Warren's patent rivets, prepared expressly for this purpose. Holes are punched in the edges and butts of the sheets of copper to receive the rivets, and when placed through the holes, and struck with a light hammer, the points (being split and slightly turned out) coming in contact with the insulator, are opened, and form a most perfect clinch. After the rivet-holes are made in the copper, the copper must be warmed, then carefully covered on the side to be placed next the insulator, with Hay's glue (a patent preparation). The bottom of the iron ship is covered all over with a material such as felt, which, being coated with Hay's glue, or other suitable composition, is to form an insulator; this is made to stick or adhere to the ship in the following manner, viz.: —Place the felt or other material, against the ship, and turn back a small part of the end of it, say about 12 inches, then well saturate with glue the part of the felt turned back: cover also the bottom of the ship with glue, and as quickly as possible, whilst the glue is hot, place the saturated part of the felt against the glued part of the ship, and press it hard home; then proceed to glue small portions of the felt and bottom of ship, pressing the felt home quickly, until the ship is entirely covered with felt. The outside of the felt must then be carefully covered all over with glue, which will then form a most efficient insulator between the bottom of the iron ship and the copper. It is then ready for coppering. Proceed to secure the copper to the insulator, in the following manner, viz.—Place some sheets of copper, either the upper or lower tier, against the insulator on the bottom of the ship, and temporarily secure them with small shores; then place the second tier either above or below, as the case may be, allowing the usual amount of lap for the edges or butts, and clinch them with the prepared rivet. Then put a hot plate over each sheet of the first and second tier, and force them home with a piece of backing and small shores, place the third tier on the insulator, in a similar manner to those, and proceed in this way, tier after tier, until the bottom of the ship is entirely covered with copper."

R. B. Forbes, Esq. of Boston, Mass., (to whom we are indebted for this paper) says:—"The inventor gives certain figures to show the advantages of coppering iron vessels, compared to those not coppered. My experience teaches me that figures generally lie when applied to the estimated cost of ships, especially steam ships; they very seldom tell the truth when treating of the speed, and never as to distances run in a given time with a certain number of revolutions, and a certain amount of steam; and as to consumption of fuel it is very seldom actually tested during trial trips. Nevertheless, Mr. Warren's figures show a gain of nearly $10,000 in six years with ships coppered by his method over others not coppered. In order to arrive at this result he assumes that the copper will last pretty well for that time, and that he will get off old copper sufficient to pay for the new, within £423, or about three-fourths of the original value. Admitting what my own experience has never yet warranted, that copper will last six years and only deteriorate 25 per cent., Mr. Warren makes a poor show for the new system, and illustrates forcibly how greatly his figures lie, by making no account of that never-sleeping element, interest, which begins in his case to eat up his substance from the date of coppering. As he gets no returns from old copper until the end of six years, the cost is about £3,580, and on this the interest for six years may be safely called 33⅓ per cent., so that he will have nearly expended £4,773 (nearly) against £4,062 and interest, which leaves the advantage whittled down to a very small sum.

"Mr. Warren enumerates, but leaves out of the account, sundry advantages to be secured, which would seem to be of some importance; they are as follows: —If the vessel was well painted originally, the damage by cleaning would be slight; fouling is the most serious evil. The estimate in Mr. Warren's prospectus for docking a ship of 3,668 tuns at £100 for 14 days is very small. But supposing the figures to be true, and the steamship to have cost $125 per tun, or $458,500 the gain—£1,787 at $5—gives only $8,935, or less than 2 per cent. on the cost of the ship, and less that 2½ on a valuation of $100 per tun. The never-sleeping interest account reduces this slight gain to a nominal sum.

"When I come to estimate the difficulty of bringing the 'insulator' to the 'sticking point,' and the difficulty in making copper stand six years in a fast ship, I cannot but be very skeptical as to Mr. Warren's mode of coppering iron vessels. I can scarcely believe that, in the damp climate of Great Britain and in the damp docks, an iron ship can be so completely dried as to make a perfect contact between the hull, the felt, and the metal—a contact so perfect as to preclude all danger of stripping off the metal sheathing, by the various strains and vibrations of machinery.

"I am inclined to think that well-braced iron ribs, covered with teak plank, or well-fitted yellow pine, will furnish a combination of great durability and capacity, costing less than a complete iron vessel. The iron-rib vessel is more especially adapted to commercial uses that for a vessel-of-war, because in the latter much of the interior is ceiled over, rendering it difficult to clean and paint the iron frames, which is an essential element of durability, whereas, in a merchant vessel, nearly the whole of the interior may be exposed to view whenever the cargo is discharged."

NEW BOOKS AND PUBLICATIONS.

THE PRACTICAL METAL-WORKERS' ASSISTANT. H. C. Baird, Publisher, 406 Walnut street, Philadelphia.

It is a matter of much importance to know that the mechanics and working-men generally, of this country, are so zealous for education and anxious to be informed on all that relates to the advancement of their special trades. None know this or can better testify to the truth of the observation than ourselves; for there is scarcely a day that passes in which we do not receive earnest inquiries for some mechanical work of the kind previously alluded to do. No man can hope to become eminent, or, indeed, maintain his position in his trade, who is contented to remain in ignorance of the improvements daily occurring about him; and, while his limited knowledge may have been useful at at one time, in these latter days he finds himself left behind by the great mass who are anxious to achieve something more than a mere common existence—who burn to not only distinguish themselves, but earn a competence by availing themselves of the researches and investigations of others.

Mr. Henry Carey Baird, the publisher of the work here alluded to, has devoted himself for years expressly to this class of mechanical literature; and his stock now on hand and in course of preparation will no doubt exceed that of any other publisher or publishers in the country. We regard Mr. Carey as a benefactor in one sense; for, while we do not wish to be understood as saying that he is uninterested in the matter, we do say that his works are not only appropriate to the times and the country, but that they are low-priced, durable, and creditable specimens of the art of bookmaking. The type is large and clear; the paper is firm in texture and handsome in surface; the binding is serviceable; and the contents of the books are all that he asserts them to be. We have said this much in Mr. Carey's favor because he is deserving of it, and not from a desire to laud him over others.

"The Practical Metal-workers' Assistant" is a book that is much needed by mechanics in general, since it contains a large number of lucid articles on practical subjects, which are in the highest degree instructive. We cannot begin to enumerate the subjects treated on in a mere notice; the reader will find a long advertisement in the SCIENTIFIC AMERICAN for March 26th [page 207], which will give him some idea of the work. Suffice it to say here that "The Practical Metal-workers' Assistant" comprises metallurgic chemistry, and the arts of working all metals and alloys; forging of iron and steel, hardening and tempering, melting and mixing, casting and founding, works in sheet metal, the processes dependent on the ductility of the metals; soldering and the most improved processes and tools employed by metal-workers, with the application of the art of electro-metallurgy to manufacturing processes. This information is collected from original sources, and from the works of Holtzapffel, Bergeron, Leupold, Plumier, Napier, and others. The author is Oliver Byrne. A new revised and improved edition, with additions by John Scoffern, M.B., William Clay, William Fairbairn, F.R.S., and James Napier, has just been published. The work is embellished with five hundred and ninety-two engravings, illustrating every branch of the subject, and forms one volume 8vo., price six dollars. It is sent by mail, free of postage, to any address.

Mr. Baird is about to issue a new catalogue shortly, which will contain the announcement of some other mechanical works he has in press.

RECENT AMERICAN PATENTS.

The following are some of the most important improvements for which Letters Patent were issued from the United States Patent Office last week; the claims may be found in the official list:—

Magnetic Globe.—This invention consists in the production of geographical globes with magnetic powers, by making them of a metal possessing magnetic properties, so that small objects, also possessing magnetic properties, will be attracted and adhere to the surface of the globe and thus enable the illustration to the eye of the principle of the power of the earth's attraction—a physical fact which teachers have heretofore found difficult to demonstrate successfully to the minds of the young. Any information regarding this invention may be obtained of the inventor, Elbert Perce, 71 Hicks street, Brooklyn, N. Y.

Marine Log.—This invention consists in a certain novel arrangement of a dial, indices, gearing and springs in combination with a slide which has attached to it, by a line of suitable length, a chip, bucket or float, which, by dragging in the water astern of a vessel while the instrument is arranged upon the taffrail, is made to produce a greater or less draft upon the slide and tension upon the springs according to the speed at which the vessel passes through the water, thereby causing the slide so to act through the gearing upon the indices as to indicate upon the dial the speed of the vessel in miles and fractional portions thereof. In order that the draft of the line may be always direct upon the slide, the case of the instrument containing the springs, gearing, dial and slide, is balanced on journals or between centers. The invention further consists in so arranging the several working parts of the instrument as to permit the whole to turn within the case, that when the vessel is making lee-way the slide may be drawn by the line and chip or float to a position oblique to an imaginary line passing longitudinally through the vessel and to indicate the lee-way upon a graduated scale provided on the case of the instrument. A. E. Lozier, of No. 322 Pearl street, New York city, is the inventor of this improvement.

Grain Drier.—This invention consists of a series of perforated revolving cones arranged in the interior of a tower or suitable shell, and applied in combination with a series of conveyers, perforated platforms, chambers for receiving and for discharging hot and cold air, and one or more suction blowers, in such a manner that grain, introduced through a suitable spout or hopper in the upper part of the tower, will be scattered successively over the cones and spread by this action, combined with that of the conveyers, on the platforms and finally discharged through a perforated chute being exposed throughout its whole course to a current of hot or cold air, which can be regulated by equitable dampers or simultaneously to a current of hot and of cold air, and by the action of the shell or tower the moisture is expelled with the spent air, while the grain is cooled by the cold air. R. T. Sutton, of Rochester, N. Y., is the inventor of this improvement.

Percussion Fuse for Rifle Shells.—This invention consists in the construction of the metal plunger which is employed in a percussion fuse plug for explosive projectiles to effect the explosion of the percussion cap or other percussion priming, with one or more small longitudinally projecting columns or prongs are bent aside or twisted off, and so caused to leave the plunger free to move lengthwise and thereby effect the explosion of the percussion cap or priming when the projectile strikes. Robert P. Parrott, of Cold Spring, N. Y., is the inventor of this improvement.

Condenser for obtaining Fresh Water in Steam Vessels at Sea.—The object of this invention is to obtain a plentiful supply of fresh water on board of steam vessels, and to this end it consists in the employment of one or more pipes leading from the steam chimney or steam chamber of one or more of the boil-

ers to one end, or nearly so, of the vessel, thence up through the bottom to any part or parts of the interior of the vessel where fresh water is required. By this means a copious supply of fresh water is obtained by condensation or distillation and forced to where it is required for use by the boiler pressure without the necessity of a donkey pump for such purpose. This invention will be very advantageous on board of steam vessels of war or transport or passenger steamers, which carry a large number of persons who necessarily require a large quantity of fresh water. G. R. Vanderbilt, of Mount Vernon, N. Y., is the inventor of this improvement.

Artificial Limb.—This invention relates particularly to an improvement in the mode of securing artificial limbs to the stumps remaining from the natural limbs. The invention consists in the use of one or more rollers in the bottom of the cup intended to receive the stump in combination with a strap secured to the covering of the stump and under its center in such a manner that by placing the stump over the mouth of the cup, passing the strap through under the roller at the bottom of said cup and pulling it, said stump is drawn into the cup entirely by the strain exerted by the strap on the covering, and consequently the slipping back of said covering and of the flesh under it is effectually prevented; the invention consists, further, in a wooden disk combined with the canvas covering of the stump and with the strap used for pulling the stump into the cup in such a manner that by inserting a staple into said disk a firm connection can be effected between the strap and covering, and by straining the strap the end of the stump and the bone protruding from the same is entirely relieved from pressure. Joshua Monroe, of No. 560 Hudson street, New York city, is the inventor of this improvement.

ISSUED FROM THE UNITED STATES PATENT-OFFICE

FOR THE WEEK ENDING MARCH 15, 1864.

Reported Officially for the Scientific American.

☞ Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

41,898.—Calculating Machine.—Joseph B. Alexander, Baltimore, Md.:

I claim the combination of the separate levers with the separate sets of wheels so that the speed of calculations is gained from right to left, or from left to right, by arithmetical progression as described and represented.

I also claim in combination with the wheels, A, the spring cogs, l, substantially as and for the purpose set forth.

I also claim so combining a set of figured drums with suitable means of operating them as that they will show subtraction working in combination with those which record addition, subs antially as herein described and represented.

I also claim the combination and arrangement of figured drums, wheels, face-plate, and levers, so that addition, subtraction, multiplication, and division may be worked out on one machine, substantially s described.

41,899.—Cultivator.—John Austin, Rockford, Ill.:

I claim, first, The combination of the shifting driver's seat, D′, with the main frame. A, and laterally shifting plows, K, in the manner described, for the purpose of enabling the driver to balance the machine, and control both the vertical and the lateral movements of the plows, as set forth.

Second, The combination of the main frame, A, and compound lever-frame, F G, with the plows, E K, when the several parts are arranged and operate as described, for the purposes set forth.

Third, The combination of the adjustable driver's seat, the foot-levers, N, and the laterally adjustable plows, K, when severally arranged (relatively to the main frame, A) and operating in the matter and for the purpose described.

41,900.—Buckle.—Isaac Banister, Newark, N. J.:

I claim t hedouble buckle with the joint bar of one tongue forming the loop for the other's strap, while the one joint bar forms the stop or bearing for the lower tongue, when constructed and arranged substantially as herein specified.

41,901.—Water Elevator.—M. C. Bignall, Seneca Falls, N. Y. Ante-dated March 14, 1864:

I claim the cross board, E, provided with the opening or passage, k, when said board performs the double office of guiding the counterpoise rope, belt, or chain, and thrusting the lower part of the bucket toward the spout or trough, as arranged with the chain C, and reel, B, substantially as herein set forth.

41,902.—Flax and Hemp Machine.—George W. Billings, New York City. Ante-dated March 5, 1864:

I claim the cleaning of flax and hemp by passing the fibre between stationary knives or slats in combination with the scraping knives, the lifting bars and feed rolls, the whole being cons ructed, arranged, and operating substantially as described and set forth.

41,903.—Machine for breaking Flax and Hemp.—George W. Billings, New York City. Ante-dated Feb. 28, 1864:

I claim the knives or scrapers, k, having the compound motion herein described, in combination with the stationary aperture or throat, o, and smooth feed rollers, i i, the whole constructed subs antially as and for the purpose set forth.

41,904.—Mode of cutting Boots.—George A. Brown, Milford, Mass.:

I claim forming a boot upper by means of two curved cuts, J J, of increasing radius and interposed pieces, C D, all as herein shown and described.

41,905.—Grain Dryer.—Lewis S. Chichester, Brooklyn, N. Y.:

I claim, first, A series of parallel or nearly parallel tables, in combination with a rocker, whereby the grain is passed alternately from end o end over such tables in consequence of the rocking movement, subs an lally as specified.

Second, I claim the metallic tables formed with mortices and overhanging lips, as and for the purposes specified.

Third, I claim the arrangem entof the tables, a a, and air passages, f f, for the purposes and a specified.

41,906.—Grain Weigher.—Lewis S. Chichester, New York City. Ante-dated March 14, 1864:

I claim, first, Hanging the box, d, on which the bucket swings or turns, by a link taking the centre, 3, on the scale-beam, b, forthe purposes and as specified.

Second, I claim the crutch, d′, and screws, x, in combination with the ox, d, and scale-beam, b, for the purposes specified.

Third, I claim the bucket frame, e, receiving the bucket, e′, in the manner substantially as specified, in combination with the counterpoise, f, for the purposes set forth.

Fourth, I claim a spring or springs applied to the weight or weights substantially as specified, for allowing a gradual movement to the scale-beam and grain bucket, for the purposes specified.

Fifth, I claim the arrangement of the cut-offs, p q r, in combination with the swinging or oscillating bucket, e′, and frame, e, for the purposes specified.

Sixth, I claim the deflector, n, at the delivery mouth, m, of the hopper or spout to check the momentum of the grain, as specified.

Seventh, I claim the stop, 13, in combination with the incline, s, to retain the bucket as it comes up to position for securing the grain, as specified.

Eighth, I claim the spring roller, 14, in combination with the stop, 13, for the purposes and as specified.

41,907.—Collarette.—C. O. Crosby, New Haven, Conn.:

I claim the collarette herein described as a new article of manufacture.

41,908.—Saw-mill.—Pearson Crosby, New York City:

I claim the method of connecting or securing the tubular side pieces, B B, to the cross-heads, A A, to wit, having rods, C, welded into the ends of the tubular side pieces to serve as screw bolts for the same, which pass through the cross heads, and either with or without the plates, D, or other equivalent bearings, at the inner edges of the cross-heads, substantially as herein set for h.

[This invention relates to an improved mode of securing tubular side-pieces to the cross-heads of the gate and sash, whereby a very firm and durable connection of the above-named parts is obtained, and consequently a light and durable ga e or sash. The invention further relates to a novel and improved mode of strengthening the cross-heads of the gate or sash, whereby the same are prevented from springing under the strain to which the saw or saws are subjected, and comparatively light draw-heads allowed to be used.]

41,909.—Balanced Slide Valves.—Henry Davies, Portsmouth, Ohio:

I claim the rocker, F, bar, G, levers, H H, stud, J, diaphragm, D, and radial bars, L L, applied and operating in combination with a valve, A, having the induction of steam under it face, subs antially as herein specified.

[This invention consists in a novel mode of applying a flexible diaphragm in combination with a slide valve, whereby the pressure of steam on the diaphragm is made to counteract that on the valve, and the valve is enabled to work with the least possible amount of friction upon its seat. We expect shor ly to publish an engraving of this invention.]

41,910.—Wood-sawing Machine.—Morris Dewey, Clarendon, N. Y.:

I claim the special arrangement of the machine, constructed substantially as descri ed, consisting essentially of the reverse saw and shank, D′ D, rock lever, C, pitman, E, lever, I, with notch or notches, m, pawl, K, and the lever, M, provided with pawl, p, and the ratchets, o o and q q, substantially as and for the purposes herein set forth.

41,911.—Railroad Car Window.—Thomas W. Emery, Buffalo, N. Y.:

I claim the combination of the jointed screens, b b b, with the pane, B, or its equivalent slide, and a frame, A, the whole so arranged that when unfolded, the scree s serve as a ventilator and dust excluder, but when folded, they are in compact form out of the way, subs antially as herein specified.

I also claim in combination with the folding screens, b b b, the cover or roof, b′, arranged and operating substantially as described.

41,912.—Folding Saw-horse.—C. J. Fay, Hammonton, N. J.:

I claim a folding or expanding and contracting saw-horse constructed in the manner substantially as herein shown and described.

[This invention consists in constructing the horse in such a manner that it may, when not required for use, be folded in compact form, and to effect this the cross-bars at each end of the horse are allowed to work or turn on the bar which connects them at their junction, each pair of cross-bars being connected by a folding brace.]

41,913.—Rock-drilling Machine.—Joseph S. Foster, Virginia, Nevada Territory:

I claim the tube, H, with the drill-rod, I, fitted within it, in combination with the rack, M, pinion, L, pawl, N, wheels, O P, and spring, Q, all arranged to operate in the manner substantially as and for the purpose set forth.

I further claim the combination of the bed, A, plate F, set screws, B, slides, D, tube, H, drill-rod, I, wheels, O P, pawl, N, shaft, K, and spring, Q, all arranged to form a new and improved device for the purpose specified.

[This invention relates to an improved device for holding the drill and rotating the same, and also for adjusting the drill in a more or less inclined position as may be required.]

41,914.—Portable Oven.—John A. Frey, Washington, D. C.:

I claim, first, The arrangement of the inside and outside case of the oven with the par itions, N and O, and fire-box, J, with its flanges to support the roasting racks, return pipes, M, and removable plate, T, as described for the purpose s set forth.

Second, The combination of a fire-box having a smoke-pipe connection at each side thereof, with a portable oven having double walls to provide flues with which the smoke-pipes connect, substantially as shown.

41,915.—Melodeon.—Reuben Goodrich, Pittsfield, Mass.:

I claim, firs , The employment in a melodeon or other reed musical instrument, of a sound board of glass or other sonorous material interposed between the socket-board and the air-receiving chamber of the exhaust bellows, substantially as and for the purpose herein specified.

Second, Causing the air after passing through the reeds to pass through one or more slots or narrow openings, d d, provided at the edge of the sound-board, substantially as herein specified.

[This invention consists, first, in interposing between the socket board con aining the reeds and the air-receiving chamber of the exhaust bellows, in a melodeon or other reed musical instrument, a sound-board of glass or other sonorous substance; secondly, in causing the air after it has passed the reeds, to pass through one or more slots or narrow passages at one edge of the sound- oard instead of through a hole or holes in the foundation-board directly under the valves, as in most reed instruments now manufactured.]

41,916.—Sewing Machine.—Wm. S. Guinness, Mount Vernon, N. Y. Ante-dated March 9, 1864:

I claim the combined arrangement of the needle-arm, C, the feed arm, N N′, the shuttle-holder, G, the carrier, g g, and the thread regulator or governor, V V, moving simultaneously in the manner and for the purpose substantially as described and shown in the drawings.

41,917.—Railroad Car Brake.—O. J. Harrington, Manchester, Pa.:

I claim the combination of the cord, s, weight, u, friction pulley, m, drum, n, shaft, 2, levers, o g and j, chains, y h and r, pulleys, 6 7 q z t and v, when used in connec ion with brakes, k, each brake being opera ed by a separate lever, and made self-operative by the means herein described and set forth.

41,918.—Dipping-frame for the Manufacture of Matches—Darwin Helmer, Mohawk, N. Y.:

I claim, first, The longitudinal channels, b b, Fig. 2, on the upper surface of the slats (without restriction as to the number and location of said channels on the upper surface of the slat) when the said longitudinal channels are used in connection with corresponding longitudinal elevations ou the lower surfaces of contiguous slats, in the manner and for the purpose substantially as set forth.

Second, I claim the longitudinal elevations, c c, Fig. 3 (whether formed as part of the slat or by additions thereto) on the under surface of the slats when said longitudinal elevations are used in connection with corresponding longitudinal channels on the upper surface of contiguous slats, in the manner and for the purpose substantially as set forth.

Third, I claim the improved slat formed by the combination of the longitudinal elevations on its under side with corresponding longitudinal channels on its upper side and the deepened transverse grooves for the receptionof blank match s icks, or its equivalent, when used in the manner and for the purpose substantially as hereinbefore set forth.

41,919.—Trap Caster for Bedstead.—David Henderson, Boston, Mass.:

I claim, as a new article of manufacture, a furniture caster with the arms, B, liquid cup, G, and spindle, D, cast in a single piece, substantially as and for the purpose described.

41,920.—Opening and shutting Gas-cocks by Electro-Magnetism.—John A. Heyl, Boston, Mass.:

I claim the arrangement of the lever, G, which carries the armature of the electro-magnet and the pawl for operating the ratchet-wheel of the stop-cock, to work upon a pivot or fulcrum formed upon the plug of the stop-cock, substantially as and for the purpose herein specified.

[This invention relates to the opening and closing of the stop-cocks of gas pipes and gas burners by means of a ratchet-wheel on the plug of the cock and a pawl attached to a lever, which carries the armature of an electro-magnet, the pawl being made to operate upon the ratchet-wheel for the purpose of turning the cock, by repeatedly closing and opening the circuit in which the electro-magnet is placed, and so alternately allowing the armature to be attracted by the magnet and drawn back by a spring. The improvement consists in the arrangement of the lever to which the armature and the pawl are attached, to work upon the plug of the stop-cock, which is made to constitute the fulcrum of the said lever, and to obviate the necessity of a separate fulcrum and support, thereby simplifying the apparatus.]

41,921.—Tobacco Pipe.—Elijah Holmes, Lynn, Mass.:

I claim connecting the bowl and stem of a wooden smoking pipe by means of the knee, B, provided with an oblique conical socket for the reception of the stem, and a flexible flange, f, substantially as set forth and for the purpose described.

41,922.—Guard-finger for Harvesters.—A. A. Hotchkiss, Sharon, Conn.:

I claim forming the steel facings of guard-fingers with wings, M M, extending obliquely downward below the under face of the plane portion, C, subs antially in the manner and for the purpose herein set forth.

41,923.—Sewing Machine Button-hole Stitch.—Charles Rogers Jackson, Brooklyn, N. Y.:

I claim the sewing machine stitch herein described suitable for stitching eyelet holes, button holes, or edges, by passing the thread or loops through and over the edge of a fabric, the same being formed with a single thread and by a succession of stitches or loops passing into each other, in the manner herein described.

41,924.—Car Coupling.—John T. Johnston & Newton T. Smith, Grand Rapids, Mich.:

We claim the combined arrangement of the obliquely pivoted plates, B, having apertures, d′, and projecting key-shafts, C, with the draw heads, D, and link, E, in the manner herein shown and described.

[This invention consists in the employment or use of a link or shackle provided at each end with a shoulder; in connection with catches placed within the draw-heads, and all arranged in such a manner as to render the coupling self-connecting, or "self-acting," as it is commonly termed, and admit of the draw-heads being readily disconnected when desired.]

41,925.—Tool for opening Boxes.—Wm. M. Keague, Brooklyn, N. Y.:

I claim, as a new article of manuf cture, an instrument for opening boxes, constructed and operating in the manner descri ed.

[This invention consists in a tool composed of a handle having on one side a toe and on the other a hammer, said toe being attached to the handle in an oblique direction, so that by entering the same between the cover and top edge of a box and depressing the handle the nails are forced out and the box is opened, and by the aid of the hammer the nails dan be readily removed from the cover or refastened as may be desired; the toe is prevented from slipping by V shaped notches cut in o both surfaces of the same near its opposite edges.]

41,926.—Cattle Stanchions.—George A. Keene, Newburyport, Mass.:

I claim in combination with the frame, C, and sliding plate, F, the pin, m, rope, p, and lever, O, or their equivalents, substantially as set forth and for the purpose specified.

41,927.—Magneto-electric Machine.—Jerome Kidder, New York City:

I claim, first, The two helices or systems of helices, H H′, so combined and arranged that the induced current or currents of one may be added to the current or currents of the other, also that the current or currents of one may be made to run in opposition to the current or curren s of another for the purpose of cutting off the power, substantially as herein specified.

Second, The combination of a metallic strip or wire, t, surrounding a helix and the arrangement for metallic connection, V V1 V2, to connect any desirable points upon the said strip, substantially as and for the purpose herein specified.

Third, The battery multiplier composed of a system of studs, k l m n k* l* m* n*, or their equivalents, and switches, P P*, with suitable battery connections, substantially as and for the purpose herein specified.

Fourth, Making the poles of the electro-magnet, p, and the armature or hammer, p′, relatively adjustable toward or from each other without altering the tension of the spring which draws back the armature or hammer, substantially as herein specified.

Fifth, The movable clamp, E, applied to the spring, K, which carries the vibrating armature or hammer, substantially as and for the purpose herein specified.

Sixth, The combination of the two bridges, Y Y′, screws, a* b* c* d* a′* b′* c′* d′*, and studs, a b c d a′ b′ c′ d′, the whole applied in relation to the several coils of the helices and to the electrodes, X and —, to operate subs antially as and for the purpose herein specified.

[The object of this invention is to enable the character of the currents obtained by an electro-magnetic machine to be varied in a very great degree, more especially with a view to apply electro-magnetism to the cure of disease, though the variations produced may be advantageous for other than medical purposes.]

41,928.—Mill-stone Bush.—George W. Landon, Graham, Ind.:

I claim the journal blocks, b b b b, and keys, a a a a, when set in a