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55,595.—EAVES-TROUGH.—J. P. Abbott, Cleveland, Ohio :

I claim the adjustable arm, A, notched standard, B, slotted lips, C, D, and key, F, in combination with the cross-tree, E, strap, G, and gutter, H, as an improvement for the purpose set forth.

55,596.—HEATING AND SOLDERING GUN-BARRELS.—Ethan Allen, Worcester, Mass. :

I claim, 1st, The mechanism, substantially as described, for heating and soldering gun-barrels by blowing the heating blast through them.

2d, The clamps, J, composed of set-screws and springs, substantially as described, for holding gun-barrels while being soldered.

55,597.—BOLT-HEADING MACHINE.—Henry E. Anthony, Providence, R. I. :

I claim, 1st, The combination of a swivel-punch, F, with the die or collar which confines the bolt at a point above the heading chamber, substantially as described.

2d, Removing the thimble, R, and pin, T, or any other equivalent device which may be used to support or confine the lower end of the bolt, after such bolt has been partially headed, in order to allow any surplus stock to be forged from the upper chamber down through the head of the bolt, substantially as described.

3d, The sliding die-holder, G, operating substantially in the manner described.

4th, The combination of screw, E, and swivel-punch, F, operating substantially as described.

5th, I also claim the manner of securing the hand-tool by the cap, H, substantially as described.

55,598.—MODE OF COVERING STEAM BOILERS.—John Ashcroft, New York City :

I claim covering a steam boiler pipe, or other heater, with felt or other non-conducting material, when the latter is supported on a frame-work removed from and surrounding the former, not being in direct contact, but having an air-space intervening between said felt and boiler pipe, or air-heater, constructed and operated substantially in the manner described and for the purpose set forth.

55,599.—SPOKE-SHAVE.—Leonard Bailey, Boston, Mass. :

I claim the combination of the screws, f, f, and nuts, g, g, or their equivalents, with the clamp-bar, c, and with the stock divided lengthwise into two parts or portions, constructed substantially in manner and so as to operate as described.

I also claim the arrangement of the clamp-bar, c, with the screws, f, f, and nuts, g, g, and with the stock divided lengthwise into two parts or portions, constructed substantially in manner and so as to operate with the said screws and nuts, substantially as set forth.

I also claim the combination and arrangement of the shoulders, i, i, with the screws, f, f, the clamp-bar, c, the cutter, d, and bed, b, or the lock, substantially as set forth.

55,600.—MANUFACTURE OF CARBONATE OF SODA.—Haydn M. Baker, Rochester, N. Y. :

I claim the application of the combined processes as herein described for the formation of carbonate and bicarbonate of soda, muriatic acid, and caustic lime, using for the said purposes the aforesaid carbonate of lime, carbonate of magnesia, and chloride of sodium, in the manner herein set forth, or any other process substantially the same and which will produce the same intended result.

I also claim the construction and application of the boiler and lime-retort in combination, as herein described and represented by the accompanying drawings, for the purposes duly set forth.

I also claim the application of heat and pressure without limitation in the process of forming bicarbonate of magnesia and subsequent double decomposition of chloride of sodium and bicarbonate of magnesia, forming chloride of magnesia and bicarbonate of soda.

55,601.—HOT-AIR ENGINE.—Cyrus W. Baldwin, Boston, Mass. :

I claim a vessel or reservoir placed between the furnace and the working cylinder into which jets of water are introduced at certain intervals and in regulated quantities, for the purpose specified.

I also claim the combination of the vaporizing trough, or its equivalent, with the hot-air duct, essentially as above set forth.

I also claim the peculiar construction of the trough, a, as made pyramidal or pointed at one or both its ends, and with the partitions, C, C, C, in manner and to operate as before set forth and explained.

55,602.—MACHINE FOR MAKING HORSE-SHOES.—Hazen J. Batchelder, Boston, Mass. :

I claim the mode of constructing each of the rolls, viz., not only with each of its dies made in sections and with lips to each, as described, but with rings to encompass the lips, the said sections and rings being held in place by a shoulder, l, and channel, i, and clamps, N, N, or their equivalents, the whole being substantially as and for the purpose specified.

I also claim the separate creasing-die, O, made as described, in combination with two of the rings, H, H, and a sectional die, R, arranged between them, the whole being as set forth.

I also claim the combination of the lateral die, F, for obtaining variation of width of the blank with the two ring-dies, H, H, the dies, E, O, and R, and the mechanism for moving the roll-shaft, C, vertically, for the purpose of effecting the variations of thickness of the blank, as described.

55,603.—GRATE-BAR.—Horatio K. Bates, North La Crosse, Wis. :

I claim the off-set or dropper grate-bar herein set forth and shown.

55,604.—ORNAMENTING WOOD.—Alexander Beckers, New York City :

I claim producing mosaics, etc., of different woods, etc., in the manner herein specified.

55,605.—CHAIR-SEAT.—Alanson Bingham, Surrey, N. H. :

I claim attaching a seat composed of a single thickness of strips of oak, ash, or other suitable wooden material to a frame by means of slits, or slits and grooves, substantially as described.

55,606.—SLIDE FOR EXTENSION TABLES.—J. F. Birchard, Milwaukee, Wis. :

I claim adding thereto or combining therewith the additional slide-bar for supporting the leaves of the table, substantially as herein set forth.

55,607.—COTTON CULTIVATOR.—W. W. Blair, Lebanon, Tenn. :

I claim, 1st, The arrangement of the adjustable revolving harrow, H, with the revolving and adjustable chopping knives, J, J, upon the shaft, I, substantially as and for the purpose herein specified.

2d, The scrapers, M, M, pivoted near their inner ends, as represented and adjusted by means of the rods, d, d, levers, c, c, and rack-bars, g, g, substantially as and for the purpose herein fully set forth.

3d, The arrangement of the adjustable scraper-feet, D, D, with the scrapers, M, M, and the cutters or colters, L, L, substantially as and for the purpose described.

55,608.—CORSET AND SKIRT SUPPORTER.—Erastus Blakeslee, Plymouth, Conn. :

I claim, 1st, The stay C, when arranged upon the body of the corset, so as to secure and support the skirt, substantially as described.

2d, In combination with a corset, buttons constructed and arranged so as to be self-adjusting on the stay, C, as and for the purpose specified.

3d, A corset supporter, constructed substantially as described, and attached to the corset in the manner herein set forth.

55,609.—ORDNANCE.—L. W. Broadwell, New Orleans, La. :

I claim the exterior reinforce, B, with a depression on its interior periphery, corresponding to the enlargement on the gun, with shoulder, b, b', substantially as and for the purpose described.

55,610.—WASHING MACHINE.—H. Bucknall, Darien, Wis. :

I claim, 1st, The combination of the rubbing concave, B, hung loosely in the machine by journals or pivots, with the uprights, G, cam, H, and rubbing bar, C, substantially as shown and described.

2d, The cam, H, in combination with the uprights, G, G, and pin, g, when constructed and operating substantially as and for the purpose specified.

3d, The thumb-screw, f, for raising and lowering the rubbing-board, C, in combination with the rock-shaft, F, and rod, E, as shown and described.

4th, The combination of the joint, e, at the connection of the rod, E, and the cross-rod, d, substantially as and for the purpose specified.

55,611.—GAP BUCKET HOOK.—James Bullock, Readsboro', Vt. :

I claim the form of three hooks combined in one piece of wire in the circle.

55,612.—HOE AND CORN-PLANTER.—John A. Burckard, Beloit, Wis. :

I claim the rod, D, hoe, C, spring, E, and roller, B, in combination with the stirrer, I, gauge plate, K, and cylinder, A, as and for the purpose set forth.

55,613.—BRECH-LOADING FIRE-ARM.—John Burke, Syracuse, Ill. :

I claim, 1st, The combination of the tipping-barrel with the front part of the hinge and stock, and of the rear part of the stock and hinge with the breech-piece or plug, when the parts are arranged for joint operation, substantially as described.

2d, The jointed retractor, constructed substantially as described, to expel the cartridge by a positive motion.

3d, Moving the retractor in one direction by a cam, and closing it by grazing the breech, as described, whereby I draw in the retractor without using a spring, and am also able to prevent friction on the flange of the cartridge.

4th, The combination of the tipping-barrel, the steady-pin, J, the locking-bolt, L, the cone-plug, K, the cone-plug, K, and the shoulder, K', substantially as described, to hold the barrel firmly while firing.

5th, Construcing the locking-bolt so that it shall slide in a groove partly in the lock and partly in the breech, as described, to prevent strain on the lock, as set forth.

55,614.—DEVICE FOR CUTTING GREEN CORN FROM THE COB.—Jonathan Burt and Leonard F. Dunn, Oneida, N. Y. :

We claim, 1st, The sliding-frame, D, in connection with the springs, P, cutters, e', scrapers, h, any or all of them, and the tube, C, or its equivalent, all arranged to operate in the manner substantially as and for the purpose set forth.

2d, We further claim the oblique rods, b, of the frame, D, connected with the plates or springs, d', for the purpose of expanding the cutters, e', and springs, P', substantially as and for the purpose specified.

55,615.—STEAM PLUG VALVE.—Russel Burton, South Adams, Mass. :

I claim, 1st, The arrangement in connection with the pipe, A, of the conical enlargement, B, conical plug, E, spring, J, and screw-cover, D, when the parts are constructed and combined as described and represented.

2d, The combination of the reservoir, J, one or more, with the conical plug, E, substantially as described and for the purpose set forth.

55,616.—LOCK.—Ira D. Bush, Detroit, Mich. :

I claim, 1st, The sliding and swinging tumblers, G, hung upon the bolt of the lock, and arranged and operating substantially in the manner and for the purpose specified.

2d, The collar, B, of the knob, spindle, or shaft, Q, in combination with the opening, S, T, in the lock-plate, the yoke, U, placed over such shaft and interlocking with the said collar, substantially as and for the purpose described.

55,617.—MACHINE FOR SHARPENING HORSE-SHOE CALKS.—Ensign A. Bushnell, Dodge county, Wis. :

I claim the arrangement of all the parts as herein set forth, and as for the purpose described.

55,618.—LIFTING-BAR.—D. P. Butler, Boston, Mass. :

I claim, 1st, The construction of the lifting-bar with the surfaces, c, in line with the center of the bar, a, substantially as set forth.

2d, The socket or socket-piece on the bar, and the pivot on the ring, substantially as shown.

3d, The elastic cushion placed between the ring and bar.

4th, The construction of the bar with the sockets or socket pieces on opposite surfaces thereof, substantially as and for the purpose set forth.

I also claim the loose slats, J, provided with blocks, K, on one or both sides at the ends, and when of double or triple length, intermediate blocks, all half the thickness desired to form the chamber, when employed in the manner and for the purpose set forth.

I also claim the partition boards, G, L, with the extended arms and followers, F, in combination with the vertical press-board, E, constructed and operating in the manner and for the purpose specified.

55,620.—SPRING LANCE.—George J. Capewell, West Cheshire, Conn. :

I claim the slotted cap-piece, K, for the casing, A, having outward bent lips or flanges, h, upon each side of its slot or opening, substantially as an improvement for the purpose described.

55,621.—MILK-PAIL.—J. Carton and Wm. Ralph, Utica, N. Y. :

We claim as an article of manufacture a wooden milk-pail with a tin lining, constructed as described.

55,622.—ATMOSPHERIC CHURN-DASHER.—S. Case and A. W. Pratt, Pultneyville, N. Y. :

We claim the combination of the adjustable and removable valve, D, with the rod, A, and tube, G, substantially as and for the purpose described, the rod being provided with the bulb, B, having the seat, a, for the reception of different-sized wings, as set forth.

55,623.—PRUNING INSTRUMENT.—Richard Collier, Springfield, Ohio. :

I claim a pruning tool the blade of which is sharpened upon the chisel-formed point and also upon both the edges, the same being attached to a handle, substantially as set forth.

55,624.—PORTABLE DOOR-FASTENING.—Dennis Conlon, Portland, Maine. :

I claim the combination of the plate, B, having the spurs, h, and shoulders, g, with the pivot, n, and button, k, constructed as described all as and for the purposes set forth.

55,625.—EGG-BEATER.—Moses G. Crane, Boston, Mass. :

I claim the combination of the segment gears and pinions with the spindle, beating-wires, and standard, when said segment gears are constructed and arranged to rotate horizontally, substantially as set forth.

I also claim, in combination with the standard, b, spindle, a, and wires, c, arranged and operating as described, the plate, g, with its fingers, n, arranged to hold the standard, b, substantially as described.

55,626.—PUMP FOR DEEP WELLS.—Joseph H. Davis, Allegheny City, Pa. :

I claim the enlargement, B, of the valve-chamber, A, when constructed and operating for the removal of the foot-valve, F, substantially as herein described and for the purposes set forth.

55,627.—SOUNDER MAGNET.—Samuel F. Day, Ballston, N. Y. :

I claim, 1st, The combination of the posts, d, d, with the raised plate or bridge, C, in the manner and for the purpose set forth.

2d, The combination of the metallic frame, A, sounding-board or insulator, B, and metallic bridge or arched plate, C, for the purpose set forth.

55,628.—FERRY-BRIDGE GATE.—Lewis P. Decker, Brooklyn, N. Y. :

I claim, 1st, The combination of the gates, C and D, constructed and arranged as herein described, with the shafts, E and F, and with the bridge arches or other suitable supports, substantially as described and for the purpose set forth.

2d, The combination of the ratchet-bar, I, with the gear-wheels, G and H, and with the shaft, E, and F, substantially as described and for the purpose set forth.

55,629.—MAKING SIRUP FROM CORN.—H. J. Deissner, Waukesha, Wis. :

I claim the within-described process of making sirup from corn, by following the various manipulations which are specified.

55,630.—SHOVEL PLOW.—Paul Dennis, Schuylerville, N. Y. :

I claim, 1st, Sharpening or providing the wings, D, D, with double cutting-edges, as and for the purpose described.

2d, The wings, D, D, constructed in such a manner as to be capable of being reversed in position, so as to throw the earth outward to a greater or less distance, and also to be capable of being expanded or contracted, as occasion may require, as an improvement for the purpose set forth.

55,631.—FRUIT BOX.—T. B. Doolittle, Ansonia, Conn. :

I claim a fruit box formed of two end pieces, in combination with a single piece bent around said blocks or end pieces, and overlapped, the whole constructed and arranged substantially as set forth.

55,632.—TABLE FORK.—John Edmond and William H. Wirt, Washington, D. C. :

We claim providing a table fork with a file edge or surface, substantially as specified, for the purpose of sharpening a knife.

55,633.—AUTOMATIC GATE.—J. G. Elkins and J. T. Green, Marquette, Wis. :

We claim, 1st, The method of hanging the gate to the bars, F, by which they are kept in contact by positive force while closed, without the use of latches or catches of any kind, substantially as shown and described.

2d, The combination of the timbers, H, H, levers, I, I, and links, J, J, rods, l, l, bell-cranks, K, K, and links, M, M, all arranged and operating substantially as shown and described.

55,634.—WASHING MACHINE.—John C. Fellows, South Adams, Mass. :

I claim, 1st, The combination of the vibrating frame, E, with the frame, B, the slots of frame, E, rising between the slots of frame, B, substantially as described.

2d, The vibrating roller whose frame has vertical motion, as described, with the fixed and vibrating frames, B and E, substantially as described.

55,635.—FISHING NET.—Edward A. Field, Sidney, Maine. :

I claim the improved manufacture of fishing net or apparatus made substantially as described, with the sinker, the ground-guard, and the mouth-hook, the lip hoops, or the same and the bait-line and float, all combined together and with netting, and so as to operate substantially as specified.

55,636.—POSTAL LETTER-BOX.—D. D. Foley, Washington, D. C. :

I claim a postal letter-box having an ante-chamber in which packages are deposited, when said ante-chamber has a sliding bottom, which is withdrawn when the entrance-port is closed, and vice versa, said sliding bottom being connected to and operated by the valve which covers the entrance-port by a lever or tilting-bar, and so adjusted, that entrance to the receptacle below the ante-chamber will always be barred either by the valve over the entrance-port or by the sliding bottom, substantially as described.

55,637.—BOOT AND SHOE STRETCHER.—William Frederick, Ashland, Pa. :

I claim, 1st, An improved boot and shoe stretcher formed in two parts, A and D, hinged together at their forward ends by a toggle-joint hinge, E, substantially as described and for the purpose set forth.

24. The combination of the rod, J, pinion-wheel, I, rack B and roller or rollers, C, with each other and with the parts, A and D, of the last, substantially as described and for the purpose set forth.

55,638.—GAUGE FOR BOILERS.—C. L. Frink, Rockville, Conn. : I claim the arrangements of the cocks, C, D, in combination with the socket, B, and tube, A, and operating in the manner and for the purpose herein specified.

55,639.—SAFETY VALVE FOR BOILERS.—C. L. Frink, Rockville, Conn. : I claim, 1st, The hinged supporter, D, in combination with the valve-stem, C, and lever, F, of a safety valve, substantially as and for the purpose described. 2d, The central screw, I, and clamping-plate, e, in combination with the packing-piece, d, and valve, B, constructed and operating substantially as and for the purpose described.

55,640.—GAUGE COCK.—C. L. Frink, Rockville, Conn. : I claim the flexible and elastic valve, D, with a central passage, e, in combination with the conical seat, E, spindle, C, adjustable gate, G, and body, A, of a gauge cock, constructed and operating substantially as and for the purpose set forth.

55,641.—LIGHTING GAS BY ELECTRICITY.—Samuel Gardiner, Jr., New York City : I claim, 1st, The combination with a gas-burner of an electrical conducting cord and tassel, D, D', connected with the poles of a battery, substantially as described. 2d, The combination with the above, of the stiff wire, G, igniting-finger, J, lever, L, and spring, M, substantially as described. 3d, In combination with the electrical lighting devices herein described, I claim the non-conducting or insulating stud, B, employed in the manner described.

55,642.—TURNING GAS-COCKS BY ELECTRO-MAGNETISM.—Samuel Gardiner, Jr., New York City : I claim, 1st, Turning a gas-cock by means of a sliding-rod, E, and click, G, acting directly upon the tooth-wheel, H, on the axis of said gas-cock and employed in combination with an armature, B, and magnet, A, A', substantially as described. 2d, The combination with the armature, B, of the guides, C, C', and springs, K, substantially as and for the objects specified. 3d, The stop or stud, e, attached to the sliding-rod, E, and employed to limit the motion of the wheel, H, as set forth. 4th, The combination with the wheel, H, and E, and click, G, of the retaining spring, J, applied and operating in the manner and for the purpose substantially as described. 5th, In combination with the apparatus herein described, I claim the helical spring, D, adjustable collar, M, and thumb-screw, N, arranged as described and employed for the purpose specified.

55,643.—BUTT FOR BLINDS.—O. S. Garretson, Buffalo, N. Y. : I claim, 1st, The loose pin, C, provided with the cam, e, and notch, f, in combination with the wings, A, B, provided respectively with the flange, f, and stop, g, arranged and operating substantially in the manner and for the purpose set forth. 2d, In combination with the loose pin, C, I claim the conical seat and corresponding bearing of the parts, A, B, or their equivalents, arranged and operating as shown and described. 3d, The free axial pin or bolt, G, operated by its own weight, in connection with suitable stops, on the wings of the butt for forming a self-fastening hinge, substantially as set forth.

55,644.—SHUTTER HINGE.—O. S. Garretson, Buffalo, N. Y. : I claim the locking-bar, H, in combination with the parts, B and D, of a hinge, constructed and operating substantially as shown and described. I also claim forming the wings, H, B, with concave faces in combination with the pendular bar, H, when said bar moves on a plane with the wings, substantially as and for the purposes set forth.

55,645.—ARTIFICIAL LEG.—David Gilson, Nashua, N. H. : I claim an adjustable socket or pad supported upon springs or their equivalent for the purposes as herein set forth. I do not limit my claim to the particular form as herein shown, but extend it to any other substantially the same.

55,646.—BOLT-HEADING MACHINE.—A. B. Glover, Derby, Conn. : I claim, 1st, The two pairs of levers, Y, Y', Y'', Y''', with the forming dies, X, X', X'', X''', arranged so that one pair will operate at right angles to the other pair, in combination with the two heading dies, O, O', all arranged to operate in the manner substantially as and for the purpose set forth. 2d, The attaching of the heading dies, O, O', to a transverse or laterally moving slide, I, fitted to the vertically moving slide, H, and operated through the medium of the arm, J, rock-shaft, K, arm, L, and the cam, M, or their equivalents, for the purpose of bringing the dies, O, O', over the bolt-rod at the proper time, substantially as shown and described. 3d, The holding dies, S, S', in combination with the lever, V, operated by the combination wheel, W, for the purpose of holding the bolt-rod during the heading operation, and releasing the same after said operation is performed, constructed and arranged substantially as described. 4th, The lever, B*, in combination with the pawl, v, in the driving shaft notches, u, in the driving pulley, A3, rod, D*, spring, d*, and cam, D'', all arranged substantially as shown to automatically stop the machine at the completion of the heading of the bolt, substantially as shown and described.

55,647.—HANGING MIRROR.—J. S. and H. F. Gray, Chelsea, Mass. : We claim the friction plates, d, f, having irregular contact surfaces, constructed and operating together as and for the purpose substantially as set forth.

55,648.—SNAP HOOK.—Adam Haggy, Keokuk, Iowa : I claim a snap hook, a, having an eye, b, in its shank, through which passes the spring, B, which is attached by projections, c, c, on the side, and the projection, e, at the end, which holds the said spring by being flattened down upon it, constructed and arranged as described.

55,649.—CHEESE VAT.—L. C. Hains, Bedford, Ohio : I claim, 1st, The detachable hinges, E, in combination with the pan, C, and vat, B, when arranged as and for the purpose set forth. 2d, The brace-rib, J, pins, n, in combination with the pan, C, and vat, arranged as and for the purpose set forth.

55,650.—RAILWAY CHAIR.—Alexander Hamill, Baltimore, Md. : I claim the construction of the chair with its hinge, L, at the outside end, when arranged and fastened to the cross-tie, B, by a bolt, F, with a flat bar head, G, below, and a forked key, H, above, substantially as herein described and for the purposes set forth.

55,651.—SKIRT-SUPPORTER.—Prescott V. Harrington, Attleborough, Mass. : I claim a skirt-supporter consisting of a loop and pin tongue and catch combined, the article being substantially as specified.

55,652.—GAS STOVE FOR HEATING.—David Greene Haskins, Cambridge, Mass. : I claim, 1st, The combination of the air-heating chamber, B, with the chamber, D, the concentric casing, A, and interposed radiating material, substantially as and for the purpose specified. 2d, The combination of the tapering chamber, G, with the chamber, D, substantially as and for the purpose specified. 3d, The combination of the air-heating chamber, B, the escape

pipe, o, and the partitioned mantle or radiating chamber, F, as and for the purpose set forth.

4th, The arrangement of the upper burners, g, with the chamber, D, in combination with the chamber, B, and space, H, as and for the purpose specified.

55,653.—FISHING REEL.—Anson Hatch, New Haven, Conn. : I claim the skeleton spool in combination with the band, A, A', when the whole is constructed, arranged, and fitted for use, substantially as herein described.

55,654.—MOWING MACHINE.—Eleazer and David Hinkley, Worcester, Mass. : We claim the combination and arrangement of the cam-wheel, F, rocker-lever, E, connecting-rod, D, the shaft, G, and its beveled pinion, H, and annulus, I, with the driving wheel, K, and the knife, C, the said rocker-lever being provided with friction rollers or projections for the cam-wheel to operate against, and the whole being substantially as specified, and for the purpose of operating the knife, C, by the revolution of the wheel, K.

55,655.—REFRIGERATOR.—Aaron A. Hinkley, Boston, Mass. : I claim the combination and arrangement of the chamber, d, and air-passage, c, of the cover, with the passages, f, f', and the ice-box or pan, C, arranged in the case, A, substantially as specified. I also claim the combination and arrangement of the cold-water cooled pipe, D, and its discharging branches, with the case, A, and the ice-pan, the chambered cover and its air-passage, and the air-passages leading therefrom, the whole being substantially as described.

55,656.—BENCH VISE.—John S. Hoar, West Acton, Mass. : I claim as a special improvement in bench vises, of the kind described or those to turn horizontally on a bed-plate, the combination of the long curved back slot, d, and its screw, f, and two side curved slots, e, e, and their set-screws in the stationary jaw-carrier, C, and with the jaws, C, D, all constructed and arranged to operate together substantially as specified.

55,657.—POTATO-PLANTER.—Lyman J. Holcomb, Nunda, Ill. : I claim, 1st, The combination of the pole, E, frame, F, seat, G, hopper, H, tube, I, beam, M, and plow, L, arranged and operating as and for the purposes specified. 2d, In combination with the above and the wheels, A, and axle, B, of a wagon, the circular plate, R, pins, a, bell, S, lever, T, and spring, d, arranged and operating substantially as and for the purpose set forth.

55,658.—MACHINE FOR PRESSING AND MOLDING PLIABLE MATERIALS.—George C. Howard, Philadelphia, Pa. : I claim, 1st, The form of the housings, A, A', combining all the necessary bearings in one piece with the table, B, constructed substantially as described. 2d, Providing the frame and housings with two or more fulcrum-pieces, substantially as and for the purpose specified. 3d, The slots in the stand, P, at right angles to those immediately under it in the table, R, substantially as and for the purpose specified.

55,659.—WINDOW-SASH SUPPORTER.—H. C. Hunt, Amboy, Ill. : I claim, 1st, The case, A, with its double inclines, b, b', and its corresponding slot, c, all operating as and for the purpose shown. 2d, The anchor, C, with its double inclines, f, f', and its knob or finger-piece, P, operating as and for the purpose shown. 3d, The friction-roller, E, operating as and for the purpose shown.

55,660.—GANG PLOW.—James B. Hunter, Ashley, Ill. : I claim, 1st, The bolster, G, screws, H, H', and plow-beams, J, J', when used in combination with the rods, K, L, and all arranged substantially as and for the purpose set forth. 2d, The attaching of the plow-beams, J, J', to the bolster, G, through the medium of the rods, K, L, placed at the under sides of the beams, J, and fitted loosely at their front ends on a rod, L, at the rear of the bolster, substantially as and for the purpose specified. 3d, The raising of the plows, P, out of the ground by means of a rod, M, crank-shaft, N, and lever, O, all arranged substantially in the manner as and for the purpose set forth. 4th, The adjusting of the shares or points of the plows in a greater or less inclination downward, by means of the screw-rod, Q, connected to the upper parts of the standards, Q', substantially as shown as described.

55,661.—CUTTER FOR DOVETAILING MACHINES.—John C. Hursell, Boston, Mass. : I claim the construction of the cutters, as herein described, for polishing and condensing the surfaces of dovetail tenons or mortises. Also providing the upper outer corners of a cutter, constructed as above claimed, with outward cutting lips, as and for the purpose specified. 2d, Constructing the conical cutter-head, a, with a slot to receive a sash cutter with opposite cutting edges, the cutter being inserted in said slot and confined to the head, as described.

55,662.—CLEANER FOR RING-TRAVELER SPINNING MACHINES.—Welcome Jencks, Manchester, N. H. : I claim an adjustable cleaner for ring-travelers, made substantially as above described.

55,663.—RAILWAY CAR FOR PREVENTING ACCIDENTS.—F. W. Jenkins, Brooklyn, N. Y. : I claim a roller or rollers hung in a vertical plane in front of the wheels of a railway car, and so as to turn thereon, substantially as and for the purpose described. I also claim so hanging the roller, C, to railway cars, that it can have a play in a vertical direction, substantially as described and for the purposes specified.

55,664.—MACHINE FOR FACING BOOT AND SHOE BOTTOMS.—N. B. Jewett and E. Everson, Haverhill, Mass. : We claim, when combined and arranged as described and so as to operate in the manner and for the purpose specified, the shaft, d, grinding cylinder, b (these being parallel with each other, and operated from wheel, h, by one belt, g), the cases, c and e, and the angular fan blades, f.

55,665.—CASTER FOR FURNITURE.—William Johnson, Milwaukee, Wis. : I claim, 1st, The combination of the rose-plate, D, in one or more parts, the chamber, h, and the collar, G, for the purpose described. 2d, The shoulder, I, in combination with the rose-plate, D, thimble, l, collar, G, and chamber, h, substantially as shown and described and for the purpose set forth.

55,666.—SPINNING TOP.—Edward E. Jones and G. L. Kitson, Philadelphia, Pa. : We claim the holes, A, A', with the hole, C, in the center of the top, in combination with a musical attachment, for the purpose herein described, an æolian or musical top.

55,667.—MANUFACTURE OF BRICKS.—Frank Jones, Boston, Mass. : I claim, 1st, The process substantially as above described of applying to bricks a preparation of mastic or cement. 2d, The apparatus constructed and operating substantially as above described for applying mastic to bricks separately before being laid. 3d, As an improved article of manufacture, I claim a mastic-covered brick prepared substantially as above described.

55,668.—CORN PLANTER.—Wm. H. Karicofe, Harrisonburg, Va. : I claim the combination of the several parts above described, in the construction of a machine that will furrow two rows and drop therein at regular intervals corn and ashes or similar fertilizer, and will cover the same, removing clods and small stones, that by means of the adjustable covers in the caps the amount of corn or of the fertilizer may be fixed by the operator, that by means of the cross-bars on the right wheel the land will have the appearance of being checked, and by means of the driver the machine may be thrown out of gear and removed to any part of the field without the shaft turning.

55,669.—SPARK-ARRESTER.—Charles Bright Keyes, Washington, D. C. : I claim, 1st, The revolving cover, d, d', constructed substantially as described in paragraph 2d, letters d, d' and i, l. 2d, The combination of the revolving cover, d, d', with a shield or deflector, c, c', and an opened-mouthed trumpet, g, g', substantially as described in paragraph 2d, letters g, g'. 3d, The combination of the revolving cover, d, d', and the shield or deflectors, c, c', and the opened-mouthed trumpet, g, g', the opening through, f, f', in connection with a pipe, b, b', and the water tank, e, c, and the arrangement, i, l, for turning the cover, d, d', substantially as described in paragraphs 3 and 4.

55,670.—CAR BRAKE.—Washington I. Kilburn, Kennedy, N. Y. : I claim, 1st, Bringing the brakes of a railroad train to bear against the wheels of the several cars, by the momentum and weight of the train itself, when the engine drawing such train or any car of its series of cars, is arrested in its motion in any possible manner, substantially as herein described and for the purpose specified. 2d, The draw-head, E, bar, F, and lever, G, when combined and arranged with regard to and connected with the brakes of a railroad car, substantially as described and so as to operate as and for the purpose specified.

55,671.—BOOT AND SHOE.—John Kimball, Boston, Mass. : I claim the improved manufacture or shoe as made with a layer of cork, so arranged between its inner and outer soles that the leather of the outer sole may come in contact with the leather of the upper where it laps over the inner sole (the same being so as to hide the edges of the cork) and the soles, cork, and upper be united by sewing or nails, as specified. I also claim the improved manufacture of water-proof sole for boots or shoes, it being composed of leather and cork arranged with a border or a piece of leather circumscribing the cork, as and for the purpose set forth.

55,672.—HORSE RAKE.—Jacob King, Omaha, Nebraska : I claim the rake provided with sets of teeth on each side of the head and drawn by means of the reversible swinging frames, K, constructed and operating substantially as described and represented.

55,673.—WINCH CAPSTAN.—David Knowlton, Camden, Maine : I claim the combination as well as the arrangement of the capstan, A, the capstan-head, B, and two or any other suitable number of winches applied to such head and provided with mechanism for revolving them separately from the capstan. I also claim the arrangement of the head, D, with the capstan, A. I also claim the combination as well as the arrangement of the internal ratchet, P, and its pawl, G, traveling pinion, Q, the drawing pinion, R, the ratchet, K, and pawl, L, and also the combination of such additional power mechanism with each winch, F, the head, D, and the capstan, A, or the same and the holding ratchet, G, and pawl, H, of the winch. I also claim the combinations as well as the arrangement of the head, D, with the two winches and their operative mechanism, as specified. I also claim the combination of the two holding ratchets, G, G', and their retaining pawls, H, H', with the two winches, their shaft and operative mechanism as applied to them, their shaft and the capstan head, substantially as specified.

55,674.—UPSETTING PRESS.—Andrew Kloman, Pittsburg, Pa. : I claim, 1st, The top-piece, C, with its side projecting ledges, d, d', and inclined top when used in an upsetting press, as described and for the purpose specified. 2d, The combination of the two wedges, D, D', screws, S, S', frame, A, plate, E, and piece, C, arranged as specified and for the purpose already described. 3d, The combination of the two pieces, G, G', with the piece, C, and bed, B, as described and for the purpose specified. 4th, The mode of forcing down and holding stationary the piece, C, and of preventing the pieces, G, G', from spreading apart at the same time by use and means of the screws, S, S', wedges, D, D', inclined top-piece, C, plate, E, and ledges, d, d'. 5th, The plunger, I, having two points or projecting angles, f, f', and notches, g', g', as described and for the purpose already mentioned. 6th, The combination of the fly-wheels, K, K', shaft, k, k', cam, L, bolt, N, wedge, W, and bolt, J, for obtaining from a motive power comparatively small an enormous pressure and long throw in a short space of time, variable in intensity to any desired degree of power or speed by the single motion of the wedge, W. 7th, The combination of the bars, q, q', piece, Q, pieces, R, R', plates, T and S, and pieces, r, r', and T', T'', as described and for the purpose specified.

55,675.—POINTEAU BOAT.—R. Knudsen and W. S. Lassoe, Brooklyn, N. Y. : We claim, 1st, A portable boat composed of two water-tight floats connected substantially as herein described, whereby they may be drawn apart to give the necessary stability for use, and closed together to afford facility for transportation. 2d, The combination with a double boat of the movable frame, B, constructed and applied substantially as herein set forth for the purpose specified. 3d, The seat, C, having row-locks, r, arranged over the space between the two hulls of the boat when the said hulls are extended and held apart, substantially as herein set forth.

55,676.—PRIMING METALLIC CARTRIDGES.—Theodore T. S. Laidley, Springfield, Mass. : I claim the combination of the cartridge case with an anvil, A, which is of such shape that it holds the percussion cap in a central position within the case against the head, and is held firmly in its place by resting against a shoulder formed in the case below the head, after the anvil has been inserted, in the manner and for the purpose above described.

55,677.—SERVING TABLE.—William L. Lancel, Plymouth, Pa. : I claim, 1st, The moving table, b, combined with one or more stationary tables, a, a', for dining and other use, substantially as set forth. 2d, Moving tables, b, in combination with one or more pantry or furnishing or receiving rooms, P, in the manner described. 3d, The moving table, b, and stationary table, a, a', so arranged having an open space, Q, forming a room on the inside or inner part of the tables, a, a, b, as described. 4th, In combination with the tables, I claim a passage-way, i, either under or over tables, a, a, b, by stairs or otherwise, substantially as set forth. 5th, Dividing the tables, a, a, b, into sections substantially as set forth. 6th, In combination with the tables, I claim the application of a flanged wheel, R, or its equivalent, to support, guide, and steady a moving table, b, for dining and other uses, substantially as set forth. 7th, In combination with the moving table, I claim the fixed shaft, x, to the leg, H, of the table, a, a', supporting table, a, a', upon which shaft, x, is wheel, R, to guide movable or moving table, b, substantially as and for the purpose set forth. 8th, The application of a belt, S, or its equivalent, to the driving of a movable or moving table, b, for dining and other uses, substantially as set forth.

55,678.—BED-BOTTOM.—S. E. Lamphear and H. H. Blair, Brunswick, Ohio :

We claim the elastic loop, B, pin, I, and collar, D, as arranged and in combination with the slat, A, staple, F, and cleat, G, for the purpose and in the manner set forth.

55,679.—FORMING METALLIC CHARACTERS ON PAPER, ETC.—John Lanza, New York City :

I claim the above-described writing-fluid for the purpose of making metallic or other dust (or metallic or earthy mixture) adhere to the writing, and thus give metallic letters, substantially in the manner and for the purposes set forth.

I also claim the above-described writing as a new and useful improvement, when the above-described fluid is employed substantially as described.

55,680.—SPRING BEDSTEAD.—Rufus Lapham, New York City :

I claim the center-piece, a, or its equivalent, with the interstices, b, b, the springs, c, c, c, with their slots, the cross-pieces or springs, d, d, d, with their pins, e, e, fitting in the slots of c, c, c, in combination, operating substantially as described and for the purposes set forth.

55,681.—ADJUSTABLE MANDREL.—Charles W. Le Count, Norwalk, Conn. :

I claim the arrangement of the sliding keys, F, socket, B, and thimble, C, in combination with the mandrel, A, in the manner and for the purpose substantially as herein described.

55,682.—PHOTOGRAPHIC APPARATUS.—Charles A. Leech, Philadelphia, Pa. :

I claim, 1st, The combination and arrangement of the dark chamber, F, with the camera box by means of the sliding frame, G, substantially in the manner above described and for the purposes set forth.

2d, The combination of the dark chamber, F, with the bathage, A, and baths, B, C, D, E, by means of the sliding frame, G, the said parts being constructed and arranged in relation to each other substantially as described, so that the said chamber may be brought successively into its vertical and horizontal positions with all the baths for the immersion of the plate into the same and its removal therefrom, without removing it from its fixed position in the dark chamber, as and for the purposes above specified.

3d, Constructing the baths, B, C, D, E, with the slots, b, and hinged lids, d, substantially as and for the purposes above described.

4th, The combination and arrangement of the opaque valve, M, with the dark chamber, F, for shutting out the light from beneath the latter when it is in its elevated position, substantially as described.

5th, The combination of the springs, I, I, with the sliding frame, G, for holding the latter in its vertical position with the bath by means of the recesses, j, in bath-case, A, substantially as described and for the purposes specified.

6th, The combination of the spring, H, having a pin or projection, J, with the sliding frame, G, for holding the dark chamber, F, in its elevated position, substantially as described.

55,683.—SILL AND WEATHER-STRIP.—Jeremy E. Lindsley, Goshen, Ind. :

I claim the metallic strip, D, having flanged edges, a, a, and i, when applied to the sill of a door, as and for the purpose specified.

55,684.—PLOW.—C. M. Lufkin, Claremont, N. H. :

I claim, 1st, A cutter, I, of any convenient form operated and connected by an eccentric, M, shaft, N, tube, II, and slide-rod, K, to the mold-board, F, in such a manner as to admit of the oscillation of the cutter by the adjustment of the mold-board, as herein set forth.

2d, A tube, H, slide-rod, K, latch, L, spring, e, and catches, g, g, operating and arranged substantially as and for the purpose herein set forth.

3d, The pivot, f, on the cutter, I, in connection with the eccentric, M, and socket, J, all constructed, arranged, and operating substantially as and for the purpose specified.

55,685.—WATER-WHEEL.—T. W. Mahler, Rome, N. Y. :

I claim, 1st, The buckets, E, hinged on axle, b, in such a manner that they may be turned or adjusted, substantially as shown and described and for the purpose specified.

2d, Connecting the axes, b, of the buckets, E, by means of arms, F, to a ring, e, adjusted through the medium of the plate or lever, G, shaft, h, and a bit, i, on said shaft working in a hole, z, in a projection, f, of ring, e, all arranged substantially as and for the purpose specified.

3d, The shaft, l, provided at its lower end with a crank, u, and pin, o, in combination with the plate or lever, G, substantially as and for the purpose set forth.

4th, The scroll, A, having greater depth than the wheel or with its top and bottom plates, p, p', respectively above and below the top and bottom rims, c, c', of the wheel, substantially as and for the purpose specified.

55,686.—STREET LAMP.—Thos. T. Markland, Jr., Philadelphia, Pa. :

I claim, 1st, The combination of the screen and reflector, H, with the burner, E, and reflector, H', substantially in the manner and for the purposes set forth.

2d, The combination of the globe, A, with the base, D, and roof, E, when said parts are constructed and arranged in relation to each other, substantially as described and for the purposes set forth.

3d, The combination of the reflector, H', with the roof, E, reflector, H, and burner, B, substantially as described and for the purposes set forth.

4th, Constructing the globe, A, with the annular projection, m, for turning the water from the lamp, substantially as specified.

5th, Constructing the base, D, with perforations, f, and the roof, E, with the slots or openings, K, for causing a current of cold air to flow over the interior surface of the globe, A, to counteract the heat from the burner, B, substantially as described and for the purpose set forth.

6th, The combination of the cap, L, with the central tube, K, and the burner, B, when constructed and arranged to operate in relation to the draft of said tube, substantially as described.

7th, The perforated names in the sides of the cap, L, in combination with the burner, B, substantially as described and for the purpose specified.

55,687.—BENDING FLANGES UPON BOILER-HEADS.—William W. Martin, Allegheny City, Pa. :

I claim the construction and arrangement of the revolving table, B, and rolls, C, said table and rolls operating substantially as herein described and for the purpose set forth.

55,688.—BUTTON-HOLE SEWING MACHINE.—John McClosky, New York City :

I claim the grooved cylinder, H, constructed substantially as described, for moving the needle forward and backward alternately, attached to or moved with the needle-arm of a reciprocating needle.

I also claim the grooved cylinder, H, in combination with the yielding flinger, G, substantially as described.

I also claim the eccentric on the lower end of the grooved cylinder for alternately moving the needle forward and backward, substantially as described.

I also claim connecting the reciprocating needle, O, with the grooved cylinder by means of an arm, J, applied substantially as above described.

I also claim the hollow flange, j, on the under side of the presser foot in combination with the guide, Q, substantially as described.

I also claim the combination of the supplementary hook, f, with the needle, O, and the devices which move it forward and backward, substantially as above described.

I also claim the horizontal lower needle, C, made and operated

substantially as described, in combination with the revolving hook, and a reciprocating needle, O, moved forward and backward alternately, substantially as described.

55,689.—TRAVELING-TRUNK.—Alexander McDonald, Charlestown, Mass. :

I claim the combination of the leather covering, e, and the board, and arranged with respect to each other, and the bands, f and x, substantially as set forth.

Also, combining with the buckles upon the front side of the body and straps, which fasten the lid thereto, the auxiliary straining-loops substantially as described.

55,690.—SHIFTING BUGGY-TOP.—S. S. Meily, Lebanon, Pa. :

I claim the application of turn-bushings, g, g, which are constructed with screw-stems to the secondary seat, B, and main seat, A, these two seats being constructed and fitted together substantially as described.

55,691.—APPARATUS FOR WEIGHING GRAIN.—R. S. Morison, Bangor, Me. :

I claim, in combination with a scale-beam, the mechanism operated thereby to control the passage of the scale of material to be weighed, when constructed and arranged to operate in the manner shown and described.

I also, in combination with a scale-beam, a secondary lever or beam, set forth, when arranged to suddenly release the scale-beam when the weight received by the scale equals the amount noted on its register, substantially as described.

Also, in combination with a scale-beam, as set forth, a slotted link to permit free motion of the beam to an extent sufficient to secure a momentum by which to actuate a controlling mechanism, as described.

Also, the arrangement of mechanism for changing the chute, substantially as described.

55,692.—RUB-IRON FOR CARRIAGES.—F. B. Morse, Milwaukee, Wis. :

I claim spring, D, in combination with shaft, C, and revolving rub-iron, A, substantially as and for the purpose described.

55,693.—DRILLING-MACHINE FOR WELLS.—Gorshom Mott, Big Run, Ohio :

I claim the tipping-beam, E, having its toe, E', shaped as shown in combination with the crank, D, substantially as and for the purpose set forth.

55,694.—METHOD OF PROTECTING PILES.—William J. L. Moulton, San Francisco, Cal. :

I claim the mode of protecting piles, by means of metallic covering and cement filling, as set forth and described.

55,695.—STAVE MACHINE.—Charles Murdock, Ellenville, N. Y. Ante-dated June 2, 1866 :

I claim, 1st, The block-carrying frame, Q, with its supplementary frame, W, arranged together substantially in the manner described, and operating with regard to the saw, as and for the purpose specified.

2d, The arrangement of the swinging-arm, b, with its spring-pawl, ratchet-wheel, Z, adjustable plate, C, and fixed arm, F, connected through a pinion and rock-gear or its equivalent, with the block-carrying frame, Q, and operating together substantially in the manner described and for the purpose specified.

3d, The disk, D, on the tongue, A, in combination with the disk, E, and the handle, H, H, for holding the frame, F, in different positions in relation to the tongue, A, B.

4th, The combination of the piece, R, with the jaw, B, of the tongue, A, B, constructed and applied one to the other as described and shown.

55,697.—COMPOSITION FOR CURING ROT IN SHEEP.—H. D. Niles and James C. Brooks, Bristolville, Ohio :

We claim the aforesaid compound formed of the above-named ingredients, in about the proportions and for the purpose herein set forth and described.

55,698.—BOOT OR SHOE.—Onesippe Pacalin, New York City :

I claim the combination of the inner and outer plates, A, B, heel-socket, E, plug, G, bolt, H, and fastenings, D, D, etc., constructed and arranged substantially as above described and represented.

55,699.—LIME-KILN.—Clark D. Page, Rochester, N. Y. :

I claim, 1st, The employment of water in coal-burning lime-kilns for the purpose of first steaming the coal, to produce a more perfect and economical combustion, and the absorption of all sulphurous acid gas of the coal by said steam and using the gases of the decomposed water in producing a greater degree of heat, substantially as described.

2d, The combination of the pans, c, c, and water-pipes, M, or equivalent, operating substantially as and for the purpose specified.

3d, The water-receptacles, f, f, in combination with the ash-pits, L, L, and grates, b, b, so arranged that the steam that is produced by the fire will pass upward around and through the grates to keep them cool, substantially as described.

4th, The partition, I, in combination with the particular form of the cupola at the base, the latter provided with the concave, a, a, and having the chamber on each side of uniform thickness, substantially as described.

5th, The arrangement of the recesses, N, O, and cold-air flues, K, K, in combination with the grates, b, b, and the sides of the furnace, the same opening directly over the grates, and so constructed as to furnish cold air and prevent chinking, substantially as described.

55,700.—STOP-COCK.—C. C. Parsons, Boston, Mass. :

I claim a stop-cock, constructed with one or more closed airtight chambers, d, operating in combination with the opening through the plug.

55,701.—COTTON-SEED HULLER.—John Perkins, Providence, R. I. :

I claim the combination and arrangement of the series of vertical ribs, e, with the shell, C, its series of horizontal ribs, e, the cylinder, A, and its case, B, the whole being to operate together substantially as specified.

55,702.—SHINGLE MACHINE.—Charles L. Pierce, Buffalo, N. Y. :

I claim, 1st, Reciprocating the block-carriage which feeds the block to the saw in an unequal progressive movement by means of the crank-pin, D, working in the slot of cross-head, D', substantially as described.

2d, Imparting an equal progressive movement of the block-carriage by means of the diamond slot, L, and crank, D, and thereby giving an equal and uniform feed of the shingle block to the saw, substantially as set forth.

3d, Operating the movable dog-bar, G1, of the dogging device by a weighted bell-crank, G2, working in combination with the sliding lever, G4, on the bed-frame, in the manner described.

4th, Operating the movable dog-bar, G2, of the dogging device by the bell-crank, J, and opening bar, J3, working in combination with the stop-piece, J3, on the bed-frame, in the manner described.

5th, The arrangement and combination of the segment lever, K1, K2, with the bell-crank, G2, carrying-segment, K, and movable lever, G4, for the purpose of operating the dog-bar by hand-power.

6th, The double taper cams, I, in combination with the tilting block-tables when arranged in relation to the block-carriage, and operated thereby in the manner and for the purpose set forth.

55,703.—STRAW-CUTTER.—Clark Polley, Sinking Springs, Ohio :

I claim, 1st, The levers, A' and V, in combination with each other, with the knife, B, and sash-frame, J, K, and with the walking-beam, P, and driving-cam, O, the whole being constructed and arranged substantially as described and for the purpose set forth.

2d, The combination of the spring, X, with the shaft, T, and walking-beam, P, substantially as described and for the purpose set forth.

55,704.—TACK HAMMER.—Alvin Pond, Southington, Conn. :

I claim the hammer herein described, consisting of the head, c, constructed with a notched jaw, e, and having a corresponding jaw, d, attached thereto, provided with their respective handles, b, constructed to operate substantially in the manner herein set forth.

55,705.—SLEIGH.—T. W. Porter, Bangor, Maine :

I claim, 1st, The metallic coupling or bar-end, A, Fig. 1, substantially as and for the purposes specified.

2d, The metallic coupling or double T, marked B, Fig. 1, substantially as described and shown.

3d, Forming metallic sleigh standards with the socket, c', Figs. 1, 3, and 4, in manner substantially as described and for the purposes specified.

55,706.—PROCESS OF PREPARING PAPER-PULP FROM STRAW.—John Priestly, New York City, and Thomas C. Bradbury, Poughkeepsie, N. Y. :

We claim, 1st, The process effected by a crushing machine used for the purpose of opening, splitting, and flattening the straw with a rotary steam boiler, as described.

2d, The process effected by a crushing machine used for the purpose aforesaid with the rotary steam boiler containing the paper-stock, operated at about sixty pounds pressure, substantially as described.

3d, The process effected by a crushing machine used for the purpose aforesaid with the rotary steam boiler containing the paper-stock, and with a pulping engine (Kingsland or other), for the purpose of disintegrating the fibers, substantially as described.

4th, The combination of the rotary boiler containing the paper-stock operated at a pressure of about sixty pounds, for the period described, with a pulping engine (Kingsland or other), substantially as described.

5th, The combination of a crushing machine and boiler, containing the paper-stock operated at a pressure of about sixty pounds and with a corresponding temperature, for the period described, with a pulping engine (Kingsland or other), for the purpose of disintegrating the stock and producing a fiber suitable for the manufacture of paper without the addition of other stock, substantially as described.

55,707.—GRAIN DRILL.—A. Putnam, Owego, N. Y. :

I claim, 1st, The changing of the machine from a grain-drill to a broadcast sower and from a broadcast sower to a grain-drill, by moving or adjusting the tooth-bars, K, to the feed-box, F, as above described, or its equivalent.

2d, Forming the teeth, G and H, from two different shaped parts or halves to incline one forward and the other backward alternately, in the manner already set forth and described.

55,708.—STAVE MACHINE.—John J. Ralya, Allegheny, Pa. :

I claim, 1st, Setting the head-stock or knife-frame on journals, so that it may admit of a slight motion on its axis to accommodate its position to any twist or irregularity of shape of the stave which is forced between the knives in the operation of shaving.

2d, Placing the knives in a head-stock or frame susceptible of motion on its axis in such a way that the center of motion shall be an line between the inner face of the knives and between their back and edge.

3d, Limiting and regulating the range of motion of the knives by means of set screws, substantially as herein-before described.

4th, The use of the movable head-piece in the end of the ram so constructed and arranged as to be susceptible of a limited motion on its axis for the purpose of allowing the staves to turn in its passage through the knives to accommodate any twist or irregularity of shape of the stave.

5th, The use of a spring in connection with the movable head of the ram, so as to permit of its yielding slightly in the operation of forcing the staves through the knives, substantially as described.

6th, Crocheting the end of the ram so as to hold the stave in place as it is being forced through the knives.

7th, The use, in combination with the cutters or knives and ram, of an upright pulley-post to carry the rope and weight for withdrawing the ram after the stave is pressed between the knives.

8th, So arranging the toothed rack of a ram as to be capable of adjustment towards or from the segmental gear-wheel for the purpose of regulating the length of stroke of the ram towards the knives, substantially as and for the purpose herein-before described.

9th, Giving to the knife-blades a concave curve from their outer edge, so as to form a ledge or shoulder, for the purpose of turning the shaving or chip outwards at such an angle as to break it off just above the edge of the knife, substantially as herein-before described.

55,709.—FRUIT BOX.—Charles Reese, Baltimore, Md. :

I claim a box made of a single piece whose flaps are so bent up as to form sides which are secured together by eyelets, substantially as described.

55,710.—REDUCING METALLIC OXYDS.—Jacob Reese, Pittsburg, Pa. :

I claim, 1st, Deoxidizing metallic oxyds while in a molten or liquid condition, by means of hydrogen gas or a vapor of carbon or of hydro-carbon, or a mixture of such vapor or gas so that these oxyds or ores may be reduced to a metallic condition without the use of additional fuel, substantially in the manner herein-before described.

2d, The use of liquid petroleum or other liquid hydro-carbon in the manufacture of iron or steel and other metals, substantially in the manner and for the purposes herein-before described.

3d, The use of hydrogen gas for the purpose of deoxidizing metallic oxyds, substantially in the manner herein-before described.

4th, Making liquid wrought or malleable iron from the ore by subjecting the ore while in a melted condition to the action of hydrogen gas or hydro-carbonated vapor, or a vapor of carbon, or a liquid hydro-carbon, substantially as herein-before described.

5th, Making cast-steel by deoxidizing iron ore while in a molten condition, in the manner herein-before described, and subjecting the pure iron thus produced to a vapor of carbon or hydro-carbon, or adding thereto a liquid carburant or hydro-carbon, until the requisite amount of carbon is added, substantially as herein-before described.

6th, Making cast-iron by deoxidizing iron ore in a melted condition, in the manner described, and supplying the requisite amount of carbon in a gaseous or liquid form, substantially as herein-before set forth.

7th, Reducing iron and steel by means of a carbon in a gaseous or liquid form to which after the metal has been deoxidized thereby, a sufficient amount of air, water, or steam is added to support the combustion of the carbon thus added as fuel to the melted metal.

8th, Making a belly in the lower side of the deoxidizing chamber or reducer so as to hold the charge, a melted ore away from the tuyere holes in the bottom of the reducer until the reducer is raised to admit the deoxidizing vapor or liquid, substantially as herein-before described.

9th, The use of a valve on one of the trunnions of the reducer constructed substantially as herein-before described, so as to shut off the deoxidizing vapor or liquid from entering the reducer, when in position to receive its charge, and open the communication when the reducer is restored to its position for working.

10th. The use of gas-meters, in combination with the air-cylinder and vapor-generator and reducer, for the purpose of measuring the amount of deoxygenizing vapor or air admitted to the interior of the reducing chamber, substantially as herein-before described.

55,711.—HYDRANT.—Joshua Register, Baltimore, Md.:

I claim, 1st, Constructing the base of the cylinder, B, in such manner that this cylinder will be held in a permanent position within a divided case, A, A, between and upon base-supports or collars, a, a, substantially as described.

2d. The combination of a divided case, A, A, with a cylinder, B, which is constructed with a contracted neck, B', and a pipe, D, leading to this neck below the base, a, a, all substantially as described.

3d. The construction of the hydrant case of two sections, A, A, two half base-pieces, a, a, and perforated portion, g, d, the said perforated portion being below the base, a, a, substantially as described.

55,712.—HYDRANT.—Joshua Register, Baltimore, Md.:

I claim, 1st, The construction of the nut, D', with an external flange, and with an internal flaring passage, in combination with the tapering plug-valve, F, packing, f, internal cylinder, B, and plug-valve, B', all substantially in the manner and for the purpose described.

2d. Fitting the plug-valve, F, in a recess formed in conical seat, H, which is perforated near its circumference, all substantially in the manner and for the purpose herein described.

3d. The combination of the conical seat, E plug-valve, F, packing, f, perforations in the seat, E, and the nut, D', all constructed and arranged substantially as described.

4th. Securing the packing, f, upon the seat, E, by means of a flange, c, and plug-valve, F, substantially as described.

5th. Applying the crank-rod, I, to a tubular bearing, J, having a flanged head, k, with stops, k', k', on its outer end, in combination with a crank-arm or handle, l, which has a stop, k2, formed on it, all used in connection with the foregoing features of invention substantially as and for the purpose herein described.

55,713.—MOLD FOR CASTING PULLEYS.—William D. Rinehart, Pittsburg, Pa.:

I claim a flask made in two parts ("cope" and "drag"), each part being furnished with a chamber for heated air or steam, the whole being constructed, arranged, and operating substantially as herein described and for the purpose set forth.

55,714.—BUTTER-WORKER.—John Robinson, Calais, Vt.:

I claim the conical roller, B, b, and handle, C, fitted so that the handle may turn upon the roller, in combination with a sector-shaped tray, A, A2, and cross-bar, d, substantially in the manner and for the purpose herein set forth.

55,715.—PREPARING HIDES, SKINS, FURS, ETC., FOR USE.—Julius A. Roth, Philadelphia, Pa.:

I claim the softening of leather, hides, furs, and the hair or wool thereon, by treating the same in a saponified solution, made in the manner as set forth and for the purpose as specified.

55,716.—GUN-STOCK.—Wm. Rudolph and A. Braun, San Francisco, Cal.:

We claim as our invention and improvement connecting the trigger to the sear by means of the hinged-arm, g, substantially as described.

And in combination with the trigger and hinged arm we claim the spring, i, substantially as described.

55,717.—BUCKLE.—Lomis W. Russell, Galesburg, Mich.:

I claim the ring or clasp, A, blocks, b and c, provided with a groove, and corrugated on their inner surface, being made of wood or metal, substantially in the manner and for the purpose herein set forth.

55,718.—DOUGH-KNEADER.—George W. Saunders, Springfield, Vt.:

I claim the combination of the roller, B, with its grooved end, a', the block, C, pin, b, staples, c, c, hook, d, and board, A, arranged and operating in the manner and for the purpose herein described.

55,719.—BREECH-LOADING FIRE-ARM.—Adolf Sayer, Naubuc, Conn.:

I claim in combination with winging breech-block, the hook, W, the groove, a, in which it is placed, and the groove, c, substantially as and for the purpose described.

55,720.—TEA AND COFFEE POT.—P. G. H. Schaffer, West Meriden, Conn.:

I claim the combination of the flange, k, with the embossed body, substantially as described.

55,721.—BILLIARD TABLE.—Peter Schouller, Boston, Mass.:

I claim the arrangement and combination of the channel, a, with the rail, B, and the elastic or caoutchouc strip, A, of a billiard table, the same being substantially as specified.

55,722.—NAIL-PLATE FEEDER.—Thomas A. Searle, Providence, R. I.:

I claim the cam substantially as described, for giving the turning motion to the nail-plate, in combination with the vibrating feeder-frame for drawing back and lifting the nail-plate, that it may be turned, and returning it to the required position on the bed-knife, substantially as described.

55,723.—PLANING MACHINE.—William Sellers, Philadelphia, Pa.:

I claim, 1st, The use in planing machines for metal of traversing uprights to support the cross-head, and upon which the cross-head may be elevated and depressed to suit the varying heights of the material to be operated upon, in combination with a fixed platform, provided with ways, slides, or their equivalents, arranged so as to avoid the necessity of raising the material to be operated upon from the platform, so as to come within reach of the cutting tool, all constructed, arranged and operating substantially as described.

2d. Actuating the traversing uprights of the planing machines for metal herein described from a revolving shaft or shafts attached to and moving with the uprights, substantially as described.

3d. The use of an endless belt in combination with fast and loose pulleys, or their equivalents, when applied to the planing machines herein described, substantially in the manner and for the purposes specified.

4th. Reversing the direction of the movement of the cutting tool by means substantially as described and for the object specified.

55,724.—TRUSS.—Jacob A. Sherman, New York City:

I claim, 1st, The curved pressure-spring, a, introduced between the bars, b and c, and carrying the truss-pad, as specified.

case, B, and forms the closed sides of the mill, substantially as described.

2d. Suspending the shoe, D, by a pivot, c, and providing it with springs, g, g, for equalizing its movements substantially as described.

3d. Providing the blast opening through the fan-case with adjustable slides, a, a, for regulating the force and direction of the blast, substantially as described.

4th. The combination of a fan-case, B, and a shoe, D, having side-boards applied to it, with an open supporting-frame, A, substantially as described.

55,726.—FEED-BAG.—Felix John Simeon, Brooklyn, N. Y.:

I claim, 1st, Constructing both the sides and bottom of a feed-bag of perforated metal or wire-cloth, substantially as and for the purpose set forth.

2d. The combination, with an open perforated feed-bag, of the springs, F, F, and strap, L, substantially as and for the purpose set forth.

55,727.—CATTLE-TIE.—Henry C. Small, Portland, Me.:

I claim the combinat on of the bows, d and c, the bow, d, having the ring, h, and hooks, f, f, on its ends, the bow, c, the two hooks, K, K, and spring, S, all constructed, arranged, and operating as set forth.

55,728.—HEATING-STOVE.—Samuel Smith, Philadelphia, Pa.:

I claim, 1st, The ring, B, secured to the cylinder, D, constructed and adapted for attachment to the base or cap plate of a stove, substantially as described.

2d. The combination with the above of the base plate, A, with its openings, x, arranged as set forth for the purpose specified.

55,729.—SPITTOON FOR CARS.—Willison G. Smith, Carlisle, Pa. Ante-dated May 26, 1866:

I claim, 1st, An improved self-cleaning spittoon, formed by combining the box or cup, B, the cover, H, the arm, G, and sliding bottom, D, with each other, the parts being constructed and arranged substantially as herein described and for the purpose set forth.

2d. The combination of the spring, F, with the lower part of the spittoon and the sliding bottom, D, substantially as described and for the purpose set forth.

55,730.—MEDICAL COMPOSITION.—Thos. W. Speissegger, Charleston, S. C.:

I claim a medical compound composed of the ingredients herein specified, and in about the proportions named.

55,731.—VALVE-GEAR FOR STEAM-ENGINES.—Edwin Sprague, Alleghany City, Pa.:

I claim, 1st, The hinged lifters, n, said lifters being operated by means of triggers, r, and inclines, l, or their equivalents, and one cam-rod made in one or more parts, said lifters, triggers, inclines, and cam-rod being dependent for their action upon the cam, l2, and adjustable point, l7, substantially as herein described and set forth.

2d. The adjustable point, l7, when used in combination with a cam and cam-yoke and a single cam-rod for working a full stroke, and used for operating the cut-off gear of steam-engines, as herein described and set forth.

3d. The inclines, l, on plate, y, said plate and inclines being operated by lever, o, through the medium of a governor or otherwise, substantially as herein described and for the purpose set forth.

55,732.—INDICATOR FOR STEAM-GENERATORS.—Joseph H. Springer and William M. Bartram, Philadelphia, Pa.:

We claim, 1st, A cup, I, open at the top and suspended within a steam-generator, or in a tube communicating with the said generator, in combination with devices constructed and arranged substantially as herein described, whereby the said cup is caused to discharge a volume of steam when the water becomes low, as set forth.

2d. The combination of the tube, A, its cup, I, steam-whistle, J, spring-valve, G, and lever, H, the whole being arranged substantially as and for the purpose described.

3d. The combination with the above of the glass tube, F.

55,733.—PESNARY.—Israel Stealy Crestline, Ohio:

I claim the application of a rubber globe under the womb, to be filled with air after inserting the same, in order that it may press upward against the womb to prevent falling, weakness, and pain, thereby give ease, comfort, and strength to the suffering patient.

55,734.—KNITTING-MACHINE.—Alden B. Stillings, Springfield, Mass.:

I claim, 1st, Constructing the crank in such a manner as to obtain a varying or adjustable thrust, substantially as described and for the purpose set forth.

2d. The use of the shaft, E, E', having screw-threads cut upon them as described, in combination with the cam-stops, when arranged and operating substantially as set forth.

3d. Imparting to the four cam-stops the same relative motion by means of the chain-carriers and endless chain, or by any equivalent means, substantially as described.

4th. The combination of a crank constructed as set forth, with the mechanism described for adjusting the position of the cam-stops, substantially as set forth.

55,735.—DEVICE FOR UPSETTING TIRES.—Alonzo Stow, Calais, Vt.:

I claim a tire upsetting-machine, with self-adjusting jaws or holders, and operated by an eccentric or cam-lever, substantially as set forth.

55,736.—RAILROAD SWITCH.—Wm. J. Stowell, Baltimore, Md.:

I claim, 1st, The construction of the movable guard, E, with a pin and a spring, in combination with the swelled head, c, of this guard, and the two rail sections, A, D, arranged to operate substantially as described.

2d. The combination of the rail section, D, which is constructed with an enlarged head, c, and inclined plane, c', with the guard, C, and the web or bridge, a, substantially as described.

3d. The movable switch-rails, D, E, when constructed substantially as described, and combined with stationary guid-rails on the opposite side of the track, substantially in the manner and for the purposes specified.

55,737.—BEVERAGE.—Christopher Sussegger, New York City:

I claim, 1st, The "American Sherbet" as a new article of manufacture.

2d. The manufacture of a beverage by a process substantially as herein-before set forth and described.

3d. The combination of water, sugar, tartaric acid, yeast, linden blossoms, audrose leaves or their equivalents, for the production of a beverage or Sherbet," substantially as herein-before set forth and described.

55,738.—SAWING MACHINE.—Zurriel Swope, Lancaster, Pa.:

I claim operating a reciprocating saw by means of a treadle and the devices connected thereto, when they are constructed and arranged to operate in the manner and for the purposes substantially as specified.

55,739.—SCREW-WRENCH.—George C. Taft, assignor to F. H. Dodge, Worcester, Mass.:

I claim, 1st, The combination with nut, E, having a flange, e, of the jaw, D, and its stirrup, f, substantially as set forth.

2d. The combination with the front of nut, E, of the shoulder, c, on jaw, D, as and for the purposes set forth.

3d. Beveling off the front of flange, e, in combination with

beveling off the rear of stirrup, f, as seen at 3 in the accompanying drawings.

55,740.—MANUFACTURE OF FLEXIBLE TUBING.—Wm. B. S. Taylor, New York City:

I claim as my invention and improvement in flexible tubing for illuminating gas, the combination in a flexible gas-tube of a layer or layers of animal membrane coated with glue or other suitable gelatinous cement, substantially as described, and for the purpose of resisting the penetrative action of the gas and its fluids.

55,741.—APPARATUS FOR CARBURETING AIR.—John B. Terry, Arburdale, Mass.:

I claim the improved air-forcing apparatus, made substantially as described, viz., not only of the two wheels, A, B, having their buckets arranged as explained, but of the case, E, provided with the chambers, I, K, L, the connecting tube, H, and the induction passage, G, as set forth.

55,742.—GRAIN DRILL.—J. H. Thomas and P. P. Mast, Springfield, Ohio:

We claim, 1st, The hopper, A, attached to the central or stationary bar, B, in combination with the adjustable bar, E, substantially as shown and described.

2d. The adjustable tubes, I and J, arranged to operate in combination with the stationary hopper, and adjustable bars, substantially as and for the purpose set forth.

3d. The slide, L, when arranged to operate in combination with the rod, F, and hopper, A, as herein described.

4th. The agitators, G, having a to-and-fro movement over the openings of the hopper, A, as shown and described.

5th. We claim the tube, I, having its upper end enlarged, and so connected to the hopper, A, as to cover the opening therein, and receive the seed therefrom, at all adjustments of which the bars, E, are capable.

6th. Fixing the tube, I, to the hopper, A, and the tube, J, to the bar, E, and having the tubes, I and J, arranged to slide upon each other, substantially as shown and described.

55,743.—REVOLVING FIRE-ARM.—Wm. Tibbals, South Coventry, Conn.:

I claim constructing the chamber of fire-arms with the groove or slot in its side, for the reception of the pin-cartridge, substantially as herein shown and described.

55,744.—CLOTHES POLE.—Francis W. Tilton, New Bedford, Mass.:

I claim a clothes-pole having one of its ends provided with a double hook B constructed substantially as shown and described.

55,745.—LAMP WICK.—Cyrus L. Topliff, New York City:

I claim the application to a lamp wick of a solution of gum and alum, for the purpose described.

55,746.—APPARATUS FOR COOLING AND CONDENSING BEER, ALCOHOL, ETC.—John Trageser, New York City:

I claim the mode herein described of constructing volute condensers or coolers by the introduction of a strip of metal between the edges of the sheet-metal divisions and soldered together in the manner specified.

55,747.—COIL FOR BREWERS' BOILERS.—J. Trageser and J. G. Schreiber, New York City:

We claim the steam-pipe, b, and condensation pipe, c, provided with the couplings, e, e, and g, g, in combination with the coils, f, f, substantially as and for the purposes set forth.

55,748.—CLAY AND PEAT PRESS.—B. Van Vranken, Schenectady, N. Y.:

1st. In a machine for molding clay and peat, employing a vertical pug-mill, or mixing-box, B, and a press-box, D, I claim the adjustable pusher, E', applied to a table, F, for moving the mold-box from the rear to the front end of said table, substantially as described.

2d. The combination with an upright pug-mill, B, press-box, D, and a table, E, I claim the rack-bars, G, G, oscillating sectors, H, H, and a pitman-rod, J, connecting with the main-shaft, C, substantially as described.

55,749.—LATHE-REST FOR TURNING BALLS.—William T. Vose, Newton, Mass.:

I claim the arrangement of the adjustable base, A, revolving-cap, B, with the hinged-stock, H, set-screw, F, cutter, F, and handle, K, substantially in the manner and for the purpose set forth.

55,750.—WATCH.—Arthur Wadsworth, Newark, N. J.:

I claim, 1st, The combination of the gear-wheels, O and Q, respectively hung to arms, T and T2, with the pendant spindle, H, main-spring axis, M, and arbor, N, of a watch-movement, when arranged together so as to operate substantially as and for the purpose described.

2d. The combination of the spindle, H, and pusher-sleeve, F, arranged together substantially in the manner described and for the purpose specified.

55,751.—STOVE DAMPER.—George W. Walker, Boston, Mass.:

I claim in combination with a foraminous plate or gauze, through which air is admitted at the front of the stove, for the support of combustion, a provision for regulating or shutting off the admission of such air, substantially as set forth.

55,752.—BREECH-LOADING FIRE-ARM.—H. F. Wheeler, Boston, Mass.:

I claim, in combination with the breech-block and single hammer, the two breech-loading barrels of varied caliber when so hung upon the breech-pin as to permit either barrel at will to be brought into position with respect to the hammer, for firing, and to be slid longitudinally on said pin for expulsion of the cartridge-shell and insertion of a cartridge, substantially as set forth.

55,753.—BUTTON-HOLE FOR PAPER COLLARS.—Nathaniel T. Whiting, Lawrence, Mass.:

I claim the lateral slots, c, or cuts, d, d, combined with the button-holes, A, substantially as and for the purpose specified.

55,754.—BURGLAR ALARM.—Horace Wickham, Jr., Chicago, Ill.:

I claim the operating of the clock-alarm by means of the arm, H, support, U, standard, I', and screw, I, when constructed substantially as set forth and operated as described.

55,755.—NAIL-PLATE FEEDERS.—James L. Wiggin, South New Market, N. H., assignor to John W. Hoard, Bristol, R. I., and George B. Wiggin, South New Market, N. H.:

I claim, 1st, Combining in a movable frame with a nail-plate feed-bar the wheels and other means of transmission whereby the rotary and vibratory up-and-down and back-and-forth motions are directly imparted to the feed-bar, the whole being constructed and arranged for operation substantially as herein shown and set forth.

2d. The sleeve for holding the feed-bar in the movable frame, as described, in combination with gear-wheels, one of which is mounted on said sleeve under the arrangement herein shown and described, whereby an intermittent rotary movement is imparted to the feed-bar.

3d. In combination with the sleeve for holding the feedbar as described, I claim the spring spline in combination with a slot or groove in said bar, substantially as set forth.

4th. Pressing the feed-bar against the gauge-plate of a cutting-apparatus by spring-power, mechanism, or the equivalent thereof, when applied through the intermediary of an arm mounted on a sleeve capable of rotating and sliding movement on a rod parallel to the feed-bar, substantially as herein shown and described, as

that the feed-bar may be instantly disengaged at the pleasure of the operator.

5th, Effecting the movements of rotation, lifting up and drawing back of the feed-bar in the manner herein described, the various devices for this purpose used being actuated by a single disk provided with cams and pins, as herein shown and set forth.

6th, In combination with the movable frame which carries the feed-bar and the intermediate support, I claim the disk provided with cams, whereby the movable frame is actuated to cause the feed-bar to be lifted between each stroke of the cutting apparatus, as set forth.

7th, Pivoting the dogs or jaws for grasping and drawing back the feed-bar, as described, to a slide secured in the top of the vibratory frame, and constructed and arranged as set forth.

8th, In combination with the dogs or jaws pivoted to a slide in the top of the movable frame, I claim the vibrating yoke hinged or pivoted to the stationary frame, and actuated by the lever as described, to cause the alternate opening and closing and drawing back of the dogs or jaws, as and for the purposes herein shown and set forth.

55,756.—GLOBE-COCK.—Joseph Worcester, Newport, Ky. : I claim the valve, C, adapted to rotate in the manner substantially as described, on the stem, G, and provided with a rigid stem, D, operated from the outside, in the manner and for the purposes specified.

55,757.—FASTENING VENTILATORS.—Max Zabel, Milwaukee, Wis. : I claim the springs, e, e, e, securing the ventilator in place, when arranged and applied as shown and set forth.

55,758.—HARVESTER.—William Zimmerman, Oska-loosa, Iowa : I claim the combination of the door, B, screw-rod, b, counter-pole, c, spring catch, E, cord, d, h, f, rake, D, and pivoted arm, g, arranged relatively to each other and with the endless carrying apron-roller, a, and operating in the manner and for the purpose herein specified.

55,759.—TOBACCO PRESS.—James W. Barber, assignor to himself and Elisha P. Strout, Cincinnati, Ohio : 1st, In the described combination with a reciprocating plunger, I claim the bottomless pressing-box or trunk, substantially as set forth.

2d, In combination with the elements of the clause next preceding, I claim the bands, H, and set-screws, I, or their equivalent.

3d, The arrangement of two or more shiftable pressing trunks adapted to be brought alternately or successively in connection with a single plunger.

55,760.—SAUSAGE STUFFER.—Purnort Bradford, assignor to Sargent & Co., New Haven, Conn. : I claim the combination and arrangement of the outer case of the form described, constructed in two parts, A and B, hinged together as specified, having a hopper, H, on the one part, and an outlet, I, on the other part, with the cylinder, E, and piston, F, constructed and arranged to operate substantially in the manner and for the purpose herein set forth.

55,761.—PACKING PROJECTILES FOR RIFLED ORD-NANCE.—Lewis Wells Broadwell, New Orleans, La., assignor to C. M. Clay, Kentucky : I claim the described method of wrapping the projectile by belts of cord which occupy detached annular recesses around the ball.

I also claim the application of the said fibrous covering of pulverized graphite or plumbago to serve as a partial protection to the fiber, as and for the purpose described.

55,762.—BRECH-LOADING ORDNANCE.—Lewis Wells Broadwell, New Orleans, La., assignor to C. M. Clay, Kentucky : I claim, 1st, The permanently located, self-acting, conical or curved gas-ring in combination with a wedge-shaped breech-block, which moves in a line at right angles to the axis of the gun to secure the gas-ring in position.

2d, The combination of a conical or curved gas-ring, as described, with an adjustable bearing-plate, D, in the face of the wedge-shaped breech-block.

3d, In combination with the adjustable bearing-plate, D, I claim an intervening softer material or cushion inserted between the block and the bearing-plate, for the purpose described.

55,763.—HARVESTER.—Francis C. Coppage, assignor to himself and Wm. Coppage, Terre Haute, Ind. : I claim, 1st, The jointed lever, e, g, adjustable vertically at the end by means of the slot, set screw, and pivot, k', k', and as to working length by the sleeve and set screw, t, t', substantially as described.

2d, The jointed connecting-rod, s, 9, 10, in its relation to the winding device at the inner and outer ends of the platform, substantially as and for the purpose described.

3d, The arrangement of the sliding-frame, S, guides, T, T', leg, H, counter-wheel, Q, shoe, P, in combination with the jointed shaft, s, arranged and operated in the manner and for the purpose set forth.

55,764.—BRUSH.—Alanson C. Estabrook, Florence, Mass., assignor to J. S. Parsons, of the same place, and Geo. A. Scott, Lausburg, N. Y. : I claim as a new article of manufacture the brush constructed and arranged as herein described, that is to say, a brush in which the bristles inserted through a perforated plate are imbedded and held firmly in a cement of any suitable substance as described, which cement shall at the same time, in combination with a strip of metal or other material, form the back and handle of the brush, as herein shown and set forth.

55,765.—HAY KNIFE.—Francis J. Fischer, Hamilton, Ohio, assignor to himself and John B. Berning, Cincinnati, Ohio : I claim the hay knife constructed as described, with a shank, A, diverging blades, B, B', and a short middle blade, C, the whole adapted to cutting hay from the stack, substantially as described.

55,766.—WHIRLING-JACK FOR TOYS.—F. W. Flagg, assignor to himself and E. B. Manning, Middle-town, Conn. : I claim the combination of the spring, D, with the barrel and spindle of a whirling-jack, when constructed and arranged to operate in the manner herein described, so as to rewind the cord, as specified.

55,767.—CAPPING WOOD-SCREWS.—John Gardner, assignor to Chas. T. Grilley, New Haven, Conn. : In the manufacture of capped screws, I claim for operation upon screws for this purpose especially provided with a notch in their shanks, the patching apparatus and spring-catch or equivalent mechanism, as described, so that the screw, when capped, may be adjusted in its proper relation to and its cap nicked by the punch, substantially as and for the purposes herein set forth.

55,768.—HOOP-SKIRT.—Thomas S. Gilbert, assignor to himself and Perkins, Cooke & Co., New Haven, Conn. : I claim inclosing a cord upon the wire substantially in the manner described, so that the hoop and tape may be screwed as and for the purpose specified.

55,769.—BROOM-HEAD.—George W. Golay, assignor to himself and Eli T. Ogle, Vevay, Ind. : I claim, 1st, The hinged clamp, B, composed of parts, B', B'',

loop, D, and pawl, E, constructed and operating substantially as and for the purpose specified.

2d, In combination with the above, I claim the sliding-clamp, C, composed of parts, C', C'', and link, c, as set forth and for the purpose specified.

55,770.—PADDLE-WHEEL.—William H. Holland, assignor to himself and William Goodman, Boston, Mass. : I claim the arrangement and combination of the series of auxiliary floats, D, D, with the wheels, A, A, and the series of main floats, C, C, C, formed and arranged substantially as described.

55,771.—LAMP.—David Howarth, assignor to himself and W. N. Gourley and S. C. Rundlett, Portland, Me. : I claim inserting into a lamp, constructed of any opaque substance, a transparent ring, of the form, in the place, and in manner, and for the purpose substantially as set forth.

55,772.—OPERATING HAMMERS AND STAMPS.—Christopher R. James, assignor to himself and N. W. Condict, Jr., Jersey City, N. J. : I claim operating a stamp or hammer by means of a piston working in a cylinder, the upper end of which is opened at proper intervals to a steam-blower and to the atmosphere alternately, and the lower end of which is in constant communication with a reservoir of compressed air, substantially as herein specified.

And, in combination with two stamps or hammers so operated by pistons working in separate cylinders, I claim a valve and passages so opened as to bring each cylinder alternately in communication with the boiler, and so produce the action of the pistons and their attached hammers, substantially as herein specified.

55,773.—PROPELLER FOR STEAMSHIP.—Charles Kinkel and Martin Hubbe, New York City, assignor to Charles Wehle, Hoboken, N. J. : We claim, 1st, The combination of a number of nozzle-pipes, with the hull of the vessel, when each one of said pipes is connected with a pump and engine, substantially as described.

2d, The mechanism for connecting and turning the nozzle-pipes, substantially as described and for the purpose set forth.

55,774.—REGISTERING APPARATUS FOR PRINTING PRESSES.—James Kirk, Dover, Del., assignor to R. Hoe & Co., New York City : I claim a feed-board for printing presses composed of two parts, connected by a joint, one part being fixed and the other part movable so as to adjust the joint in connection with a fixed or stationary pin or point connected with the fixed part of the feed-board, and a plunger point connected with the movable part of the same, all arranged to operate in the manner substantially as and for the purposes set forth.

55,775.—INSTRUMENT FOR IMITATING THE SKIN.—Friedrich Klee assignor to Louis Klee, Williamsburg, N. Y. : I claim the arrangement of the screw, f, piston, d, spring, a, nut, g, and handle, e, applied relatively to the cylinder, A, combined and operating in the manner and for the purpose herein specified.

2d, The diaphragm, h, in combination with the cylinder, A, and pricks, b, constructed and operating substantially as and for the purpose set forth.

55,776.—TREE PROTECTOR.—William and David McCaine, assignors to themselves and Daniel McCaine, Groton, Mass. : We claim as our improvement in the tree-protector, the arrangement of its plates of glass so that each two which are next to each other shall meet at an angle with each other in a vertical direction at their junction.

We also claim the arrangement of two of such glass plates in a groove or rebate, and so as to meet together and make angles with each other in a vertical direction.

We also claim the arrangement and combination of the passage, h, and its holes, k, k, in the top-plates of glass, c, c, d, d, arranged as specified.

55,777.—METHOD OF BURNING GAS.—John C. McNulty, assignor to himself and Thomas Lee, San Francisco, Cal. : I claim the burning of jets of inflammable gas in combination with clinkers, substantially as described.

55,778.—APPARATUS FOR CARBURETING AIR, GAS, ETC.—A. C. Messenger, assignor to himself and A. T. Smith, Syracuse, N. Y. : 1st, In an apparatus for carbureting gas for illuminating purposes, I claim the use of double perforated walls, d, d, having a suitable capillary substance connected between them, said walls being so arranged as to form a porous division through which the gas is to pass.

2d, The forming of two apartments in a vessel, A, by means of an upright double wall partition, which is rendered sufficiently porous to allow of the absorption of the fluid in said vessel, and the passage of gas through it, substantially as described.

3d, Subdividing the chamber, C, by means of a partition which is applied on one side of the induction passage, a, for the purpose and in the manner substantially as described.

55,779.—OPERATING BEATER OR POWER-PRESS.—Charles Nelson, assignor to himself, James W. Taylor, Wm. R. Brown, and Fred. W. Banks, Newburg, N. Y. : I claim, 1st, Automatically throwing the clutch, d', out of gear from the wheel, d, by the descent of the follower during the operation of pressing, for the purpose of preventing said follower from descending too far, substantially as described.

2d, The combination of the follower, e, rope, g, drum, r, screws, h, h', shaft, b, and a continuously revolving shaft, e, all arranged and operating substantially as described.

3d, The combination of the loose wheels, a, d, and clutches, a', d', with the shaft, e, and the two wheels, b, c, on the reversible shaft, h', substantially as described.

4th, So constructing a balling-press that a rapid vertical movement can be communicated to the follower, or the follower brought down upon the pile or compressed mass with a dead pressure from a main driving-shaft which has a continuous movement in one direction, substantially as described.

55,780.—HARVESTER.—Daniel G. Norris, assignor to himself, John H. Paddock, and Rufus S. Merrill, St. Johnsbury, Vt. : 1st, In mowing machines constructed and operating substantially as herein described, I claim the combination with the recessed sliding-bar provided with friction rollers, as herein before described, of the cam-wheel on the pinion-shaft, said sliding-bar communicating its movement to the cutter-bar through the medium of a connecting rod or plunger hinged to the sliding-bar, as set forth, the whole being arranged and operating substantially as shown and described.

2d, In combination with the recessed sliding-bar, as described, I claim the pinion-shaft revolving in bearing on the cutter-frame, when arranged relatively to the driving pinions, as set forth, and having the cam-wheel located within and the self-adjusting clutches without the cutter-frame upon the said shaft, as and for the purposes herein shown and described.

3d, In mowing machines, arranged and operating as described, I claim attaching the whistle-truss directly to the metal cutter-frame and shafts to the wooden frame, as and for the purposes herein described.

55,781.—HARVESTER.—David M. Osborne, assignor to himself and Wm. A. Kirby, Auburn, N. Y. : I claim connecting the pitman of a harvesting machine to the

head of the cutter-bar or cutters, or connecting bars to their supports by means of a single pin, and retaining said pin in place by means of a self-adjusting, perforated spring, substantially as above described.

55,782.—HYDRANT.—Agur Pixley and John Robertson, assignors to Robertson, Dow & Company, Brooklyn, N. Y. : We claim the ring, I, formed with a hole or opening, n, and arranged upon the hollow valve-stem, D, with reference to the hole or opening, r, thereof, in combination with the valve-seat, D, and valve-box, C, substantially as herein set forth for the purpose specified.

55,783.—MACHINERY FOR FINISHING COFFIN NAIL AND SCREW-HEADS.—Augustus A. Randall, assignor to Sargent & Co., New Haven, Conn. : I claim, 1st, The combination of the spindles, F and I, fingers, N, and channel E, constructed and arranged to operate substantially in the manner and for the purpose specified.

2d, In combination with the above, I claim the cutter, b, mill, f, and a burinisher, substantially as and for the purpose specified.

55,784.—STOP-COCK.—Francis Roach, assignor to himself and Joseph Zane, Boston, Mass. : I claim the arrangement and combination of the socket, e, the guide, h, the valve, A, the spring, b, the valve-seat, i, the induction chamber, E, the eduction chamber, F, the pivot, a, the key, G, the neck, H, the screws, f, g, and the induction and eduction passages or pipes, l, m, the whole being as specified.

55,785.—STEAM GENERATOR.—M. M. Rounds, New Haven, Conn., assignor to himself and William Zellner, New York City, and J. E. Jerold, Jersey City, N. J. : I claim the tubes, d, arranged in the crown-sheet, C, so as to open into the fire-box, substantially as and for the purpose specified.

55,786.—SABOT.—F. W. Schroeder, assignor to himself and W. H. Hoskins, Philadelphia, Pa. : I claim, 1st, The sabot composed of the sole-piece, A, and heel-piece, B, connected together by a metal strip, D, bent to conform, or nearly to conform, to the shape of the sole and heel of a boot or shoe, and having a shoulder, a, and turned-up end, b, all as substantially as described.

2d, The combination of the strip, D, and its hooked end, e, with the transverse strip, E, and its hooked ends and sole-piece, A.

3d, The transverse strip, F, having hooked ends, and being arranged to slide on the strip, D, as set forth for the purpose specified.

55,787.—COTTON GIN.—Charles Spofford and C. H. Hersey, assignors to themselves, W. E. Hawes, and Francis C. Hersey, Boston, Mass. : We claim the employment of the triangular-shaped bar, K, in combination with the rolls, G, H, and combs, N, operating substantially as and for the purpose set forth.

We also claim the triangular-shaped bar, K, with its projecting ledge, l, substantially as and for the purpose described.

55,788.—SMUT MACHINE.—R. C. Swann, assignor to himself, John L. Riter, and T. Jefferson West, Brownsville, Ind. : I claim the reciprocating perforated bed or screen, A, in combination with the pressure-rollers, B, having a rough periphery, and their journals fitted in springs, C, all arranged to operate in the manner substantially as and for the purpose set forth.

55,789.—RIGGING STOPPER.—Henry Thompson, assignor to himself, D. C. and C. H. Haskell, Rockland, Maine : I claim a rigging-stopper made and for use substantially as herein before described, that is to say, of the toothed sectional lever, the rack, and the movable supporting-arm, and the two jawed levers, arranged and applied together in manner and so as to operate as explained.

55,790.—SWAGING MACHINE.—James H. Tobey, assignor to himself and Alfred E. Tenney, Cranston, R. I. : I claim the duplex plunger, composed of two independent plungers, D and E, having coincident axes operating relatively to each other, as described, in combination with the die, C, constructed and arranged substantially as and for the purpose specified.

55,791.—MILK-CAN.—Isaac F. Van Duzer, assignor to himself and R. M. Sayer, Middletown, N. Y. : I claim, 1st, The manner herein set forth of attaching the breast to the body of the can, viz., by having the breast-piece confined between the body and hoop, as and for the purposes described.

2d, The manner of constructing the bottom part of the can, of the two hoops, and body and bottom, as herein recited.

3d, The manner of securing the body-piece and the hoops together, by first riveting them and then dipping them in the melted solder, as set forth.

55,792.—GRINDING MILL.—Jules Aubin, Paris, France : I claim constructing mill-stones with metal boxes or compartments let into the stone, and covered with metallic or other cloth, substantially in the manner and for the purposes herein before described.

55,793.—ARTIFICIAL EYE.—Auguste Boissonneau, Paris, France : I claim the shaping or forming artificial eyes in enamel, with a hollow, c, in the lower internal section, so that the lower section is symmetrical to the upper one, for the purpose, as herein before set forth, of using the said eyes on either side, as substantially described.

55,794.—MACHINE FOR MAKING HINGES.—Jean Baptiste Errard and Jean Pierre Boyer, Paris, France : We claim, 1st, The arrangement of the spring-dogs, b, reciprocating carriage, c, in combination with the slotted rod, e, with its cam-slot, d, the lever, e', dovetailed strips, h, operating in the manner and for the purpose herein specified.

2d, The punches, l, and knives, r, in combination with the cams, n, levers, o, and with the guide grooves through which the blanks are fed, constructed and arranged substantially as and for the purpose set forth.

3d, The bending tools, s, and grooves, a', in combination with cams, v, and levers, w, constructed, arranged, and operating substantially as and for the purpose described.

4th, The arrangement of the dog, l, cam, l', lever, m', constructed and operating in the manner and for the purpose specified.

5th, The operating lamp, a, b, in combination with the cam, d, and lever, e, substantially as and for the purpose set forth.

6th, The adjustable guide-tube, i, arranged in combination with the mechanism for feeding in and bending the plates and feeding the wire, substantially as and for the purpose specified.

7th, The counter-shafts, o', e', applied in combination with the mechanism for feeding in, bending, and cutting-off the plates, substantially as and for the purpose set forth.

55,795.—GUNPOWDER.—Louis H. G. Ehrhardt, Bayswater, England : I claim the combination of mineral carbon with pitch, tannin, or gambler, substantially as herein described, to form a safety powder which may be rendered explosive at will by the addition of chlorate and nitrate of potash, in the proportions substantially as herein set forth.

I also claim the combination of tannin, or its equivalent, with

mineral carbon, chlorate of potash, and nitrate of potash, substantially in the manner and for the purpose herein set forth.

55,796.—PROJECTILE.—Samuel H. Haycock, Ottawa, C. W. :

I claim an elongated pointed projectile with a cylindrical portion to fit the lands of the bore, and a conical rear, the center of gravity being in advance of the cylindrical portion.

55,797.—PHOTOMETER.—S. G. Elliott, San Francisco, Cal. :

I claim the combination of the tube, A, with the sliding, graduating tube, B, reflector, F, and rod, E, when said tubes, reflector, and rod are constructed in the manner and for the purpose as substantially described.

RE-ISSUES.

2,288.—MACHINE FOR PRESSING BONNETS, BONNET-FRAMES, ETC.—W. E. Doubleday, Brooklyn, N. Y., and J. Stewart, New York City, assignees by mesne assignments of Wm. Osborn. Patented August 19, 1856; re-issued Feb. 17, 1857; again re-issued March 27, 1860:

We claim a pair of dies fitted to press the whole of a bonnet-frame, or similar article to be worn upon the head, at one operation substantially as specified, whether said bonnet-frame or similar article is formed of one or several pieces, and irrespective of the particular size or shape.

2,289.—EGG-PAN AND CAKE-BAKER.—The Russel & Erwin Manufacturing Company, New Britain, Conn., assignees of Nathaniel Waterman. Patented April 5, 1859:

We claim, as a new or improved article of manufacture, the baking-pan or arrangement of cups and a handle at each end of the series, all connected together and cast or founded in one united piece of metal, with heat-passages between the cups, and longitudinal, transverse, or circuitous channels on the underside of the same, substantially as herein-before described and set forth.

2,290.—MACHINE FOR GRINDING SAWS.—Emanuel Andrews, Williamsport, Pa. Patented Dec. 16, 1856:

I claim, 1st, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, roller bearing, and spring, substantially as set forth.

2d, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, bearing for the article, and turning-frame for the grinder, substantially as set forth.

3d, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, traversing carriage for the same, bearing for the article, and mechanism to move the grinder along the surface of the article with varying speed, substantially as set forth.

4th, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, bearing for the article, and pattern-holder, of varying thickness at different parts of its length, substantially as set forth.

5th, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, bearing for the article, and pattern-holder, of varying thickness both lengthwise and crosswise, substantially as set forth.

6th, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, bearing for the article, and pattern-holder, whose thickness at different parts of its length can be varied by adjustment, substantially as set forth.

7th, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, bearing for the article, and the pattern-holder, whose thickness at different parts of its length and breadth can be varied by adjustment, substantially as set forth.

8th, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, bearing for the article, pattern-holder, and spring to maintain a yielding pressure on the article during grinding, substantially as set forth.

9th, The combination in a grinding machine of the following instrumentalities, viz., the revolving grinder, bearing for the article, pattern-holder, spring to maintain a yielding pressure on the article during grinding, and mechanism to move the said pattern-holder past the grinder, substantially as set forth.

2,291.—COOKING STOVE.—Daniel E. Paris, Troy, N. Y., assignee by mesne assignments of Samuel B. Spaulding, Brandon Vt. Letters-Patent No. 20,668 dated June 22, 1855; additional improvement May 17, 1859:

I claim, 1st, The extending of one or more of the flues of a square-shaped or diving-flue cooking stove, so as to conduct the heat and products of combustion under the bottom of a reservoir or water-tank and against it before the same passes into the exit-pipe, when the said reservoir is placed wholly or partly below the top of the stove, and in rear of the back flue or flues thereof, substantially as herein described and set forth.

2d, A return-flue constructed that the heat will be conducted under the bottom of a reservoir or water-tank, and thence back to the exit-flue or pipe, and when the whole or a part of the reservoir is placed below the surface of the stove, and in rear of the back flue or flues thereof, substantially as herein described and set forth.

3d, The damper, F, so arranged and operated as to throw the heat and products of combustion under the reservoir, E, and against it, or by a proper adjustment or change of position thereof to allow the same to pass directly into the exit-flue, I, substantially as herein described and set forth.

4th, Constructing the flues which pass under the oven of a cooking stove in such a manner that the heat and products of combustion will pass under the hearth in front of the stove, substantially in the manner and for the purpose herein described and set forth.

5th, The hot-air chamber projecting out from and situated immediately in the rear end of the stove and back of the flue or flues connected therewith by means of an aperture or opening in and through the rear end and a vertical plate of the cooking stove, so as to permit or allow the heat or heated air, or escaping products of combustion to pass through the same into such chamber or its equivalent, and thereafter come in direct contact with the reservoir or water-tank, arranged for the purposes substantially as aforesaid.

6th, An open seat or outward projecting chamber which shall receive and contain said reservoir or water-tank, and formed on the back end of a cooking stove, so that such reservoir shall itself form the covering or a part of the outer casing of the rear flue or flues, and of the said hot-air chamber combined just below the same, in the manner substantially as herein described and set forth.

7th, The arrangement of an aperture, opening, or openings, constructed in and through the rear vertical end plate of the stove so that the heat, hot-air, or escaping products of combustion may be by the means thereof come in positive contact with the bottom or other exposed parts or portion of said reservoir or water-tank, and thereby heat or warm the water therein, substantially as herein described and set forth.

8th, The arrangement of a reservoir or water-tank, with the whole or in part thereof sustained or supported substantially as herein described and set forth, in combination with an aperture or opening or openings in and through the rear vertical end plate of said stove, for the purposes substantially as herein described and set forth.

9th, The arrangement of a hot-air or warming or drying chamber or closet directly underneath the bottom of the cooking stove, in combination with the hot-air or drying chamber or closet, X, of the horizontal flue or flues of the stove into such chamber or closet, in the manner and for the purpose substantially as herein described and set forth.

10th, The suspending and supporting of a cooking stove, without the use of the ordinary legs, upon the surrounding casing or box, C, which forms the hot-air or drying chamber or closet, between the seam and the floor, substantially as herein described and set forth.

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