RECENT AMERICAN PATENTS.

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

Canal Propeller.—The object of this invention is to obtain a propeller adapted for canal navigation, which, besides possessing other advantages, shall be free from the principal objection to the screw propellers heretofore employed, namely, that of requiring the after-part of the boat to be of such lean form as to seriously impair its carrying capacity, and to this end it consists in the construction of a propeller with its blades arranged tangentially to circles concentric with a propeller shaft placed parallel with the length of the vessel and in its center, such blades being attached to a hub or disk in such a manner as to prevent the water from entering the propeller from the interior, that is to say, except by passing in an inward direction from between the outer edges of the blades, and to compel the discharge at the inner edges of the blades ; it also consists in the combination with such tangentially arranged series of blades, of a conical surface, arranged concentrically within them, for the purpose of directing the water which is discharged from the center of the wheel, directly astern of the vessel. J. B. Root, of Brooklyn, N. Y., is the inventor of this improvement.

Ventilating Damper.—This invention relates to an improvement in that class of dampers for stoves, heaters, &c., which have ventilators combined with them in such a manner as to operate in conjunction with the damper to regulate the fire and at the same time afford a perfect means for ventilation. The object of the invention is to obtain a device for the purpose specified, which may be very economically constructed and operate in the most efficient manner. To this end the invention consists in having both the damper and regulator constructed on the slide-register principle, that is to say, with a perforated or slotted part sliding or working over a stationary perforated or slotted part. N. A. Boynton, of No. 60 Canal street, New York city, is the inventor of this damper.

Sewing Machine.—This invention consists in certain novel devices for extending the loops of the upper or needle thread on the under side or back of the cloth or other material to be sewed and carrying the under or locking thread through them. Also in a novel mode of combining the needle-operating lever with the said devices for extending the loops of the eedle thread, and carrying the locking thread through them, whereby the operation of the said device is produced by the same crank or its equivalent, by which the movement of the needle-operating lever is produced. Also in a novel construction and arrangement of the feeding apparatus for feeding the cloth or other material in all directions, and in a novel mode of applying the needle in combination with such feeding apparatus to keep the planes of revolution of the feed wheel always at the same distance from the line of motion of the needle. F. W. Grote, corner Thirty-sixth street and Tenth avenue, New York city, is the inventor of this sewing machine.

Apparatus for Filtering Water.—The object of this invention is to obtain an apparatus for purifying or filtering water, which will operate continuously and be self-cleaning, and adapted for operation on a large scale for manufacturing purposes, such as the manufacture of paper and other articles in which a large quantity of pure water is required. To this end the invention consists, substantially, in the employment of an endless apron of felt or other fibrous material passing around a wheel, the periphery of which is formed of parallel rods placed a suitable distance apart, said wheel being placed in a box or reservoir of water, and the apron driven by a water wheel and cleaned by a revolving brush, the water passing through the apron into the wheel and discharged from the ends of the latter. D. N. Denman, of Milburn, N. J., is the inventor of this improvement.

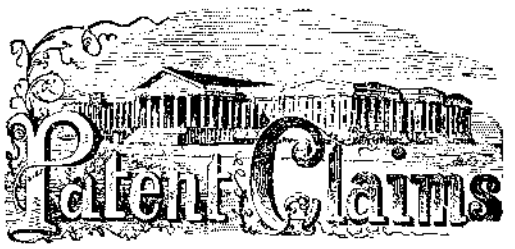
Mode of controlling the launching of Vessels.—This invention has been more especially designed with a view to controlling the launching of iron war-vessels which, by reason of their great weight, require to have the blocks supporting their permanent launching ways so close together that the men who remove the blocks from under the keel preparatory to the launch, cannot escape at the sides of the ways, but have to go all the way to the lower end before they can get out. It is also applicable to controlling the launching of other vessels. It consists in fitting the lower or permanent ways just below their faces with a transversely-arranged horizontal shaft provided with catches arranged to enter notches or mortises in the upper or sliding ways, for the purpose of holding the latter back while the blocks are being removed from under the vessel, and after they have been removed, the said shaft being operated by a lever for the purpose of withdrawing the said catches when all is ready for launching. T. F. Rowland, of Brooklyn (Greenpoint), N.Y., is the inventor of this device.

Improvement in Watches.—The object of this invention is to make watches and chronometers keep time with great exactness. The invention consists in the employment in a watch, chronometer or other time-keeper, as a substitute for the fixed stud commonly used for the support of the balance spring, of an elastic support, capable of vibrating in such a direction as to permit the spring, at each vibration of the balance, to have a movement lengthwise, or in such manner that its spires have a rotary motion. This support, is of spiral or convolute form arranged so that its spires, and those of the spring will open and close alternately at each vibration of the balance which will allow the spring to have the movement above mentioned at each vibration of the balance, by which means not only may the effects of expansion and contraction in length by heat and cold be counteracted, and the escapement be kept in beat by keeping the balance in a condition of equilibrium, and, if a curb be used, keeping the effective length from the curb-pins uniform, but its alternate vibration tends to make the opening and closing vibrations of the spring equal in time or isochronous ; and, what is more important, the impulse which the spring has lengthwise at the outer end, where it has been formerly held by the fixed stud, increases the range of motion in the balance and consequently quickens it to make up time. By thus supporting the balance spring much of the variation in a watch may be prevented without any further attempt at compensation and a lighter mainspring may be used, and hence the wear of the teeth of the wheels is very greatly reduced. H. B. James, of Trenton, N. J., is the inventor of this improvement.

Propulsion of Vessels.—This invention consists in the arrangement of one or more screw propellers, each within a stationary cylindrical casing, in combination with peculiarly-constructed chambers in front and rear, whereby a column of water, of an area equal to that of the greatest submerged section of the vessel, is discharged at the stern of the vessel by the action of the propeller or propellers, and so any tendency to the formation of a vacuum astern of the vessel, and the consequent retardation of its progress is prevented. B. T. Babbitt, of Nos. 70 and 72 Washington street, New York city, is the inventor of this improvement.

Device for upsetting Tire.—This invention consists in giving to the keys which hold the tire down upon the anvil, beveled edges so that a slight motion of the tire, in a direction transversely to said keys, has a tendency to turn them edgeways, and to bring their edges down upon the tire with increased tightness, and that, by these means, a slipping of the tire under the keys during the operation of upsetting, is entirely prevented ; it consists, also, in the employment of a tapering convex wedge or guide to go under the crook made in the tire for the purpose of assisting the operator in obtaining a uniform thickness in that part of the iron that has been or is to be upset ; it consists, further, in the employment of one or more false anvils in connection with the regular anvil of the upsetting machine, in such a manner that the surface of the said anvil can conveniently be adapted to the tire or hoops of different diameters. M. P. Larry, of Windham, Maine, is the inventor of this improvement. Address Messrs. A. and A. J. Mosher, Portland, Maine, for further information.

The ancient English "yard" was a measure of length, based upon the length of the arm of King Henry I.



ISSUED FROM THE UNITED STATES PATENT OFFICE

FOR THE WEEK ENDING MAY 5, 1863.

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.

38,366.—Breech-loading Fire-arm.—Louis Albright, Ottawa, Ohio :

I claim, first, The combination of the hinged and sliding breech-plug, E E′ or E″, carrying the dog, hammer and main spring, the trigger, K, pivoted in the stationary stock, and the screw threaded and milled abutment, A′, when the said parts are constructed, arranged and operated in the manner and for the purpose specified.

Second, I claim the knife, L, projecting laterally from and flush with the forward end of the hinged plug, E E′ E″, and acting to sever and remove the butt of the cartridge by the act of closing the plug, in the manner set forth.

Third, The hinged plug, E′, having the sliding block, N, adapted to be retracted to allow the passage of the said plug, over a metallic percussion cartridge and to be closed automatically by the cocking and discharge of the hammer as and for the purpose set forth.

Fourth, The arrangement of hinged plug, E″, hammer, H″, slide, P, wafer magazine, O, cap, R, and touch-hole, J, the whole being combined and operating together in the manner described.

Fifth, In the breech-loading arm above described, I claim the employment of the exchangeable hinged breech blocks, E E′ E″, for the use of different forms of ammunition, as explained.

38,367.—Device for Stoppering Bottles.—Antoine Andre, Chicago, Ill. :

I claim a device for stoppering bottles having in combination a screw valve, A, passage, f, channel, g, and funnel-shaped mouth-piece, C, all arranged and operating in the manner and for the purpose described.

[This invention consists in the employment of a screw valve fitting into a seat that is secured to the neck of a bottle in combination with a funnel-shaped mouth-piece, in such a manner that, by the aid of said valve, the communication between the interior of the bottle and mouth-piece can be effectually stopped, and that, on opening the valve, the contents of the bottle can conveniently be poured out, or, by the aid of the funnel-shaped mouth-piece, fresh liquid can be introduced into the bottle with ease and convenience.]

38,368.—Marine Propeller.—Benj. T. Babbitt, New York City :

I claim the combination with one or more screw propellers, of chambers, D H, constructed substantially as herein specified for the purpose set forth.

38,369.—Apparatus for curing Caoutchouc.—W. R. Bagnell, Chelsea, Mass., assignor to the Union Elastic Goods Company :

I claim constructing the curing vat with a narrow area at the level of the contained fluid and with a movable partition, operating substantially as specified.

I claim, also, combining a vitreous or other suitable rod or roll with the movable partition, and also combining such rods or rolls with the vat at its upper edges, substantially as shown.

38,370.—Ventilating Damper.—N. A. Boynton, New York City :

I claim the employment of the double-slotted flanged shell, C, in combination with the slotted projection, B, and slotted shell, A, the parts being constructed and operating together, substantially in the manner herein shown and described.

38,371.—Pipe Drainer.—Abram Brigham, Lawrence, Mass. :

I claim the cover, of the box, A, made hollow in the form of a circular tube or pipe with the under side perforated in order to distribute the condensed steam equally when it enters the drainer, in combination with wire, P, and air valve, L, substantially as described.

Second, I claim the making the valve seats with a partition, T, between them, for the purpose herein set forth.

38,372.—Window-sash Supporter.—F. P. Catlin, Hudson, Wis. :

I claim, first, The combination of the arm or lever, K, and the weight, W, inserted in the casing, as described, with the rubber or other elastic substance, R, inserted either in the sash or in the lever, K.

Second, I also claim the lever, K, and weight, W, inserted in the sash, with the rubber or other elastic substance attached to either the casing or arm, K, substantially as and for the purpose described.

38,373.—Boot and Shoe.—D. N. B. Coffin, Jr., of Woburn, Mass. :

I claim the button-laced boot and shoe, as a new article of manufacture, the distinguishing feature of which consists of the arrangement of a series of buttons and a series of holes, eyelets, loops or studs upon the different parts which are to be drawn together and secured to each other ; these buttons on the one part and holes, eyelets, loops or studs on the other, being arranged to receive a lacing, string or cord, alternating from one member of one series to one of the other, and *vice versa*, so that the unlooping of the string from one button loosens the loop upon the next, and unlooping one or more of the loops from their respective buttons, the fastening of the boot or shoe is loosened while the ends of the string remain fast, and such loops of the string may be looped on again, so refastening the boot or shoe, substantially as herein set forth.

38,374.—Tax Calculator.—C. D. Crane, Fort Wayne, Ind. :

I claim the permutation method of calculating applied to the calculation of taxes in the manner described in the specification, viz., first, by the printing of the taxes on the multiples of $100 at each per cent on a separate slip, so that the several slips may be arranged into any required series of per cents ; and, second, the arranging of the taxes on the intermediate amounts between one and one hundred dollars, including the poll tax, on a separate sheet cut with appropriate apertures, so that they may, when necessary, be added to the amounts on the slips.

38,375.—Machine-shirred Ruffles.—C. O. Crosby, New Haven, Conn. :

I claim the mechanically-shirred ruffle described, as a new article of manufacture, whether the same be double or single, or either with or without a band or binding attached thereto, substantially as herein set forth.

38,376.—Washing Machine.—C. A. Dabney, of San Jose, Cal. :

I claim the combination of the oscillating concave and rubber, when used in connection with the oblique bars, f f, connected with the rubber by the cords, g′ g′, and the rubber arranged as shown to admit of having its pressure graduated at the will of the operator, as herein set forth.

[This invention relates to an improved clothes-washing machine of that class in which an oscillating concave of rollers is used in con-

nection with a rubber. The object of the invention is to obtain a more efficient machine of the kind than any hitherto devised, by arranging the rubber in such a manner that it may be made to operate automatically by the movement of the concave and at the same time be capable of being adjusted at the will of the operator in order to regulate the pressure on the clothes, as may be required.]

38,377.—Skirt Wire.—T. D. Day, Brooklyn, N. Y. :

I claim water-proof skirt-wire prepared substantially as described.

38,378.—Liquid Filter.—D. N. Denman, Millburn, N. J. Ante-dated Dec. 25, 1862 :

I claim, first, A device for filtering water and other liquids composed of a wheel, F, fitted in a reservoir, A, and provided with an endless apron or roll, G, of felt or other fibrous material, when all are arranged in such a manner that the liquid to be filtered will pass from the reservoir through the apron or roll into the wheel, and be discharged from the ends of the latter, substantially as set forth.

Second, In combination with the reservoir, A, wheel, F, and apron or roll, G, the rotary brush cylinder, I, when used as and for the purpose set forth.

Third, The pivoted bar, J, with roller, K, attached, in combination with the apron or roll, G, wheel, F, and reservoir, A.

Fourth, The driving wheel, D, and penstock, B, when combined and arranged with the reservoir, A, wheel, F, and apron or roll, G, to operate as and for the purpose herein specified.

38,379.—Thrasher and Separator.—W. W. Dingee and A. B. Farquhar, of York, Pa. :

We claim, first, Driving the rake shaft, C, from the continuation, B, of line shaft, A.

Second, Placing the delivery hopper, F, of the fan in front of the front axle of the wagon.

Third, The combination of the feeder's platform, J, with the wagon brake, L.

Fourth, Connecting the line shafting by reversible couplings in which the shaft has a free longitudinal movement.

38,380.—Clothes-wringer.—S. F. Emerson, Seville, Ohio:

I claim the wedge, F, and thumb-screw, G, when arranged and operated as and for the purpose set forth.

38,381.—Hand Mowing Machine.—Henry Fisher, Alliance, Ohio :

I claim operating the sickle, B, through the medium of the bent lever, H, connecting rod, I, crank pulley, h, gearing, j k, and crank, l, when said sickle and its operating mechanism are used in connection with the bar, C, rollers, E F, and finger bar, A, all arranged and operated as shown, for the purpose set forth.

[This invention relates to a new and improved mowing machine designed to be operated manually and for cutting or mowing lawns.]

38,382.—Kiln for drying Grain.—Abner Greenleaf, Jr., Brooklyn, N. Y., and T. C. Vice, New Haven, Conn.:

We claim, first, The arrangement of the crocks or thimbles, E, with openings, a, the diameter of which is larger on one end than on the other, to correspond to the inside and outside diameter of the fire flues or pipes, C C', and to be used in combination with said pipes, substantially as and for the purpose shown and described.

Second, The arrangement of the flue chamber, D, at the rear end of the kiln, A, in combination with the pipes, C C', and furnace, B, constructed and operating as and for the purpose specified.

Third, The pipe, G, extending from the exterior of the kiln through the latter and back to the chimney, in combination with the pipes, C C', as herein shown and described.

Fourth, The arrangement of the sieve, I, with the hopper and the platform, H, as and for the purpose herein shown and described.

[This invention relates to a grain-dryer, which has been in successful operation for some months. The various improvements will be readily understood from the claims.]

38,383.—Water Wheel.—W. L. Gregory, Amsterdam, N.Y. Ante-dated Aug. 25, 1862 :

I claim the combination and arrangement of the buckets, C C' C'' C''', pinions, g d, chains, D f, and wheel, e, as herein shown and described.

[This invention relates to an improved water wheel of that class which are operated by the force of a current or stream, and are commonly termed current wheels. The invention consists in the employment of a series of buckets attached to vertical shafts provided at their upper ends with gears connected together and to a stationary gear by chains or equivalents, whereby the buckets, as the wheel rotates, are made to present a greater or less area to the action of the stream according to the power required, and the buckets also rendered capable of being adjusted manually when it is desired to stop the wheel so as to be in a state of equipoise and incapable of being acted upon by the current.]

38,384.—Lock.—J. L. Hall, Cincinnati, Ohio .

I claim, first, The provision of the sliding check piece or dog, E, operated in advance of the main bolt by the same key or other device which moves the latter, in combination with one or more sets of tumblers, substantially as and for the purposes set forth.

Second, In the described combination with the fast tumbler, Q, I claim the provision of the sliding check piece or dog, F, operated in advance of the main bolt by the same bit, key or other instrument which moves the said bolt, the whole being combined and operating as and for the purposes substantially as set forth.

Third, The arrangement of a hollow withdrawable hub, G, containing the operating stem, N, and supporting the series of alternate loose tumblers, I, and fast washers, J, the whole being confined to said hub by the annular cap, M, in the manner represented.

Fourth, The combination of the cap, T, shiftable stem, N, and fast tumblers, Q, to facilitate numerous and ready changes of combination, as explained.

Fifth, The fixed washers, J, gate, j, in line with the aperture, S, in the hub, G, to afford a fixed guide for the trier, as described.

38,385.—Machinery for dressing Axle Boxes.—William Hamilton, Alleghany, Pa. :

I claim facing both ends of an axle box at the same time by means of two cutters placed parallel to each other at right angles to the axis of the axle box, which is caused to revolve on its axis, the cutters being so operated as to approach each other as the box is being faced, in the same relative position to each other and to the axis of the axle, substantially as described.

The combination of cutters for facing the ends of axle boxes, placed at each end thereof and susceptible of motion toward each other while preserving a given angle of inclination to the axis of the box, with a mandrel for holding the box from its inside, capable of opening on each side of its center for the purpose of holding the axle box with its axis at the proper angle to the cutters, and yet allowing the cutters to pass beyond the point of contact of the exterior surface of the mandrel and the interior circumference of the axle box, substantially as described.

The use of an adjustable gage interposed between the two cutters for the purpose of stopping the operation of the machine, when the axle box has been faced down to the required length.

38,386.—Apparatus for evaporating Saccharine and other Liquids.—Dennis Harris, New York City :

I claim the rotating disks, E, and blast pipes, C, one or more, in combination with the pad, B, and steam under pressure, all arranged as and for the purpose set forth.

[This invention consists in the employment of rotating disks in connection with a steam chamber and blowing apparatus, all arranged in such a manner that the sirup may be boiled by steam under pressure and a rapid evaporation produced without having the temperature of the sirup sufficiently high to retard or prevent crystallization and occasion a loss in sugar.]

38,387.—Sliding-door Sheaves.—R. C. Hatfield, New York City :

I claim the application of adjusting apparatus to the bearings of sliding door sheaves, for the purpose described.

Second, I claim the construction of the wheels of sliding door sheaves with a tire or periphery composed of a muffler or sound-deadening material.

38,388.—Chimney-fastener.—R. W. Hawkins, Pittsburgh, Pa. :

I claim the use of a chimney fastener for lamps, consisting of a slide placed in the burner frame and having arms or other equivalent device for holding down the flange of the chimney on one side, and capable of being slid round toward the points or other device by which the chimney is held down on the opposite side, substantially as herein before described.

38,389.—Electric Baths.—M. W. House, Cleveland, Ohio :

I claim, first, constituting the head electro e, C, the terminus of two batteries, which may receive positive, +, and negative, —, from either battery or instrument, or both of the positives or both of the negatives, thus completing a double circuit through a single electrode, while the opposite poles of the batteries, respectively, terminate in traversing electrodes upon the sides of the tub, thus completing the circuit of either or both of the batteries, or induced current or currents, through any conducting medium placed between them.

Second, I claim the traversing electrodes in combination with conductors placed along the sides of the tub, as and for the purpose specified.

Third, I claim such an arrangement of traversing electrodes, that two independent sets of currents can be worked at the same time in the same direction or in opposite directions, either longitudinally, transversely or diagonally through the conducting medium in the tub.

Fourth, I claim working a primary uninterrupted current in connection with an induced interrupted current, either or both of which may be local or general, combinedly or single, as specified.

Fifth, I claim the adjustable head electrode, when constructed and arranged so as to expand and contract their surface, as and for the purpose set forth.

38,390.—Fastenings for Ornaments on Dress.—D. B. Howell, New York City :

I claim the combination of a spring plate, A, and pins, a a, applied to a shoulder strap or other ornament, substantially as and for the purpose herein specified.

[This invention is more especially adapted for masonic or other ornaments or regalia, which are to be attached as occasion may require to an ordinary dress, but is also applicable to officers' shoulder straps or other military or naval ornaments. Its object is to provide for the convenient attachment and detachment of such articles, and to this end it consists in inserting within them plates of spring steel having attached pins or hooks which may be sprung into the garment and held therein by the elasticity of the plate.]

38,391.—Horse-tooth Files.—J. P. Howell, Washingtonville, N. Y. Antedated Feb. 21, 1863 :

I claim a horse-tooth file composed of a cast-metal stock or handle, A, and a file, B, made separately and fitted together, substantially as herein shown and described.

[This invention consists in having the file and stock made separately and the file fitted in the stock in such a manner that it may be adjusted and secured therein and renewed therefrom with the greatest facility, and a far more economical implement obtained for the purpose than hitherto used.]

38,392.—Sash Fastening.—F. M. Hubbard, Protection, N. Y. :

I claim the driving wheel, g, the wheel, k, the spring, h, the cam wheel, L, and the knob, e, the whole arranged in the manner and for the purpose substantially as set forth.

38,393.—Watch.—H. B. James, Trenton, N. J. Antedated Nov. 14, 1862 :

I claim, first, Providing an elastic vibrating support for the balance spring, substantially as herein specified.

Second, Combining the use of the elastic vibrating support for the balance spring with the system of compensation for expansion, which constitutes the subject matter of my Letters Patent of December 27, 1859, by making the said elastic support of combined laminæ of two metals, substantially as herein specified.

Third, The within-described mode of connecting the balance spring and elastic vibrating support by means of the slide ring, e, applied in combination with the enlarged end of the arm, b, of the said support, as herein specified.

Fourth, Securing the elastic supporting coil, B, to the plate, C, by means of the taper stud, a, applied to the coil and plate, in the manner herein specified.

38,394.—Plow Clevis.—Joseph Keech, Waterloo, N. Y. :

I claim the dial-plate, C, provided with cogs, d d, on one side, engaging with the cogs, a a, of the beam, and with concentric, radial teeth, g g, on the other side, engaging with the index-plate, D, that sustains and adjusts the draft rod substantially as and for the purposes herein set forth.

38,395.—Ox-bow Fastening.—Elisha Kenny, Livermore, Maine :

I claim the spring, B, combined with a bow cap, in the manner and for the purpose herein set forth.

38,396.—Fence.—Theodore E. King, Ashtabula, Ohio :

I claim, first, Securing the posts to the base, G, by means of the flanges, E, and screws and nuts, F F', as specified.

Second, I claim the adjustable brace, O, for supporting the panel in an upright position, arranged and operating as set forth.

Third, I claim the brackets, figure 6, for securing the panels to the posts as specified.

Fourth, I claim the brackets, M N N', for uniting the panels and securing them to the base, G, as described.

Fifth, I claim the gate brackets, P Q P', and the hinge, R S S', shown in figure 7, constructed and arranged as and for the purpose set forth.

38,397.—Machine for making Nuts.—Philip Koch, New Haven, Conn. Antedated April 18, 1863 :

I claim, first, The stationary cutter forme of the steel bar, C, with a hole, b, made in it, in connection with the lever, D, or its equivalent, arranged as shown to cut the blank from the bar from its under side upward, substantially as set forth.

Second, The combination of the die, O, and punch, Q, when arranged as shown, to operate as and for the purpose specified.

Third, The pin, w, attached to the spring, U, and having the spiral spring, W, connected with it in combination with the slides, X X', all arranged as and for the purpose described.

Fourth, The combination of the die, C', and movable bed, B', arranged for joint operation substantially as and for the purpose specified.

Fifth, The slides, G I, arranged as shown when used in combination with the lever, D, and stationary cutter bar, C, as and for the purpose set forth.

Sixth, The slides, X X', arranged as shown when used in combination with the pen, w, and box, T, to operate as and for the purpose specified.

[This invention consists in a novel and improved manner of cutting off the blanks from the bars and forging or hammering the sides thereof, and also in an improved manner of punching the blanks and finishing the same, whereby it is believed the nuts may be manufactured in a more rapid and prompt manner than hitherto.]

38,398.—Apparatus for upsetting Tires.—M. P. Larry, Windham, Maine. Antedated Jan. 16, 1863 :

I claim a tire shrinker, constructed, combined and arranged as shown and described.

38,399.—Lathe for turning Irregular Forms.—Edward Lumley, Elizabeth City, N. J.:

I claim vibrating the cutter, H, in the manner and for the purpose hereinbefore specified.

38,400.—Lock and Latch.—Burton Mallory, New Haven, Conn.:

I claim a reversable latch-bolt when the same is placed in a case independent of the lock case, and made reversable in the manner substantially as herein specified.

38,401.—Water Elevator.—J. B. McMillan, North Vernon, Ind.:

I claim the combination and arrangement of the ratchet collar, F, compound pawl and brake, E D, tipping hook, L, tipping bail, B, and return spout, G, all substantially as shown and described.

38,402.—Apparatus for cutting Ornaments in Paper and Leather, &c.—John D. Mets, Dubuque, Iowa.:

I claim, first, Combining with the frame-work, A and B, the knife, a, and the frame, C, and its knife, b, and the yielding platforms, D and E, as and for the purposes described.

Second, The removable cutter frame, C, with its yielding platform, E, when arranged within an outer cutter frame, substantially as and for the purpose described.

Third, Constructing the main knife-frame so that it will constitute a holder or support for one or more removable knife-frames, substantially as described.

38,403.—Apparatus for grinding File Blanks.—Sargent O. Morse, Medford, Mass.:

I claim the blank-holder, a, when made with the recess (corresponding in depth to the blank to be ground, so that its faces shall be patterns to which to reduce the surface of the blank), and with the clamps, b, for grasping the tang.

I also claim combining with the tang-holder, a, the gage-plate, g, when made with the pattern lips or edges, and to be confined directly to and so as to form part of the holder or carrier, for the purpose as above set forth.

38,404.—Saddle.—Barak T. Nichols, Newark, N. J.:

I claim the combination of the screw bolts, S S, with the springs, D D, substantially in the manner and for the purposes described.

38,405.—Parallel Vise.—N. P. Otis, Yonkers, N. Y. Antedated May 3, 1863 :

I claim, first, The strap, D, and bar, C, applied to the part, a, of the shank or pillar, B, of the vise and connected by the keys, E, when the said part, a, has any angular or irregular form which will adapt it to be firmly held, substantially as and for the purpose described.

Second, The combination of the cross-bars, J J, bar, C, strap, D, shanks or pillars, B H, swivel jaw, A, permanent jaw, I, screw, G, and socket, F, when arranged as shown to form an improved article of manufacture for the purpose specified.

[This invention relates first to an improvement in the arrangement and application of the cross-bars which are connected to the shanks or pillars of the jaws, whereby the latter are protected from all twisting or torsional strain, and the vise rendered more durable than those previously constructed. The invention consists, secondly, in a novel and improved means for adjusting and securing the vise in different positions relatively with the bench as the convenience of the workman may require, whereby the vise may be readily adjusted and firmly held in the desired position by a very simple contrivance and one which will not appreciably augment the cost of construction. The invention consists, thirdly, in an improved manner of securing the back jaw to its shank or pillar, whereby the same, when taper articles are to be secured in the vise, will be allowed to adjust itself, as the movable jaw is secured up toward the stationary one, in proper relative position with the work and grasp the same firmly.]

38,406.—Door Knob.—Emory Parker, Meriden, Conn.:

In combination with the screw-threaded knob and the screw-threaded angular spindle, I claim the clamp piece, b, or its equivalent fitting a recess in the shank and located within the escutcheon of the knob in the manner and for the purpose substantially as set forth.

38,407.—Adjustable Port-hole for directing Ordnance.—Philip G. Petty, Chief Engineer in the U. S. Navy:

I claim, first, The use of spirally-grooved rollers, substantially as herein described, rotated by a screw, lever, or other suitable means for the purpose of presenting at any desired height, an aperture to receive the muzzle of the gun.

Second, Elevating or depressing guns by means of spirally grooved rollers, substantially as herein described.

Third, The reversible boxes, F F, employed in the described combination with the rollers, D D, for the purpose of changing their distance asunder.

Fourth, The casing, J, employed in the described combination with the rollers, D D, to exclude smoke and gas.

38,408.—Vertical Windlass.—Charles Perley, New York City :

I claim, first, Arranging the shaft to which the motive power is applied and the vertical shafts carrying the chain heavers in a triangular position, so that the said heavers may be brought nearer together transversely of the vessel as set forth.

Second, I claim the combination of two pinions or wheels, k and v, with the gearing of the vertical windlass, when said wheels, k and v, are of different sizes and fitted in such a manner as to be connected to or disconnected from the motive power, substantially as specified, in order that the vertical windlass may receive a faster or slower movement from the motive power as set forth.

Third, I claim the construction of the coupling squares on the shaft, i, and the recesses in the respective wheels, k and v, whereby one wheel is coupled and the other uncoupled, by an endwise motion given to the said vertical shaft, i, as specified.

Fourth, I claim the arrangement of the pinion, w, and shaft, z, for raising and lowering the shaft, i, as specified.

Fifth, I claim constructing the box or base of the vertical windlass containing the gearing of a triangular shape in its general outline, in order that the said base may occupy but little space and more firmly sustain the strain of the chain cables as specified.

Sixth, In combination with a chain heaver fitted in such a manner that it may be rotated from below, or disconnected from the motive power, I claim double gearing for communicating a fast or slow motion to such chain heaver, substantially as specified.

Seventh, I claim constructing the base box of the vertical windlass with the elevated portion, e, above the top, b, substantially as shown, whereby double gearing can be introduced and the chain wheels are raised from the deck as little as possible, as set forth.

38,409.—Constructing Cannon.—Charles Perley, New York City :

I claim the barrel, a, with the exterior surface tapering both ways in combination with the ring, c, and breech cap, b, drawn together by screw bolts or their equivalents as and for the purposes specified.

38,410.—Swage for Zinc Washboards.—John Poole & Thomas J. Pattin, Harmer, Ohio :

We claim the bed-plate, C, the weighted lever drop, L, in combination with the cam or snail wheel, G, and spring catches, w w, in the manner and for the purpose set forth.

38,411.—Clamping and nailing Washboards.—John Poole & Thomas J. Pattin, Harmer, Ohio :

We claim the sliding clamps, E E, standards or posts, B B, with the lever, L, and cams, D D, in the manner and for the purposes set forth.

38,412.—Process for Graining and Ornamental Painting.—William J. Potter, Chicago, Ill.:

I claim the employment in connection with the aforesaid roller, of some suitable solution as described, for preventing the drying of the paint forming the figure or ornament, and thereby producing the ornamental design required, by subsequently removing the paint forming such figures in the design, substantially as and for the purposes specified and described.

38,413.—Suspended.

38,414.—Shot Metallic Cartridges.—E. K. Root, Hartford, Conn. Ante-dated May 3, 1863 :

I claim the combination of a charge of powder, a charge of shot and the fulminate, with a case or shell, surrounding or inclosing them, constructed substantially in the manner described and for the purposes set forth.

38,415.—Marine Propeller.—John B. Root, Brooklyn, N. Y.:

I claim the arrangement of the blades and hub of the propeller substantially as herein specified whereby the water is drawn from the circumference toward the center and discharged from the center directly astern of the vessel as herein set forth.

38,416.—Pump.—Henry Rosen, Elkhart, Ind.:

I claim driving the buckets of the two barrels, A and A', from a crank shaft, I, through the medium of the rods, K and K', arms, D and D', and rods, B and B', the whole being arranged and operating as and for the purpose herein set forth.

38,417.—Gas Burner.—George C. Roundey, New York City :

I claim the combination of the cap-tube, A, the expansion chamber, B, and fish-tail tip, C, substantially as herein described.

[This invention relates to that kind of burner which is placed like a cap over an ordinary burner, and it consists in the combination of a tube or globular expanding chamber and a tip.]

38,418.—Apparatus for Launching Vessels.—Thomas F. Rowland, Greenpoint, N. Y.:

I claim the arrangement or use, in connection with the ways, A C, of the rotating shaft, D, extending from one set of ways to the other and provided with catches, b, all operating in the manner herein shown and described.

38,419.—Device for heating Ores for Smelting Furnaces.—Alfred Roger, Reeds Mills, Ohio:

I claim the grate, D, adapted to present the ore in an open condition to the flame of the tunnel head, and to discharge the heated ore, the said grate being preserved from destruction by a current of water traversing its interior, the whole being combined and operated substantially as set forth.

38,420.—Hay-elevating Fork.—Luman Rundell, New Baltimore, N. Y.:

I claim extending the tines of a hay-fork back of the head in a sharp curve and thence to their points in a flat curve, substantially as herein shown and described, and in such relation to the handle and loop from which the fork is suspended in elevating the same, that said tines can be easily rocked into the bay and that in elevating the load lodges in the sharp curve where it exerts almost no lateral strain on the butt ends of the tines, and consequently the liability of snapping the same at the place where they enter the head is obviated.

[An engraving of this fork was published on page 304, current volume of the SCIENTIFIC AMERICAN.]

38,421.—Horse-power.—W. J. Sage, Steubenville, Ohio:

I claim the combination of the two toothed wheels, C D, pinion, E, and shaft, F, arranged to operate in the manner as and for the purpose herein set forth.

[This invention consists in the employment or use of two horizontal wheels provided with cogs which gear into a pinion, said wheels being placed one over the other and arranged in such a manner that the horse may act upon the lower wheel with his feet and pull or draw upon the upper wheel, thereby acting in two different ways and in the most efficient manner to propel machinery.]

38,422.—Lamp Burner.—Orrin J. Savage & George P. Hawley, Ithaca, N. Y.:

We claim, first, The cone, A, with its slot narrowed at the top, and gradually widening by straight and uniform lines to the bottom of the square or rectangular bottom as represented.

Second, The combination of the cone, A; the broad and flaring, finely perforated or foraminous sheet metal belt, B, widening as it descends, and the base, C, narrowing as it descends, with large perforations; made and used as represented and described, for the purposes set forth.

38,423.—Cooking Stove.—Jacob H. Shear, Albany, N. Y.:

I claim the combination of the flue, M, and its openings, a a b b, flue, H, and its openings, e e, and its openings into flues, C and E, with the back and bottom flues, C D E, in the manner and for the purposes set forth in the above specification.

38,424.—Composition for filling Shells.—Levi Short, Philadelphia, Pa.:

I claim, first, A combustible composition formed of the above named ingredients or their equivalents, substantially in the proportions and for the purposes herein set forth.

Second, I claim metallic pellets or missiles filled with combustible matter in combination and use with explosive projectiles for the purposes and substantially as set forth.

38,425.—Grain Separator.—Otis W. Stanford, Mason, Ohio, and Andrew W. Crane, Lebanon, Ohio:

We claim the vertically and laterally agitated shoe, B, having the riddle, D, in the upper front part of it, immediately under the hopper and mainly out of the blast, in the described combination with a case, A A', having that part of it, A, which contains the shoe, so much wider than that part of it, A', which contains the fan, as to enable the interior width of the shoe at its front end to be equal to or somewhat in excess of the fan case at its front end, as and for the objects set forth.

38,426.—Cooking Stove and Range.—David Stuart, Philadelphia, Pa.:

I claim, first, The chamber, F, with its door, k; the chamber, G, the fireplace, J, and the oven, L, when the said chambers are arranged to receive the culinary vessels, to communicate with each other, and the fireplace, and in respect to each other and the oven, substantially as and for the purpose herein set forth.

Second, The culinary vessel, g, the flange, p, on the upper edge of the same, said flange resting on a ledge, n', so formed in the top-plate, A, of the stove, and so situated in respect to perforations, v, that the said perforations shall form a communication between the interior of the vessel and the chamber within which the vessel is suspended, for the purpose described.

Third, The combination of the compartment, F, the perforated door, k, and the perforated valve, d, or its equivalents, the whole being arranged for roasting, frying, broiling, and other like purposes substantially as described.

38,427.—Instrument for ascertaining the Amount of Water, &c., in Barrels of Oil, &c.—Guiseppe Tagliabue, New York City:

I claim, first, The tube constructed of metal and glass.

Second, The valves at top and bottom acted on by one rod and opening and closing together.

Third, The graduated scale on the glass sides of the tube constructed as aforesaid.

Fourth, The whole constructed substantially as and for the purpose described.

38,428.—Chair.—Daniel E. Teal, Norwich, N. Y.:

I claim the combination of the seat, A, the springs, C C, or their equivalents, and the frame, B, adapted to tilt back at the will of the sitter against the resistance of the springs, substantially as shown and described.

38,429.—Apparatus for generating Gas from Petroleum and other Hydro-carbons.—George W. Thompson and Joseph Foster, Bordentown, N. J. Ante-dated Nov. 10, 1862:

We claim depositing on the bottom of the retort a layer of unslacked lime, charcoal, or other equivalent material, and so arranging the feed pipe, D, that the oil will drop directly on to the said layer, as and for the purpose herein set forth.

38,430.—Machinery for molding Pottery.—John Fresch, New York City:

I claim, first, The arrangement of the double-headed reciprocating carriage, C, each head being provided with a series of revolving cores, e, in combination with two stationary flasks, D D, one opposite to either head of the carriage, all constructed and operating as and for the purpose described.

Second, The arrangement of a hinged cap, j, and brace, k, in combination with a sectional flask, D, constructed and operating in the manner and for the purpose substantially as described.

Third, The employment of the remover, D, constructed substantially as specified, for the purpose shown and described.

[The object of this invention is to mold a large quantity of flower pots or other similar articles by machinery in a short time and with little labor.]

38,431.—Beehive.—Waters Warren, Three Oaks, Mich.:

I claim the body, B, and spare-honey box, E, constructed of alternate sides of wood and glass and arranged in polygonal form, in combination with the cap or cover, G, and platform, A, substantially as described.

I further claim the manner of arranging or applying the spare-honey box, E, to the body, B, of the hive, to wit: by fitting the box, E, on a central pivot or pin, e, when said box, E, is provided with holes, h, in its bottom, g, and the top, C, of the body, B, is provided with similar holes, e', as and for the purpose specified.

[The object of this invention is to obtain a bee-hive which will be extremely simple in construction, economical to manufacture, and admit of having honey readily taken from it.]

38,432.—Elliptic Spring.—Richard Vose, New York City:

I claim the combination of one or more curved, metallic bearing plates, A and A', with one or more curved, metallic tension plates, B and B', when said plates are arranged in planes at right angles to each other, substantially as herein set forth.

When bearing plates, A and A', are arranged and combined with tension plates, B and B', in the formation of an improved spring, substantially as herein set forth, I claim confining and securing said plates by means of the metallic heads, C C, and D D, or their equivalents, substantially in the manner herein described.

I also claim the use of intermediate, compensating springs, when combined with the bearing plates, A and A', and tension plates, B and B', of my improved spring, substantially in the manner and for the purpose herein set forth.

38,433.—Arrangement of Conducting Pipes and Manifolds.—Caleb C. Walworth, Boston, Mass:

I claim the combination of the conducting pipe, valve and manifold when arranged substantially as herein shown and described.

38,434.—Cherry-stoner.—Theophilus Van Kannel, Chester, Ill.:

I claim, first, The curved spring-rocker, E, constructed and applied to the mouth of the hopper and operating in conjunction with the slide, F, or its equivalent, for feeding cherries to the machine one at a time, substantially as described.

Second, An automatic device, I I', applied to a sliding box, F, for discharging the stoned cherries separately from the machine, substantially as herein described.

Third, An alternately sliding and vibrating claw-plate, I I', substantially as and for the purposes herein described.

Fourth, A removable plate, K, applied to and forming a part of the box, A, substantially as and for the purpose described.

Fifth, The combination of a conical hopper, D, with an automatic feeding device, E, and slide, F, substantially as and for the purpose described.

Sixth, The perforated reciprocating basin, G, for receiving and centering the cherries and retaining each cherry during the operation of the stoning fork, H, in combination with a machine operating substantially as herein described.

Seventh, A machine for stoning cherries operating substantially as and for the purposes specified.

38,435.—Safety Switch for Railroads.—Charles H. White, Emmett, Mich.:

I claim the use of the flanches, I I, tongues, n n, grooves, e e, rebates, u u, and flange supporters, J J, in combination with the track switch rails, A A, when arranged relatively with each other and with the said rails, substantially as and for the purposes specified.

38,436.—Hoisting Oyster Dredges.—Joseph Whitecar, Philadelphia, Pa.:

I claim constructing and arranging a pair of conical wheels, substantially as described, in combination with an oyster or other dredge, for the purpose above set forth.

38,437.—Skirt-supporter.—Norman Wiard and Hermann Shlarbaum, New York City:

We claim the new article of manufacture herein described, consisting of hinged levers adapted to be operated by a single band of elastic material held in place on the levers, as represented, and lipped, in order to receive and hold suitable parts to seize the skirt in the manner shown.

38,438.—Process of manufacturing Illuminating Gas.—S. Lloyd Weigand, Philadelphia, Pa.:

I claim the combination of the processes disclaimed when combined in the manner or in any equivalent manner, as set forth and described.

38,439.—Grinding the Upper Cutter of Nail Machines.—George B. Wiggin and J. W. Hoard, Providence, R. I.:

We claim the arrangement of the grinding wheel, C, and the carriage, F, for grinding the movable cutter of a nail machine, substantially as described.

38,440.—Window-sash Fastener.—Samuel H. Williams, Shoemakerville, Pa.:

I claim the serrated oval rollers, B B, in combination with the adjustable screw, D, when said devices are used for the purpose described and set forth.

38,441.—Incendiary Shell.—Loftis Wood, Brooklyn, N. Y.:

I claim the invention of coating or lining a shell projectile with the composition herein before described, or with any other equivalent fire-proof substance, susceptible of producing the same result as set forth.

I also claim the construction of a cast-metal shell, a a a a, b b, c c c, formed with a smaller enclosed charge chamber, d d, and a larger enclosed incendiary chamber, e e e e, when formed and separated by a transverse air-tight partition or diaphragm, f f f, the interior surfaces of which are coated with any fire-proof, non-conducting composition, as shown in Fig. 2 and indicated at 1 1 1, through all of which and whereby any molten or fused metal may be effectually and safely enclosed within an explosive mass, thus composing an incendiary and explosive projectile for the purposes as hereinbefore fully set forth and described.

38,442.—Tourniquet.—Frederick W. Bond (assignor to John B. Murray), Cypress Hills, N. Y.:

I claim the employment of an endless band of vulcanized rubber as an elastic ligature, in the combination of a pad and elastic ligature, substantially as described.

38,443.—Metallic Burial-case.—Martin H. Crane (assignor to Crane, Reed & Co.), Cincinnati, Ohio:

I claim the production, as a new article of manufacture, of a sectional metallic burial-case, that is to say, a case whose lower shell, or both upper and lower shells are composed of two or more parts, which may be united for use or disunited for transportation, at pleasure, substantially as set forth.

I also claim making the top, bottom, ends and sides cast in separate pieces or sections united at the angles by overlapping flanges, substantially as set forth.

I also claim forming upon each section a flange arranged to lap over or under a corresponding section flange in such manner as to admit of the interposition of a cementing substance, substantially as set forth.

I also claim providing the flanges of the lower shell section with lugs, or their equivalent, to receive the ends of the screws, substantially as set forth.

38,444.—Pump.—Joseph W. Douglas (assignor to W. and B. Douglas), Middletown, Conn.:

I claim the valves, j j, k k, all placed on one and the same plate, when used in combination and arranged with a cap, E, and a single screw-bolt, F, passing through a pier, e, substantially as shown and described.

[This invention relates to an improvement in the force pump, and consists in a novel arrangement of the valves and valve box, whereby all the valves may be rendered accessible by the removal of one nut only.]

38,445.—Sail Hank.—Charles Ellis (assignor to himself and Daniel Douglass. 3d), Gloucester, Mass.:

I claim the combination and arrangement of the sail hank and the two sets or ranges of friction rollers, in manner and so as to operate substantially as described.

38,446.—Manufacture of Sheet-iron Hard-ware.—John Grey and John D. Grey (assignors to themselves and Thomas Grey), Pittsburgh, Pa.:

We claim making articles of seamless hollow-ware out of sheet-iron in the manner substantially as described, by the use of a succession of shallow, bottomless dies, having flaring or curved sides, each die in the series being of greater diameter than the last, with forcers of corresponding shape and depth, whereby the articles are gradually shaped from a flat disk by successive stages, the bottom or central part of the disk being last shaped.

38,447.—Sewing Machine.—Frederick W. Grote) assignor to himself and Clans O. Tietzen), New York City:

I claim, first, The combination of the cylinder, G, the spool case, J, spool, I, and stationary plate, H, the whole constructed and arranged to operate substantially as and for the purpose herein specified.

Second, The construction, combination and arrangement of the bar, N, carrying the feed wheel, and the needle-bar, E, substantially as herein specified, whereby the feed wheel is enabled to be adjusted around the needle to feed in various directions and always kept close to the needle.

Third, Operating the feed wheel by means of a dog lever, P, applied to the said wheel, a lever, R R', attached to the bar, N, which carries the feed wheel and connected with the dog lever, P, and a wiper, 23, attached to the needle-bar, the whole combined and arranged to operate substantially as herein specified.

38,448.—Dry Gas Meter.—Charles C. Lloyd (assignor to himself and R. H. Gratz & Co.), Philadelphia, Pa.:

I claim, first, Dispensing with the use of packing around the shafts of the spiral flange wheel and the index mover, or either of them, by placing the said spiral flange wheel, G, outside of and separated from the gas chest, substantially as described for the purpose specified.

Second, I claim the employment of a supplementary packing box in combination with each of the vibratory flag shafts used for operating the valves and index, the said packing boxes being placed in the top-plate of the gas chest, substantially as described and set forth for the purpose specified.

Third, I claim the arrangement of the valves, B B', in such relation to the final outlet channel, L, that the latter shall serve as a single and direct outlet channel from the central openings of the said valves to the outside of the meter, substantially as described and set forth, for the purpose specified.

Fourth, I also claim making the curved recesses, 2 2 3, in the two side faces of either the cap or seat of each of the valves of a dry gas-meter, substantially as described and set forth, for the purpose specified.

38,449.—Preparing Hydrated Silicates of Potash and Soda.—John M. Ordway, of Manchester, N. H., assignor to Charles E. Hodges, of Dorchester, and Nathaniel D. Silsbee, of Boston, Mass.:

I claim the process, substantially as described, of producing a solid, hydrated alkaline silicate, the same consisting in treating a solution of silicate by precipitating the silicate, and subsequently pressing and drying it, substantially as specified.

I also claim the application of chloride of sodium or a neutral alkaline salt to a solution of an alkaline silicate, as a means of effecting precipitation of the mineral matter of the solution.

38,450.—Sewing Machine.—Charles H. Palmer (assignor to himself and Samuel Colgate), New York City:

I claim, first, The construction and arrangements of the parts, A Al A2 A3, so as to form the framing of a sewing machine, substantially in the manner and for the purpose herein set forth.

Second, The construction and arrangement of the presser foot, C, center, c, cams, D D', and screw, d, substantially as and for the purpose herein set forth.

Third, The construction and arrangement of the slot, a a', spring, C', center, c, and presser foot, C, substantially as and for the purpose herein set forth.

Fourth, The combination of the wheels, G G', with the yoke, F, and projections, f f', substantially in the manner represented and for the purpose herein set forth.

38,451.—Horseshoe.—Isaac Peacock (assignor to himself and S. S. Sawyer), Shortsville, N. Y.:

I claim, first, Constructing a shoe with the continuous calk, d, in combination with the continuous stiffening rib, e, and the wide bottom surface or groove, a', substantially as herein described.

Second, In combination with the improvement embraced in the claim above, the peculiar manner of curving the shoe at the heel, as shown and described, for the purpose set forth.

38,452.—Paper-bag Machine.—S. E. Pettee (assignor to the Union Paper-bag Machine Company), Philadelphia, Pa.:

I claim, firstly, Hanging the spindle, G, which carries the roll of paper to a plate, E, so secured to the frame as to be readily adjusted laterally thereon, for the purpose specified.

Secondly, So connecting the plate, D, which carries the roller, I, and the pasting device to the frame, that the whole may be adjusted laterally on the said frame, for the purpose specified.

Thirdly, Folding the continuous sheet by means of a pulley or pulleys, M M, or their equivalents, in combination with the horizontal pulleys, d d, or their equivalents, to the same, the sharp edges of the pulleys forming the crease at the proper place in the paper, and the pulleys, d d, or their equivalents turning down the fold determined by the creasing pulleys, thereby enabling me to dispense with the objectionable "former" used in the machines for making paper bags.

Fourthly, So securing the creasing pulleys, M M, to the shaft, L, that they can be adjusted thereon, in respect to each other and to the paper, for the purpose described.

Fifthly, The roller, h h, secured to the bar, P, and so arranged as to present a lateral sagging of the paper without disturbing the creases made by the pulleys, M M.

Sixthly, So constructing the revolving striker that the striking bar can be moved to and from the center of rotation and secured after adjustment, for the purpose specified.

Seventhly, The revolving striker, when arranged in respect to the rollers, v v, and rollers, w and w', as and for the purpose herein set forth.

Eighly, Imparting to the pasting blade, 15, by the devices herein described, or their equivalents, the motion described to and from the pasting roller, as well as the motion described to and from the folding rollers, for the purpose herein set forth.

Thirdly, The beveled portion of the plate, 15, so formed and arranged as to conform or nearly conform to the circumference of the roller, 6, and so as to effectually transfer the paste to and spread it over the fold at the bottom of the bag, as described.

Tenthly, The roller, 7, with its angular projecting plate, 2 2, when combined and operating in conjunction with the paste roller, 6, substantially as and for the purpose herein set forth.

38,453.—Lamp.—W. H. Pierce, Somerville, Mass., assignor to himself and Samuel Adlam, Jr., Boston, Mass.:

I claim, first, Providing the metallic collar of a lamp with a projecting portion or continuation, which shall form the handle of the lamp, substantially as set forth.

Second, I claim the combination of a glass lamp body, A, metallic collar, B, handle, C, substantially as set forth.

Third, Fastening a metallic handle to a glass lamp by means of the collar, and without puncturing the glass, substantially as set forth.

38,454.—Machine for rolling File Blanks.—Charles Spofford and A. B. Southwick (assignor to the Whipple File Manufacturing Company), Ballardvale, Mass.:

We claim the rolls, E and F', in combination with the carriage, P, arranged and operating in the manner described for the purpose set forth.

RE-ISSUE.

1,471.—Cement for uniting Leather and other Substances.—Samuel F. Hilton, of Providence, R. I., and Willliam D. Hilton, of Cranston, R. I., assignees of said Samuel F. Hilton. Patented August 13, 1861:

We claim, as a new article of manufacture, a cement made of the two materials heretofore first mentioned, in combination substantially as described.

DESIGNS.

1,757.—Link of a Chain.—Egbert S. Richards, Attleboro', Mass.

1,758.—Breast-pin and Ear-drop.—Egbert S. Richards, Attleboro', Mass.

EXTENSION.

Method of making Wire-strengthened Spoons.—William Mix, Prospect, Conn. Letters Patent No. 6,413, dated May 1, 1849. Re-issued, No. 480, dated August 4, 1857:

I claim casting the spoon handle in a mold of larger dimensions than the finished handle is required to be, as herein set forth, and subsequently swaging the handle in to the proper shape, and condensing the metal upon the strengthening wire by means of the drop press and dies, as described.

Notes and Queries

W. S. L., of Pa.—We have never known a case of a near-sighted person being restored to perfect vision by manipulating the eyes.

J. L. Q., of Pa.—Spiral springs are manufactured at the Novelty Works and by Messrs. Hoe, of this city.

E. S. R., of Pa.—You will find a description of the mode of constructing an ice-house on page 16, Vol. VI (new series) of the SCIENTIFIC AMERICAN. It should be built on a northern exposure, with double boarded walls and roof, leaving a space between the planking to be packed with saw-dust or straw. It should be built above ground.

D. D., of Pa.—The best paste that you can use for a scrap-book is that which is sold for general use under the name of mucilage. It is made from starch roasted at a temperature of 300° Fah., and is called dextrine.

N. P. M., of Ohio.—To cover your pulley so that a belt will not slip on it, take an old belt and turn the flesh side out, drill holes in the pulley, make holes in the belt to correspond and rive it to the pulley with copper rivets. A better way is to lace the belt tight and throw a little rosin and oil on it; the belt will not slip then.

T. H., of Pa.—Your communication on aerial navigation is too long and otherwise unsuitable to our columns. Your MSS. is at your disposal.

J. G. G., of Ill.—We have never received your note on the length of the boiler to furnish steam at 40 pounds pressure per square inch. The length of a boiler is governed by the amount of heating surface desired, and we wish all whom it concerns to bear in mind the fact that we do not furnish estimates or calculations for building steam or any other machinery. We could not attend to a tithe of the business of this class that comes to us and give attention to our legitimate duties.

A. L. P., of N. Y.—We cannot tell you how to proceed to get the appointment of Professor of Mathematics in the Navy. You had better write to Secretary Welles on the subject. There is no publication devoted exclusively to naval engineering.

O. T. W., of Iowa.—You can obtain a work on mills and milling by addressing Henry C. Baird, of Philadelphia.

J. C., of Md.—The patentee of the connecting link resides in Texas, and it is not at all likely that he has any agent in this section

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, May 6, to Wednesday, May 13, 1863:—

F. C. P., of N. Y., $25; J. W. H., of N.Y., $50; L. C., of N.J., $16; M. & C., of N.Y., $15; E. C. H., of N.Y., $20; T. T. H., of N.Y., $16; W. J., of Wis., $20; B. W., of N. J., $16; G. J., of N. Y., $26; T. R., of N. Y., $54; G. D., of Pa., $20; J. S. C., of Mich., $15; A. H. C., of Wis., $26; H. S. J., of Cal., $30; R. R., of Ill., $12; M. T. W., of Ky., $30; L. A. B., of Ind., $15; R. D. N., of N. H., $20; G. C., of N. Y. $36: O. F. W., of Conn., $367; J. C. W., of N. Y., $26; S. W., of Mass., $36; F. D. B., of Ind., $20, A. J. H., of Pa., $25; D. S. E., of Mass., $16; J. H., of Pa., 16; A. S. M., of Ill., 62; J. M., of Cal., $40; F. A. De M., of N. Y., $25; C. T. D., of N. J., $25; S. R. S., of N.Y., $36; W. H. F., of Mass., $20; A. M., of N. Y., $20; J. K. U., of N. Y., $22; O. E., of N. Y., $45; C. F. T., of N.Y., $16; J. B., of N. Y., $16; L. B., of N. J., $16; C. M. S., of Mass., $20; M. & M., of Cal., $40; H. H. B., of N. Y., $25; C. J. P., of Cal., $15; J. H. M., of Mo., $12; O. P., of Vt., $16; E. & K., of Cal., $18; B. A. H., of Iowa, $15; G. B. McD., of Ky., $20; F. A., Jr., of Mich., $34; L. E. R., of Mich., $15; E. R. S., of Mich., $12; P. L. S., of Pa., $25; J. C., of Va., $7; J. F. J., of N. Y., $10; E. J. Y. P., of N. Y., $150; J. A. G., of Iowa, $25; H. W. M., of N. Y., $16; J. P., of N. Y., $25; J. McK., of N. Y., $20; E. L. P., of N. Y., $41; W. & C., of N. H., $20; F. H. B., of N. Y., $20; J. R., of Minn., $20; H. K., of N. Y., $16; J. W. B., of Ill., $20 S. R. S., of N. J., $20; T. J. McG., of Ohio, $20; J. C., of Mass, $150; G. G. H., of Ill., $25; W. J., of N. H., $25; S. F. G., of N. Y., $25; H. W., of N. Y., $16; R. H. B., of N. Y., $16; J. H. R., of Conn., $26; H. P., of Pa., $16; S. S. & D. C., of Ill., $25; J. T., of N. Y., $16; D. & H., of Ohio, $15; W. S. J., of Conn., $25; S. W. D., of N. Y., $12; J. N. W., of Ill., $15; F. & B., of R. I., $16; T. R. C., of Iowa, $26.

Persons having remitted money to this office will please to examine the above list to see that their initials appear in it, and if they have not received an acknowledgment by mail, and their initials are not to be found in this list, they will please notify us immediately, and inform us the amount, and how it was sent, whether by mail or express.

Specifications and drawings and models belonging to parties with the following initials have been forwarded to the Patent Office from Wednesday, May 6, to Wednesday, May 13, 1863:—

F. C. P., of N. Y.; F. A. De. M., of N. Y.; J. P., of N. Y.; J. W. H., of N. Y. (2 cases); C. T. D., of N. J.; S. R. S., of N. Y.; E. L. P., of N. Y.; M and C., of N. Y.; J. K. U., of N. Y.; C. F. T., of N. Y.; T. R., of N. Y.; P. and H., of England; R. R., of Ill.; J. H. M., of Mo.; S. F. G., of N. Y.: W. J., of N. H.; C. and J. A., of Ill.; G. G. A., of Ill.; H. H. B., of N. Y.; A. H. C., of Wis.; J. S. C., of Mich.; C. S., of Ill.; G. C., of N. Y.; J. H. R., of Mich.; S. W. D., of N. Y.; E. R. S., of Mich.; F. D. B., of Ind.; J. A. G., of Iowa; W. S. J., of Minn.; S. S. and D. C., of Ill.; P. L. S., of Pa.; A. J. H., of Pa.; M. and S., of Iowa; J. C. W., of N. Y.; A. S. M., of Ill. (2 cases).

Back Numbers and Volumes of the Scientific American.

VOLUMES I., II., III., IV., V. AND VII. (NEW SERIES) complete (bound or unbound) may be had at this office and from periodical dealers. Price, bound, $225 per volume, by mail, $3—which include postage. Price, in sheets, $2 50. Every mechanic, inventor or artizan in the United States should have a complete set of this publication for reference. Subscribers should not fail to preserve their numbers for binding. Nearly all the numbers of VOL. VI. are out of print and cannot be supplied.

GENERAL ORDERS, NO. 105.

WAR DEPARTMENT,
ADJUTANT GENERAL'S OFFICE,
WASHINGTON, April 28, 1863

The organization of an Invalid Corps is hereby authorized.

This Corps shall consist of Companies, and, if it shall hereafter be thought best, of Battalions.

The Companies shall be made up from the following sources, viz.:

First, By taking those officers and enlisted men of commands now in the field (whether actually present or temporarily absent) who, from wounds received in action or disease contracted in the line of duty, are unfit for field service, but are still capable of effective garrison duty, or such other light duty as may be required of an Invalid Corps. Regimental Commanders shall at once make out, from information received from their Medical and Company Officers, and and from their own knowledge, rolls (according to the Form furnished) of the names of all the officers and enlisted men under their commands who fulfill the following conditions, viz.:

1. That they are unfit for active field service on account of wounds or disease contracted in the line of duty: this fact being certified by a Medical Officer in the service, after personal examination.
2. That they are fit for garrison duty: this fact being likewise certified by the Medical Officer, as above, after personal examination.
3. That they are, in the opinion of their Commanding Officers, meritorious and deserving.

These rolls shall be certified by the Examining Surgeon and Regimental Commander, and transmitted, through the regular channels of military correspondence, to the Provost Marshal General of the United States.

The Regimental Commander shall enter in the column of remarks, opposite each officer's name on the roll, a statement as to the general character of the officer for intelligence, industry, sobriety and attention to duty; and all intermediate Commanders shall endorse thereon such facts as they may possess in the case, or, if they have none, they shall state how far they are willing to endorse the opinion of the officer or officers making the recommendation. Similar rolls shall be forwarded from time to time, whenever the number of men fulfilling the conditions enumerated or the exigencies of the service may render it expedient.

Second, By taking those officers and enlisted men still in the service and borne on the rolls, but who are absent from duty, in Hospitals or Convalescent Camps, or are otherwise under the control of Medical Officers. In these cases the Medical Officer in attendance shall prepare the rolls according to Form, entering the names of officers and men from the same Regiment on a roll by themselves, and send them, with the certificate of the Surgeon, duly signed, to the proper Regimental Commander, who will forward them, as heretofore specified, subject to the same conditions and requirements. If, in any case, the Regimental Commander shall think an officer unfit, in point of character to continue in the service of the Invalid Corps, though disabled and certified by the Surgeon, he will state his objection in the column of remarks, and note the exception before signing the certificate. If any officer or enlisted man now in the service, but absent and beyond the reach of a Medical Officer in charge of a Hospital or Convalescent Camp, desires to enter this Corps, he will take the course indicated below for those who have been honorably discharged from the service.

Third, By accepting those officers and enlisted men who have been honorably discharged on account of wounds or disease contracted in the line of duty, and who desire to re-enter the service. In the case of an officer, application for appointment must be made to the Provost Marshal General of the United States through the officer detailed as Acting Assistant Provost Marshal General of the State. No application of this kind will be considered unless the following conditions are completely fulfilled:—

1. That the applicant produce the certificate of the Surgeon of the Board of Enrollment for the District in which he resides, that he is unfit for active field duty an account of wounds or disease, and is not liable to draft, but is fit for garrison duty.
2. That he furnish evidence of an honorable discharge on account of wounds or disability contracted in the line of duty.
3. That he produce recommendations from the Regimental, Brigade and Division Commanders under whom he formerly served, that he is worthy of being thus provided for and capable of returning adequate service to the Government. In case it shall be impracticable to get this last evidence, he may, having established the first two points above, satisfy the Board of Enrollment that he is deserving, and present its certificate of the fact. This evidence must all be obtained by the applicant, and must be transmitted with his application for appointment.

If there be no Acting Assistant Provost Marshal General for the State, the application may be forwarded through the Adjutant General of the State, who is desired to endorse thereon such facts in the military history of the applicant as he may know, or as are afforded by his records, and forward the same to the Provost Marshal General of the United States. Enlisted men, honorably discharged on account of disability, desiring to re-enlist in this Corps, will present themselves to the Board of Enrollment for the District in which they reside, for examination by the Surgeon thereof, who shall examine them and report the result to the Board of Enrollment.

The Board shall then consider each case, and if the applicant is found to fulfill the conditions specified below, the Board shall give him a certificate to that effect, viz.:

1. That he is unfit for service in the field.
2. That he is fit for garrison duty.
3. That he is meritorious and deserving.
4. That he was honorably discharged from the service.

The Provost Marshal for the District shall then send the application, with this certificate of the Board, to the Acting Assistant Provost Marshal General of the State, who shall procure such evidence of service and character as the records of the Company to which he belonged, on file at the Headquarters of the State, may show, and if satisfied that it is a meritorious case, and that the man is deserving, he will enlist him in accordance with such special rules as the Provost Marshal General may establish.

Medical Inspectors, Surgeons in charge of Hospitals, Military Commanders, and all others having authority to discharge, under existing laws and regulations, are forbidden to grant discharges to any men under their control who may be fit for service in the Invalid Corps.

The Provost Marshal General is charged with the execution of this order, and the troops organized under it will be under the control of his Bureau.

By order of the Secretary of War:

E. D. TOWNSEND,
Assistant Adjutant General,

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