
a Weekly journal of practical information in art, science, mechanics, chemistry and manufictures.

| NEW YORK, DECEMBER 26, 1863. |  | NEW YORK, DECEMBER 26, 1863. |  |  |  |  |  |  |  |  |  |  |  |  |  |
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(NEW SERIES.)

Improved Convertible Fence.
The object of the inventor in designing this structure has been to obtain one that could readily be converted into many different kinds of fences, and also be applied to other uses not generally attainable in structures of a similar nature. In Fig. 1 we present a view of the fence as arranged in straight panels; in Fig. 2 the same pieces or parts of the fence are shown in the form of a rail, or worm fence, as It is sometimes designated ; and Fig. 3 is a representation of a shed or hut, also built up from the

The fence is made in sections or panels, and it will be seen by looking at the engraving that several panels are joined together by the diagonal braces, C. These braces are supported by a rod, $D$, running through the tops of the adjoining uprights, and a cross-stay, E, is further pinned to each leg of the braces in the manner shown. It will also be seen that the bars of each panel are embraced by the cross-stay, E , in a notch cut to receive them. In this manner the several panels are firmly secured against accidental dislodgement. In the rail plan of
double duty is thus obtained from the parts of which the fence is constructed.
This fence is the invention of H. C. Foote, 127th New York Volunteers, and was patented on Dec. 17, 1861. For further information address the inventor, Company A, 127 th Regiment, N. Y. V., Port Royal, S. C.

## ON PACKING METALLIC RODS.

The rods about steam engines which work through vessels or chambers containing steam, or liquids,


Rig. 2.

same parts as the preceding plans are. The construction of the fence is quite simple, inasmuch as it consists only of a few distinctly different details. Many pieces are required in the aggregate, but the essentially different nature of them is not changed in bnilding the lines of fence herewith illustrated. In the straight panel fence, Fig. 1, the uprights, A, are notched, and the bars, $B$, placed on every alternate notch; these bars are then secured by nails.


## FCCTE'S IMPROVED CONVERTIBLE FENCE.

this fence the uprights are notched in the same manner as the others and the bars nailed to them; the ends of the bars, however, are extended beyond the notched uprights, so as to permit the several panels, or sections, to be set angularly, as shown. When this plan is desired, the braces, C , in the straight plan of fence are omitted, and the caps, F, used instead. In Fig. 3 the house, or shelter-hut, is shown, and to change the fence into this form it is only necessary to remove the braces and separate the panels, then to invert each alternate panel and adjust the ends of the bars thereof opposite the spaces between the bars of the panels which have not been inverted, and to shove the inverted panels along a sufficient uistance to cause the bars thereof to occupy the said spaces, and the posts of each pair of panels to come opposite one another as shown. The panels thus doubled are set up in the form of barracks or a shanty, and are extremely useful for sheltering stock and farm produce in the winter.
These fences can be set up temporarily around the growing crons in the summer season, and, later in the year, when the grain has been harvested, taken down and erected as shown in Fig. 3 ; so that a
are fitted with glands and stuffing boxes in the latter the packing is placed and the gland comp resses it against the rod, so as to form a perfectly steam-tight and yet an easily-working joint. Ail this is well known to mechanics and engineers, but so many plans for and such erroneous ideas prevail respecting the performance of this duty, that we have thought a little discussion on the subject not inappropriate.
To judge from the number of scored, three-sided, bent and otherwise damaged piston and valve rods which we have seen at various times about steam engines, there would appear to be a necessity for some radical reform. To insure ease of action and economy of work, an engine should be very carefully packed, for the absorption of power from this source is enormous, in a large engine, and would scarcely be believed. We have seen engineers in charge of large low-pressure engines take a wrench three feet long in the handle, apparently made especially for the purpose, and heave down the nuts on the standing bolts with main force, merely in order to check the cscape of a small jet of steam. Such practices are reprehensible from the fact that the expenditure
of force to accomplish the desired end is a proof that something is wrong, either in the design of the engine or the execution of the duty discussed. Faulty design may be briefly alluded to ; where piston rods issue through cylinder heads the bottom of the stuffing-box, which is bored to admit the rod, is often made too large; there is too much clearance. No rule can be laid down for the size of the hole; engineering common sense must tell when the aperture is too large or too small ; but from the first evil -too much clearance-many other evils spring. The packing is exposed to an unnecessary pressure of steam, which requires the enormous tension obtained by a long wrench to prevent leakages; it is sooner destroyed by being burned out; in consequence of the friction it necessitates a great expenditure of oil, absorbs power, and is also liable to be drawn in during the down stroke of the piston, and thus cause thrums and ravelings to get under the valves, or make dirt and grit in the cylinders. Un-equal compression of the packing gland, caused by reckless screwing down of the same, together with the use of improper substances, such as old tarred rope, rough coir, or jute, also scant clearance in the cylinder head, and the absence of brass bushes in the same, is the cause of the scratched and damaged piston rods previously spoken of. When a gland is screwed up it should be carefully measured all round so as to insure perfect accuracy. A rule will not do; a pair of inside calipers should be employed and the engineer should set the gland as accurately as if he were about to re-bore it in the lathe ; then it will be certainly right, and the pieton rod will be clean, bright, smooth and true, as it should be.
A kind of packiug in very general use is jute ; this is a very good substance when braided into an eightstrand, square gasket, and well slushed with tallow. Some men use a central core of India-rubber, but this is not necessary, in our opinion; another kind used for packing small rods is a piece of square rub-ber, well overlaid with cotton lampwick; this kind has gone out of favor lately, probably from the high price of the material. Still another sort is a compound of india-rubber and brass wire gauze, for which a patent has been issued and whitch is highly spoken of. Metallic packing has also been used in connection with small rods with some success ; indiarubber in the form of several layers of canvas coated with it, rolled up like a sausage, has also been employed as packing, and is, as we can testify, a most xcellent article.
It matters little what the nature of the material is, so that it is soft, close in texture, and uniform in quality, without knots or hard layers. Jute is very ofteu full of grit and should be washed before it is used; care ought to be taken to keep gaskets off the Hoo: when they are being braided, otherwise the rod will be scratched by the dirt accumulated. If the bottoin of the stuffing:box is too large, from wear or design, take two turns of lead pipe, or such a length as will encircle the rod twice, draw a gasket through the bore of it, and drive the pipe down about the rod with a wooden drift ; no other material than wood should ever be used in packing an engine, even to the mallet which drives the packing home. The packing should be renewed as soon as it is worn out, which can be told when the amount of pressure required by the nuts to preserve the joint is too great, and by leakage. When an engineer cannot screw down the gland on a 100 inch cylinder with a wrench twenty inches long in the handle, and by the force of one hand, or arm, there is some defect or fault that needs remedy. Of course far less power is required when the rods are smaller. Smooth and true rods and tight joints are the pride of every good engineer, and no pains should be spared to have every engine in such a condition.

## The Ingenuity of the Japenese.

They are bold, courageous, proud, and eager after every kind of kuowledge. A gentleman gave a workmin a Bramsh lock to put on a box; it was not discovered until some time afterward, and only then by the absence of the name, that the lock had been imitisted, and, as the workman confessed, the original kept as a pattern. There is a steamer (paddle), which used three years ago to run between Nag ${ }_{3}$ saki and Jeddo, 600 miles, whose engines and boilers, and evarg part of her machinery, were made
of copper. She was built by a doctor in Jeddo, whose only guide was a Dutch description of a steam engine, translated into Japanese. An American gunnery officer was sent over in 1859, in the Powhatan, to teach them gunnery. He was courteously received, and then taken over the arsenal at Jeddo He returned to the ship, saying " he had been taught a lesson instead of having to teach." In many of the arts and manufactures they excel us ; their beautiful castings in bronze would puzzle the most experienced European workmen. Specimens have been shown to clever workmen who have confessed they could not imitate them. Though they do not know how to blow glass, there are samples which would rival in brilliancy any made in England. The French minister had a large ball, so clear, and of such perfect color, that he believed it to be a gigantic sapphire, and bought it for a good round sum. Their paper imitations of leather are perfect ; their papor waterproof coats are bought by the captains of ships for their exposed boats' crews; their own clocks are good, and they have imitated our watches; they walk about with "pedometers" attached to their belts, and they are not backward in copperplate engraving and perspective. Their china is far superior to the Chinese. The country abounds with coal, though they only use that found close to the surface; but even that, a sort of bituminous shale, is good. In gold and silver they could almost rival Mexico and Australia ; iron, copper, and tin are found in profusion. An Englishman at Yokohama gave a Japınese a piece of English cotton shirting ; in a few days the man brought back two pieces, and the former had much difficulty in saying which was his, so closely had it been imitated. In fact, they are a people who want for nothing but teachers.

## Incendiary Cotton.

The Providence Journal speaks of a new danger to cotton factories from the use by the Government of a small steel point, by which the tag marked "duty paid" is attached to bales. Several mills have had a very narrow escape from fire, where these have got into the machinery. The Providence Bullelin says :"The cloth tag or label, on which are stamped 'duty paid,' the weight of the bale and other marks, is connected by a brass wire about eight inches long, with a piece of steel shaped much like an arrowhead. This steel is driven into the bale, and the sharp point-like barbs at the base render it impossible for it to work out of the cotton. It thus holds the tag securely, if the brass wire does not break. But, unfortunately, in a great many $c_{3}$ ses the wire does break, and the piece of steel is left in the bale. When the cotton with this little steel point, which is narrow and less than two inches long and so escapes attention, is put in to the lapper, the chances are that the steel strikes fire and ignites the cotton. Several cases of such ignition have recently occurred in this vicinity, and some mills have had narrow escapes. The Government officers should at once discontinue the use of this 'incendiary document.' ',
[There is no necessity for using such a clumsy de vice ; there are much better and far simpler ones invented and for sale. - Eds.

## Nitrous Oxide Gas in Surgery.

Messrs. Editors :-It was not my intention to raise any discussion on the properties of the protoxide of nitrogen; but in the different letters which have appeared on the subject in answer to my communication no one has controverted the facts I advanced. I believe in the anesthetic properties of this gas and that thousands of teeth have been extracted from persons while under its influence; but I have said (and repeat) that its uses are dangerous. And my opinion is confirmed by the authority and experiments of Sir H. Davy, Dr. Pereira, Prof. Silliman, Reynauld, Thenard, Berzolius, Taylor, Nysten, \&c. In the different answers which you have published not a word is said to refute them. I will re main an unbeliever and opponent to the uses of this gas until as good authorities as mine are produced; and until it is demonstrated that the delirium produced by this gas, when inhaled, brings no change in the nervous system of the person submitted to its influence.

Prof. H. Dussauce.
New Lebanon, N. Y., Dec. 2, 1863.

## Squeaking Boots--.a Crying Nuisance.

Messes. Edrtors :-I wish to call your attention to what I consider a grievous annoyance, for which I suppose the bootmakers are responsible. I allude to the disturbance produced at lectures and other meet ings (where silence is essential), by those who enter late with creaking boots. If they made other wear ers of them as nervous as they do me when afflicted with a pair, I think some remedy would be adopted It seems to me, however, that the gentlemen who come late into such meetings are entirely unconscious of the effect they are producing. Where the voice of the speaker is not very powerful, or he does not keep an even tone, and the closest attention is required from the audience, a creaking pair of boots often causes the loss of a statement or a link of an argument essential to the right understanding of the whole subject on hand. I want you to urge the adoption of a remedy on your readers. Bootmakers have told me that French chalk, or something like t, put between the soles, will prevent the evil. The last bootmaker from whom I purchased a pair having assured me positively that they would not annoy me in that way, agreed that if they did he would take the soles apart and apply the corrective. But when I came to wear them I found they screeched horribly; though as it was in a distant city that I bought them I could not call upon the seller to fulfill his agreement ; so I determined to try some remedy myself, however desperate, to cure them. I had frequently tried saturating the soles with common oils, but though this mitigated the evil it did not cure it. It occurred to me that boiled linseed oil might do better. I accordingly applied it to the soles, keeping them quite hot during the process to enable them to absorb the more. I did not know but that the hot oil might bo ruinous to the boots; but though I could not afford to throw away such an article, I was determined to sacrifice the boots rather than to be so sadly troubled with their noise. I saturated them accordingly with as much oil as they would absorb, and am happy to say that my experiment ap. pears to have succeeded. I have worn them now for a number of weeks and they have been as quiet as the best--behaved boots ever made. I can march up the broad aisle of a church without disturbing one serious listener, or enter any other meeting as noiselessly as a lady in velvet slippers, and as far as 1 can see, the boots are none the worse for the application.
H. W.
[As this correspondent has provided his own remedy, we caniot do better than circulate it for the benefit of others.--Eds.

## Morphia and Tincture of Iodine for Neuralgia

The following method of successfully treating that painful disease-neuralgia-is from the Dublin Medical Press:-"As a corollary to his remarks on the efficacy of tincture of iodine in the treatment of neu ralgia, M. Bouchutadduced several cases, from which it appears that when the remedy in its pure state has proved unavailing, the pain sometimes yields in a remarkable manner, when a certain amount of morphia has been added to the tincture. In this instance the application is not merely counter-irritant ; indeed in this respect the fluid would seem to have lost some of its power; its efficacy is chiefly due to the presence of the sedative, the introduction of which beneath the epidermis is facilitated by the tincture of iodine. Whatever explanation may be offered of the effects of this mode of treatment, its beneficial operation is an unquestionable fact, deserving of every attention. Thus, we noticed in M. Bouchut's wards, a little girl, who, while recovering from typhoid, became affected with neuralgia of the forehead and temple ; pure tincture of iodine failed in relieving the pain; M. Bouchut ordered the brow to be painted over three times a day with a solution of half a drachm of sulphate of morphia in half an ounce of tincture of iodine, and a cure was effected in the course of three days. The professor adopted the same method of treatment in the case of a lady, aged fifty-two, suffering from interscapular neuralgia, symptomatic of chronic pulmonary disease. Morning and evening the sedative tincture was applied to these regions, and on the second day amendment set in, and the neuralgia was altogether removed on the fourth day."

PRACTICE AT SCRAP-IRON TARGET No. 10.
with rubber one inch thick placed between the front plate and timber. [0FFICIAL.]
Pencote Battery, July 26, 1862.
This target was made in Washington Navy Yard, of scrap iron $4 \frac{1}{2}$ inches thick, backed by 1 inch rubber, 20 inches oak, and a 1 -inch wrought-iron plate, all joined together by six $1 \frac{1}{4}$-inch bolts, and clamped on the top and bottom with wrought-iron clamps, and set up firmly against a clay bank, with timber in the rear to prevent it from being forced into the bank as shown in this engraving.


Dimensions of Plate.- 8 feet 3 inches long; 4 feet 2 inches wide ; $4 \frac{1}{2}$ inches thick. Gun, XI. inches Charges, cannon powder, 1862. Projectiles, Cloverdale cast-iron solid shot. Primers friction tubes.


First shot to day and first at plate struck the plate 20 inches from the left side of the target and 18 inches from the right side, throwing the target forward on its face. After a delay of about one hour and a half the target was placed in its former position. The ball entered the plate and passed through the rubber and lays imbedded in the plate, and first course of timber, with its rear level with the outer surface of the plate. The plate is indented on the right edge of the hole $1 \frac{1}{4}$ inches, on the left edge $\frac{3}{4}$ of an inch, top edge $1_{4}^{1}$ inches, lower edge $1_{4}^{\frac{1}{4}}$ inches. The plate is not bent on the right edge of the target, on left edge $\frac{1}{4} \mathrm{inch}$. The plate is not cracked excepting directly around the shot hole, which is cracked very slightly. The bolts are all broken in the rear of the target, but on the face of the plate they appear to be good. The two last courses of timber are broken at the center from right to left edges of the target, and have sprung back from the first course 3 inches on the right edye and $2 \frac{1}{2}$ inches on the left edge. The first course of timber is somewhat shattered and thrown out on both sides of the target, right side $2 \frac{1}{4}$ inches, left side 5 inches. Diameter of shot hole 12 inches.
The second shot struck the plate $17 \frac{1}{2}$ inches from right and left edges, and $10 \frac{1}{2}$ inches from shot hole No. 1. The shot threw the plate on its face as before, which occasioned a delay of two hours before it was placed in its proper position. The shot broke into pieces, which fell out when the target was thrown down, excepting a small portion which remained in the hole. This shot passed through the plate, rubber and first course of timber, and entered the second course, making a hole $16 \times 13 \frac{1}{2}$ inches in
diameter. The extreme depth of hole is 14 inches. The plate is indented on the right edge of the hole 1 inch., on the left edge $\frac{3}{4}$ of an inch, on the top edge 1 inch, on the lower edge 1 inch . The plate is bent on the right-hand side of the target $\frac{1}{2}$ an inch, on the left-hand side $\frac{3}{8}$ of an inch. Opposite the center of the shot hole No, 2 the timber (first course) has sprung out on the right-hand side 5 inches, on the left-hand side 6 inches. The back plate is forced back from the timber 3 inches at the center. The top clamp was broken in two places. No cracks are visible about the plate excepting those already mentioned. The rubber plate was furnished by Mr. Bennett, of New York, last May, for trial as above. Dimensions as follows :-8 feet long, 4 feet wide, 1 inch thick.

## PRACTICE AT SCRAP-IRON TARGET NO. 10.

with rubber one inch thick placed between the front plate and timber. july $28,1862$.
Gun XI. inches. Charges of cannon powder 1862. Projectiles, Cloverdale cast-iron solid shot. Primers, friction tubes.


First shot to day and third at target, struck the plate $18 \frac{3}{8}$ inches from right-hand side of target and $10 \frac{1}{2}$ inches from the left-hand side, and $5 \frac{1}{2}$ inches from lower edge of shot hole No. 1, passing through the plate, rubber and first course of timber. The shot broke into pieces, several of which were thrown in the rear of the battery, and several were laying in front of the target. The main body of the shot remains in the hole with its rear $9 \frac{1}{8}$ inches from the outer surface of the plate. The plate is indented on the top edge of the shot hole $\frac{7}{8}$ of an inch, on the lower edge $\frac{1}{2}$ an inch, on the right edge $\frac{11}{16}$ of an inch, on the left edge $\frac{3}{4}$ of an inch. The plate is bent on the right-hand side $1 \frac{1}{2}$ inches, on the lefthand side 15 inches. In the right-hand side of the shot hole No. 2, the plate is cracked from the edge of the hole 13 inches, on the left-hand side there is also one extending 10 inches from the edge of the

hole. Between the shot holes No. 1 and No. 2, there is a crack from edge to edge of the holes, and between shot holes Nos. 1 and 3 there is a piece broken out measuring $2 \frac{7}{8}$ inches at the top and $5 \frac{7}{8}$ inches at the bottom ; on the right-hand edge of the plate is also a small crack. The lower clamp is broken. The first course of timber is completely broken up and thrown out at the sides, the second course is somewhat broken. The target was forced out 7 inches from its position, it being secured by a rope leading from a tree in the rear prevented it falling on its face as before.

## BENNETT'S "RUBBER WITH IRON" TARGET.

Ordnance Department,
Washington Navy Yard, August 1, 1862
In relation to the rubber furnished by Mr . Ben nett, of N $\epsilon \mathrm{w}$ York, I have to report as follows :-A target was made of scrap iron $4 \frac{1}{2}$ inches thick, backed by 20 inches solid oak and a 1 -inch wrought-iron plate of rubber 1 -inch thick, placed between the $4 \frac{1}{2}$. inch plate and timber, all being secured by six $1 \frac{1}{4}$-inch bolts, and clamped on the top and bottom with wrought-iron clamps, and set against a clay bank.
Gun XI. inches. Charges 30 lbs . cannon powder 1862. Projectiles, Cloverdale cast-iron shot of 168 lbs. Muzzle of gun from target 88.3 feet. On the 26th ult., two shot were fired at the target with re sult as follows:-


The shot passed through the $4 \frac{1}{2}$-inch plate and rubber, and penetrated the timber the same as previous shots fired at other targets made in the usual way without rubber, the only exception being that the target was thrown on its face at both fires.
On the 28th ult. another shot was fired with the same penetration. The target was thrown forward from its position 7 inches. A rope having been passed around the target and made fast to a tree in the rear, prevented it from falling, as before.
Whether the repeated falling forward of the target is to be attributed to an accidental coincidence, or is the legitimate result of the use of a material so elas tic as rubber, $I$ am unable to say.

## THE MACHINISTS AND THEIR TROUBLES.

The disturbance in this trade, which lasted five weeks and over, has virtually ceased, and large numbers of the men have gone to work again. We are pleased to see that good sense has resumed its sway once more, and that the better portion of the machinists are attending to their business with all the energy they are possessed of. The advance has not been granted by the proprietors of the several shops, but they have agreed to satisfy the reasonable demands of the workmen, provided they resume work forthwith. In the Morgan Iron Works a number of men have been at work for two weeks past ; the first week that labor was resumed, a number of strikers yet unemployed collected about the Works during the noon hour, with the intention of assailing those who had been at work. On learning this fact, Mr . George Quintard, proprietor of the Works, immediately sent out to the nearest restaurant and ordered dinner for all those who remained in the Works; this piece of generosity was highly appreciated by the mechanics.
It is a noticeable fact that while the proprietors have sternly refused to accede to advance the wages generally to 25 per cent, they have acted most gen erously toward unfortunate men with families and in many ways manifested their sympathy with their wants. It is understood that much suffering pre vails among the families of many of the strikers.

## PRACTICE AT IRON PLATE TARGET NO. 15.

with rubber placed between the plates and timBER.

Pencote Battery, Sept. 4, 1862. This target was made of two thicknesses of halfinch boiler iron put on in four plates, backed by 1 inch rubber and 7 inches yellow pine, and 3 beams running lengthwise of the target. The rubber was placed between the plates and timber ; all bolted together with eighteen $1 \frac{1}{4}$-inch bolts, and the target set up firraly against a bank of clay at an angle of $15^{\circ}$.

Dimensions of Target.--Iron plates 8 feet long, 6 feet 8 inches wide, and 1 inch thick; rubber 1 inch thick ; timber 7 inches thick; beams 1 foot square.

## Vessels for Carrying Petroleum.

Our cotemporary, the Pittsburgh Dispatch, in alluding to a recent article on the above subject in our columns, in which the use of iron barrels was suggested, says :-"The Scientific American, generally well informed on subjects of this kind, recommends, in a recent issue, the adoption of certain safeguards, which have already been in use for some time, but which, from the apathy of those engaged in the business, have secured but a partial introduction into the traffic. A letter in the same number enters very fully into the defects of common barrels, when used for carrying petroleum, and the means of preventing leakage, but the editor suggests the propriety of manufacturing iron cylinders for the purpose, and also refers approvingly to a plan used by Young, an
of consulting those who had a practical knowledge of the subject, before passing any laws affecting the trade. Dr. Trench said that if the deputation could prove to the magistrates that wooden casks were sufficient to prevent either leakage or effluvia, they would be glad to save the trade the expense of providing casks of other material.

## New Chemical Agent in Warfare,

Chloride of nitrogen will, it is said, soon be utilized as an implement of war. Its employmen would seem likely to put an end to all war. Mr. Isham Baggs, an English chemist, in announcing his discovery, proposes to carry up his composition in balloons, and drop it from the air in the midst of armies and fortresses. "The very mention of this


Gun XI. inches, No. 214. Charges of annon extensive manufacture of coal in Scotland, for powder 1862. Projectiles, Cloverdale cast-iron solid shot. Primers friction tubes. Officer in charge Lieut...Commander Mitchell. Record by Carnigan. Hon. G. V. Fox, Assistant-Secretary of the Navy present.


First shot struck the plates 3 feet 3 inches from the right-hand edge, and 12 inches from the lower edge, tearing through the plates, rubber and timber, making a hole 3 feet 8 inches long, and mean width $8 \frac{3}{4}$ inches. The shot passed off and penetrated the bank $11_{4}^{1}$ feet from the outer surface. Angle of shot after leaving the target was 90 . The plate is indented at the right edge of shot hole half an inch, at left-hand edge 1 inch, at top edge three-eighths ot an inch, at lower edge 1 inch.

The secend shot struck the plates on the crack between the platez, and $2 \frac{1}{2}$ feet from the right edge, tearing through the plates, rubber, timber, and a portion of the beam, making a hole 4 feet long and mean with 10 inches. This shot forced the lower plates from the upper ones $3 \frac{1}{2}$ inches on the lefthand edge and over $1 \frac{1}{2}$ inches on the right-hand edge of the shot hole.
The shot passed off and penetrated the bank 15 feet. Angie of shot after leaving the target $9 \circ$
The plate is indented on the right edge of the hole $1 \frac{1}{2}$ inches, on the left edge 1 inch:, on the top edge $\frac{3}{4}$ of au iach, on the lower edge $1 \frac{3}{4}$ inched.
The plates are cracked from the lower edge of the shot hole No. 2 to the upper edge of shot hole No. 1.

The bolts appear to be in good condition on the face of the target, but it is impossible to ascertain if any are broken in the rear until the target is taken down.

## Respectfuily submitted,

(Signed)
W. Mitchell,

Lieut.-Commander, U.S.N.
compound," he goes on to say, "as a proposed element in modern warfare, may possibly provoke a smile among chemists, who know that the most accomplished among their number would scarcely dare to experiment with in quantities larger than a grain of mustard seed, and even then at a respectful distance, and under guard at the moment of its detonation. And yet not one of those chemists will be bold enough to deny that with two or three chemically clean carboys of this teriible compound present in a city or fortress, however strong, the slightest cuttings of phosphorous or a single drop of olive oil coming in contact with it, would in one instant decide the fate of the place and its inhabitants.' Mr. Baggs then proceeds to affirm that he has discov.. ered a method of overcoming the contingent difficulties, and that he is able to manufacture this deadly material with perfect safety, and in any required quantity, and that it can be safely conveged to its destination.

## Reaping the Reward of Faithlessness.

The British Government narrowly escaped having the bitter cup of its policy in American affairs pressed to its own lips a few wetks since. The screw steam-corvette Pelorus took fire in the Bay of Biscay, and at one time the flames got such headway that the boats were lowered to enable the crew to save themselves. A large vessel under full sail being seen about five miles distant, three guns were fired and rockets and bluelights burnt, but without taking any further notice of these signals of distress than by the discharge of a single gun, the strange vessel held on her course. This apparent inhumanity is explained by the British Admiralty on the supposition that she was a Union merchantmen, who took the Pelorus to be a Confederate cruiser emplosing the ordinary devices to lure her intoits clutches.

Cotron in Utaif.-We learn from tue Farmer's Oracle of Spring Like Villa, Utah, that quite a good crop of cotton has been raised in that territory this year. Brigham Young has a cotton manufactory in operation, and another factory is soon to be erected at Springville. The quantity raised will average about five pounds fer each inhabitant.

## Improved Nail Clincher and Nippers.

By the aid of this instrument some parts of horseshoeing are accomplished much more expeditiously than by the old methods. The object is to combine a pair of nippers and a clinching-iron in one tool, so that by the aid of them work may be done quicker and with more ease to the smith. On referring to the engraving it will be seen that the nippers are like all others as regards their particular duty, or office; to accomplish the clinching, however, the projections, $A$ and $B$ are fastened to one side of the nippers, the lower one being placed underneath the horse's hoof; the upper projection is brought down by the aid of the handles upon the point of the nail, and thus effectually clinched. There is a pin, C, in serted between the handles against which they strike when brought up, so that the sharp edges of the nip pers are not in contact with each other and are thus preserved from injury. The object of the spring, D, is, of course, to force the handles apart ; the serrated, or toothed faces of the projections prevent the tool from slipping when used. In regard to using the tool the inventor says "the nail is prepared just the same as if a hammer was to be used; in using the clinching projections, the left hand takes the same, or nearly the same position as in holding the common clinching.iron, the left forefingers being under the clincher, while the thumb of the same hand is placed against the upright part of the clincher to steady it to its work."
This invention was patented through the Scientific American Patent Agency, on Nov. 3, 1863, by E Warren, of Marshall, Mich. For further information address the inventor at that place. See advertisement in next number.

Formation of the Fatty Matter in Olives.
M. de Luca $h$ is reported to the Academy of Sciences at Paris the results of his elaborate researches on this subject. From the figures given in his table of observations, ranging from June to December, it appears that the weight of the olive increases with the progress of vegetation until the month of November; but that the stone is the first to be developed, the growth of which takes place in the early part of vegetation, during the months of July and August, after which it remains stationary ; there being, in fact, in successive months no sensible varia tion of its weight. The pulp on the contrary, increases in weight continually until the complete maturity of the fruit. The quantity of water found in olives diminishes progressively at their maturity. Thusit is about 60 or 70 per cent in the first phases of vegetation, while it is only about 25 per cent. at the last period of the growth and maturity of the fruit: The sulphuret of carbon takes from olives several substances of a different nature; among which are coloring matters, especially chlorophyll, which gradually diminishes as the fruit approaches maturity. The farty matter, on the contrary, which is found only in small quantity at the beginning of vegetation, increases as the plant grows, and is at its. maximum when the olives are ripe and have com pletely lost all trase of thoir greenish tint. It is also remarkable that when the stone ceases to in crease in weight the fatty matter in the fruit accumulates in greater proportion

## The Turko-American Bath.

The patient submits to an air bath in an apart ment heated to $100^{\circ}$ Fah., followed by another a $146^{\circ}$ Fab., remaining in these hot atmospheres for half an hour or so, until profuse perspiration is induced. The seven millions of pores are thus made to open their portals, bringing the effete matter of the system to the surface of the skin ; thence it is re moved by soap and brush, in the hands of a vigor ous assistant ; closing with a warm water shower and a comfortable drying off between clean sheets and soft blankets. Nothing can be more luxurious than this process, while its medical uses are considered extensive and important. The Tarko-American bith has been inaugurated by Dr. Saephard, at the Brooklyn Water Cure, 63 Columbi street.

Recovering Gold in Photographers' Baths.
A correspondent of the American Journal of Photography asks the following questions :-
"I have on hand a lot of old toning solution, the gold in which is precipitated with proto -sulphate of iron; how am I to work it up into chloride of gold?
"Of an ammonio-nitrate solution ( $\frac{1}{4} \mathrm{am} . \cdot$ nitrate) I wish to make a plain nitrate solution. Will you be so kind as to tell me the modus operand? ?',
To which Professor Seely (the editor) gives the following answer :-
"Your precipitate from the toning bath is prob ably oxide of iron with a little gold in it. You can dissolve out the oxide of iron with sulphuric acid, and the gold will be left as a brown powder, which after washing in water may be converted into chloride in the usual way. The toning solution, before precipitation with iron, should be made acid with acetic or hydrochloric acid, in which case nothing


WARREN'S NAIL CLINCHER AND NIPPERS.
but the gold is precipitated. Sulphuret of potassium auswers well for precipitating gold. In the last case the gold, after washing, should be heated to a red heat in order to drive off the sulphur, when it is ready for solution.
"By evaporating and fusing the ammonia nitrate, it will be converted into plain nitrate But the operation is so troublesome that we would not re commend it to a person who is not skilled in chemical manipulation. Perhaps the best way for you is to precipitate as chloride, reduce to metal, and dis solve in nitric acid."

## Brains

Our cotemporary, the Tribune, in publishing the very able official report of Gen. Halleck, of the operations of our armies for the year 1863, allows its types to perpetrate a very melancholy joke upon the General, wherein he speaks of the cumbrous" supply trains" that follow our forces. The types make him say-_" nevertheless our brains have been very considerably reduced within the past year."
Gen. Halleck, while commanding the Mississippi Department, gained the soubriquet of "Old Brains," and it is barely possible that he has reduced the quantity somewhat, though we confess after reading this voluminous report that we cannot see it.
Substitutes for Cotton.-The Commissioners appointed by the Department of Agriculture for making investigations to test the practicability of cultivating and preparing flax and hemp as a substitute for cotton, will hold their adjourned meeting on the 24th of February. In the meantime all persons anxious to develop this subject are requested to forward sam ples of hemp and flax in different stages of preparation of the fibres and fabrics prepared by them, accompanied by statements of the various processes used, and the cost of production in each case; also descriptions of the kinds and cost of machinery used, where made, \&c., together with any and all information which may be useful to the Commission.
A curious accident occurred last month on the Cen tral Railroad, near Oriskany, N. Y. The boiler of the locomotive exploded while the train (a freight) was under full headway. It was thrown some fifty rods from the track into an adjacent field, destroying fences, \& c , in its course. The fragments of the locomotive flew in every direction, severely wounding the fireman, conductor, and one or two others. The accident is considered one of the most remarkable on record.

Rebels and Repeating Rifles.
A soldier-correspondent who writes us from Virginia some very friendly remarks concerning the value of the Scientific American to soldiers, relates also the following auecdote concerning the Spencer rifle ; the rebels have a wholesome awe of this weapon as will be seen from the account appended :-
" After the battle at Gettysburgh whilst our cav alry were pursuing the rebels, our regiment was employed as skirmishers; some of our boys got into a mill, the rebels holding a stone-wall opposite ; these hearing our guns go off, would rise up thinking they would find us unloaded, but would fall back car rying rather more lead than was agreeable. The 'John nies ' couldn't stand this long and retired. Shortly after this we took a captured officer across this par of the field to the rear, when he saw his men lying there he began to complain bitterly against our bar barity; he was asked to explain, when he pointed te his dead saying: 'almost allsare shot through the head '-implying that they had been murdered after surrendering; but when he was shown one of our rifles he only wondered that more were not shot.'
One of our rebel prisoners relates the following:-'I was under good cover, but exposing myself was fired upon; thiuking I had drawn their fire I stepped out when another ball just missed me; I thought perbaps that they had a double-barelled gan, and I had him suie. I stepped out again when another ball grazed me; then I thought there must be two in front of me. I then stepped entirely from under my cover, determined to have my chance for a shot, and was wounded by a fourth shot. While I was lying there I heard three more shots in rapid succession from the same gun, when our boys fell back and yours came up and sent me prisoner to the rear,' said he 'there's no use tighting against such guns.' It took our boys but a short time to learn to use them. They played this ruse upon the rebels quite successfully : when they came up where they knew the rebel line of skirmishers were within good shot they would fire once at random, when Mr. Reb rose up in sight he would get another shot at something he could see and feel
One day as our line of skirmishers were advancing one of the Johnnies yelled out-"helloa, Yanks, have you got them d--d gans loaded to the muzzle again;' whilst the cavalry was picketing along Robertson's river skirmishing was frequent along the line, but when our regiment took its turn we exchanged but a few shots with them when they offored the following proposition:-'Say there, if you'ns won't shoot wee'ns won't shoot,' and peace existed along the lines as long as our regiment remained.'
Flax Cotron.-The Cleveland (Obio) Herald states that B. O. Warner has built a mill at Toledo, for preparing flax cotton at the rate of 2,000 pounds per day. It is prepared for an Eastern Company engaged $\mathrm{i}^{\mathrm{n}}$ the manufacture of satinets.
Iris stated in a communication upon "Rifled Ordnance" which appeared in a recent issue of the Scientific American that "for guns exceeding 43 inches caliber from $\frac{1}{2}$ to $1 \frac{3}{4}$ diameter is preferred, \&c.' the line should read" from $1_{2}^{\frac{1}{2}}$ to $1_{4}^{\frac{3}{4}}$ diameter," \&c.
A correspondent sends us some remarks about rolled and hammered bayonets. The letter is uusigned ; we cannot give attention to anonymous communications upon any subject.
Punch's joke about brushing hair by machinery, which looks like no joke to the patronizer, is really a stern fact, as such a machine is in operation at a famous hair-dresser's in London.

The following is deceptively promulgated under the head of zoologscal information :- The black tapir is found in many districts of Summatra, but the red tapir is found chiefly in the District of Columbia.'
Napoleon said that "Dayunets thiuk." Few thinkers have so much keenness, point and penetration as they.

## Improved Hitching Bolt.

The old idea that it is impossible to remove a horse from fire when once fascinated by $i t$, may have had its origin in the unwillingness of some responsible individual to undertake the rescue of beasts so situated, and so ever afterward it became a proverb; doubtless like many others, without foundation. Of course, horses cannot get away when they are tied, and by the time the halter is consumed the animal is in no condition to leave. The invention leave. The invention
herewith illustrated is designed to obviate this evil, and also others which attend unhitching horses, such as those which arise from entering the stable of vicious animals, and in short, to provide a secure and safe attachment to which horses may be tethered, without liability of acci dental detachment. These objects are all obtained in the bolt herewith illustrated; the engraving explains itself. The invention is merely a stout bolt, A, provided with a spring in the case, $B$; these bolts are all connected with a handle, C, by a wire which runs through the groove, $D$; when the bolt is drawn back the halter may be slipped over it, and is then held in place when the bolt flies back to its seat as shown in the engraving. If it is necessary, the handle, C, may be kept extended. This is accomplisked by the spring-catch, E ; it being made in two parts which embrace the rod of the handle, C ; when the catch is pulled open the rod is drawn out until the recess, F, comes outside of the case, $G$; the catch then falls into it, holds all the bolts open and the horses are released. Any number of bolts may be fastened thus and worked by one hand, or each bolt can at any time be worked separately by pulling on the knob, H ; thus avoiding the necessity for going to the principal handle, which is perhaps situated at some distance.
The patent for this invention was procured through the Scientific American Patent Agency, Oct. 27, 1863. For further information address Julius Hurx" thal, 23 William street, N. Y.

## Explosion of Naphtha.

At an inquest lately held in England, a grocer testified that while he was pouring coal oil from a barrel into another vessel, a lighted candle being within three feet, he saw a small blue flame run along the outside of the barrel to the bung hole. Of what followed he was ignorant. But it appears that a terrible explosion ensued, for the grocer was pitched up into the street, insensible ; his house was set on fire, the upper apartments quickly filled with a dense black smoke, by which three of his children were suffocated, while his wife and three other little ones barely escaped with their lives. This explosive stuff was found to be a very light coal oil, or naphtha, the vapor from which is highly explosive.

Loss of an Iron-clad.
The Weehawken recently went down at her anchorage in Charleston Harbor. This was caused by great neglect on the part of those in charge of the battery. The Weehawken was very low in the water, so much so that her deck was submerged continually by the seas; during a severe gale the forward hatch was left off the hatchway, and the water poured down in a continuous stream, without those on board being aware of the fact until it was too late. There were some thirty persons, engineers and others, lost in the Weekawken; she was a monitor battery, and quite new. The accident is very much regretted; it was one that might have been avoided by proper care, as all the other monitors in the vicinity rode out the gale unharmed.

The 22-tun gan of Sir William Armstrong requires a crew of twenty men to handle it; the 20 -tun gun in the monitors can be worked by three, or at most four men-a slight difference !


## KLOENNE'S HITCHING BOLT.

old laughing-gas of Sir Humphrey Davy again galvanized into life and notice ; and since, in the hands of dentists, the effects, as now described, are so much at variance with what is generally stated about them in the text-books, we must conclude that the gas is either more thoroughly purified and free from noxious admistures, or that it is diluted with air or some other gascous body, and thus divested of some of the unpleasant effects of the ordinary nitrous oxide."

## PALMER'S PULLEY BLOCK.

The engraving published herewith represents an
 as the true groove of the pulley (shown by the arrow in Fig. 1) and running out to nothing, ending in a flat surface or circumference as at D in Fig. 2. When, therefore, the slack is to be taken in the workman merely diverts the fall, A, a little to one side, when it takes the false groove, C, runs up in it and jams between the block and wheel; as at E, in Fig. 1. In Fig. 2 the same operation is shown and this variety in the form of the pulley may be substituted for the ordinary snatch-block, or for the cleat, so much used on shipboard. This device is a very convenient one for the purpose mentioned previously, as every practical man can readily see; it dispenses with labor, and completely secures the ends desired. The block and fall, with load attached, can be left suspended for any length of time with this arrangement. The pulley blocks, in other respects, are not peculiar.
This invention was patented on Nov. 1, 1859, by Isaac E. Palmer, of Montville, Conn. Patent reissued through the Scientific American Patent Agency, on Sept. 8, 1863.
The patent is for saleon very favorable terms, as it is out of the patentee's usual business. For further information address Isaac E. Palmer, care of H. F. Palmer, No. 28 Warren street, N. Y.

## Quite Novel.

Army correspondents make a great many funny mistakes when they attempt to write about military or mechanical subjects; we think the following incident, however (which the correspondent who sends it says is " a novel effect '") is the most startling and surprising one that ever came under our notice. Mr. Whitworth may learn something, it seems, even from an army correspondent. We quote :-
"After a few discharges the gun was found to have lengthened two inches. This was caused by the immense strain upon the piece in projecting the ball; the resistance offered by the rifling causing the immense mass of metal to draw out as if it had been a piece of iron wire in process of manufacture.'

Copper-coated Boiler Plates.
An English boiler-maker has taken out a patent to protect boiler plates from damage by furrowing or corrosion. This occurs chiefly in the neighborheod of the seams and rivet holes; these parts are therefore covered with copper, either in thin sheets or by deposit, for the purpose set forth. This remedy is worse than the disesse it is intended to cure, the contact of the two metals inducing galvanic action which will deteriorate the plates more rapidly than furrowing.
Gen. Burnside, by a rapid flank march from Knoxville upon Cumberland Gap, cut off the retreat of the rebel garrison which was thus compelled to surrender. His infantry made a forced march of sisty miles in fifty-two hours. His defence of Knoxville against the besieging forces of the rebel Longstreet, is one of the most heroic achievements of the war.

## The šicutific Agmerican.

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NEW YORK, SATURDAY, DECEMBER 26, 1868.

## 1864.

We shall mail to each of our subscribers a copy of our annual prospectus for 1864, and would remind them that we furnish the Soientific Abrerican to clubs at greatly reduced rates.
For 20 names sent in a club the subscription price is $\$ 2$ per annum. If it is found impracticable to get up a large club, we would remind each and all of our generous patrons that if they can each add a single name to our list, the mathematical fact is made perfectly plain that our list will be doubled. We have no claim upon any one of our subscribers We furnish them the paper and they pay for it according to our terms. Nevertheless it would gratify us exceedingly if they would stir about a little and induce some of their clever neighbors to join with them in tiking the Soientifio Ameridan for 1864
Go and remind your neighbor that the long winter evenings ought not to be wasted away by unprofitable dozing in the chimney corner, and that while he is toasting his toes around the blazing hearth, he ought to be storing his mind with useful knowledge, such as is always found in the Scientific American. Show him one of your numbers and tell him that he can get fifty-two of them for only $\$ 3$, of equal size, each containing a varied assortment of the most interesting information ; and we will guarantee that unless he is a miserable miser he will pull out the old suet-skin and hand over the appropriate greenbacks.

We tried this the other day in Norwalk, Csnn., and got an honest carpenter to chalk over his $\$ 3$; and he growled considerable because some one had not got him to do the same thing before. Certainly there is no harm in trying what can be done by thus coaxing him.

## another year closed.

Like the weaver's shuttle speeding along in the loom, so our days and years sweep rapidly past, and thus our web of life is woven. During periods of great excitement, when mighty events crowd swiftly upon each other, the mind fils to take cognizance of the fleeting moments. We can scarcely realize the fact that another year in the life of the Scientific American has been measured out, and that this number completes volume nine of our new series. For about three years now ous nation has been engaged in the most momentous civil war on record, and the struggle has been increasing in magnitude and importance. Originating in the unreasonable disaffection of ambitious and selfish men, it was forced upon the legal rulers and loyal people of the land, who accepted it with hesitation and sorrow in view of the afflictions which would naturally attend it. But amid the grief of thousands whose homes and hearts have been made desolate, the nation has cause for being devoutly thankful at its unexpected
and surprising prosperity. Civil war usually crushes out useful industry, and in every such case the people become impoverished. But every attempt to carry the conflict into the loyal States has been frustrated, and the armies of the Government have pushed back the insurgents, and have also been successful in reducing extensive territories to legal authority. Such results are very encouraging, auguring well for future success in ultimately subduing the rebellion and conquering obedience to law and order.

Amid this great war the people of the loyal States have been permitted to pursue their usual avocations in peace. No better evidence of material national prosperity can be adduced than the general and active employment of the people in useful industry, which is the true "Wealth of Nations." There has been plenty of employment for all, and the wheels of commerce have rolled on with unexampled speed and success. New sources of industry have been developed, and old branches have received a marked impetus, so that our industrial products have exceeded in quantity those of any similar period in the history of our commonwealth. Herein lies the great strength of our country, for the productive power of a nation is the true measure of its strength.
No better proof can be adduced of our progress and improvement in the industrial arts than the achievements of inventors. The number of patents issued in our country during the year closing with this number, is 3,746 , against 3,220 for the same period in the previous year-being an increase of no less than five hundred and twenty-six! Every department of industry has been benefitted by these improvements, and the numerous illustrations of new inventions which have appeared in the columns of the Scientific American afford cheering evidence of great progress made in the useful arts during the past year. A great scarcity of labor has necessitated a demand for new inventions to abridge human toil, and inventors have been more than usually successful. The demand for labor, however, is still urgent, and inventors never had a more favorable prospect for obtaining lucrative employment in devising new labor-saving mechanism. In conclusion, we can heartily join the President in the introductory lines of his late message :--"Another year of health and of sufficiently abundant harvests has passed. For this, and especially for the improved condition of our national affairs, our renewed and profoundest gratitude is due.'

## the people's college

The Trustees of the People's College have issued an address respecting its present condition. It is located at Havana, N. Y., but the main edifice is not quite completed. It is 216 feet long, 52 feet wide, five stories high above the basement, and there is a rearward projection from the center erected, 70 feet long by 64 feet wide, which will soon be ready for the students. The college farm consists of 200 acres, and upon this and the edifice about $\$ 100,000$ have already been expended. In 1862, the State of New York gave to this college an annuity of $\$ 10$,000 for two years, chiefly for the support of the Professors, defraying the expenses of indigent students, \&c.; and in July 1862, Congress granted 99,000 acres to the State for the establishment and maintenance of such an institution ; similar grants for like objects having been made to other States. The edifice when completed will cost $\$ 175,000$; it will have a chapel, 220 rooms for students, a culinary department, and rooms for the steward. The first term of the college will commence on Tuesday, April 7, 1864, and will continue to the 15 th of July. The terms of admission are as follows :-
Classical Course.-Candidates for admission to this course must sustain a satisfactory examination in English grammar, geography, and arithmetic ; in the Latin grammar; Cæsar's commentaries, six books of Sallust ; Virgil's Eneid, six books; Cic ero's Select Orations; in the Greek grammar and Greek reader, or in an equivalent amount of classical Greek.
Scientific Course-Candidates for admission to this course must sustain a critical examination in English grammar, geography, and arithmetic.
Provisional or Select Course.-For admission to this course, the candidate must be prepared to pur-
sue, with profit to himself and without hindrance to others, the studies of his choice.
Candidates for admission to either of the above courses must be more than fourteen years of age, and must furnish satisfictory evidence of good moral character.
No less than twenty-two different branches of education are to be taught at this college; comprehending natural and revealed theology, intellectual and moral philosophy, jurisprudence and political economy, logic, history, rhetoric, anatomy, physiology, geology, chemistry, languages, agriculture, engineering, military science and tactics, \&c. The course of the college to be pursued, to entitle students to the degrees of Batchelor of Arts and Batchelor of Sciences, will be four years; but a student may enter the college with the intention of pursuing a select course of study, and when this is completed and he passes a good examination he will be entitled to a diploma. The expenses of a student for tuition, board, and room rent, will be $\$ 120$ per annum, paid in semi-annual instalments in advance. Students will be allowed compensation for labor, which they may apply to the reduction of their expenses.
This institution embraces the object of useful labor combined with a superior education. Those students who intend to pursue an agricultural course, will labor on the farm; those intended for a me chanical trade will labor in some of the workshops. It is provided in the charter of the college that its students shall labor on the farm or in one of the shops from two to four hours daily, during five day of the week-a rule that should never be relaxed.
The institution was projected about sixteen years ago, by members belonging to the Mechanics Mutual Protection, an order which has ceased to exist ; but we still recognize the names of two of its old members in the Board of twenty-four Trustees. The objects of this college are good, but the educational branches laid down in the programme are too numerous, and there are too many lawyers and too few farmers on the Board of Trustees. At first it was intended for the practical education of young far mers and mechanics.
The President is Amos Brown, LL D., and the Governor and Lieutenant-General of the State, with the Speaker of the Assembly and Superintendent of Public Instruction are ex officio Trustees. The Treas urer is T. L. Minier, Esq., Havana, N. Y. Eight professors have been elected to the different chairs, and we suppose they will enter upon their duties at the first term next spring.

## CONCERNING STEAM BOILERS.

We have in previous numbers of the Scientific ambrican frequently called the attention of engineers and manufacturers to the condition of their steam boilers; for we have felt, and still feel, that in too many cases they are neglected and overlooked. If there is any department where false economy is out of place it is certainly about a steam boiler; and by this we mean a disposition to let repairs go until a more convenient season, or as a person once said in our hearing, "till it gets so that it is worth mending;" this is false economy. The tailor's proverb about "the stitch in time" is eminently true of steam and the apparatus driven by, or the vessels containing it. All the leaky rivets (if any) should be driven tight, slack braces set up to their duty, seams calked where they require it, ashes kept away from water-drip when it falls on the sheets, clinkers prevented from forming on grate bars (where anything like decent coal is provided, no excuse should be received by manufacturers for this neglect), safety valves overhauled and put in working condition (too many of them are mere percussiou caps, so to speak ), flues swept at least once a week, ashes and soot kept out of the smoke box; every ounce of it is a non-conductor that robs the boiler of its rightful heat. In short, every detail and appurtenance of a steam boiler requires conscientious, thorough, and continual supervision; then there will be fewer lives lost, less property destroyed, and a better class of engineers and manufacturers geverally. That is the true way to raise the wages of engineers and make business pay; elevate the standard of the services rendered, and, our word for it, manufacturers will accede to all reazonable requests.

The terrible effects of carelessness are too apparen when steam boilers explode, and blow to the fou winds of heaven all that a man has been able to accumulate in a lifetime of hard labor. See to it, then, you manufacturers, and you, engineers! that there are no half-way measures adopted; that no "penny wise and pound foolish" policy prevails ; keep the boilers in the best possible repair and condition; buy none but the best fuel ; hire on!y capable, con scientious, and sober men to oversee them ; and the rate of insurance will be lower, higher profits will accrue, and steam power be rendered what in fact it is-an energetic, easily-managed, and economical servant.

## RECENT AMERICAN PATENTS.

The following are some of the most important im provements for which Letters Patent were issued from the United States Patent Office last week. The claims may be found in the official list :-
Port Stopper.-The immense weight of which it is necessary to make the port stoppers of iron clad, turreted, or other vessels intended to be invulnerable, to give them the requisite power of resistance to projectiles, $\mathrm{h}_{\star \mathrm{s}}$ rendered them, as hitherto applied, extremely difficult of operation, owing to the great amount of power required to move them : and the methods of applying them hitherto adopted have rendered them liable to be so bound or disarranged by the blow of a shot as to render it impossible to operate them. The object of this invention is to obtain for a port stopper the requisite power of resistance, and yet enable it to be worked by the application of a very small amount of power, and to prevent its being seriously bound or obstructed is its action by any displacement or disarrangement which is likely to be produced by the blow of a projectile. With a view to accomplish the above ob ject, this invention consists in the construction of the stopper in the form of a crank; also its arrange ment to turn about an upright or nearly upight axis situated some distance within or behind and opposite, or nearly so, to the center of the port or embrasure; and further in the attachment of the bearings in which the journals or pivots of the port stopper turn, to supports which are detached from the wall of the turret or other defensive structure in the immediate neighborhood of the port. John Ecic sson, of New York city, is the inventor of this im provement.
Registering Marine Log.-The object of this invention is to register the direction of the distances run by a ship or other vecisel, as well as the distances themselves; and to this end it consists in the com bination with an apparatus substantially like what has been heretofore known as the registering marin lug, or "patent log" of a compass of peculiar con struction, and an apparatus connected with the re gistering mechanism for dropping pellets into a compartment of the said compiss whenever a certain distance has been made by the vessel to which the log is applied. Alexander Gordon, of New York city, is the inventor of this improvement
Machine for Exercising the IIuman Body.-The object of this invention is to obtain a simple and cfficient machine for exercising certain portions or members of the human body, designed more especially for the benefit of persons afflicted with dyspepsia, liver com plaint, \&c. The invention consists in the employ ment or use of a lounge provided with an adjustable section for the purpose of adjusting the patient in the proper and desired position, and using in con nection with said lounge a pair of reciprocating pads arranged and operated in such a manner as to effect the desired end. Dr. Charles F. Taylor, of No. 159 Fifch Avenue, New York, is the inventor of this im provement.
Brewing With Murze.-It is understood by person that in order to effoct the dissolution and saccharifi cation of barley-malt, a temperature of about $160^{\circ}$ to 168 Fah. is required, and that when the tempera ture exceeds $170^{\circ}$ the saccharifying property of the malt is killed and the malt is rendered useless. The starch of Indian corn or maize, however, cannot be perfectly dissolved at a temperature lower than that of boiling water, and the attempts heretofore made to treat barley malt and maiz mixed together in the s tme m ush tub have failed, becauso the temperature
required for the saccharification of the malt is not high enough to dissolve the starch of the corn, and very little benefit is derived from the use of the corn ; or if the temperature is raised high enough to dissolve the starch of the corn, the barley malt i killed and the whole process is a failure. These difficulties are overcome by the present invention, which consists in disclosing the starch of Indian corn and preparing the saccharified extract from corn mixed with barley malt, all in one and the same vescel simply by sacrificing a small quantity of barley malt or if desired the process may be executed in different vessels, and from 40 to 50 per cent of corn can there by be mixed with barley malt, and great economy effected in brewing malt liquors. Ludwig Haecker, of Altenburg, in the Kingdom of Hungary, is the inventor of this improvement, and further informaion may be obtained of Escher \& Co., 9 Murray street, New York.


SSUED FROM THE UNITED STATES PATENT-OFFICE for ter whex ending december $8,1863$.
** Pamphlets containing the Patent Laws and full par icalars of the mode of applying for Letters Patent, speci ying size of model required, and much other informatio seful to inventors, may be had gratis by addressing MUNN \& CO., Publishers of the Scientific American New York.
40,803.-Composition for Covering Hams.-Henry A Amelung, New York City:
I claim a covering fir ham or other me at, consisting of paper or
cloth soaked in a solution made of the ingredients herein specified cloch siaked in a solution made of the ingredients herein specified
and mixed together in about the proportion and substantially in th
manner described. nanner described.
This invention consists in the application to ham or other meats her that all parts of the ham or other piece of meat are perfectly covered and protected against the injurious and decomposing intur nce of the atmosphere. This covering is much cheaper thin thit generally used. and by its use a great saving in the weight of the hams is effected.]
40,804.-Generating Gases for Heating and Illumination. -
Jacques Arbos, Barcelona, Spain
I c!aim tirst, The formation of a gaseous
I ctaim, tirst, The formation of a gaseous compound, as hereinbe
 tars. or
heating.
Second, The apparatus for generating the gasens cempound, con
trineteela nd acting substantially as sherein before described and illus 40,805. - Gas for Motive Power.-Jacques Arbos, Barce lona, Spain:
 as motive power, in the manner horembefore sed forth.
Seciond, The apparatus fir generating the gaseous Secind, The apparatus fir generating the gaseons mixtare to be
used in the manner substantially as hereinbetore described and illus Crated in the accompanying rawings.
Third, The generation ot steam by the heating of water in the acket of the cyinder of the said gas engine and in a boiler sur-
ounding the furnace of the said gas generating apparatus, substan-
bully inshereinbefore 40,806.-Snap Hook.-Samuel Babcock, Middletown Conn.:
with its eye in one piece with its hook and with its tongue not only provided with lips to embrace the shank of the thonk ang form a a join
herewith, but with a recessarranged substantialiy as described and herewith but with a recessarranged substantialiy as described and
or the purpose of carrying a straght or leaf spring disposed within such recess, in manner as hereinbefore explained.
40,807 .-Skate.-Wm. Bailey, Utica, N. Y.
I claim, irst, The construction of the clamps with the penden Sperating them which I have described.
Second, I claim the construction and use of the skate runner of base, and for other purposes as described, in combination with the
ase purposes de cribed.
Third, I claim the mode of fastening the runner to the woude thck, by means of the dove tanl device at the toe, as described; and
he heel pin passing directly through the ranner at the heel, head countersunk, in the manner described and for the purposes de
ceribed. seribed.
Fourth
subint 40,808.-Telescope.-Wm. H. Baker, Marathon. N. Y.: I claim supporting the lenses or their settings and diaphrann whic
com;ose the eye-piece of the telescope by mpans of a spring springs, thereby making a fastening that may be more readily re
moved. and rendering the lensestess lable to wark loose or be broke hued and rendering the lense tiss lable to work loose or be broke I claim he noch, C, in the setuing if the obpiect lens., in combina
It, with the spring on the tube which holds the setting in and pre vents it from working out by the recoil of the gun when it is fired.
I claim the spring clasp for holding the fure end of the telescope The barrel of the gun
I claim securing he
I claim securing the disk, $P$, to the adjusting screw by turning the
dge.of the socket over the edge of the disk as described.
 sprs,
springs, betw
and strap,
40,809.-Lock for Fire-arms.-Wm. H. Baker, Marathon N. Y.:
p, provided with notches for the sere to hold the bammer at full or
talf cock
It I claim in a lock constructed as described. extending the arm of
he sere or link through the lock plate, to makea connection between
ne sere and the elt he sere or link through the lock plate, to make a connection betwee
ne sere and the cock.
t0,810.-Railroad Journal Box,-O. Ber t0,810.-Railroad Journal Box.-O. Beecher \& R. E. Rog we claim, first
 $M_{\text {o }}$ or its equivatent, the whole' be ng connstructed and arranged
vithin a journal. box and operating substantially as and for the pur-
jose herein set forth. ose herein set forth.
Second, The partition, I, oil chamber, L, frame, J, and oiling
oller, K, the whole being arranged substantially as set iorth for the niler, K, the whe
Third, The ified.
Third, The annular flange, G, or its equivalent secured to or form
ng part of the wheel or arle, and arranged to priject into the in
erior of the box, substantiaily as a and for the purpor
 vheel or axle, and arranged in, respect to the anmular a llart of the, E , of
he box, substantially as and fur the purpose herein set fon th.
t0,811.-Soda Water Apparatus.-J. H. Blaisdell, Boston Mass.:
vichinm in a soda apparatus the arrangement of one outlet for sod Also the arrangement aronnd or adjacent to the sida outlet or
mitlets of the various outlets for sirups and other fluds, substan
iall ally as described.
Also the arrangement in a soda apparatus of a diaphragm, $n$, and
tisk. or or the equivalent thereto, so as toact under pressure as
de cribed to admit into two or more passages, and to shut olf ther
rom tie sod rom the soda supplied from a common sonree.
Als. the formation of a chamber in a soda discharge pipe, so as to
 hic superseno $h$,
hilly as set forth.
Also the condensed arrangement of ontlets, so that while each is
ieparate from the others, they are all with the composs of and
:an each of them discharge ints an ordinary drinking glass, without an each of them discharge int, an on
emoval thereof, from a fixed postion.
10, 812. - Harvester.-Virgil W. Blanchard, Bridport, Vt.
I claim, first. The employment or use of a sliding shat I claim, first. The employment or use of a slidng shatt, E, one cir
wo. provided with arm, H, in comhinatinn with two coacer trie
ircles of cogs, b b', attached to the driving wheel D, or to a wheel

set forth. The employment or uce of springs, $G$ G, applied to or con nected with the shaft or shatis, E. in the manner shown. or in any
quivalent way for the purpose of equalizing the movem ont of the
ickle, or cansing it to operate smoothly without jars or concussions sickle, or cansing it to operate sunoothly without jars or concussion
ic herein setf forth
Third, The curved stay bar, $T$, attached to the bar, $O$, and shoe, F




 hy means of the roller, v, placed in the arm, Q, and fited in the pen-
lant frame, $R$, attached to_the frame, $A$, substantially as herein de
icribed. cribed.
[The object of this invention is to obtain a grain and grass barvester
which will be of light draught, admit of having a more or less rapid which will be of light draught, admit of having a more or less rapid
novement communicated to its'sickle as oceasion may require. be durable, free from allj unnecessary friction in the operation of it orking parts, and admit of having its finger bar adjusted with th greatest facility so as to clear obstructions which may lie in its path
40,813 _Railwav Corriage.--Nainum Franklin Bryant East Boston, Mass.: I claim the compunatuou, of the sliding box, e, made either with -r r
without the oilchamher and either a stationary or a moveable bear-

 I aliso claim the combination of the moveable stopper, a, with the
honsing, . and its chock, H, the said stoperbeing for the purposes
r to operate as specified Ito operae as specined
I also claim the housing as made and provided with the packing
grove, tand packing, w. to ercumpass the sliding box, in maniser srove, and packing, w. inded
ind for the pripposes specified
I also claim the combination of the centralizer or lip. s. with the I also claim the combination of the centralizer or lip. s'. with the
hrusing or truck rrame, or car inge thereor, when the latier has its
wheels so applied as to be c.pible of being adjusted by means of a wheel changing irack to either of two tracks of difiterent gages.
40,814 . -Channeling. Tool.-Albert Bottum, Bridgeport Conn:
I clanm the combination of the straight cotter, A, and the arc
formed cutter, , or cutting a score and a channel within it of the orm substantially as herein specified.
[This invention consists in the combination of a straight cutter and an arc-formed cutter so arranged relatively to each other, that while he first cuts a score in the sole or other article the other cuts from within the said score a strip whose transverse section is of semi-cir-
cular or segmental form, thus producing a semi-circular or seg:nent cular or segmental form,
shaped covered channel.]

40,815.-Machine for making Nuts.-Orin C. Burdict, New Haven, Conn.:
I claim, first, A die constructed as described in woparts. a anid $h$
and he said two parts combined with movate minich m, and
fixed punch, $\mathbf{N}$, to operate in the manner and for the purposi secified. The combination of the sleeve, i, punches, $L$ and $N$, when
Second, The Second, The crmbination of the sleere, i, punches, Land $N$, when
he same are arranged in the manner descrined and combilied winh a die constructed as and for the purpose specified.
0,816.-Feeding Device for Saw Mills.-Victor H. Busch mann, Baltimore, Md.

## I claim, first, Applying the reqnired pressure to the feed and guide ollers. by means of a single force acting equally upon opposite side

 ollers. by means of a single force acting equally upon opposite sidesf both roller cearrying frames. by mechanism constructed and operating substantially as descri,bed
Second, Hanging or supporting the roller carrying frames con
sructed a s described in such manner that while they will alway suructed a s described in such manner that while thev will always
preserve their paralielism to each other they are allowed to yilld
equally on each sideot a centralline and accom mudate theinselves

 scribed.
Fourth, A central weight or other similar force in combination
with a guide a pplied and operating substantially as and for the pur poses described.
40,817.-Construction of Buggies.-Jonathan H. Bye, Sterling, 111
I claim, first, The combination of the thills, a a, with the springs
b and ce iot the purpose and in the manner herein described.
Second The chater
 ar, $h$, substantially as set forth
40,818.-Filter.-Anthony Chabot. San Francisco, Cal.:
I claim, first. Combining one or more porous tubes with a pive by means of a fllange, a, on the pipe for the reception of one end ot
each tube, a cap. C. for' the reception of the other tidd and a bolt, D suhstantially a herein described Second, In a filtering apparatus constructed subztantially as speci-
feed, Ilaim the herein described arrangement of chambers and pass aese for conveying the water to and f rom them, operating as ex
rlanned to provide the cleansing of the tilitrsby reversing the
flow of water through them without reversing or changing the posi.
 the purpose herein specified.
[This invention consists in a novel mode of applying porous tubes for filtering pur poses whereby they are:secured in their places with great facility and their strength greatly increased, and provision is
madefora very free flow of water to pass through and from them; made in the arrangen of a tilter or fiiters and the chamber passagesforeving the water to and from them, in suoh manver as to provide for the cleansing of the filters by reversing the flow of water through them.]
40,819.-Window-sash Fastener.-Charles B. Clark, Mount Pleasant, Iowa

## "I I claim the circular flange, B, or its equivalent and the peculiar- shaped rollers, C C; the same being combined and operated substan- tially and for the purpose as set forth shaped rollers, C; the same being

40,820.-Railroad Car Coupling.-Wm. C. Clark, Portland, Maine :
I claim the application of the pin tothe bunter bar, so that the pin
may be capabie not only of swinging on a fulcrum in manner and under circumstances as stated, but of being raised ofr the fulcrum in
order to disconnect the link from the bunter bar. pin and its supports as described, when such pin may be appled to
the bunter bar, substantially in manner and so as to operate as
40,821.-Washing Machine.-Adams R. Cooper, Mason
City, lll.:
I claim, firct, The combination of the furnace, the boiler, and the
washing inechanism, substantially in the manner described for the purpose sel forth,
Second, Mounting the upper rubbing and squeezing rollers in an
independent skeleton frame, substantially in the manner described
 ential motion, with two or more rollers carrying an endioss apron
over a boatd between them, substantially in the manner and for the purpose described.
40,822.-Corn Planter.-Wm. Craig, Urbana, Ill.
which are providod with flanges, $b^{*}$, as shown for the purpose speci
tied Second, The button, L , attached to the back part of the dranght pole, B, and arranged as shown for the purpose of keeping the front
part of the frame, A.elented and the shares, $F$, above the surface Third, A rranging or placing the drivers seat, M, on supports, $\mathbf{N}$,
the upyer parts of which are horizontal and are fitted in slots made the upper parts of which are horizontal and are fitted in sios made
longitudinally in the end of the seat, $M$, to admit of the adjustmen
of the latter as set forth. or the later as set forth.
this invention relates to a new and improved seed-planting device rows, and the seed-distributing device operated either automatically or by hand, and the seed also properly covered and the earth rolled so that the latter will be firmly compacted over the seed and the clods of earth crushed or pulverized, the device also, by a simple manipulation being capable of having its furrow shares raised out of and free from the earth, as is necessary in turning at the ends of rows, transporting the device from place to place and in rolling land.] 40,823.-Seat and Cane.-Charles H. Dascomb, Cleve land, Ohio
I claim the herein described improvement in combined cane and
seat, consisting of the sections, ABB, canvas, S , head figure, 3 , and
pin, D, the several parts being constructed and united in the manner pin, D, the several parts being constr
40,824.-Apparatus for Adjusting Ordnance in Boring claim the arrangement of the Mass.:
screws, $g$ and it and uperights, h, or their equering, the incline ine, $c$, wedge, $d$, 40,825.-Nut Cracker.-Timothy Earie, Smithfield, R. I.:
 tion with a ssationary back rest, $g$, substantiany as described for the
purposes specified
Second, of various siz js , when applied to a nut-cracker, substantially as de
scribed. 40,826.-Hoe.-Josiah Ells, Pittsburgh, Pa. Ante-dated Dec. 1, 1863 :
ion with a b bade, m, having a semi-circular tlangeve, e, and arched re-
cess, h, and the key (Fig. 3). tior securing and strenghening the
40,827.-Machine for making Tags.-Thomas B. De Forest Birmingham, Conn.
ith an eyeleting mechanism whereby mechanism, in combination tervals, substaniplly as set forth. mechanism and a stamping or cutting-out device or mechanism,
whereby the material may be eyeleted and cut apart into pieces of given size with the eyelet in a given position in each.
Third. An eyeleting or eye-torming mechanism, in combination
with a siamping or cuting-out device or mechanism. whereby the eye-firming oueratlon and cutting out are both performed in an or-
ganized mechine without moving the material (or handing it) more

 frith. The emplorment of the presser foot, g, or its equivalent in
Fith. The
combination with the eyeleting mechanısm as and for the purpose Sixth, The employment of the hammer, $L$, or its equivalent, in
onnection wih the eyeleting mectanism. to insure the flow of eyeets through the supply passage or chute, $Q$, substantually as herein 40,828.-Percussion Fuse for SheIls.-A. H. Emery, New York City:
I ciaim, first. The combination and use of the flange, $D$, and
hre $l$, Fi, with the phunger, C , substantially as and for the purposes Second, The connination and use of the washer, E. when combined
with the shell, H, , ,lange. , , and screw thread, $F$, substantaily as and
for the purposes hereind described and set torth. 40,829.-Latch.-Barthol Erbe, Snowden, Pa. Ante-dated Oct. 24, 1863
I ciaim the use and employment of a round latch head when the
same is connected with the internal moving parts, so as to revolve same is connected with the internal moving parts, so as to revolve
on its axis. in the manner substantially as described for the purpose 40,830.-Port Stopper for Vessels of War.-John Erics son, New York City :
claim, first, The construct
crank, substantially as herein specitied port-stopper in the form of Secon', The arrangement of a port-stopper to turn about an up-
right axis or nearly upright axis. situated some distance with in or
behind and opposite ornearly opposite to the center of the port,

 40,831. - Bed Bottom.- George Frey, New York City : I claim the cimbination of two frames, A C, one being provided
with rovable legs and the other with an adiustable head piece and
both being connected with each other by elliptic springs, D, in the
manner and for the purpose substantially as herein shown and de
scribed. [This invention consists in the application of elliptic springs beween two frames, one of which is provided with movable legs and the other with an adjustable head-piece and with a cane bottom, in such a manner that when the legs of the first or lower frame are in heir places, the whole device forms a convenient and cool lourige particularly intended for summer, and when the legs are removed edevice can be placed into a bedstead and

40,832.-Process for Removing Burrs from Wool.-James Fullen, of Saxonville, Mass.
I claim the treatment of wool, as described, viz, by applying to it,
in connecun with the treatment of it, an acid solutin, a picker
and an alkalme solution, as set forth, atolution of Irish Moss,
equivalent, the whole being
40,833.-Car Coupling.-M. C. Gardner, Rochester, N. Y.: means of the balls, $\mathbf{C}$, moving in holes or groovesat tight angles to the line of draft, the whole operating in the manner and for the pur-
pose substantially as described. 40,834.-Registering Marine Logs.-Alexander Gordon, New York City
 their equivalents and an apparatus for dropping a pellet into one of
said compartments whenever the vessel has made a certain distance said compartments whenever the vessel has main a aertaind stance
the ellverin tuhe or portion of the said dropping aparatins being
controlled asto aluays point in the direction in which the vessel is
coviled moving through the water, and the wh
and for the purpose herem specified.
40,835.-Composition for Lubricating.-Charles Grath, St. Louis, Mo.:
I claim the production of an axle and machine grease made from
paraffine oil with the combination of the substances above specified. 40,836.-Brewing with Maize.-Ludwig Hacker, Altenburg, Hungary
claim, tirst, The within-described process of disclosing the starch barley malt, in about the proportion heretofure specified, hy the hree manipulations substantiaily as set forth, said manipulations
being condncted either in one apd the same ur' in differtut vessels, Say me desirable.
Second, Exposing maize, when the same is mixed with barley malt
about ine proportion herein specitied, to the action of boilling wa40.837 suntantially as and tor the purpose set forth.
 c c arranged substantially in the manner and for the purpose spe
40,838.-Machine for Grinding and Polishing Tools,- J .
A. Hendrick, Providence, Pa. Ante-dated Nov. 21 , A. Hendrick, Providence, Pa. Ante-dated Nov. 21 I claim th
Ing a lateral reciproca shafts, I.T. fitted in a sliding frame, H, hav
 ated from the grindstone shatt. As. Ashown, or in any equivalent
way, in combination with the griudstous, h, and the adjustable bear
ing, S , or tis equivalent, for the purpuse herein tel forth. 40,839.-Composition for Bank-note and other Inks.-T. S. Hunt, Montreal, C. E.
as an ingredient or basis of an in ink for of the sainting from tngraved plates,
from inves or for orther kinds of 40,840.-Grain Cleaner.-John Hutciiison, of Three Rivers, Mich. :
I claim, ats, The combination of the hopper, the sliding-sleeve,
and the rotating dish. or scattering cup, substantially in the manue and fer rote purpose described.
and or the scattering dish, inclined board, E
Second, The combination of the Second, The combination of the scattering dish, inclined bard, $\mathbf{E}$
and beak, e, with the suction spout, as described, for the purpose st
forth.
forth.
Third, The combination of a sliding sleeve, cut-off, a cant board,
and a suction spout with a fan, substantially in the manner described, Or the purpose set forth.
Fourth, The combination of the hopper the toll dish, and the slideFourh, The combination of the hopper the toll dish, and the slide-
ralre, as and for the purpose set furth. 40,841.-Inkstand.-L. P. Jenks (assignor to L. L. Tower), Boston, Mass. :
I claim the combination of the elastic ring. $G$, with the reser 40,842.-Potato Digger.-William Jones. St. Louis, Mo. I claim, first. The clearer, $D$, arranged ou the front end of the ma
chine and combined with the bar, E , for operating the same. The chine and combined witt the bar, E, for operating the same. The
whole to
set forth second, I claim the rods, K, and snrings, J, in combination with
the hinged platform, H, as and lor the purpose set forth. Third, I clam, in, combination with the digger, $\mathcal{G}$, the sifter, $\mathbf{N}$ Fourth, I claim, In combination with the digger and sifter, cen
siructed as set forth, the endless apron, , mi, for the purpose of receiv ingoted as set forth, the endiess apron, m , fo
ing and delivering the potatoes, as described
40,843.-Ventilating Railroad Cars.-T. S. Lambert, of
Peekskill, N. Y. Ante-dated Dec. 4, 1863 : I claim the and fort other purposes, substantiallo as set forth rai The construction of a coloset with shelving or drawers for ventilation by $m$
set forth.
40,844.-Mode of Facing the Walls of Buildings.-T. S Lambert, Peekskill, N. Y.
walls. of building each piece of which facing is finished with $\&$ shon er off set or arm, to be the means of fastening it to the
manner and for the purpose substantially as set torth.
40,845.-Roller for Wringing Machines.-T. S. Lambert,
Peekskill, N. Y. I claim the a pplication of any kind of cordage to form the surface
of rollers in wringing machines, in the manner and for the purpose

40,846.-Pen and Pencil Case.-J. J. Lownds, New York ${ }_{1}$ clain
 [This invention consists in having the case of the pen and pencil for med of two tubes, arranged so that one may slide within the other nd connected with a pen-slide movement or mechani $m$, in such canner that the pen will be moved out from and drawn within the
case by extending and closing the tubes. The device being also pro vided with a reserve fur leads and a pencil arranged in a novel way to form a convenient article of the kind specified. 1
40,847.-Hose Nozzle.-C. F. Macy and Seth Martin, Lit tle York, Cal.
We claim a hose pipe provided with internal radiai plates, substan
(ially as and for the purpose herein set forth. [The ordinary bose pipes, especially those whichare used for min partly in consequence of the taper form of the pipe and partly in consequence of the hose itself, which is almost invariably more o ess twisted or cr ooked near the pipe. This scattering or spreading difficulty is the object of this invention )

 as set forth. ,849.-Mode of I claim the manner herein described and represented of slinging
the carridge.box of a infantryor faavary soldier so as to have the
weightthereof counterbalanced hy the other accouterments and arms
usually worn upon the body, and ihe weight of the whole borne upon usually worn upon the body, a nd the weigh
the shoulders, substantially as described.
IThe object of this invention is to transfer the entire weight of the arms and accouterments of a cavalry or in fantry soldier usually worn upon the body, from the waist to the shoulders, for the purpose of lessening the tendency of the soldier to inflammation of the bowels, piles, hernia and oul dseases which result from wearing a tigh body belt, and at the sume time enable him tocarry a much larger
quantity of ammunition than he could possibly do in the usual or ordinary way.]
40,850.-Excavator.-Daniel McNabb, Moscow. Mich. I claim, first. The scraper, B, with its arooves, P, and pulley, K,
supended by chains, E E, on pivots, N, and operating substantially as described. . .
Second. I Ilso claim the bar. G, the hooked king-bolt, the shifter,
F, and the brake. D, the whole constructed, combined and operating substantially as described and for the purposes specified.
${ }_{c} 0,851$.-Clock and Watch Escapement.-Don J. Mozart, and Laporte Hubbell, Bristol, Conn. :
We claim, tirst, Constructing a staff or verge, in such manner that
the pallets or points of reposse are adapted to receive the teeth of a common ratchet scape wheel, substantially as describe
Second, The concave heveled surfaces, j, j, and groove, or charnel,
i, formed in the onlid cylidraricaliverge, substantially as deseribed.
Third, The auplication of the scane whepl
 the verge, h'. When e netructed snbstantially as described.
Fourth, Giving the vertical anjosiment th the sunprit for the rerge
of the escapement by means substantially as described. 40,852.-Hydrant.-John Pringle.-Jersey City, N. J.: I claim, first, The plug. a. with hree passages, g h i, and held in
place by a cap. © over its thick end in combination whith the lever,
rod. , slip weight. E, and pines, $\mathbf{C}$. all constructed and operating
 in combination with the rod e. and plug, a, constructed and operat
ing as and for the purpose directed.
IThe object of thisinvention is a self-actijg metallic hydrant capa he of being closed by the water or other liquid from the supply to the delivery pipe and allow the waste in the upper part of the deivery pipe to run down into the ground, thereby preventing its freez: ing, and saving the hydrant from injury.l
40,853.-Sewing Machine.-W. S. Pratt, New York City I claim, first. A sewing machine making a running stitch and usip,
an ordinary sowing needie, operating sumstantially as described. in
which the needle is not stationary, but is carried or driven torwar which the needle is not stationary, bnt is carried or dryven thirward
throuh the clith in making the stith, and then carried backward
with the to hric piepratory with the tahric p, pparatory to the making another stitch.
Recond, The arraangement of the lip, d, in connhination with the
needle, g, and the rollers, a a a stantially as desrribed.
Third, The comination and arrangement of the ratchet, o, and im
pellingarmorpawl. n, with the mechanism. rotating the rollers, a $\mathrm{a}^{\prime}, \mathrm{b} \mathrm{b}^{\prime}$, sul hstantialily as and for the purposes set forth
 the ratchet, o for the purpose of regulating and varying the length of
the stitch, substannally as described.
40,854.-Quartz Mill or Crusher.-P. M. Randall, San Francisco, Cal.:
 upon from the peri, hery of the muller tor ind its conter and thence
unward through the mulier. so that the substances mav be expelle.
 s before, as herein set furth
IThe object of this invention is to obtain a muller to operate in Continuous operation until the article is reduced to or reduced by ontinous operalion de bree of comminution. Theinventionis applicabl to the reduction pecially designed for the reduction of quartz and the amalgamation of pecially designed for the reduction
the minerals contained therein.]
40,855.-Pen and Pencil Caises.-J. H. Rauch, New York I ciaity first, The tube, B. placed centrally or concentrically in the
inbe, A, in combinatiod wlth the detachable pen-slide tinhe. I). all ar
 Second, Constructing the pen-slide, $\mathbf{E}$ of two tules, a b one being
Sited over the other with the shank of the ipen-holder, F , between
 AD. for the purpose set firth.

 pose herein set forth.
[The object of this invention is to obtain a combined pen and pen cil case which will be capable of being closed so as to be quite shor and convenient to carry in the pocket, and at the same time be capa-
ble of being readily extended or lengthened when used either with the pen or pencil and admit of a good sized-pen being used.]
40,850.-Compound Projectile for Ordnance.-L. E. Rey
I claim the combingtion. of the major and minor proiectiles, the
interpossd charge and the fulminate priming, substantially as herein
described the interposed charge and the fulminate priming, substantially as herein
described the whole forming a compound projecule operating is
herein sei forth. And I alss claim the nrotecting ring, e, applied substantially as an
[This invention consists in a compound projectile composed of tw distinct projectiles, one of which fits the piece of ordnance from le bore or be fired, snd the other fits to and projects from a suita laining, behind the smaller projectile, a charge of gunpowder and percussion priming for the ignition of the same, or a charge of fulmiweight sodistributed that when it is discharged frum the gun it pointof the smaller projectile will strike and by percussion causethe exploson of the charge by which the smalier one, after having re tiona! impact.?
40,8j7.-Stamp Canceler.-R. H. Rogers, New York I clity the ink reservoir. A. with perforated stamp, plate, J, a
tached to its lower end in connection with the plunger, D, and dia
phragm, E, elther or both, and with or without the tached
phragm, E, elther or both, and with or without the gage, H , and dia
[ $\mathbf{T}$ in inventisn relates to a fountain canceling device, one which
will contain a quantity of ink so as to supply the deviee for an indef nite number of impressions and obviate the necessity of applyin the device to an ink pad when an impression is to be given.]] 40,858.-Joint for Slate and other Frames.-Francis Shen ton, Slatington, Pa.
I claim a joint formed of notchirg the sides and ends, as described
in combination with the spline or piece, $J$, and pins, $K$. 40,859.-Cultivator.-M. H. Skiff, Cornwall Bridge, Conn. I claim the combination of the carriage, F, that carries the culti
vator teeth or plows, with the axle, A. and with the main frame, arried on said axle, that the driver' from his seat may, at pleasure and
down, substantially in the manner and for the purpose herein de 40,860.-Hay-elevating Fork.-R. J. Stanley, Mount Mor ris, N. Y.:
I claim the double tork composed of the two stocks, A A', with
heir attached tines, the two arms. C C ${ }^{\prime}$, two links, $D$ D and the atch lever, $G$, and spring catch, d, or their equivalent. Ritached to
ne of the arms, $C C$, the whole combined and operatieg substan
ially as and for the purpose herein ne of the arms, $\mathrm{C}^{\mathrm{C}} \mathrm{C}^{\prime}$, the whole combined
lially as and for the purpose herein specified.
[This invention has been more especially designed ior forks for th scharging of straw from the bleaches in the manufactare of paper but may also be applied to agricultural purposes. It consists in novel construction of the fork and in certam novel appliances there to, whereby the opening and closing at the proper time is rendered tomatic, and the nepsily for a separate tackle to open the fork is ispensed with
0,861 - Truss.-W. R. Stephenson, 'West Greenville, Pa. Bratching overlampining springs A A, with each other and with the
Ewinging arms, $D^{\prime}$, and pads, E E, in the manner herein shown aninging arms,
and described.
The object of this invention is to arrange the branched ends of ouble body spring by means of straps, for extension and counter促 end everted by said pads on the body can be increased or diminished pleasure without removing the truss.]
40,862.-Evaporator for Sorghum Juice.-D. S. Stewart ello, Iowa
I claim, tirst, The combination and arrangement of the pans, B C C
the furnace, A, and flues, $\mathbf{D}$ D, substantially as and for the purpose set forth and described,
second, The arrangement of the valves, $T$ T, in combination with
the flues, $D$, for the purpose of varying the heat under the pans, $C$ Third, The entire apparatus herein described, consisting of the pans,
TC $\mathbf{C}$ arranged as shown, the furnace, $A$, with flue, $F$, the flues, $D$, B C C, arranged as shown, the turnace, A, with flue, $F$, the fues, $D$
$D$, and chimneys, $M$, $M$, and valves, $T$, the whole combined and op

40,863.--Cooking Stove.-L. E. Suffiert, St. Louis, Mo. I claim the removable heating jacket or chamber to be placed on
top of the stove, furnace, or any other fire-place, fig. 6a, substantially as describedrabove.
4 ,864.-Harvester.-W. A. Sweet, Syracuse, N. Y. : I claim, irst, The attaching or securing of the cutter-bar head, $\mathbf{C}$, torm, interposed between the cutter bar, b, and the teeth, a, of the
fickle, substantially in the manner as and for the purpose herein set forth.
Second, The peculiar construction and arrangement of the slot cap,
E, and way guide, $F$, substantially as shown, for the purpose of form-
 40,865.-Machine for Exercising the Human Body.-C. F. Taylor, New York City
I claim the arms, G G. provided with a.diustable pads, M M , and at
tached to the reciprocating bar, C , substantlally as shown, for the purpose specified.
I further claim
I further claim the arms, $G$ G, pads, M M, bar, C, serpentine cam,
E, andlounge, A, all arranged and combined fur joint operation, as
and for the purpose speciiced.
40,866.-Combining Springs for Motive Power.-George
Terry, New York City. Ante-dated Oct. 3, 1863: Terry, New York Uity. Ante-dated Oct. 3, 1863 : In claim the combiningor connecting together of a series of springs, will be wound up simultaneously by the turningot a common shatt,
and, when wound up, be made to exert their power, or act in an uni and, when wound up, be made to exert their power. or
form combined manner upon said shaft, as set forth.
[This invention consists in combining a series of springs, two or more, in such a manner that the power or strength of all the springs will be applied to a common shaft, and so as to act equally and har moniously precisely the same as a single spring, but with an increased
duration equal to the time of the action of one spring multiplied by duration equal to the time of then
the number of springs used.]
40,867.-_Lifting Jack.-William Thurber, Olean, N. Y.: I claim, frst, the combined arrangement of the truck wheels, I, $I$,
the spring shoe, $h$ and pointed spikes, $k$, operating in the manner the spring shoe, h and pointed spikes,
as and for the purposes herein set forth.
Second, I claim the cormbination of the hanging rack, a, the stirrup,
 40,868.-Shutter Fastenings.-T. J. Townsend, Baltimore, Md.:

I claim the wheel, A, chain, F, and bar, E, placed respectively
within a case, C, and pipe, D, in, connection with the hinge, ${ }^{F}$, of
the blind or shuttle applided to the wheel, A, or shaft, B, thereof, the the blind or shuttle applied to the wheel, A, or shaft,
case and pipe being applied to the window frame, a
substantially as and for the purpose herein set forth.
This invention relates to a new and improved device for opening and closing window shutters and blinds, and for securing them at any desired point between an open and a closed state from the inner the employment or use of a chain attached at one end to a sliding bar and attached at the opposite end to a wheel provided with a 40,869.-Pruning Hөok.-Aaron Travis, Peekskill, N. Y.: 40,869.-Pruning Hook.-Aaron Travis, Peekskill, N. Y.:
I claim a pruning hook, A, constructed in the form herein shown
with cutting edge on the various parts, ec and d, as set forth. [This invention relates particularly to the shape of the pruning
hook, anditconsists in running the cutting edge from the handle in hook, andit consists in running the cutting edge from the handle in
a straight line up to about two-fifths (more or less) of its entire length a straight line up to about two-fifths (more or less) of its entire length
and turntng it off at an angle of about 135 degrees, whereby an inand turning it off at an angle of about 135 degrees, whereby an in
clined plane is produced which finally ends in ashort hook, in such a manner that in applying said cutting edge to a twig or branch of a tree or to a stalk of corn or other plant, a draw-cut is produced and
the operation of cutting performed with less power than with a hook of the ordinary shape.]
40,870.-Sugar Evaporating Apparatus.-Erasmus Tucker, Poplar Grove, Ill.:
heat regulator, H, consisting substantially ol alternate ehallow indater
pans and perforated plates, when constructed and operated sul sian tially in the manner and for the pnrposes described. H, the dampers, g h , for the purpose of regulating or or shutuling oft
the heat from the pant ,
I also claim, in combinaty in the manner herein descrined. I also claim, in combination with the evaporating pans, set at dif-
ferent levels, the two chimneys, $E F$, and dampers, $k$, m, for the
purpose of heating the first pan, ${ }_{B}$, independently of the others,

40,871.-Machine for Renovating and Purifying Feather
-Clark Turner and J. A. Jackson, Triangle, N. Y.: We claim the revolving feather receptacle, A, in combination wit the steam chamber, C, provided with perforated tubes D D, passin
nto the sides of the reeeptacle, $A$, and having valves, E, fited
within them and all arranged as shown to operate in the manner as within them and all arranged as, sh
[This invention consists in the employment or use of a rotating
 manner and dried in a thorough manner.]
40,872.-Condenser.-G. J. Washburn, Worcester, Mass operating substantially as herein described.
Second The employment or use in a condenser, of the construc Second. The employment or use in, a condenser, of the construc-
tion specified, of a water chamber, ${ }^{A^{\prime} \text {, to contann a supply of water }}$ Which may descend by its own gravity in the event of pressure oc
curring within the tank.
Third. The Third, The check valve, b, employed for the purpose described in
Founthon with a condenser of the construction specified. Fourth, The combination of the perforated diaphragm, $\mathbf{J}^{\prime}$, and sy
phon pipe, $M$, with the tank, $\mathbf{A}$, and chamber, $\mathbf{A}^{\prime}$, for the purposes Fifth, The combination of the safety valve, 1, with a condenser of he construction described.
[mployment of the syphon ines the dimiculties hitherto existing in th 40,873.-Plant Protector.-James ${ }^{\text {W }}$ Weed, Muscatine, Iowa Iclaim thelemployment or use of rockers, $D$, of circular or secto orm attached to shutters, B, to admit or the ad. instment or manipu I alein set forth.
I allaim the supplemental shutters, $j 1$, attached respectively I the framing or structure and shutters, substantially as and for th
to in inose set forth.
ure or with ways antached thereto by means of cords, as and for the
urpose specified.
[This invention relates to an improved means for protecting trees, inesand other plants against injury from winter and springfrosts, and may be considered as the further carrying out, perfecting or ex ending of a means which was patented by this inventor on Oct. 21 1862.$]^{\circ}$
40,874
,874.-Machine for Amalgamating Gold and Silver.-
Zenas Wheeler, San Francisco, Cal.:
I clam, frst, The fixed spiral rilus, h, on the periphery of the ro-
tary muller, D, and reversedly spiral ribs, e, on the inner side of the
pan, $\mathbf{A}$, in combination with the curved grooves, g , in the face or pan, A, in combination with the curved grooves, g , in the face or
underside of the muller, D, and reversedy-curved grooves, d, in the
bottom of the pan, A, when arran ged for joint operation in the man er and for the purpose specified.
Second, Connecting the muller, $D$, to the shaft, $G$, by a universa oint composed of the yoke, $F$, and ring, i, provided at four equi-dis
ant poins around
arkis periphery with journals, i. it h h, the former
arkarings in the lower end of the yoke, F, and the latter working in hearings in the lower end of the yoke, $F$, and the latter
n boxes attached to the upper side of the muller, $D$, as and for the purpose specified.
Third In combination with the muller, $D$, and pan, $A$, the curved
plates, $L$, supported at their outer ends in slides, $n$, and at their in plates, $L$, supported at their outer ends in slides, n, and at their in haft, $G$, in such a manner that the plates, $L$, will follow any adjust
nentor the muller, and thus bear the same relation to it whether
in its highest or lowest working position as specified
The object of this in wention is position, as specined.
The object of this invention is to obtain a device of simple con struction which will cause a thorough incorporation of the quicksil
ver with the pulp containing the metal, so as to insure a perfectamal ver with the pulp conta
gamation of the latter.]
40,875.-Latch for Gates.-S. B. Williams, Leavenworth Kansas
I claim the securing of the bolt, $\mathbf{D}$, of the latch within the case, $\mathbf{A}$ shown, to admit of of me long on of the set screws, E, substantial adjustment of said bolt for the
purpose herein set forth.
[The object of this invention is to obtain a latch with a bolt so ar ranged that it may be adjusted longitudinally further forward or backward in the latch case, so as to compensate for any shrinking or swelling of the gate or fence, and admit of the bolt always being put in a proper relative position with the strike or nosing so that it gate and the fence may vary in consequence of shrinking and swell ing ]
40,876.-Combined Rake and Reel for Harvesters.-W. A. Wood, Hoosick Falls, N. Y. claim the combination of an independent rake and reel, when
arranged to work ogether, substantially in the manner and for the 40,877.-Rufflle.-E. C. Wooster, New York City I claim the too-ply ruftle herein described, composed of a single
piece of cloth folded, futed or crimped and sewed or stitched, sub piece of cloth folded, fluted
stantially as herein specified.
iece of oloth doubled by turning-ply ruffe composed of a single edges, having the two edges secured by two lines of sewing or stitch ing running lengthwise of the piece, with two frills which extend out ward from the line of stitching, and with a series of flattened plaits between them, the stitching serving the purpose of confining the plaitsand frills as well as the edges of the piece.
40,878.-Washing Machine--G. F. S. Zimmerman, Frederick, Md.:
I claim in a wash
non wash turb, the hinging of the frame, d, that carries the rubber f , to the stationary or under portion, b , tor the purpose and in the

40,879.-Spring Hinge.-Lorenz Bommer (assignor to the American Spiral Spring Butt Hinge Manufacturing Company), New York City :
lied to the sectional spring hinge, essen tially as and for the purpose erein set forth.
Second, The annular groove, $p$, in cap, $\mathbf{E}$, or its equivalent, in con
nction with pins, $f \mathrm{f}$, as and for the purpose herein set forth nction with pins, f f, as and for the purpose herein set forth.
Third, The combination of cylinder, $\mathbf{D}$, caps, $\mathrm{E} F$, spring, C , or
heir equivalents, substantially as and for the purposes herein set forth
0,880.-Machine for Nailing Shoes.-J. H. Brown (asclaim the to himself and J. E. Farwell), Boston, Mass.: I clarm the improved machine, as not only having its shear or cut-
ter arranged with respect to the nail drver and nail strip carrier,
substantially in manner as described, but as having combined with substantially in manner as described, but as having combined with
the shear and naildriver a mechanism, viz. the lever, D, and cam,
c, or the mechanical equivalent thereof, which through or by the downward movement of the said driver' shall be caused to force the
ghear forward against the nail strip in a manner to cause a nail by
the conjoint action of the channel, a, and the said shear, to be separ the conjoint action of the channel, a, and the said shear, to be separ
ated from the strip.
And furthermore I claim the improved machine, as not only so made, but as provided with a feeding mechanism, constructed, ar-
ranged and applied to the nail strip carrier, substantially as and so as o operate by meansas described.
And furthermore I claim the arrangement of the spring, N (either With or without the auxiliary carrier, L), with the nail carrier, the
channeled stock and the shear, made to operate with such stock as specified.
I claim in the nailing machine not only the arrangement of the
spring within the driver, but its combination with a bearer to work
within such driver substantially as suecifiec 40,881.-Tobacco Smoking Pipe.-Frederick Fickey (as signor to Wm. H. Fickey), Baltimore, Md.

A B C and D, the smoke passages, a b c and d, and the saliva cup
in the mannerd escribed and shown. Second, Placing a sponge or similar material in such a position in
a tobacco pipe that while it shall absorb and retain the nicotine, it which may accumulate in the pipe, substantially in the manner an ror the purpase described, and inis I claimirrespective of any specia
form or arrangement of chambers so long as the principle herein 40,882.-Lock.-T. G. Harold (assignor to himself and J I elaim a changable ring, b, notched for the passages of the bolt or解 Second, 1 claim the ring, g, carraing the shakkle in combination
with the divided and flanged case, secured hogether as specifed
whereby the hinge of the shackle is secured between the flanges, as Third. I claim the divided lock case secured together as specified
in combination with the ring carrying the shack le, when said case provided with two or more opening whereby the whesition of th shackle relative to the indicators can be changed whe
wilhdrawn, without opening said case as specified.
40,883. - Harvester.-William Jones (assignor to himsel and T. L. Salisbury), St. Louis, Mo.:
I claim, first, The arrangement of the elevating lever, $S$, on the apparatus, in the mann ner and for the purpose shown and described.
And second, $I$ claim the arrangement ot the cogged segments, $B$. rippers, PP , and reel posts, $O$, in respect to each other and to the
rame of the unachine, as shown and described. 40,884.-Breech-loading Fire-arm.-J. H. Merrill (as
signor to Merrill's Patent Manufacturing Co.), Balti signor to Merrill's Patent Manufacturing Co.), Balt more, Md.:
I claim, in combination with the ordinary hammer of a gun for
exploding a cap, an auxiliary hammer, $\mathbf{C}$, for exploding a metallii cartridge, said auxiliary hammer being pivoted to some stationary
part of the arm, and actuated by said ordinary hammer, substantially
F. F. Patterson Somerset, Ky. (now in the U. S. Army) assignor to
himself and $W$. S. Forbes, Philadelphia, Pa.

I claim the holding of the inner tube, $\mathbf{C}$, which is the hammer or
plunger in its phace, and to the outer tube, B, by means of a wooden 40,886.-Sizing for Hats, \&c.-H. E. Pond, Franklin I claim the above-described improvement in making the hydro
acoholic solution of gum for the purpose specified. 40,887.-Breech-loading Fire-arm.-Joseph Rider, Newark, Ohio, assignor to himself and E. Remington \& Sons, Ilion, N. Y.:
I claim the so combining of the hammer and the independen
breech plate, as that they may lock and interlock with each other
substantially as herein described and represented. 0,888.-Explosive Projectile.-J. N. Smith (assignor t himself and W. B. Headley, Jersey City. Ante-dated
Dec. 1, 1863:
in claim the wall of the misement of the bent levers, H H. in pivot sockets also in relation to the front and rear
shells, so as to simultaneously fulfill the two functions of direct in the wall of the missile, as also in relation to the front and rear
shells, so as to simmultaneously fulfill the turo functions of direct
hammers, and through conneting wires, of operating other ham
mers in a distant part of the missile, substantially as herein hammers, a dd, through connecting wires, of operating other ham
mers in a distant part of the missile, substantially as herei
specifed. I also claim the protecting cap, $G$, with its hollow cap arms, $g g$,
constructed, arranged and operating, substantially as herein set
I also claim the arrangement of the spiral wings, $M$ M, in combi I also claim the arrangement of the spiral wings, $M$, in combi-
nation with the arms, g, of the cap, G, as herein get forth.
I also claim locating separate shells in the extreme end of the pro


 40,889.-Railway Car Truck.-C. T. Tisdale (assignor to himself, B. W. Tisdale and M. B. Boynton), East Bos ton, Mass.:
I claim the combination of the two separate wheel frames, C D pplied together and to the wheels substantially in manner and so to operate as and for the purpose bereinafter specified. cribed, viz: the latch bars, L , Gad witheir means substan tially as des, for connectng and
disconnecting each two adjacent ends of said wheel frames, the pur ase of connecting them being as hereinbefore stated.
And I also claim the combination of the whel frames, $\mathbf{C D} \mathbf{D}$, an
heir bar, $\mathbf{G}$, with the bolts, I I, and on their holes. K K , or their me hanical equivalent, applied to the frames and bar, the same being for the purpose of fixing the frame to the bar in order to preserve
the wheels in their true positon with respect to the railway track.
And I also claim the bar, $G$, as provided with one or more shoul And I also claim the bar, G, as provided with one or more shoul.
ders, e, at each end, when the said bar is combined with two whee
frames, C D, applied to it and supporting the wheel axles, substan
40,890.-Lamp Chimney.-Albert Albertson, New York City. Ante-dated Nov. 26, 1863
I claim a lamp chimney composed of a metal frame, formed of a
tube, , rods, a, and a ring or base, E, and a glass portion, $\mathbf{F}$, fitted
on the exterior of the metal trame, in such a manner as to be on the exterior of the metal rame, in such a manner as to be ca
of being raised and lowered thereon, substantially as set forth.
40,891.-Toy Automaton.--J. S. Brown, D. C., assignor to 40,891.-Toy Automaton.--J. S. Brown, D. C., assignor to
himself and C. P. Stimets, New York City : I claim producing the walking motion by propelling each foot for-
ward alternately in the arc of a circle, around the other foot as a stationary center or pivot. 1 also claim the alternately acting wheels, $L$ L, for propelling the ee forward, having an intermittent moving action, to as to make I also claim adiusting the feet up and down on the legs or frame, so
s to vary or adjust the steps, as desired, substantially as herein socifary or adjust the steps, as desirea, substantially as herein I also claim suspending and pivotang the bust of the automatic
upon the movement thereof, substantially as and for the purposes


## RE-ISSUES.

 1,587.-India Rubber Soles for Boots and Shoes.-CharlesMcBurney, Roxbury, Mass. Patented April 5, 1859:
I claim as a new article of manufacture a sole for boots or shoes madaim as a new article of manufacure a sole for boots or shoes
mith holes for the reception ruber or other valcanized gum provided
wails, pegs, rivets threads or other with holes for the reception of nails, perg, rivets threads or othe
hechanieal devices by means of which the sole may beattached to
he uppers, such soles having a protecting external vulcanized sur Iace, substantially as herein described.
I also claim making india rubber sole
I also claim making india rubser soles or soles of any other vulca
izable gum in molds, in combination with forming therein previous nizable gum in molds, in combination with forming therein, previous
o vulcanization, holes designed to contain nails, pegs, rivets, hread
or other mechanical means for the attachment of the sole to the up

1,588.-India Rubber Soles for Boots and Shoes.-Charle McBurney, Roxbury, Mass. Patented April 5, 1859 Iole madeof a new manuracture a vulcanized gum adapted for attachment to boots or shoes by means of pegs, nails, rivers or sewing or other
equivant mans, the sole being made in such manner that sid at
tachment does not require any previous preparation of the sole by piercing or cutting holes.
I also claim as a new manuacture boots and shoes produced by
combining with the uppers thereof, a molded sole made of vulcanize ndia rubber or other vulcanizable, gum, when thelatter is attached to
the cormer by nails, rivets or othsr metallic clinching devices o
hreads, applied in

| Money Received. | H., of N. Y., \$20; J. L. C., of Iowa, \$20; G. A. S., of Conn., \$16; |
| :---: | :---: |
| At the Scientific American Office, on account of Patent | S.S., of N. J., \$12; A. G., of N. Y., \$12; J. E., of N. Y., \$20: R. H. |
| ce business, from Wednesday, Dec. 9, to Wednesday, Dec. 16, | B., of N. Y., $\$ 20$; T. B., of N. Y., 16; J. R. B., of Ind. M., of France, $\$ 16$; J. N., of Ill., $\$ 20$; W. G, S., of N. Y |
|  | A. D, of $\mathrm{N}, \mathrm{Y}$ \$16. C. H. G. of Wis., $\$ 20$ D. W., of |
| H. \& B., of N. J., $\$ 75$; I. E. P., of Conn., \$12; G. L. T., of N. Y., | P., of Mass., 25; B. L., of N. Y., \$28; T. W. W., of IIl., \$25; |
| \$49 ; M. C. B., of Ill., \$20; M. \& S.. of Vt, \$45; G. M. Jr., of Ill, | McG., of Pa., $\$ 10$; L. P., of Ind., 15; E. G. R., of Mich., $\$ 16$; E. |
| $\$ 20 ;$ M. \& H., of N. Y., $\$ 20$; A. J. B. F., of Ind , $\$ 20$; P. L. S., of N. Y., $\$ 16 ;$ F. L. S,, of $\mathrm{Pa}, \$ 45 ;$ A. C., of N. Y., $\$ 61 ;$ L. C. W., | of N. Y., $\$ 15$ A. A. B., of N. Y., $\$ 16$; H. B. H., of Ill., $\$ 12$; J. of N. Y,, \$16; D. D., of N. Y., $\$ 20$. |
| of Cal., $\$ 15$; W. K., of N. Y. $\$ 25$; J. L. \& Co., of Iowa $\$ 250$; L. \& | Persons having remitted money to this oflice will please to examine the above list to see trat their initials appear in it, and if they have |
| of Mass., \$16; L. W. F., of Ind, \$25; E. C, N., of N. H., \$16; | the above list to see trat their initials appear in it, and if they have notreceived an acknowledgement by mail, and their initials are not |
| R. L., of Ohio, $\$ 15$; L. B. S., of Conn., $\$ 25$; M. B. W., of Conn. $\$ 20$; W. A , of U. S. N., $\$ 20$; S. A. S., of N. Y., $\$ 25$; G. P. G., of N.' | to be found in this list, they will please notify us immediately, and |
| Y., \$25; J. \& D , of N. Y., \$59 ; J. W. R., of N. Y., \$20; R. H. M., | inform us the amount, and how it was sent, whether by mail or ex press. |
| Wis., \$20; T. F. B., of N. Y.. \$25; W. L., of N. Y., \$16; H. T. M., N. Y., \$16; J. P. I., of Iowa, \$15; D. I. S , of Iowa, \$20; E. S. | Specifications and drawings and models belonging to |
| of N. Y., \$16; B. E., of N. Y., \$16; C. S., of N.Y., \$16; M. \& | ith the following initials have been forwarded to the Patent |
| of N. J., \$25; G. T., of Mich., \$25; K | ednesday, Dec 9, to Wednesday |
| Iowa, \$15; C. K , of Iti., \$32;C. \& D., of Conn., \$25; | J. |
| Ili., \$16; A. 'T., of Iowa, \$16; F. A. De M., of |  |



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