



ISSUED FROM THE U. S. PATENT OFFICE  
FOR THE WEEK ENDING MAY 29, 1866.  
Reprinted Officially for the Scientific American

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**55,034.—Self-Lubricating Knitting Machine Burr.**—Charles Allardice, Cohoes, N. Y. Antedated March 29, 1866. I claim the shaft b, having its closed cup, b, in combination with the spindle, D, and its spiral groove, a, a, and the reservoir C, substantially as described, and for the purpose set forth in the above specification.

**55,035.—Horse Hay Fork.**—F. H. Arnold, Troy, Pa.: A horse hay fork frame by combining the bars, A and G, the lever, D, and the prongs or hooks, E and F, the parts being constructed and arranged substantially as described, and for the purpose set forth.

**55,036.—Machine for Cutting Cork.**—Andrew J. Bailey, Charlestown, Mass.: First, I claim the rotating knife, D, having its face in the form of an arc of a cylinder, and its edge parallel with its planes of rotation, when arranged in segments of a circle and operating in combination with the rotating mandrel, S, substantially as herein shown and described. Second, the centering feeder constructed with elastic or self-adjusting grippers, for the reception of blanks of varying size, applied and operating in relation to the rotating mandrel and opposite center, substantially as herein specified. Third, the compound carriage, K, M, having attached to it the mandrel which carries and produces the rotation of the cork in its rotation, and made adjustable relatively to the cutter wheel to vary the size and form of the cork, substantially as herein specified.

**55,037.—Water-Cooler and Purifier.**—J. M. Baird, Wheeling, West Va.: I claim a water cooler and purifier, formed by combining the tank, D, constructed and arranged as herein described, with the induction and discharging pipes, c and e, substantially as and for the purpose set forth.

**55,038.—Method of Collecting and Separating Carbonic Acid from Mixtures of Gases.**—James S. Baldwin, New York City: I claim separating, purifying, and transferring carbonic acid gas from waste gases, by means of water, or its equivalent liquid, substantially in the manner, for the purpose herein set forth. I also claim driving the pumps, or other machinery, by the waste gases evolved in this process, substantially as described.

**55,039.—Method of Preserving and Storing Carbonic Acid Gas.**—James S. Baldwin, New York City: I claim the combination of vessel, c, with vessel, e, or the equivalent thereof, arranged and prepared substantially in the manner and for the purposes herein set forth.

**55,040.—Method of Charging Water with Carbonic Acid.**—James S. Baldwin, New York City: I claim charging water, or other equivalent liquid, with carbonic acid, by inclosing said liquid with solid carbonic acid, in the same vessel, or series of vessels, substantially in the manner and for the purpose herein set forth.

**55,041.—Shoe.**—Achilles Ballard, Dublin, Ind.: I claim a shoe, the vamp, A, and quarter, B, of which are shaped and united substantially as set forth.

**55,042.—Machine for Bending Horse Shoes.**—Hazen J. Batchelder, Boston, Mass.: I claim the benders, H H, made and arranged in combination with the spring, i, in manner and so as to operate with the former, A, substantially as described. I also claim the combination and arrangement of the jaws, i, k, with the former, A, combined, and to operate with the spring bending levers, H, H, substantially in manner as described. I also claim the combination as well as arrangement of the dischargers, h, h, with the former, A, and the bending levers, H, H.

**55,043.—Pruning Shears.**—Adam Baumann, Philadelphia, Pa.: I claim the rod, D, and its special spring, h, combined with and adapted to the hooked portion and knife of pruning shears, substantially as and for the purpose herein set forth.

**55,044.—Stereoscope.**—Alexander Beckers, New York City: First, I claim a concave mirror or reflector, combined with the stereoscopic box and movable reflectors, b and c, substantially as and for the purposes set forth. Second, I claim the sheet metal clasp, i, attached to the wire frame of the picture holder, as and for the purpose set forth.

**55,045.—Horseshoe.**—Jacob Bchel and John M. Buell, Rockford, Ill.: First, we claim the curved clamp, F P, in combination with a shoe having recesses, E, and openings, A, with projections, B, and the nut, y, for securing and tightening the shoe, the parts being constructed and arranged for use, substantially in the manner and for the purpose set forth.

**55,046.—Means for Operating the Doffer Comb of Carding Engines.**—Anthony A. Bennett, Newark, Conn.: I claim the arrangement with the comb shaft, B, and its oscillating slot and arm, A, of the crank pulley, G, constructed as described, and its adjustable pin, D, in the manner and for the purpose set forth.

**55,047.—Lock.**—Wilson Bohannon, New York City: First, I claim the arrangement of the catch or hook of the keeper, C, below the plate, a, and in rear of the base of the socket into which it enters in combination with the arrangement of the bolt, c, of the lock, substantially as and for the purpose described. Second, the construction of the hooked keeper, C, with a beveled nose, in combination with the beveled nose of the self-locking bolt, c, substantially in the manner and for the purpose described.

**55,048.—Lock.**—Wilson Bohannon, New York City, and Frank G. Johnson, Brooklyn, N. Y.: First, we claim inclosing the grooved tumblers, g, together with their springs, h, h, within cells which are formed in the movable case, C, constructed substantially as described. Second, the construction of the coiled case, C, with a hooked bolt, c, a groove for receiving the guard plate, D, and a notch for receiving the nose of the hasp, B, substantially as described. Third, the movable cap, "g", in combination with the nose, c, constructed for receiving the tumblers, g, substantially as described. Fourth, the combination of the guard plate, D, and movable tumbler case, C, all constructed and arranged substantially as described. Fifth, the combination of the notched cylindrical case, C', g, with the hasp, B, the said parts being constructed and operating substantially as described and for the purpose set forth. Sixth, the means substantially as herein described and shown for throwing the hasp open when it is unlocked, in combination with

the tumbler, case, C, constructed and arranged substantially as described.

**Seventh,** the combination of the friction spring, S, with the movable tumbler case, G, for preventing this case from moving too freely when the hasp is unlocked, substantially as described.

**Eighth,** the construction of the tumblers with depressions in them for receiving and keeping in place, the springs, h, h, substantially as described.

**55,049.—Washing Machine.**—J. E. Briggs, West Randolph, Vt.: I claim the combination with the grooved board, B, of the perforated irregular pressing block, C, joint, G, and handle, D, when the parts are constructed and applied to a tub, A, in the manner and for the purpose specified.

**55,050.—Snap Hook.**—Charles B. Bristol, New Haven, Conn.: I claim as a new article of manufacture, the hook and loop part, A and B, cast on a plane in combination with the tongue, e, and spring, g, when the parts are constructed, attached, and fitted for use, substantially as herein described.

**55,051.—Portable Fence.**—Albert Brooker, Atlassa, Iowa: I claim a fence having posts, A B and D, with brace, C, and cross slats and rails as represented, all constructed combined and arranged substantially as herein specified.

**55,052.—Reversible Lock or Latch.**—Asa T. Brooks, New Britain, Conn.: First, I claim a latch hub made in two or more parts, acting conjointly with each other, substantially as and for the purpose described. Second, I claim the arrangement of the several parts in the manner substantially as described, by virtue of which the spring is made to act in the double capacity of actuating and holding the latch and slide respectively in place.

**Third,** I claim the combination of the latch bolts, b, spring, e, with or without the plate, d, slide, i, and two or more part hubs, substantially as and for the purpose described.

**55,053.—Apparatus for Lowering Ships' Boat.**—Samuel Brown and Leon Level, San Francisco, Cal.: We claim a breaking block for running out even lengths of two or more ropes having an extra set of sheaves, c, which are capable of being moved to and from the reel sheave and a striking lever, F, the different sets, a, c, or sheaves being secured rigidly to their pins, b, d, substantially in the manner and for the purpose set forth.

**55,054.—Lamp Chimney.**—V. W. Brown, Camden, N. J., and D. Frankish, Philadelphia, Pa.: We claim the chimney, A, having a portion at X, flattened or depressed, as and for the purpose described.

**55,055.—Method of Blasting.**—Nirum Cadwallader, Birchville, Cal.: I claim the use of compressed air in combination with all explosive substances, for the purpose of increasing the explosive force of said substance by the aid of a greater amount of oxygen, and assisted by the force of pressure, as well as by the expansion of the air from the heat generated by the explosion, said compressed air to be confined in a chamber with the explosive material, or when in a chamber or recess contiguous to it, to be let free at the time the explosion takes place, substantially as described and for the purpose set forth.

**55,056.—Machine for Punching Paper for Telegraphs.**—Edward A. Calahan, Brooklyn, N. Y.: I claim a type wheel, revolved by friction in combination with revolving stops and levers, and an apparatus, substantially as specified, for punching fillets of paper for composing telegraphic messages, as set forth. Second, I claim the stoppage bar, 39, escapement, 33, and ratchet wheel, in combination with the shafts, B' and G', as and for the purposes specified.

**55,057.—Sash Supporter.**—E. A. Campbell, William's Bridge, N. Y.: I claim use lever sash supporters, f and i, formed with their ends wide in the manner shown, so as to be fitted upon tulerium screws in recesses in the casing beneath the molding, as and for the purposes set forth.

**55,058.—Farm Gate.**—Jarvis Case, Springfield, Ohio: First, I claim so constructing and arranging the rests or supports, r, r, with shoulders, c, c, in combination with the notches, n, n, and post, A, that the gate may be readily placed on said rests or supports in a chamber with the rest and post, as set forth. Second, to close the gate or swing round it fully open it, or if so desired, may be taken off the rests or supports and removed from the posts, substantially as described. Second, I claim so constructing and arranging the rests or supports, r, r, and adjustable piece, D, with the gate and posts, that when closed the gate is firmly held in place, or may be partially opened and still retained in its proper position, resting a portion of its weight on each post, substantially as set forth.

**55,059.—Harvester Rake.**—William J. and Rhutson Case, Pittstown, N. J.: First, I claim the combination of a vibrating sweep rake, with a crane post rigidly secured to and turning upon the main frame by means of a system of levers forming a parallel rule joint, substantially in the manner described, for the purpose of enabling the rake to conform to the undulations of a binged platform without the use of a connection between the rake and platform, as set forth. Second, the combination with the rake, of the bevel gear, F, cam, f, tappet, o, rock shaft, Q, and arm, P, as described, for the purpose of raising and lowering the rake. Third, the combination of the rake and crane post by means of inclined arms, arranged and operating substantially as described, to enable the rake to strike close to the finger beam, as set forth. Fourth, the combination of the clutch lever, e, with the locking arm, e', when arranged and operating as described, for the purpose of simultaneously uncoupling the rake and locking its driving wheel. Fifth, the guide, R, to support the rake after discharging the hay. Sixth, the arrangement between the cranks, g, i, of the adjustable pitman, H, as described, for the purpose of varying the stroke of the rake, as set forth. Seventh, the combination of the levers, K M, with the rake arms by the socket joints, l, l, as set forth. Eighth, the combination of the rake head with a system of levers, substantially as described, for the purpose of locking the rake in a vertical position for transportation, as set forth. Ninth, the combination substantially in the manner described, of the binged platform with the self-locking automatic rake so located upon the main frame as to enable the finger beam to be folded up for transportation.

**55,060.—Harvester Rake.**—P. Charles Chipron, High Land, Ill.: I claim the combination of the teeth, a curved wire teeth, f, and the rake head, E, arranged and operating in the manner and for the purpose herein specified.

**55,061.—Fruit Basket.**—W. Clement, Charleston, Ill.: I claim a fruit box, constructed substantially as herein described.

**55,062.—Self-Tilting Bucket for Wells.**—Aaron J. Cook, North Branford, Conn.: I claim the combination and arrangement of the shaft, C, drums, D and E, and the bucket, G, suspended on cords or chains of an equal length, the whole being constructed and arranged, substantially as herein described and set forth.

**55,063.—Flour Packer.**—Isaac Cook, St. Louis, Mo.: I claim the use and combination of the packing tube, G, the connecting tunnel, B, and the feed spout, A, with such flour packers as use a packing device which in packing rises out of the tube, C, and when otherwise arranged as set forth.

**55,064.—Fastening for Garments.**—William P. Cook, New York City: I claim a fastening for garments and other articles, constructed and operating substantially as herein described.

**55,065.—Open Coal Grate.**—Clay Crawford, East Cleveland, Ohio: First, I claim the magazine, B, in combination with an ordinary open fire place, substantially as and for the purpose set forth. Second, in combination with the magazine, arranged in the open fire place as described, I claim the grate, D, having the bars inclined to throw the coal to the front, as shown and described.

**Third,** The air chamber, H, or its equivalent, arranged to operate in combination with the magazine, B, as set forth.

**Fourth,** The tube, E, arranged to operate in connection with the magazine, B, substantially as set forth.

**55,066.—Screw Wrench.**—John L. Christ, Harrisburg, Pa.: First, I claim the combination of A A', and B B', operating substantially in the manner described. Second, The slotted rotating ferrule, D, serving also as a lock for the sliding jaw, A, and operating in the manner shown and described.

**55,067.—Car Brake.**—John Davis, Alleghany City, Pa.: First, I claim applying brakes to wheels of railroad cars, so that said brakes become operative by the action and inaction of the locomotive and cars always operating with relation to the wheels, so that they will adjust themselves, and bring the proper force to bear on the wheels, when the locomotive becomes inoperative from any cause, or when any undue or improper action is imparted to the cars, said brakes being constructed and arranged substantially as herein described and set forth. Second, So arranging the cranks, O and O', on the spring shaft, 1, that it will require less power to hold the brakes off the wheels than is required to draw them off, as herein described and set forth. Third, the combination of the Pawl, m, and ratchet wheel, n, with the shaft, l, l', cranks O and O', and coil spring combined, arranged and operating substantially as herein described and for the purpose set forth. Fourth, the combination and arrangement of the coil spring, l, l', cranks, O O', rods, k k', levers 18 and 16, and shaft, x with the rods, l, l', and h' brake bars, e, and brake, d, the whole being constructed, combined, arranged and operating, substantially as herein described and for the purpose set forth.

**55,068.—Washing Machine.**—George M. Denison, New London, Conn.: I claim the elastic knobs, F, in combination with elastic ribs, G, on the surface of the rubber and bed, respectively, of a washing machine, substantially as herein set forth and for the purpose specified.

**55,069.—Plow.**—Liberty B. Dennett, Portland, Me.: I claim the standard, C, supported by the wing or brace, F, extending from the standards to the rear of the mold board, the standard, C, being so placed as to offer no resistance to the stubble or grass as it falls over the mold board into the central cavity of the plow.

**55,070.—Rock Drill.**—Julius C. Dickey, New York City: I claim the combination of the drill bits, A B and C, substantially as set forth.

**55,071.—Apparatus for Distilling.**—Silas R. Divine and Charles A. Seely, New York City: We claim the apparatus and its modification, substantially as herein described. We also claim the combination of the shell, A, with the pipe, B, and the gutter, C, substantially as described.

**55,072.—Rain Water Cut-off.**—L. W. Doty, Aurora, Ill.: I claim the gate, E, and spring, d, in combination with the partition, D, arranged relatively with the induction pipe, B, and education pipe, C C'.

**55,073.—Composition for Lining Barrels.**—Alpheus C. Dunn, New York City: I claim a composition substantially as herein described of gum copal, boiled linseed oil, and an aqueous solution of soda or potash, either with or without glue.

**55,074.—Construction of Finger Bar for Harvesters.**—Rutus Dutton, New York City: I claim forming the finger bars of harvesting machines from a metallic plate rolled or formed by suitable machinery, of sufficient width for two finger bars, and having the edges turned or rolled up, as described when such metallic piece or plate is made thinnest at its edge and increasing in thickness toward the center, substantially as and for the purpose set forth. Second, Making in the center of such metallic plate a recess or channel for the purpose of facilitating the dividing or cutting such plate, substantially as set forth. Third, Making the finger bar of harvesting machines wedge-shaped, or increasing in thickness from the front toward the back side, and rolling or turning up its thinnest edge, substantially as and for the purpose set forth. Fourth, The combination of the finger or finger bar, substantially as described, so that or by which the finger is braced and supported by the bar at the back end of the under side of the slot of the finger, substantially as and for the purposes set forth.

**55,075.—Lamp.**—Michael B. Dyott, Philadelphia, Pa.: I claim the air directing drip cup, E, constructed and arranged so to operate in combination with the bowl, G, D, and the shell A, B, of a lamp, substantially as and for the purpose described. I also claim the combination of the screen, F, with the said drip, E, and the opposite sides of the shell, A B, substantially as and for the purposes described.

**55,076.—Beer Pitcher.**—Winslow P. Eayrs, Nashua, N. H.: I claim the arrangement of the divisional plate, B, perforated plate, C C' D' D'', as described, mouth, u, b, in combination with the pitcher, A, constructed and operating in the manner and for the purpose herein specified.

**55,077.—Roller for Wringer Machines.**—S. M. Emerson, Seville, Ohio: First, I claim the hollow slotted cylinder, A, constructed as herein described in combination with the wedge, D, and with the rubber, C, substantially as and for the purpose set forth. Second, The combination of the central band, E, with the cylinder, A, wedge, D, and rubber, C, substantially as described and for the purpose set forth. Third, The combination of the washers or ferrules, F, constructed as described with the cylinder, A, substantially as and for the purpose set forth.

**55,078.—Numbering Stamps.**—David Emonnot, New York City: I claim the type-carrying wheels No. 6, the ratchet wheels, 7 and 9, the pawls, 10, 11, 12, and spring catch or trigger, 13, in combination with the guides, 17 and 19, and the spring mount d shaft, 15, operating together in the manner substantially as and for the purpose set forth.

**55,079.—Furnace.**—William Ennis, New York City: First, I claim, in a furnace having a downward draft, the introduction of the steam above the grate in such a manner that it may pass downward through the burning fuel and through the grate, substantially as and for the purpose herein set forth. Second, The tubular steam generating grate and the elevated steam chamber in combination with a chimney below the grate, substantially as and for the purpose herein set forth.

**55,080.—Steering and Turning Apparatus for Vessels.**—Caleb G. Forshey, Washington County, Texas: First, I claim the application of a rotary steering apparatus to a portable frame, C, which is so constructed that it can be readily applied to or removed from the side of a vessel at pleasure, substantially as described. Second, The construction of the supporting frame, C, so that it shall be self-holding when applied to the side of a vessel, substantially as described.

**55,081.—Steam Trap.**—William Fuzzard, Chelsea, Mass.: I claim the buoyant stopper, C, in combination with the exhaust chamber, A, and a suitable seat, B, in said chamber, substantially as and for the purpose described.

**55,082.—Turbinat Force Pump.**—J. H. A. Gericke, New Orleans, La.: First, I claim a turbinat wheel inclosed as shown, with three systems of vanes or paddles, D E F, substantially as described. Second, The fixed case, H, over the tubinane wheel or engine which drives the water upward, fitted with three different systems of curved vanes to direct the water toward the center of the said case, substantially as described. Third, Separating the column of water in the case, H, and above it from the turbinat wheel above described by means of a fixed plate, M, substantially as described.

**55,083.—Hay Loader.**—Charles Gibbs, Pittsfield, Vt.: First, I claim the loader, P, constructed substantially as described, in combination with the hay frame of a wagon or cart for the purpose set forth.

Second, The combination and arrangement of the pulleys, S' W and U, the arms, O S and T, and the rope, R, with each other and with the hay frame, substantially as described and for the purpose set forth.

55,084.—Harvester Cutter.—Sewell Gillam, New York City: I claim the arrangement of the pitman, a, and crank, d, pitman, b, and crank, c, in combination with the sickles, A and B, operating in the manner and for the purpose herein specified.

55,085.—Refrigerator.—John C. Govc, Cleveland, Ohio: First, I claim the frame, D, with slats, G, slides, E and F, with spring, d, constructed, arranged, and used as and for the purpose herein set forth.

55,086.—Socket Joint for Oil Tools.—Robert Gracey, Pittsburgh, Pa.: I claim the use of the swivel-head, d, key, g, and key seats, o and h, when used in combination with the male and female parts of the joint and the sleeve or band, c, the whole being constructed, arranged, and operating, substantially as herein described and for the purpose set forth.

55,087.—Cement Roofing.—William Green, Cleveland, Ohio: I claim the herein described cement roofing made substantially as set forth, for the purpose specified, being a new article of manufacture.

55,088.—Buckle.—Adam Haguy, Keokuk, Iowa: I claim an improved trace buckle formed by combining the two tongues, G and I, constructed and arranged as herein described, with each other and with the frame of the buckle, substantially as and for the purpose set forth.

55,089.—Toy Spring Gun.—Albert Hall, New York City: The coiled wire, b, cord, plate, r, and spring, m', arranged and operating in relation with the barrel, B, and case, C', as herein shown and described.

55,090.—Sheep Rack.—Lester Hall, Richfield, Ohio: I claim the arrangement of the grain trough, O, tubes or pipes, D, manger, E, and trough, L, with the adjustable rack, F, door, G, and frame, constructed as and for the purpose described.

55,091.—Portable Field Fence.—Manley Hall, Richfield, Ohio: I claim the arrangement of the panels, or sections, A B C, and posts, D, so connected to said sections as to lock them together, in combination with the cross pieces, G, and stakes, d, in the manner and for the purpose set forth.

55,092.—Rotary Steam Engine.—Samuel G. Hall and Geo. W. Bugbee, Norwich, Conn. Antedated May 21, 1866: First, We claim the valves, e, in the body of the piston wheel, B, in combination with the slides, D, substantially as and for the purpose specified.

55,093.—Wheel Cultivator and Gang Plow.—William Hammond, Marshall, Mich.: I claim the employment, independently, or in connection with each other, of the bent axle, bearing levers, L, in combination with the roller pins, F, and adjustable stop stage plates, G, connected and arranged relatively to, and with the frame and wheels of a cultivator, or gang plow, substantially as and for the purpose herein specified.

55,094.—Car Ventilator.—George Hardy, Lawrence, Mass.: I claim the vibratory ventor, E, constructed as described, and its combination and arrangement with a passage, c, leading into a car or structure to be ventilated, and with the guard, A, made and arranged with respect to the said ventor and passage, as hereinbefore explained.

55,095.—Shntter Fastening.—John Harrar, Philadelphia, Pa.: I claim the combination of the coupling shanks, B and C, and their respective parts, the pin, p, throat, t, and holes, n, n, with the shanks, A, and their respective parts, the slots, S', S', rest holes, r, and the arrangements of the spindle and its parts, D e f g h i m, and k, in combination together, substantially in the manner and for the purpose herein set forth.

55,096.—Mode of Attaching Handles to Tools.—George W. Harris and Andreas Franz, New York City: We claim the combination of the counter-sunk shoulders, B, the wedges or keys, dgs 2' and 2', and the clamp or ring, R, as and for the purpose herein set forth.

55,097.—Blocks for Polishing and Glossing Watch Hands.—George Hastings, Waltham, Mass.: I claim as my invention, the carrier, constructed substantially as described, and also the employment of such carrier, or its equivalent, in manner, and for the purpose, as herein explained.

55,098.—Machine for Raking and Loading Hay.—A. W. Heany, Doylestown, Pa.: I claim the arrangement of the frame, C, shafts, E F G, heads, H, teeth, I, rearwardly inclined, rotating at a, s, s, and t, e h, t, all located at the front of a wagon, and operating in the manner and for the purposes set forth.

55,099.—Sawing Machine.—Luman F. Heath, Lansing, Mich.: First, I claim the spring, q, constructed and operating in the manner and for the purpose herein set forth.

55,100.—Screw Wrench.—John Hegarty, Jersey City, N. J.: I claim the arrangement of the cross piece, A, fixed jaw, O, sliding jaw, D, and screw, E, in relation with each other, and with the shank, B, substantially as herein specified.

55,101.—Stove Pipe Damper.—Milan Hicks, Richmond, Ill.: I claim the band I, concave plates, A A', perforated plates, B B', and C, constructed and arranged substantially in the manner and for the purposes herein set forth.

55,102.—Lifting Jack.—Aaron Higley, South Bend, Ind.: I claim the link, D, pivoted to the standard, A', and lever, B, hinged to said standard by the straps, E and plates, C, and to the base, A, by the shaft, a, and staples, n', in combination with the rack, C, and bands, C', arranged as and for the purpose set forth.

55,103.—Knitting Machine.—Jonas Hinkley, Norwalk, Ohio: First, I claim an eye pointed needle, (for carrying a thread or yarn) a work supporting comb, (on which the work or fabric is set up or supported) and a looper or looping mechanism (by means

of which the stitch or loop is taken from the needle and conveyed to or deposited on the comb), or the equivalents, combined to operate for the production of knit fabrics, substantially in the manner set forth and specified.

Second, I also claim an organism or combination consisting of an eye-pointed needle, a work-supporting comb, and a looping mechanism, substantially as described, and a traversing mechanism by which traveling movements of the said comb may be produced, essentially in the manner and for the purposes set forth and specified.

Third, I also claim an organism or combination consisting of an eye-pointed needle, and work-supporting comb, and a looping mechanism, substantially as described, and a tension mechanism, by means of which a proper friction or tension is exerted on the yarn or thread while in the act of being knit, as and for the purposes set forth.

Fourth, I also claim an organism or combination consisting of a work-supporting comb and traversing mechanism, substantially as described, and a detent mechanism, by which the movements of the said comb may be reversed in the manner and for the purposes set forth.

Fifth, I also claim an organism or combination consisting of a work-supporting comb and its traversing mechanism, substantially as described, and a detent mechanism, which operates to detain or hold the comb while the looper stitch is being formed, in the manner and for the purpose set forth.

Sixth, I also claim an organism or combination consisting of an eye-pointed needle, a work-supporting comb, and a looping mechanism, substantially as described, and a cast-off mechanism, by which the looper pushed from the tooth, in manner and for the purposes set forth.

Seventh, I also claim an organism or combination consisting of an eye-pointed needle for carrying the yarn being used, a work-supporting comb, by which the yarn is set up or supported, a looping mechanism, by which a loop or loops are taken from the needle and conveyed to or deposited on the comb, a traversing mechanism, by which traveling movements of the comb are produced, a shipping mechanism by which the traversing movements of the comb are reversed, a detent mechanism, by means of which the comb is held while the loop is formed, and a cast-off mechanism, by which the loop is pushed from the tooth of a comb, and a tension mechanism by which tension is applied to the yarn, the said instrumentalities, parts, or mechanisms being substantially as hereinbefore described, and combined and used for the production of knit fabrics, essentially in the manner set forth and specified.

Eighth, I also claim the combination of a work-supporting comb, substantially as described, and a device by which the shipping mechanism may be automatically operated, essentially in the manner and for the purposes set forth.

Ninth, I also claim the combination of a work-supporting comb, substantially as described, and an index mechanism or means, as explained (or its equivalent) for indicating at what point the movement of the comb will be reversed, substantially in the manner and for the purposes set forth.

Tenth, I claim the arrangement or application of the rod, a2, with the comb teeth, in such a manner as to traverse therewith, substantially in the manner and for the purposes specified.

Eleventh, I claim a work-supporting comb, constructed with rod, a2, and a rack and teeth, substantially as set forth and described.

Twelfth, I claim a combination of a work-supporting comb, substantially as described, and a slotted or grooved end or piece of metal, g', or its equivalent, so arranged or disposed in relation to the comb, that the teeth of the comb may pass through the groove or slot, whereby the loops, especially in the vicinity of the needle, will be more securely kept upon the said teeth, substantially as and for the purposes set forth.

Thirteenth, I claim the bracket, i2, for supporting or holding the parts disposed in or upon the same, as constructed and arranged, substantially as described.

Fourteenth, I also claim a combination composed of an eye-pointed needle, or a work-supporting comb, substantially as described, and a guard mechanism, by which the discharged loop is prevented from being carried too far from the comb, by the advancing needle, as described.

Fifteenth, I also claim a combination consisting of a work-supporting comb, an eye-pointed needle, and a looper, substantially as described, and the projecting piece, g', or its equivalent, so arranged as to prevent the needle from being sprung upward by the action of the looper, substantially as described.

Sixteenth, I also claim a combination consisting of an eye-pointed needle, or a work-supporting comb, a looper, substantially as described, and a spring finger, g2, for assisting in the conveyance of the loops from the needle to the tooth, as specified.

Seventeenth, I also claim the finger, g2, so constructed and arranged as not only to assist in conveying the loop as stated, but also to act as a part of the guard mechanism, substantially as and for the purposes set forth.

Eighteenth, I claim a guard mechanism, one part of which is a spring so arranged that it will yield to admit of the use of a large or small needle, as circumstances may require, substantially as shown.

Nineteenth, I claim the combination of the cast off, G, directly with the needle carrier, so as to be operated by it in the manner set forth and described.

Twentieth, I claim the combination of the tension spring, E, directly with the needle carrier, so as to operate with and be operated by it, substantially in the manner shown.

Twenty-first, I claim the combination of the arm or detent, H, directly with the needle carrier, so as to be operated by it, substantially in the manner set forth.

Twenty-second, I claim the combination and arrangement of an eye-pointed needle, A, a tension mechanism or spring, E, a cast off, G, and a detent, H, or their equivalents so that any two or more of them will have but one carrier, substantially as set forth and described.

Twenty-third, I claim the extension of the tension spring, E, back to the pitman or rod, b, so that the same may also act, to keep the said rod on the crank wrist, substantially in the manner shown and specified.

Twenty-fourth, I claim the needle carrier and looper mechanism, s, so combined and arranged with respect to each other that the tension spring, E, may be operated by the needle carrier, substantially in the manner set forth.

Twenty-fifth, I claim the needle carrier as constructed with a cam-shaped slot, i2, or its equivalent, for operating the looping mechanism, substantially as shown.

Twenty-sixth, I claim the combination of the slot, i2, tri-armed lever, i2, and the looper rod, g2, or its equivalent, for operating the cam-shaped movement of the looper, substantially as set forth and described.

Twenty-seventh, I claim a looping mechanism, considered or taken as a whole, constructed and operating substantially as set forth and specified.

Twenty-eighth, I claim the combination and arrangement of the socket, t, or its equivalent, with the clutch shaft, or its crank for connecting the spool or bobbin to the said shaft, preparatory to filling it, substantially as described.

Twenty-ninth, I claim a narrowing and widening mechanism, consisting of the row of holes, w, the pins, x' x' the slide rod, q' provided with projections, p' p' and s' to operate with the pins, x' x', and clutch lever, v', or their equivalents, substantially as set forth and described.

Thirtieth, I claim the application of the shipping pins, x' x', directly to the index plates y' y', substantially in the manner and for the purposes specified.

Thirty-first, I claim the means of holding or keeping the loop on the tooth until the needle has fairly entered the loop, such being effected by the looper itself, substantially in the manner set forth and described.

55,106.—Beverage.—E. G. Holland, Union Springs, N. Y.: I claim the aforesaid discovery of making wine, vinegar, and brandy, from the properties of the stomach drupes or berries.

55,107.—Screw Wrench and Hammer.—L. S. Hoyt and E. G. Hoyt, Croton Falls, N. Y.: We claim the implement herein described, having at one end of its shank, A, a hammer, C, and at its other end a stationary jaw, B, in combination with the adjustable spring jaw, D, as a new article of manufacture.

55,108.—Carriage Plow.—A. Ingalls, Independence, Iowa: I claim the lever, m, standard, E, rod, j, pulleys, n n', in combination with the chain or cord, I, guide plate, D, and plow arranged, substantially as and for the purpose set forth.

55,109.—Screw Wrench.—Joel C. Jackson, Rochester, N. Y.: I claim the sectional screw rack extending from the bracket, c', of the moving jaw, a, and occupying a groove in the bar, b, in combination with the nut, g, surrounding said bar, b, contiguous to the socket, h, substantially as set forth.

55,110.—Process of Coloring Wood, Etc.—Barton, H. Jenks, Bridesburg, Pa.: I claim the process substantially as described of injecting wood and other porous substances with coloring matter.

Also, The new manufacture of wood, prepared substantially as described.

55,111.—Mode of Treating Wood for the Manufacture of Carding Engines.—Barton H. Jenks, Bridesburg, Pa.: First, I claim the construction of the cylinders and rollers of carding engines of wood, which is impervious to the action of moisture, substantially as described.

Second, Applying card clothing to the base or backing which is composed of a combination of wood a d paraffin or other equivalent substances, substantially as described.

55,112.—Whiffletree.—Niles Johnson, Ripon, Wis.: I claim the cleaves, C' C' arranged with the doubletree and whiffletree, as and for the purpose herein set forth.

55,113.—Buckle.—George R. Kelsey, West Haven, Conn.: I claim the combination of the bow and lever, Figs. 3 and 4, when the two parts are constructed, put together and fitted for use, substantially as herein described.

55,114.—Amalgamator.—Washington Kendrick, New York City. Antedated May 14, 1866: First, I claim the use for amalgamating and separating ores of a tubular heater, E provided with suitable pipes for injecting and discharging water or superheated steam, or hot air in combination with the tank, A, constructed and operating substantially as and for the purpose set forth.

Second, The agitator, F, in combination with the tubular drum, E, and tank, A, constructed and operating substantially as and for the purpose described.

55,115.—Adjusting Door Knob to Spindles.—Thomas Kennedy, Branford, Conn. Antedated May 20, 1866: I claim the combination of the nut, D, and spindle, E, with the rose, G, and neck, F, constructed and arranged with the projections, a, a, and notches, c, c, substantially in the manner and for the purpose specified.

55,116.—Wool Press.—P. B. Killam, Allna, Mich.: I claim the arrangement of the shafts having wheels or pulleys, or their equivalents, connected together by a chain or belt, knuckle jointed levers for raising and lowering the leaves of the table, in combination with any suitable device for holding the leaves in an upright position, substantially as herein described and for the purpose specified.

I also claim the combination of the fixed and movable guards when arranged together, and so as to operate in the manner and for the purpose specified.

I also claim the use of the catch buttons for holding one end of the binding cords for the twine as described.

55,117.—Bent Lever Scale.—Jacob King, Jr., Fort Wayne, Ind.: I claim an improved lever weighing scale formed by combining the lever, F, scale pan, G, cog wheels, K and L, and index, J, with each other, and with the frame of the scales, substantially as herein described and for the purpose set forth.

55,118.—Picker House for Opening and Cleaning Cotton, Etc.—Richard Kitson, Lowell, Mass.: I claim the hollow walls or flues, B B, and openings, C, in combination with the enclosed spaces between the beams, or their equivalents, the whole arranged substantially in the manner and for the purpose specified.

55,119.—Attaching Sole to Horseshoes.—A. H. Knapp, Coxsackie, N. Y.: I claim the combination of the spring frame, B, lips, h, and web, C, applied relatively with the recessed shoe, A, in the manner and for the purpose herein specified.

55,120.—Churn Power.—David J. Knapp, Fallsburgh, N. Y.: I claim the slide, G, fitted in suitable guides or a slot in a standard or support, H, with the pit an, F, passing through it, substantially as shown and described, in combination with the gearing and spring, all arranged to operate in the manner substantially as and for the purpose specified.

55,121.—Coin Holder.—Norbert Landry, San Francisco, Cal.: I claim the arrangement of coins and medals upon a vertical inclined or horizontal axis, between or upon transparent substances to be revolved at pleasure, for the purpose of displaying said coins or medals, substantially as herein described and set forth.

55,122.—Steam Engine.—Finly Latta, Cincinnati, Ohio: I claim the arrangement of the direct steam passages in combination with steam cylinders of unequal diameter, in a steam engine, adapted to operate, as and for the purpose set forth.

55,123.—Medical Compound.—H. H. Lockwood, Madison, Wis.: I claim as a new article of manufacture, the medicine herein described.

55,124.—Self-acting Decanter Stopper.—Louis Loeffler, East Cambridge, Mass.: I claim the self-acting ball valve decanter stopper as made with the series of fingers applied to the valve seat tube, and so as to extend therefrom and about the ball, when in place, substantially in the manner as hereinbefore specified.

55,125.—Leather Dressing Machine.—S. C. Lord, Portland, Oregon: First, I claim the arrangement of the duplicate legs, c, cross bars, f, slotted arms, g, shaft, h, arms, i, connecting rods, m, lever, n, and notched bar, O, in combination with the table, A, and supporting legs, a, constructed and operating in the manner and for the purpose herein specified.

Second, The arrangement of the spring shoe, P P, having sliders, x, x, and levers, n, n, for raising or lowering the same, the whole being arranged together in a common frame, E, of a cross head, C, and operating as and for the purpose specified.

Third, In combination with the above the roller, a2, with its standards, b2 b2, spring, c2, and lever, d2, arranged together substantially in the manner and for the purpose set forth.

Fourth, The combination of the hangers, and slides, B, with the cross head, C, and its frame, D, connects with the driving shaft through a pitman, rod, g2, so as to operate in the manner specified.

55,126.—Fastening Key in Locks.—S. B. Loughborough, Canandaigua, N. Y.: I claim the employment or use of the safety bars, b, constructed substantially as and for the purpose herein shown and described, in combination with the clamping wedge, w, or its equivalent.

55,127.—Safety Valve.—Addison Low, Albany, N. Y.: First, I claim the combination of the measuring valve, H, with the piston, F, for the purpose herein set forth.

Second, The construction of the piston, F, with the safety valve,



**D.** and the measuring valve, H, as and for the purpose described.

**Third.** The combination of the piston, F, lever, E, lever, G, and safety valve, D, as and for the purpose named.

**Fourth.** The combination of the measuring valve, H, with the piston, F, lever, G, and safety valve, D, as and for the purpose set forth.

**55,128.—Fruit Jars.—**Joshua R. Lupton and M. E. Lupton, Stafford, Ohio:  
We claim an improved fruit jar stopper, formed by combining an india-rubber or equivalent surface or lining with a wooden or metallic cap, constructed and applied substantially as herein described and for the purpose set forth.

**55,129.—Farm Gate.—**D. F. Luse, Spring Mills, Pa.:  
I claim the shoulders or offsets, d, d', and f', in the bar, H, and post, A, so as to allow the pivoted rails, C, D, D', to shut by each other in folding, substantially as and for the purpose set forth.

**55,130.—Water Indicators for Steam Generators.—**George Lutz, Lancaster, Ohio:  
I claim the rod, I, incased within a tube, J, and hung at its lower ends to the float rod, G, and at its upper end hung to the crank arm, O, of the shaft, P, in combination with the sector rack, T, of shaft, P, interlocked with the piston, V, of the index spindle when arranged together, substantially in the manner described and for the purpose specified.

**55,131.—Sash Fastening.—**John Lydy, Georgetown, Ohio:  
I claim the combination and arrangement of the pawls, D and D', the serrated plates, C and C', the plate, I, and the springs, A and A', substantially as herein described and shown and for the purpose specified.

**55,132.—Gages for Augers.—**Samuel L. Syford, Portland, Me.:  
I claim a gage for bits and augers composed of two pieces, A, A', formed to fit the faces of the twisted blade of the bit or auger, so as to turn with the spiral twist, and adjustably suited by set screws, substantially as and for the purpose set forth.

**55,133.—Car Truck.—**Theodore Lyman, Sandusky, Ohio:  
I claim the combination of the braces, O, P, W, V, and block, R, with the swing beam, D, of an ordinary railroad car truck, substantially as described and for the purpose set forth.

**55,134.—Atmospheric Governor.—**Benjamin Mackerley, Paint, Ohio:  
I claim an atmospheric governor composed of a cylinder, A, with two pistons, B, C, and brake, D, arranged substantially as and for the purpose described.

**55,135.—Mop Handle.—**Henry B. Malbone, Middletown, Conn. Antedated May 21, 1866:  
I claim the cloth holder for mop handles herein described, when constructed and arranged substantially in the manner set forth.

**55,136.—Hydrants.—**Ruben A. McCauley, Baltimore, Md.:  
I claim the combination with the elbow seat, c', of the chamber, d, the strainer and supporting disk, f', spring, l, holding cup, h, elastic ball, g, and pipe, F, as herein described and operating substantially as described and for the purpose set forth.

**55,137.—Manufacture of Casks, Barrels, and Kegs.—**Joshua Merrill, Boston, Mass.:  
I claim the improved cask, substantially as described, having its joints made with tongues and grooves, substantially in the way and for the purpose herein before described and set forth.

**55,138.—Regulating the Draft of Furnaces.—**Albert H. Mershon, Philadelphia, Pa.:  
I claim the ash-pit door and draft door, the chain, H, pulleys, K, K', and weight, with the door and index gage when combined and constructed substantially as and for the purpose herein described.

**55,139.—Apparatus for Parlor Croquet.—**William S. Messinger, Roxbury, Mass.:  
First, I claim the wickets, I, or stakes, i, with their sockets, D or E, in combination with the cloth, B, perforated to receive them, substantially as set forth.

**Second.** I also claim the perforated cloth, B, and frame, C', in combination with the wickets, I, and stakes, i, and their removable sockets, D and E, substantially as described.

**55,140.—Cheese Hoop.—**Henry W. Millar, Utica, N. Y.:  
I claim a cheese hoop made of wood, hooped with iron bands, the inner surface whereof is lined with a metallic lining, as hereinbefore described, my invention consisting in the application of the metallic lining.

**55,141.—Washing Machine.—**John Miller, Russellville, Ky.:  
First, The combination of the loose balled drum, with the loose balled frame, constructed, arranged and operating substantially as set forth.

**Second.** The combination of the furnace trough, drum and frame, when constructed, arranged and operating as described, for the purpose set forth.

**55,142.—Seeder and Cultivator Combined.—**John Miller, Russellville, Ky.:  
I claim the combination of a cultivator which furrows and forms the ridge, with a planter that plants, covers, and finishes the ridge with a smooth, flat surface, all in once passing over the ground, substantially as set forth.

**55,143.—Street Lamp.—**Jacob G. Miner, Ohio, N. Y.:  
First, I claim a cylinder, or its equivalent, when sustained, substantially as described.

**Second.** I claim the combination of cylinder frame and lid, for the purpose set forth.

**55,144.—Auger.—**Henry P. Moody, Newburyport, Mass.:  
I claim the removable centering plug, D, in combination with the bit or auger, A, for the purpose set forth.

**55,145.—Kettle Bottom.—**Charles A. Moore, West Brook, Conn.:  
I claim the above described improvement in kettle bottoms, formed substantially as specified, and for the objects set forth.

**55,146.—Brick Machine.—**Isaac Morley, Pittsburgh, Pa.:  
First, The reciprocating slide, I, and plunger, K, arranged and operating in connection with the hopper, A, as and for the purpose set forth.

**Second.** The combination and arrangement of the wheels, F and G, and the eccentrics, E, for the purpose of operating the slide, I, and plunger, K, as shown and described.

**Third.** The frames, d, for the purpose of holding the molds in position while being filled and having the wire, h, arranged, as described, for cutting of the brick, as set forth.

**Fourth.** The wheel, B, constructed as shown, and arranged to operate in connection with wire, a, C, as described, for the purpose of elevating and depressing the frames, d, at the required intervals.

**Fifth.** I claim the combination and arrangement of slide, I, plunger, K, and frames, d, to operate in connection, and at the proper intervals, substantially as herein shown and described.

**55,147.—Ship Pump.—**George Moulton, Jr., Bath, Me.:  
I claim arranging the valves in or over the pump, tube, or pipe, in combination with an open top above the valve, and a piston working in an auxiliary cylinder, substantially as described, so that the pump may be sounded by removing the valves, without removing or disturbing the piston.

**55,148.—Brick Machine.—**Charles Murtha, Philadelphia, Penn.:  
First, The intermingling rotating cylinder, H, H', provided with blades or knives, I, in connection with the endless carrier, K, said parts being arranged in relation with a mud mill, substantially as and for the purpose set forth.

**Second.** The plate, M, suspended on pivots above the endless carrier, K, to operate in connection therewith, and the sanding device, substantially as and for the purpose specified.

**Third.** The intermingling rotating block, P, provided with a series of radial molds having plungers, R, fitted within them, and arranged in relation with the endless carrier, K, substantially as and for the purpose set forth.

**Fourth.** The cap, B, operated in the manner shown, or in an equivalent

way, and arranged in relation with the block, P, so as to impart an intermingling rotating movement to the block, and at the same time serve to confine the clay molds while the clay is under pressure therein, substantially as set forth.

**55,149.—Surface Condenser.—**Joseph Nason, New York City:  
I claim the within described construction and arrangement of the plates, I, 2, 3, etc., and condensing coils, G, H, etc., whereby one of the fluids is allowed to flow freely through the holes into and through alternate spaces, m, m, etc., between the plates, and prevented from communicating with the intermediate spaces, h, h, etc., while the other fluid is allowed to flow through said intermediate spaces, substantially in the manner and for the purposes herein set forth.

**55,150.—Fruit Gatherer.—**Eliza H. Newcomb, New York City:  
First, I claim the employment in a fruit gatherer of converging blade, b, b', applied to the frame or ring, A, and operated by the simple withdrawal of the fruit gatherer, substantially as described.

**Second.** I claim the combination of the ring, A, converging blades, b, b', curved slats, m, m, p, m, n, and spring, e, by means of which a shear action of the converging blades is obtained by the simple withdrawal of the fruit gatherer, as described.

**Third.** I claim the combination of the hinged frame, A, either square or circular, with four points or ornors converging blades, b, b', and springs, by means of which a shear action of the converging blades is obtained by the simple withdrawal of the fruit gatherer, substantially as described.

**55,151.—Apparatus for Preserving Beer.—**A. F. Neynaber, Philadelphia, Pa.:  
I claim the method of preserving beverages or fermented liquors, as lager beer, ale, porter, etc., in air-tight india-rubber vessels, and discharging these liquors therefrom in parts, by means of compressing the vessel by weight, in such a manner as to avoid the admission of any air, substantially as set forth in the foregoing specification.

**I also claim** the construction of the beer keeper, by the application, combination, and arrangement of the india-rubber vessel, A, inlet, I, with plate, m, screw, n, and bar, o, outlet, j, with valve, k, tap, l, and presser, y, frame, B, with ring, a, presser, C, with pulleys, j', j', and stand, D, substantially in the manner and for the purpose as herein described.

**These claims I make jointly and separately.**

**55,152.—Grain Screen.—**Harrison Ogborn, Richmond, Ind.:  
First, I claim the crooked groove, S, in combination with the friction rollers or pulleys, n, n, and arms, m, m, when used for the purposes set forth.

**Second.** The perforated crank, c, shaft, b, a, and hopper, A, in combination with the nest of screens, D, E, and P, and crooked groove, S, when arranged and operated substantially as set forth, and for the purpose specified.

**55,153.—Composition for Stiffening Felt Cloth.—**Patrick O. Rork, Norwalk, Conn.:  
I claim the union of storn with a solution either of shellac and borax, or shellac and sal-soda, or shellac and ammonia, for the purpose of stiffening hats, hat bodies, hats for ladies' wear, and other articles, in which a greater degree of stiffness is required than the material used possesses of itself.

**55,154.—Carpet Stretcher and Hammer.—**F. M. Osborn, Dover Plains, N. Y. Antedated May 29, 1866:  
I claim the combination, in one machine, of a stretcher, w, and hammer, o, arranged and operating with regard to each other, substantially in the manner described, and for the purposes specified.

**I also claim** the arrangement of the stretcher, w, hammer, o, with the intermediate parts or devices, connecting them with a common lever handle, g, substantially as and for the purpose set forth.

**55,155.—Subterranean Reservoir for Wells.—**Alonzo Palmer and John Bean, Hudson, Mich.:  
We claim the arrangement of the cylinder, A, shaft, B, disks, Sand S', together with the agitators, d, d', when used as and for the purpose herein specified.

**55,156.—Stamp Extractor.—**Alonzo Palmer and Robert Gilliland, Hudson, Mich.:  
We claim the beams, A, supports, B, C, elevators, F, stays, D, H, lever, E, braces, G, G', pinions, I, J, H', and tongue, G', arranged in the manner substantially as and for the purpose herein set forth.

**55,157.—Ratchet Wrench.—**William Pierson, Newark, N. J.:  
First, I claim the lever-like catch, D, applied as described, with a spring, f, in a mortise in the stock, and in combination with a circumferential groove, d, in the exterior of the ratchet socket, the whole arranged substantially as herein described.

**Second.** The screw, a, in combination with the catch, D, substantially as and for the purpose herein specified.

**55,158.—Manufacture of Caustic Alkali.—**Louis Prang, Boston, Mass.:  
I claim the mode herein described of combining any alkali with lime in such a way as to obtain a powder to serve when dissolved as caustic lye.

**55,159.—Process for Manufacturing Glass.—**Samuel Richards, Philadelphia, Pa.:  
I claim the manufacture of merchantable glass from impure cullet and common fluxes by first melting them and straining the impurities out of them and then taking the product and mixing it with a small portion of ordinary batch substantially as described.

**55,160.—Medical Compound.—**Margaret Richardson, Norristown, Pa.:  
I claim a medicine for the cure of cholera and other bowel complaints, made of the ingredients herein described and in about the proportions specified.

**55,161.—Washing Machine.—**Charles Roberts, Lake Village, N. H.:  
I claim a washing machine composed essentially of a concave of concentric rollers, I, I', nearly touching each other, except a wide space at the top, for the introduction of the clothes, and having a cylinder, c, with elastic or yielding pressure bars, revolving inside thereof, the whole to be placed within a tub, or other vessel holding water or soda, substantially as herein specified.

**I also claim** giving the rollers, I, I', a positive revolving motion nearly equal to and in the same direction as the pressure bar surfaces of the revolving cylinder by means of pinions, J, J, on said rolls, and a driving cog wheel, H, on the cylinder, or the shaft gearing into said pinions, substantially as herein set forth.

**I also claim** the arrangement of the stationary bars, F, F', and yielding pressure bars, B, B', in the heads of the cylinder, c, substantially as herein described.

**55,162.—Swivel Shackle.—**Thomas B. Roach, Folsom, Cal.:  
I claim the swivel shackle, constructed substantially as herein described.

**55,163.—Training Hop Vines.—**Benjamin C. Rogers, Stockbridge, Vt.:  
I claim the arrangement of stakes and lines substantially as herein described, and as represented by the accompanying drawing.

**55,164.—Machine for Cutting Succulent Roots for Feed.—**Albert J. Roosevelt, Pelham, N. Y.:  
First, I claim the combination of the curved knife, E, attached to the projection, G, of the arch, F, with the hopper, C, the parts being constructed and operated substantially as and for the purpose herein recited.

**Second.** I claim the groove, M, for the entrance of the edge of the knife, and the lip, N, under the groove, for clearing the throat or space under the edge of the knife, as herein described.

**55,165.—Burglar Alarm.—**A. J. Ross, Rochester, N. Y.:  
I claim the portable burglar alarm, made up of the combination of the alarm bell, C, and base plate, D, engaged and disengaged by simply changing the position, as described, and the cam plate, G, provided with a series of corrugations or cams, k, k', for giving a succession of alarms, as herein set forth.

**55,166.—Padlock.—**Cyrus W. Salader, Newark, Ohio Antedated May 24, 1866:  
I claim securing the wards or guards, B, for the key, in the body of the lever, A, or its equivalent, in the manner and for the purpose substantially as set forth.

**55,167.—Padlock.—**Cyrus W. Salader, Newark, Ohio: Antedated May 24, 1866:  
First, I claim the lever, S, or its equivalent, in combination with the lock bar, A, in the manner and for the purpose, substantially as shown and described.

**Second.** I claim the spring, B, or equivalent, in combination with the lever, S, and lock bar, A, in the manner and for the purpose substantially as shown and described.

**55,168.—Heating and Ventilating Railroad Cars.—**Thos H. B. Sanders, Philadelphia, Pa.:  
I claim the arrangement of air pipes, F, and registers, R, with hot or cold air chamber, c, c', of stove, S, and fan, B, B', combined together as and for the purpose hereinbefore described.

**55,169.—Churn.—**John F. Seaman, Cortlandville, N. Y.:  
First, I claim the arrangement of bars, O and V, in their connection with the lever, 2, and pendulum weight, L, for the purpose specified.

**Second.** I claim churning by an attachment to the bottom of a pendulum or pendulum-weight, as set forth, and for the purpose specified.

**Third.** I claim the arrangement of the springs, 2 and 3, as set forth and for the purpose specified.

**55,170.—Carpet Holder.—**E. Shopbell, Ashland, Ohio:  
I claim the combination of the cleats and button, when used in connection with the carpet and mop board, as and for the purpose set forth.

**55,171.—Screw Cutting Machine.—**Amos B. Simonds, Youngstown, Ohio:  
I claim the combination and arrangement of the dies, H, movable jaws, F, and stops, J, constructed and operated as described, with an other end, or the head, d', of the shafts, D, substantially as and for the purpose set forth.

**Second.** The combination of the spring, M, with the arms, r, of the movable jaws, F, substantially as described, and for the purpose set forth.

**Third.** The combination of the sliding conical block, L, gage rod, R, arms, F, and N, and connecting bar, O, with each other, with shaft, D, and with movable jaws, F, substantially as described and for the purposes set forth.

**55,172.—Steam Generator.—**Andrew J. Smith, Greenville, Ohio:  
I claim an improved steam boiler, formed by combining the perforated interior boiler, B, and the water induction pipe, D, d', E, with an outer, or the steam boiler, A, substantially as described, and for the purposes set forth.

**55,173.—Machine for Cutting Smoking Tobacco.—**H. M. Smith, Richmond, Va.:  
I claim the fine steel or iron comb, made single or with two edges to reverse, in combination with the fine steel teeth in the cylinder, and an ordinary or green, operating for the purpose and in the manner as above described and set forth.

**55,174.—Grain Cleaner.—**Geo. Stevenson, Lionsville, Ind., and John J. Crider, Greenfield, Ind.:  
We claim the combination of the outer drum screen and the inner casing, K, K', provided with a revolving brush, the whole constructed and operated substantially as described and represented.

**55,175.—Cultivator.—**Amos D. Stocking, Dowagiac, Mich.:  
First, I claim the application of a swivel wheel, a, to the rear end of the frame of a cultivator, which is constructed substantially in the manner described.

**Second.** Keeping the shovel standards, E, in proper position during their passage through the soil by means of the transverse rods, h', and notches, l, combined with the forward braces, k, substantially as described.

**Third.** The pivoted board, g, or its equivalents, arranged transversely across the cultivator frame, and connected to the shovel standard, E, substantially as described.

**55,176.—Rotary Brush.—**Silas Stuart, Sterling, Mass.:  
I claim the perforated corrugated toothed cylinder, A, constructed and operating in the manner and for the purpose herein described.

**55,177.—Tobacco Cutter and Nut Cracker.—**Howard Tilden, Boston, Mass.:  
I claim a tobacco cutter and nut cracker, having the operating lever in the form of the tail of a dog, or other animal, and the jaws that hold the nut, corresponding to the mouth of an animal, the operating mechanism, or its equivalent, being contained in the case, H, as herein described.

**I also claim** the combination of the transversing knife or cutter, operated as herein set forth, with the jaw, V, and the case, H, constructed as herein set forth.

**55,178.—Apparatus for Collecting Floating Oil from Streams.—**Hamilton E. Towle, New York City:  
First, I claim the combination with the squeezing roller of an apparatus, constructed as herein described, of a swinging apron or scraper, actuated by means of a spring, or equivalent mechanism, and arranged and operating as and for the purposes herein set forth.

**Second.** In combination with the squeezing roller and swinging scraper, as described, I claim the employment of a second apron or scraper, arranged and operating as herein shown and set forth.

**Third.** In combination with the squeezing roller, I claim the lever arms, in which it has bearings, and the rods or bolts, by means of which the pressure of the roller may be regulated, the whole being constructed and arranged substantially as herein shown and described.

**55,179.—Grain Cleaner and Separator.—**B. T. Trimmer, Rochester, N. Y.:  
I claim the special construction and arrangement of the machine, consisting essentially of the trough passages, d, g, h, i, of the trunk, E, fan, C, shoe, H, beater chamber, G', and beater, M, f, arranged and operating substantially as and for the purpose herein set forth.

**I also claim** the construction and arrangement of the passages, d, g, h, i, uniting in a common discharge, having the turn or deflections, k, t, and the pockets, m, n, the whole forming a trunk that is connected with the top and bottom of the machine in such a manner as to form a circuit through, substantially as described.

**I also claim** exhausting both the inside and outside of the beater cylinder by the single fan, C, operating above, the whole arranged substantially as herein specified.

**I also claim** distributing the grain falling into the passage, i, from the trough, g, by the wall, w, and floor, x, the whole arranged and combined as described.

**I also claim** making the beater cylinder in sections, I, 2, 3, c, and using the same in combination with the grooves, a, a', and space, b', of the heads, I, i', so that said sections may be applied or removed without removing the outer casing of the frame, substantially as specified.

**I also claim** forming the disks, M, M', of the beater with the star points, having opposite sides, g', h', for attaching the wings, f, f', in opposite angles, substantially as described.

**55,180.—Air-cooling Ventilator.—**Friedrich Villard, Mount Eaton, Ohio:  
First, I claim the water grate, C, D, constructed substantially as described, for distributing the water over a number of conductors.

**Second.** In combination with the distributing water grate constructed and adapted to operate as set forth, I further claim the two tanks, A, G, and water elevator, J, for passing the water repeatedly over the evaporating surface, as explained.

**55,181.—Quartz Mill.—**C. Ph. Wagner, New York City:  
First, I claim communicating an alternate reciprocal movement bodily to the lower end of the crushing jaws, I, J, and at the same time a vibrating movement to the upper ends of said jaws, so as to produce a rubbing or guiding action and a crushing action combined employed for the purpose by means, substantially as described.

**Second.** Pivoting the lower ends of the vibrating jaws, I, J, or their equivalents, to bearings which have a vertical vibration and communicating a lateral vibration to the upper ends of said jaws, by means, substantially as shown and described.

**55,182.—Sewing Machine.—**Albin Warth, Stapleton, N. Y.:  
First, I claim the combination of the rack, s, v, w, teeth or pins, b', slip weight, a', and adjustable dog, b', arranged and operating in the manner and for the purpose herein specified.

**Second.** The combination of the rack, s, pendulum, b, and needle, n, constructed and operating substantially as and for the purpose set forth.

**Third.** The perforated flat sole shaft, s, in combination with the shoe, G, and needle, n, arranged and operating in the manner and for the purpose herein described.







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