

ber next; depositions and other papers relied upon as testimony, must be filed in the Office on or before the morning of that day.

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:—

Machine for Rolling the Seams of Boots and Shoes.—In the manufacture of boots and shoes, particularly of leather or morocco, it is essential, in order to produce good work, to rub the seams well down on the inner side. Up to the present time this operation has been performed entirely by hand, with great exertion and loss of time. The object of this invention is to perform the operation of rubbing down or rolling the seams, by machinery capable of being driven by other than human power, and the invention consists in the arrangement of a roller arm connected by suitable mechanism with a rotary shaft, and working on a curved or straight bed, which supports the material to be rolled, in such a manner that by imparting to the shaft a continuous rotary motion, the roller assumes a reciprocating rectilinear motion, traveling repeatedly over the seam on the bed; the bed is adjustable, to conform to the shape of different seams, and the pressure is increased or decreased by a simple arrangement of springs. John C. White, of Auburn, N. Y., is the inventor of this machine.

Device for turning Crank Pins.—The object of this invention is to obtain a simple and portable device, so constructed and arranged that it may be readily applied to the driving wheels of locomotives, and in such relation with their crank pins as to admit of the latter being turned and made true, without detaching the pins from the wheels or removing the wheels from the locomotive. Socrates S. Cheney and Danforth Cheney, of Galesburg, Ill., are the inventors of this device.

Paddle wheel.—This invention relates to paddle-wheels with series of narrow buckets of a parabolic or curvilinear shape. The principal objection to such paddle-wheels as heretofore constructed, has been, that though in the highest degree effective, when rotating in a direction to act upon the water with the convex faces of their buckets to propel the vessel ahead, they fail to operate as well as is desirable when rotating in the opposite direction, and hence cannot be very successfully used in backing the vessel. The reason for this has been that the buckets, in entering and passing through the water, have divided it and pushed it aside, instead of taking hold of it and acting with a direct pressure. The principal object of this invention is to make the wheel more effective in backing; and to this end it consists in dividing the wheel in a plane perpendicular to its axis by means of a partition ring, thus making the buckets of the form of semi-parabolas, and so setting the said buckets between the said partition ring and two outer rings of a depth equal to the depth of a series of buckets, that the buckets on one side of the partition alternate with those on the other side of the partition, by which means not only is the above mentioned result accomplished, but the wheel is made stronger, and produces less vibration of the vessel when propelling in a forward direction. Addison C. Fletcher, of New York city, is the inventor of this improvement.

Car Brake.—This invention relates to a new and improved railroad car brake, of that class designed to be operated simultaneously on a train of cars, by the engineer or his attendant. The invention consists in the employment of wedges connected by chains or ropes to a shaft, which extends the whole length of the train; the wedges being fitted between drums on the axles of the trucks or the wheels thereof, and inclined plates attached to the trucks, all arranged so as to operate very effectively. Isaac N. Pyle, of Decatur, Ind., is the inventor of this improvement.

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ISSUED FROM THE UNITED STATES PATENT OFFICE

FOR THE WEEK ENDING AUGUST 11, 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.

39,455.—Breech-loading Fire-arm.—John S. Adams, Taunton, Mass.:

I claim, first, The pivoting of the breech within the frame by means of the rings, b b, or their equivalents, having combined with them the springs, c c, and the false trunnions, f f, the whole applied and operating substantially as herein set forth.

Second, The packing-piece, k, combined with the movable breech by means of the taper screws, m, m, substantially as and for the purpose herein set forth.

Third, So constructing and applying the sight, E, that it constitutes a rammer to operate in combination with a movable chambered breech, substantially as and for the purpose herein specified.

39,456.—Refrigerating Apparatus.—J. L. Alberger, Buffalo, N. Y.:

I claim an apparatus constructed substantially as herein described for cooling the air of a closed apartment, by causing it to circulate naturally or unforced through the apartment, and through and in contact with pipes or plates which are artificially cooled by an evaporating fluid and a forced current of air, in the manner substantially as and for the purpose described.

39,457.—Universal Chuck.—Manoah Alden, Philadelphia, Pa.:

I claim, first, The combination of the plate, C, and its spiral teeth, with the screw spindle, D, when both are applied to the case, A, of the lathe, and arranged to operate the jaws, a a, substantially in the manner herein described.

Second, The combination of the jaws, a, a, pins, d, and plate, C, with its curved slots, the whole being constructed and arranged within the case substantially as described.

39,458.—Steam Engine.—John Baird, New York City:

I claim, first, In combination with a piston and a cylinder, a stationary rod or rods passing through the piston, and operating substantially as specified, the combination being substantially such as described.

Second, I claim a bush or sliding block and appropriate packing in combination with a piston, a stationary rod and a cylinder, the whole acting substantially as described.

Third, I claim in combination a cylinder, a piston, and a stationary rod operating in combination as described, where the latter is likewise combined with the cylinder covers or heads as described, whereby the rod performs the double duty of sustaining the piston and the cylinder heads, substantially as set forth.

39,459.—Dish-heater.—William Brand, Burlington, Iowa:

I claim, first, The combination of chambers, G B, with a stove or stoves, A, and steam-pipes, h, h, and domes, g, g, the whole constructed and operating substantially as and for the purposes described.

Second, In combination with the horizontal chambers or box herein described, the adjustable standards or legs, k, k, for the purpose of keeping the water pan level as set forth.

Third, The arrangement of stoves, A, beneath a shallow horizontal box constructed with the dish-holding plate, C, water chamber, G, smoke chamber, B, and a direct steam and smoke escape flue, b, substantially as described.

39,460.—Ambulance.—Clarissa Britain, Saint Joseph, Mich.:

I claim, first, The removable slotted posts, B, in combination with the transverse bars or rails, G G', springs, H, holding-down bars, J, J, and wagon body, A, all arranged and operating substantially as and for the purposes described.

Second, Suspending the stretchers, E E, upon poles, c, c, arranged and supported upon springs substantially in the manner herein described.

39,461.—Fastening for Studs or Buttons.—Laura M. Bronson, New York City. Ante-dated Dec. 31, 1862:

I claim the ring or S-shaped wire of metal with the cross bar and counter eye as shown, and for the purposes set forth as specified.

39,462.—Invalid Back-rest.—William Felix Brown, New Bedford, Mass.:

I claim my improved invalid back-rests as made of a cushioned frame, D, a series of helical springs, F, F, an auxiliary frame, E, a covering of cloth or rattan, b, and the two frames, A B (hinged together and provided with a latching apparatus), arranged in manner and so as to operate as specified.

39,463.—Grain Binder.—W. W. Burson, Atkinson, Ill.:

I claim, first, The combination of the wire-lever, A, and double grooved supports, B B, overhanging the gavel, constructed and operating substantially as described.

Second, The combination of the slide, D, cam-rod, I, and lever, A, acting substantially as described and for the purpose set forth.

Third, The combination of the spring-rod, x, and coil spring, Y, with lever, A, and slide, D, acting as set forth.

Fourth, The combination of the spring pliers, b, slide, D, and twisting claws, e, substantially as described.

Fifth, The combination of the ratchet rods, L L', ratchet pulley, M, springs, O O', and lever, A, acting substantially as described, and for the purpose set forth.

Sixth, The combination of the spool, G, wire-covering belt, H, and bar, Q, substantially as set forth.

Seventh, The combination of the crank, P, spring, U, rod, m, drop catch, W, and wheel, T, acting substantially as described.

Eighth, The combination of the handle, a, and rollers, b, acting substantially as described and for the purpose set forth.

39,464.—Grain Fork.—H. M. & W. W. Burson, Atkinson, Ill. Ante-dated July 3, 1863:

We claim, first, Attaching to a grain fork, the clasp, C, for the purpose set forth.

Second, The combination of the handle, A, fork, B, clasp, C, and pitman, D, acting substantially as described and for the purpose set forth.

39,465.—Lathe for turning Locomotive Crank Pins.—S. S. & Danforth Cheney, Galesburg, Ill.:

We claim the plates, A, D, in connection with the revolving tool or cutter frame composed of the ring, t, disk, r, and rods, s, and provided with a sliding combination of the hook, a, c, a, d, and rollers, b, acting through the medium of the screw, v, star-wheel, v', and pin, w, all arranged to operate substantially as and for the purpose herein set forth.

39,466.—Grain Dryer.—M. C. Cogswell & A. G. Williams, Buffalo, N. Y.:

We claim a device or opening made at the side of the case, in such a manner that it will open upwardly and prevent the grain from passing out, and at the same time increase the pressure and effectiveness of the air within; and also allow the evaporation, dust, air, &c., to escape, substantially as set forth.

We also claim the jacket B (with or without its lid, b'), in combination with the case, A, for the purposes and substantially as described.

39,467.—Cane Mill.—D. M. Cook, Mansfield, Ohio:

I claim, first, The matching circular wedges arranged on and constituting the splintering and expressing surfaces of a roller-cane mill, substantially as and for the purposes set forth.

Second, A roller-cane mill constructed to operate upon the cane with the one series of interlocking rolls, in the manner set forth.

Third, Splintering cane, expressing the juice therefrom, driving the ungeared rolls and relieving the journals of the rolls, by means of circular wedges, as set forth.

39,468.—Fastening for Skates.—C. T. Day, Newark, N. J. I claim operating or adjusting the bars, D, which have the jaws, d, at their ends through the medium of the circular plates, E, arranged so as to turn on pivots, g, and provided with eccentric slots, f, into which pendent pins, e, at the inner ends of the bars, D, are fitted, substantially as and for the purpose set forth.

I further claim holding the plates, E, and consequently the jaws, d, in proper position by means of the pendent screws, j, attached to the plates, C, and passing through concentric slots, l, in the plates and having thumb nuts, F, fitted on them substantially as described.

[This invention relates to an improved fastening for securing the skate to the boot or shoe, and of that class which are composed of jaws for clamping or grasping the sole and heel of the boot or shoe. The invention consists in an improved means for operating the clamps or jaws, whereby the same may be readily adjusted so as to grasp the sole and heel of the boot or shoe firmly and also readily detached or moved therefrom, and firmly held in position when grasping the sole and heel.]

39,469.—Let-off Mechanism for Looms.—George Draper, Milford, Mass.:

I claim a combination consisting not only of the escapement detent lever, k, its wheel, l, and the apparatus as described for depressing or operating such detent lever, but of a stopping mechanism (viz., the lever, G, and its connecting rod, I), to be operated by the lay, or while the lay may be beaten up, the whole being arranged substantially as and for the purpose specified.

39,470.—Construction of Sheet Metal Tanks.—Alfred Edwards, Chicago, Ill. Ante-dated May 18, 1863:

I claim not only the construction of a receptacle with a double bottom, by means of cutting and bending two pieces of the material, &c., in the manner as set forth and described, but also by means of cutting and bending any number of pieces according to the size and shape of the receptacle; the pieces in all cases to be laid crosswise on each other, so as to form a bottom of two or more thicknesses.

39,471.—Lighting Street Lamps.—Hosea Elliot, New York City:

I claim the arrangement of the tilting lamp, A, in combination with the case, C, self-closing door, d, pole, B, and thumb-piece, D, all constructed and operating in the manner and for the purpose substantially as shown and described.

[This invention consists in the arrangement of an adjustable lamp attached to a rod or pole which is provided with a thumb-piece and with a case enclosing the lamp in such a manner, that by depressing the thumb-piece the lamp is tilted and the door of the case enclosing the lamp is thrown open, allowing the flame of said adjustable lamp to come in contact with the burner of a street lamp, and obviating the necessity of climbing up on a ladder in order to light a street lamp, or other lamps or lights which cannot be reached from the ground.]

39,472.—Treating Night Soil for Agricultural Purposes.—R. B. Fitts, Philadelphia, Pa. Ante-dated Dec. 19, 1862:

I claim the process herein described and specified, for the purposes set forth.

39,473.—Paddle Wheel.—Addison C. Fletcher, New York City:

I claim the construction of a paddle wheel with alternating narrow semi-parabolic or curvilinear buckets, D E F, arranged in series as described and rings, C C', outside of and between the said buckets, the whole combined and arranged substantially as herein described.

39,474.—Welt-guide for Sewing Machines.—Hannibal Folsom, Milford, Mass.:

I claim in combination with the gage, B, the welt-guide, C, made with the bearing surfaces, a b c, and with a spring, g, or its equivalent for keeping the welt in lateral position, and for creating tension upon it as set forth.

39,475.—Potato Digger.—E. T. Ford, Stillwater, N. Y. Antedated Oct. 28, 1862:

I claim, first, The combination and arrangement of the two rotating wheels, one armed with teeth, a a a, the other with scraper blades, K K, separately or combined, the frame, C, and the divider, D, all constructed and operating substantially as and for the purpose above described.

Second, A, in combination with the above, I claim the arrangement of the wheels, G, G, plows, F F, flange, S, lever, H, gage bar, I, double flange, Y, and driving wheels, A A, as and for the purpose above described.

39,476.—Mounting Artificial Teeth.—John C. Fuller, Chicago, Ill.:

I claim, first, Constructing a platina or other metallic base plate for the teeth and gums with grooves and hooks, or other suitable attachments in the trough of this plate, substantially as described.

Second, The combination of continuous porcelain gum, a, having the teeth, b, affixed therein substantially as described, with a vulcanized rubber base substantially as and for the purposes herein described.

39,477.—Spur for Horsemen's use.—Thomas Garrick, Providence, R. I.:

I claim the improved spur for horsemen's use described, consisting of a spur with a screw shank, D, and a compressing and supporting clamp, B, provided with the spur points, a a, or their equivalents substantially as and for the purposes specified.

39,478.—Dumping Wagon.—R. W. Green, Bradford, Pa.:

I claim the box or body of the dumper, constructed with circular sides, J J, and hinged sections, M M, in combination with the pivoted frames, K K, all arranged and operating substantially as and for the purposes specified.

39,479.—Breech-loading Fire-arm.—Henry Gross,iffin, Ohio:

I claim, first, As an auxiliary device to a breech-loading fire-arm operating substantially as described, the pivoted guide, E, working in the slot, D, and maintaining during its up and down movement in the path of a circle a close relation between its forward end and the breech end of the gun barrel, substantially as and for the purpose set forth.

Second, Connecting the plug-carrier, F, to the guide, E, substantially as described.

Third, The construction of the slot, D, with its face, a, concentric with the axis, a', of the guide, E, in combination with the auxiliary device, E, and breech-piece, F c, substantially as and for the purpose described.

Fourth, A breech piece, F, with plug, c, on its front end, made so as to receive an eccentric within it and to wholly encircle the same, and also to admit a wedge segment, J, in rear of it, and likewise to admit a guide, E, above it, all substantially as and for the purpose set forth.

Fifth, The combination of the guide, E, sliding segment, F, and eccentric, G, substantially as described.

Sixth, The combination of the lever, H, segment, J, eccentric, G, breech piece, F c, space-closing device, E, and peculiarly formed slot, D, substantially as and for the purpose set forth.

39,480.—Manufacture of Water Gas.—W. H. Gwynne, White Plains, N. Y.:

I claim passing steam super-heated or otherwise through melted metal or ores, for the purposes described and shown.

39,481.—Filling Molds with Vulcanizable Gums.—Joseph Charles Howells, Washington, D. C.:

I claim the introduction of vulcanizable gums into molds or flasks by injection, substantially as set forth and by the apparatus herein described or its equivalent.

39,482.—Secret Pockets for Wearing Apparel.—Joseph Charles Howells, Washington, D. C.:

I claim a secret lapel pocket to be worn in garments substantially as specified and herein set forth.

39,483.—Gang Plow.—H. R. Huis, Hayward, Cal.:

I claim the peculiar arrangement, construction and application of the axle, D, and arm, E, the slotted oval, A, and the spring slide and lever, A, B, for the purpose herein specified and described.

39,484.—Smoothing Iron.—Richard Kuhfs, Saint Louis, Mo.:

I claim the arrangement and combination of the body, A, spaces, B, hinged lid, B, and grate, G, all being constructed, arranged and adjusted to operate substantially as herein shown and specified for the purposes set forth.

39,485.—Piston Valve for Steam Engine.—Robert H. Lecky, Allegheny, Pa.:

I claim the arrangement of the open end pipe or steam chest, C, head, G, and F, on the valve rod, E, exhaust opening, B, and steam valve, I, the whole being arranged, constructed, and operating substantially as herein described and for the purpose set forth.

39,486.—Padlock.—Conrad Liebrich, Philadelphia, Pa.:

I claim the lever, D, in combination with the shackle, B, and the spring, N, or its equivalent, when the said lever is formed and hung to the lock, substantially as set forth for the twofold purpose of throwing up the shackle when the bolt is withdrawn from the same, and of retaining the bolt when withdrawn as described.

I also claim forming on the lever, D, a projection, L, arranged substantially as described, so as to serve the purpose of a crossward.

39,487.—Artificial Arm.—Marvin Lincoln, Malden, Mass.:

I claim applying to an artificial arm a detachable hand made capable in itself of holding and grasping in the manner as set forth, and of being removed for the attachment of a hook or other instrument by the mechanism described.

I also claim the combination of hinges, I, joints, B, spring, S, and cord, T, applied to the thumb as set forth.

I also claim combining with the solid and rigid fingers, a movable or spring thumb, arranged and operated with respect to the hand as above described.

I also claim giving to all or part of the fingers when made of solid and rigid construction as described, a curved hooking form, for the purpose specified.

I also claim applying a locking mechanism, substantially as described, to operate in connection with the parts, B, C, for the purpose of locking the forearm in position.

I also claim combining in an artificial hand a spring thumb and rigid fingers, having a grasping function with fingers having a rigid and hooking form, to give them a holding function as set forth.

39,488.—Lamp.—Louis Loeffler, East Cambridge, Mass., (citizen of Prussia):

I claim the combination of a lamp or burner, a piece of spongy platinum, or its equivalent, and an apparatus for the generation of hydrogen gas, and discharge of such gas, on the said piece of spongy platinum, the whole being substantially as and for the purpose above specified.

39,489.—Washing Machine.—J. H. Mallory, South Bend, Ind.:

I claim the cylinder, B, having its periphery fluted longitudinally, in combination with the polygonal rollers, C, attached to curved or segment bars, A, and the latter connected together and to the yielding bars, D, said parts being placed at one or both sides of the cylinder, B, and all arranged as and for the purpose specified.

[This invention relates to an improvement in that class of clothes-washing machines, in which a rotary fluted cylinder is employed in connection with pressure rollers. The object of the invention is to obtain a machine of the kind specified, which will cause the clothes to be operated upon with a more equal and uniform pressure than hitherto, the pressure at the same time extending nearly or quite around the entire circumference of the fluted cylinder.]

39,490.—Apparatus for Evaporating Saccharine Liquids.—James A. Morrell & Peter Bargion, Richmond, Ind.:

We claim, first, The combination of the strainer, M, polygonal divisions, R, E, and pan, B.

Second, We claim the arrangement of the pan, B, with its polygonal divisions, R, E, in combination with the part, O, D, when used in combination with the chambers, A51 A51' A52, damper, K, openings, A1 A2, and y, and I and U.

Third, We claim the arrangement of the chambers, A51 A51' A52, in combination with the damper, K, and openings, A1 and A2, and y and Z, and the dampers, I and U.

Fourth, We claim the combination of the cooler and fliter when constructed, arranged and operated substantially as above described.

Fifth, We also claim the tank, D, when used in combination with the pan, B and C, and chambers, A51 A51' A52, damper, K, openings, A1 A2, and y and Z, and I and U, the whole being arranged, constructed, and operated substantially as above described.

39,491.—Farm Gate.—Ezra Nicholson, East Rockport, Ohio. Ante-dated April 18, 1863 :

I claim the arrangement of the spring latch, I, under the hinge lever, A, in combination with the notched segment, H, and stop-plate, Q, the bell-crank, K, and levers, D and A, operating in the manner as and for the purposes herein set forth.

39,492.—Meat-cutter.—August Nittinger, Philadelphia, Pa.:

I claim, first, Any convenient number of reciprocating blades, K, and the block, N, when such an intermittent rotary motion is imparted to the said block, that the latter is stationary when the blades are acting on the meat.

Secondly, The worm, U, having a thread partly straight and partly spiral, as described, for the purpose of imparting an intermittent rotary motion to the block, N, through the medium of the gearing herein described, or any equivalent to the same.

Thirdly, The crosshead, I, with its blades, K, when the said crosshead is arranged to turn in the sliding block, B, substantially as set forth, for the purpose herein specified.

Fourthly, The grooved retaining pin, M, passing through the sliding block, B, and crosshead, I, in combination with the spring latch, L.

39,493.—Smoke Stack for Locomotive Engines.—Charles P. Noble, Chicago, Ill.:

I claim, first, The globular or swelled pipe, D, when the inner surface is continuous, and is provided with the projections, A, and when its discharging orifice or mouth, C, is contracted nearly or quite to the diameter of the pipe, A.

Second, The combination of the swelled pipe, D, deflecting head, E, rods, C, and teeth, A, with the pipe, A, substantially as set forth and specified.

39,494.—Breach-loading Fire-arm.—John Percy, Albany, N. Y.:

I claim, first, The construction of the neck of the stock of a gun with a chamber which has segmental seats for the triggers, a removable plate, J, and a perforated diaphragm, A, in combination with the lock and hammer mechanism which is arranged and operates substantially as described, the whole constituting a device which is sufficiently water-proof for all practical purposes, as set forth.

Second, In combination with the solid shield or diaphragm, A, a pivoted hammer, C, and breach-loading barrel, D, the water-tight lock chamber formed in the casing or portion, B, C, substantially as described.

39,495.—Railroad Car Brake.—Isaac N. Pyle, Decatur, Ind.:

I claim the wedges, F F', in combination with the continuous shaft, G, and inclined plates, E E', the latter being placed in the relation as shown, with the wheels, C, or drums, A, attached to the axles, D, thereof, and all arranged as and for the purposes herein set forth.

39,496.—Ratchet Drill.—Edward A. Raymond, Brooklyn, N. Y.:

I claim the tool-holder, A, ratchet, D, pawl, G, and stock, E, constructed, combined and arranged as specified.

39,497.—Rake for Harvesters.—C. D. Read, Hamilton, Ohio:

I claim, first, The combination of a reciprocating rack, m, with a toothed segment, K, oscillating rake-shaft, K, slide rest, J, and arresting screws, h, h', substantially as described.

Second, The combination of adjustable crank-arm, e, pitman, G, and adjustable arresting screws, h, h', substantially as described.

Third, The toothed spring, L, in combination with the reciprocating rack, m, and inclined projections, p' p'', on the slide rests, J, operating substantially as described.

Fourth, The combination of cam, s, on rake-shaft, K, lever, I, lever, C', and pulley, b, with a clutching device applied to the driving shaft, A, all arranged and operating substantially as described.

Fifth, Releasing the lever, I, by means of a cam, s, applied to the rake-shaft, K, substantially as described, so that the rake can only be stopped, while the machine is moving forward, at the terminus of its backward stroke.

Sixth, The combination of the reciprocating rack, m, toothed segment, K, oscillating rake-shaft, K, and slide-rest, J, arranged and operating substantially as described.

39,498.—Water Wheel.—Robert Safely, Cohoes, N. Y.:

I claim the hollow beam, H, in combination with the stuffing box, J, and the oil cup, O, arranged and fitted substantially as described and for the purposes set forth in this specification.

39,499.—Circular Knitting Machine.—Daniel Scattergood, Nottingham, England. Patented in England Nov. 3, 1862 :

I claim the employment, in circular frames, or roundabouts, of a cone and conical supports or bearings for the needle jacks or carriers, so as to afford them a continuous bearing whatever the diameter of the circle of needles, and imparting motions to the loop and dividing landing, and knocking over wheels so that they shall perform their usual functions, whatever the diameter of such circle, all substantially in the manner hereinbefore described, whereby a fashioned or narrowed work may be produced and finished, as far as the fashion is concerned, before being removed from the frame.

39,500.—Vacuum Box of Paper-making Machines.—J. L. Seaverns, Worcester, Mass.:

I claim the combination with the vacuum box of a paper machine of a series of rollers supported on stationary bearings at each end inside of said bearings, with a movable cheek packed where the rolls pass through it, when said cheek is made continuous, or to fit closely in and against the sides of the box, as set forth.

Also, in combination with the rolls of a paper machine vacuum box, means for adjusting the height of the stationary bearings, for the purpose specified.

39,501.—Gun Lock.—J. Hamilton Shapley, Exeter, N. H.:

I claim the sear and the nose of the sear and all its parts, which are above fully described, or their equivalent, and the mode of using or applying the same.

39,502.—Mortising Machine.—Henry C. Smith, Clarksville, Ohio:

I claim, in the described combination with the mortising saw, D, and its accessories, the compound or right-and-left ratchet wheel, G G', pawls, H and H', feed hand L, rod, P, hooked nut, Q, and dog, R, or their equivalents, substantially as set forth.

39,503.—Record Book.—William H. Somers, Urbana, Ill.:

I claim the method of opening and closing the same with the record by means of the lever, A, operating to close the drawer by the act of sliding into the case, substantially as shown and described.

39,504.—Nut Machine.—Leopold Thomas, Allegheny City, Pa.:

I claim, first, Compressing, swaging and punching nuts in a cavity which has for its sides the vibrating shear blocks, m, in its ends the stationary perforated die, h', and the movable perforated die, h, and its top and bottom, the portions o and v, all constructed, arranged and operating substantially as described in its specification.

Second, The combination of the reciprocating punch carrying bar, f, with the perforated reciprocating die block, h, bar, g, and cheek pins, j, arranged and operating substantially as described.

Third, Transmitting a reciprocating motion to the punch bar, f, by means of links, w, w', and vibrating levers, k, k', which carry the cutting and closing blocks, m, m, substantially as described.

Fourth, The combination of a reciprocating punch carrying bar, f, with the nut, which is swaged and punched, and a block, v, which constitutes, when in a horizontal position, the bottom of the cavity in which the nuts are swaged and punched, in combination with the stationary die block, h, and moving die, h, substantially as described.

Fifth, The reciprocating perforated die block, o, h, so arranged with reference to the dies, h' v, as to form the top and one side of the cavity in which the nuts are swaged and punched, and combined with the levers, k, k', punch bar, f, and links, w, w', so that after the nuts are punched they may be discharged from the punching tool, substantially as described.

Sixth, The combination of vibrating arms, k, k', link connections, w, w', cross arm, x, spring, y, punch bar, f, and sliding die block, h, substantially as specified in its specification.

Seventh, The combination of the reciprocating die-carrying bar, g, with the reciprocating punch bar, f, stop pin, j, vibrating arms, k, k', links, w, w', and pendulum guides, d, d, substantially as herein described.

39,505.—Fire Escape.—Thomas Thompson, Baltimore, Md.:

I claim the curved flange, D, on the risers, in combination with the hollow standard for supporting the steps, as described.

I also claim supporting the steps with the curved flanges, D, and hollow standard, by fastening the rear edge to the lower edge of the riser above, and letting the front edge rest on the riser below.

39,506.—Harness Snap.—James B. Tibbits, Palmyra, N. Y.:

I claim the employment or use, in combination with the main portion or body, A, of a harness snap provided with a hook, a', and an eye, a, of a tongue, C, pivoted to the part, A, and provided with an eye, f, all arranged as herein described.

[The object of this invention is to obtain a snap for the breast straps, and other parts of the harness where applicable, which will operate perfectly without the aid of a spring, which is liable to get out of order. To this end, the invention consists in forming the snap with a tongue, which is attached to the snap by a pivot, and having said tongue provided with an eye, through which the strap passes, the strap also passing through an eye on the main portion of the snap; the several parts being so arranged that the pull or weight of the strap, will keep the tongue closed or in proper relation with the main portion of the snap, so that the latter cannot become casually detached from the part to which it is connected.]

39,507.—Churn.—John Tingley, Waterford, N. J.:

I claim, first, The clamping hoop, C, operated by the lever, M, link, N, and plate, I, or their equivalents, substantially as described; and

Second, The head, B, provided with the groove, E, and the elastic strip, F, or their equivalents, in combination with the clamping hoop, the lever, the link and the plate, as above described.

39,508.—Cooking Stove and Range.—W. B. Treadwell, Albany, N. Y.:

I claim, first, The open fire pot, B, constructed as described, in combination with an iron or soap-stone backing, arranged substantially as described.

Second, Openings, I, I', chambers, k C E D3, and deflector, m, of the oven, D, all arranged and operating substantially as described.

Third, The arrangement of flues, V G2 G1 G3 k', in combination with opening, I, and oven, G, operating substantially as described.

Fourth, The combination of the space, 2, between the open fire pot and the backing thereto with the dampers, m' m', so that the combustion of the fuel may be retarded, or regulated, by a counter or upper current outside of the fire-pot, substantially as described.

Fifth, The combination with a range or stove, and the doors thereof, of the button fastening, consisting of a fixed screw pin, n, plate, p, button, n', and nut, p', substantially as described.

Sixth, The combination with a range or stove and the doors or window thereto of the mica frame, H', r, s, constructed as represented, and the button fastening, n, n', and p, p', all substantially in the manner and for the purposes set forth.

39,509.—Fruit Dryer.—J. H. L. Tuck, St. Charles, Ill.:

I claim a fruit-drying case, formed of a shallow box, A, having ventilating openings at its sides, and provided with a glazed sash, B, for a top, and with folding legs or props, D, D, one at each side, and used in connection with a stake or post, C, substantially as described.

[The object of this invention is to obtain a simple and economical device for drying fruit, one which can be readily adjusted so as to receive the sun properly, be perfectly ventilated, and the fruit thoroughly protected from the weather.]

39,510.—Binding Attachment for Harvesters.—Alexander Underwood, of Kenosha, Wis.:

I claim, first, The self-actuating shifting levers, E and D, operated by the cams or inclined planes, m and n, on the wheel, K, and the cam, 7, on the wheel, L, all as herein described.

Second, The arm, B, provided with the cam groove, m2, in its rear half, the friction rollers, s2, on the forward part, and the mortise, L, near the center, and operated substantially as explained.

Third, The combination of the arm, B, forked lever, A, shaft, U, stud, e2, guide rollers, k2 s2, and ways, I2, all constructed and arranged in the manner and for the purposes described.

Fourth, The combination of the spiral cam, H, rack, R, pinions, T B2 c2, swinging hanger, a2, yoke, h, pin or roller, d4, and cam-grooved gear wheel, F, when the said parts are constructed and arranged as herein described, so as to impart a reciprocating motion to the arm, B, by a continuous motion of the cam and gear wheel, F.

Fifth, The combination of the book, I2, F, radially slotted pinion, o2, sliding bar, C, and shear blades, h3 and n, when the said parts are constructed and arranged in the manner hereinbefore described, so as to adapt them to uniformly twist and subsequently knot and sever the band.

Sixth, The stud, k, operated by the sliding bar, C, and employed in the described combination with the shear blades, h3 and n, to hold the said blades in close proximity and retain the end of the cord, as explained.

Seventh, The combination with the gear wheel, G, sliding bar, C, stud, k, and blades, h3 and n, of the roller, a', grooves, s g', shifting curved, inclined plane, t, and spring stop, z, operating as explained, to impart an alternate motion to the bar, C, to sever the cord on one or the other branch of the blade, n.

Eighth, The combination with the gear wheels, I and G, of the clutch pinion, V, clutch, J2, cams, I' a', lever, g2, and dog, r2, whereby an intermittent motion is imparted to the wheel, G, and the dog, r2, inserted in and retracted from a notch therein, as explained.

Ninth, The combination with the gear wheel, G, pinion, o2, and book, I2, of the lever, b', rack, d', pinion, e', connecting rod, k3, rock shaft, u2, hook, w2, and finger, h, operating in the manner described to catch, loop and tie the ends of the cord around the sheaf.

Tenth, The book, I2, operated by the cam, I', lever, k', and rod, n', to draw down the cord, in readiness for the next sheaf, as explained.

[The machine is entirely automatic in its operation, taking the grain directly from the cutters and delivering it in securely bound sheaves of any required size.]

39,511.—Harvester.—William Van Anden, Poughkeepsie, N. Y.:

I claim, first, Supporting the frame of a reaping or mowing machine in such a manner that its weight, together with that of the cutting apparatus, will be supported on, or sustained by one wheel of a double wheel machine (when the wheels are used together for the purpose described) by means substantially as set forth.

Second, Making the main draft frame, A, to counterbalance the weight of the cutting apparatus in a double wheel machine, when both the cutting apparatus and the draft frame are supported upon the propelling wheel, C, and this wheel made to serve as the fulcrum of both, substantially as described.

Third, So supporting the main draft frame, A, upon the tapering axle, c, of the wheel, C, that the "outer" wheel, D, is allowed to rise and fall, in surmounting obstacles, without tipping, or otherwise affecting either the wheel, C, or the position of the cutting apparatus, substantially as described.

Fourth, The elongated stirrup, G, in combination with frame, A, vibrating axle, B, and short axle, c, substantially as described.

Fifth, The wheel, C, arranged upon a tapering tubular axle, c, substantially in the manner and for the purposes described.

Sixth, Supporting the main draft frame, A, upon a short tubular axle, c, at one side, and guiding said frame in its vibrating motions, by means of the stirrup, G, and box, j, substantially as described.

Seventh, Supporting the main draft frame, A, upon a short tubular axle, c, at one side, and guiding said frame in its vibrating motions, and balanced substantially as described, the tongue or pole, J, pivoted to the vibrating axle, B, and supporting the driver's seat, K, arranged substantially as described.

Eighth, The combination, with the oscillating frame, A, supported and controlled in its motions, as described, of the auxiliary axle, B, and wheel, D, substantially as described.

Ninth, Pivoting the short axle, c, of the finger-bar, V, to the frame, A, by means of the tubular connection, I, fixed rod K, and front and rear supports, H H', and central support, n, substantially as described.

Tenth, Keying the main driving spur wheel, E, to the tubular axle, c, and connecting said wheel to the fulcrum wheel, C, by means of a ratchet, D, detent, or their equivalents, substantially as described.

Eleventh, The two large supporting wheels, C, D, in combination with the auxiliary oscillating axle, B, and oscillating frame, A, arranged and operating substantially as described.

39,512.—Wringing Machine.—Sylvanus Walker, Boston, Mass.:

I claim the employment or use, in clothes-washing and wringing machines, of India rubber, or other elastic pressure rollers arranged in a suitable frame, in connection with wooden or other rigid rollers, in such a manner that the latter will keep the former in proper position and communicate motion to the same, substantially as herein set forth.

[This invention relates to an improved clothes-washing and wringing machine of that class in which India-rubber, or other elastic pressure rollers, are employed. The object of the invention is to obtain a clothes-washing and wringing machine, of the class specified, which will be more durable and more economical to construct than those previously made.]

39,513.—Window-sash Stopper.—James Warren, New York City:

I claim the combination of the whole of the above-described machinery, and its appropriation to the purposes herein specified.

39,514.—Heel Iron and Ice Calk.—William Weaver, Nashua, N. H.:

I claim the double sliding wedge, D, used for the purposes and in the manner as herein set forth.

I do not limit my claim to the particular form of wedge, as herein shown, but extend it to any other, substantially the same.

39,515.—Rolling Seams of Boots and Shoes.—John C. White, Auburn, N. Y.:

I claim, first, The employment or use of the reciprocating roller arm, E, and stationary bed, F, when said arm connects by suitable mechanism with the rotary shaft, C, or its equivalent, substantially as and for the purpose specified.

Second, The arrangement of the adjustable roller, j, and spring roller, n, in combination with the roller arm, E, and bed, F, constructed and operating substantially as and for the purpose set forth.

Third, Making the outer part, o', of the bed, F, adjustable by a set screw, p, or other equivalent means, as and for the purpose described.

Fourth, The arrangement of the swivel clamps, q, in combination with the bed, F, constructed and operating in the manner and for the purpose substantially as specified.

39,516.—Equalizing Draught in Horse-powers.—James Wilkinson, Prophetstown, Ill.:

I claim the supplemental sweeps, C, sweeps proper, B, cords or chains, E, and rods, d, combined and arranged to operate in the manner as and for the purpose herein set forth.

[This invention is designed to be applied to that class of horse-powers which are provided with sweeps to which the horses are attached. The invention consists in the employment or use of supplemental sweeps, which are attached by pivots to the drivingshaft of the device, and have the whiffe-trees attached to them, and are also connected with each other and with the sweeps proper in such a manner that the draught of the several horses will be equalized.]

39,517.—Draught-equalizing Attachment.—James Wilkinson, Prophetstown, Ill.:

I claim the combination of the double-tree, E, two pairs of whiffe-trees, D D', traces, F F' G G', and neck-yoke, E, all arranged to operate as and for the purpose herein set forth.

[This invention consists in a novel arrangement of whiffe-trees, draught-pole, double-tree, neck-yoke and traces, whereby the draught of the animals is rendered equal, or the horses made to pull equally in drawing the vehicle along.]

39,518.—Rail Capstan for Ships.—W. H. Willard, Cleveland, Ohio:

I claim the herein described construction and arrangement of a rail capstan and haul post, when the several parts are arranged and operated as and for the purpose specified.

39,519.—Fertilizer or Manure.—G. F. Wilson, East Providence, R. I. :

I claim the compound fertilizer obtained by the admixture of the above-described bone-sulphate of lime, with the ammoniacal and other bodies condensed in the distillation of bones.

39,520.—Gate.—Walter Worth, of Jackson, Mich. :

I claim the arrangement of the notched post, A, slide rack bar, B, hinged gate, D, loops, F, and stop, G, substantially as and for the purpose described.

39,521.—Tinsmith's Fire-pot.—William Yapp, of Cleveland, Ohio :

I claim the combination with the rectangular box or casing, A, of one or more longitudinal cylinders, A, grate, B, openings, C, E, doors, D, H, and sliding drawer, K, all arranged as and for the purposes specified and adapted for completely preventing circulation of a air when required.

[This is a convenient portable apparatus for heating the soldering coppers of tinsmiths. The copper is preserved from direct contact with the fire, except when it is necessary to remove a defective face, and by this means the work may be performed with greater rapidity, economy and ease.]

39,522.—Paddle Wheel.—T. S. Bigelow (assignor to himself, L. E. Porter and S. M. Rowe), Lake Mills, Wis. :

I claim, first, Providing the prolonged float-shafts and the arms, f, with the anti-friction rollers, c, c', when used in combination with the grooves, a, a', and the projections or grooves, b, b', arranged and operating as and for the purposes herein shown and described.

Second, I claim the combination and the arrangement of the frame, C, the floats, F, provided with fixed and prolonged shafts, as shown, the arms, f, and the anti-friction rollers, c, c', with the outer frame, A, provided with the peculiarly arranged circular grooves, a, a', all operating substantially as and for the purposes shown and specified.

39,523.—Machine for Shaving Canes for Weavers' Reeds.—Joseph Church, Chester, Ohio, assignor to J. N. Rathbun and E. F. Branch, Rutland, Ohio :

I claim the series of pairs of feed rollers, C, C', in combination with the cutters, G, H, I, and plates, E, provided with the channel, c, all arranged substantially as shown, to operate in the manner as and for the purpose herein set forth.

39,524.—Lamp-burner.—Joseph Dodin, Brooklyn, N. Y., assignor to James Edgar, of Bergen, N. J. :

I claim, first, The particular shape of the plate of metals, figures 3 and 4, with their openings, e.

Second, The shape of the plate, figure 5, with the mode of fastening it to the plate, figures 3 and 4, at a, figures 3, 4 and 5.

Third, The shape of the plate, figure 6.

Fourth, The mode of fastening the cone, b, figure 1, to the base, G, figure 2, substantially as described.

39,525.—Manufacture of Manure.—Phillip Eley (assignor to himself and R. B. Pitts), Philadelphia, Pa. :

I claim the process or method herein described, of treating night-soil for agricultural purposes.

39,526.—Harvester.—D. L. Emerson (assignor to Mary Manny), Rockford, Ill. :

I claim the combination of the grain wheel directly with the back beam of the harvester, as set forth, so that the employment of a cross-bar connecting the grain ends of the finger beam and back beam, for the purpose of connecting the grain wheel arm or axle with the finger beam and back beam, is unnecessary.

I also claim the combination of the grain ends of the finger beam and back beam, without a connecting cross-bar, by means of a removable raking platform or its appendances, substantially as set forth.

I also claim the combination of the front end of the reach, the tongue and the case wheel, in such manner, that the machine may be used interchangeably with a side tongue laterally or a limber tongue, by shifting the connection of the tongue from the caster wheel yoke to the front end of the reach, or vice versa, substantially as set forth.

I also claim combining the thrust bar of a harvesting machine with the machine by means of an adjustable pivot bearing, substantially as set forth.

I also claim the combination of the driver's seat with the machine by means of an adjustable seat standard connected at its foot with the frame, in such manner that the seat can be adjusted by varying the connection of the foot of the standard, as described.

I also claim the combination of the driver's seat with its support by means of an adjustable brace, substantially as set forth.

I also claim the combination of the driver's foot-board, with its support, by means of an adjustable brace, substantially as set forth.

I also claim the device herein described, for imparting two different speeds to the sickle of a harvester, consisting of the combination of a double-rimmed cog wheel upon one of the shafts of the gearing, with two pinions which are connected with the next shaft, in such a manner that one is fastened to the shaft, while the other runs loose upon it, and vice versa, substantially as set forth.

I also claim the combination of a finger-beam of plate metal bent into a trough form with a wood filling in the hollow of the trough, substantially as set forth.

I also claim constructing the finger beam with a recess in which the crank of the sickle can revolve, so that the sickle can be withdrawn past the face of the crank without displacing the crank, substantially as set forth.

I also claim the combination of the raking platform of a harvester with a tipping or hinged dumping box whose bottom is not above the level of the adjacent part of the raking platform, and which is also skewed sidewise, so that the cut grain can be discharged from the platform directly into said dumping box and can be dropped therefrom, but downward, at the side of the track of the sickle, so as to be entirely out of the way of the machine and the horses when cutting the next swath, substantially as set forth.

I also claim the combination of a tipping dumping box with a driver's seat, located sufficiently behind the finger beam to permit the driver supported thereon to rake the grain from the raking platform, and drop it upon the ground, substantially as described.

39,527.—Steam-engine Cylinder.—S. D. Gilson, Syracuse, N. Y., assignor to himself and Joseph Hall, Rochester, N. Y. :

I claim providing the inner surface of steam cylinders with several annular channels, c, or their equivalents, in combination with the piston head, D, substantially as and for the purposes specified.

39,528.—Cultivator.—C. W. S. Heaton (assignor to J. J. Piggott), Salem, Ill. :

I claim, first, The arrangement in a cultivator of the brace rods, b, b', and stay rod, k, in such manner that the longitudinal strain upon the implement shall be thrown upon the side beams, B, B', and front beam, C, when the implement is unobstructed by stones, &c., but when the implement is obstructed by stones, &c., the sudden jar, due upon the tongue, A, shall be relieved by the oblong slot, c, and finally be sustained by the stay rod, k, all substantially in the manner set forth.

Second, The arrangement, in a cultivator, of the automatically shifting brace rods, b, b', pin, d, and vertical slot, e, in the manner and for the purposes described.

Third, The arrangement of the inclined stay rod, k, beam, C, and tongue, A, substantially as and for the purpose set forth.

Fourth, A cultivator combining in its construction the tongue, A, side beams, B, B', upper and under slotted cross-beams, C, C', V-shaped adjustable braces or stocks, E, E', brace rods, b, b', and stay rod, k, the several parts being constructed and arranged as described.

39,529.—Churn.—Egbert Hinman, Syracuse, N. Y., assignor to John Rankin, Homer, N. Y. :

I claim the employment of the preliminary dasher, a, constructed as described, in combination with the case, b, provided with a register for varying the capacity of the discharge apertures, the whole arranged and operating as set forth.

I also claim regulating the capacity of the apertures through which the liquid and solid masses escape from the case, b, as and for the purpose described.

I also claim making the driving gear, E, adjustable in its shaft, as described, in combination with the clutching device, or its equivalent, whereby the driving gear may be adjusted to run in mesh with either one or both of the dasher pinions, as and for the purposes set forth.

39,530.—Steam Boiler.—T. T. Prosser (assignor to himself and M. C. and K. A. Darling), Fond du Lac, Wis. Antedated Jan. 31, 1863 :

I claim, first, The application of the exhaust steam of the engine to the boiler for the purpose and in the manner set forth.

Second, The combination of the chamber, A, A', A'', and the inclosed tubes or pipes, with the exhaust pipe or pipes of the engines in the manner and for the purpose set forth.

39,531.—Process of Uniting Iron and Steel with Copper, Brass, &c.—Richard Savary (assignor to himself and R. C. Totten), Pittsburgh, Pa. :

I claim uniting pieces of iron, whether cast, wrought or steel, with copper, brass, bronze, or other alloys of copper, by casting one metal on to a solid piece of the other, having interposed between the surfaces to be thus united, a flux composed of the ingredients hereinbefore described, or their equivalents.

39,532.—Machinery for Operating Churns.—J. J. Taylor, Attica, Ind., assignor to himself and E. F. Giles, Washington, D. C. :

I claim a portable mill that shall contain within its interior, all the machinery and power to operate a churn-dash, automatically, when constructed and operated substantially as described and set forth in the accompanying drawings and specifications.

39,533.—Car Axle.—C. D. Tisdale (assignor to C. D. and B. W. Tisdale, and M. B. Boynton), East Boston, Mass. :

I claim my improved arrangement and application of the wheels, their sleeve, axle and stuffing boxes, substantially in the manner as described.

39,534.—Manufacturing Flesh Hooks and Forks.—M. V. Trask (assignor to Parker & Perkins), Meriden, Conn. :

I claim, first, Casting in one piece with the lines, A, and shank, B, of a flesh-hook fork a hollow handle, C, substantially as and for the purpose described.

Second, Casting the handle, C, and shank, B, in one piece, and after the metal is rendered malleable, giving said shank a quarter twist, so as to bring the flat, broad part of said handle parallel with a line passing through the points of the lines, A, substantially as set forth and for the purpose described.

39,535.—Coal Stove.—J. G. Treadwell and William Hailes (assignors to M. L. Mead and Wm. Hailes), Albany, N. Y. :

First, We claim the combination of the illumination openings, flame-expansion chamber, coal-supply reservoir, fire-pot, descending flue and draft flue, substantially in the manner and for the purpose described.

Second, The combination with the flame-expansion chamber, formed at the base of the coal-supply reservoir, and around the upper edge of the fire-pot of a base-burning stove, of the branch draft flue with damper, when the same are located with respect to the flame-expansion chamber, fire-pot, coal-supply reservoir, and descending combustion flues, substantially as and for the purpose described.

Third, A fire-brick or fire-proof throat, for a coal-supply reservoir of base-burning stoves, when such throat is wholly free, so far as expansion and contraction are concerned, from the different parts of the stove, and is loosely set upon that portion which sustains it in place, and is constructed of encircling rings of metal and fire-brick or other fire-proof substance, substantially as described.

Fourth, The branch to the poke-hole, substantially as and for the purpose described.

Fifth, The portable auxiliary grate, constructed and adapted as specified, for use with base-burning reservoir stoves, in the manner and for the purpose set forth.

Sixth, Providing the ash pan with unobstructed holes in its sides, about midway of its length, for the purpose set forth, and so that side handles or a bale which is permanently attached and liable to become heated, may be dispensed with.

39,536.—Plow.—G. W. N. Yost, Nashville, Tenn., assignor to himself and William Dilworth, Jr., of Pittsburgh, Pa. :

I claim, first, The wrought-iron standard holders, A, B, constructed and arranged as described, in combination with the beam, C.

Second, The combination and arrangement of the standards, D, E, with the standard holders, A, B, and beam, C.

39,537.—Double Plow.—G. W. F. Yost, Nashville, Tenn., assignor to himself and William Dilworth, Jr., of Pittsburgh, Pa. :

I claim, first, The construction and arrangement of the wrought-iron standard holders, A, B, in combination with the beam, O, of the plow, substantially as herein set forth and described.

Second, The combination and arrangement of the plow standards, C, D, with the beam of the plow operating so as to turn two furrows wide or two furrows deep, substantially as herein set forth.

39,538.—Dental Plate.—J. A. McClelland, Louisville, Ky. :

I claim, first, The employment or use of a metallic dental plate closely perforated or woven, so that india-rubber may penetrate and adhere to it, as described.

Second, The combination in a dental plate of a skeleton or plate of woven or perforated metal with a base or filling of vulcanized india-rubber, in order to unite the perfect adaptability of rubber to the mouth, with the strength of metal, substantially as explained.

[This invention consists in the employment, in connection with vulcanized rubber as a base for artificial dentures, of a skeleton composed of reticulated or perforated metal, the object being to produce a plate possessing the requisite strength, without making it so thick and clumsy as is unavoidable when the plate is composed entirely of vulcanized india-rubber.]

RE-ISSUE.

1,519.—Grain Separator.—J. B. Barcelo, Tuscarora, N. Y. Patented Dec. 9, 1862 :

I claim the vertically-adjusting screen, B, having projecting bearings, c, c, when arranged in combination with the shoe, A, and its gears, d, in such a manner that the screen can be applied to any ordinary mill without special adaptation, said screen being adjusted relatively to the blast, by means of the rod and nut, f, g, or equivalent, the whole arranged and operating substantially as herein set forth.

In combination with the vertically-adjusting screen, B, I also claim the longitudinally-adjusting discharge board, C, substantially as herein described.

1,520.—Horse-rake.—Conrad Frirst, David Bradley, and John Lacey, Chicago, Ill. Patented April 15, 1862 :

We claim, first, The slide and socket, M and P, arranged in combination with a rake head and axle, substantially as and for the purposes specified.

Second, The combination of the lever, A, connecting bar, B, front pad or pin, o, and the treadle, c, with the rake head, substantially as set forth and specified.

1,521.—Grate for Stoves.—William Hailes, Albany, N. Y. Patented Nov. 18, 1862 :

I claim, first, A grate having varying openings or spaces extending from or about the center thereof to the circumference or rim, when constructed substantially as shown in figure 1, with a series of long and short projections, a, b, running towards its center, substantially as described.

Second, In combination with the above I claim the projections, a', a'', on the circumference, all for the purpose herein described.

Third, Casting a grate with the tongue portion, B, forming an extension of the rim of the grate, and constituting the means whereby the grate can be vibrated, substantially as described.

Fourth, The supporting bar for the grate when constructed with the vertical segmental slot, D, through it, for receiving and allowing a free circular play to be given to the tongue, B, and also to the grate of which this tongue forms a part, substantially as described.

Fifth, The curved tongue portion, B, formed on the grate, in combination with the vertically slotted segmental portion, D, formed on the rocking bar, operating substantially as and for the purposes described.

1,522.—Buckle.—Frederick Stevens, New York City, assignee of Luther Fogg, Boston, Mass. Patented June 2, 1863 :

I claim, first, The curved frame, a, swinging on its axis, h, at or near its centers, provided with stops, i, i, and with the anterior front, b', beveled, all as set forth.

Second, The grooved tongue, e, with its lugs, f, f, working on its own axis, g, and furnished with the axis, h, upon which the curved frame, a, is hinged, all as set forth.

Third, The shank, k, when rigidly attached to the strap, in combination with and hinged to the posterior bar, q, of the tongue, e, substantially as described.

Fourth, The combination of the curved frame, a, with its stops, i, i, and beveled front, b', with the grooved tongue, e, and its lugs, f, f, and the rigidly attached shank, k, substantially as set forth.

DESIGNS.

1,806 to 1,816.—Carpet Patterns.—E. J. Ney, Lowell, Mass., assignor to the Lowell Manufacturing Company.

EXTENSIONS.

Movable Breech for Fire-arms and Apparatuses for the same.—Benjamin Chambers, Washington, D. C. Patented July 31, 1849. Re-issued April 19, 1853 :

I claim, in combination with a hinged breech piece, the support, G, the slot, Y, and lever, L, whereby the said breech piece is easily moved into and out of place in closing and opening the gun for the purpose of loading, swabbing, &c., substantially as described.

I also claim, in combination with a gun having a dissected screw breech, the flanged shield through which the cartridges are made to pass into the chamber over the dissected screw, without danger of being broken by the ends and edges of the reads, as herein set forth.

I also claim, in combination with a rammer for charging guns at the breech, the projecting central point, n, whereby the cartridge, in being driven to its place in the chamber, is perforated at its base, to receive the point of the percussion cap, herein described, for the purpose of insuring the ignition of the gunpowder, as set forth.

I claim the enlargement, x, near the shoulder, s', of the rammer, whereby the shell through which the cartridge has been rammed, is made to adhere by friction to the rammer, and to be drawn out of the breech of the gun, without requiring a separate operation for taking it out. And I wish it to be understood that in these claims I shall not confine myself to the exact arrangement of parts herein described but shall vary the same at pleasure while I attain the same ends means substantially the same.

Method of Regulating the Contraction of Car Wheels.—Mary Murphy, administratrix of John Murphy, deceased, Philadelphia, Pa. Patented Aug. 7, 1849 :

I claim the mode of cooling and thereby regulating the contraction of chilled railroad car and other wheels and pulleys with solid hubs, by the application of a stream of cold air to the hub, in the manner above described, in combination with the non-conducting case for retarding the cooling of the rim, as herein set forth.

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Persons having conceived an idea which they think may be patentable, are advised to make a sketch or model of their invention, and submit it to us, with a full description, for advice. The points of novelty are carefully examined, and a written reply, corresponding with the facts, is promptly sent free of charge. Address MUNN & CO., No. 37 Park Row, New York.

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PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE. The service we render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there, but is an opinion based upon what knowledge we may acquire of a similar invention from the records in our Home Office. But for a fee of \$5, accompanied with a model or drawing and description, we have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made up and mailed to the inventor, with a pamphlet, giving instructions for further proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh streets, Washington, by experienced and competent persons. Many thousands of such examinations have been made through this office. Address MUNN & CO., No. 37 Park Row, New York.

HOW TO MAKE AN APPLICATION FOR A PATENT. Every applicant for a patent must furnish a model of his invention if susceptible of one; or, if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them and sent, with the Government fees, by express. The express charge should be pre-paid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of



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The revised Patent Laws, enacted by Congress on the 2d of March, 1861, are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

The duration of patents granted under the new act is prolonged to SEVENTEEN years, and the Government fee required on filing an application for a patent is reduced from \$30 to \$15. Other changes in the fees are also made as follows:—

Table with 2 columns: Fee description and Amount. Includes items like 'On filing each application for a Patent, except for a design', 'On issuing each original Patent', 'On appeal to Commissioner of Patents', etc.

The law abolishes discrimination in fees required of foreigners, excepting natives of such countries as discriminate against citizens of the United States—thus allowing Austrian, French, Belgian, English, Russian, Spanish and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (but in cases of designs) on the above terms. Foreigners cannot secure their inventions by filing a caveat; to citizens only is this privilege accorded.

During the last seventeen years, the business of procuring Patents for new inventions, in the United States and all foreign countries has been conducted, by Messrs. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN; and as an evidence of the confidence reposed in our Agency by the inventors throughout the country, we would state that we have acted as agents for at least TWENTY THOUSAND inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of inventors and patentees at home and abroad. Thousands of inventors for whom we have taken out patents have addressed to us most flattering testimonials for the services we have rendered them, and the wealth which has inured to the inventors whose patents were secured through this office, and afterwards illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! We would state that we never had a more efficient corps of Draughtsmen and Specification Writers than those employed at present in our extensive offices, and we are prepared to attend to patent business of kinds in the quickest time and on the most liberal terms.

REJECTED APPLICATIONS.

We are prepared to undertake the investigation and prosecution of rejected cases on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our charge is generally left dependent upon the final result.

All persons having rejected cases which they desire to have prosecuted, are invited to correspond with us on the subject, giving a brief history of the case, inclosing the official letters, &c.

CAVEATS.

Persons desiring to file a caveat can have the papers prepared in the shortest time by sending a sketch and description of the invention. The Government fee for a caveat, under the new law, is \$10. A pamphlet of advice regarding applications for patents and caveats, printed in English and German, is furnished gratis on application by mail. Address MUNN & CO., No. 37 Park Row, New York.

FOREIGN PATENTS.

We are very extensively engaged in the preparation and securing of patents in the various European countries. For the transaction of this business we have offices at Nos. 66 Chancery Lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through the Scientific American Patent Agency, No. 37 Park Row, New York. Inventors will do well to bear in mind that the English law does not limit the issue of patents to inventors. Anyone can take out a patent there.

Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through our Agency, the requirements of different Government Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park Row, New York, or any of our branch offices.

ASSIGNMENTS OF PATENTS.

Assignments of patents, and agreements between patentees and manufacturers are carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park Row, New York.

It would require many columns to detail all the ways in which inventors or patentees may be served at our offices. We cordially invite all who have anything to do with patent property or inventions to call at our extensive offices, No. 37 Park Row, New York, where any questions regarding the rights of patentees will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park Row, New York.

TO OUR READERS.

Models are required to accompany applications for Patents under the new law, the same as formerly, except on design patents when two good drawings are all that are required to accompany the petition, specification and oath, except the Government fee.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of Instructions to Inventors, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No. 37 Park-row, New York.



S. G., of N. Y.—The culture of fish has not been prosecuted, so far as we know, in any part of our country. There are rivers in New Jersey, New York and the Eastern States which once teemed with salmon, but in which none of this fish have been taken for thirty years. We believe that such rivers could again be stocked with this excellent fish.

W. B. R., of Mass.—You can make brass of different degrees in quality, according to the quantities of zinc and copper employed. About 65 per cent of zinc, to 35 of copper makes very good brass. White lead is a carbonate, and is formed by submitting thin sheet lead rolled in cones, to the vapor of acetic acid.

H. W., of Conn.—No mordant is required for dyeing silk and wool with aniline colors. You have simply to clean the silk or wool well, then handle it in a warm solution of aniline color dissolved in alcohol.

T. Y. B., of Pa.—If castings of good pig iron be heated to a low cherry red temperature, and then plunged in oil, they will become much tougher, and their strength will be increased about forty per cent.

J. R., of Ohio.—In preparing the juice of your sorghum for boiling, to obtain sugar, mix a small quantity of lime-water with it as soon as it is pressed from the cane. Maple sugar used with the juice of currants and berries makes a superior flavored wine to juice treated with cane sugar. If you have plenty of maple sugar we advise you to use it in preference to cane sugar in making your blackberry and elderberry wines.

J. B. L., of Ind.—Glass for windows, is colored by two different modes. The beautiful stained glass used in cathedrals, is made by fusing coloring agents with it. Painted glass for windows is produced by mixing pigments with a clear varnish—such as is made with Canadian balsam. Very little colored glass should be employed for the windows of churches, or other buildings; as it obstructs the passage of pure white light. We should advise you to get a bell of pure bell-metal (copper and tin), in preference to one of any other alloy.

H. A. W., of Vt.—The bill which was introduced last year into the Canadian legislature, containing the provision for permitting American citizens to secure patents in Canada, did not pass. Several illustrated works on stair-building have been published. You should examine them for your own satisfaction; before deciding which to purchase.

T. M., of R. I.—The natives of Madagascar used just such a bellows in 1838, as the one you propose; you will perceive then that it is not new.

Money Received

At the Scientific American Office, on account of Patent Office business, from Wednesday, Aug. 12, to Wednesday, August 19, 1863:—

- E. C., of N. Y., \$164; J. W. R., of Conn., \$16; N. T., of Ohio, \$16; J. T. C., of Iowa, \$15; L. K., of N. Y., \$16; A. M. B., of Mich., \$15; J. J. K., of Ill., \$25; C. F. B., of Conn., \$12; W. P. C., of Cal., \$20; H. S. W., of Mich., \$25; E. S. S., of Sweden \$20; W. R., of N. Y., \$15; T. B., of Ohio, \$15; T. J. V., of Conn., \$15; A. H., of Ill., \$26; R. & B. of Ill., 25; S. W., of N. Y., \$30; O. P. H., of Mass., \$41; W. H. J., of — \$75; S. & G., of C. W., \$506; D. J. S., of N. Y., \$16; D. S. E., of Mass., \$20; H. K., of N. Y., \$45; J. D. P., of N. J., \$20; J. D., of N. J., \$45; R. B., of N. Y., \$45; D. C., of N. Y., \$30; N. H., of N. Y., \$20; V. G., of N. Y., 16; D. C., of N. Y., \$30; J. W. T., of Vt., \$20; J. S. T., of Cal., \$41; M. B. W., of Conn., \$16; S. W. N., of N. C., \$25; G. W. L., of Ohio, \$15; D. C. M., of N. T., \$20; C. E. M., of Vt., \$15; J. B., of Ohio, 16; G. F. C., of Mass., \$15; N. C. S., of Conn., \$25; A. A. S., of Mich., \$25; B. & C., of R. I., 73; J. T., of W's., \$20; C. E. S., of Conn., 20; L. S., of N. Y., \$16; N. F. C., of Wis., \$20; T. W., of Mass., \$20; O. & F., of N. Y., \$16; A. & W., of N. Y., \$20; W. S. W., of N. Y., 20; G. H. S., of Mass., \$20; H. D. W., of Mass., \$20; J. B., of N. Y., \$20; J. M. M., of Mass., \$25; A. L. F., of Pa., \$55; G. P., of N. Y., \$64; N. S., of Ind., \$20; J. D. B., of Vt., \$20; A. B., of N. Y., \$20; R. L., of N. Y., \$16; J. D. W. W., of N. Y., \$20; C. D. B., of Mich., \$20; J. P., of N. Y., \$145; L. A. J., of Cal., \$20; M. E., of Ill., 20.

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, August 12, to Wednesday, August 19, 1863:—C. F. B., of Conn.; J. W. McL., of Ohio; A. A. S., of Mich.; J. J. K., of Ill.; N. C. S., of Conn.; B. & B., of Mo.; S. P. La D., of Iowa; W. W. T., of Wis.; H. W., of Pa.; A. H., of Ill.; S. W. N., of N. Y.; J. L. K., of N. J.; B. & C., of R. I. (3 cases); S. W., of N. Y.; H. B., of Pa.

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Among the contents are—Linear Drawings; Definitions and Problems; Plate I.; Applications, Designs for Inlaid Pavements, Ceilings and Balconies; Plate II.; Sweeps, Sections and Mouldings; Plate III.; Elementary Gothic Forms and Rosettes; Plate IV.; Ovals, Ellipses, Parabolas and Volutes; Plate V.; Rules and Practical Data; Study of Projections; Elementary Principles; Plate VI. Or Prisms and other Solids; Plate VII.; Rules and Practical Data; On Coloring Sections with Applications—Conventional colors, Composition and nature of Colors; Plate VIII. Continuation of the Study of Projections—Use of sections—details of machinery; Plate XI.; Simple applications—spindles, shafts, couplings, wooden patterns; Plate XII.; Method of constructing a wooden model or pattern of a coupling, Elementary applications—Rails and chairs for railways; Plate XIII.; Rules and Practical Data: Strength of material, Resistance to compression or crushing force; Torsional resistance to flexure, Resistance to torsion, Friction of surfaces in contact.

THE INTERSECTION AND DEVELOPMENT OF SURFACES, WITH APPLICATIONS.—The Intersection of Cylinders and Cones; Plate XIV.—The Delineation and Development of Helices, Screws and Serpentine; Plate XV., Application of the helix—the construction of a staircase; Plate XVI., The intersection of surfaces—applications to stop cocks; Plate XVII.; Rules and Practical Data, Steam, Unity of heat, Heating surfaces, Calculation of the dimensions of boilers, Dimensions of fire grates, Chimneys, Safety-valves.

THE STUDY AND CONSTRUCTION OF TOOTHED GEAR.—Involute, cycloid and epicycloid; Plates XVIII. and XIX.; Involute; Fig. 1, Plate XVIII.; Cycloid; Fig. 2, Plate XVIII. External epicycloid described by a circle inside it; Fig. 3; Internal epicycloid; Fig. 2, Plate XIX. Delineation of a rack and pinion in gear; Fig. 4, Plate XVIII. Gearing of a worm with a worm-wheel; Fig. 5 and 6, Plate XVIII.; Cylindrical or Spur Gearing; Plate XIX. Practical delineation of a couple of spur-wheels; Plate XX.; The Delineation and Construction of Wooden Patterns for Toothed Wheels; Plate XXI.; Rules and Practical Data: Toothed gearing, Angular and circumferential velocity of wheels, Dimensions of gearing, Thickness of the teeth, Pitch of the teeth, Dimensions of the web, Number and dimensions of the arms, Wooden patterns.

CONTINUATION OF THE STUDY OF TOOTHED GEAR.—Design for a pair of bevel-wheels in gear; Plate XXII. Construction of wooden pattern for a pair of bevel-wheels; Plate XXIII.; Involute and Helical Teeth; Plate XXIV.—Contrivances for obtaining Differential Movements, The delineation of eccentrics and cams; Plate XXV.; Rules and Practical Data: Mechanical work of effect. The simple machines, Centre of gravity, On estimating the power of prime movers, Calculation for the brake, The fall of bodies, Momentum, Central forces.

ELEMENTARY PRINCIPLES OF SHADOWS.—Shadows of Prisms, Pyramids and Cylinders; Plate XXVI.; Principles of Shadowing; Plate XXVII.; The Study of Shadows of Solids; Plate XXVIII.; Shadows of Solids; Plate XXIX.; Rules and Practical Data: Pumps, Hydrostatic principles, Forcing pumps; Lifting and forcing pumps. The hydrostatic press, Hydrostatic calculations and data—discharge of water through different orifices, Gaging of a water-course of uniform section and fall. Velocity of the bottom of water-courses, Calculation of the discharge of water through rectangular orifices of narrow edges. Calculation of discharge of water by an overshoot outlet. To determine the width of an overshoot outlet, To determine the depth of the outlet, Outlet with a spout or duct.

APPLICATION OF SHADOWS TO TOOTHED GEAR: Plate XXX.—Application of Shadows to Screws; Plate XXXI.; Application of Shadows to a Boiler and its Furnace; Plate XXXII.; Shading in Black—Shading in Colors; Plate XXXIII.

THE CUTTING AND SHAPING OF MASONRY; Plate XXXIV.—Rules and Practical Data, Hydraulic motors, Under-shot water wheels, with plane floats and circular channel, Width, Diameter, Velocity, Number and capacity of the buckets, Useful effect of the water wheel, Overshot water wheels, Water wheels with radial floats, Water wheel with curved buckets, Turbines. Remarks on Machine Tools.

THE STUDY OF SHADOWS.—Various applications and combinations; The Sketching of Machinery; Plate XXXV. and XXXVI.; Drilling Machine; Motive Machines; Water wheels, Construction and setting-up of water wheels, Delineation of water wheels, Design for a water wheel, Sketch of a water wheel; Overshot Water Wheels; Water Pumps; Plate XXXVII.; Steam Motors; High-pressure expansive steam engine; Plates XXXVIII., XXXIX. and XL. Details of Construction; Movement of the Distribution and Expansion Valves; Rules and Practical Data, Steam engines: low-pressure condensing engines without expansion valve. Diameter of piston, Velocities, Steam pipes and passages, Air-pump and condenser. Cold-water and feed-pumps, High-pressure expansive engines, Medium pressure condensing and expansive steam engine. Conical pendulum or centrifugal governor.

OBLIQUE PROJECTIONS.—Application of rules to the delineation of an oscillating cylinder; Plate XLI.

PARALLEL PERSPECTIVE.—Principles and applications; Plate XLII. TRUE PERSPECTIVE.—Elementary principles; Plate XLIII., Applications—Hour mill driven by bells; Plate XLIV. and XLV., Description of the mill, Representation of the mill in perspective, Description of recent improvements in flour mills, Schiele's mill, Mullin's "ring millstone", Barnett's millstone, Hastie's arrangement for driving mills, Currie's improvements in millstones; Rules and Practical Data, Work performed by various machines, Flour mills, Saw mills, Veneer-sawing machines, Circular saws.

EXAMPLES OF FINISHED DRAWINGS OF MACHINERY.—Plate A. Balance scale, rolling mill, Engineer's slide, Engineer's slide, Plate B. D. Express locomotive engine; Plate C. Wood pulping machine; Plate D. Washing machine for piece goods; Plate E. Power loom; Plate F. Duplex steam boiler; Plate G. Direct-acting marine engines.

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