

Standard SERVICE BOOK of Instruction

for the Operation of the
EDISON-DICK MIMEOGRAPH
and MIMEOSCOPE

WITH THE DERMATYPE STENCIL PROCESS

Containing

Step-by-Step instructions necessary to attain results of the highest quality. Also Chapters on important Reproduction Methods of stylus and typewritten work.



Published by
A. B. DICK COMPANY
CHICAGO

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RICE LEADERS OF THE WORLD ASSOCIATION

Elwood Rice
FOUNDER AND PRESIDENT



The Mimeograph Service Book

It will be obvious to the readers of this book that consideration of minute details and thoroughness are the principal objects of the edition. The instructions furnished with the Mimeograph are augmented in this book. It treats numerous fine points of the Mimeograph process as well as the difficulties that beset those who are indifferent or through lack of knowledge persist in using wrong methods, and it emphasizes the varied exactions involved in the attainment of perfect results.

By publishing such a book we hope to extend manifold benefits to all users of modern Mimeographs and at the same time collocate our standard instructions.

Aside from this broad and general object of The Mimeograph Service Book another motive deserves to be explained. There are among our customers many who especially desire that their mimeographing results should give evidence of painstaking effort and skill. The mutual interest which we have with this progressive class of users has supplied the major part of the incentive we have felt to furnish such comprehensive information; and, therefore, we ask tolerance to expend a liberal share of our enthusiasm upon those who are thus keenest for improvement in results.

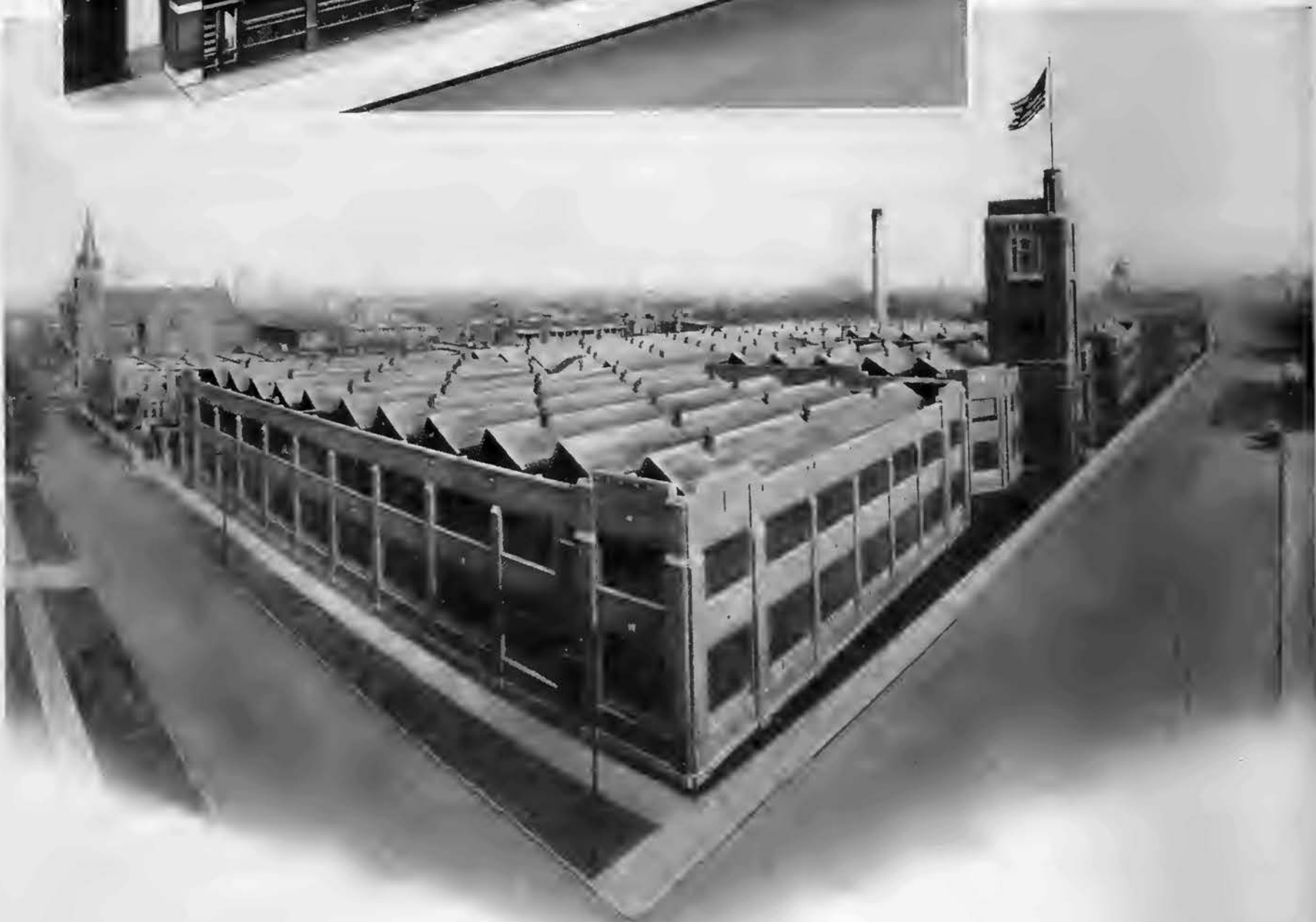
The instructions contained in the following pages are intended to be all that are necessary for the proper operation of the models Nos. 77 and 78 Edison-Dick Mimeographs with Dermatyl stencil paper. For convenience, the machine instructions refer principally to the model No. 78, but they are equally applicable to the No. 77, except those portions which refer particularly to automatic feeding of impression paper, this being an exclusive feature of the model No. 78. Similar instructions covering the proper operation of the older types of Rotary Mimeographs and special machines designed for exceptionally large work, as well as directions for the use of wax stencil paper, are contained in our illustrated booklet entitled "The Mimeograph Manual." The figures which appear in parentheses in the text of this book are those corresponding to the figures on the reference chart of Mimeograph parts shown on page 6. List numbers of parts and supplies for the Nos. 77 and 78 Mimeographs are occasionally used and are the identifying numbers used in our two booklets, "List of Parts" and "List of Auxiliaries and Supplies." Any of the three publications mentioned will be sent free of charge upon request.

We trust that the issuance of The Mimeograph Service Book for widespread distribution will also make amply evident the desire we have to serve the needs of all.

A. B. DICK COMPANY.



*Mimeograph Factory
and
General Offices
730-744 West Jackson
Boulevard*



Mimeograph Supplies Factory

Corner Lake and Albany Streets

The Three Factors

The Mimeograph The Typewriter The Operator

IN their order, the *Efficiency of the Mimeograph itself, with its Supplies,* the *Condition of the Typewriter used,* and the *Proficiency of the Operator employed,* may be said to figure as three distinct factors in the problem of successful Stencil Reduplication.

We alone supply, and are directly responsible for, the Mimeograph and its supplies; and while we strive to influence the other essential factors, still their actual condition is beyond our immediate control. The Mimeograph has been brought to the highest state of development demanded by exacting requirements. Were it possible for us to exert the same control over the condition of the typewriting machine and likewise over the selection and training of operators, we would then be in a position to assume the entire responsibility for the combined process and the subsequent results attained.

Factor 1—THE MIMEOGRAPH AND SUPPLIES

While it is necessary for the attainment of proper results from the use of a Mimeograph that it be *operated in accordance with accurate instructions,* it is no less essential to its successful operation that the *proper supplies,* such as Ink, Stencil Paper, Pads, etc., be used (and these are made by us). We have developed and perfected both the process and the machine, and are conversant with every requirement of the users. We therefore have the greatest possible interest in their success. With makers of imitation supplies the *only* consideration is that of immediate profit. The use of such imitations is equivalent to courting failure. None are genuine that do not bear our name as makers. Our responsibility naturally ceases when supplies other than those of our manufacture are used; whereas the use of supplies made by us insures the user our Service, and with it, if directions are faithfully followed, the guarantee of satisfactory results.

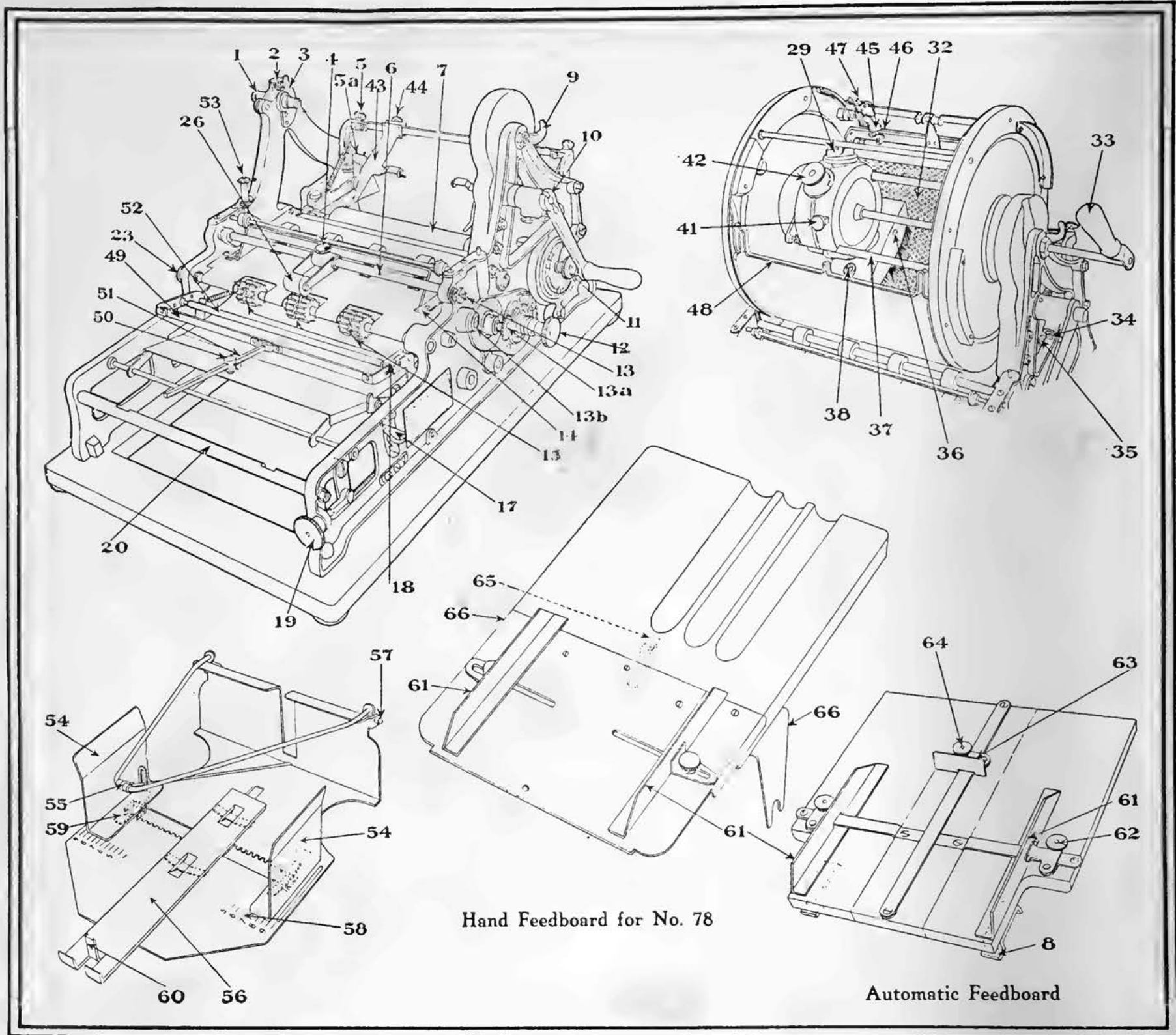
Factor 2—THE TYPEWRITER

The typewriting machine best adapted for stencil writing must have type in good condition, and a platen (roller) of proper degree of hardness to present the necessary resistance to the impact of the type. The smoothness of the platen must likewise be considered; a roller, indented through excessive usage, will not produce a perfect stencil. The fullest attention must be given to the *cleanliness* of the face of the type. All details of instruction covering such matters will be found under proper heads.

Factor 3—THE OPERATOR

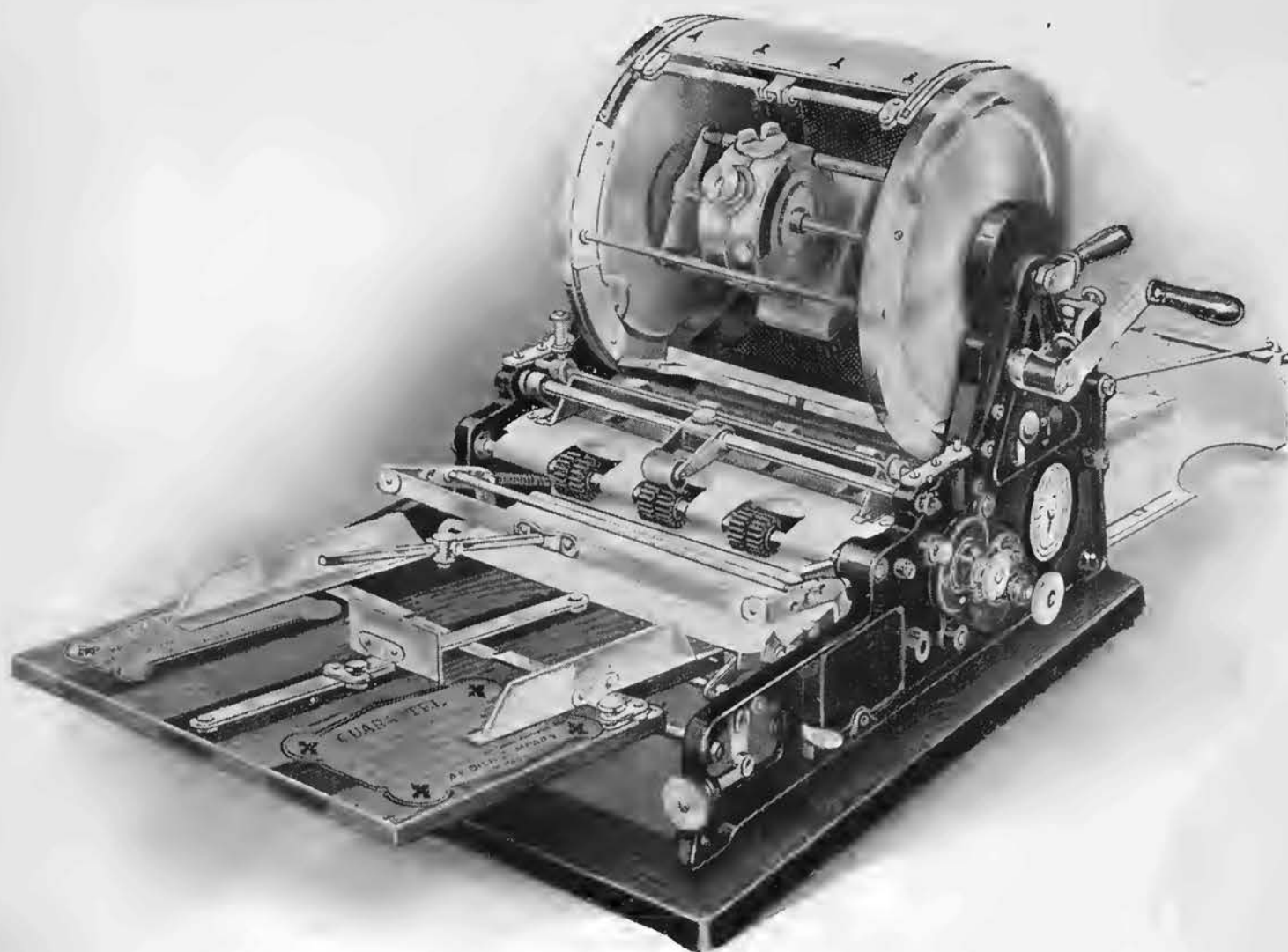
Indifference is the barrier most difficult to surmount. The operator who desires to learn well-nigh solves the problem of his own accord and, if he takes proper interest in what we would impart, proficiency and skill are easily attained. The experience of years of instructing is presented in this book in the most concise form that accuracy will permit. By direct statements expressed in simple terms, and by a progress made gradual through the various Steps in the work, we have developed a method of direction by which *anyone* may learn.

Reference Chart of Mimeograph Parts

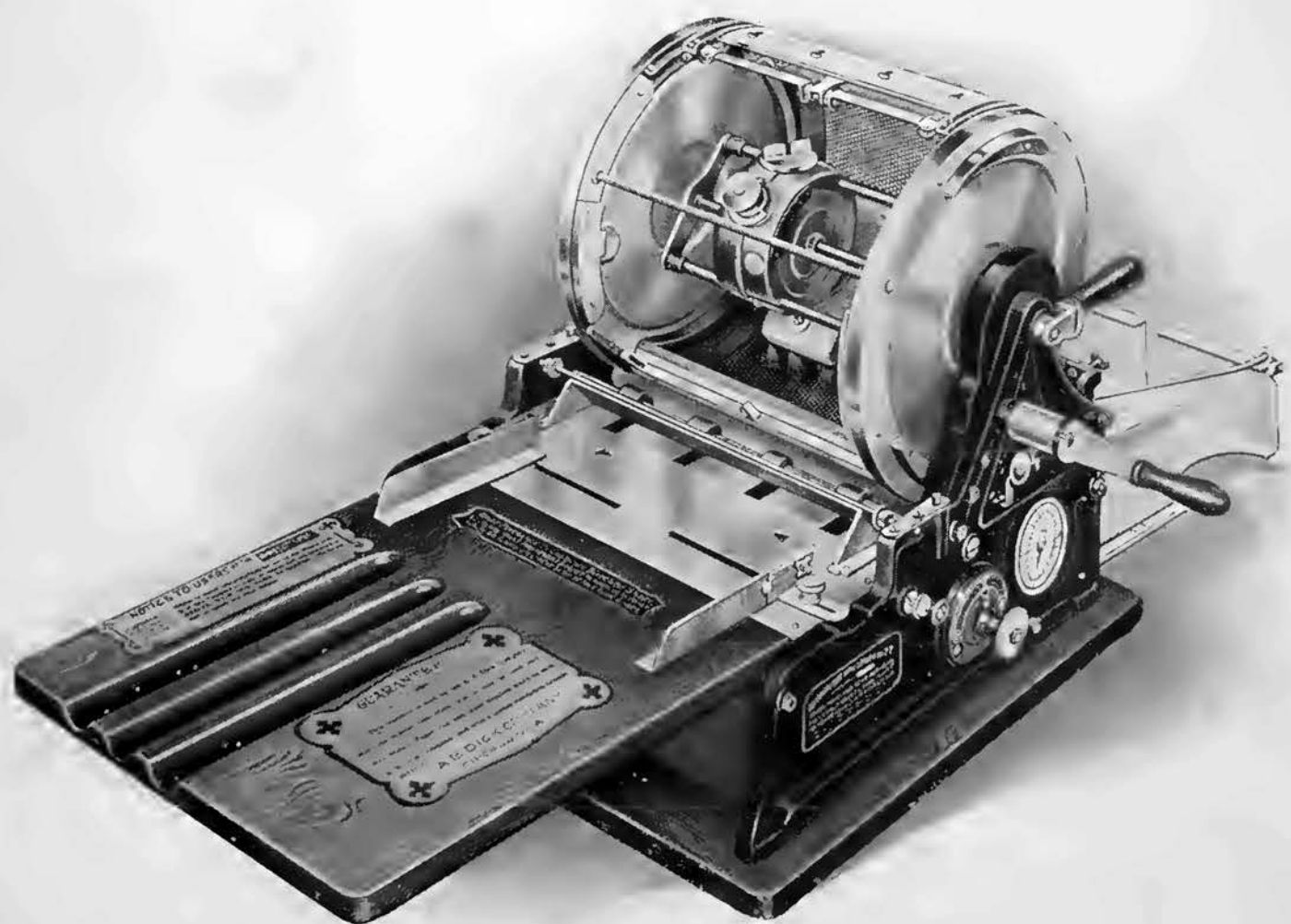


- | | | |
|---|---|---|
| 1. Left Hand Cylinder Trunnion | 19. Tension Lever Adjusting Nut | 45. Stencil Adjusting Thumb-Screw |
| 2. Cylinder Trunnion Screw | 20. Cross Rod | 46. Stencil Strap |
| 3. Cylinder Trunnion Lock | 23. Automatic Feed-Roller Shaft
(The screw on outside of frame is for removing this shaft) | 47. Clips (one on each side) |
| 4. Idler Roller Set Screw | 26. Idler Feed-Roller | 48. Stencil Clamp |
| 5. Impression Roller Adjusting Nuts | 29. Ink Cap | 49. Paper-Weight Yoke |
| 5a. Impression Release Lever | 32. Diaphragm | 50. Paper Weight |
| 6. Station on Idler Roller Shaft for Narrow Paper | 33. Inking Rod Handle | 51. Paper-Weight Slide Bar |
| 7. Impression Roller | 34. Handle Lock | 52. Paper-Weight Rod |
| 8. Feedboard Hooks | 35. Cam Truck | 53. Idler Roller Adjusting Nut |
| 9. Ink Handle Lock | 36. Brush Clamp Screw | 54. Side Guides |
| 10. Crank | 37. Cradle | 55. Bail |
| 11. Print Recorder | 38. Brush Screws | 56. Tray Extension |
| 12. Print Adjustment Knob | 41. Tank Lock | 57. Tray Bail Pivot Hole |
| 13. Idler Roller Shaft Screw | 42. Vent Valve | 58. Width Scale |
| 13a. Feed Control Knob | 43. Strippers (one on each side) | 59. Side Guide Lock |
| 13b. Locking Screw | 44. Stripper Index Plate Clamp Nuts (one on each side) | 60. Stop Lug |
| 14. Hand Feedboard Hooks | | 61. Paper Side Guides |
| 15. Automatic Feed-Rollers | | 62. Side Guide Clamping Nuts |
| 17. Feedboard Release Latch | | 63. Paper Back Stop |
| 18. Feedboard Release Plate | | 64. Paper Back Stop Clamp Nut |
| | | 65. Angle Clip (on under side of board) |
| | | 66. Notched Side Plates |

The Edison-Dick Mimeograph



Model No. 78—for automatic feeding



Model No. 77—for hand feeding

Note. For instructions having special reference to the No. 77 Mimeograph, see page 27.

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Mimeographing Typewritten Matter

Follow Step by Step

NOTE

In applying these instructions in a case where the Mimeograph has been in service "Step 1" may be omitted. The responsibility rests with the operator to see that such a machine is in good working order and that it is clean and properly lubricated.

Step 1

ASSEMBLE THE MACHINE



Attaching the Automatic Feedboard

If the Mimeograph is delivered in a packing case, remove the cover and follow the printed directions for further unpacking, to be found just beneath it.

Attach the automatic feedboard (the shorter of the two boards equipped with guides for holding sheets of paper), found to be packed in the same case with the machine. To attach this board raise paper-weight yoke (49). Insert hooks on forward end of board under the second cross rod and allow board to rest on the first cross rod (20), so that backs of the hook plates fit into the slots on rod (20) and the

board lies level. This board must drop loosely into a level position without any forcing. Slide the board from side to side on the cross rods until its true location is found and it drops freely into its proper place (*Note 1*).

The receiving tray, which receives the printed copies as they are discharged, will be recognized by its tall side guides. The flat center strip of metal has lugs bent up at one end. Hook these lugs under the tie-rod found below the rubber impression roller (7).

To attach the hinged wire tray "bail" hold it in upright position with the small wire swinging toward the cylinder and press the ends together so that they will enter the holes (57) on the upper edge of the outer end-piece of tray (*Note 2*).

If the machine has motor equipment, for its assembling see Chapter 20, page 45.



Installing the Receiving Tray

WRONG-METHOD RESULTS

Note 1. Forcing the feedboard down to the level position tends to bend the rod supporting the paper feed-plate and causes binding which impairs the proper action of the automatic feed.

Note 2. Where the tray is used without the advantages of the bail to guide downward and steady each single sheet as it falls, it may require a considerable amount of unnecessary handling to gather and straighten the sheets.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Step 2**ARRANGE THE WORK REQUIRED**

Typewrite the original matter to be stenciled on a sheet of paper the same size as those on which the copies are to be printed. The more carefully this preliminary copy is planned and written, the better the final results will be (*Note*).

WRONG-METHOD RESULTS

Note. A disregard of the above precautionary method of planning is responsible for much ill-placed and unattractive work, with line lengths and spacing arrangements entirely out of proper proportion to the size or shape of the impression paper used.

Step 3**PLAN THE POSITION ON STENCIL SHEET**

Place top edge of sheet of impression paper to be used on a line with the small corner-marks (found on the stencil sheet stub, about $\frac{1}{4}$ inch above the perforations) or, if an approximation will serve, on the perforated line, and observe opposite what number on the margin of the backing sheet the writing should be started. Make a mental note of this position, or with red ink and pen actually mark the position on the surface of the blue dermatype. It is also well to make some mark indicating the side margins desired. If the copies are to show a certain width of margin, it should be provided for at the time of writing the stencil (*Note 1*).

If the impression sheets to be used are specially ruled or printed, and the typewritten matter is required to fit into certain definite spaces or columns ("registering" with them, as it is called), place one of these impression sheets between the backing and the stencil sheet, face upward and suitably located as to height, and make all marks needed on the blue sheet as a guide in writing the stencil, exactly in accordance with the form, as it is there seen showing through. Remove the impression sheet form before proceeding further (*Note 2*). Where much of this registration work is to be done on the same blanks, we print for our customers, at a nominal price, the needed form directly upon the backing sheet, thus saving for the operator both time and trouble.

WRONG-METHOD RESULTS

Note 1. If stencil matter which is intended to appear on the printed sheets with a wide margin on one side is erroneously written on the stencil sheet in a centralized position—that is, without this same side-margin allowance—any attempt to effect a margin on the copies by simply resorting to feeding the impression sheets to one side on the feedboard may result in the sheets being caught and crumpled by the stripping devices while being printed and discharged from the machine.

Note 2. Substituting guesswork methods for the above definitely prescribed and sure plans for properly placing the typewritten matter leads to many unsuccessful efforts on the part of operators to print an *incorrectly* laid-out stencil in the desired *correct* position on the paper. The Mimeograph is not provided with adjustability sufficient to correct such faulty operation.

SPECIAL NOTE*To Users of the Hammond Typewriter*

Steps 4, 6 and 7 do *not apply* where the Hammond Typewriter is employed in writing stencils, except as to the general principles involved.

The Hammond Typewriting Machine *requires* the use of specially prepared *Dermatype Stencil Paper*. In ordering this material specify "*Hammond*" in addition to giving the Catalog Number of the Stencil Sheets desired. A special *Hammond Direction Sheet* is included with the stencil paper, or will be mailed gratis, on request.

Step 4 PREPARE THE TYPEWRITING MACHINE

Shift the ribbon out of printing position. If there is no shifting device on the typewriter remove the ribbon entirely. Clean the type thoroughly. First cover the keys with a sheet of paper held in position by creasing it down over the top row. With a type brush, having very stiff bristles, brush the type until the inky ribbon-fiber has been entirely removed from it. An ordinary pin may be used to pick the type before brushing. If, after brushing, the type are wiped clean with a cloth saturated with alcohol, the stencil will be free from ribbon lint and easier to read as it is being written (*Note*).

WRONG-METHOD RESULTS

Note. Merely rubbing the type with a cloth, without thoroughly brushing, has little or no cleansing effect. Where poor and illegible copies have been obtained, the result has often been attributable to clogged and gummed-up type.

Step 5 PREPARE THE STENCIL WITH DERMAX

Dermax is a chemical preparation for the specific purpose of converting dermatype stencil paper to the impressionable condition necessary to obtain perfect results, and it is the only agent that will maintain that condition while the stencil is being written. The proper application of dermax is one of the most important steps in the mimeograph process.



Position for rolling up the Stencil Sheet

sheet, but avoid getting any dermax on the under side (*Note 4*). With the thumb and finger of the left hand extended hold down the stencil stub and with the right hand unroll the stencil sheet. While so doing, take up any fulness and slightly stretch the now moist stencil sheet, by applying a light tension and a gentle downward pull every two or three inches. (*Note 5*). If a dermatype sheet, due to extreme age or any other cause, feels dry to the touch, or stencil writing is to be done in a hot atmosphere, beneath



Method of smoothly relaying the Stencil Sheet

an electric fan, or under any especially drying conditions, additional dermax should be brushed upon the top surface of the stencil sheet, and then after a minute or two the excess blotted off before the sheet is inserted in the typewriting machine (*Note 6*). If preparing for long full pages of work or for very difficult stencil matter requiring much time to write, apply the dermax liberally on top of the stencil as well as on the backing and blot off excess as directed. (See paragraph entitled "The exceptional case" on page 13.) Avoid using any other dermax brush than that furnished with the Mimeograph (*Note 7*).



Dermaxing the Stencil Backing

WRONG-METHOD RESULTS

- Note 1.* Otherwise the dermax will get on the desk or table top.
- Note 2.* Where the handy roller is not used, smoothing out the stencil sheet with the hand may cause injury to the dermatype coating. (List No. of handy roller, 606.)
- Note 3.* The use of any substitute for the dermax softening fluid, is attended with disadvantages which condemn the practice.
- Note 4.* Wherever dermax gets on the under side of the backing sheet, the written work opposite such places will be heavy and imperfect.
- Note 5.* If the blue stencil sheet is laid loosely or unevenly against the backing, the lines of the printed copy are likely to sag or be irregular. In unrolling the sheet *do not press* the roller against the backing—it will cause the needed dermax to be squeezed out along the edges.
- Note 6.* If this direction is disregarded the dermatype sheet is likely to become too dry before the stencil writing is finished and cause the centers of certain letters to cut out and other letters to lack distinctness.
- Note 7.* The stiff bristles of a coarse brush roughen up the tissue surface of the backing sheet, causing an inferior stencil.

Step 6

TYPEWRITE THE STENCIL

Place the dermaxed stencil sheet, complete with its backing, in the typewriting machine, and write upon the blue dermatype surface, with a careful, even touch. If the platen (roller) of the machine is that ordinarily used in office work (medium hard) and the type in reasonably good condition, the accustomed touch of the average operator will be of sufficient force to produce a clearly made stencil. The writing on the stencil sheet will always be legible, if the stencil is perfectly written.

If—as the writing progresses—the appearance of the stenciled matter becomes gradually less distinct, it will be evident that the backing sheet has not had a sufficient supply of dermax to retain the blue stencil sheet in a proper moist condition a sufficient length of time. A redermaxing should follow this discovery, as instructed herein, *and in no other way*. Remove the stencil from the typewriting machine (*Note 1*) and, without lifting the written portion of the blue sheet from the backing, apply dermax to its *top surface*. At once blot off the excess and replace the stencil in the typewriting machine. If, due to extreme delay in completing the stencil, the unwritten portion of the blue sheet has become so dry that it no longer *clings* to the backing, then lift such portion, redermax that part of backing beneath it, respread the blue sheet and proceed with the writing.

If it be noticed that the capitals M, W and E or such signs as \$, &, # and % or letters especially worn on the typewriting machine are indistinct on the written stencil, strike these lightly a second time, and thus make them equal to the others in effect (*Note 2*).

WRONG-METHOD RESULTS

- Note 1.* We particularly caution against brushing a new supply of dermax over the surface of the stencil sheet while it is held in the typewriting machine. This is a very mussy proceeding; and, furthermore, one in which the dermax is necessarily freely carried to and deposited on the feed-rollers.
- Note 2.* A common error into which stencil writers fall is that when noting a lack of legibility in the case of certain letters, they evade that little *extra* attention these may need, and proceed to strike *every* letter, an especially hard blow. The result is work altogether too heavy to be attractive and utterly lacking in finished appearance.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Step 7 REMOVE STENCIL FROM TYPEWRITER

When the stencil is completely written and ready for removal from the machine, open the paper-release and lift out the stencil, instead of rolling it out (*Note 1*).

THE EXCEPTIONAL CASE—When a stencil sheet has been very freely dermaxed over the entire surface of the backing, as a provision for a very long page, or other elaborate work, the above method will not afford a sufficient safeguard against squeezing dermax onto the paper feed-rollers of the typewriting machine. A method that will protect the typewriting machine in this regard is to insert the lower end of the stencil sheet, after dermaxing, into an ordinary No. 9 or 10 envelope in such a manner that the gummed flap can be made fast to the back of the backing sheet. As the written stencil is removed from the machine the envelope will then follow so as to catch and retain all the squeezed-out dermax, as in a bag, leaving the rollers clean. In the absence of a large envelope, an absorbent paper folded properly may be improvised and attached with any adhesive so that it will overlap and follow the stencil through the feed-rolls of the machine.

Pass a sheet of porous or absorbent paper through the typewriting machine and thus absorb from the surface of the feed-rolls any deposit of dermax which may be there (*Note 2*).

WRONG-METHOD RESULTS

Note 1. When an excess of dermax still remains upon the backing surface after the stencil has been written, rolling the stencil entirely through the machine is likely to cause dermax to be pressed out on both platen and paper feed-roll surfaces.

Note 2. A persistent habit of excessive dermaxing, together with a careless indifference to this simple method of absorbing any fluid deposited, may make it necessary now and then to clean and relubricate the typewriter-carriage and paper feed-roll mechanism. There is little excuse for such a condition. The preventative method, as above instructed, is recommended.

Step 8 ASCERTAIN IF STENCIL IS CORRECTLY WRITTEN

Proofread or compare the written stencil with the original copy. If found to be correct, raise the stencil from the backing and place a sheet of paper underneath, allowing it to remain until ready to make the prints. The interposed sheet of paper, absorbing the remaining dermax, quickly converts the stencil from its moist and somewhat tender condition to its normal state, in which it can more readily be handled without damage (*Note*).

If any pieces of paper, cut from the thin paper surface of the backing, adhere to the stencil on the under side they should be removed by pressing a moistened finger-tip against them.

WRONG-METHOD RESULTS

Note. If the stencil be allowed to fully dry without this separating sheet it may adhere to the surface of the backing, so that when necessary to detach it, some distortion of the stenciled letters may result.

Step 9 CORRECT ERRORS WITH MIMEOGRAPH VARNISH

To make a correction on the stencil, first turn the platen until the line containing the error stands apart from both ribbon guide and indicator. Close the openings of the incorrect letter or word by gently rubbing them with any hard, smooth object. For example, a small wire clip will serve the need (*Note 1*). Remove excess varnish from the brush, first by pressing it against the neck of the bottle, and then against a piece of paper or card (*Note 2*). Apply a thin coating to the error, wait a moment or two, and then touch the freshly varnished surface with the moistened tip of the finger (*Note 3*). Write in the correction without further delay, using a *light* touch on the keys. Unless necessary to use the stencil immediately, raise it from the backing, and insert a piece of paper as directed. Dermatype corrections should be made with mimeograph varnish (*List No. 260*) and varnish brush (*List No. 262—brush and cork combined*).

For Reference Chart, showing all parts of the Mimeograph, see page 6.

WRONG-METHOD RESULTS

- Note 1.* If the varnish is allowed to penetrate through and reach the backing, it may so adhere to it that the correction is likely to be injured when the stencil sheet is lifted.
- Note 2.* Varnish thickly applied will not dry fast enough for stenciling, nor will it retain a correct impression of the type, when written over. If varnish be retained in a bottle not tightly corked, it will soon thicken and become unusable. In such an emergency, pour in a little alcohol to thin it and stir thoroughly.
- Note 3.* If not thus made moist the varnish may stick to the face of the type.

Step 10

RENEW THE PAD, IF NEEDED

No general rule can be given stipulating the exact time to change the ink pad. Experience will enable the operator to judge the condition and determine the proper time at which it should be done.



Putting on Ink Pad

The practice of renewing the ink pad at regular intervals, whether the Mimeograph is frequently used or not, is advantageous. The pad that has been on the machine for weeks in an inked condition should be renewed without question.

The mimeograph ink pad, when thoroughly saturated with ink, is in reality the secondary ink reservoir and it deposits the ink through the stencil on the impression paper by capillary attraction and light pressure (*Note*). As long as the ink in the pad retains its original consistency, it will flow in and through the pad and by it be properly distributed, but if through long exposure some of the liquid ingredients of the ink evaporate, or if when making long runs the pad is called upon to convey ink for a continuous period, some of the fibers of the cloth may become overimpregnated with the ink coloring matter. Either condition prevents the flowing of the ink and therefore necessitates changing the ink pad. (Ink pads for No. 78 or No. 77 Mimeographs, List No. 781.)

Before placing a stencil on an ink pad that has had considerable service, raise one end of the pad from the cylinder and shake it gently. This has a tendency to loosen the clogged fibers of the cloth and thereby assures good distribution of the ink. In making very long runs the clearness of the print is improved by occasionally resorting to this practice.

To put on a new pad, insert the pad rods through the hem found at each end of the pad, and, with the hinged clips thrown back out of the way, attach the pad to the cylinder with its fuzzy side against the perforated metal surface. In attaching the pad rods by which the pad is stretched and held in position, the far end of the rod is pushed into the round socket for the purpose and then the near end slipped into its corresponding groove. Removal of a pad is merely a reversal of the operation. This attaching is easily accomplished. No wrinkles must be allowed to remain.

WRONG-METHOD RESULTS

- Note.* Even a well-written stencil will not deliver good work, if the ink in the pad is retarded in passing through the mesh of the cloth. Never undertake to increase the tension of the impression roller (7) as an expedient to evade proper renewal of a pad, in which the ink has clogged. Forcing the flow of ink by excessive roller pressure will still further close the mesh of the cloth and poor and unsatisfactory work will follow.

Step 11

SUPPLY INK TANK WITH INK

To fill the fountain turn the cylinder so the pad covered portion is downward. Push fountain to the further end of its cradle (37), so locating it that the fountain ink cap (29) is uppermost. Unscrew the fountain ink cap. Lower the ink can to a position immediately over the opening, to avoid spilling, and pour until the tank is nearly full. Replace fountain ink cap and screw on tightly.



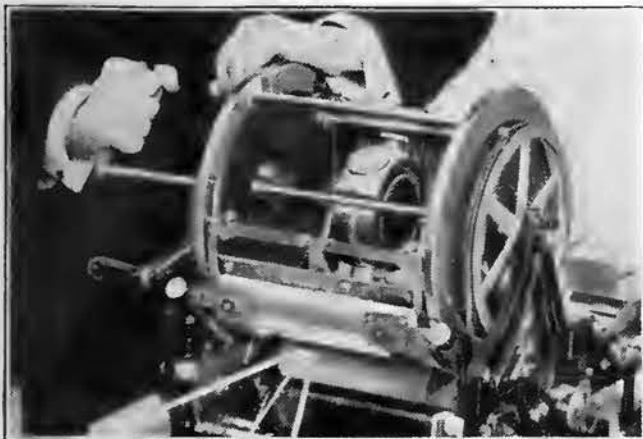
Proper method of filling the Ink Fountain

CAUTION

The proper mimeograph inks, furnished by us, are described by numbers in our price-list. The perfection of these inks is the result of extensive and careful study of, and vital interest in, their working qualities. Entirely successful results from their use in accordance with directions are in all cases guaranteed. The chemical ingredients of mimeograph inks, dermax and dermatype stencil paper will not cause any reaction upon each other, while operating difficulties of various kinds follow the use of poorly developed inks.

Step 12

INK THE PAD SUFFICIENTLY



Position for inking the Pad

right—to the stop pin. In spreading the ink give the brush a forward, backward and side motion as well (*Note 2*).

To use the ink fountain, with its mechanical inking brush, place the left hand on the rim of the cylinder to steady it, grasp the ink rod handle (33) with the right hand, lift it from its lock (9) and draw it forward, until the motion of both fountain and brush is found to be controlled. As they come under control, the tank lock (41) will be seen to unlock itself—by rising—and the vent valve (42) may then be turned to the left and the ink thus allowed to flow through the brush into the cylinder (*Note 1*). When a sufficient supply of ink is released turn the vent valve back again—to the

Where the pad is partially inked from having been already in service, the supply will merely need replenishing where the previous work has depleted it. A glance at the outer surface of the pad will generally suggest by its drier appearance in certain spots, where a little ink can advantageously be applied. However, no reliable estimate of the ink needed can be made until after the stencil is finally placed on the cylinder and trial prints run off, after which additional ink may be supplied where needed.

In all cases the forward end or head of the pad should be inked, in order to cause the stencil to cling closely, and avoid wrinkling. In inking to the extreme head of the pad, it can be done more conveniently if the handle lock (34) is pulled and operating crank (10) is allowed to hang down loosely. Release ink as near the head of the cylinder as possible; bring the brush behind the ink and force it forward, then a side movement will distribute it. The same method at the foot of the cylinder. When the ink is distributed, depress the tank lock (41) and this act will permit the return of the ink rod handle to the handle lock (9). This cannot be done unless the vent valve (42) is entirely closed. Never *force* back the ink handle. It will slip into place easily, if

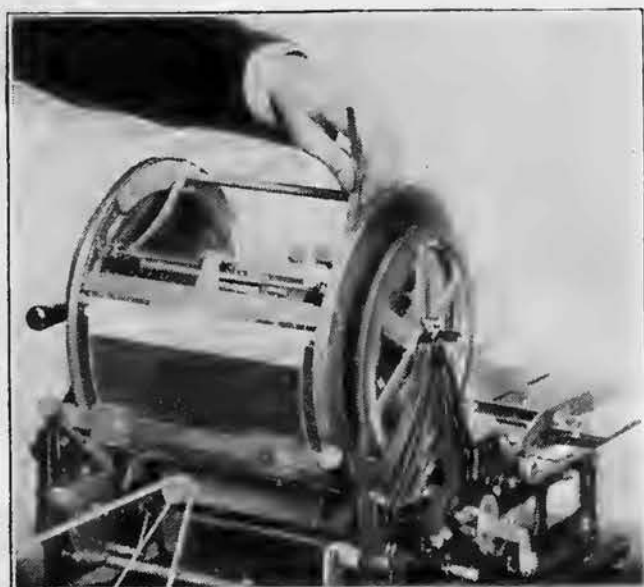
above directions are followed. Revolve hand crank (10), press it toward the cylinder, and it will regain its former adjustment in readiness for the printing operation.

WRONG-METHOD RESULTS

- Note 1. If the ink supply in tank, when released, does not flow out freely, see if the air-vent hole in the rim of vent valve (42) is open. If not, force a pin in to clear it, and the ink will then flow.
- Note 2. A crude method of pouring ink from the can directly into the cylinder, and then spreading it about with the brush, employed by certain carelessly disposed operators, is reflected in the soiled and mussy appearance of both fountain and cradle, and in excessively inked prints. A similar abuse and like departure from all cleanly methods consists in the use of a hand brush employed to spread a quantity of ink over the outer surface of the pad each time before covering it with a stencil. No finished quality of work can be obtained through such methods. First prints will be blotchy and heavy and succeeding copies light—no uniformity being attained.

Step 13

THROW BACK THE CYLINDER CLIPS



Throwing back the Cylinder Clips

Before attaching stencil to the mimeograph cylinder the two grooved hinged clips resting against its outer surface must be raised and thrown back until they lie against the tie-rod (*Note*).

WRONG-METHOD RESULTS

- Note. If these clips instead of being thrown back as directed are allowed to remain in a standing position while the stencil is being attached, they are likely to be caught and broken off should the cylinder be turned backward.

Step 14

PREPARE WRITTEN STENCIL FOR CYLINDER

With the stencil raised from the backing (after writing), bend the stub backward and forward at the perforations to crease it for easy tearing. Place stencil on desk or table with the backing underneath. Throw blue stencil backward over the stub, and with thumb and fingers of the left hand spread well apart, hold down both stub and stencil firmly. With right hand hold the backing in a low position, and starting from the further end of the line of perforation, pull the backing apart from the stub (*Note 1*).



Removing Backing from the Stencil

Before the written stencil can be used its backing must be thus detached, and the stub, to which the stencil is fastened, should be bent to conform to the cylinder surface. To properly bend the stub, crease it from one end to the other toward the printed side on a line with the word "Mimeograph" printed near the center (*Note 2*).

WRONG-METHOD RESULTS

- Note 1. Any method of detaching the backing without first creasing it to weaken the perforations, results in tearing away portions of the stub, or loosening the stencil sheet, where fastened. These dangers are exaggerated if the operator tears off the backing sheet *after* the stencil has been spread upon the cylinder.
- Note 2. Where the stub is attached without first creasing it, an undue strain is put upon the button-holes particularly during long runs. A stencil left to adjust *itself* on the cylinder surface, rather than by creasing the stub, may develop a "fulness" when printing, which will distort the top lines of the work.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Step 15

PUT THE STENCIL ON CYLINDER

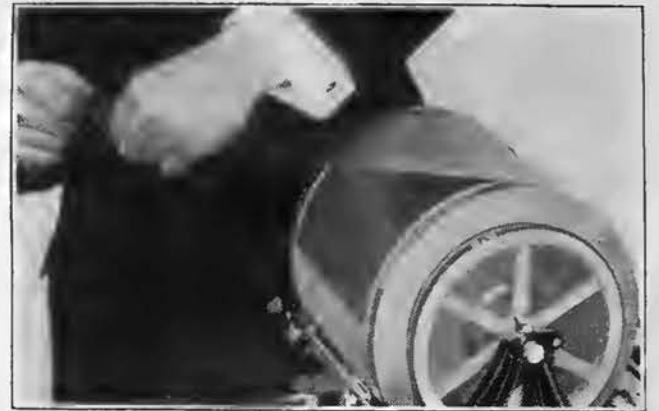


Attaching Stencil to the Cylinder Buttons

With the pad properly inked as shown in Step 12, suspend the stencil in the left hand by its stub and with right hand turn the hand-crank until it takes a directly upright position, with the attaching buttons in line with the wooden handle of the crank. With the right hand, take hold of the lower end of the stencil and lift it higher than the stub. Holding it clear of the ink pad, attach the button-holed stub to the buttons. Now with the left hand, turn the crank to a *right-hand* horizontal position, and lean against the crank handle to prevent the cylinder from revolving. With the left hand take

hold of the farther corner of the lower end of the stencil, at the same time changing the position of the right hand so that it, in turn, holds the lower near corner; in which position gently stretch the stencil and lower its upper half (approximately) to contact with the pad. Release the hold upon the stencil and by gently pressing the thumb or finger-tips against the *margins* of the stencil smooth out any wrinkles that may be found in the upper half (*Note*). Then swing the crank downward to the left until it reaches the *left-hand* horizontal position, again lean against the crank handle, and lift the stencil (this time only the lower half) and proceed to smooth it out as before. Lift the stencil clamp (48) by means of its central finger-piece, and make the lower end of the stencil fast beneath it.

N. B.—When using short stencil paper, which does not extend to the stencil clamp, lay on the ink pad a piece of blank paper of sufficient length to extend a short distance under the lower edge of the stencil and far enough down to permit clamping with clamp (48).



Method of laying Stencil smoothly over Ink Pad

WRONG-METHOD RESULTS

Note. An effort to smooth out a very pronounced wrinkle or overlap in the stencil by a firm pressure applied with the hand on the stencil surface may possibly damage the stencil and thereby blemish the print.

Step 16

RETURN THE CYLINDER CLIPS

Bring forward the cylinder clips to a position resting against the cylinder, where they will rest on the edges of the stencil sheet just previously attached (*Note*).

WRONG-METHOD RESULTS

Note. Failure to return the clips to the cylinder surface will allow the impression sheets to cling to the stencil surface. Sheets thus allowed to cling to the stencil, in printing, will frequently get caught and become crumpled in discharging, instead of falling into the tray.

Step 17 ADJUST CYLINDER CLIPS ACCORDING TO IMPRESSION ROLLER

The factory adjustment is properly made for the ordinary 8½-inch width of paper. Only *special* work calls for readjustment.

The cylinder clips are readily movable to the right or left. They should be fastened in such a position that when the cylinder is revolved they will pass beyond the ends

For Reference Chart, showing all parts of the Mimeograph, see page 6.

of the rubber impression roller (*Note 1*) at a distance of about one-quarter of an inch, but not farther (*Note 2*). This is the usual or standard adjustment.

To conveniently gauge this distance, and adjust the clips accordingly, turn the cylinder until the clip adjustment thumb-nuts are *immediately* above the impression roller. Loosen, move, and tighten them while so positioned.

The original method of adjusting clips and strippers in accordance with the *scale numbers* on the supporting bars, as set forth in other directions, will serve for making the above standard adjustment if fully understood and followed.

THE EXCEPTIONAL CASE, WHERE NARROW PAPER IS USED

The standard width of office letter-paper, and of impression paper ordinarily used in mimeographing, is $8\frac{1}{2}$ inches, and the above approximate adjustment of the cylinder clips presumes the use of such full width material. But where 8-inch impression paper is in use, the clips should be moved *closer* to the ends of the roller, in order to engage with positiveness the edges of these narrower sheets. The clips should, however, be positioned a full $\frac{1}{8}$ -inch distance from the roller ends. If the printed sheets are creased near their side edges, move the clips a trifle farther from the roller ends.

WRONG-METHOD RESULTS

Note 1. If they ride on the roller they will prevent it from the contact necessary to print copies.

Note 2. If further away than this they will either pass altogether beyond the edges of the impression sheet, or will at least take an insufficient hold upon its edges to serve the purpose for which they are designed.

Step 18

POSITION THE STRIPPER POINTS TO FACE CYLINDER CLIP GROOVES

Clips lift the printed sheets from the stencil surface, enabling the strippers to guide them down to the tray.

The strippers (43) also are readily movable to the right or left, and they should be positioned so that each stripper faces or matches the corresponding cylinder clip, and as the cylinder turns, the stripper points will follow the *center* of the channels in the clips without actual contact (*Note 1*). The lateral position of these strippers, in relation to the ends of the impression roller, is thus wholly determined by the position of the previously adjusted clips (*Note 2*).

PRECAUTION: STRIPPER ADJUSTMENT AS TO HEIGHT

Aside from the above right and left location of the stripper points, they must be maintained in their correct position as to *height*. In their original form, or proper state of repair, they, of themselves, maintain a *fixed height* in accordance with the factory adjustment; yet, if the machine has had promiscuous handling, it may be a wise precaution to inspect this feature, as follows: See that the points of the strippers, as the cylinder is revolved, just miss the flat metal surface of the clips (*Note 3*). In such an investigation it is obviously necessary that the curvature of the clips themselves should exactly conform to the curvature of the cylinder. Therefore, if for any reason they have become arched, they can be raised and carefully bent into proper curvature, permitting them to rest firmly against the cylinder. See, however, that the star-wheel members do not come in contact with the stencil or pad.

WRONG-METHOD RESULTS

Note 1. If the stripper points be allowed to come in contact with the raised sides or rims of the clip they will wear off to a sharp, jagged condition—a menace to impression sheets and fingers as well.

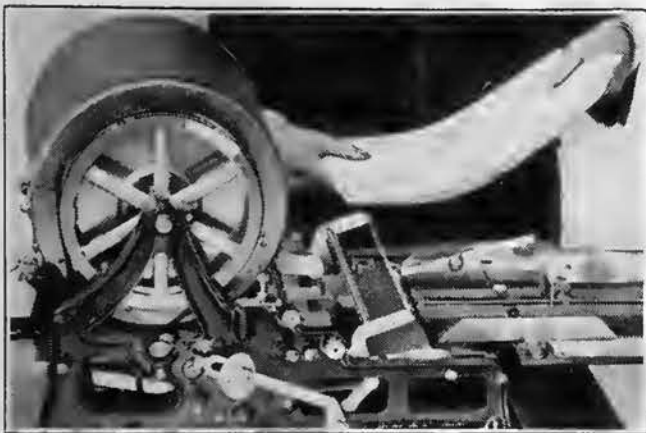
For Reference Chart, showing all parts of the Mimeograph, see page 6.

Note 2. If the stripper points are erroneously positioned so as to face the impression roller the printed sheets will be caught, crumpled and torn, instead of being properly discharged; with an attendant danger of the stripper point grooving and spoiling the rubber roller. If they are positioned outside of, or entirely beyond, the limits of the clips, they will be inoperative.

Note 3. A contact adjustment of the strippers with the clips causes friction with the clip surfaces and consequent wearing to a sharp condition. Should the stripper points be allowed to press against the clip surfaces, they will spring against the stencil when they pass beyond the clip, and thus will rip it along its edge. A *low* adjustment of the strippers will result in the stripper points passing so far from the clip surfaces that they afford no protection and consequently catch the impression sheets and cause them to be torn.

Step 19

PLACE SUPPLY OF PAPER ON FEEDBOARD



Method of "combing" paper for inserting in machine

Lift paper-weight slide bar (51). Press down release latch (17). Prepare, by "combing" apart, a quantity of the impression paper to be initially used, equal to about $\frac{1}{2}$ -inch thickness (*Note 1*).

This "combing" operation, which should not be omitted, consists in holding the paper pile loosely at both ends, and proceeding to bend the sheets backward and forward, thus causing them to "creep," until their edges separate and are thrown out of line. Again straighten the pile and place it upon the feed-board as far forward

as it will go, in a position carefully centered from right to left (*Note 2*). Bring up the side guides to contact with the paper pile, but see that the sheets are given ample freedom for feeding.

Then set the back stop (63) a full quarter of an inch from the paper (*Note 3*). If the impression sheets are particularly heavy or stiff, this quarter-inch may be increased to three-eighths of an inch, so that they can more readily be lifted by the feed-rollers.



Set Side Guides in loose contact with paper pile

WRONG-METHOD RESULTS

Note 1. In feeding paper that has not been "combed" two or more sheets occasionally cling together when lifted by the feed-rolls and are thus forwarded as a single sheet. The fault in compressed paper as it comes from the paper knife, or sheets which have been punched or perforated, is remedied by proper combing.

Note 2. If the paper is not thus centered, the edges of the sheets, while printing, will not be properly engaged by the clips and strippers of the Mimeograph, and catching and crumpling of the sheets may result.

Note 3. Where the back stop is erroneously placed *against* the pile of paper, the sheets will be so crowded forward as to cause more than one sheet to be fed at a time.

Step 20

LOCATE THE SLIDING PAPER WEIGHT

It keeps the sheets from bulging.

Set the sliding paper weight (50) on the bar (51) in accordance with the length of the impression paper to be used. The longer the paper the farther the weight should be from the paper-weight yoke (49) and vice versa. For legal size paper, place the weight at the end of bar farthest from the yoke. For letter size paper, place the weight about four inches from the yoke. For especially short sheets of paper, place the weight at the end of the bar nearest the yoke (*Note*).

For Reference Chart, showing all parts of the Mimeograph, see page 6.

If the bar and weight do not drop quickly (and this would only occur when driving the machine at excessive speed), the remedy will be found either in less speed, or in a complete lubrication of the bearing points in any way connected with the paper-weight yoke (49). Pay particular attention to oiling the operating cam and cam-roller on the far side of the machine and other moving parts, including the engaging points of the two spiral springs and the lower shaft bearings.

WRONG-METHOD RESULTS

Note. If the weight is carelessly located too near the yoke for the length of paper being used, it will on its downward motion come to rest on the end of the sheet being forwarded and will thus retard the feeding operation.

Step 21

LOCATE THE PAPER-WEIGHT ROD

It bends the sheets to aid their forwarding.



Adjusting the Paper-Weight Rod

When using ordinary qualities of office papers place the round paper-weight rod (52) in the first pair of opposite holes in paper-weight yoke (49)—those nearest the feed-rolls. If using paper that is of heavy weight, or paper more difficult to bend, then in the second or third pair of holes (*Note*). A slight endwise pressure will depress the plunger in one end of the rod to permit either its removal or insertion.

WRONG-METHOD RESULTS

Note. Locating this paper-weight rod farther back than the paper in use demands gives to the sheets, as they are forwarded, an amount of unnecessary freedom that will lessen the positiveness and regularity of the feed, and will also affect the accuracy of registration.

Step 22

REGULATE TENSION OF PAPER FEED-PLATE

It raises the paper into contact with the feed-rolls.

The forward extension of the feedboard (the slanting metal surface) is called the feed-plate, and this plate rises and falls under a tension controlled by the tension lever adjusting nut (19), the normal adjustment being when the face of the nut is even with the end of the stud on which it turns. If necessary, alter this normal adjustment, as follows:

As the paper feed-rolls in the course of time through wear become smaller in diameter, thereby lessening their efficiency, the effect of this reduction in size can be offset by turning up tension nut (19), thus increasing the upward pressure of the feed-plate.

It is purposely devised that the last few sheets will always remain on the feed-plate, to act as a cushion which the feed-roll action requires.

When the feed-rolls ultimately become so worn that they no longer can be made efficient by means of the tension nut they should be renewed, and the substitution of new feed-rolls will necessitate the return of the tension nut (19) to its original normal adjustment; that is, with face of nut even with the end of stud (*Note 1*).

N. B.—The feed-rollers are made of a quality of rubber *intended to wear away gradually* so as to maintain a constant gripping surface to meet the surface of the impression paper and raise the top sheet. Without this “wearing” the rollers would become smooth and ineffective. (See, also, page 22.)

THE EXCEPTIONAL CASE, WHERE VERY LIGHT PAPER IS USED

In feeding extremely light-weight papers, those not only thin but at the same time soft and flexible or light papers having a rough finish, such as linen manifold stock, the feed-rolls require the least possible length of time in contact. Therefore, turn control knob to its limit, to the right. (See, also, page 22.)

For Reference Chart, showing all parts of the Mimeograph, see page 6.

WRONG-METHOD RESULTS

- Note 1.* If after installing new feed-rolls the tension nut (19) is allowed to remain screwed up, so that the stud protrudes beyond the face of the nut, the pressure on the paper feed-plate will cause the feed-rolls to pick up and forward several sheets of paper at a time.
- Note 2.* If tension nut (19) be released to this extent, when the feed-rolls are much worn, the feed may miss a sheet occasionally, making it necessary to retighten the tension nut somewhat to compensate for the condition of the worn feed-rolls.

Step 23 RELEASE AND START THE FEED, NOTING ITS BEHAVIOR



Starting the Paper Feed

With the right hand, hold the hand-crank in a downward position, with the closed part of cylinder uppermost (*Note 1*).

With the left hand, release latch (17) and the paper-weight lever simultaneously. As the crank is turned, observe whether the feed is regular in its operation, one sheet at a time. To correct any irregularity of this nature, adjust the control knob—explained under Step 24.

When the supply of sheets on the feedboard is low, press down feedboard release latch (17), lift the paper weight (50), and add more paper.

While the supply of paper is being added, the cylinder, if motor driven, may continue turning. It is far better to replenish the supply of paper *often* rather than to overload the feedboard with too many sheets at one time (*Note 2*). The replenishing should be done before the Mimeograph stops feeding for lack of paper supply.

WRONG-METHOD RESULTS

- Note 1.* While the automatic feed may be started from other positions of the cylinder than the one above prescribed, there are certain starting points which afford a less positive beginning. The right way, as proposed, involves the least loss of time.
- Note 2.* It is difficult to keep an excess of paper uniformly controlled. A thick pile of sheets offers to the feed-rolls a cushion without resistance for their proper action, and the top sheets, moreover, will be inclined to override the back stop. Time is thus lost before the pile of paper is brought down to a height that can be handled to advantage.

Step 24 REGULATE THE ACTION OF THE PAPER FEED-ROLLS

With the closed part of cylinder uppermost, adjust the feed control knob (13A), which regulates the length of time the paper is held in contact with the feed-rolls, or in other words, the length of time given the feed-rolls to pick up a sheet before the feed-plate, with the paper, drops entirely away from them. Turning this knob *to the right* shortens the time of this contact, while turning it *to the left* lengthens the time accordingly.



Adjusting the Feed Control Knob

If more than one sheet is being lifted on account of length of contact, pull out control knob, and, turning it *to the right*, make a one-

notch adjustment. If feeding two or more sheets continues, turn the knob still another notch to the right (*Note*).

N. B.—“One notch” is indicated by marks appearing on the inner edge of the control knob, yet it is by aid of the sense of touch, or feeling these notches as the knob is turned, that such adjustments are usually made.

If single sheets fail to feed uniformly—one now and then being missed—make a similar one notch adjustment *to the left*. Should the missing of an occasional sheet in feeding still continue, turn the knob another notch to the left.

N. B.—The feed-rollers are made of a quality of rubber *intended to wear away gradually* so as to maintain a constant gripping surface to meet the surface of the impression paper and raise the top sheet. Without this “wearing” the rollers would become smooth and ineffective.

When the feed-rolls are new, turning the knob to the *first adjustment* to the left, from the extreme right-hand limit to which it is possible to turn it, will, in the case of most grades of paper, effect uniform feeding. But the more usual resting place of the control knob (assuming that the feed-rolls have had a certain amount of wear), is in the *second adjustment* to the left, from the extreme right-hand limit of turning. In the case of especially heavy, smooth, or stiff papers, or of any paper for other reasons hard to feed, the necessity for going to the *third adjustment*, or farther, can generally be avoided by additional tension of nut (19).

THE EXCEPTIONAL CASE, WHERE *VERY LIGHT* PAPER IS USED

In feeding extremely light-weight papers, those not only thin but at the same time soft and flexible or light papers having a rough finish, such as linen manifolding stock, the feed-rolls require the least possible length of time in contact. Therefore, turn control knob to its limit, to the right.

The Idler Feed-Roller: If, as single sheets are forwarded between the idler feed-roller (26) and the feed-roll in contact therewith, there is a lack of positiveness in feeding, the adjusting-nut (53) should be screwed down to increase the tension. Only very stiff paper will require this change, while for the lightest papers its adjustment should be the reverse. The adjusting screw and nut are not intended to be rigidly fitted to the frame. Do not screw down with the intention of making rigid.

WRONG-METHOD RESULTS

Note. The difference in behavior resulting from a “one notch” adjustment, either to the right or left, is considerable, so that where the directions as to the number of notches are exceeded, the feeding is likely to revert to the *opposite* extreme in behavior, no less troublesome than that which endeavor is being made to correct. After each notch of adjustment watch carefully the effect.

Step 25 ADJUST RECEIVING TRAY FOR THE PAPER USED



Adjusting the Receiving Tray Side Guides by first tilting them

If the central metal strip of the receiving tray be properly hooked under the tie-rod found just beneath the impression roller, its length can readily be extended or shortened by pulling it outward or pushing it forward, until it will accommodate the *length* of sheets being mimeographed. To adjust the tray according to the *width* of the paper used, the side guides are devised so that they can be moved. In order to alter the position of these side guides it is necessary to tilt them outward, in which position, *and in this position only*, they are movable in either direction.

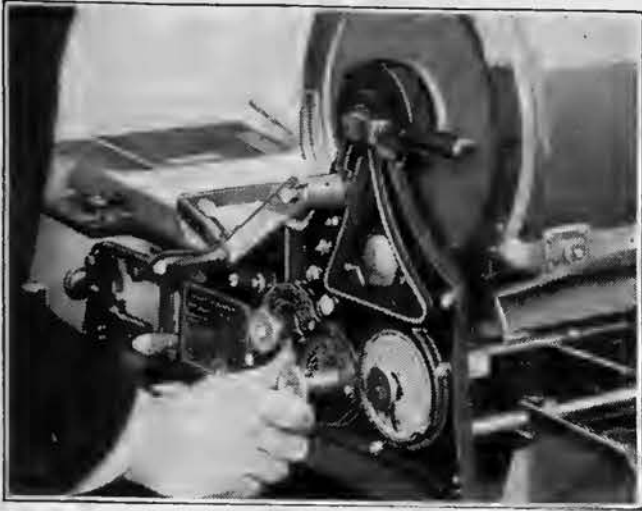
Next lower the wire bail and see that it swings centrally and freely, and that its point rests lightly on the printed sheets. Thus adjusted it will steady and guide the copies downward, and assist in forming an even pile (*Note*).

WRONG-METHOD RESULTS

Note. The extra handling needed to straighten up or “jog” the printed sheets, if scattered loosely about an unadjusted tray, tends to blur the copies unless they can be allowed to remain as they fall until they become fully dry.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Step 26 RAISE OR LOWER THE PRINT ON THE PAPER



Adjusting the Feed-Timing-Knob

The facility for raising and lowering the print on the impression paper has but a limited range; the reason for this adjustability is not one of general positioning of the print, but merely a provision against any slight inaccuracies that may have occurred in the original calculation of the operator when writing the stencil. (See Step 3.)

The raising and lowering is easily done by an adjustment of the print adjustment knob (12). If the print is too low on the sheet, in order to raise it turn the timing-knob clockwise. Should the print be too high, lower by turning it counter clockwise. One complete revolution of this knob, in either

direction, makes a change in the position of the print equal to one typewriter line-space.

Three rings will be found on the shaft of the knob, and above the shaft an indicator. When the indicator points directly at the *center ring* the feed timing is in *normal adjustment*, and therefore the print will appear on the impression paper in the particular position where the stencil-writer planned that it should appear; provided, of course, that the stencil itself was originally positioned according to the directions.

Turning the knob clockwise until the indicator points to the outermost ring, raises the print approximately one-half inch above its normal or originally planned location on the sheet. Turning the knob counter clockwise until the indicator points to the innermost ring, lowers the print approximately one-half inch below its normal or originally planned location.

N. B.—Avoid turning the timing-knob so far in either direction that the indicator passes more than one-sixteenth of an inch beyond the outermost or innermost ring (*Note*).

WRONG-METHOD RESULTS

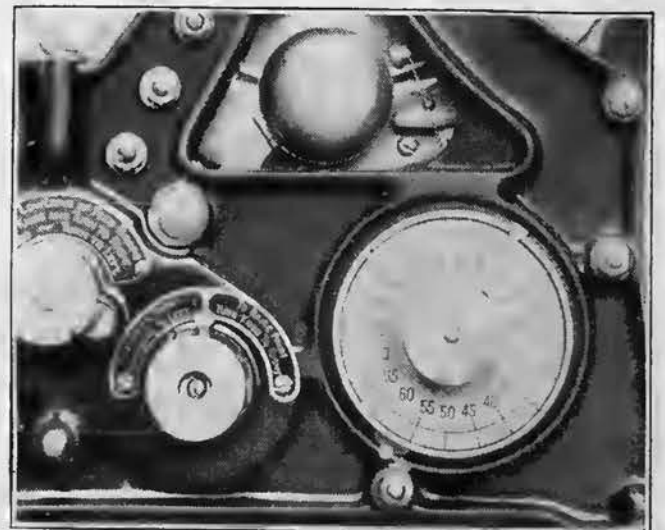
Note. If the timing-knob be turned to an extreme in either direction so that the indicator passes beyond the above prescribed limitation, the paper advancing mechanism will thereby be thrown out of time, and the reliability of its action lost.

Step 27 SET PRINT RECORDER FOR NUMBER OF COPIES REQUIRED

The print recorder, the large white dial of which appears on the frame of the Mimeograph, is a device for indicating to the operator when the desired number of copies have been printed. At any time, as the copies are being run, a glance at the position of the pointers on the dial will at once reveal just *how many more* copies are yet to be made. Waste of paper and office stationery occasioned by over-runs of unnecessary copies is avoided by this device. The method of its operation follows.

SETTING THE POINTERS

After determining the number of copies to be made from the stencil, and after printing a few copies to equalize the distribution of the ink and clear the print, proceed to set the pointers on the dial so that they will indicate the number desired. The smaller pointer on the outer rim of the dial is the indicator of the even hundreds.



The Print Recorder (Set for 818 copies)

By means of the small handle opposite the pointer, set it for the number of *hundreds* desired. The large inside pointer indicates *units* only. By means of the central knob, set this pointer for the number of additional copies needed, over and above the number of even hundreds already provided for. For example, to set the print recorder for 818 copies, turn the hundred pointer to line 8 on the dial, and the unit pointer to line 18. If less than 100 copies are needed, set the hundred pointer at zero and the unit pointer at the desired number. If even hundreds only are wanted (as 700, 800, etc.), set the unit pointer exactly at zero (*Note*). Where thousands of copies are wanted, indicate them by the number of hundreds they represent; for example, for 2,000, have the hundred pointer set at line 20. The dial numbering makes provision for a 10,000 run. If more than 10,000 copies are required, reset the recorder as often as need be.

Observe that the pointers move in one direction only, and that while setting them the moving of one pointer has no effect upon the other. Also that when the Mimeograph cylinder merely revolves, without copies being printed, the recorder does not register. The pointers will only change position as the actual prints are made. As each copy is printed the unit pointer will move one space on the dial, and each time this unit pointer passes zero, the hundred pointer will likewise move a single space; and it is thus that the pointers always show how many copies are yet to be printed. As the last copy is made, the bell will ring, and so long as the cylinder is turning, the ringing will continue, until either pointer is reset.

WRONG-METHOD RESULTS

Note. If the unit pointer be accidentally allowed to remain one space to the left of zero, which would be the 99th line (though not so marked on the dial), 99 extra copies would be printed.

Step 28 ALLOW USED STENCIL TO REMAIN ON THE CYLINDER

By permitting the stencil to remain upon the cylinder after being used, it will conveniently serve as a protective covering to the pad (*Note*) until its removal is made necessary by subsequent work. Then, if there is a possibility that there may be in the future a call for more copies from the same stencil, it may be preserved and retained until such time arrives. (See Step 29.)

If the stencil is removed the ink pad should be protected while the Mimeograph is not in operation by using one of the ink-resisting, paper "flexible covers" provided for this purpose. Many users prefer to utilize the paper "flexible cover" even though the stencil may be left on the cylinder, particularly when used in hot temperatures.

WRONG-METHOD RESULTS

Note. Leaving the ink pad entirely uncovered, while the Mimeograph remains idle, permits dust to gather on the pad surface and also endangers the intricate portions of the feeding mechanism of the machine (through ink drippings), and these are difficult to clean. If allowed to remain uncleaned, the printed sheets are liable to be soiled.

Step 29 CLEAN AND FILE THE STENCIL FOR FUTURE USE

Employ the following simple method which will, without fluids or washing, thoroughly remove the ink from a stencil. This step is a necessary proceeding before it can be safely filed away (*Note 1*) if it be desired that a preserved stencil yield copies to compare favorably with those it originally produced.

As the stencil is removed from the cylinder, lay it flat between any soft, smooth waste paper (newspaper will answer), smooth out with the hand, and allow a few

For Reference Chart, showing all parts of the Mimeograph, see page 6.

moments for the excess ink to be absorbed. Remove the stencil from *these* inked sheets and discard them. Now spread out the stencil on a sheet of *soft* paper, the more absorbent the better, this time with the face uppermost. Observe where varnished corrections have been made. Cover these spots freely with talcum powder (a small can of talcum is supplied with the Mimeograph equipment). (*Note 2.*) Next cover the stencil with a top sheet of the same *soft* paper and fold the stencil with the double covering into a size suited to the envelope or other receptacle in which it is to remain filed. The act of folding does not in any way injure the stencil, but when filed a moderate pressure should be applied, sufficient to maintain a continuous contact between the two sheets of absorbing paper and the stencil. This will enable the process of cleansing, by absorption of the ink, to still continue, after the stencil has been filed away. Where users elect to file stencils in a flat condition, the top and bottom absorbing sheets should, in the same manner, be placed in close contact with the stencil.

If a stencil that has been filed away has become dry, apply dermax to the negative side, and blot off the excess before placing it on the cylinder. As a result it will take the ink quickly and the print will be clear.

WRONG-METHOD RESULTS

- Note 1.* The mistake is often made of permitting a small quantity of ink to remain in the stenciled letters, under the impression that a little ink can do no harm, whereas the smaller the particles of ink, the more quickly they solidify and cause blemishes in the work.
- Note 2.* If the varnished correction spots are not thus covered with talcum before filing, the varnish will adhere to the covering sheet, and when separated the corrected portion will be damaged.

Step 30 USE CARE IN PUTTING AWAY THE MIMEOGRAPH

When through using the Mimeograph, cover the cylinder as in Step 28 and turn it so that its closed portion is downward (*Note 1*), and leave the ink fountain located in the center of the cylinder (*Note 2*) with the bristles of the brush pointing straight downward. *This practice will insure every feature of the inking mechanism being kept absolutely clean.* (See, also, Step 28.)

To guard against accidental disturbance of this proper positioning of the cylinder and ink fountain, while the machine stands idle, the hand-crank may be attached to the feed-timing-knob with a cord or rubber-band.

THE MIMEOGRAPH COVER

After placing the cylinder and ink brush in position as above directed, *place the cover over the machine* in order to prevent dust accumulations (*Note 3*).

WRONG-METHOD RESULTS

- Note 1.* If the closed portion of the cylinder is allowed to remain uppermost, the surplus ink within it, instead of draining toward and collecting in the center of the cylinder where it would be properly retained, will gravitate toward the ends (and the ink in the pad will do likewise), and will drip into the paper-feeding mechanism. Another annoying result of the inverted cylinder is that the surplus ink will drain from the brush and run over the surface of the ink fountain. For satisfactory operation of the ink fountain, the cradle rods should be kept clean and slightly oiled (with a rag).
- Note 2.* Permitting the ink fountain and brush to remain at or near either end of the pad, instead of in the center as directed, will overbalance the cylinder and bring it to rest in a tilted position so that the ink will drain toward the pad rods, with the results already described.
- Note 3.* Failure to use the cover means an accumulation of dust and grit in and on the cylinder, particularly harmful to the ink, and also injurious to bearings of working parts. It is but an easy step from such negligence to careless indifference in other matters concerned with the care of the machine. (See page 30.)

For Reference Chart, showing all parts of the Mimeograph, see page 6.

YOU CAN BE ABSOLUTELY SURE that when the foregoing instructions are faithfully followed *satisfactory results* will be obtained.

The foregoing Step-by-Step instructions are, from beginning to end, based directly upon years of *practical operating experience*, embracing the widest possible range of efficient Mimeograph work.

The *following* Chapters pertain to the operation, adjustments, and care of the Mimeograph.

A. B. DICK COMPANY.

Chapter 1

The No. 77 Mimeograph and Hand-Feeding Methods

THE foregoing instructions have referred entirely to the Model No. 78. The Model No. 77 is equipped for hand feeding only. The automatic-feeding device is not furnished with this model. In all other respects the two machines are identical. Therefore all the general instructions except those concerned with automatic feeding apply to both machines.

Hand Feeding with Model No. 78

The mimeograph user whose requirements are limited to comparatively short runs and simple classes of work may be afforded all the facilities necessary for such uses in the hand-feeding machine. And even the larger user, possessing the No. 78 with its automatic feed available for handling the main volume of his work, may have occasional runs when hand feeding will be preferable, or when it may afford *the only way* in which the work can be done.

It is advisable to use the hand-feeding method under the following operating conditions:

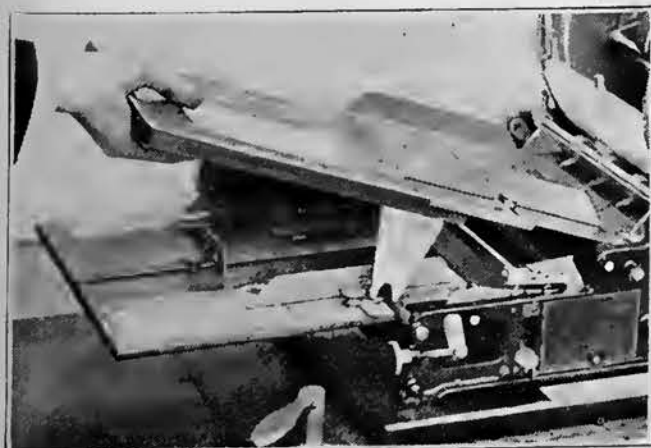
- (1) When using
 - (a) cardboard
 - (b) heavy or highly glazed paper
 - (c) punched or perforated paper
 - (d) very small or odd sizes of paper
- (2) When
 - (a) close registration of prints is required
 - (b) sheets of paper are wrinkled or curled

As the No. 78 Model is equipped for *both methods* of feeding impression paper, do not misplace the hand feedboard.

To hand feed the No. 78 Automatic-Feeding Mimeograph, it is necessary to attach, just above its automatic feedboard, the special *hand feedboard*, furnished for the purpose with every No. 78 Mimeograph.

Attaching the Hand Feedboard

First unscrew and remove the idler roller shaft screw (13) and slide the shaft out of its bearings. Replace screw to prevent loss.



Installing Hand Feedboard



Removing Idler Feed-Roller and Shaft

(Later, reverse this operation when replacing shaft.)

Press down the small lever found above the paper-weight yoke (49), causing the yoke to drop. Then depress the feedboard release latch (17) and lock down the automatic feed-plate.

Insert the forward end of the hand feedboard under the hooks (14) located directly in front of automatic feed-roller shaft (23), resting the notched side plates (66) on the rear cross rod (20).

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Attached to the under side of the hand feedboard is an angle clip (65). Lift the paper-weight slide bar and fix it in stationary position by swinging the angle clip under it. Machine is then ready for hand feeding.

The Feeler-Pins—A Feature

As the paper is forwarded to the paper stops, located immediately in front of the impression roller (7), the feeler-pins, located at the point where the paper enters the machine, come into contact with the sheet. The presence of the sheet prevents the further upward movement of these pins, thereby releasing the impression roller, so that the print may be made. When no paper is inserted the pins rise to their full height and the impression roller is thereby prevented from coming into contact with the stencil-covered surface of the cylinder, from which, if contact were made, the roller would receive an ink print on its surface, as would also the lower portion of the stencil surface (retransferred from the roller). This condition would produce blemished work.

When Feeler-Pins are Not Used

Lock down the feeler-pins when feeding tissue-paper if the feeler-pins press upward against the tissue, causing it to wrinkle and not feed smoothly, or when feeding paper having punched holes in which the feeler-pins catch. This locking down is done by turning locking-screw (13b) with a screw-driver, until it is set tight.

CAUTION: Be sure that feeler-pins are released again, by unscrewing (13b) before attempting other work.

The Method of Hand Feeding the Sheets

Place on the feedboard 50 to 100 sheets of impression paper in a squared-up condition, so that their forward edges rest about two inches from the feeler-pins, and otherwise so positioned as to be *centered* from side to side. Bring the two metal side guides close enough to the edges of the paper pile to steady it, without firmly confining it. The centering of the paper is essential for proper co-operation with the likewise centered impression roller and paper stripping system. Forward a single sheet, to determine if the pile be centered. The relation of its side edges to the two small end-rollers under which the sheets pass will determine this.

“Comb back” the sheets (see page 19) to facilitate the feeding. This is accomplished by passing the thumb-nail over the pile, with strokes from right to left.

Now with the right hand turn the hand-crank (in a right-hand direction, from its uppermost position), observing that it takes two complete revolutions of the crank to print each copy.

In hand feeding, *the proper time to start the forwarding* of each separate sheet is when (the closed part of cylinder being uppermost) the hand-crank *is extended to the right*, in a horizontal position. With cylinder and hand-crank so positioned, pick up the first sheet with left hand and forward it to the paper stops; turn the crank and, as the cylinder revolves, the sheet is carried forward automatically, printed and discharged into the tray.

To start the first stroke correctly, place the crank at the extreme right-hand position as above instructed (cylinder having its closed part uppermost), insert the sheet to the paper stops, turn crank twice around (thus printing the copy) and stop; insert another sheet, and, as each sheet is fed, keep repeating this method of making the two complete turns and stopping before the next sheet is forwarded. With a little practice the sense

of time, or rhythm, will be acquired, and the motions will then gradually become continuous.

DETAILED EXPLANATION

It needs, however, to be explained to those who seek to know the reason for such a precise method of feeding, that, due to the time of the rising and falling of the feeler-pins, it is *not possible* to forward sheets to the stops at all times during the turning of the hand-crank. Sheet feeding can be done, however, without interference by the feeler-pins, at any time after the hand-crank has reached its highest position, on the second time around, and until it comes to the lowest point. Note that the right-hand horizontal position of the hand-crank, recommended as the position for sheet insertion, is the medium, or half-way point, in that interval during which the sheets may be fed. After the hand-crank has *passed by* the straight downward position, the feeler-pins quickly rise, and having risen *prevent* the insertion of the paper to the paper stops, so if the forwarding of the sheet of paper is attempted *too late*, the feeler-pins will be *in the way*, preventing its advancement until the cylinder revolves again.

If, as it sometimes happens *in improperly timed hand feeding*, the top edge of a sheet engages with the points of the feeler-pins, that sheet *will not be forwarded*, but the impression roller will be made to rise, and therefore it and the stencil will be inked. If this happens, a few used blank sheets of paper may be run through the Mimeograph for the purpose of cleaning; the roller may be wiped off with a piece of cloth.

Paper Must be Fed to the Stops, or Prints Will Not Register

Prints, on impression paper being fed by hand, will be correctly registered if the paper is fed against the paper stops. If fed to any point between the paper stops and feeler-pin holes, the print will appear on the paper but not in its required position.

The Hand Feeding of Cards

In the feeding of stiff cards, the necessary combing should be done before they are placed upon the feedboard. Otherwise, the method of feeding is the same as with paper. To arrange strippers for card printing, see page 31.

Hand Feeding on a Motor-Driven Machine

When the Mimeograph is electrically driven, *both hands* of the operator are available for the combing, steadying and forwarding of the sheets, in the hand-feeding operation. Exceptional speed can be developed under such conditions.



Hand feeding the electrically driven
Mimeograph

While the ordinary one-hand method of feeding, from sheets combed backward, as previously described, can also be employed when machine is motor driven, yet greater speed can be attained by a forward combing method, employing both hands, as customary among printers when feeding a cylinder press.

When this printers' method of feeding is adapted to the Mimeograph, the following detailed instructions will apply:

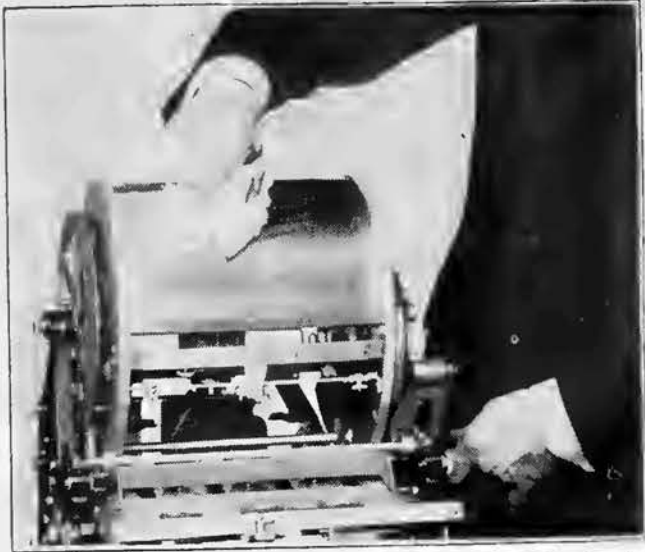
The pile of a hundred or more sheets, combed *forward*, is supported in the left hand, in the position shown in illustration, the hand grasping the pile at the lower end, the left thumb on the top of the pile, and the remaining four fingers beneath it. The back of the hand rests upon the feedboard. In pushing forward the single sheets, the right thumb or either one of the first two fingers should be employed. A rubber finger-tip, as used by press-feeders, will make such forwarding easier. The left thumb positioned on top of the pile is in effect doing four things at once—steadying and combing the sheets, releasing each single sheet as forwarded, and restraining the sheet immediately beneath it.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Chapter 2

Cleaning the Mimeograph

IN OPERATING the highly developed modern Mimeograph its proper care and cleansing take second place only to its lubrication; to continually lubricate bearings without first cleaning off the ink or other accumulations not only reflects unfavorably upon the operator but shortens the life of the machine.



Cleaning Cylinder with benzine and soft cloth

Do the cleaning frequently, using soft cloths and cleansing benzine (or gasoline, or kerosene). *One caution only:* Keep all such fluids, and other cleansing preparations of that nature, away from the rubber rollers of the machine; otherwise they will become swollen and impaired.

Denatured alcohol, if employed as a cleanser, must be kept away from the japanned finish of the ironwork and from all the polished woodwork of the machine or support on which it rests. To brighten the japanning or woodwork use furniture polish or oil.

The operator who stands each day before a well-kept Mimeograph will see his own self-respect reflected. He will improve his status among his office associates, and likewise with those in a position to influence his advancement.

For the careless, indifferent operator, who *persists* in disregarding every consideration of this kind, there is only one solution and that is a periodical equipment "inspection," on the military order, backed by sufficient authority to effect *insistence* on at least a *reasonable* amount of care.

Chapter 3

Interleaving Mimeographed Copies

Method used to prevent slight spotting with ink, on the reverse side of the impression sheets, commonly called "offsetting."

INTERLEAVING or slip-sheeting is placing an extra sheet of paper on top of each printed copy as it falls into the tray to keep the copies separated until the mimeograph ink is nearly dry. Any paper may be used for this purpose, provided it is not so highly finished that it will blur the copies. These slip-sheets may be used repeatedly.

Dermatype Stencil Paper is now almost universally used, and the ink deposit is so diminished that slip-sheeting is required only in exceptional cases.

THE EXCEPTIONAL CASE: If mimeograph work, requiring slip-sheeting, is sufficiently extensive to justify the preparation of special slip-sheets, to provide for extra speed in their insertion and removal, a size of 10x10 inches will afford the greatest utility. Light-weight cardboard, or the inexpensive strawboard, is preferable to paper, for quick handling. To use these 10 x 10 squares remove the nearer paper guide from the receiving tray. When copies are sufficiently dry, jog the square cardboards and the copies can be shaken out rapidly. When the slip-sheets are of same size as the printed sheets, the removal of copies is slower.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Chapter 4

Mimeographing on Narrow Sheets of Paper

Heavy Stock Needs No Stripping

HEAVY paper or card stock will not cling to the stencil surface sufficiently to cause it to be carried around on the cylinder. Such paper can be placed in any position on the feedboard and fed over any portion of the impression roller. For work of this class the stripper and clip system can be ignored.

EXCEPTION: If stiff cardboard, fed to one side and somewhat beyond the end of the roller, should meet with any interference from the stripper, slightly change the feeding position, laterally, or if that does not avoid the contact with the stripper, move the stripper itself to its extreme side position, where it is entirely out of use, and later replace it, opposite its respective clip, when the card work is finished.

When the Usual Stripping is Necessary

Narrow impression paper of ordinary weight but of insufficient width to engage the clips at both sides of the cylinder (see Step 17) should be so positioned on one side of the feedboard that the sheets when forwarded will extend far enough beyond that end of the impression roller, to be engaged by *one* cylinder clip and its co-operating stripper.

It is usual, in such cases, to place the stenciled matter on the left side of the stencil sheet and to feed the paper from the farther or left side of the feedboard.

When a Narrow Impression Roller is Needed

Narrow paper, if very light and flexible, may necessitate the use of a cylinder clip and stripper on each side of the sheet. To accomplish this a special narrow roller must be used. Rollers can be purchased in lengths from $3\frac{1}{4}$ inches increasing by quarter-inch graduations to $7\frac{3}{4}$ inches.

Paper less than 4 inches wide cannot be printed in this manner.

To remove the impression roller, note the directions next following. With the standard length roller removed, a shorter one can then be put in its place. Cylinder clips and strippers must then be adjusted to the shorter roller. (See Step 17.) Adjust the paper guides on the feedboard to properly center the sheets. (See Step 19.)

Method of Removing Friction-Type Impression Roller

Turn the cylinder until open part faces downward. Rest the thumb on top of roller in central position, allowing thumb to overlap the plate. Put four fingers under the roller and thus lift it out of its bearings, being careful to release both ends of the roller shaft at the same time, in order not to wrench the arms on which the roller is supported.

Method of Removing Impression Roller Carrying Ball Bearings

Turn the open part of the cylinder down. Release both ball-bearing locks by pressing them to the side and pulling outward; then grasp the roller in the center and slide the bearings out of the sockets; lower the roller until the bearings are clear of the lever locks.

To Place Impression Roller in Position

With the open part of the cylinder down, release both ball-bearing locks on levers by pressing with thumbs and pulling outward.

With the ball bearings in place on the ends of the roller shaft grasp the roller in the center and pass it underneath the roller levers until the bearings are beyond the sliding locks; then raise and place it in the sockets; now push the locks forward into place to hold it in position.

Automatic Feeding of Narrow Sheets



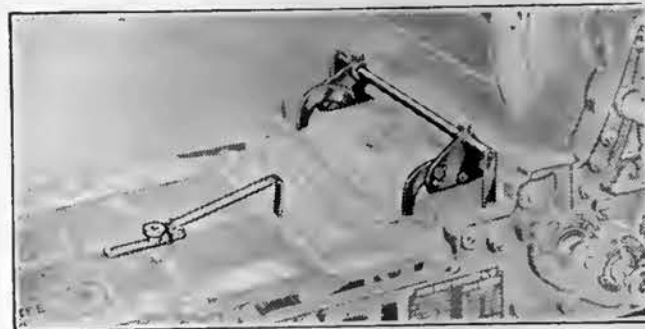
Adjusting Idler Feed-Roller for narrow sheets

To automatically feed narrow paper from one side of the automatic feedboard, the idler feed-roller must be moved to the station on its shaft over the feed-roller to be used.

Release set screw (4), slide the idler roller along this shaft to the required station and set the screw firmly onto the indentation made for that purpose.

Only one feedboard side gauge is gener-

ally used in such work, but, where lateral registration is demanded and also for automatic feeding of very short or very narrow pieces of paper, an auxiliary paper guide may be purchased.



Auxiliary Paper Guide for feeding short or very narrow sheets

Chapter 5

When the Lines Do Not Print Straight

In Automatic Feeding

INACCURATE stencil-making may cause the horizontal lines to slant on the copies or the vertical lines to be printed out of parallel with the side edges of the paper. In either case correct the error by adjusting the stencil strap (46).

To make such adjustment, first throw back the clips, then lift the stencil from the pad surface, without detaching it from the buttons, and while thus suspended turn the stencil adjusting thumb-screw (45) to the right if the horizontal lines slant upward, and to the left if they slant downward. Then respread the stencil on the cylinder, and return clips to position. Make a print, and if alignment is not exactly corrected, repeat the operation. After completing the run from such a stencil, **BE SURE TO RETURN THE ADJUSTABLE STRAP TO ITS NORMAL POSITION**, parallel with the immovable piece on which it is supported, otherwise your next *correctly* made stencil will print out of line.

In Hand Feeding

If the impression paper is being fed by hand, and an incorrect alignment in the stencil work is evident, the improper alignment on the copies can be corrected by placing the side gauges on the paper feedboard at an angle, so the sheets will be fed forward in a position to straighten the copies.

If in feeding cardboard this need arises, and especially card stock in smaller sizes, as postal cards, for example, the use of the stencil strap adjustment is especially recommended so that such cards may be fed firmly against the feed stops to attain speed in the feeding, and accuracy in the position of the print.

We recommend care in writing the stencil straight, to avoid any need of the foregoing correction methods.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Chapter 6

Typewriter Platens (or Rollers)

THE platen or roller of a typewriter is the rubber cylinder against which the paper is held to receive the impact of the type. There are in use three familiar grades, viz., *soft*, *medium-hard* (or correspondence), and *hard* (or manifolding) platens.

Dermatype stencils can be written under such normal conditions that the regular correspondence platens, in general use, serve all ordinary stencil-making requirements. Most makes of typewriters are equipped with platens sufficiently resistant for dermatype stencil-writing purposes.

Soft Platens Will Not Yield Good Stencils

A *hard* (or manifolding) platen is necessary for stencil-writing when the type used is *larger* than the pica size.

In the use of the Underwood typewriter, we especially recommend the *hard* (or manifolding) platen for all sizes of type, if the best stencil results are desired.

Chapter 7

Extremely Dark or Extremely Light Prints

THERE are numerous ways of varying the appearance of the mimeograph print. Dark or light copies may be produced to suit any special requirement or individual taste, if the operator understands the conditions governing the result.

Conditions That Determine the Degree of Strength of the Print

IMPORTANT: The following takes no account of mimeograph work of ordinary quality and density.

Each of the following four suggestions will aid in making the print EXTRA HEAVY.

- (1) Thoroughly dermax the backing, *and the face* of the stencils as well, carefully blotting off excess Dermax, before writing.
- (2) Select a typewriting machine having a hard platen (or roller).
- (3) Give a very hard (but snappy, "staccato") touch to the keys.
- (4) In printing turn the crank slowly, thus allowing longer contact and increased deposit of ink.

Each of the following four suggestions will assist in making the print EXTRA LIGHT.

- (1) Apply Dermax very moderately, and over the backing only.
- (2) Use a typewriter having a medium platen (or roller).
- (3) Give a studied lightness to each separate stroke of the keys.
- (4) In printing turn the crank rapidly, thus reducing the time of contact and the deposit of ink.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Chapter 8

Ribbons for Matching Mimeograph Work

SPECIAL ribbons made by us, may be purchased for matching mimeographed type-written matter. They are prepared with inks which match the colors and effects of the mimeograph prints; but the uniformity with which any lot of letters, or forms, can be filled in with names, addresses, or other individual data, depends entirely upon the skill and experience of the typewriter operator. For example, while the ribbon is fresh and thus more liberally supplied with ink, the key-touch must be light, and must depart as far as possible from the snappy or "staccato" touch. As the ribbon continues in use, and its ink supply gradually diminishes, the key-touch must become more decided, though it should be borne in mind that the typed matter will grow deeper in shade shortly after being written.

It is advisable to mimeograph copies with the darker effect (as in Chapter 7) if they are intended for matching work. (See page 33.) Furthermore, work slowly printed to produce this dark effect *should be interleaved*. (See page 30.)

Exact matching of mimeograph work cannot be *uniformly* executed except with great care on the part of the typewriter operator. Nevertheless, mimeographed communications have established their value in advertising and general publicity work. A typewriter ribbon of an entirely different color from that of the body of the letter produces the most effective work. For example: *red ribbon date lines and addresses are especially attractive when heading a letter neatly mimeographed in black ink.*

Chapter 9

The Care of Dermatype Stencil Paper

Method of Restoring It When Dry

DERMATYPE stencil sheets are packed face to face, and should be allowed to remain so placed, without disturbance, until used. So long as this close contact of the sheets is maintained they will remain soft and pliant and thus in good working condition for a considerable length of time; and especially is this true if the box of sheets is kept in a cabinet or drawer and thus not needlessly exposed to drying conditions.

If, due to extreme age or neglect of the above precautions, stencil sheets shall have become somewhat dry, and therefore more difficult to use in the normal manner with best results, they can be *restored* so as to produce successful work. No matter how dry they may be the dermax softening fluid, properly applied, will serve to revive and restore them to a suitable condition for use.

To accomplish the restoration of dry Dermatype, first place between the stencil sheet and the manila backing a hard sheet of paper (so as not to spoil the unused backing sheet) and then apply dermax to the top surface of the stencil sheet and let it stand for fifteen or twenty minutes. It will be found that the stencil sheet coating has gradually absorbed most of the dermax; blot off what excess remains, and the sheet will then be found to be as soft and pliant as when new. Remove the previously inserted sheet of paper, and, when stencil is to be written, employ the handy roller and *proceed with the dermaxing of the backing in the regular way.*

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Chapter 10

Removing Lint from the Stencil Surface

IN mimeographing on certain kinds of impression papers, lint or paper-pulp will adhere to and gather on the surface of the stencil sheet, and if this is not occasionally removed it will detract from the sharpness and finished quality of the print. In very cheap or extremely absorbent papers, this condition is most pronounced, and the removal should therefore be more frequent. When higher finished paper stock is used this attention is unnecessary.

To cleanse the stencil surface, when so covered, saturate a small piece of soft cloth with denatured alcohol, or benzine, and lightly rub the stencil surface while on the cylinder, making the strokes toward the side, in one direction only. If mimeograph correction-varnish has been used on the stencil, avoid using alcohol, as it will dissolve the varnish and spoil the corrections. Benzine, however, has no effect upon the varnish. If the automatic feed-rolls deposit a small quantity of lint on the stencil surface *above* the type-written matter, it can be removed by rubbing lightly with a piece of *dry* cloth.

Chapter 11

Uses for Powdered Soapstone in Mimeographing

POWDERED soapstone, familiarly known as "Talcum Powder," and as such everywhere obtainable, serves several purposes in mimeographing. A small can of it is made part of the equipment.

Should a stencil sheet, after having been spread upon the cylinder, become "sticky," causing the impression paper to cling to it, a small quantity of talcum powder applied with a soft cloth to the entire stencil surface affords an *immediate* cure. Another method of application, which assures an even distribution and the avoidance of excess that might clog the stencil, consists in rubbing the powder over the surface of a sheet of impression paper and then making a print (very slowly) on the powdered surface of this sheet. A thin but sufficient coating of the powder will be thus transferred to the stencil surface. (In using a No. 78 Mimeograph pass the talcumed sheet over the top of the feed-rolls, so that none of the powder will be deposited on the rolls themselves.)

Certain qualities of light-weight papers, being extremely thin and flexible, are difficult to strip, however accurately the strippers may be adjusted. In such cases it will prove helpful to apply talcum to the stencil surface in order to relieve the strippers, whether or not "stickiness" is shown.

Soapstone (talcum) should be applied to all varnish spots on stencils filed away to avoid adhesion to the absorbent sheets. (See Step 29.)

Chapter 12

Changing Inks

WHEN the need arises for a *limited* amount of mimeograph work in a color of ink other than that in the ink fountain, the simplest method is to remove the fountain from the cylinder, and, after cleaning the diaphragm and changing pads, apply the ink with a hand brush as directed on the following page.

To Remove the Ink Fountain

To remove the ink fountain, depress tank lock (41) and withdraw the inking rod handle (33) from the machine. Press the far cylinder trunnion lock (3) away from the

cylinder trunnion screw (2), turn the cylinder trunnion screw two or three revolutions and draw out the cylinder trunnion (1) only far enough to release the cradle (37) on which the fountain travels. Take hold of the ink fountain and cradle, back it off the shoulder, on the center of the cylinder head nearest the operator, and lift the entire inking attachment out of the cylinder. To replace the fountain and brush reverse these steps. Caution: The tank lock must be on side nearest operator.

To Clean the Cylinder Diaphragm

Detach pad rods, and remove ink pad. With pieces of any soft paper blot off the greater part of the ink from the perforated metal surface, both inside and out, then clean this surface with soft cloth saturated with benzine, or other cleanser, rubbing with sufficient firmness to draw out and absorb all the ink retained inside the perforations themselves.

Applying Ink with Hand Brush

With the diaphragm thus clean, and a new pad in place, it is then a simple undertaking, with a hand ink-brush (List No. 490) to spread ink moderately, and evenly, inside the cylinder, until it has sufficiently and uniformly saturated the pad. Inks are obtainable in round cans (see Supply List) suited to hand-brush application, and in order that such method should prove as neat and clean as possible, it is but necessary to acquire a little of the painter's knack, slowly revolving the brush handle between the fingers, while conveying ink from the can to the cylinder. Ink will not drip from a brush thus slowly revolved.

To Clean Inside of Fountain Before Introducing a Different Color of Ink

To remove the fountain from the supporting cradle, slide it to either end of the cradle rods, press the opposite ends of these rods together, and lift off the end piece.

Should the tank contain ink, which must be removed, suspend the tank and brush in upright position over any receptacle or waste pipe, open vent-valve (42) and drain out the ink. Then remove ink cap (29) and run water through the fountain, direct from the faucet (hot preferred), close the vent-valve, and then follow this flushing by pouring a small quantity of benzine, or similar cleanser, into the tank. Replace ink cap and shake thoroughly. Open vent-valve and drain out contents. In preparation for any light-colored ink, the benzining may well be repeated. If a change of ink in the ink tank be made from one of intense color, as black, to an ink of a more delicate shade, as blue or red, the cleaning of the tank, and fountain ink-brush also, must be especially thorough. Under the reverse circumstances, however, ordinary care will suffice.

The brush bristles may be cleaned if necessary (changing from a deep color to a lighter shade) with hot water and benzined cloth, as outlined above for cleaning the tank.

CAUTION: Two inks of different kinds must not be mixed in the ink tank. Should such a mixing accidentally take place, the mixture is likely to become thick, or even to jell, whereby the fountain valves will become clogged and fail to release the ink.

CAUTION: Never force open the vent-valve with a wrench. Instead, if it sticks, fill the fountain with hot water and gradually turn valve while the hot water is loosening the gummy ink in the valve slides.

To Remove the Cylinder

For cleaning, adjusting and repairing, it is occasionally necessary to remove the cylinder. This is easily done as follows: With the opening of the cylinder turned upward, remove the ink fountain as previously explained, draw out the cylinder trunnion (1) from the cylinder, press the cylinder off the shaft at the side nearest the operator and lift it out. Replace by reversing the operation, taking care to see that when putting the cylinder on the shaft nearest the operator the pin on the cylinder head fits into the socket of the gear wheel, and that the trunnion (1) is in position and locked securely.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Chapter 13

Renewal of Automatic Feed-Rolls

When and How Installed

WHEN the automatic paper feed-rollers (15) become worn to such an extent that their efficiency is diminished, they should be replaced with a new set. (Part List No. 3082-A.)

To install them, loosen idler roller set screw (4) and then remove the auxiliary plate, which projects over the feed-roller shaft, by first loosening the screws at the extreme ends, and sliding the plate out and over the feed-rollers. Then remove the screw on the outside of the frame which holds the automatic feed-roller shaft (23), by turning to the right (this is a left-hand screw); back the shaft through the screw hole in the frame far enough to remove it from the machine; loosen the set screws of the rubber feed-rollers and slide them off. In putting on new rollers set the shaft with the gear end to the right; slide the feed-rollers onto the left end of the shaft with the set screws to the left of the rubber rollers; see that the set screws enter the depressions or "stations" in the shaft, which will lock the feed-rollers in their proper places, with the teeth all in line.

In replacing the shaft, reverse this operation, but be sure that the end gear is properly engaged with the gear in the frame on the near-side of the machine, and that the auxiliary plate is again in position, with the screws tightened, and the idler roller (26) properly replaced.

When Feed-Rolls Need Cleaning

When the printers' ink on any forms, or letterheads, which are being automatically fed, is in a sufficiently fresh condition to make the surface of the feed-rolls become somewhat greasy, the rolls must be cleansed with alcohol and glycerin to enable them to pick up the sheets satisfactorily. A mixture of three-quarters alcohol and one-quarter glycerin is a preferable solution for keeping the rollers pliant. Alcohol alone has a hardening effect on rubber.

Chapter 14

Necessary Care of the Impression Roller

The Need of Cleaning

UNDER ordinary operation the rubber impression roller of a Mimeograph may become covered with a coating that will be found made up of a certain amount of ink accidentally deposited, but more largely of lint gathered from the surface of the impression paper. It will be necessary, from time to time, to clean it.

Remove the roller from the machine (see page 31) and scrape with some metal edge not sharp enough to cut the rubber. Then apply alcohol or soap and water, but never benzine or kerosene. Oils are very harmful to rubber, and their frequent application will so swell the roller as to render it unfit for use.

Never return the roller to place in a "sticky" condition. A little talcum powder spread over its surface will render the surface non-adhesive.

Altering the Roller Tension

The normal tension of the impression roller, regulated by the adjusting nuts (5), is when the nuts are flush with the top of the studs (as when the Mimeograph leaves the factory).

For Reference Chart, showing all parts of the Mimeograph, see page 6.

The roller adjustment should not be altered except to increase or diminish the pressure to overcome the unusual conditions named below.

Increase—When the machine must be operated in a room with the atmosphere sufficiently cold to chill the cylinder and thereby stiffen the ink it contains, assuming that no means of increasing the warmth is available.

—When the impression paper is especially rough, embossed or corrugated, or for any other reason inclined to be especially resistant to the ink.

Diminish—When the atmosphere is necessarily hot, and the ink therefore flows so freely through the stencil that the copies print, even under high cylinder speed, more heavily than desired.

—When it is sought to attain long runs, of many thousands of copies, from single dermatype stencils.

—When the impression paper is so light that it wrinkles as it prints.

—When the arrangement of the subject-matter offers little or no margin for the stripping means; so that a light pressure, and a talcumed stencil surface, must serve to accomplish the discharge of the printed copy.

—When a lighter effect of print be desired than an increase of the cylinder speed is able to insure.

REMEMBER to always put the adjustment *back to "normal"* when the special work is finished.

Warning!

The great danger attending the making of *special adjustments* for occasional necessities is the fact that operators are likely to neglect to return such adjustments to their proper or normal state when the unusual need has passed, *and to this especial attention is now called.*

Chapter 15

The Ink-Brush Adjustment

UNDER constant usage the bristles of the ink-brush are likely to become softened and lose some of their effectiveness, no longer spreading the ink as thoroughly as they should. This natural wear of the bristles is easily offset by slightly *lowering the brush*, so that the bristles will again press firmly against the perforated metal surface. The substitution of an entirely new brush is rarely needed. The lower part of the inking fountain, which is called the brush-holder, is adapted to be raised and lowered on the round central shaft of the fountain, and it will be found fixed in its position by the action of screw (36), the head of which will appear on the flat side of the brush-holder.

To lower the brush, remove from the cylinder the entire inking equipment, release the screw (36); gently tap the brush-holder, causing it to move down on the shaft from one-sixteenth to one-eighth of an inch. Again tighten the screw firmly, replace brush in the cylinder and note whether the bristles protrude so far into the ink-pad as to puncture and damage the stencil sheet. If so, the brush is too low and must be raised. The sides of the brush-holder must rest parallel to the sides of the cylinder.

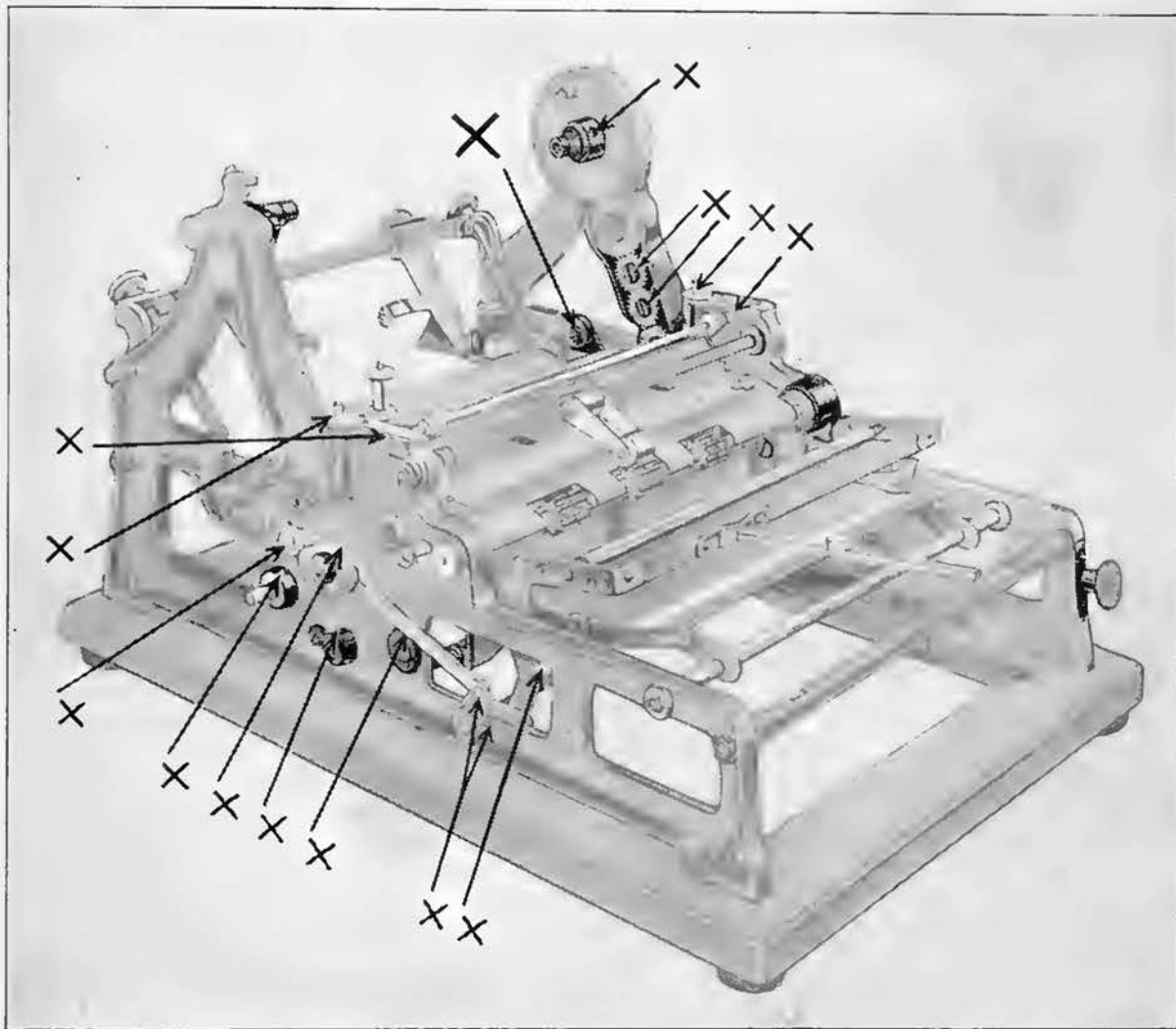
For Reference Chart, showing all parts of the Mimeograph, see page 6.

An incidental effect of softening the bristles is that the entire inking device is permitted to swing, without restraint, from one end of the cylinder to the other as the cylinder revolves. The lowering of the brush corrects this trouble, the bristles serving to hold the device in a proper manner, so that it will remain in any position in which it is placed, whether the cylinder be stationary or revolving.

Chapter 16

How, When and Where to Oil the Mimeograph

Left-Hand-Side View



Oil X frequently

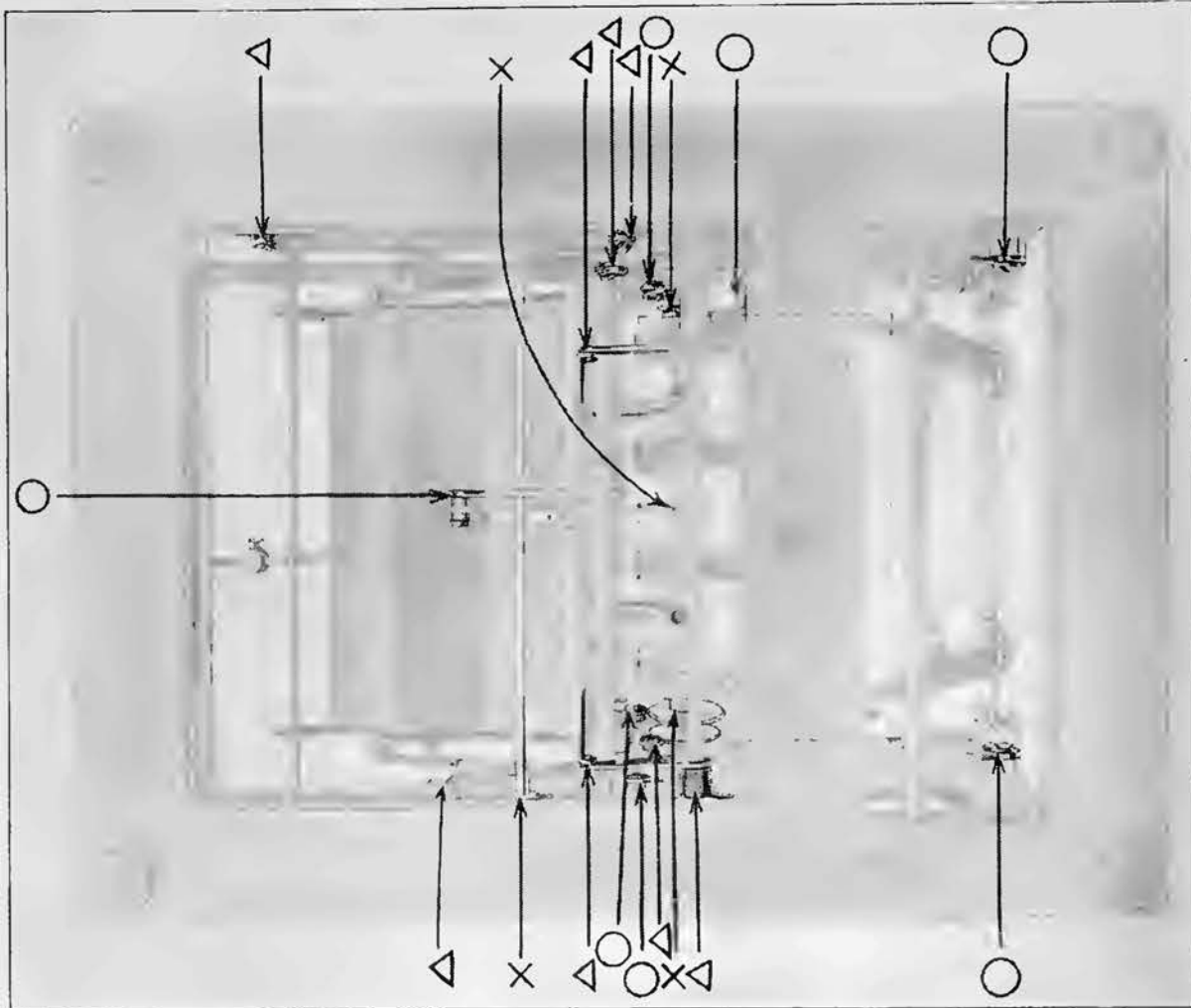
NOTE: A special necessity for *very* frequent oiling exists in the case of the bearing of the "truck" (wheel) on the older models of Mimeographs to which the arrow with the largest "X" points. Put the spout of the oil-can over the top of the bell of the print recorder, permitting the oil to drop to the wheel edge and its bearing. Where the print recorder has an oil hole immediately over the bell, the "truck" bearing (large "X" above) must be oiled through this hole. This oiling does not lubricate the recorder.

IF the machine is to do its work properly, or be operated with ease, or if it is to be expected to last for years in continually good working condition, oiling instructions must be followed.

The lubricating oil used should be of good quality and of medium weight. Such "medium" oil can be bought at any garage or gasoline station.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Under-Side View



Oil x frequently

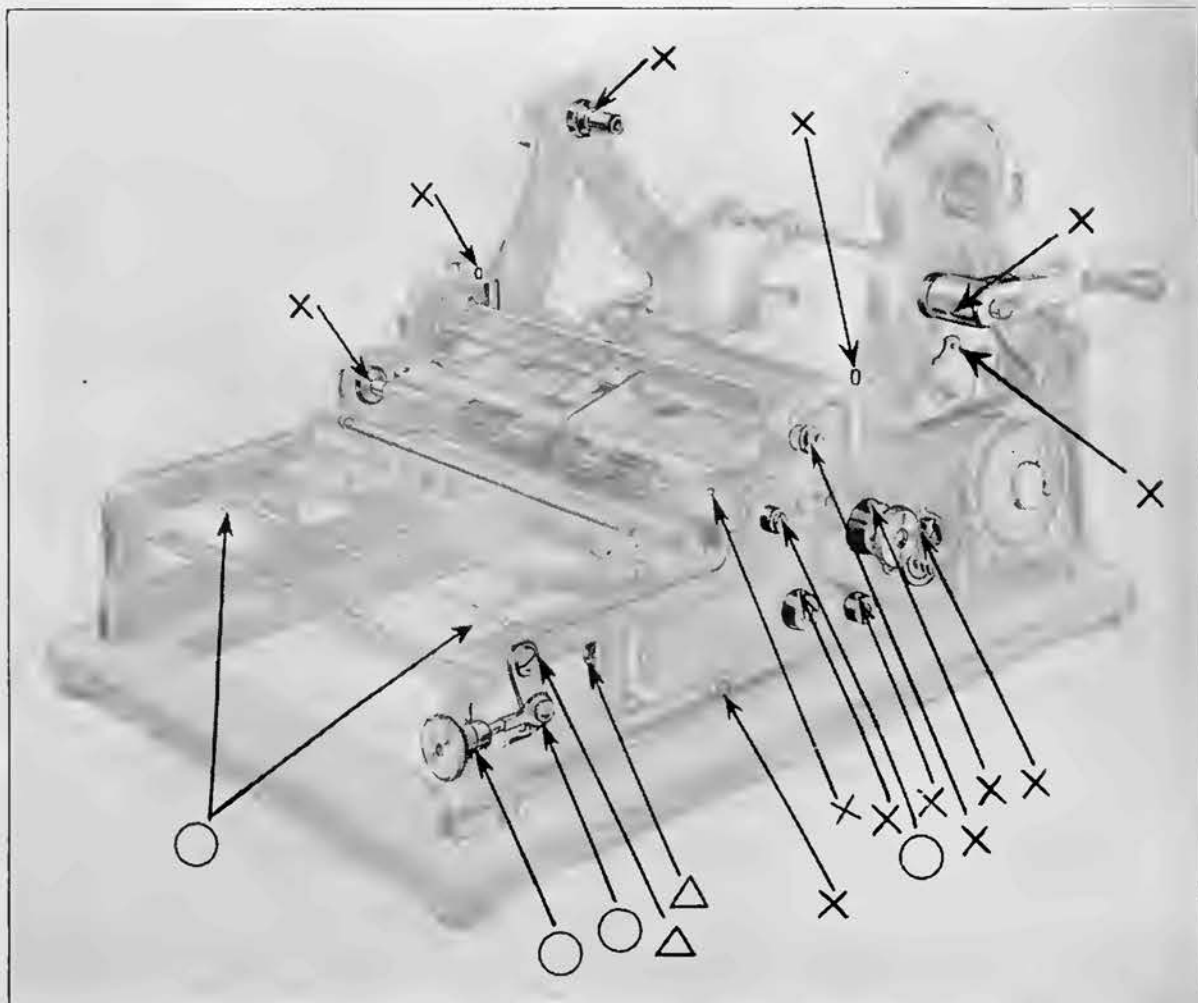
Oil o occasionally

Oil Δ say once every three months

To prepare for a general oiling of the Mimeograph, remove the ink-fountain and the cylinder (see page 36), and also the feedboard and receiving tray.

The three accompanying diagrams plainly indicate when, at the various bearings, oiling is to be done. Rather than oil too freely, oil should be applied a drop or two at a time, and any excess then removed with a cloth to prevent subsequent dripping. Observe caution against getting oil on any of the rubber rollers.

Right-Hand-Side View



At points marked x ("x" meaning "oil frequently") apply the oil, say every 20,000 copies or thereabouts.
 At points marked o only now and then.
 At points marked Δ only once in two or three months.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Lubricate the following Ink-Fountain Parts (when replaced)

- The tank lock (41) on each of the four sides of its plunger.
- The cradle (37) round rods and end bearings often.
- The inking-handle (33) entire length of rod.
- The seat of vent-valve (42) entire rim surface.

This should be done with a small quantity of vaseline on a cloth, thus avoiding the possibility of dropping oil on the ink inside the cylinder, which would have a tendency to spoil the ink.

Directions for oiling motor-drive equipment will be found on page 48

Chapter 17

Repair Parts to be Ordered by Numbers

IN MAKING REPAIRS, involving the renewal of worn or broken parts, *order new parts by List Numbers*, found in our illustrated book, "List of Parts for Mimeographs Nos. 77 and 78," as supplied with each machine—or sent free on request.

All parts with their identifying numbers beneath them are shown on the left-hand pages in the book, "List of Parts," and listed on the right-hand pages are the numbers, descriptions and prices of the parts.

Improvements have been made on both models Nos. 77 and 78 since their introduction. It is therefore essential in ordering that the serial number of the machine be given as well as the list numbers of the parts wanted.

Chapter 18

Avoid Disturbing Permanent Adjustments of the Mimeograph

THE mechanisms which operate the feeler-pins, paper stops and other features are adjusted and timed when the machines are manufactured, and their operation thoroughly tested before being released from the factory.

Therefore alterations are not necessary, and, if made, will seriously interfere with the proper operation of the Mimeograph.

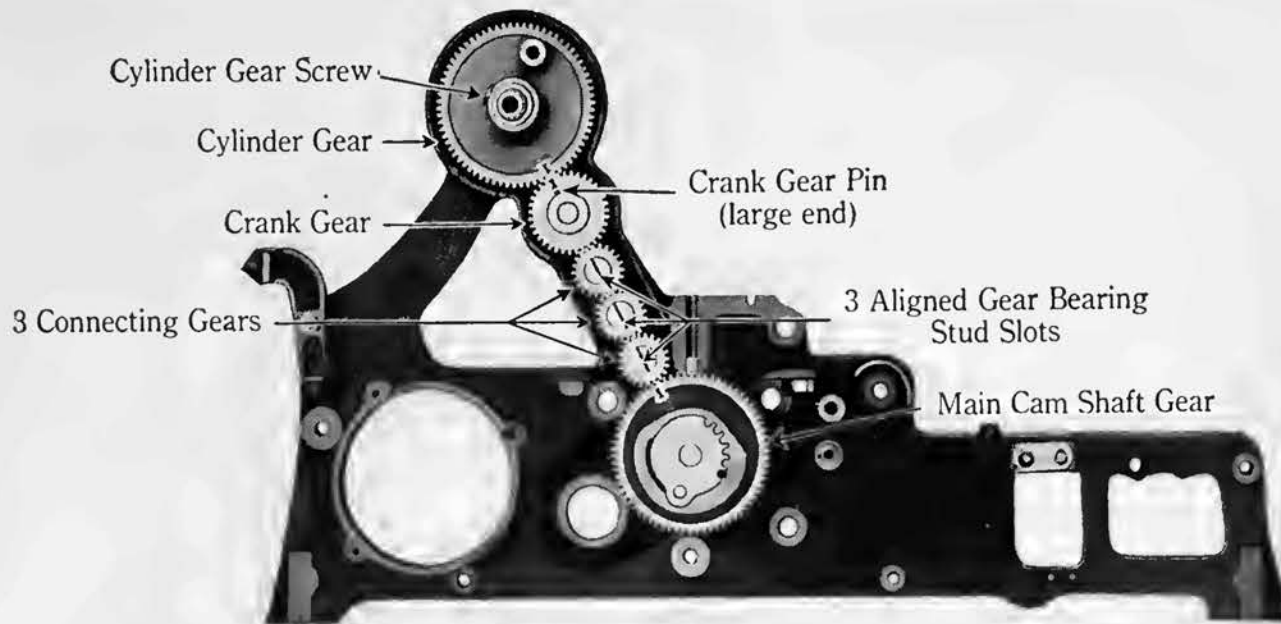
By removing the cylinder, the impression roller, the feedboard, and the tray, every part of the machine is accessible for cleaning, oiling and adjusting.

Adjustment of the "Timing" Gears

The six co-operating gears which are assembled in *one straight line* or "train," and located in the upper section of the right-hand-side frame, are known collectively as the "timing gears." Removing the cylinder plainly exposes the upper five of these six gears. The top one is the cylinder gear, and the one next below it, the crank gear. The three small gears next following are called the connecting gears, and engaged with the last one of these and directly below it is the last gear of the "train," called the main cam shaft gear.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

If, inadvertently, these gears are removed, or if removal of any one of them is necessitated by accidental breakage or wear, their timing after replacement must be done with extreme care and in exact accordance with the instructions which follow.



GEAR "TRAIN" IN "TIME"

The cylinder gear, the crank gear and the main cam shaft gear are each marked with a figure "1" on the rim of the inner face. Each of the three bearing studs holding the connecting gears has a slot across the head. These figures "1" on the large gears and the slots in the bearing studs of the small gears are the guides used to indicate the correct setting of the gear train and to properly time the operation and registration of the Mimeograph. When the gears are all in correct alignment the figures "1" on the cylinder gear and the crank gear point directly to each other and are almost in contact, and a straight line produced through these two marks will pass through the slots of the three bearing studs to the figure "1" on the lower or main cam shaft gear (see illustration above). The figure "1" on the main cam shaft gear is difficult to see because it is partially obscured by the main bed plate. However, it can be seen if care is taken to first remove accumulated grease or dirt.

SETTING THE GEARS

The Cylinder Gear

First: Push the crank toward frame and thus allow the detent to lock the crank gear to the crank shaft.

Second: Turn the crank until the figure "1" on the lowest or main cam shaft gear is in line with the three bearing stud slots and the crank parallels the line of the "gear train." With it in this position the figures "1" on the cylinder gear, crank gear and main cam shaft gear should be in the alignment previously specified. If this test proves adjustment of *cylinder* gear necessary, remove it by releasing the screw on the hub, then correct the error by replacing the cylinder gear in correct position. Tighten the screw in the hub to fasten the gear securely.

The Crank Gear

The crank gear is attached to the crank shaft by means of a tapered pin. The gear hub and crank shaft are bored to a taper corresponding to the taper of the pin.

The large end of the hole in the hub is that nearest the figure "1" on the gear. The large end of the hole in the shaft is that opposite the crank lock slot.

Removing Crank Gear

First: With a punch, about one-sixteenth inch in diameter, on the small end of the taper pin, drive the pin out of the hole and remove gear.

Second: With small wrench loosen detent nut and take out detent. Take off crank and pull out crank shaft.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Installing Crank Gear

First: Place the shaft in the frame bearing with lock slot downward.

Second: Place gear on shaft so that the figure "1" on the gear rim will be in the correct relative position to the other figures "1" and the bearing stud slots. (See illustration on page 42.)

Third: With large end of hole in shaft and large end of hole in gear hub up, enter the small end of the taper pin in the large end of the hole in hub and drive it downward until the gear is securely fastened on the shaft.

CAUTION: The crank gear cannot be wrongly positioned on the shaft if the taper pin is properly entered in the taper holes of the gear hub and crank shaft.

The Connecting Gears (Idler Gears)

The slots in the bearing studs of the three connecting gears must be in the alignment specified in order that the correct position of the balance of the gears may be exactly determined.

Removing Connecting Gears

Any one of the connecting gears may be taken out by holding a screw-driver in the slot and removing the stud nut with a small wrench.

Replacing Connecting Gears

With a screw-driver hold the stud slot of the gear in alignment, put on the stud nut and tighten.

Setting the Main Cam Shaft Gear

To alter the alignment of the main cam shaft gear, remove the center connecting gear as instructed above, and by means of the feed control knob (13a) revolve the large cam shaft gear until the figure "1" comes to a location where it points directly to a line which, if continued, would pass through the bearing stud slots of the two connecting gears remaining in place. (This operation need never be undertaken unless the gear train has been taken apart and improperly assembled.)

Chapter 19

How to Attach Print Recorder to the Mimeograph

THE print recorder is attachable to any No. 78 Mimeograph having a serial number over 2725, and to any No. 77 Mimeograph with serial number over 3200. These numbers are to be found on the small brass plate attached to the front face of the machine.

1. Remove cylinder for convenience (see page 36).
2. Remove rubber impression roller (see page 31).
3. Remove the near-side impression roller tension spring by unscrewing adjusting nut (5).
4. Remove impression roller lever and bearing (see page 31) on near-side frame—using a screw-driver in connection with the small wrench (to hold hexagon nut on hanger bearing).
5. Remove the three screws on the inside of the side-frame which hold the blank in the opening arranged to receive the recorder.
6. Set hand-crank to its uppermost position.
7. Set the hundred pointer (outer one) of the recorder at 25. Now insert the recorder from the inside outward, and fasten with the screws.
8. Replace the impression roller lever and be sure that the controlling pin on the back of the recorder *is in the slot* of the impression roller lever, before fastening. Replace impression roller and cylinder.
9. Tack the celluloid directions for operation on the wooden base, where indicated by small holes.

It will be obviously easy to *detach* the recorder, in repairing, by following the same order and reversing the details of procedure.

N. B.—Observe that oil hole immediately above the bell is NOT designed for lubrication of the recorder, but should be *frequently* supplied with oil to lubricate the bearing of the "truck" (wheel) beneath, as illustrated on oiling chart (page 39) under arrow marked with largest "X."

For Reference Chart, showing all parts of the Mimeograph, see page 6.

The electrically operated Mimeograph and the Mimeoscope (an illuminated drawing table) are described in the following Chapters.

A. B. DICK COMPANY.

Chapter 20

Motor Drive for No. 78 and No. 77 Mimeographs

THE capacity of the hand-operated Mimeograph is limited by the skill and speed of the operator. Electric operation of the machine assures maximum capacity. It is a great convenience for most classes of work but is especially advantageous in making long runs on paper of practically uniform size and weight.

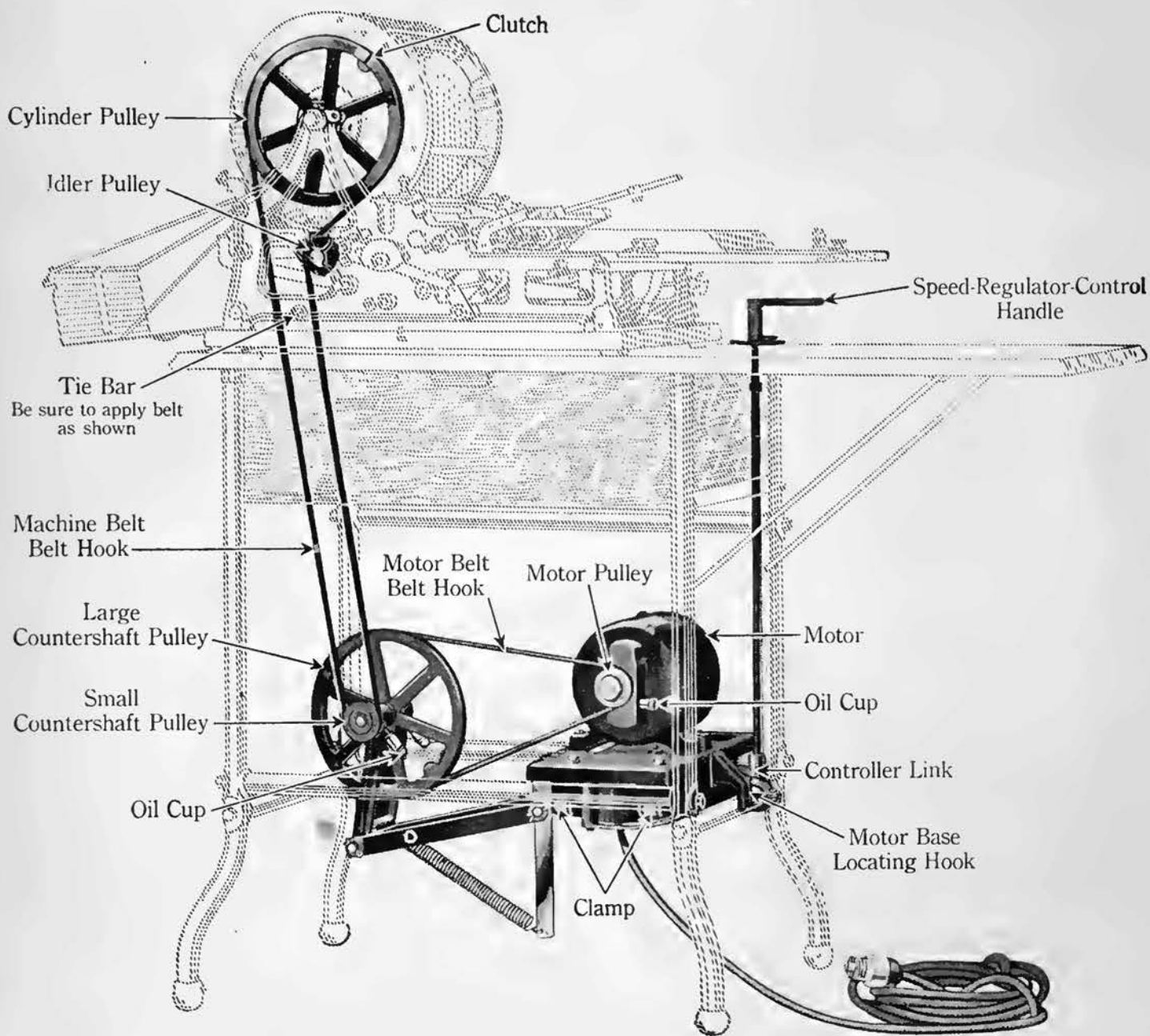
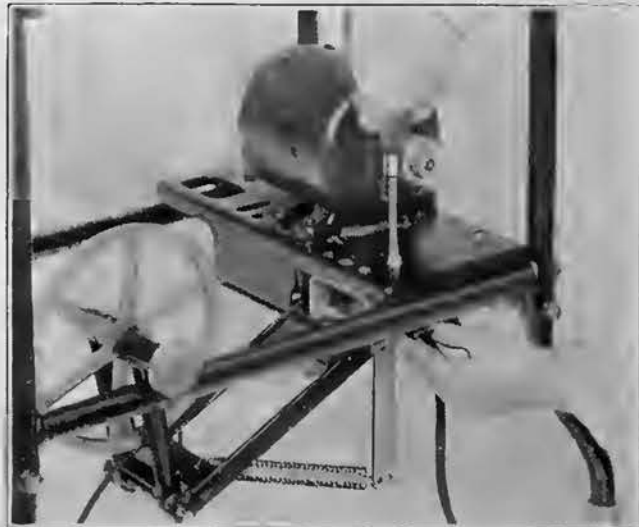


Diagram of Electric Motor Equipment—attachable to any No. 78 or No. 77 Mimeograph

Method of Installing Motor Equipment

Place the hand-power Mimeograph on the motor stand with the rubber feet of the Mimeograph base resting in the recesses in the top of the stand.

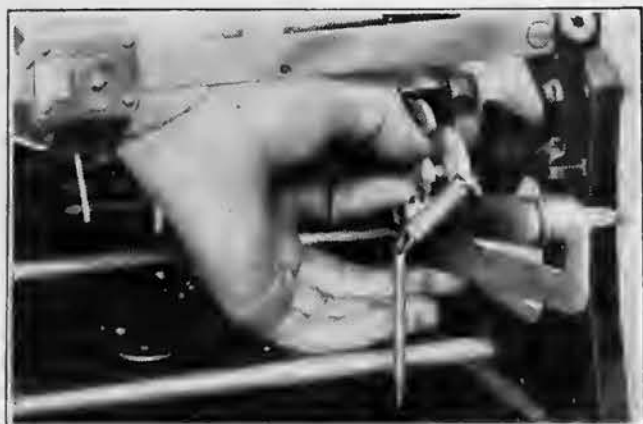
Set the cast-iron base to which the motor is attached on the lower rails of the stand frame, positively against the legs of the stand and with the motor locating-hook over the cross-rod at the leaf end of the stand. The motor pulley must be toward the side opposite the control lever. The long flat bar protruding from beneath the motor base is the control link. Insert the upright pin of the control crank into the hole in the control link. Then clamp the motor securely in position by means of the two bolts supplied for the purpose.



Installing motor and base
on machine stand

For Reference Chart, showing all parts of the Mimeograph, see page 6.

Attach the bracket holding the countershaft to the under side of the base casting, on which the motor rests, by the three screws accompanying it. The small pulley on countershaft must be placed above the side-rail of the stand, before attaching bracket. To mount the small grooved idler pulley, remove cylinder and impression roller (7), unscrew adjusting nut (5), and free the spring, so that the bearing farthest from the operator, which carries the impression roller, will drop down.



Installing the Idler Pulley

Now attach the small idler pulley on inside of frame, by passing the screw bolt carrying the pulley through the hole in frame leaving the washer on bolt between the frame and idler pulley. Fasten securely in place with nut.

To mount the large grooved cylinder pulley (continuing from above) replace impression roller, impression roller spring and cylinder in their original positions, in the order

named, but before placing trunnion (1) in final position pass it through the large grooved cylinder pulley, with the polished face of this pulley outward. Complete the forwarding of the trunnion until it enters the cylinder, and thence the ink-tank cradle, to which it gives support. A slight lifting of the cylinder will assist this operation. Now firmly set the trunnion screw (2).

To put electric counterweight on cylinder, first remove that counterweight from the inside of the rim of



Installing the Electric Counterweight

the cylinder head farthest from the operating side of machine, by unscrewing and removing the three small screws found on outside of cylinder, and also loosening the screw in the front end of the cylinder tie-rod, which reaches to the counterweight. Substitute the special counterweight which is equipped with a clutch. The clutch stud should extend through the hole in the cylinder head, for connecting with cylinder pulley. Replace the three screws and tighten the front tie-rod screw.

Place the longer or machine belt over the grooved cylinder pulley, thence pass it downward over the small idler pulley through the hole in top of stand and attach it to the small grooved pulley on the countershaft. The tie bar on machine frame must be straddled by the belt. Place the shorter or motor belt over the large grooved pulley on countershaft, and over the small pulley on the motor shaft.

If table does not rest steadily on the floor, loosen the set screw on the cap on the right-hand rear foot of the stand, and revolve the cap to the right to shorten the leg, or to the left to lengthen the leg, until steadiness is attained.

Attach plug at end of circuit cord to lamp socket, first having the speed-regulator handle turned off, and the machine is ready to operate.

CAUTION: The universal motor will operate on either alternating or direct current, but the motor voltage must correspond to the voltage of the circuit to which it is connected.

When necessary to renew brushes on motor, caution the electrician not to change the position of the rocker arm holding brushes, as this is set in correct position for either direct or alternating current.

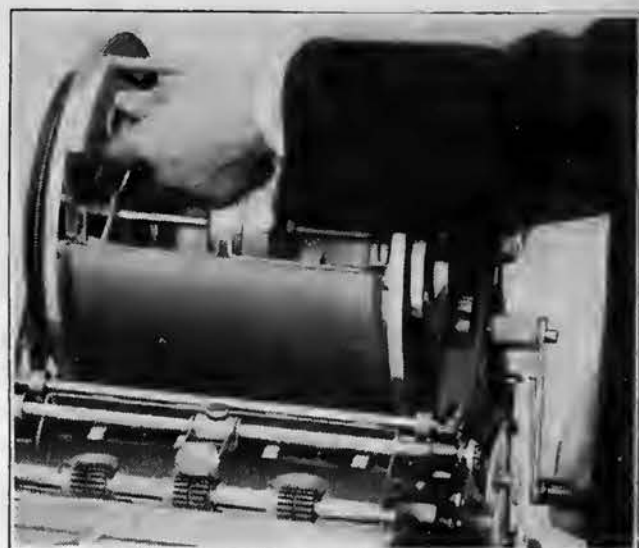
For Reference Chart, showing all parts of the Mimeograph, see page 6.



Putting the Cylinder Pulley in position

To Operate the Mimeograph by Motor

When motor equipment is properly installed, in order to connect with the motor-power turn the clutch knob, found on inside of back end of cylinder, until it releases and the pin extends through against the cylinder pulley. Then turn the cylinder slowly by hand until this clutch pin enters the depression on the inside edge of the pulley. Be sure now to disengage the cylinder crank, so that it hangs down loosely.



Releasing the Clutch Knob to connect with Motor

The Speed and Its Control

Starting and regulating the speed of the Mimeograph is done by movement of the speed-regulator-control handle shown in diagram. (See page 45.) As the pointer is turned from the lowest to the highest number on the quadrant, the speed of the Mimeograph will increase and vice versa.

These figures have no definite significance but aid the operator in retaining a mental note of the position to which the handle must be returned when restarting the machine in order to at once attain the speed at which the machine had previously been running.



Starting the Motor

To insure a positive start, shift the speed-regulator handle at once to the high-speed position. The slower speed desired may afterwards be attained by turning the handle backward. The cylinder should not turn faster than one hundred revolutions per minute. Should any current make it possible to exceed that limit, the speed should be diminished by the operator.

Renewing the Paper Supply

In operating the No. 78 Automatic Feed, the supply of paper on the feedboard may be renewed without bringing both motor and machine to a stop. Simply lock down the feedboard, by depressing the feedboard release latch (17), and lift the paper-weight yoke (49), permitting the cylinder to continue its revolution until the paper is placed, then the yoke thumb-piece and the release latch can again be pressed toward each other, so that the paper will continue feeding as before. No effect upon the registration is involved. Similarly, when hand feeding either of the electrically driven models No. 77 or 78, the cylinder may be permitted to continually revolve; but, more than that, in the hand operation not a single feature need be made inoperative, or disturbed, while the paper supply is being renewed.

To Return the Machine to Hand-Power

Disconnect the motor by pulling out the clutch knob, on the back of the cylinder, and turning this knob until it locks. Return the hand-crank to its locked position on the crank shaft, and conditions for hand-feeding operation are restored.

Repairs to the Motor Drive

The motor is the main feature of the electrically equipped Mimeograph. They are subjected to a rigid inspection at our factory and therefore should give satisfactory service.

The universal motor furnished should operate with little attention, except oiling. Where the operation is only occasional, repairs may not be needed for years.

For Reference Chart, showing all parts of the Mimeograph, see page 6.

If in time the motor's efficiency deteriorates it can be rehabilitated by cleaning one or two parts, or the renewal of its two small carbon motor brushes (List No. 3576).

However, when a motor-driven Mimeograph does not operate as fast as it should the operator often prematurely concludes that the motor is out of order. This premature conclusion is so frequently reached that our advice to operators is to examine every *other* possible source of difficulty *before concluding that the motor is at fault*. The following outline is suggested for such examination:

1. Does the electric equipment need lubrication?

Oil the motor and countershaft as follows:

Put good medium-weight oil in the oil cups (found on both ends of motorshaft), turning the outer cap until the opening appears. Close the cap after oiling.

Refill each countershaft oil cup. Unscrew and remove the base of the cup, fill this base with oil and replace.

Above the table, put a limited amount of oil in the oil hole feeding the bearing of the grooved cylinder pulley; but oil the small idler pulley, through the oil hole, more freely.

Caution: Do not directly apply oil to the *interior* of the motor.

(Is the speed now increased?)

2. Does the Mimeograph itself run hard, for lack of proper oiling—thus overburdening the motor?

Oil all principal bearings of the Mimeograph, to which attention has been called. (See Chapter 16.)

(Does the machine itself now run easier? Try with hand-crank.)

(Is the speed, with motor, now increased?)

3. Has the machine belt so stretched as to be "slipping" on the small countershaft pulley?

Should the belt be shortened?

This question refers only to the longer of the two belts. The shorter, or motor belt, in driving the countershaft, *requires* the light tension you will find it to have. It will never be found to have stretched. Do not attempt to shorten or otherwise tighten this motor belt. Such tightening would overload the motor.

All belts used on this equipment are especially prepared to insure the minimum stretch; therefore, only belts furnished by us should be used. The heavy tension spring beneath the countershaft will keep the proper tension on the machine belt until the belt has stretched sufficiently to permit the countershaft bearing to touch the side rail. If such a condition develops the belt must be shortened by unscrewing one end from the belt-hook. Cut off about two inches, and, with a sharp knife, taper the cut end (gradually); now, by using pliers, screw it firmly into the belt-hook. A belt which is inclined to slip, on account of being oily, can be wiped clean with benzine or gasoline.

(Did attention to belt increase the speed?)

(Or, must we look still further?)

4. Is the electric current giving full power?

The current should be tested as to voltage.

This is a matter which must be taken up with your local electrician or, better, with the Company supplying the current.

The motor may be in excellent condition but the current may be at fault, being of improper voltage. If the current is supposed to be one of 110 volts, are 110 volts actually being supplied to the motor? Or, if of 220 volts, are the full 220 volts being furnished?

A deficiency in this respect may have arisen from an overloading of the particular lamp circuit with which the motor has been connected; or, if an alternating current, the local transformer may have an overload to carry.

(Has the Mimeograph now its proper speed?)

5. And then last of all, investigate the condition of the motor—if all other sources have been investigated, and the difficulty still exists.

Where possible, get an electrician, but, where none may be available, endeavor to place the following suggestions before some one who knows at least *something* about a motor.

First, disconnect the motor.

Now, open the two hinged doors of the iron case of the motor, by prying aside, with a screw-driver, the small protrusions for the purpose, on the top edge of each door, and the parts to which we shall hereinafter refer will then be exposed to view.

The Two Motor Brushes

Next, remove and inspect the two motor brushes (No. 3576 Illustrated Parts List). These brushes are small pieces of carbon, the condition and proper action of which are vital to the efficiency of the motor. They will be found to be held in their position by coiled, flat-steel springs, in such a manner that they are permitted to slide freely from right to left, between confining guides, under a tension afforded by the springs. The upper one of these brushes is made accessible by the opening of the right-hand door, and the lower by the opening of the left-hand door.

Attention to the Upper Motor Brush

Attached to this carbon motor brush is a copper wire which passes downward under the flat brass terminal (a small, flat plate having a face about $\frac{1}{4}$ -inch square) and is held there by a broad, flat, brass spring. Release the tension of this terminal spring by pressing inward on its lower end, and disconnect the brush wire from the terminal. Now put finger on the top end of the steel brush spring and pull this spring forward and downward, so that the brush may be pulled out from its guides. Do not let the spring snap backward, but confine it in a forward position by inserting under it a small chip of wood, allowing it to remain there until ready to replace the same brush, or a new one, as the case may require.

Measure the motor brush on its longest surface. This was originally one inch in length. If, through wear from contact with the revolving commutator, it has become shorter than three-quarters of an inch, it is advisable to replace the worn brush with a new one. When brushes are short the spring tension is weakened and the contact with the commutator is not positive enough to be dependable. If the same brush is to be replaced, examine the concave surface of its contact end, and if it be coated with a shiny, brassy, or greasy accumulation, this surface needs attention. Take a piece of the

For Reference Chart, showing all parts of the Mimeograph, see page 6.

finest grade sandpaper, bend it over a round lead-pencil, and rub it back and forth through the concave surface of the brush end, until such surface is entirely cleaned.

CAUTION: Never use emery-paper nor emery-cloth in motor repairing, nor emery in any form.

Again pull brush spring forward and downward, and replace the right-hand brush so that its curved end will conform to the curvature of the commutator. Again release the terminal spring and insert the brush wire under the terminal, from the top downward. If, in releasing the terminal spring, the covered (insulated) feed wire has accidentally been pulled out from its proper clamping (by the same spring) under the terminal, reinsert it through the round hole from the left. It is not material that the brush wire and feed wire make contact with each other.

When a new motor brush is being substituted, see to it that it slides freely in the guides. If *any* tendency to bind, dress down the binding surface of brush slightly with the sandpaper.

Attention to the Lower Motor Brush

Above instructions apply to the lower motor brush also, except that the right and left directions when referred to are obviously reversed. In the replacement of this lower motor brush, however, the longest surface must be *downward*, to conform to the commutator surface and make proper contact.

The Commutator

The commutator of the motor is so easily damaged by those inexperienced in motor maintenance that it is always advisable, when an electrician is not available, to ship the motor to the factory for commutator repairs or cleaning. However, if by the process of elimination heretofore outlined, the cause of improper operation has not been discovered and remedied, the commutator should be examined. When in the best working condition the copper surface of the commutator is bright. If upon inspection it is found to be dark, stained or greasy looking, an electrician should be employed to clean it, or the entire motor should be shipped to the factory for that purpose. If the owner of the Mimeograph decides to have this work done by his local electrician, it is advisable that the procedure be as follows:

A piece of the finest sandpaper, grade 000, 3 inches wide and 6 inches long, should be wrapped around a stick of wood $\frac{1}{2}$ -inch square and 6 inches long, so that the entire stick will be covered with sandpaper. The motor should then be connected, the current turned on and the pointer of motor control handle should be set at position 4 on the quadrant. The sandpaper-covered stick should then be carefully inserted and pressed downward against the copper surface of the revolving commutator. When the surface of the commutator has become bright and clean from this abrasive action the current should be turned off and the motor doors closed. *Extreme care must be taken to avoid the sandpaper coming in contact with the insulated wires of the revolving motor.*

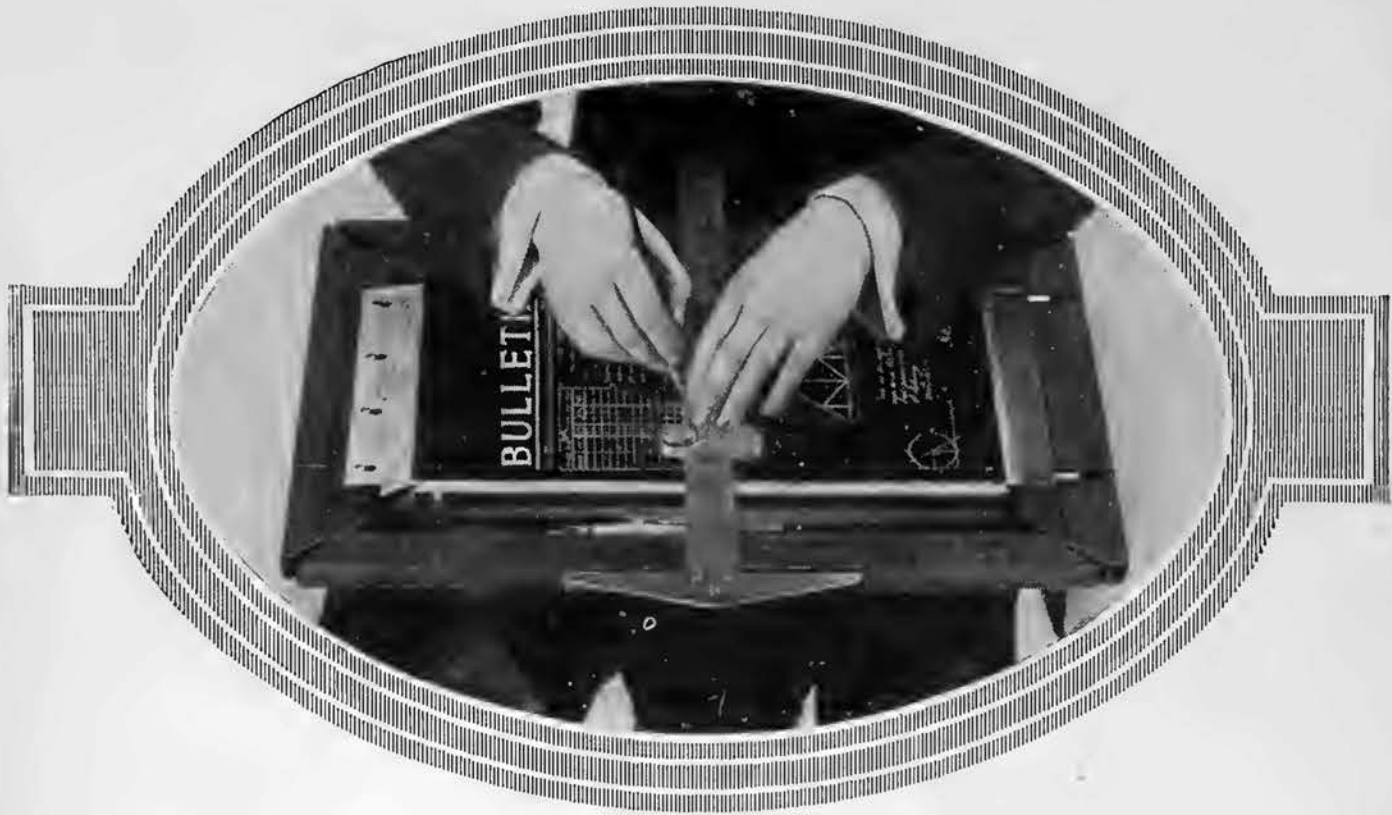
CAUTION: Do not put any oil or grease inside the motor.

To determine the general condition of the motor and also to test the bearings in which the commutator shaft revolves, the following instructions should be followed:

Take off the motor belt, turn off the current and allow the motor to run free from load. The motor, when so started, should pick up speed rapidly, and as it runs the speed is gradually increased until the highest speed is attained. It should then maintain an even speed and run smoothly. If the entire examination of the motor has been conducted in accordance with the directions previously given and if under this final test the motor performs satisfactorily, it will demonstrate its full capacity when again put into service.

If when making this final test it is obvious that the speed of the motor is not what it should be, or if it is observed that the bearings have been damaged and consequently heat and interfere with the motor speed, the bearings will have to be repaired, which can be done only at the factory.

For Reference Chart, showing all parts of the Mimeograph, see page 6.



Chapter 21

The Edison-Dick Mimeoscope

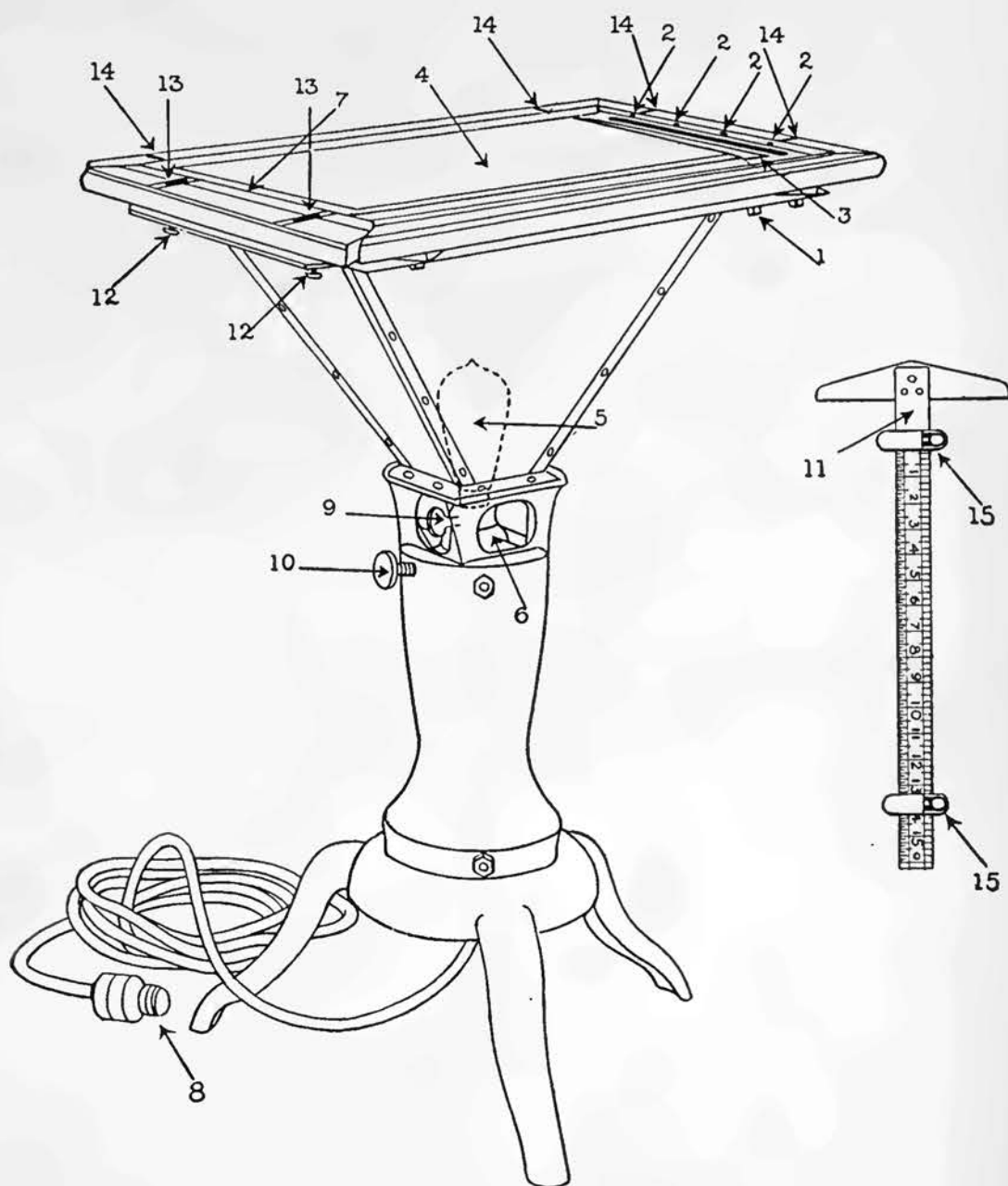
Instructions for Operating

To properly understand these instructions read them consecutively, as certain principles, having been once explained, are not referred to in subsequent directions.

The equipment included with the Mimeoscope consists of one each of the following:

Universal Scale Sheet	No. 405 Flat (Loop) Stylus—for plain lines
Combination T-square	No. 405-B. Small Flat (Loop) Stylus—for finer plain lines
Combination Beam Compass	No. 406 Wheel Stylus—for plain lines
Small-Circle Ruler	No. 407 Wheel Stylus—for division lines
Dermatype Handy Roller	No. 408 Wheel Stylus—for dotted leader lines
Set of Blotters	No. 410-S Sharp Stylus—Ball-Pointed
Bottle Oil	No. 410-XS Extra-Sharp Stylus—Ball-Pointed
Small Piece of Perforating Silk	No. 410-XXS Needle-Point Stylus—Ball-Pointed
Set of Guide-Line Sheets	Flexible Writing Plate
Book of Directions	Envelope containing Gummed Stickers

Reference Chart of Mimeoscope Parts



Following List Applies to the No. 1 (illustrated hereon) or to the No. 2 Mimeoscope

- | | |
|------------------------|-----------------------------|
| 1—Wing Nuts | 8—Electric-Cord Plug |
| 2—Stencil Buttons | 9—Switch Button |
| 3—Glass-Plate Clamp | 10—Large Thumb Nut |
| 4—Glass Plate | 11—Combination T-square |
| 5—Electric Lamp | 12—Stencil-Clamp Thumb Nuts |
| 6—Electric-Lamp Socket | 13—Stencil Clamps |
| 7—Beveled Wooden Ledge | 14—Limitation Lines |
| | 15—Adjustable Stops |

The Edison-Dick Mimeoscope



Model No. 1—Standard Type

For making stencils for Mimeographs Nos. 78, 77, 76 and 75. (Printing capacity $7\frac{1}{4}$ x 14 inches or less.)

What the Mimeoscope Is

THE Edison-Dick Mimeograph equipment is not considered complete—for most users—without the Mimeoscope, an adjunct for the production of drawings, commercial forms, music, etc., and with it the range of Mimeograph stencil work is greatly enlarged. The Mimeoscope is an electrically illuminated drawing table by means of which tracings may be easily made from original drawings (or original work executed) on the Dermatyp stencil paper. Typewriting and handwriting may be added to the same stencil and the whole rapidly reproduced in any quantity on the Mimeograph.

What It Does

The Mimeoscope's "Field of Usefulness" includes the following classes of work. The list is merely suggestive; there is practically *no limit* to the variety of work that can be done:

Ruled Office, School and Factory Forms, with typewritten, hand-lettered headings and column designations.

For Reference Chart, showing all parts of the Mimeoscope, see page 52.

Outline and Detailed Commercial Illustrations for use in circular advertising, frequently adapted and traced from illustrated sheets.

Mechanical Engineering and Architectural Drawings, generally reproduced by blue-print methods, are now being supplanted by mimeographing, especially in technical colleges and manual training schools, as a much quicker and less expensive process affording more distinct and legible work.

Line Illustrations in School Work—of an unlimited variety, including examination and daily exercise papers, map work, drawing lessons, music, entertainment announcements, programs, tickets, etc., etc.

Real Estate Plots, Land Survey and Road Maps, etc.

Scientific and Statistical Sheets, Charts and Diagrams.

Card Index Record Cards, Post Cards, etc.

Fashion Model Design Work—for the cloak, suit and millinery trade, etc.

Cartoon Work, Art Studies, and Outlines for Coloring (mimeographed), for correspondence instruction purposes.

And for a great variety of other classes of work.

Instructions covering all such work as the above is given in the pages that follow.

Its Description in Detail

The Mimeoscope, as seen from its illustration (page 53) is compact, sturdy and built to endure. It is a glass-top drawing table, with extending side-frame pieces which are properly squared for use with the T-square as is a draftsman's drawing board. The top is of heavy plate glass with frosted finish, over which is laid a transparent flexible writing plate (see page 58). A 60-watt electric lamp is so placed at the apex of an inverted pyramidal reflector that all its rays are distributed without shadow over the drawing surface. An electric extension cord with standard plug permits attaching to any lamp socket. Stencil buttons are fixed in position for attaching the stencil sheet above the flexible plate, and provision is made for the retention of the stencil backing sheet for subsequent typewritten work.



MIMEOSCOPE No. 2
Extra-Large Size.

This size is required for making stencils for the large Mimeographs Nos. 79 and 80. Printing capacity 11 x 16 inches and 14 x 20 inches, respectively. Equipped with two 60-watt lamps and switches.

The top of the Mimeoscope may either be locked in a fixed position or may be released and revolved on its base at will to any position most convenient for work. An equipment of the drafting tools needed make the outfit entirely complete.

When the tracing method is employed, the ruled form or drawing to be copied is placed beneath the flexible writing plate, while on it is laid the blue dermatype sheet. The electric rays, then being projected through both copy and stencil sheet, bring into view every detail of the form or design as clearly as though drawn on the stencil surface itself. The operation of tracing over these lines with a stylus makes a finished stencil.

To Assemble the Mimeoscope

After the Mimeoscope has been removed from its case, loosen the two wing nuts (1) found under that end of the wooden frame where are located the four stencil buttons (2). Now push aside the glass-plate clamp (3) and thus release the glass plate (4). Remove the packing from about the glass and lay the plate to one side. Remove the packing from the electric lamp (5) and screw it into its socket (6) within the pyramidal reflector. Then replace the glass in the position in which it was originally packed, press it toward

For Reference Chart, showing all parts of the Mimeoscope, see page 52.

the lower end of the frame and fit it under the beveled wooden ledge (7) so that it rests upon the bent-up edge of japanned sheet steel found immediately in front of ledge (*Note*). See that the glass plate is centered laterally. With one hand hold the movable glass-plate clamp firmly against the upper edge of the glass and with the other hand tighten the wing nuts underneath the frame which were formerly loosened. Screw the plug (8) at the end of the electric cord into an electric-light socket, turn on the current at the socket and also at the switch button (9) just below the Mimeoscope electric lamp. The glass plate should now be illuminated. The equipment includes a 60-watt, 110-volt lamp (or 220-volt if specified in order).

WRONG-METHOD RESULTS

Note. If not thus properly resting on the metal edge, the surface of the glass plate will be below the level of the wooden frame, and, therefore, the T-square cannot evenly rest upon the surface of the stencil sheet for accurate stencil-making.

To Prepare the Mimeoscope for Use

Place the Mimeoscope near a table or desk to provide a convenient place for working tools and materials, and as far from the prevailing light as the connection cord will permit, to assist in making the illumination within the Mimeoscope sufficiently penetrating to sharply define the work on the stencil sheet.

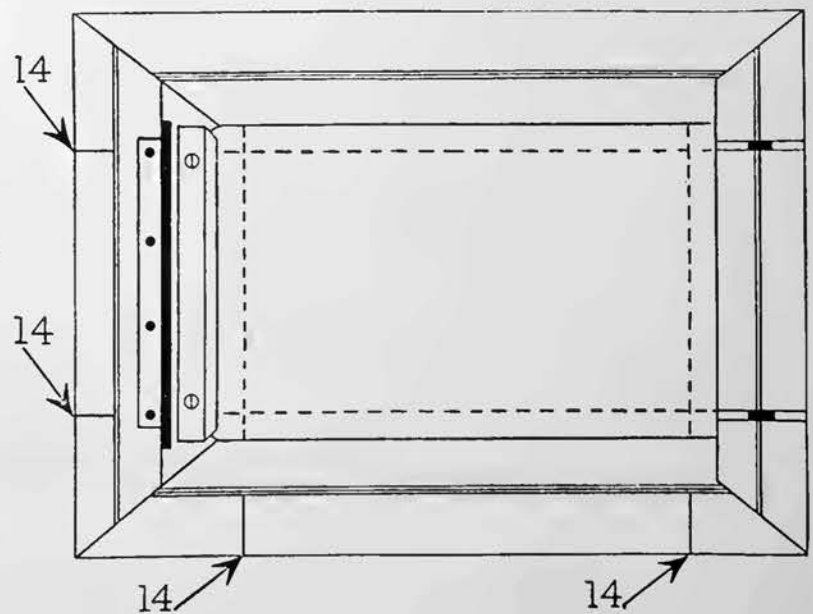
Release the large thumb nut (10) permitting the top to revolve.

Draw upon the glass plate the "*Limitation Lines*." Place the T-square on the white limitation lines (14) found on the upper end and left-hand side of the wooden frame, and with a lead-pencil extend them entirely across the glass plate. The rectangular figure thus drawn will represent the limit of printing capacity ($7\frac{1}{4} \times 14$ inches) of Mimeograph models 78 and 77. For other models the penciled lines should be located according to their printing area. If any special length roller is used on the Nos. 78 or 77 the side limitation lines should be positioned according to the roller length (*Note 1*). Copy should not be made wider than the length of the roller.

Over the glass plate attach the "flexible writing plate" (see page 58). Either side may be used for writing and drawing. Dermax one entire side of the flexible plate; then blot off the excess and place the dermaxed side against the glass plate (*Note 2*), center the flexible plate (laterally) and secure it in position by inserting its lower edge under the two stencil clamps (13) and tightening up the stencil-clamp thumb nuts (12). In so doing, see that the clamped edge of the flexible plate is located at least $\frac{1}{8}$ -inch away from the higher portion of the wooden frame on which it rests, in order that it may, if necessary, be subsequently adjusted to overcome any bulging of the flexible writing plate. The Mimeoscope will then be ready for use.

Limitation Lines (14)

The dotted lines represent penciled border lines showing printing capacity of Mimeograph



WRONG-METHOD RESULTS

Note 1. Estimating the size of a form or drawing to be made upon the stencil, unaided by the proper Limitation Lines, would be likely to produce a stencil that could not be completely printed.

Note 2. If the under side of a new flexible writing plate is not dermaxed the plate will warp and spring away from the glass.

For Reference Chart, showing all parts of the Mimeoscope, see page 52.

Chapter 22

The Mimeoscope Equipment

The Ball-Pointed Styli

For Handwriting, Sketching, Music,
Maps, etc., on Dermatyl Stencil Sheets



Furnished in three degrees of sharpness:

No. 410-S —Sharp, Ball-Pointed Stylus.

No. 410-XS —Extra-Sharp, Ball-Pointed Stylus.

No. 410-XXS—Needle-point, Ball-Pointed Stylus.

Stylus No. 410-S

The No. 410-S “Sharp” Stylus (with the red-tipped handle) is the least sharp of the above-mentioned styli, and on this account requires somewhat less care in handling than the others. It is the stylus generally used for writing signatures. It is especially intended for those who write a heavy hand. Pronounced effects in free-hand sketching and drawing can best be accomplished with this stylus.

Stylus No. 410-XS

The No. 410-XS “Extra-Sharp” Stylus (with the yellow-tipped handle) is a ball-pointed instrument somewhat sharper than the 410-S above described. This medium-point stylus is the one most used, it being adapted for general handwritten work, music, shorthand notes, maps and free-hand sketches, etc. It may likewise be used for work where certain portions require strong-line effects or heavy shading. If the lines are not sufficiently heavy, repeat the stroke.

Stylus No. 410-XXS

The No. 410-XXS “Needle-Point” Stylus (with the blue-tipped handle) is for special purposes. Fine drawing details require this stylus, and it will also be found most suitable for use in line development and retouching. This stylus has an especial adaptation for technical work having small signs and characters. Employ it for delicate work only.

Whether used in drawing or writing it should be handled with a very *light touch*; for with this instrument, just as in the case of a fine-pointed pen, very little pressure is required. Properly handled, its fine ball-point will ride over the stencil fibers without pulling.

Flat (Loop) Stylus No. 405



This tool is for ruling; it rides smoothly over the stencil sheet and produces clear-cut lines. Cross-lining of any kind done with it will show less distortion at the points of crossing than would be the case if a round-pointed stylus were used. If a heavy ruled line is desired do not endeavor to produce such an effect *at one heavy stroke*. Rather, repeat the stroke in the same direction, “developing” the line to the width required, otherwise there is danger of severing the stencil-paper fibers. The writing plate offers a positive resistance that must be taken into account. *This stylus has an advantage over the wheel stylus, No. 406, described on following page, for short lines and small details.*

Small Flat (Loop) Stylus No. 405-B



Finer lines can be made with this stylus than with No. 405. It produces clear, sharp lines and is adapted for use in crosshatched and shaded portions of free-hand drawings where a round-pointed stylus, with its greater tendency to distort the stencil, would give a less finished result.

Wheel Stylus No. 406



This plain wheel stylus is also an efficient implement for ruling straight lines. With it, crossing and recrossing of single and double lines can be done without distorting the stencil, and the lines it produces are especially smooth. Lines made with it can be strengthened or broadened by a repetition of the stroke, as recommended in the case of the flat styli previously described. It is indispensable in ruled form work.

Wheel Stylus No. 407



This wheel stylus produces the "dash and dot" line so much used in mechanical engineering and architectural drawing. To insure the best results press firmly, as the stroke may not be successfully repeated.

Wheel Stylus No. 408



This dotted-line wheel stylus is used for a variety of ruled form work. *Press firmly* to insure a decided effect. Faint dotted lines in mimeographing are unattractive and have the additional disadvantage of becoming less pronounced when making long runs.

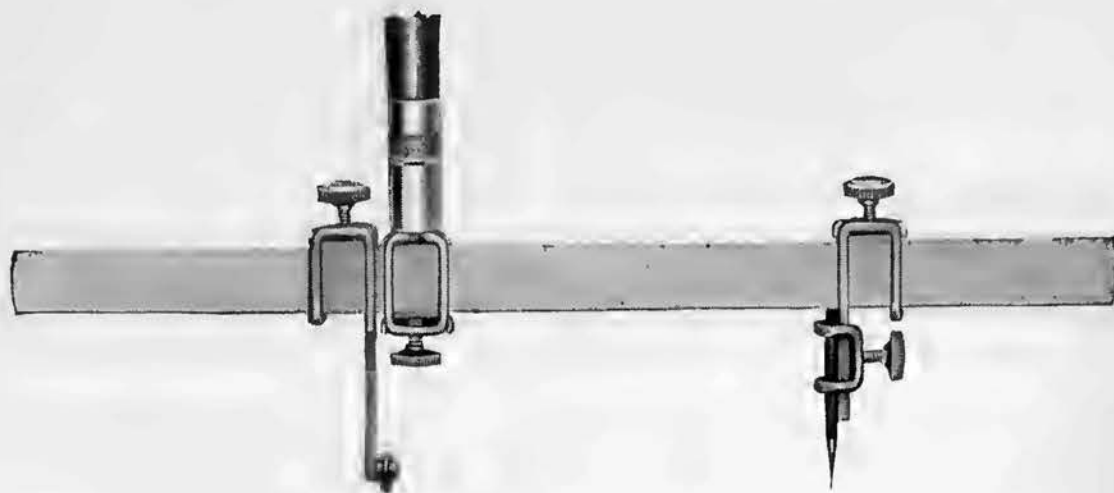
Regarding the Wheel Styli

Wheel styli obviate the danger of distorting the stencil fibers. However firmly applied, the pressure is always straight downward and they roll with smoothness, giving a finish to the stenciled lines. In the use of wheel styli the following precautions *must be observed*:

1. Keep the stencil sheet freely dermaxed.
2. The bearing of the wheels must be kept free from dermax, and *well oiled*.
3. Grip stylus firmly in the hand, and apply a uniform pressure throughout the stroke.
4. Place the flat side of the wheel against the ruler edge, and *hold* it there firmly in ruling.
5. Always incline the stylus handle slightly away from the ruler.

For Reference Chart, showing all parts of the Mimeoscope, see page 52.

Combination Beam Compass No. 605



The combination beam compass is for drawing circles and simple curves on Dermatype stencil sheets. It has a small wheel stylus on one leg and an adjustable steel center-point on the other. Its rigid structure permits extremely accurate work.

The movable handle of the compass should be tightened on the beam, in close association with the wheel stylus to afford the proper purchase, as will be evident in using it. It is necessary that the center-point be kept sharpened in order that it may be set into the surface of the flexible writing plate securely and thereby prevent slipping. In adjusting the center-point to the compass see that it extends downward to the level of the lower edge of the wheel stylus.

The best position in which the compass can be held is with the upper end of the handle resting against the center of the palm of the hand, the hand itself maintaining a light hold on the instrument, with the handle of the compass leaning in the direction in which the line is being drawn.

Make the sweep of the compass over the line lightly, two or three times, thus developing it to any effect that may be desired. To make larger or smaller circles from the same center or to make a wider line, loosen the thumb-screw above the center-point leg and move the position of the beam without disturbing the center position of the point itself; then retighten the thumb-screw and proceed as before.

The bearing of the wheel stylus must be well lubricated to run freely.

The stencil surface must be thoroughly dermaxed in order to use the compass successfully.

To make very small circles with the compass, interchange the position of the handle and the wheel leg.

The Small-Circle Ruler



This ruler is intended for use in describing very small circles on the stencil sheet. It demands less skill than is required to handle the beam compass for the same purpose. It is formed of a flat piece of metal in which are punched graduated round holes. Any one of the ball-pointed styli may be used to rule within the openings the size circle desired. The ends of the ruler are shaped to provide a means of holding and lifting it with the thumb and fingers held in an extended position. Its straight edges will be found convenient for ruling the details of a drawing.

The Flexible Writing Plate

This important part of the mimeoscope equipment, intended to lay over the glass plate, is a flexible and semi-transparent sheet of celluloid composition, specially devised for dermatype stencil work, affording a suitably roughened and resistant surface for effective

stylus work on the stencil sheet. It is reversible, but if from wear or damage both surfaces become too smooth, a new plate should be obtained. Occasionally clean it with hot water and soap that is free from grit. Gritty cleaning powders or alcohol used as a cleaner destroy the special surface of the plate. If a new plate bulges or curls, reverse it so that the opposite side will become relaxed by the dermax and lay flat upon the glass.

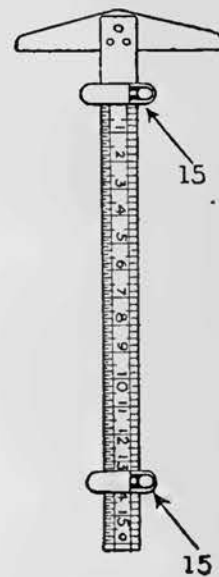
The Universal Scale Sheet

This transparent celluloid scale sheet is lined for many different kinds of work. When inserted between the glass surface and the flexible writing plate it should be so positioned that its margin lines are parallel with the penciled limitation lines. Its use insures accuracy in ruled form work or mechanical drawing and in making stencils of staff lines for music, or scale paper for drawing purposes, or guide lines for either handwritten matter or any special work. It should be kept dry. Dermax will tend to efface its printed lines.

The Combination T-Square

This T-square has adjustable stops which prevent the ruled lines from running beyond their proper terminations.

To move a stop on the T-square, press the button (15) with the forefinger, hold the stop between the thumb and the second finger and slide it to position. Occasionally wipe the edges of the rule with an oiled cloth.



Mimeograph Perforating Silk

A small piece of this silk is furnished with the Mimeoscope. Pieces of larger sizes may be purchased. This silk will be referred to frequently in the instructions that follow.

In work requiring its use it is laid and held over the surface of the stencil sheet and the stylus work is done through its mesh. The silk affords protection to the stencil sheet, and distortion is thus avoided. Silk in use will become more or less wrinkled. Dermax will relax the wrinkles. The silk is usable until its mesh is destroyed by wear.

Chapter 23

Classes of Work

RULED FORMS

When Tracing from a Copy

THE dimensions of the copy must be within the printing capacity of the Mimeograph. If it is not so originally, it must be condensed to meet this requirement by narrowing columns, abbreviating box-headings and titles, etc. Sketch on the copy the necessary corrections so that they may be traced in proper location on the stencil sheet.

The Typewritten Work

In form work, wherever possible, titles, column headings or other descriptive matter should be typewritten upon the stencil sheet *before* the tracing is commenced.

Establish the exact location of all typewritten words by placing the copy of the form be-

tween the blue Dermatype sheet and the backing, properly positioned laterally and as to height, and make such marks upon the surface of the stencil as will indicate clearly all starting points and endings of the typewriting required. (Small right-angle marks best serve the purpose. For such marking employ a smooth-point pen and red ink, or if extreme distinctness is desired use a red "china marking pencil"—obtainable from the stationer.)

Remove the "copy," then dermax and typewrite the stencil sheet as indicated (see Steps 5 and 6).

Attach Stencil Sheet to Mimeoscope

Bend backward the button-hole stub of the stencil sheet at the perforations and crease it firmly. Take hold of the lower end of the blue Dermatype sheet with the right hand and with the left hand insert the backing sheet only (its lower end foremost) through the slot found between the buttons and the glass-plate clamp, lowering it until the stub and blue Dermatype sheet lie flat. This is done to preserve the backing sheet in prime condition for adding further typewritten matter when necessary. Attach the stencil stub to the buttons and use the handy roller to roll up the stencil sheet before dermaxing. Apply the dermax to the surface of the writing plate and unroll the stencil sheet over it as directed on page 11, Step 5. To better prepare and soften the Dermatype sheet for stylus use, it is advisable to dermax the top of the blue sheet also. Permit the dermax to remain about a minute and then blot off the excess.

Position the Copy for Tracing

Insert copy of form, face upward, between the glass surface and flexible plate, so that the typewritten portions will be in their proper location and registered with the spaces they are to occupy after the ruling has been done. As the work progresses occasionally redermax and blot off excess in order to preserve the sheet in the best workable condition. Using wheel stylus No. 406 (see page 57), begin at the top of the sheet, ruling the horizontal lines first, and work downward. Substitute dotted wheel stylus No. 408 (see page 57) when a lighter effect is desired.

Set one T-square adjustable stop (15) about one-quarter inch before or ahead of the starting point of the lines to be drawn and the other one-quarter inch beyond their termination. Verify after the first line is drawn, and move stops, if necessary, for exactness.

FREE-HAND WORK

The *fundamental principle* involved in the execution of free-hand drawing and handwriting on the stencil sheet is explained in the following instructions, which must be complied with *exactly* to obtain complete success.

In free-hand work involving frequent line crossing *the stencil sheet must cling to the flexible writing plate* so as to permit the stylus to pass over the stencil sheet without disturbing its fibers and causing ragged lines. To insure this condition dermax must be sparingly spread on the flexible plate and a short time allowed for absorption by the Dermatype sheet. If as the work progresses the Dermatype sheet gradually becomes dry, redermax the top side and blot off the excess deposit *immediately*. If the freshly applied dermax be allowed to remain upon the stencil sheet it will penetrate to the plate and thereby unseat the stencil. Redermaxing and blotting off should be confined to that special portion of the stencil sheet then being used. Unnecessarily dermaxing completed portions of the work has a tendency to narrow the width of lines already drawn. All lines should be made reasonably open as a safeguard against closing that may subsequently follow redermaxing.

Experience will enable the operator to maintain the Dermatype sheet in proper condition to produce the best results. When a thorough knowledge of the behavior of the stencil material is acquired, the operator will understand the necessity to avoid dermaxing so excessively as to cause the stencil sheet to become loosened from the writing plate. Good work can only be produced when the surface of the flexible writing plate is in good condition (not worn smooth), otherwise the stencil sheets will not properly adhere to it. The stencil sheet should not be raised from the plate until the work is completed.

For Reference Chart, showing all parts of the Mimeoscope, see page 52.

To Make Hand-Written Stencils

Attach, dermax and prepare stencil sheet as directed on page 60. The standard ruled sheet of guide lines with the equipment may be used if desired. It may be inserted and fastened beneath the flexible writing plate. Use stylus No. 410-XS (yellow tip), or, if a lighter line is desired, then stylus No. 410-XXS (blue tip). Select stylus best suited to the work and uses. If due pressure is not applied to the stencil surface the stroke of a coarse stylus will not be effective. The pressure applied to any round-point stylus should depend upon the degree of its sharpness. The medium point No. 410-XS is recommended for general work. The stroke should be easy and natural. On signatures and display words greater prominence is given by retouching.

ILLUSTRATIONS

To Make a Stencil of a Print or Drawing by Tracing

Lift the free end of the flexible writing plate. Place the design to be copied on the glass plate, face upward, within the prescribed limitation lines. In calculating the proper distance from the top of the plate to determine the height at which the print will be made upon the impression sheet, consider the top pencil line on the glass plate as approximately the top printing line of the Mimeograph. Also plan the location of the drawing with reference to the size of the sheet of impression paper to be used. The T-square will be helpful in positioning the copy. Attach the copy to the glass plate, by the use of paste or gummed paper, at the corners only. Replace the flexible plate so it covers the glass and the copy. Attach and prepare the stencil sheet as directed on page 60. Dermax the top surface of sheet and blot off the excess.

Intensify Copy Where Needed

If the lines show indistinctly through the stencil sheet the original copy may be intensified by the application of oil to its surface. For this purpose a small bottle of oil is furnished. Any light-weight oil, or even kerosene, will serve this need. Apply the oil with a small piece of cloth, using a sufficient quantity to have it strike in deeply, and then wipe off the excess.

Selection of Styli

Each stylus has its special adaptation and, therefore, no fixed rule can be made governing selection. An intricate drawing may demand the employment of all the styli in the set. In considering the sharpness of the stylus to be chosen for any part of the work remember that the printed line, when the stencil is mimeographed, will show broader than the operator is likely to expect, judging from the appearance of the line when the stencil is on the mimeoscope. Beginners almost invariably press harder than is needed and thus produce a ragged effect in their work. For any close parallel-line shading, or crosshatching, whether ruled or free-hand, stylus No. 405-B should be used.

The Solid Tones and Backgrounds

A solid color effect over a limited amount of surface may be produced by a "back and forth" motion of the coarsest rounded point or the heavier loop stylus, taking care not to disturb the stencil fibers. This heavy effect and background work may be best done by holding a piece of mimeograph perforating silk on the Dermatotype sheet and using the stylus over it. Stretch the silk tightly and use more pressure on the stylus than would be required without silk.

Note—To press extremely hard in shading a surface will injure the surface of the writing plate.

The Stippled Background

A half-tone effect may be produced by holding one of the duller round-pointed styli in a perpendicular position and repeatedly tapping or "stippling" the surface to be shaded.

For Reference Chart, showing all parts of the Mimeoscope, see page 52.

The Screenlike Background

If a stencil be in other respects completed and raised from the plate, a screen-effect background may be very quickly produced over any area desired by inserting between the stencil and the writing plate a piece of fine wire screening or "hair cloth" of similar mesh. Rubbing over this with the heavier-point stylus or other blunt rounded-point instrument should be done only through the perforating silk overlying the stencil sheet.

Comparing with the Original and Adding Finishing Touches

Before lifting the completed stencil from the writing plate, first unclamp the lower end of the writing plate and remove the original copy from the glass and compare it carefully with the stencil. If any of the finer details are found to need retouching, do it with No. 410-XXS blue-tipped stylus and the small-loop stylus, and, if feasible, without redermaxing.

AIDS IN MECHANICAL DRAWING

If a design being traced involves "mechanical drafting," such as is required in making stencils for manual training, engineering or architectural work, all the facilities ordinarily required are afforded by the accurately squared frame of the Mimeoscope, combination T-square, beam compass and other specially designed tools. Other helpful tools, such as triangles, French curves, etc., may be procured locally if needed.

PENCIL SKETCHING ON THE GLASS

The ground-glass surface will be found well adapted for sketching or laying out an original drawing with a view of making a stencil. After the stencil is completed a damp cloth will serve to erase the drawing from the glass.

When using a pencil compass directly on the glass plate, provide a center by pasting a small piece of cardboard on the glass to receive the point. Remove it when the drawing is completed. The beam compass may be used for such purpose by tying to its wheel stylus leg an ordinary pencil and extending the center-point to a corresponding length.

CARE OF THE MIMEOSCOPE

When through using the Mimeoscope, wipe off the glass top and writing plate and the surrounding depressed surfaces with a dampened cloth. Occasionally wipe the dust from the interior reflector surfaces and electric lamp. The wooden frame of the Mimeoscope and its japanned finish can be kept in good condition by use of any furniture polish. Do not use alcohol for this purpose. Keep the rubber cover spread over the device when not in use.

CORRECTING ERRORS WITH MIMEOGRAPH VARNISH

Care and accuracy save time in stencil-making, and avoid the need of making corrections, but for emergency use, varnish for obliterating errors is supplied with the Mimeograph (see page 13, Step 9, in regard to No. 260 and No. 262 and cork). If an error is made and, as is usual, a correct line is required to supplant the line to be removed, do not attempt to varnish out the error until the stencil has been completely made and can be raised from the plate. Then proceed to obliterate the error by first inserting a piece of paper between the stencil sheet and the flexible writing plate to prevent varnish getting on the plate (from which it is difficult to remove). Next, by blotting, make the section of the stencil to which the varnish is to be applied as dry as possible, for varnish will not adhere to a moist surface. When the stencil has been so prepared, brush a thin coating of mimeograph varnish over the lines to be erased. Correcting with varnish should be done over the illuminated top of the Mimeoscope. If the writing plate should become accidentally spotted with varnish it must be removed immediately with hot water and soap free from grit. If, in free-hand work, intricate line work, or especially in handwriting, the above procedure cannot be advantageously followed and it becomes necessary to completely obliterate errors and then immediately make correc-

tions where the varnishing has been done, a special method must be employed. Stylus work cannot safely be done directly on a varnished surface. In such a case raise the stencil from the plate, insert the separating paper, dry the top of the stencil by blotting, brush on a thin coating of varnish, allow time for the varnish to partially set, remove the inserted paper, dermax the varnished surface and place over it a piece of mimeograph perforating silk (see page 59). Hold the silk, tightly stretched, while corrections are being made with the stylus. Thus working through the silk apply considerably more pressure than would otherwise be required. After removal of the silk any necessary retouching of the correction can be done with the finer-pointed styli.

MUSIC STENCILS

Tracing from a Copy

A music copy of a size within the printing capacity of the Mimeograph is easily traced on the Mimeoscope.

Raise the flexible writing plate and position the copy upon the glass surface in accordance with the location the prints are to occupy on the impression paper, using the T-square to insure the correct direction of the staff lines. With adhesive slips of paper secure the copy at the corners of the glass surface, using care not to shift its position, and then lower the flexible writing plate upon it. Attach the dermatype sheet, dermax and unroll it over the plate in the usual manner. Also dermax the top surface of the stencil sheet and blot off the excess.

If the copy is sufficiently distinct to show the staff lines clearly through the blue stencil sheet, use the medium-point (yellow tip) stylus and at once write the clefs, signatures, notes, rests, etc., and then proceed to draw the staff lines firmly, as the last operation. For this staff-line work use wheel stylus No. 406, and the T-square with its stops properly positioned. Complete one staff at a time. Before starting on each staff, redermax and blot off the limited surface which is to include only the staff on which work is to be done.

Copying from Sight, Without Tracing

Place the universal scale sheet between the glass and the writing plate, with its side margins parallel with the limitation lines and fasten both with the stencil clamps. Attach and properly prepare the stencil sheet, remembering to dermax the top surface also. With wheel stylus No. 406, and the T-square with its stops positioned, proceed first to rule the staff lines upon the stencil sheet. Select from the groups of staff lines shown on the scale sheet those suitably spaced to provide for the required number of lines of words (typewritten or handwritten) or for music without words, as the case may be. Conform the full-length staff lines to the short music guide lines on the scale sheet by carefully tracing their indicated positions, as the lines are drawn. Rule firmly with wheel stylus to secure strong, enduring lines. If words are to be typewritten, the stencil sheet should now be detached from the Mimeoscope, the backing sheet properly dermaxed, and, after typewriting, replaced on the Mimeoscope for completion of the music. The lines of words should be apportioned to the lines of the staff, and their division into syllables will correctly determine the respective positions of the notes and other characters to be added. If the words are to be handwritten or hand-lettered the stencil clamps should first be released, the scale sheet removed and the clamps again tightened to hold the flexible writing plate only. Use, for hand-lettering, the medium or finer round-point stylus according to the size of lettering or the strength of line desired. Now proceed with the clefs, notes and other characters, and lastly use the loop stylus and small-circle ruler to rule the bars forming the measures.

SPECIAL GUIDE-LINE SHEETS

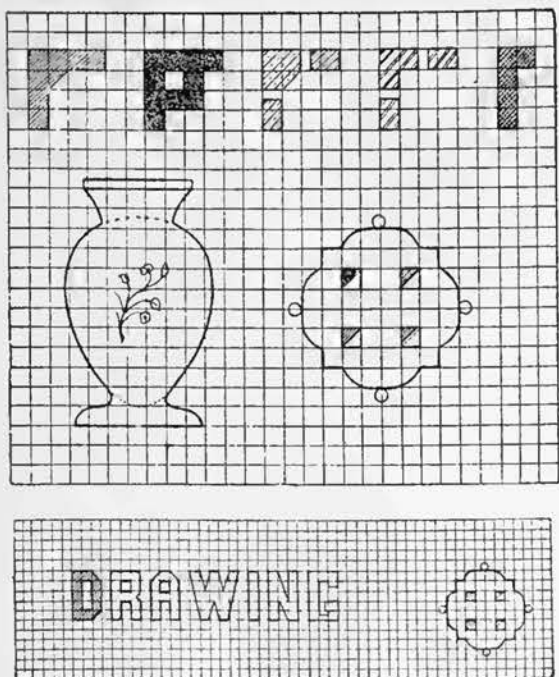
Such sheets are designed for repeated use in mimeoscope work to establish limitations, line spacing, etc. In use these guide-line sheets are placed beneath the flexible writing plate while stencils are being made, similarly to the method of using such sheets of guide lines as are furnished with society stationery. As they are intended for special stencils they must necessarily be made by the user.

For Reference Chart, showing all parts of the Mimeoscope, see page 52.

To make a special guide-line sheet for a particular use, lay a piece of light-weight paper over the universal scale sheet and attach both to the mimeoscope glass plate by means of the stencil clamps (13), omitting the flexible writing plate.

From the universal scale sheet select such measurements or lines as are suited to the specific need, and, with the stops set at proper terminal distances, rule such lines by aid of the T-square, employing either pen or hard-lead pencil. The stencil sheet is not used in this instance.

TO MAKE STENCILS FOR MIMEOGRAPHING SCALE PAPER



There is abundant use for cross-ruled scale paper (as shown in accompanying illustration) in both elementary and technical school work, as well as in the commercial arts. It is usually an expensive item and therefore to mimeograph such paper effects a considerable economy, especially for schools.

Directions: Properly position the universal scale sheet beneath the flexible writing plate. Attach and prepare stencil sheet as directed on page 60. In scale-sheet work absolutely straight-line results must be obtained. Set the T-square stops to suitably limit the horizontal lines, and with the wheel stylus No. 406 draw these lines, first having selected the required dimensions on the scale sheet for spacing the lines apart. When all lines are ruled in one direction, revolve the top of the Mimeoscope to a convenient position and repeat the operation, drawing the cross lines in a similar manner.

Chapter 24

Signatures and Simple Ruling

Signature Plate and Styli are Furnished with the Mimeograph

THESE accessories, which include one writing and one ruling stylus, are supplied for signature writing and for occasional ruling on typewritten forms. They are not offered as a substitute for the complete autographic equipment.

SIGNATURES

For adding signatures to typewritten letters, the stylus supplied, described as No. 410 sharp stylus, best serves the average need. After typewriting the letter, insert the flexible signature plate between the backing and the stencil in proper position for the signature. See that the stencil is laid smoothly over the plate and slightly dermax the top surface of the stencil where signature is to be written. Allow an instant for softening of the stencil sheet and blot off the dermaxed surface. Then with the backing resting on a hard and resistant surface write the signature with such firmness of stroke as an ordinary hard-lead pencil would require. The perforating silk is often used by laying it over the stencil, the writing being done on it instead of directly on the stencil sheet.

RULINGS

Flat (loop) stylus No. 405, supplied for rulings, may be used on the stencil sheet and backing only, in which case it is imperative that the backing rest upon a hard surface.

For further knowledge of the mimeographing art, the Company is at your service, by correspondence.

A. B. Dick Company, Chicago.

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