samples, sales kit free. No experience needed. No age limit. Big commissions. Hanover Shoe, Dept. 1292, Hanover, Pa. 17331.

EVERY Man a prospect. Refundable sales kit offer showing line belt buckles, tie clasps, money clips, cuff links, lapels, identification badges, individualized with customer's name and emblems. Cap badges for trucking, bus, taxi, police, firemen. Also postal, letter carriers and heavy construction emblems. Choice 5000 emblems. Hook-Fast, Box 1088-PM, Providence, R.I. 02001 02901.

YOUR Own business. Used Suits \$1.50; Overcoats 65¢; Mackinaws 35¢; Shoes 12½¢; Ladies' Coats 30¢: Dresses 15¢, Enormous profits. Catalog Free, Nathan Portnoy Associates, 2109-AA Roosevelt Road, Chicago, Illinois 60608.

PRINTING Advertising Salesmen—Excellent money-making sideline selling Decalcomania Name Plates, small quantities. Advertising Specialties, sign letters. Free Samples. Raico XL, Boston, Mass. 02119.

MAKE MONEY IN SPARE TIME. As a subscription sales representative for leading national magazines, you can earn generous commissions while learning the art of selling. Instructions and supplies will be sent to you free. Send this ad with your name and address to: POPULAR MECHANICS, Room 1107L, 250 W. 55th St., New York, N.Y. 10019.

FABULOUS New Beauty Mask. Earn Fantastic Profits Part Time. Also Party Plan—Crew Manager Opportu-nities. Barnes, Box 759-H, Portsmouth, Va. 23705.

finest shoes from friends, neighbors! Easy. Profitable. No experience needed. Selling outfit Free! Mason Shoes, K-125, Chippewa Falls, WI 54729.

EMPLOYMENT INFORMATION

LAS YEGAS JOB OPPORTUNITIES, COMPLETE LIST-INGS, CASINO JOBS, CONSTRUCTION, AND MANY OTHERS, \$2.00. MICHELS, 4137 MARYLAND PKWY. LAS YEGAS, NEV 89109.

AUSTRALIA NEEDS YOU!!! Thousands of Jobs!!! Every Skill Needed, Paid Transportation, Latest Hand-book, Glgantic Employers List and Forms, \$1.00. Aust. Box 203, Stoddard, Wis. 54658.

GOOD Paying Jobs In Civil Service Quick Easy Preparation, Score High, Send \$1.00 Refundable With Order For List of Civil Service Books, Insco, Box 8C, Pittsford, New York 14534.

AUSTRALIA WANTS YOU! JOBS—JOBS. FREE PASS-AGE! Complete Details about Rents, Salaries, Schools, Farming, Taxes, Social Life, Teaching, Immigration Requirements and Forms. Plus Giant Employers List! \$1.00 Guaranteed. EMICO, Dept. C-1, 2420 Tudor, Albany, Oregon 97321.

AMERICA NEEDS YOU, TOO!! Proven Ways to Make Money in U.S.A. when you're out of Work! Notarized Affidavit Supports claims! C. V. Meyers, Box 244, Cape Canaveral, Fla. 32920.

AUSTRALIA Employment-immigration information. Money Back Guarantee, \$1.00 GRANDerson (A1-1) Box 9098, Sunnyvaie, CA. 94086.

NEW YORK OPPORTUNITIES! Good Jobs., High area. New 1975 edition of Job Facts lists 200 m. Employers in City and Suburbs, Send \$2.00 Job Facts, Box 1369A, Radio City Station, New York 1985 (1985)

AUSTRALIA WANTS YOU!!! THOUSANDS Of Jobs! Free Transportation! Newest Information and Forms, \$1.00. Austro, Box 276, Kent, Ohio 44240.

OVERSEAS Bulletin of specific openings published monthly for professionals, military, craftsmen. Complete information, guaranteed. Current issue \$5. Not post office box operation. Trans-Global Overseas Network, 301 E. Franklin, Richmond, Va. 23219 (804) 644-0351.

AUSTRALIA NEEDS YOU! 10,000 JOBS! GIANT em-oyer's list. Paid passage. Form. \$1.00 to Jatman, 107 New Hampshire Avenue, Hyattsville, Maryland 20783

AUSTRALIA Wants you!! 50,000 Jobs! Government assisted passage. Latest Information and Forms. \$1.00, Jimco, Box 186JP, Garden Grove, California 92642.

CIVIL SERVICE JOBS. Home, Overseas! Free Details. HARCO, Box 25 PM, Big Island, Va. 24526.

AUSTRALIA WANTS YOU-Good Pay, Complete Infor-ation Including Company List, Only \$2.00mation Including Company List, Only \$2.00— Mc Neal Sales Co., Box A-3595-P1, Chicago, III. 60690.

AUSTRALIA Needs American Skills! Paid Transportation! Plus Financial Assistance! Information \$1.00. CROSSNO, Box 8592-B, Pine Bluff, Ark. 71601.

AUSTRALIA—Make sure your right!! Complete details—Employers Addresses—Immigration Form. . . . Guaranteed. \$1.00. Mseco Sales, Box 2187-A—Peabody, Mass. 01960.

AMAZING AUSTRALIA! . . 50,000 Jobs . . Complete othook. S2.00. Guaranteed. Harrington, 430 East Factbook. \$2.00. Guaranteed. Har 66th, New York, New York 10021.

AUSTRALIA NEEDS YOU. Transportation Paid. Com-plete Information. Guaranteed \$1.00. The Olympic's Enterprise, 108 W. 3rd, M.M., Port Angeles, Washington 98362

FLORIDA Employment Information Booklet. \$ Sunshine, 4512N Jamaica, Tampa, Florida 33614.

AUSTRALIAN Handbook—Employment Directory + application \$2.00. Overseas, Box 19881-A1, Atlanta, Georgia 30325.

AMERICAN Skills To AUSTRALIA-Jobs-Jobs! Transportation, Housing, Taxes, Social, Pay Immigration Information, \$1.00. "Jobs," Box 372-A, N. Chicago,

5000 NEW JOBS! Nationwide and Overseas. Free Details! Mono-West, Box 8020-H, Universal City, Calif.

AUSTRALIA!!! Jobs! Full Detailed Report . . . Transportation, Salaries—Immigration Information—Forms. Employer List . . . \$1.00 Guaranteed. Royal Sales, Box 593-AA, Dover, N.H. 03820.

AUSTRALIA!!! Complete Information Jobs, Transportation, Settling Allowance, With Employment Directory \$1.00. Austra, Box 42382A-2, San Francisco, Calif. 94142.

UNEMPLOYED? Want To Change Jobs? HELP WANTED The New Employment Magazine Lists Over 5000 New Jobs Monthly From Coast To Coast Including Foreign. Skilled, Unskilled, Professionals, 1 Year Subscription \$33.00 Single Copy \$3.95. Help Wanted, Dept. M, 54 Monmouth, Glen Rock, NJ 07452.

AUSTRALIA—NEW ZEALAND WANT YOU!!!50,000
Jobs! Paid Transportation! Latest Information and
Forms. \$1.00 Austro, Box 3623-E, Long Beach, California 90803.

OVERSEAS JOBS—Now Hiring, 103 Countries, All Occupations, High Pay, Free Transportation, Tax Benefits. Latest Computerized Reports—\$2.00. TRANSWORLD, International Airport, Box 90802-E, Los Angeles, California 90009.

OVERSEAS Jobs—Europe, South America, Australia, Far East, etc. 2000 openings all trades. Constructon, Office. Engineering Sales, etc. \$700 to \$3,000 month. Expenses paid. Free Information. Write: Overseas Jobs, International Airport, Box 536-M, Miami, Florida 33148.

TEXAS REFINERY CORP. offers PLENTY OF MONEY Plus cash bonuses, fringe benefits to mature individual in your area. Regardless of experience, airmail W. L. Pate, Pres., Texas Refinery Corp., Box 711, Fort Worth, Texas 76101.

OVERSEAS EMPLOYMENT Australia, Europe, stions! \$700-\$3,000 International, Box South America, Asia! All Occupations! monthly! Write: Employment Intern. 29217-AA, lindanapolis, Indiana 46229.

REAL ESTATE & FARMS

NEW! FREE CATALOG! Exciting SPRING edition of country property! Over 5,400 NEW properties described, pictured—Land, Farms, Homes, Businesses—Recreation, Retirement. Selected Best thruout the U.S.! 75 Years' service—670 Offices, 41 states Coast to Coast, Mailed Free from the World's Largest! Strout Realty, Inc. 60-MX E. 42nd St., NY, NY 10017: 7-MX S. Dearborn, Chicago, III 60603: 150-MX N. Santa Anita, Arcadia, Ca 91006.

CANADIAN LAND FROM \$35.00 AN ACRE CHOICE. Properties available across Canada. Low monthly payments. Ideal for farming, cottages, hunting, fishing. Free Catalogue. Canadian Estate Land, Dept. PMC-1, 286 Lawrence Ave. West, Toronto, Ont., Canada M5M 183

\$1.00 ACRE! USA and Canada, Lists, photographs malled. Government Lands, 220-PM Delaware, Buffalo, New York 14202.

\$1 ACRE—Canadian border—hundreds campsites, islands, farmlands, directly from tax authorities, (Non-profit). Lists, photographs mailed. Register, Room 10, 110 Church Street, Toronto 1, Canada.

NEW . . BIG . . FREE . . . SPRING CATALOG! Over 2,500 Top Values in 40 States Coast to Coast! UNITED FARM AGENCY, 612-PM West 47th St., Kansas City, Mo. 64112.

BUYERS Guide, Land! Home! Condominiums! Know The Soil You Build On, Closing Costs? Etc. \$2.98 Chassey, 21 Ridge Road, Danbury, Conn. 06810.

"CANADIAN Country Acreages and Lots." Our 60th year. Free catalogue. Tax Sale Service, Room 301-PM, 85 Bloor Street, East, Toronto, Ontario M4W 1B5.

CENTRAL Ontario—Choice 640 acre Sportsmen's paradises still available—\$20.00 plus \$6.50 taxes yearly, Maps, pictures. \$2.00 (Refundable). Information Bureau, Norval 4, Ontario, Canada.

CANADIAN Land: \$285.00, \$10.00 month. Free infor-ation. Vacation Acres, 7771-A Bernard, LaSalle, mation. Vacation Canada, H8N 1V8.

FOR NORTH ARKANSAS LAND DON MOORE IS YOUR MAN DON MOORE REALTY P.O. Box 1072, Harrison, Ark. 72601. Phone 501-365-9416.

GOVERNMENT LANDS FROM \$7.50 ACRE! Vacationing, Farming, Investment! Exclusive "Government Land Buyer's Guide"... plus "Land Opportunity Review" listing lands throughout U.S. Send \$2.00. Surplus Lands, Box 6588-AA, Washington, D.C. 20009.

Lands, Box 6588-AA, Washington, D.C. 20009.

HOW TO BUILD YOUR OWN GET-AWAY CABIN ON PRIMITIVE LAND. First, select the proper site—mountain slope, meadow, stream—because terrain will determine the type of building. Buy the land first. The cabin plans can wait. The land won't. America's vanishing wilderness is definitely vanishing. So act now, while we still have primitive acreage in Montana, Idaho and Eastern Washington. Five to forty acre tracts. As little as \$2450.00. Low down payment. Terms available. Guaranteed road access, warranty deed and title insurance. Growing timber on every tract. Some view and stream sites. Camp on it before you build. See for yourself how great this wild country still is. But it's selling fast. So enjoy it now, hold for retirement or investment. Write for free lists of sites, maps and complete information: Reforestation, Inc., Dept. C-40, P.O. Box 14006, Opportunity Station, Spokane, Wash. 99214.

EXCEPTIONAL 5-ACRE RANCH. Lake Conchas, New

EXCEPTIONAL 5-ACRE RANCH. Lake Conchas, New Mexico. Only \$95 per acre. Vacation Paradise. Good long term investment. Easy Terms. Free brochure. Ranchos, Box 2008PM, Alameda, California 94501.

FLOWERS, PLANTS, & NURSERY SUPPLIES

LEARN Landscaping and the growing of plants. Start a profitable business part or full time. Free information without obligation. Lifetime Career Schools, Dept. A-827, 2251 Barry Avenue, Los Angeles, California

GINSENG Bringing \$35 Pound. Have Seeds, Roots, Goldenseal. Full Information. K. Collins, Viola, Iowa 52350.

10 DEADLY POISONOUS Home Grown Plants—\$1.00 -Melonson, 435 West Butterfly, Gretna, La. 70053.

CONSTRUCTION PLANS, BLUEPRINTS

HOUSE EXPANSION PLANS And detail instruction book provide anything from an extra room to 1000 s/f addition. Build what you need at big do-it-yourself saving. Book with 1 set working blueprints \$14.50! With 4 sets (required by contractors) \$20.00. Money-Saver Projects, Box 303-44B, Chappaqua, New York 10514. Information available.

BUILD Log Cabins, Rustic furniture, Fireplaces!! Complete manual \$3.00 . . "A" Frame plans, \$2.00 . . . Guaranteed. . . Beels, 956 Springdale, Atlanta, Georgia 30306.

"A" FRAME CABIN. 1184 square feet: \$1950 material. Purchase locally. Complete plans, illustrated instruction manual & material list: \$5.00. Money back guarantee. Plan #1210, "Dependable Products," Box 113, Vista, California, 92083.

HOME CRAFTSMAN

CATALOG FULL SIZE FURNITURE PLANS—\$1.00
Refunded with first order. Traditional Early American, over 150! Furniture Designs, 1425 Sherman, Dept. CP-75, Evanston, Illinois 60201.

W00D—Domestic and Imported Hardwoods! 3500 Items! Clock, Musical Instrument Kits. Tools Discount Prices! Hard-To-Find Hardware, 144 page Catalog, 50¢. Craftsman, Dept. AX-15, 2729 Mary, Chicago, Illinois 60608.

AMUSING DANCING FROG Easy To Make Sells On Sight. Plans \$2.00 Plans And Sample \$5.00. L. Hastings, Box 7754, Beaumont, Texas 77706.

BRIAR, MEERSCHAUM, Smoking Pipe Pimop, Box 59211, Chicago, Illinois 60659. Materials.

WOODEN Tavern Lantern plan-\$1.00, P.O. Box 74, Langhorne, Pa. 19047.

SIMPLIFIED Veneering Manual/Catalog, 25¢. Exotic Veneers, Butts, Burls, Crotches, Inlays, Supplies! New Easy Instructions Make Veneering Breeze. Morgan, PO1K15, Box 18169, Louisville, Kentucky 40218.

101 PATTERNS of Smart Gifts, Novelties, Shelves, Action Windmills, plus "Make Money Jig Sawing." \$2.00, Mastercraft, J5M, 7041 Olcott, Chicago 60631.

BARN PLANS, Gambrel roof. Simplified plans and material list, Garage and utility, 20' x 24' or 24' x 28' \$5.00. Utility 16' x 20' or 12' x 16' \$4.00. Modular Designs, 216 Garver, Elkhart, Ind. 46514.

CABINETMAKING MADE EASY And "How to Make Formica Counter Tops." Two excellent guides let you build kitchen cabinets and counter tops like professionals. Extraordinary guides bring master craftsmen's shortcut methods. Satisfaction guaranteed. Write: Japs, 126-P Seventh North, Hopkins, Minn. 55343.

CRAFTSMEN'S Cement. Bonds Wood, Metals, Plastics. Used by Jewelers, Electricians, Metalworkers, Craftsmen. Transparent. \$3.00 oz. Butco, 1626 2nd Ave., N.Y.C. 10028.

PLASTIC ASSORTMENT! Sheets, tubing, rods. Clear, white, colors. Three pounds! Makes \$50.00 in household and gift items. Great for railroaders, model cars, sports, accessories, crafts. Complete with illustrated booklet. \$4.95 postpaid. Order today! Raymo Products, Box 6, Olathe, Kansas 66061.

AMERICA YESTERDAY—Colonial Period Spinning Wheel Full Size \$3.00. Tom-Rok Des., Box 141, Ellicott Sta., Buffalo N.Y. 14205.

BUILD Your Own 8' Picnic Table and Benches For ½ The Cost of Store Bought 6' Table. Send \$1.35. RCC, Box 251, Downingtown, Pa. 19335.

HOME REMODELING

FUEL SHORTAGE? BURN HYDROGEN From Water. One Days Work. Use Existing Fuel System, Cheap, Send \$3.00 to: Plans, Box 8279, North Royalton, Ohio 44133.

OLD Two-Story Home. How We Found, Moved, and Restored an 1800 Square Foot Home for Under \$25,000. Complete Details. Send \$1.00. Drawer F, Merkel, Texas 79536.

KITCHEN REMODELING: Design Kit, Instructions, Specifications, Low Cost Cabinet List \$3.00 (Refund-able) Home Supply, 778 Newton, Costa Mesa, Calif. 92627.

DO-IT-YOURSELF

FREE Windpower heat cuts fuel bills, beats short-ages. Encyclopedic windmill/generator report gives sources, costs, instructions, capabilities, specifica-tions. Now \$2.98 from Energy Unlimited, Dept. 501, 219 Thorndike Street, Palmer, Massachusetts 01069.

SAVE UP TO 15% ON YOUR HEATING COSTS, With A Lauffen Humidifier. Operates Off Any Hot Water System and Installs Easily, Tested, Certified, and Guaranteed, Order Now \$79.95 or Send \$1 for Additional Information. Comfort Humidifier, P.O. Box 1908, Marine Bank Building, Erie, PA 16507.

DOOR BELL REPAIR. Send \$2.00 For My Instructions. Satisfaction or Money Refunded. Roland Sweet, 165-C Carl Ave., Brockton, Mass. 02402.

SAVE GAS Modify pollution control on your car and get up to 5 miles more on gallon of gas—no mechanic needed, do it yourself with new book that shows you how. Money back if not satisfied. Send \$10.00. Wags Technical Service Co., 108 N. Sparta St., Steeleville,

MAILORDER OPERATOR'S Camera-Ready Art Work; For Forms, Circulars, Ads, Envelopes: Mailorder Hutt, P.O. Box 12146, Hartford, Conn. 06112.

LEARN Self Defense. Book of Judo-Karate. Photos, Directions. \$3.50 plus .25¢ Handling. Business Consultants, Box 1228, Yuba City, CA. 95991.

HEAT YOUR HOUSE ALMOST FREE. Burn Waste crankcase oil in your oil furnace, white flame, easy conversion plans. \$6.90. Satisfaction Guaranteed. Halkias, Box 296P, Copiague, N.Y. 11726. pairs, Free Information; Duvall Publishing, 908 Rhawn, Philadelphia, Pa. 19111.

BURGLAR-FIRE Alarm Supplies and Information. Free Catalog. Protecto Alarm Sales, Box 357A, Birch Run, Michigan 48415.

AMAZING NEW FAUCET WASHER made of ROYAL-THANE. Guaranteed to last 5 years. 20 Washers— assorted sizes only \$2.00. Minisink Corp., R.D. 5, Box 379, East Stroudsburg, Pa. 18301.

CLOCK Movements—Battery, Electric; Plus Fifty Ideas Making Decorator Clocks. Details \$1.00. Clock Repair Center, Dept. 11, P.O. Box 65, Carle Place, N.Y. 11514.

ORNAMENTAL Iron-Work-Beautiful Scrolls, Simply with Inexpensive Professional Bender, Free Details! AIM, Box 729, Woodland, Calif. 95695.

WOOD FINISHING, Tried and Proven Methods ,\$3.00. Dans Scientific Methods, Box 5339, Fort Wayne, Indiana

SOLAR SOLAR Science Projects \$3,00. Centerline, 401A South 36 Street, Phoenix, Ariz. 85034.

SOILLESS Year-Round Gardens, Illustrated Guide, Adaptable Plans, Bibliography, Sources, Houtrient (Makes 100 Gallons)—\$4.00.

Drawer 260M, Corona, CA 91720.

ELECTROPLATING. Complete amateur's textbook All metals Electroplate metallic/nonmetallic items \$7.00. Details free. Tropic, Box 95F3, Palm Bay, Fla. 32905.

SOLAR Energy Handbook, 2nd Edition ,\$7.50, Ficoa-aa, 2901S Wentworth, Milwaukee 53207. Satisfaction guaranteed.

CONVERT MOWER Engines into air compressors. Write: Showalter, Box 409, Abilene, Kansas 67410.

WIRE YOUR OWN DRYER. Complete Instructions \$2.00. F.E.C. 318 Hillside Ave., Naugatuck, Conn. 06770.

YOUR CHIMNEY IS ROBBING YOU BLIND! Reduce your furnace inefficiency and CUT FUEL BILLS 15-40%. New booklet—"OIL BURNERS & HEATING SYSTEMS" full of illustrations, information, instructions, easy remedies, low-cost improvements. Money-back guarantee. Send \$3.00. HOME HEATING INSTITUTE, Dept. 23P, 919 Third Ave., New York, N.Y. 10022.

HOW To Make Delicious Wine and Champagne at ome. No Special Equipment Needed. For Information and 25¢. Alexander Sales, Box 55347M, Indianapolis, Send 25¢. Alex Indiana 46205.

RUBBER "MUG" STAMP. Reproduce your own photo anywhere. Image approx 1½"x1½" Send sharp, clear, black and white photo. Only \$12.00. Bradley, 589 Ridgewood Ave., Dept. J, Bklyn, NY 11208.

MESSY Attic? How To Organize Your Attic—\$1.00. Frye, Box 65A, Royalston, Mass. 01368.

SOLAR Water Heating Absorber Panels. Details \$1.00. Lee Enterprises, P.O. Box 3633, Fullerton, Calif.

HOW TO SAVE ENERGY . . . Over 100 Ways! Complete oklet—\$1.50 . . . Bonus!! Alternative Energy Source rectory! R. Middleton, Box 558, Rushville, N.Y.

TELEPHONES Unlimited, equipment, supplies. Catalog 0¢. Box 1654-B, Costa Mesa, California (92626).

FREE HEAT (Not Solar), Stored energy in every home. Release it simply, inexpensively. Complete instructions \$3.00. Neways, P.O. Box 551, Astoria,

CARNIVAL BUILDING PLANS; Rides, Games, Shows, Illusions; 284 Page Catalog Refundable \$1.00. Brill, Box 875-P, Peoria, Illinos 61601.

RECORD Telephone Conversations Automatically. Information. Jensin, PM3, 7275 Euclid, Cincinnati, Ohio 45243.

SYNTHETIC GASOLINE! Make It Yourself from Common Trash! Chemist's Complete, Simplified Instruc-tions \$2.00. Also, Instructions on How You Can "Make Natural Gas From Wastes"; "Reclaim Your Own Motor Oil"; "Test and Reclaim Old Gold". Only \$2.00 Each. Burchette, Box 1114-PM, Spring Valley, California 92077.

1400 CATALOGS Listed and Described Sources for EVERYTHING Imaginable! Rush \$2.00. MASTERLOG, Box 24413-YM, Oakland, California 94623.

YOU CAN BECOME A NOTARY PUBLIC! Send \$3.98 For Easy Step by Step Instructions. Benefits. Prestige, Extra Income. Northwestern Consultants, Box 4254, Minneapolis, Minnesota 55414.

HOW To Modify Old Telephones For Actual Use. New Book Shows How! Guaranteed! Send \$2.95 to The Recapture Press, Box 6302, Shawnee Mission, Kansas

WINDTURBINES, Several Kinds, 12v-110v, \$5.00. Solar Heating, Power, Cooling, \$3.00. Power Mower Tree Limb Shredder, \$2.00. Automoble Battery Power, \$2.00. All Illustrated Instructions Guaranteed. Energycraft, 2350 W47P, Denver, Colo. 80211.

FREE ENERGY! Dozens of plans and ideas. Solar, Windmills, Methane generators, More! \$1.95 plus \$.50 postage, handling. PER-M, 15 Riverside Dr., Saginaw, Michigan 48602.

CONVECTOHEATER Cuts Fuel Bills. ETMx+, Box 29CM, Rocky Hill, Connecticut 06067.

EXTERMINATE COCKROACHES With Sure Kill. \$4.95 dose keeps large home roach free for 5 years—guaranteed! Star—B 1, 5936 Silver Star, Orlando, Fla.

REPRODUCTION MOLDS

MOLDS For Ornamental Concrete. Catalog Contains Over 700 rubber and fiberglass molds. Catalog 2.00. Plycrete Mold Co., Elk Rapids, Mich. 49629.

GLASS BLOWING Kits and Supplies—Literature Upon equest—Willis Glass, P.O. Box 3460, Anaheim, Request-Willis California 92803

AVIATION AND AUTOMOBILE COLOR PRINTS READY TO FRAME. SEND 50¢ FOR CATALOG: COLLECTORS SERIES 161 W. HARRISON CHICAGO, ILLINOIS 60605.

MAKE Figurines, plaques, lawn ornaments. Molds, plastercraft kits, liquid rubber. Sample and catalogue 25¢. Wooley Company, Box 29-B, Peoria, Illinois

MONEYSAVING GUIDE. Largest listing "Handicrafts uppliers" and Wholesale Arts Crafts Directories \$3.00 ach—Handicrafts supply catalog \$1.00—All three 5.00, R.P.H. Manufacturing, Winter Street, Stamford, Connecticut 06905.

"GETTING Started in Stained Glass" Whittemore, Box 2065Y, Hanover, Mass. 02339.

LIQUID LATEX Paratol. 706-G compound for making rubber mold. Toughest, finest quality. Instructions. Money-back guarantee. Postpaid \$3.95 quart, \$12.00 gallon. TESTWORTH, 139 Commercial, Addison, III.

BINOCULARS, TELESCOPES, MICROSCOPES, MAGNIFIERS

FREE Binocular, Riflescope catalog. Discount sale. Save 50%. Free gift with order. Write: United Binoculars, BN-9208, 9043 So. Western, Chicago 60620.

CAMERAS AND EQUIPMENT

FREE 32 PAGE Catalog. Name Brand Cameras, Lenses, Equipment, Supplies. Camera Haven, Department PMI, P.O. Box 24515, St. Louis, Missouri 63141.

FREE! FREE! BARGAIN BOOK. Central Camera Co., Dept. 3131, 230 S. Wabash, Chicago, III. 60604.

PHOTO & PHOTO SUPPLIES

CAMERA Profits In Aerial Photography Details \$2.50. Wenty Sample Photos" \$1.50. Roberts, East "Twenty Sample Pi Hartford, Conn. 06108. Roberts,

PHOTO FINISHING

KODACOLOR FILM DEVELOPED! By Professional Quality Lab. We Do Most Type Films, Including All Process C-22 using Latest Equipment and Material, \$2.50 12 Exposure, \$3.50 20 Exposure, \$6.50 36 Exposure. Stein Photo, Box 615-A, West Bend, Wisconsin 53095.

COLOR SLIDES

GAF COLOR Slides. All countries. 56 page catalog 6c. Worldwide Slides PM7, 7427 Washburn, Minneapolis, Minn. 55423.

PAPUA, NEW GUINEA—Sparkling Lifelike Slides from Exotic, Wild Primitive, colourful Islands in the South Pacific. Catalogue \$1.00 Waigani Photographics, Box 3406, Port Moresby, Papua, New Guinea.

35MM COLOR Stides, 10,671 Individually Sold, de-ribed encyclopedia catalog, 25¢. Wolfe Worldwide, scribed encyclopedia catalog, 25¢. V Dept. 14-15, Los Angeles, Calif. 90025.

MOTION PICTURES & SOUND EQUIPMENT

175-FT. 8MM, CLASSIC SAMPLER... ONLY \$1.99. Highlights from heyday of the silents! Chaplin, Laurel & Hardy, Fairbanks, Keystone Kops, Gish, Pickford, Chaney, the first Indianapolis 500 and more. Order today ... specify standard or super-8. Free catalog: 8MM. & 16MM. movies & 35MM. 2" x 2" color slides. Blackhawk Films, 491 Eastin-Phelan Bldg., Davenport, lowa 52808.

UNUSUAL Movie supplies. Free circular. Esor, 47th Holly, Kansas City, Missouri 64112.

8MM—SUPER 8—16MM MOVIES! Biggest Selection! Lowest Prices! Free Catalog! Cinema Eight, Box PM, Chester, Connecticut 06412.

SUPER 8MM, 16mm, 8mm silent and sound film classics. Free catalog, NILES, 1141PM Mishawaka, South Bend, Ind. 46615.

"FREE" Catalog-Castle-Columbia-Home Movies. G & G Film Library, Box 321, Syosset, N. Y. 11791.

SUPER 8, 8mm, 16mm, 35mm, B&W and Color Film, Supplies, Processing Equipment. Send 25¢ for 84-page catalog refundable with order. Superior, 448 N. Wells, Chicago 60610.

RADIO, TV & HAM EQUIPMENT

"CRYSTAL Set Handbook"—50¢, Catalog 25¢, Rendable, Laboratories, 1477-C, Garden Grove, Calif. 92642

CANADIAN Catalogs—Giant Savings, Surplus, Clear-outs, Bankruptcy Stocks, Factory Deals. Rush \$1.00. Etco-PM, Box 741, Montreal "A".

GOVERNMENT Surplus receivers, transmitters, snooperscopes, parts. Catalog 25¢. Meshna, Nahant, Mass. 01908.

36¢ RADIO & TV Tubes, Free catalog, Corn 4213-17 University, San Diego, California 92105. Cornell,

HIFI, TAPES, & RECORDS

OLD Time Radio Personalities—Their Hit Phonograph Records: Available On C-60 Cassette—\$5.00. Free Catalog. Wetzell's Cassettes, 523 DuBois Ave., Barrington, N.J. 08007.

RECORDING Tape Cheap—Guaranteed—Information. Mitchell, Box 132PM, Flushing, N.Y. 11367.

HIFI, TAPES, & RECORDS (Continued from preceding page)

OLD Radio Programs. Thousands Available! Huge Catalog \$1.00! Radio Vault. Box 9032-Z, Wyoming, Michigan 49509.

FREE Catalog—Electronic Kits—Amplifiers—Preamplifiers—Psychedelic Strobes—SCA Adaptors—Color Organs—Digital Instruments—Guitar Amplifiers. FREE Suoscriptions. SWTPC, Box PM32040, San Antonio, Texas 78/284.

8-TRACK TAPE REPAIR SERVICE, Send \$1.25 for each defective 8-Track Cartridge. Music Machine, 301 Wilson St., Shelby, N.C. 28150.

FREE Catalogues, 2000 hard to find unusual records. Rose's Records, Box 7216, Louisville, Ky. 40207.

OLDIES. 45RPM. Free Catalog. Corny's Record Shop, Box 166DZ, Mason, Ohio 45040.

8-TRACK Fidelity Stereo Tapes. Any Top Rock, Oldies, Radio Shows, Humor, Party. \$3.50 you name it. List 50¢ (refundable). DIWan Company, Box 1302, Springfield, IL 62705.

GOLDEN Age Radio. Complete taped Shows. Box 25215-M, Portland, Oregon 97225.

MUSIC & MUSICAL INSTRUMENTS

AC_ORDIANS Manufacturing, 6846-P North, Chicago 60635. Concertinas - Chromatics - Heligons - Hohners -New - Used - Repairing - Wholesale Catalogs Free.

LEARN GUITAR This System has been used and proved by Thousands, Teach yourself or money back. Send \$4.95. B&E Sales, Box 72126B, Valley Station, Ky. 40272.

DULCIMER Cassette. Listen; Learn. Thorough. \$5.95, Pastor's Workshop, Rockbridge Baths, Virginia 24473.

LEARN Banjo. 5-String Bluegrass. No music. Makes learning easy. Free details. Blaylock, Box 25-M, Marietta, Georgia 30060.

WHOLESALE, Musical Instruments—Accessories. Allied, 573 Route 17, Paramus, New Jersey 07652.

ELECTRIFY Player Pianos, Pump Organs Quickly, Inexpensively with Lee Silent Suction Units. Write: Lee Music, 525F Venezia Avenue, Venice, California 90291.

ACCORDIONS—Famous makes. 40 models. 5 Day Home Trial, Easy terms, Trades. Free Catalogs! Money saving Importer-to-You Price List, Write: Accordion Corporation, Dept. R, 5535 Belmont, Chicago, 60641.

GUITAR MAKING BOOK & TOOLS. Overholtzer, 618 Orient, Chico, Ca. 95926.

POEMS Wanted for songs. Nashville Music Productions, Box 40001-P, Nashville, Tennessee 37204.

SWISS Finest Music Boxes, Movements, Spielman, 55 West 42nd, New York, 10036.

WHOLESALE! Professional Guitars, PA Systems, Altec Speakers, 240W RMS Amplifiers. Free Catalog. Carvin, Escondido, Calif. 92027.

GUITAR, Banjo, Violin, Mandolin Making Materials, Accessories, Books. Catalog 25¢. Guitar Center, Box 15444, Tulsa, Oklahoma 74115.

EASY To Play And Make, Quality Dulcimers, Banjos, Thumb Pianos; Instruments And Kits. Can Be Profitable Hobby. HERE, Inc. #P, 410 Cedar Avenue, Minneapolis, Minn. 55404.

KITS! Build Dulcimers, Guitars, Balalaikas, Thumb Pianos, Harps. From \$2.95, Finished Dulcimers from \$19.95, 8665 West 13th Avenue-PM, Denver, Colorado 80215.

ACCORDION Top discounts. Trades accepted. Free brochure PM. Accordion-O-Rama, 874 Broadway, N.Y.C. 10003.

VIOLIN And Guitar makers—send for latest Free Catalogue of woods & accessories, International Violin, PM1, 414 East Baltimore St., Baltimore, Md. 21202.

POEMS Songs wanted. Recording. Publishing guaranteed. Royalties. Radio-TV release. Broadway Music, Box 11647-PM Sarasota, Fla. 33578.

PLAYER PIANOS; PUMP ORGANS—books; repair manuals. Catalog \$1.00, refundable first order. Vestal Press, Box 97, Vestal 11, NY 13850.

30% DISCOUNT Name Brand Musical Instruments. Free Catalog. Freeport Music, 455F Route 110, Melville, N.Y. 11746.

EDUCATION & INSTRUCTIONS

AUCTIONEERING, Resident or home Study Course. Free Catalog, Nashville Auction School, 1921 West End, Nashville, Tennessee 37203.

AUTOSUGGESTION. Sleep-learning headquarters! Tapes, records, books, Gigantic cata og free. Research Association, Box 24PM, Ölympia, Washington 98501.

FINGERPRINTING—Investigation. Exciting, secure career. Learn at home. Free book. State age. Institute of Applied Science, 1920 Sunnyside, Dept. 161, Chicago, Illinois 60640.

UNLOCK Your Future. Become professional Locksmith by spare time homestudy. \$13 in an hour possible. All tools, equipment included. Facts FREE, Send name. Locksmithing Institute (homestudy), Dept. 1310-015, Little Falls, New Jersey 07424.

LEARN BLUEPRINT READING. No Special Education needed. Read and understand Blueprints in only six to eight weeks at home. Help yourself to a better future in supervision or management. Registered certificate awarded. Write: Cambridge Technical Center, 506 Glenn Drive, Palatine, Illinois 60067.

INCREASE I.Q. By 30 Points. Scientific Method. Simple Exercises. Results Guaranteed \$3.00. Paslow, 15 Clifton, Pittsburgh, Pa. 15210.

DETECTIVE—Training Course. American Detective Institute, Box 418-A, Fairfield, Alabama 35064.

MULTIPLY Your opportunities. Learn easy success techniques from remarkable new book. Includes unique kit. Special: Free message "Self-Starting". Write Dunmore, Box 2112A3, Asheville, N.C. 28802.

LEARN to Fix Typewriters and Office Machines. Many Trained Men Needed. Make up to \$25 in one hour on overhaul. Learn at Home in Spare Time. Facts FREE. Send Name. Typewriter Repair School (homestudy), Dept. 3310-015, Little Falls, New Jersey 07424.

RELIGIOUS VOCATION? Write: Church Of Holy Light Inc., P.O. Box 4478, Pittsburgh, Pa. 15205.

USED Courses! Books! List 10¢. Smith's, 124 Mariborough, Salem, Massachusetts 01970.

LEARN To Play Piano In One Hour, Free Details. Correlation, Box 751-M, La Canada, Calif. 91011.

MOTORCYCLE MECHANIC. Train at home in spare time. Make good money in motorcycle shop or start own business. Motorcycle tools, test instruments included. FREE "Career Kit!" Dept. PBCC4, North American School/Motorcycle Repair, 4500 Campus Drive, Newport Beach, CA 92663.

ORDINATIONS, Limetime! Church chartered 1887! Write! 708 Bragg, Monroe, North Carolina 28110.

COMPLETE YOUR HIGH SCHOOL At home in spare time. Texts furnished. No classes, Our diploma awarded. Our 78th year. Free Brochure. American School, Dept. X145, Drexel at 58th, Chicago 60637.

OWN Collection agency. "Little Gold Mine!" Franklin Credit, Roanoke, Virginia 24004.

LEARN Flower Arranging and Floristry, Start business or hobby. Free information on home study course. Lifetime Career Schools, Dept. B-263, 2251 Barry Avenue, Los Angeles, California 90064.

LEARN Heating and Air Conditioning at Home. No reading or writing. Send \$4.00 for Sample Lesson. EDUCATION UNLIMITED, Box 3, Glenside, Pa. 19038.

DETECTIVE Profession, Easy home study; free tietack or lapel pin, certificate, future. GI approved. Professional Investigators. Box 41345. Dept. CP, Los Angeles, Caiff, 90041.

MIND STIMULATOR Develops Personality, Helps Hundreds Succeed, Tibolt, 2819M Carmel, Glenside, Pa. 19038.

PIANO Tuning quickly learned with home study course. Diploma granted. American Tuning School, 17050 Telfer Dr., Morgan Hill, California 95037.

LEARN Auctioneering, Term soon, Free Catalog, Reisch World Wide College of Auctioneering, Inc., Box 949, Mason City, Iowa 50401.

AVIATION JOBS—Train at one of nation's largest acronautics schools for pilot license, helicopter pilot, aviation technician, maintenance, power-plant, airframe technician, aviation electronics or instrument technician. Indicate if eligible for G.I. Benefits. Write for Free "Career Kit". Spartan Airschool, International Airport, Dept. PBCC4, Tulsa, OK. 74151.

FREE Lifetime Ordination. Become Chaplain Missionary. Bishop, Box 744, McKeesport, Pa. 15134.

EARN ELECTRONICS DEGREE by correspondence. Free brochure. Grantham, 2004 Stoner, Los Angeles, California 90025.

I.Q. TEST—Einstein, a genius, was a poor student. Discover your hidden abilities. Comprehensive COMPUTER analysis and scoring, Free information, I.Q. Analysis, Dept. AM, P.O. Box 178 (Weston), Toronto, Canada.

NOW! YOUR OWN BURGLAR/FIRE ALARM BUSINESS OR Alarm installation position through training at home. Great demand, rapidly expanding field. Full information by mail, no salesmen. Security Systems Management School (homestudy) Dept. 7310-015 Little Fails, N.J. 07424.

LEARN Swedish Massage. Professional Masseur reveals facts. Massage Manual \$1.00. A. Green, 645 Mizzen Avenue, Beachwood, New Jersey 08722.

LEARN Sewing Machine Repairing. Men, Women. Lucrative profits. Profession with bright future. Gresslin Correspondence School, Box 927, Spencer, lowa 51301.

INCREASE Your Salary.... Become Successful Get The Job You Want.. Fantastic Bonus. Free Details. Alsar. Box 184-PM, Paramus, New Jersey 07562.

PROBLEMS? There's an Answer! Free Home Study by Mail in the Torah or Confraternity New Testament. Please state your Religion, Lamplight Studies, Box 88-D, Brooklyn, New York 11229.

FREE Book tells how you can learn camera repair and service. Home study or classroom. Write today! National Camera, Dept. EAD, Englewood, Colorado 80110.

EXTENSION And Post-Graduate Awards in Philosophy, Art, Sciences, Botanic Medicine, Homeopathy, Radionics and others. 30 subjects, Curricular free (airmail \$1.00 refundable), Registrar, Sussex College of Technology, Highfield, Danehill Sussex, England.

COLLEGE & Theological Extension Deg.ee Programs. Catalogue \$1.00. Box 647, Morgantown, Kentucky 42261.

LEARN Asleep or awake! Records, tapes, equipment! Free catalog! Drawer PM-400, Ruidoso, New Mexico 88345.

LEARN SPEED READING Basic Program \$1.00. K & J Industries Box 37, Schererville, Indiana 46375.

USED Courses! Books Catalog 10¢. (Courses Bought). Lee Mountain, Pisgah, Alabama 35765.

INSTANT MEMORY. . . . New way to remember. No memorization. Release "photographic" memory. Forget notning! Liberates extraordinary knowledge taients, EsP. Immediate results! Free information. Institute of Advanced Thinking, Box 606-PM, Pacific Palisades, California 90272.

SURVEYING PAYS BIG!!! United States Department of Labor reports "openings for 26,000 Surveyors in next ten years." Easy nome-study pian guides you. Send for Free "Surveying Career Kit." North American School of Surveying, Dept. PBCC4, Newport Beach, California 92663.

WATCH REPAIR. Learn this cash business at home, \$5 monthly. Free Details. Chicago School of Watchmaking, YN, Fox River Grove, Illinois 60021.

ACCOUNTING CAREER. Many make \$1,200 monthly. You start, only 20 lessons, \$5.00 each. Pay as you learn and earn. State approved. Certificate. Start by mailing \$5.00 for first lesson. Jenkins, Box 571, Taft, California, 93268.

HAPPINESS IS A Skill. Learn it from one Book. \$3.25. Satisfaction Guaranteed. Rempe, Box 1014/J, Lomita, CA 90717.

DETECTIVE Course. Free Information. Universal Detectives, Box 8180-F, Universal City, California 91608.

MEN Join Master Technicians. ASSO Membership Certificate, P.O. Box 281 Essex Sta., Boston, Mass. 02112.

FOR INVENTORS

PATENT Application Financing. Free patent search plan. Global Patent Division, 2354 Telegraph, Oakland, California 94612.

NEEDING Assistance? INVENTION DEVELOPMENT FOUNDATION, 155 Kent Street, Ottawa, Canada KIP 5P3.

INVENTIONS Wanted immediately for promoting on cash or royalty. Patented, Un-Patented. Free booklet outlines royalty rates, requirements. Write Kessier corporation, C-51-FI, Fremont, Ohio 43420.

MR. INVENTOR: Manufacturers need inventions. For development assistance, patent searches, sales for cash or royalties, free "Proof of Invention" forms and other important information, write: Charles S. Prince, Invention Consultant, 509-A 5th Avenue, NYC, 10017.

FREE PAMPHLET: "Tips on Safeguarding Your Invention." Write: United States Inventors Service Company, 501-P Thirteenth Street N.W., Washington, D.C. 20004.

INVENTORS—UNITED STATES PATENT OFFICE SEARCHES. PATENT DEVELOPMENT Engineering and MARKETING of your inventions, ideas with MANUFACTURER CONTACTS. Send for FREE INVENTION CERTIFICATES and Invention information. Serving inventors since 1948. GEORGE SPECTOR, LICENSED PROFESSIONAL ENGINEER—PATENT ENGINEER. Former UNITED STATES PATENT OFFICE EXAMINER—3615 Woodworth Building, New York, New York 10007.

SEARCHES with Nearest Copies and Patentability Report \$16. Market Surveys. Inventions Evaluated, Patent Sales Promoted. Professional Engineer, Box 8001 JFK. PO. Boston, Mass. 02114.

U.S. PATENT Office Searches, 234 Broadway, Room 3615, New York 10007. Free invention certificates.

AMAZING Guide Tells How—Where to Sell Inventions \$4.90 Galleon, Box 8001 JFK. PO. Boston, Mass. 02114.

\$4.90 Galleon, Box 8001 JFK. PO. Boston, Mass. 02114.

INVENTORS: Your ideas and inventions (patented: unpatented) expertly searched, developed for comercial appeal and cash/royalty sales to manufacturers by professional Invention Developer with excellent record of experience. B. S. Industrial Engineering; United States Patent Office former Patent Examiner. United States Government former Patent Advisor. Second decade reliable service! Member: United States Council International Chamber Commerce. Free "Invention Record" and "Recommended Protection Procedure." Airmailed! Write: Raymond Lee, Invention Developer, 230P-Park Ave., New York, New York 10017.

INVENTIONS WANTED

INVENTIONS Needed immediately for manufacturers. For additional information write Kessler Corporation, C-51-IW, Fremont, Ohio 43420.

HONGKONG FACTORY Needs 10-15 New Products Every Month To Satisfy Their Overseas Buyers, And To Keep The Factories Running. Particularly Interested In Household Items, Toys, Games, And Gadgets. Please Send Sketches or Detailed Explanation For Our Evaluation And Cash/Royalty Purchase. Hongkong Plastic & Metal Products Company, P.O. Box 9627, Kwuntong, Hongkong.

CASH-Royalties for patented, unpatented Inventions, Global Marketing Service, 2354G, Telegraph, Oakland, California 94612.

California 94612.

INVENTIONS IDEAS WANTED Developed, Marketed by leading professional organization for Cash/Royalty sales. FREE EXAMINATION and CONFIDENTIAL REPORT of the Commercial Features of Your Patented/Unpatented Invention. FREE COPY "How to Safeguard and Market your Invention to Industry" Write or Call: LAWRENCE PESKA ASSOCIATES, Dept. C, 500 Fifth Ave., N.Y.C. 10036, (212)354-9696, 150 S. Wacker Dr., Chicago, III. 60606, (312)346-1172, 1 Biscayne Tower, 2 So. Biscayne Blvd., Miami, Florida 33131. (305)358-1366, 44 Montgomery St., San Francisco, Calif. 94164 (415)956-1212, 1888 Century Park East, Los Angeles, Calif. 90067 (213)552-2020.

(Continued from preceding page)

INVENTORS! Protect your ideas! Free "Recommended Procedures." Washington Inventors Service, 422F Washington Building, District of Columbia 20005.

FREE! LATEST DIRECTORY OF 500 CORPORATIONS SEEKING NEW PRODUCTS! If you have an idea for a new product—or a way to make an old product better, send for our FREE INVENTORS KIT NO. A-84. It gives vital information on developing and marketing your invention/idea for Cash/Royalty Sales to corporations nationwide. Raymond Lee Organization, 230 Park Avenue, New York, N.Y. 10017.

INVENTIONS MARKETED Cash, Royalties FREE IN-VENTION PROTECTION CERTIFICATES George Spector Manufacturers Representative, Woolworth Building, New York, N.Y. 10007.

PATENTS FOR SALE

INVESTMENT U.S. And Foreign Patents Cookware-Machine Tool Info. 2044 N. Willis Blvd., Portland, Oregon 97217.

MANUFACTURING

INVENTORS Ideas Developed, Research, Models, Manufacturing, Sales, Free Brochure, Since 1942. William Parker, Box 6305, Orlando, Fla. 32803.

BUY IT WHOLESALE

WORLD'S Largest Wholesale Supply. 7853 American, European, Japanese wholesalers. Hongkong clothes. Rockbottom prices. Automobile discounts. Free Details. International Buyers, Box 16386-M, Portland, Oreg. 97233.

HEARING Aids, batteries, Wholesale. Catalog 25¢. Fiston, Box 1444, New Preston, Conn. 06777.

PLASTIC Bags, Film, Tubing. Wholesale Price List 20¢. Milvan, 7799 Enterprise, Newark, Calif. 94560.

400,000 BARGAINS Below Wholesale: Many Free! Liquidations . . . Closeouts . . . Job Lots . . . Single Samples. Free Details. Bargainhunters Opportunities, Box 730-A, Holland, Michigan 49423.

GIANT Wholesale Catalog—\$2.00, Treasure House, Box 1005PM, Claremont, California, 91711.

166 FREE WHOLESALE CATALOGS. 165,000 Products. 600 Suppliers, Dropshippers, Importers. Free Details. Worldwide Marketing, Box 1355-PM, Sioux Falls, South Dakota 57101.

EXPORT-IMPORT

JAPAN: 1200 Products directory, Illustrated Manufacturers' names, addresses. \$5.00. Send cash. Yamagata Office, 814 Togin Bldg., Marunouchi, Tokyo.

HONG KONG Shopping Service. Free Details Mercantile Associates, Box 8372 Fountain Valley, California 92708.

FOR THE HOME

SAVE your home from TERMITES destructive damage. Do your own inspection and Termite control, Book \$3.50. Monroe Termite Advisory Service-T, 703 Almar, Santa Cruz, Calif. 95060.

FREE Catalog Featuring Items For Home, Car, Shop, Garden, Office, Sports, Personal Accessories, gifts. P.E. LINDENMAYER: 78-15 64th Place, Glendale, New York 11227.

ELIMINATE Roaches and Waterbugs. One Can Sure Kill Enough for 6 Rooms. Guaranteed 5 Years, \$3.98. Baldwin Enterprises, Box 83, Hartsville, Indiana 47244.

SIMPLE To Manufacture Own Wrought Iron Gates— Chandeliers Window Boxes etc. Some Projects Take Minutes Complete Precision Made Tool Set Includes Steel—Plans Only \$129 Postpaid From Wrought Iron Tool Co., 1083 Bloomfield Ave., West Caldwell, N.J. 07006.

REDUCE YOUR HEATING BILLS, TimeTherm II Automatically Time Sets Temperature on Wall Thermostat. Installs Easily. Only \$49.95. Information, Phasetrol, 215 Olive, Pasadena, Texas 77506.

OF INTEREST TO ALL

BOOKLETS—2.00—How To Make Good Drinks, Free Passage to Australia, Jobs, Homes, Learn Contests, make extra Money. Russell Albers Associates, 190 Bay 47th Street, Brooklyn, N.Y. 11214.

CRIME FIGHTERS! Police—Detectives—Investigators—Information—\$1.00 (Refundable) Don-Q, Box 548-PMO, Seattle, Wash. 98111.

ATTENTION!! HAM RADIO SHORTWAVE, C-B, Scanner Operators, And All Law Enforcement Personnel. Know Your Police Codes! 60 Codes (10) Plus 50 State Signal Codes. Formerly \$7.50 Reduced Because Of Incredible Demand. Send Only \$2.00: E. Bower, P.O. Box 1170, Muncie, Indiana 47305.

OF INTEREST TO WOMEN

LEARN Arts & Crafts at home. Excellent full or part time business opportunities or hobby. Free booklets. Lifetime Career Schools, Dept. E-46, 2251 Barry Avenue, Los Angeles, California 90064.

BEAT THE HIGH COST OF LIVING! Buy Clothing, Furniture, etc. at up to 90% off retail price! New cars \$125.00 over Dealer's cost! Many amazing budget stretchers! Completely legal. Astounding Report \$2.98. Satisfaction Guaranteed. Progress Reports, Box 66-A, Denham Springs, La. 70726.

\$500 MONTHLY Possible clipping items from your newspaper. Experience unnecessary. Details, send stamped addressed envelope, American, Excelsior Springs, Mo. 64024.

\$800 MONTHLY Possible addressing—stuffing envelopes (longhand-typing) your home. Experience unnecessary. Details, send stamped addressed envelope. American, Excelsior Springs, Mo. 64024.

HOW TO MAKE MONEY Writing Short Paragraphs. Information Free. Barrett, Dept. C-27-X3, 6216 N. Clark, Chicago, 60660.

VINYL'S Where The Money Is! Invisible Repair, refinish, recolor furniture, luggage, car tops. Quick, easy. Two small \$20 jobs a day earn you \$1,000 a month. Homes, cars, offices, restaurants, unlimited customers. Start earning after an hour's practice. Sensational details Free. VIP, 2034 Montrose, Chicago, 60618.

KNOCK INFLATION! Make your own cosmetics at home. Detailed instructions. \$1.00 and stamped addressed envelope. Ascending House, 88-66 195 Place, Hollis, New York 11423.

\$40 DAILY possible . . . Addressing at home. Begin immediately. Information—send stamped addressed envelope. Solway-PM, Box 26346, Houston, Texas 77032.

WANT a new car, color TV, new clothes? Learn hundreds of ways to make money. 5 month subscription FREE. Write: Salesman's Opportunity Magazine, Dept. 178, 1460 Hancock Center, Chicago 60611.

LEARN Delicious exotic INDIAN cooking easily! Illustrated recipes plus conversation sparklers! Lively, different. \$3.95 Ascending House, 88-66 195 Place, Hollis, New York 11423.

GIFT SHOPPING

FREE Catalog. Bonus. Sperry Gifts, Box 441, Virginia Beach, Virginia 23458.

FREE Discount Catalog, Gift World, 27675 Santa Clarita, Saugus, Calif 91350.

MINIATURE Charms—Trinkets—Toys. (3) FREE Samples. TREASURE CHEST, 9321 PGM Capeview Ave., Norfolk, Va. 23503.

FREE Catalog. Bargains are our Business. Alicia Company, Pelzer, South Carolina 29669.

FREE! New Distinctive Gifts Catalog. EJ Kremanek Enterprises, 20 Marshall St., 7M, Irvington, N.J. 07111.

JEWELRY! Gift Catalog Free! Randolph, Dept. PM5, P.O. Box 146, Nebo, N.C. 28761.

FREE Catalog. Bargains. 100's Of Useful Items, Gifts. Parker, 4302 Garfield, Trevose, Pa. 19047.

CLOCKS, WATCHES, OLD GOLD, JEWELRY

HIGHEST CASH Immediately for Old Gold, Jewelry, Gold Teeth, Watches, Diamonds, Spectacles, Silver, Platinum. Free Information. Rose Industries, 29-A East Madison, Chicago 60602.

JEWELRY Sample \$10.00. AED, #303, 3100 S. Michigan, Chicago, III. 60616.

BUYING Anything Made of Gold, Silver! Coins! Jewelry! Free Information! Metallurgy, Box 33009-PM, Charleston, S.C. 29407.

BATTERY Powered Clock Movements Including Striking and Pendulum Models. Catalog Free. Write Modern Technical Tools, 211 Nevada, Hicksville, N.Y. 11801.

WANTED-Gold, silver, platinum (any form). Coins. Information free, Wilmot's, 345 South Glassell, Orange, Calif. 92666.

CLOCK Repairing Parts, Tools, Supplies, Catalog, \$1.25, G/M, 22627 Berdon, Woodland Hills, California 91364.

HEARING AIDS

HUGE SAVINGS. Eliminate dealer mark-ups, Free Trial. Batteries Wholesale. Terms arranged. Lloyds-PMC, Rockford, III. 61104.

SAVE! Batteries, Repairs. Free Details. Tartan, Box 2166A Westminster, Cal. 92683.

WHOLESALE Discounters! Aids! Batteries! Repairs! AidMart, Drawer Z-2, St. Petersburg, Florida 33731.

HEARING Aids, Batteries, Discount Prices. Free Trial. Write: Rhodes, Brookport, Illinois 62910.

FREE HEARING AID CATALOG—\$ave by mail. Write: "MONEY\$AVERS", 9530-PM-1, Langdon, Sepulveda, California 91343.

HEARING Aids—Huge savings on tiny, all in the ear, eyeglass, behind the ear and body models. Free home trial. Low as \$10 monthly. Write for free catalog. Prestige, Dept. R-6, Box 10947, Houston, Texas 77018.

TOBACCO

DO YOUR pipe a flavor. Factory-fresh, pure tobacco. Natural and aromatic custom blends. For free sample write: Green River Tobacco, Box 1313-PMT, Owensboro, Ky. 42301.

MEERSCHAUM Pipes From Turkey, Sample \$13.95. Nichols, Box 3144, Enid, Oklahoma 73701.

HAND Blended Pipe Tobaccos, Mild Rich Flavored, finest available, Send \$3.00 for Eleven Samples or write for Free Catalogue only. R.K. Williams Co. Ltd., Dept. P1, 6316 Winthrop Ave., Indianapolis, Indiana 46220.

MEERSCHAUM Pipes—Free Catalog, Conner Imports, Box 9574-PM1, San Jose, Calif. 95157.

SCIENCE & CHEMISTRY

CHEMISTRY Catalog, 35¢. Special listings. Laboratory Sales, Box 161-A, Brighton, Mass. 02135.

CATALOGUE Of Those Ver-ry Hard-To-Find Chemical Products, 500 How-To-Books, Laboratory Experiments, Supplies, Information. Special Attention to Beginners. Formulas Of Every Conceivable Mixture In Science and Industry, 75¢. Kenrus-C, Box 205, Staten Island, New York 10306.

MAKE Your Own Smoking Snake Pellets, Soap, and Other Formulas, \$1.00 to: R. Berry, P.O. Box 185, Bartlett, III. 60103.

LASER Tube Kit—\$5.50; Five Laser Plans-\$4.00; Catalog-\$1.50; Plasma Scientific, Box 1005PM, Claremont, California, 91711.

AMAZING! Scientific-Apparatus-Glassware-Chemicals. Catalog-50¢. Hagenow Laboratories, 507-A Huron Street, Manitowoc, Wisconsin 54220.

DISCOUNTED! Laboratory Chemicals, Glassware-Apparatus. Catalog-50¢, Deluxe Scientific, 507 Huron, Manitowoc, Wisconsin 54220.

FORMULAS, PLANS, ETC.

HEAT YOUR HOUSE ALMOST FREE. Burn Waste crankcase oil in your oil furnace, white flame, easy conversion plans. \$6.90. Satisfaction Guaranteed, Halkias, Box 296P, Copiague, N.Y. 11726.

DISGUISES. Become An Expert On Facial Disguises And Theatrical Make-Up. Book Will Guide You With Step By Step Instructions \$10.00. Catalog \$1.00. Courtois, 176 West 87 Street, New York, New York 10024.

CHEMICAL Magic Formulas 40 different plus sources of Materials \$1.95. BBN Co., Dept. D-102, P. O. Box 191, Gretna, La. 70053.

PLASTICS

CASTOLITE Pours like water, hardens like glass without heat. Crystal clear, colors. Embed flowers, seashells, mementos, anything. Make fine gifts. Form flexible molds over patterns of any shape, size, Reproduce your own designs in plastics, candlewax, metal, plaster, cement. Free descriptive folder. Or send \$1.00 for illustrated Manual Catalog. Profitable. CASTOLITE, Dept. 75A/PM, Woodstock, II. 60098.

TREASURE FINDERS

GOLD, Where To Look For It. Send \$2.00. C. Barr, Box 3471, Industry, Calif. 91744.

TIRED OF DIGGING UP TRASH? The All New "Coin-Shooter" Rejects Bottle Caps, Tin Foll, Nails and Shallow Trash, Detects Gold, Silver Coins and Jewelry. Free Literature. D-TEX ELECTRONICS, Box 451-U, Garland, Texas 75040.

POWERFUL Metrotech locator detect gold, silver, coins, relics. Moneyback guarantee, terms. Free information. Underground Explorations, Dept. A, Box 793, Menlo Park, California 94025.

MAP Dowsing for Treasure, Kems 14039 Don Julian, La Puente, Calif. 91746.

TREASURE FINDER Locates buried gold, silver, coins, treasures. 6 powerful models. Instant financing available. Write or call for free catalog. Phone (713) 682-2728 day or night. Dealer inquiries invited. Relco, Dept. AA21, Box 10839, Houston, Texas 77018.

DON'T DIG TRASH! Owners report our "Selectmatic"
Detector best. Differentiates treasure faster; deeper.
Patented against imitations. Treasure Electronics,
Rt. 1, Box 56MN, Benton, La. 71006 CALL
318-965-0277.

FIND buried treasure with patented metal detectors that distinguish Metallic trash from treasure, have push button and automatic tuning, ground pickup eliminate feature, great range, etc. Free catalogue. GARDINER ELECTRONICS, DEPT. 9, 4729 N. 7TH Avenue, Phoenix, Arizona 85013.

PRECIOUS STONES & MINERALS

GOLD 10 Small Nuggets Panned From Oregon Streams. \$1.00. Robert Brandt, Sweet Home, Oregon 97386.

500 POLISHED Gemstones \$5.00, Tumblecraft, 5401 James North, Minneapolis, Minn. 55430.

PLASTIC Casting Supplies, Molds, Jewelry Mountings, Cut Stones. Wholesale Catalog 25¢. Eloxite, 806B 10th St., Wheatland, Wyo. 82201.

CARTOONING, COMMERCIALARTS, SHOWCARD & SIGN PAINTING

LEARN Sign painting at home. Free Talent test. Ben Kerns, Box 812-PM, Greenville, S.C. 29601.

SIGN Painting—\$1000 per Month Part-Time. Free Catalogue. Kaufmann Supply, Centertown, Missouri 65023.

MODERN Cartooning taught by mail. Write for free brochure. Cartoonerama—Box 263-PMA, Branford, Conn. 06405.

COMPACT 23 lesson Cartoon Course and Cartoonist's Magazine. \$2.00. Hartman, Box 30367, Lincoln, Nebraska 68510.

FASCINATING Systems. Sign Painting-Cartooning. Straley, 1704 South Center, Springfield, Ohio 45506.

ADVERTISING AGENCIES, ADV. SERVICES MAILING LISTS

ADVERTISING Ratebook leading newspapers, maga-zines. 50c. Chicago Advertising Agency, 28-E Jackson, Chicago 60604.

MAILING List, Most all Kinds, \$9.00 1000 Gummed, rculars mailed \$5.00 1000. Dixmailers, King, North Carolina 27021.

MAILORDER ADVERTISERS!! CLASSIFIED ADVERTISING CAN BE MOST PROFITABLE AND REWARDING. PROBLEM IS TO KNOW WHAT TO DO, WHAT NOT TO DO. COLUMBIA CAN HELP YOU WITH YOUR MAILORDER PROGRAM. OVER 20 YEARS CLASSIFIED ADVERTISING EXPERIENCE, KNOWLEDGE OF BEST PULLING PUBLICATIONS, EXPERT COPY SERVICE IS ALL YOURS AT NO INCREASE OVER PUBLISHER'S STANDARD RATES. CHANCES ARE YOU WILL SAVE MONEY. WRITE TODAY FOR FREE DETAILS PLUS YOUR FREE COPY OF "MAILORDER ADVERTISER'S RATE GUIDE". COLUMBIA ADVERTISING AGENCY, BOX 1258CAR, RICHMOND, INDIANA 47374.

RUBBER STAMPS

FREE stamp catalog. 45 type styles, Fast Service, low prices. Jackson's, Box 443A, Franklin Park, III. 60131.

CUSTOM Made Stamps. Free Catalog. ALLEGHENY, Box 14C, East McKeesport, PA 15035.

3-LINE Stamps, \$2.50. Signature Stamps, \$5.95. Tabco, Tomkins Cove, New York 10986.

\$1.50 ONE Line. 50¢ Additional. Fast Quality. Exserco(pm), B38, Warren, Oregon 97053.

FREE catalog—Rubber Stamps—Signature Stamps
—Business Cards. Youngers Stamp Shop, Princeton,
Iowa 52768.

3-LINE Stamp \$2.50. Signature Stamp \$5.00. Don's, 502 Briarwood, Abilene, Texas 79603.

QUALITY RUBBER STAMPS 3 Lines \$2.50. Cloverleaf Service, Box 49, Selbyville, Del. 19975.

OFFICE SUPPLIES

SPELLRIGHT Self-Correcting typewriter Ribbon. No more Erasing-Ever: Just back space, shift ribbon selector and retype. Error disappears. \$3.50 each. Guaranteed—include make and model. Customer Services, Dept. AP1, 2745 Bowie, Camden, Arkansas 71701.

SELF-CORRECTING TYPEWRITER RIBBON!!! Only \$3.50—Guaranteed!!! State Make and Model of Type-writer—Rising's., Rt.1, Chadbourn, N.C. 28431.

PRINTING PRESSES RUBBER STAMP OUTFITS

PRINTING MACHINES. Offset, Mimeograph, Type-writers, Composing, Machines, Dixgraph, King, North Carolina 27021.

NEW Catalog No. 13, 120 Pages, hand printing presses, type fonts, supplies. Send \$1.00 deductible first order. Acme Type, 732 Federal, Chicago, Illinois 60605.

RUBBER Stamp manufacturers supplies, Presses, starting outfits. Best prices, service. Catalog. Jackson Supply, Box 443A, Franklin Park, III. 60131.

SAME Day shipment on rubber stamp supplies. Revised wholesale price list No. 10 free. Star Stamp Supply, 732 Federal, Chicago, III. 60605.

PRINT YOUR OWN—Printing Presses, type, supplies direct from factory. Send 25¢ for catalog and samples to: Kelsey Co., DM, Meriden, Conn. 06450.

SIMPLE-X RUBBER STAMP PRESSES, Hydraulic oper-SIMPLE-X RUBBER STAMP PRESSES, Hydraulic operated, electrically heated. Sizes 5" x 8", 8" x 12", 10" x 15". Starting outfits. Orders for presses, supplies shipped day received. Send \$2.00 for Catalog and brochure. Custom Manufacturers, 2251-P N. Golden, Springfield, Mo. 65806.

PRINTING Presses, type, Supplies Lists, 10¢. Innbaugh Service, Mechanicsburg, Pennsylvania Turnbaugh 17055

RUBBER Stamp Presses. Supplies. Literature 25¢. Klewiet, 2025 Barney Road, Kalamazoo, Michigan

RUBBER Stamp Presses, Starting Kits, Type, Sup-plies. Barco Type Founders, 237 S. Evergreen, Bensenville, III. 60106.

RUBBER Stamp Supplies; Starting Outfits. Martin, 1432 Major, Jefferson City, Mo. 65101.

PRINTING AND SUPPLIES

NOVELTY Business cards, Free sample, Empire-PM, 1916 Fifth, Sacramento, California 95814.

ENVELOPES! No. #10-1,000 \$14.00. Free Literature. Enterprises. Box 103, Grosse IIe, Mich. 48138.

EMBOSSED Business Cards \$6.10. Agents Wanted. Printers, Box 2426. Alderwood Manor, Wash. 98036.

1000 EMBOSSED Business Cards \$5.75 Postpaid. Agents Wanted. Elco, 181-A, Sylvania, Ohio 43560.

FREE Literature, Business Cards, Letterheads, Labels, Rubber Stamps. Geer's, 111 North Drive, Ottawa, Ohio

FREE INFORMATION—SAMPLES—Embossed Business Cards, Rubber Stamps. Carter's, Box 4082, Martinez, Ga. 30907.

SHIPPING LABELS, gummed mailing, \$5.00 per ,000 prepaid, Halderman's, Girard, Kansas 66743.

\$7.90 YOUR COPY Reverse of 1000, $8\frac{1}{2}$ x 11 Circulars, your copy black ink. Mailtrade, Box 1302, Springfield, IL 62705. Samples 20¢ stamps.

QUICK Copy Offset Printing, Free Introductory Offer, ationwide Printing, 614 North Main, Bloomington, Illinois 61701.

200 BUSINESS Letterheads, 200 envelopes! BOTH! \$9.00 Total! Haldeman's, Girard, Kansas 66743.

FREE Literature: Rubber Stamps, Books, Business Cards, Printing, Labels. Jordan's, 552 West O'Connor, Lima, Ohio 45801.

AMAZING Free Illustrated Business Printing Catalog. Inexpensive. Victor, Drawer 707P, Sharon, Pennsylvania 16146.

DISTINCTIVE Letterheads, Cards, Forms. McDonald, 545 North Oakland, Pasadena, California 91101.

GUMMED LABELS

1000 GUMMED Address Labels \$1.00. Walt's, Box 960A, South Bend, Indiana 46624.

1,000 GOLD Stripe Labels. Name, Address-\$1.00. Enterprises, Box 103, Grosse IIe, Mich. 48138.

1,000 GUMMED ADDRESS LABELS \$1.00. FREE TERATURE, Acme, 1238 Vookamp, Pittsburgh, Pennsylvania 15212.

BLANK Address Label Sheets-990 Labels \$1.00 Ppd. atalog Free, Merit Service, 24 Murray St. Rochester, New York 14606.

ADDRESS LABELS! \$1.00/1,000\$2.00/3,000NBC, Box 345-B, Hendersonville, Tennessee 37075.

BARGAIN 1,000 Addressing Labels 90¢. Scruggs, Box 11, Atlanta, Ga. 30301.

REMAILING SERVICE

NEW YORK, Remails Newburgh, New York 12550. 25¢-Calvin, 3168

1975-76 REMAILERS Directory, \$1.00. Puget Sound, Box 9068, Tacoma, WA. 98409.

CONFIDENTIAL New York Mail Address \$5.00 month. Telephone service \$5.00 Remails 25¢. Birnhan, 130 West 42, New York, 10036.

FOREIGN OR U.S. REMAILING. London \$2.00. Honolulu, Seattle, Los Angeles. San Francisco, or random U.S. cities 25¢. Fast, Efficient, and Confidential. Annco International, Ltd., Box 264, Burlingame, California 94010.

NEW ORLEANS Remails 25¢. Melonson, 435 West Bufferfly, Gretna, Louisiana 70053.

MIAMI 25¢. Letters remailed from 130 foreign cities. 300 U.S. cities. Marle, Box 1266, Miami, Florida 33134.

CONFIDENTIAL California Address. Receiving-Forwarding, Single Remails 25¢—Business—Personal. MERLIN Remail Service, Suite 318, 206 West 4th Street, Santa Ana, California 92701.

REMAILING From Beautiful Webster Lake 25¢ Direct Sales Service, P.O. Box 925, Webster, Mass. 01570.

SECRET. Receiving—forwarding. Discreet and con-dential. Remail 25¢ single. Mail Forwarding Service, 8050 S. Main, Houston, Texas 77025.

MILWAUKEE Remails Singles 25¢ Monthly \$3.00. Details. Racomm, Box 21954, Milwaukee, Wisc. 53221.

NEW YORK, New Jersey, Remails, 25¢, Fahey, Box 159, Matawan, N.J. 07747.

CINCINNATI Or Louisville Remails 25¢. Foley, 311 West 3rd, Frankfort, Ky. 40601. RICHMOND remails 25¢. Harding, 642 La Brook Drive, Richmond, Virginia 23225.

HAWAII Confidential Remailing 25¢. Bator, PO Box 8821-B3, Honolulu, Hawaii 96815.

CONFIDENTIAL, Remails 25¢. Dixie, Box 51804, New Orleans, La. 70151.

CONFIDENTIAL Colorado, Wyoming Remails, 25¢ Cheyenne Postcards 6/\$1.00. Solitude, Box 10401, Cheyenne, Wyoming, 82001.

PROMPT-CONFIDENTIAL Mail Received. Forwarded. 25¢. Corbin, Box 1265, Running Springs, Ca. 92382.

HONOLULU HAWAII 25¢ Each. \$3.00 Monthly. P.O. Box 1301, Honolulu Hawaii 96807.

REPAIRS & SERVICING

COMPLETE Hydraulic Jack Repairing Manual \$3.00. oneyback Guarantee. Bayerco, 938-JN Betty Avenue, Moneyback Guarantee, Ba Neenah, Wisconsin 54956.

SPECIAL SERVICES

INFORMATION On anything. Ferguson Res Specialists. 72-25 Woodside, Woodside, New 11377. Research

BETTER HEALTH

LIVE LONGER Booklet Reveals the Secrets of a Long Healthy Life \$1.50. Robert Toler, PS2 Main St., Oceana, W.VA. 24870.

DON'T Drink Ordinary Water (Avoid Serious Hazard). S&S, Box 35178-H, Chicago, IL 60635.

OVERWEIGHT??? Live Longer, Healthier, Happier fel!! Free Information . . . Diet Plan, Box 592-P115, Life!!! Free Informati Simsbury, Ct. 06070.

QUIT SMOKING. Free brochure. BOOT THE URGE. Opportunities, Box 1274 PJ, Las Vegas, Nevada 89101.

LOSE 20 pounds . . . Two Weeks. Chemically Bal-anced Grapefruit diet. Eat Good . . . Guaranteed. \$1.00. Diet, 5632 11th N.E. Seattle, Washington 98105.

YOU CAN STOP SMOKING! Magic 4-Step Formula! Send \$2.00. Reed, Box 1135, Denver, Colorado 80201.

LOANS BY MAIL

BORROW By Mail! Up to \$3,000.00. Convenient terms. State Licensed. Postal Finance, Dept. 17-01, 6018 Military Ave., Omaha, Nebraska 68104.

PERSONAL

NEED Money—Debts Too Big? Consolidate Bills. "Quick-Cash" Emergency Loans Available. Helped Thousands since 1936. Free Application. Interstate, 28 E. Jackson, Suite 1204-X3, Chicago 60604.

HOW To Win Big At Pocket Billiards: Booklet \$2.00. J.M.W., Box 51, R.I., Maribel, Wis. 54227.

"GAIN WEIGHT" fast and easy. Free information. Unique Advisors, Box 668, Dept. C, Sparks, Nevada

FOR YOUR FACE, HANDS, SKIN? People in many occupations, sports, write praising our lanolin-loaded, antiseptic, long-time farm best seller BAG BALM. Featured in national financial newspaper, magazines' stories. Purse size BAG BALM sample \$1.00. Generous 10 oz. \$2.00. Send today. Dairy Association Company, Dept. A-7 Lyndonville, Vermont 05851.

RECORD Telephone Conversation automatically. Leave Recorder Unattended. Robert's, Box 49-PM1, Parkridge, Illinois 60068.

INVESTIGATORS, Latest electronic Aids, Free Litera-ire. Clifton, 11500-P NW 7th Ave., Miami, Florida

BIBLE Questions answered, Stamped envelope. Bylon, 17167 Bentler, Detroit, Michigan 48219.

HOW To SAVE MONEY On Most EVERYTHING 10U BUY. New Book Tells Exactly How to Save Hundreds of Dollars Each Year on Everyday Purchases. \$2.00 Postpaid. Ware's, Box 26070-BU, Phoenix, AZ 85068. Satisfaction Guaranteed or Money Back.

RECORD Telephone Calls Automatically! Unattended peration. Auto-Cord, Box 192-PM1, Griffith, Indiana 46319.

\$1,000! SAVE UP TO \$1,000 AND MORE IN INCOME TAXES. CPA Reveals Many Little-Known Ways to Save. Satisfaction Guaranteed. \$3.95. Tax, 1302 S. Princeton, Arlington Hts., III. 60005.

STOP SMOKING! 4-Step Proven Method Eliminates Desire. Guaranteed! Only \$2.00. Duca, 574 Tahos Rd, Orinda, Cal. 94563.

NOW—Restore Youthful Beauty to Your Face! Complete, Illustrated Program—Only \$2.00. Fully Guaranteed! Vistas, Box 7153A, Baltimore, Maryland

UNIQUE NEW BOOK Explains Group Insurance Benefits. Free Details. Status International, 1619A Ashcroft Ct., Longmont, Co. 80501.

AFRAID? Conquer Your Fears and Live Fully, Guar-anteed. \$7.95. Counself, Box 604, Ardsley, N.Y. 10502.

FABULOUS, Affordable, Portable, Personal Sauna! Plug in, Step In, Relax! \$39.95—90-Day Guarantee. Envelope, 10¢ Details. Fitzpatrick Enterprises, 24 Hunter Street, Dept. 7H1, Toronto, M4J 1C2.

DON'T Die Without A Will. Legal Forms and Instructions. \$1.50. Bryan's, 501 W. 27th So., Wichita, Kans. 67217. Instructions.

ESCAPE From debts and bill collectors! Have AAA-1 credit everywhere. Free report reveals secret plan! Credit 4A1, 333 North Michigan, Chicago 60601.

STOP SMOKING Or MONEY BACK. \$1.00 GRANDerson A1-1, Box 9098, Sunnyvale, Ca. 94086.

SUCCESSFUL: Not free, amazing, secret, or new. Complete. "HOW I QUIT SMOKING." You can too. \$2.00. Opportunities, Box 1274-PJ, Las Vegas, Nevada

I Did! YOU CAM! "How To Stop Smoking" Guaranteed! \$1.00 T & O International Enterprises, 2419 Alycia Avenue, Richmond, Virginia 23228.

FREE RENT, Manage Apartments, Your City, Broker Tel's How, Copyrighted Booklet \$2.00, Postpaid, Guaranteed, Lucus, P.O. Box 33000A, San Diego, Calif.

3-HANDED Contract Bridge with a REAL CHALLENGE? YES! For Explanatory Booklet @ SLW 1974 send \$3 to: Stuart Wells, P.O. Box 2568-F, Downtown Sta., Orlando, Fla, 32802 Florida Residents Add 4% Tax.

PLAN FOR RETIREMENT NOW—LIVE LONGER. Booklet Reveals The Secrets of Long and Healthy Life. Send \$1.00 to: Superior Enterprizes, P. O. Box 715, Marquette, Mich. 49855.

GROWING INFLATION AND HOW TO LIVE WITH IT. Send \$2 or request free details. BABCO, (PM1) 715 Cavalier Drive, Tempe, Arizona 85281.

PERSONAL (Continued from preceding page)

LEGAL WILLS—Family Protection Guaranteed Complete \$2.00 Finley, 10 Fifth Avenue, Amsterdam, New York 12010.

"QUIT SMOKING!!" Revealing, Full-Color Illustrated Book . . Plus FREE Magazine Subscription! . . \$1.50, GUARANTEED.—Communique, Box 1988-A, Hollywood, Cailf. 90028.

HOW To Double The Interest On Your Savings Account, \$2.00 Guaranteed. Enterprises, Box 9214, Salt Lake City, Utah 84109.

STOP SMOKING NOW! Guaranteed, Personally Autographed Book Leads You Step By Step From Slavery To Freedom! \$2.00. Edwards, Box 4059, KA-1, Dallas, Texas 75208.

STOP SMOKING! Guaranteed Results! Send Stamped Envelope for FREE Information To Church Entr., Box 508A, Millers Creek, N.C. 28651.

HOW TO STRETCH YOUR DOLLAR. Valuable Secrets of Easy Saving. Food, clothes, car, home. Much more. 96 pages. \$1.00, ELANCO, 5493 Don Pizarro Ct., San Jose, Calif. 95123.

MEN! Overcome Baldness, Thinning, Graying Hair Naturally, Booklet Describes Startling Results and Method. \$1.00 Guaranteed. ERS, Box 28075AA, Columbus, Ohio 43228.

TROUBLES? The Mynah Bird will Bring You Luck. Send \$1.00. Don Murphy, Box 141A, Keewatin, Minn. 55753.

STOP Smoking!—Guaranteed Program Helped Others . . . Why Not You?—Free Proof—Aaron, Box 1587-P, Marietta, Georgia 30060.

DRIVE A \$10,000 Car. No Cost To You. Moneyback Guarantee. \$2.00. Clark Enterprises, Box 9214, Salt Lake City, Utah 84109.

LEARN Handwriting Analysis . . . \$1.00 Information . . . Refundable . . . Analysis, Box 13335-P, San Diego, Calif. 92113.

WRITE Your Will Quick Easy, 4 Will Forms, Attorney's Instructions, Moneyback Guarantee, \$2.00, Marion 2609PMS Tilbury, Pittsburgh, Pa. 15217.

PROTECT Your Family!! Write Your Own Will!! Forms and Full Instructions. Only \$2—Guaranteed! Order Today!! Soto, Box 1534, Dept. 2G1, Passaic, New Jersey 07055.

DON'T DIE WITHOUT A WILL. Legal Forms, Instructions \$2.00-Refundable, Maphil, Box 64939PM, Baton Rouge, La. 70806.

HOW To Stop Smoking Complete Details. Guaranteed! \$2.00. Way's, Box 882, Indian Rocks Beach, Florida 33535.

STOP SMOKING! Time tested copyrighted method really works! Send \$2.00. Marbil, Box 177, Shamokin Dam, Pennsylvania 17876.

IMPROVE YOUR FIGURE! Finally, A Diet Plan That Works. Included are Delicious Menus and Special Recipes. Send \$1.00. Samways, 12 Brackett Avenue, Stoneham, Mass. 02180.

HOW TO SAVE MONEY Buying Your Next Car. Guaranteed \$2,00. T & O International Enterprises, 2419 Alycia Avenue, Richmond, Virginia 23228.

WANTED MISCELLANEOUS

MERCURY Gold, Silver, Platinum: Ores assayed Wholesale Terminal, Norwood, Mass. 02062.

WINEMAKING & OTHER RECIPES

HOW to Make Wine and Champagne Inexpensively Using Ordinary Kitchen Equipment, Complete Instructions. Guaranteed! \$1.00. Winemaking, Box 6262, Seattle, Wash. 98188.

DELICIOUS Champagne and Wine, using Kitchen Utensils only. Seven Tested Recipes. \$2.00. Moore, 8190 West 8th, Lakewood, Colorado 80215.

HOW To Make Delicious Wine and Champagne at home. No special equipment needed, Fantastic Tastel SATISFACTION or MONEY-BACK. Send \$2.00. Earl Larkins Enterprise, 435 Roan, Kingsport, Tennessee 37665.

SECRET OF GOOD ITALIAN SPAGHETTI SAUCE Is in the herbs. Sauce and meatball recipe \$2.00, Italian Country House, Box 412, Elmer, N.J. 08318.

BARRELS. Winemaking Supplies—Complete Line. Barrel Winery, 1201 University Ave., Berkeley, Calif. 94702.

WINEMAKER'S Supply Catalog—Free, Bacchanalia, 273 Riverside Ave., Westport, Conn. 06880.

WINEMAKERS FREE Supply Catalog. Excellent Selection of Fruit & Grape Concentrates. Kraus, Box 451-L, Nevada, Missouri 64772.

WINEMAKER'S! Free Illustrated Catalogue of Quality Products. Brant's Wine Rack, Box 3256-PM, Orange, California 92665.

WINEMAKING Delicious Wine From Ordinary Grocer Ingredients NO SPECIAL EQUIPMENT NEEDED, My Personal Recipe \$2.00. Enterprises, Box 8201, Shreveport, La. 71108.

MAKE Delicious Sparkling CHAMPAGNE—WINE Kitchen Utensils——Recipes—Instructions Guaranteed —\$2.00. "Wines" Box 372-A, N. Chicago, III. 60064.

HOME BREW, FRUIT WINE, FRUIT BRANDY, Amazingly Simple Down Home Guide and Recipes. \$1.00. Wingate, Rt. 1, Box 226-C, Quincy, Calif. 95971. MAKE WINE & CHAMPAGNE Use Kitchen Utenslis. Send \$1.98 K + C Sales, P.O. Box 4362-A, Muskegon Hgts, Mich. 49444.

WINEMAKING, Yogurt, Cheesemaking, Free catalog Arbolyn, Box 663, West Columbia, S.C. 29169.

HOLIDAY TIMES! Make Delicious Wine and Champagne at Home For Only Pennies a Bottle. Send \$3.00. GW Enterprises, Box 93-AA1, Williamsville, N.Y. 14221.

HOW TO MAKE SPARKLING WINE AND CHAMPAGNE With Standard Kitchen Equipment. Recipes and Full Instructions \$2.00. Bonus. For Only \$1.00 Get Homemade Beer Recipes. Satisfaction Guaranteed. Dalco, Box 312, Colby, Kansas 67701.

WINEMAKERS FREE ILLUSTRATED Supply catalog of yeast, equipment. Continental, Box 18223-PM, Indianapolis, Ind. 46218.

HOME WINEMAKING—Send \$1.00 for INFORMATIVE CATALOG of RECIPES, EQUIPMENT, AND INGREDIENTS. Brewer's yeast, malt extracts, dry malt, bottle caps, barrels, chemicals, concentrates, over 300 items. \$1.00 refunded with your first order. Write to DANENBERGER'S, Box 276-M, New Berlin, III. 52670.

MAKE Wine and Champagne At Home, \$3.98. Wineceller, Box 19881-A1, Atlanta, Georgia 30325.

SAVE—Inflation Fighter \$1.98 Guaranteed. Beer-Wine Recipes. Vail Associates, Y-Dept. K, Blvd. Station, Norman, Okla. 73069.

WINEMAKING Supplies and Equipment—Largest stock, Free Catalog, Jim Dandy Wine Supplies, 8454 Beechmont, Cincinnati, Ohio 45230.

AMAZING . . . Make Wine With Kitchen Utensils . . Plus . . . Six Delicious Recipes . . . \$3.95. FREE Champagne Recipe with Order. Universe, Box 1639-C, Hollywood, Florida 33022.

WINEMAKERS!!! FREE Illustrated Catalog Of Supplies And Equipment. Write Today! Brownley Enterprizes, Box 950-A, El Cajon, California 92020.

HOW To Make Fine Wines & Champagnes. Stock Your Cellar For Pennies A Bottle! Easy To Follow Recipes—using Simple Home Equipment And Supplies. Money Back Guarantee. \$2.00—Reinwine, Box 65, Ellenburg Center, New York 12934.

WINEMAKERS. Free illustrated catalog of yeasts, equipment. Semplex, Box 12276R. Minneapolis, Minn. 55412.

MAKE Wine, Champagne . . . Using Regular Kitchen Equipment . . Detailed Recipes . . \$2.00 . . . Free Bonus! C&H. Box 13335-P, San Diego, Calif. 92113.

WINEMAKING. Make superb Wines and Champagnes Plus Free BONUS. For Details. Sun Associates, Box 999778-1, San Diego, Calif. 92109.

HOW TO MAKE WINE AND CHAMPAGNE. Complete instructions and recipes. Use regular kitchen utensils!
--- \$1.00 --- Money Back GUARANTEE. Stewart's, 137 Joost, San Francisco, Cal. 94131.

MAKE YOUR OWN WINE AT HOME. Send For Make-Your-Own Booklet. \$2.00. Marbil, Box 177, Shamokin Dam, Pa. 17876.

MAKE WINE AND CHAMPAGNE AT HOME Use Standard Kitchen Items. Instructions & Recipes. Send \$2.00. Hathaway Products, Box 293A, Winchester, Mass. 01890.

MISCELLANEOUS

LEARN How To Successfully Bid At Auction. \$2.00. LR, Box 2733, Monroe, LA 71201.

LOSE Weight Permanent. No Dieting, Guaranteed. Send for Information: Wheatpm, 3311 S. Hooper Ave., Los Angeles, Ca. 90011.

CIGARETTES at half the cost. Roll plain, filtertip or king with our rollers and blended tobaccos. Free Sample. Write Green River Tobacco, Box 1313PM, Owensboro, Ky. 42301.

TWO Will Forms, Instruction Booklet \$2.00, Action Services, Dept. PM, Box 10961, Baltimore, Md 21234.

METRIC Converter with Tables and Answers not Methods—Housewife—Student—Motorist—Homeowner Overseas traveler, \$2.99 postpaid. Easy to Use—Easy to Carry, Order Today: BE Sales, Box 488B, St. Clairsville, Ohio 43950.

GOLD RECLAIMING AND TESTING! Easily Identify and Refine old gold yourself! Chemist's Complete, Simplified instructions \$2.00. Burchette, Box 1114-PG, Spring Valley, Calif. 92077.

WILL Kit Forms, Asset List, Instructions, \$2.00. Futura, Dept. 2PM1, 602 Syracuse Ave., N. Massapequa, New York 11758.

LARGE SELECTION & BIG DISCOUNTS—Books/Merchandise. Catalogs and Samples \$1.00 VAZER, Box 10055, Phoenix, AZ 85064.

ORNAMENTAL Iron designs, Book of 1600 beautiful, practical designs for railings, columns, etc. Free literature. Cunningham, 3881 South 3200 West, Box 20005, Salt Lake City, Utah 84120.

"EXTRA MONEY—100 Best Ways to Make It!" 20,000 words—\$1.00! Guaranteed, Holden's (P2), Box 1, Evanston, Illinois 60204.

NEW Stanley Steamer!—Jet Powered Steam—Wrinkles Disappear. Brush Attachment Gets Rid of Lint! . . . Stains! Safe For All Fabrics, Use Tap Water U.L. Approved! 1Y11. \$9.98. Order Now Guaranteed! Steamco, P.O. Box N3606, Nassau Bahamas.

STOP SMOKING! Free Details. Moray Enterprises, Box 94-C, Moraga, Cal. 94556.

TATTODING: Complete Inventory of Equipment and Supplies for Professional and Amateur. Transistor Driven Machines. Illustrated Information. Paul's, Box 8073, LaCrescenta, California 91214.

SAUSAGE MAKING. 50 Recipes curing Smoking— Hams-Bacon-Poultry-Fish-Venison. Premixed Spices.. Cures Casings. Smokehouse Ideas. Free Catalog. Send Stamped addressed envelope: RAK, Dept. 9, Box 4155, Las Vegas, Nevada 89106.

HOW TO Pan Gold! Book explains Equipment used, simple panning method. \$1.00: The Olympic's Enterprise, 108 West 3rd., Port Angeles, Wash. 98362.

DON'T DIE Without a will. Blank Form protects your family. Only \$2.—guaranteed. Order Today. Kuhlen, Dept. 1PM10, 46 Brittany Court, Charlotte, NC 28211.

USE your Transistor Radio as Emergency Direction Finder. Complete Details. No Electronic Experience Required. Guaranteed Results. \$1.00. RADIO COMPASS, Dept. C, Box 606, Webb City, Missouri 64870.

INVENTORY Clearance Giant Savings Stereos, Hi-fi's, Musical Instruments, Burglar Alarm, Clocks, Appliances, Walkie Talkies, CB Equipment, TV's, Electronic Specialities, Calculators, Cassette Recorders, Radios, Telephone Answering Machines. All Merchandise Includes a Money Back Satisfaction Guarantee. Send \$1.00 For Catalog. Wonderland Music Co., Dept PM, 13519 Michigan, Dearborn, Michigan 48126.

AMAZING SECRET FORMULAS! Revealed, Galliano, Kahlua, many others. \$3.00, Jenco, 7525 Florence, Downey, Calif. 90240.

BOOKS On antiques and their prices. Free circular!!

Narman Publishers. Uniontown, Penna. 15401.

HOW To SAVE on Fresh Vegetables, Fruit. Send \$2.00—Informative Booklet. Box 141-P, North Salt Lake, Utah 84010.

PLAY CHESS BY MAIL! Information: Chessnuts, 25-PA Mount Vernon, Saugus, Mass. 01906.

IDENTIFICATION CARDS. Send stamped self-addressed envelope for samples. NIPCOM, 727 North Main, Las Vegas, Nevada 89101.

RACE FANS—A-1 Handicapping Guide, Free sample, Lucas, Box 7284, Pittsburgh, Penna, 15213.

CUSTOM Made Fiberglass Backed Latex Molds and Fiberglass Hard Molds for Casting Ornamental Concrete or Plaster. Freeman Industries, Joliet, Montana 59041.

HOW TO MAKE DELICIOUS WIME And Champagne At Home. Easy To Understand Booklet - \$1.00. Deli., Box 42382A-1, San Francisco, Calif. 94142.

NUDIE S-S Plates \$1.25¢ Male, Female, 2-Flag. Send Name S-S No. NA. Michael Smith Sales Company, 1160 Jackson Avenue, Bronx, New York 10456.

WIN! Casino Games! Free Details! Xcito Games, 5715 N. Mozart, Chicago, Illinois 60659.

"AUSTRALIA EMPLOYMENT HANDBOOK AND Directory" or "HOW TO STOP SMOKING" Bookiet \$1.00 (Refundable). Maphil-Box 64939 PM, Baton Rouge, La. 70806.

MAGNETS. All Types. Specials-20 Disc. or 10 Bar, or 2 Stick, or 8 assorted Magnets, \$1.00. Magnets, Box 192-A, Randalistown, Maryland 21133.

BRANDING IRON Your Choice Up To Five %" Copper Letters or Numerals, \$5.00 Postpaid. Additional Letters \$1.50 Each. Great Identification. I. Miller Enterprises, Box 772, Manchester, Mo. 63011.

STOP SMOKING! YOU CAN!!! Instruction Booklet Guaranteed. Only \$2.00. Hathaway Products, Box 293A Winchester, Mass. 01890.

BURGLAR ALARMS & HOME PROTECTION

"WARNING—BAD DOG—ATTACK TRAINED" Striking sign gives protection with or without dog. Metal, black on yellow, 12"X6". \$5.00. Box 446, Alston, Mass. 02134.

LOCKSMITHING Supplies—Buyers Guide \$1.00 Despubs, Bax 22005H, Phoenix, Arizona 85028.

INEXPENSIVE Fire Alarm \$10.95—10 Year Guarantee
—One for Every Room or Potential hotspot—Order
Today! Martin Baldridge, 911 1st St., Chappell, Nebr.
69129.

EMERGENCY Device Calls Police With Touchtone. Plans \$2.00, Fearnomo, P.O. 114, McKinney, Texas 75069.

PROTECTION! Piercing, Battery Powered Chain Alarm Alerts You To Intruders, Mounts on Doors, Windows, \$4.95. Motronics, 4522 W. Solano Dr. S., Glendale, Arizona. 85301.

HOME SECURITY. Do-It-Yourself. Low, Low Cost. Send \$1.00 and Stamped, Self Addressed Envelope. LZ, Box 4A, 55 Halley St., Yonkers, N.Y. 10704.

FREE Catalog on Burglar-fire Alarm Equipment, Protecto Alarm Sales, Box 357-D Birch Run, Michigan 48415.

LOOKING FOR IDEAS ON HUNTING, FISHING, CAMPING, BUILDING, TOOLS, ETC.? CHECK THESE LISTINGS, THEN USE THE COUPON BELOW.

Worth Writing For

318. Chainsaw Craft

Firewood isn't the only thing you can make with your chain saw! Excellent step-by-step booklet from Homelite vividly makes the point by illustrating 22 diverse projects that can be built in a single weekend using a lightweight chain saw. Well worth \$1.25.

319. 1974 Popular Mechanics Index & Shelf Wrapper

Actually converts your '74 PM issues into a complete "reference library". Over 5,000 entries from the past year are cross referenced and built into a handsome and sturdy lacquer board shelf wrapper. From "A Penthouse for A VW Beetle" to "16 Ways To Hide Plywood Edges". It's all at your finger tips. \$1.95.

320. Lawnowner's Bargain!

This 20-page, four-color, illustrated brochure shows you how to keep your lawn and mower in top notch, AOK condition with a minimum of effort. Even has instructions on how to use part of your yard as "anti-inflation garden", how to pick the mower best for you, and how to mow safely. Free from Toro.

321. Fun-Filled Catalog

New, world famous catalog of 1,600 hard-to-find novelties, jokes, tricks, hobbies, sports, science, posters, bargains and much more. From Johnson Smith. 10c.

322. Super Saw Literature
Poulan Super XXV lightweight chain saw has super-quiet muffler, all-magnesium housing, 14-inch cutting bar. Til-loston all-position carburetor and extra power to cut through an eight-inch log in under four seconds. Send for free litera-

323. Rugged Denim Carpenter's Apron
POPULAR MECHANICS Shop Apron! Constructed of 100% Burlington industrial-weight cotton with 3 full-depth nail pockets. Bright yellow PM imprint and wrap-around 21" length. It's a tough utility item for the dedicated do-ityourselfer! \$2.95.

324. Flat-Tire Woes

Takes the flat out of driving. New 12-volt Auto-Flator air compressor that plugs into your car's lighter. Inflates any tire in minutes! Also rafts, pools, etc. Brochure from W. R. Brown Corp. Free.

325. Put Your Feet in Them

Catalog describes full-line-up of quality outdoor shoes and boots. All of them are fit for work, fun and feet. From Jos. Herman Shoe Co. Free.

326. Lawn and Gardening Equipment

A dynamic catalog: garden tractors from 8 to 191/2 hp, wide range of attachments, riding mower, rotary mowers, roto-fillers, snow throwers, chain saws, etc. Check it out! Free from Allis Chalmers.

327. Fishermen Attention!

A new Cordell lure, embroidered patch, and big full color catalog only \$2. Sensational top water lures, saltwater lures and spinners Illustrated. From Cordell Tackle Company.

328. Do It Right!

A great set of twelve "how to" photo-illustrated pamphlets from Stanley Tools includes: paperhanging, storage areas; shelving; mitering and coping; cedar closet paneling; drawer construction; door lock installation; garden pruning; switch installation and using Surform Tools, 10¢ each.

329. Shooter's Delight

Lyman offers 2 complete photo-illustrated catalogs. The 1974 Black Powder Catalog No. 1 plus the New Products for 1974 catalog—both musts for the shooter. Everything from muskets to scopes! Free.

330. Wood Finishing?

Here's the step-by-step procedure for easily finishing or re-finishing furniture, antiques, anything wood. Includes stain info. wood type tips, and finish choices. It's all in a concise 16-page brochure by Minwax. Free.

331. 1975 Evinrude Motors Catalog

Boaters get out of the winter doldrums with this brochure! Graphically shows you 21 outboard motors and four new electric motors, accessories, etc. Free.

332. PM's Famous Master Shop Guide

One of the most important tools you'll ever own! Lays out everything you need to know about nails, screws, bolts, drills, adhesives, lumber, masonry, plumbing and electrical work. 24 stand-up, hang-up, wipe-clean laminated pages. 56 charts plus a built-in ruler, protractor and compass. Solid value at \$3.95

333. Plastics Revolution!

Want to be one of the thousands of home handymen getting into plastics? Here's the info you need. Cutting, gluing, repairing, forming—it's all in a 70-page instruction booklet from Plastic-Crafter. \$1.00.

334. Gun Safety in the Home

Master Lock Company offers the booklet "12 Rules for Gun Safety in your Home." Also packed with information on the new Master gun lock for handguns, rifles and shotguns. Free. 335. Wait!

Before you paint that home exterior, check out this illustrated, full-color "all about aluminum siding" booklet from Alcan. Answers questions on siding colors, styles—all to make your home the best. 35¢.

336. Totally Unique Catalog

Know where to find hinges that make a square table round, butcher block tops, professional brass bar railings, built in toasters, or any other professional kitchen cabinet supply? You do if you've got the W & L Manufacturing Corp. cata-

log. 30¢.

337. Remember Those Fragrant Cedar Closets?

A fun "do-it-yourself" brochure puts aromatic cedar closets within your reach. Provides plans and step-by-step guide-lines. From Giles & Kendall, Inc. 25¢.

338. Extraordinary Electronics!

The 1975 Lafayette Radio Electronics catalog has 18,000 individual items, from 4-channel quad components to ham radio gear to musical instruments to security devices. An incredible source of info! Free.

| BARREREE | | ******* | | | | | | | | This Course | Eval | ************************************** | |
|-------------------------------------|---------|----------------------------------|--------|-------------------|-------------|-------------------------------|-----------|----------------------------|--------|----------------------------------|---------|--|-----|
| Popular Mechan Box 1718, Sandu | | | | | | | | | | This Coupon | EXPI | res Mar. 31, 19 | 113 |
| Please see that I re | ceive t | the items check | ed bel | ow. I have | enclosed 3 | 5¢ for the over | rall serv | ice charge, plus | remitt | ance for any pric | ced ite | ms. | |
| 318 (\$1.25) 319 (\$1.95) 320 | | 321 (10¢) 322 323 (\$2.95) | | 324 325 326 | | 327 (\$2) 328 (10¢) 329 | | 330 331 332 (\$3.95) | | 333 (\$1.00) 334 335 (35¢) | | 336 (30¢) 337 (25¢) 338 | |
| Total Items requests | d | | | | | Total | money (| enclosed | | | | | _ |
| Name (Please Print) | | | | | | | | | | | | | _ |
| Address | - 2 | | | | | | | | | | | | _ |
| Town | | | | | | State | | | | Zip Code | | | |
| | | (Please send | cash, | check or | money order | made out to | POPULA | R MECHANICS. | No st | amps, please.) | | | |

Note: Popular Mechanics processes your requests for the above information and forwards these inquiries to the organization making the offer. Each company mails the material directly. Please allow 4-6 weeks for delivery.

152



