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54,836.—Drilling Machine for Wells.—M. E. Abbott, Summit Hill, Pa.:

First, I claim the arrangement of devices herein described for imparting to the drill rod a movement in a vertical plane, the same consisting in securing it within the frame or cross bar, o, moving on suitable vertical guide rods or bars, p p, and connected with the engine beam, g, in proper manner, substantially as set forth.

Second, Revolving the drill through the vertical movement of the same, by means of the sliding plate, x, moving in and between parallel inclined guides, b' b', and provided with a spring pawl, a', engaging with the ratchet wheel, s, of the frame, v, arranged and operating substantially in the manner described.

Third, The combination of the jaws, q' q', and bent arms, s' s', arranged and operating with the rod, v, in the manner and for the purpose herein specified.

Fourth, The combination of the jaws, t' t', and lever frame, v', arranged and operating with the rod, v, in the manner and for the purpose herein specified.

Fifth, In the described combination with the drill rod, v, and the beam, g, for operating the same, I further claim the crank arms, d' b' m', rods, f n', and adjustable tappets, g' g', arranged and employed, substantially as set forth, to regulate the stroke of the drill.

54,837.—Riveting Machine.—John Adt, Wolcottville, Conn.:

I claim the reciprocating and rotating tube, I, operated substantially as shown, in combination with the internal hammer rod, O, arranged with the springs, P Q, and the nut, R, or its equivalent, substantially as and for the purpose set forth.

I further claim the adjustable orrising and falling disk or bed, T, in ombination with the reciprocating tube, I, and he bammer rod, O, and spring, P, all constructed and arranged substantially as and for the purpose specified.

54,838.—Method of Combining Wrought Iron with Cast Iron.—W. M. Arnold, New York City. Antedated May 18, 1866:

First, I claim the mode, hereinbefore described, for combining and uniting wrought with cast iron, that is to say, forming a skeleton of wire, which has been coated or tinned, and so arranged and placed at such intervals, that the melted metal can penetrate all portions of such skeleton, and then filling those interstices with cast metal, substantially in the manner and for the purpose above set forth.

Second, I also claim, in this connection, the tinning or coating of iron wire in such a way as to prevent the molten metal, which shall afterwards be combined with it, from producing any injury to such wire, substantially as above set forth.

Third, I also claim forming a skeleton of metallic wire, and then filling up the interstices with molten metal, for the purpose and substantially in the manner above set forth.

54,839.—Apparatus for Preparing Peat.—Edward H. Ashcroft, Lynn, Mass:

First, I claim the hollow perforated shaft, B, and the screw, C, or their equivalents, in combination with the cylinder, A, the whole being constructed and made to operate together, substantially as described, and for the purpose set forth.

Second, The combination of the steam jacket or cylinder, F, with the inner or forming cylinder, E, constructed and operating substantially as described, and for the purpose set forth.

54,840.—Coupling for Carriage Thills.—C. H. Bassett, Derby, Conn.:

I claim the employment of centers, or taper bearings, in ombination with the tongue piece and clip, and a suitable means of holding the parts in adjustment, substantially as set forth.

54,841.—Hand Protector for Sad Irons.—J. R. Batey, New York City:

I claim a hand protector for flatirons composed of a wrapper, A, and guard, B, substantially as described, as a new article of manufacture.

54,842.—Furrowing Machine.—Francis M. Birdsall, Martinsville, Ohio. Antedated May 16, 1866:

I claim the plow frames, e, longitudinal strips, e', and levers, d, in combination with plows, g, frame, A, and sliding strips, h, constructed as above described, and for the purposes set forth.

54,843.—Sash Fastening.—Eli S. Bitner, Lockhaven, Pa.:

I claim the lever, D, with flange, C, and knob, E, constructed and connected with plate, B, as shown in combination with the spring, C, having the spur, A, at its end, all arranged and operating as herein shown and described.

54,844.—Sewing Machine Guide for Stitching Hat Tips to the Side Linings.—H. E. Bodwell, Jr., Paterson, N. J.:

I claim the ombination of the hemmer, C, and gage plate and guide, D F, constructed and arranged substantially as above set forth, for the purpose of stitching, and also of connecting a side lining to a hat tip, at the same operation.

54,845.—Hydrant.—B. P. Bower, Cleveland, Ohio:

First, I claim the adjustable toothed plate, B, the corresponding depression in the plate, B', and the pipes, C' and D, arranged in the manner, and for the purpose set forth.

Second, I claim the adjustable tooth plate, B, with the corresponding depressions in the plate, B', arranged in relation to the screw stem, h, and cap, F', the washers, m, valve, L, packing, q, and groove, e, in the manner and for the purpose set forth.

Third, The cylinder, F, with flaring end, G, pipes, E, and pipes, D, in combination with packing, t, and induction pipe, H, arranged as and for the purpose specified.

54,846.—Churn.—J. C. Bridgman, London, Ohio:

I claim the combination of the cover, B, and pin, H, with the handle, D, having spiral thread, D', the loose collar, E, and dasher, C, the parts being severally constructed and arranged for use substantially in the manner and for the purpose set forth.

54,847.—Anchor.—E. F. Brown, Warren, R. I.:

First, I claim forming the sides of anchors of continuous bands, with the flukes arranged across the inner sides thereof, substantially as described.

Second, I also claim strengthening the body of an anchor whose sides are made continuous, by means of an inner rib or membrane, E, and by a stay rod, C, one or both, substantially as described.

Third, I also claim cutting away the upper parts of the body of an anchor, whose sides are continuous, as at D D, and forming points, F F, at one side of the center of gravity, so that the anchor will right itself, substantially as described.

54,848.—Croquetrie.—Lewis Bradley and Milton Bradley, Springfield, Mass. Antedated April 17, 1866.

First, We claim the combination of arch, a, and sockets, b c, to form a croquet bridge or arch, substantially in the manner and for he purpose herein set forth.

Second, An iron croquet bridge or arch coated with zinc, tin or other similar metal, substantially in the manner and for the purposes herein fully set forth.

Third, The method herein fully described of painting croquet balls in which the light balls are designated by black or dark stripes and the dark balls by white or light stripes.

54,849.—Trunk Lock.—T. Stewart Brown, Philadelphia, Pa.:

I claim the combination of the two bolts, b and b', arranged in respect to the case, a, and operating substantially as and for the purpose herein set forth.

54,850.—Head Light for Engines.—Peter Budenbach, New York City:

I claim the combination of the plates, B, covering and extending beyond the margin of the aperture, C, with the radial and oblique director plates in the lower opening of the tube of A, the combined devices operating to deflect the entering currents of air to prevent the direct infringement of the air upon the flame and the consequent disturbance thereof.

[This improvement consists in a combination of plates standing out and covering holes in the sides of the base of locomotive head light lamps, so as to admit air obliquely with a circle of radiating oblique plates at the bottom for the same purpose.]

54,851.—Steam Valve.—M. Burnett and H. Comstock, Boston, Mass.:

We claim as an improvement in stop valves, the arrangement of the seat, a, and valve, b, when constructed substantially as described.

54,852.—Ice Pick.—E. G. Burnham, Bridgeport, Conn.:

I claim the pick iron or steel point formed on the tube which is held in the hand in combination with the solid metal rod fitted within the tube, so as to work up and down therein, and act as a hammer upon the pick, all substantially in the hammer and for the purpose described.

54,853.—Rail for Railroads.—Jesse S. Butterfield and M. S. Green, Philadelphia, Pa.:

We claim the rail, composed of the upper portion, A, with its longitudinal groove, and pins, S, and lower portion, B, with its longitudinal rib, b, adapted to the said groove, and its openings, e, substantially as set forth.

54,854.—Cultivator.—H. F. Byerly, Clinton, Ill.:

First, I claim the sliding bolts, K K, slots, i i, and pendants, b b, combined and operated, substantially as and for the purpose specified.

Second, The rolls, L, lever, f, and chain, M and h, combined and operated substantially as and for the purpose set forth.

54,855.—Switch Stand for Railroads.—Charles E. Byers, Mahanoy Plain, Pa.:

I claim the combination of the bolt, G, lever, K, piece, I, and sprig, J L, applied to lever, D, arranged relatively to each other and with the top, F, of the switch in the manner and for the purpose herein specified.

54,856.—Needle Wrapper.—William Byfield, New York City:

I claim the combination of a wrapper having two flaps with a holder, substantially as described, so that the opening of two flaps will permit the points and eyes of the needles to be seen while they are held securely to be removed one at a time.

54,857.—Flour Dipper, Measure, and Sifter.—George G. Carver, Roxbury, Mass.:

I claim the combination of the dipper with ridges or lines indicating quarts and pints, the horizontal beater with radial flexible rubbers and concave selve, all as specified.

54,858.—Paper Neck Tie.—Elisha Childs, Jr., Springfield, Mass.:

I claim the ornamental neck tie composed of a paper scarf, stock, and band, and the metallic clasp carrying an elastic loop, combined and arranged substantially in the manner and for the purpose set forth.

54,859.—Apparatus for Inducing the Flow of Oils from Wells.—John B. Christian, Mount Carroll, Ill.:

I claim the combination of the flanged pipe, A, with the slotted, double hollow cylinder, B, and the hollow cylinder, Y, as arranged in relation to each other substantially as and for the purpose specified.

I claim lowering the pipe, A, or its equivalent, and securing it firmly to its place in the well, by means of the tube, D, with its circular base, E, in combination with the rod, H, substantially as set forth.

54,860.—Mop Head.—Charles B. Clark and O. S. Garretson, N. Y.:

We claim the nut, K, with the collar which carries the movable jaw, E E, by means of the lugs, g g, or their equivalent, in combination with the threaded shank of the jaw, C, arranged and operating substantially as set forth.

We also claim connecting the movable jaw, E E, with the collar, D, by means of the bows, l, l, constructed and operating substantially in the manner and for the purpose specified.

54,861.—Churn.—Amos Clift, Jr., Mystic River, Conn.:

First, I claim the combination of the hollow journals or axles constructed with flaring enlargements on their inner ends, with the revolving churn box, substantially in the manner and for the purpose described.

Second, Making the inner funnels removable, substantially as and for the purpose described.

54,862.—Horse Rake.—Lyman Clinton and Ezra S. Munson, North Haven, Conn.:

First, I claim combination of the slide, c, the rod, h a, and axle, A, with the double acting lever, I, substantially as and for the purpose specified.

Second, The combination of the slide, c, the rod, h, and axle A, with the lever, G, substantially as and for the purpose specified.

Third, The combination of the lever, L, with the axle, A, when arranged upon a movable fulcrum and constructed so as to operate substantially as and for the purpose specified.

54,863.—Chair, Sofa and Car Seat.—G. W. Cochran, New York City:

I claim the employing the perforated or whole sheets of hardened or enameled india-rubber or gutta-purcha for chair, sofa, car and carriage seats, substantially as above described and set forth.

54,864.—Apparatus for Preparing Hay for Market.—Samuel Colahan, Cleveland, Ohio:

First, I claim the arrangement of the follower, a, and sheaves with their respective ropes or chains in combination with the side doors, L M, trap door, R, loops, V, and clamps, P, substantially as and for the purpose set forth.

Second, The followers, m, bolts, L, and ratchets, p, in combination with the follower, constructed and arranged in the manner and for the purpose substantially as set forth.

Third, The adjustable ends, e, connected with the frame, as specified, in combination with the followers, a m, and side doors arranged as and for the purpose substantially as set forth.

54,865.—Cow Milker.—L. O. Colvin, New York City:

First, I claim the construction of a cow milker in such manner that it may be operated by water or other fluid acting upon its flexible diaphragms, substantially as herein specified.

Second, So constructing the water spaces on the backs of the several flexible diaphragms of a cow milker that all are in free communication and made to communicate with a single pipe, substantially as herein specified.

Third, The combination of two or more cow milkers with a pump, L, or its equivalent by means of a pipe or pipes filled with water or other fluid, substantially as set forth, for the purpose specified.

54,866.—Detecting Check Boxes.—John P. Conkling, Batchellerville, N. Y.:

First, I claim the combination of ratchets and pawl, c d, and gravitating follower, G, substantially as and for the purposes described.

Second, The open-bottom ticket boxes, in combination with the follower, G, or its equivalent, substantially as described.

Third, The stops, g g, substantially as and for the purposes described.

Fourth, The use of locking bars, a' or J, applied substantially as described.

Fifth, The removable transparent graduating face plate, E, in combination with ticket holder, substantially as described.

54,867.—Sand Pump.—Robert Cornelius, Philadelphia, Pa.:

First, I claim the employment of wire gauze or perforated metal in the sand pump, in the manner and for the purpose substantially as described.

Second, The employment of the turning plate, D E F, in the interior of the sand pump.

Third, The combination of the sand pump, having an interior turning plate, with the drill

54,868.—Railway Chair.—D. W. Crocker, Deposit, N. Y.:

First, I claim dividing the chair into two similar parts or sections in the direction of its length, in combination with the wedge-shaped plate or regulator, G, having the general form and construction herein above described, which plate is driven in and between the bases of the said chair, suitably constructed or formed therefor, and the rail, extending across from one section to the other and operating upon the same, substantially in the manner and for the purpose specified.

Second, The combination with the two-part chair, a, and its regulator, G, of the spring catch, t, interlocking with suitable notches made in the base of the chair, and arranged substantially as and for the purpose specified.

54,869.—Chair.—M. E. Cronk, Auburn, N. Y.:

First, The combination of the rod, s, and plate, n, constructed and operating as and for the purpose herein described.

Second, The combination of the rod, s, the plates, n, the hinges, h, and rubber springs, the whole constructed and operating in the manner herein set forth.

54,870.—Pile Fabric.—James W. Crossley, Bridgeport, Conn.:

I claim the process herein described of producing the pile fabric by the aid of wires which are withdrawn after cementing the warp upon the backing.

54,871.—Harvester Rake.—Charles F. Davis, Auburn, N. Y.:

I claim the combination in a harvester rake of the lever, L, springs, M, or equivalent latches, I, and catches, J K, with each other and with the rake heads, F, arms, D E, and frame or guide, B, substantially as described and for the purpose set forth.

54,872.—Stove for Railroad Cars.—H. G. Dayton, Maysville, Ky.:

I claim the arrangement of the flanges, F, the combination chamber, B, air jacket, E, and pipe, G, substantially as and for the purpose described.

54,873.—Machine for Turning and Jointing Screw Blanks.—Jonathan Dennis, Jr., Washington, D. C.:

I claim pointing screw blanks, rivets, and other articles at the same time their heads are turned or shaved, by the devices shown and described or their equivalents.

I claim arranging the pointing tool behind the griping jaws for turning the heads of screw blanks, rivets, and other articles, so as to point them the same time their heads are turned or shaved.

I claim the rod, H, made hollow or otherwise, and arranged in the arbor to hold the pointing tool, substantially as described, in combination with a pointing apparatus.

I claim arranging the shanks of the griping jaws, the levers, and other devices in the arbors of screw machines, in such away and manner as to allow the rod which holds the pointing tool to traverse in the arbor between them, substantially as described.

In combination with a pointing tool arranged behind the griping jaws, I claim the cross, L, pins, L', lever, N1, springs, N3, and cam, N2, or such other equivalent mechanism as will hold and traverse the pointing tool to do its work, substantially as described.

In combination with the pointing tool I claim the mechanism described, or its equivalent, for pushing the blanks out of the griping jaws after they are pointed.

I claim making the cutting edges of tools for turning the scored, nicked, or grooved heads of screws, screw blanks, or other articles, curved, or rounded, as shown and described.

54,874.—Hatchway Door.—Marshall S. Driggs, Brooklyn, N. Y.:

I claim constructing a hatch, D, with tracks, D, running upon horizontal ways, B, suspended beneath the floor so that the hatchway may be opened and closed from below, substantially in the manner set forth.

54,875.—Reaping and Mowing Machine.—M. Easterbrock, Geneva, N. Y.:

First, I claim the sliding gears, B and C, connected together by the feathered sleeve, S, and arranged to slide upon the shaft, D, without moving the latter longitudinally, as and for the purposes set forth.

Second, The arrangement of the hand lever, E, ratcheted arch, H, and yoke, y, in combination with the feathered connecting sleeve, S, and gears, B and C, as shown and described, and for the purposes specified.

54,876.—Harvester.—M. Easterbrook, Jr., Geneva, N. Y.:

First, I claim the combination of the hand lever and two loose pinions, p and p', with the double pinion b, and the spur wheel, B, arranged and operating, substantially as and for the purposes set forth.

Second, The two loose pinions, p and p', (whether they are adjusted with a hand lever or other suitable device), in combination with the double pinion, b, and the spur wheel, substantially in the manner, and for the purposes shown and described.

54,877.—Bed Bottom.—Thomas Falloon, Lyons, N. Y.:

I claim the combination of the elastic slats, B B, and the expanding frame, A, as a whole, substantially as and for the purpose herein set forth.

I also claim the combination of the caps, f f, covering the ends of the slats, the links, g g, pins, h h, friction rollers, i i, and elastic loops, m m, operating substantially as herein set forth.

I also claim the cross strap or straps, D, provided with the loops, q, or equivalent, and connected with the elastic loops, S, when used in combination with the slats, B B, substantially as described.

54,878.—Churn.—Benjamin S. Fletcher, Cornish, N. H.:

I claim the form and arrangement of the dashers, F F, and the breakers, G G.

54,879.—Bed Bottom.—James H. Fletcher, Lowell, Mass:

I claim the said improved bed foundation or combination and arrangement of the frame, A, with its mortices, a a a a, and india-rubber springs, c c c c, the cross bars, B B, with their series of notches, d d d, and the series of slats, C C C, with their supporting springs, e e e, or the same and the holding bands, D D, the whole being substantially in the manner and for the purpose specified.

54,880.—Machine for Stripping Cane.—Delos C. Flint, Bushnell, Ill.:

First, In combination with the strippers, E' H, I claim the auxiliary hinged or jointed strippers, F' F, attached to the movable stripper, F', and operated by the action of the upwardly divergent grooves, h h, in the fixed stripper, H, on the ribs or points, f f, all arranged and constructed substantially as shown to operate as set forth.

Second, The combination of strippers, E, vertically slotted, parallel guides, B B, spring, D, and screw, C, all arranged and operating in the manner herein described.

Third, The slotted vertically adjustable angular plate, G, when used for the purpose herein described.

54,881.—Pump.—Nelson T. Fogg, Lewiston, Me.:

I claim the described arrangement and combination of the rod, y, the ball, A, the screw, B, the cross-bar, C, valve, d, screw, k, and fastening rods, M M', as and for the several purposes herein set forth.

54,882.—Tool Holder for Dentists.—George F. Foote, New York City:

I claim the combination of the slot, P, in the tool rack, with the flattened surface, N, of the tool, and its upper point, C, fitting a corresponding socket of a tool holder, for the purpose herein set forth.

54,883.—Manufacture of India-Rubber Shoes.—Geo. H Fowler, New Haven, Conn.:

I claim the napped woolenet (or its equivalent), in combination with the cottonet (or its equivalent) and the India rubber, for making an elastic ventilating shoe, when they are prepared, fitted together and finished, substantially as herein described.

54,884.—Ore Crusher.—Joseph Fowler, Rahway, N. J.:

First, I claim the crank shaft, e, and connecting rods, h h and l, in combination with the jaws, g and k, when the parts are arranged and operating as and for the purposes specified.

Second, In combination with the jaws, g and k, I claim the adjustable side pieces, n n, and screws, o o, for the purposes and as set forth.

54,885.—Animal Trap —A. A. Fradenburg, Nevada City, Cal.:

I claim, in traps for vermin, the combination of the grating, D, on the platform, P, with the revolving door, E, the stops, N and F, substantially as shown.

54,886.—Clothes Dryer.—Wilham Gallaway, Sheboygan Falls, Wis.:

I claim the annular channel, c, around the point or shank of the staff so that when the arms, D I, are wholly or partially distended the head cannot be lifted from the staff, substantially as set forth.

The revolving head, F, resting upon the projecting metallic shoulder, E, in combination with said shoulder and the notched braces, D, for the purposes specified.

The collar, G, attached to the heads, for the purpose of preventing the same from being split, substantially as described.

54,887.—Apparatus to Prevent Horses from Kicking.—Elijah H. Gammon, Batavia, Ill.:

I claim the device to prevent horses from kicking, etc., constructed substantially as herein described, as a new article of manufacture.

54,888.—Wrench.—George P. Ganster, New York City:

I claim a wrench constructed of the hollow frame or bundle, A, the moveable rack or hammer bar, B, and the volute toothed wheel, c, these several parts being combined and arranged in the manner substantially as set forth, and operating as described.

54,889.—Shackle for Prisoners.—John C. Gardner, Portland, Oregon:

I claim the invention of an improved shackle and the supporter, and the mode of fastening them upon the ankle, as hereinbefore described.

54,890.—Machine for Jointing Oval Frames.—David Garrison, Philadelphia, Pa.:

I claim the combination of two saws, the cutting planes of which are at an angle to each other, a table having a movement parallel with the cutting planes of the two saws, and a set of adjustable stops or guides arranged upon the said table, in relation to each other and to the saws, substantially as and for the purpose herein specified.

54,891.—Churn Dasher.—John Gelston, Cincinnati, Ohio:

First. I claim the provision in the tubular handle of a churn dasher, of the apertures F, for passing compressed air through the body of the cream, at right angles to said tubular handle, substantially as described, and for the purpose set forth

Second, The arms, E, when provided with deflecting faces, e, in combination with the perforated dash, D, all arranged to operate substantially as and for the purpose herein described.

54,892.—Washing Machine.—Franklin A. Gleason, Brooklyn, N. Y.:

I claim constructing the tub and cone of corrugated sheet metal, in combination with the balance wheel, gear wheel, and pinion substantially as herein described, and for the purpose specified.

54,893.—Machine for Making Auger Bits.—W. W. Grier and R. H. Boyd, Hulton, Pa.:

First, We claim a machine for twisting auger bits, drills, and similar articles, and constructed substantially of the shaft, B, and a series of dies, arranged to operate substantially as and for the purpose set forth.

Second, The rotating and longitudinally moving shaft, B, having a hole made longitudinally therein, of proper size and form to receive the blank and hold it while being twisted and drawn out, as shown and described.

Third, In combination with said shaft, B, we claim the tongs, L, having their jaws constructed as shown and described.

Fourth, In combination with the shaft, B, we claim the screw, C, with its thread, constructed as described, for the purpose of imparting to the shaft an intermittent longitudinal movement, while it has a continuous rotary movement during the operation of twisting the blank for the purpose of both twisting the blank and setting the lips at one operation.

54,894.—Filter.—Frank P. Griffitts, Philadelphia, Pa.:

I claim the frame or stand clamped between the permanent flange, d, and the movable flanged ring, F, for the purpose of firmly clamping the felt diaphragm to its seat, and allowing it to be readily removed, cleansed and replaced, substantially as described and represented.

54,895.—Grain Separator.—P. Griswold, Hudson, Mich.:

First, I claim the arrangement of the frame, L, with its vibrating bottom and trough, N, attached with the screw, I, substantially as and for the purpose herein specified.

Second, The arrangement of the shaft, H, rod, P, and curved plate, b, with the frame, L, for the purpose of giving the bottom of said frame and the screw, I, a vibratory as well as a vertical motion, as and for the purpose specified.

Third, The adjustable cleat, O, as constructed when arranged with the screen, J, as and for the purpose specified.

Fourth, the arrangement of the bar, R, button, S, and screw, C, the same being constructed and used as and for the purpose herein set forth.

54,896.—Machine for Cutting Corks.—George Hammer, Philadelphia, Pa.:

I claim the use of pressure pad, E, when arranged and operating in combination with a cutter and cutting block, substantially in the manner and for the purpose set forth.

54,897.—Broom Clamp.—Asaph S. Harwood, Malone, N. Y.:

I claim the mode of strengthening and supporting corn brooms by means of the ring above described, attached to springs made of wire and arranged as above specified.

54,898.—Die for Swaging Hands for Watches.—George Hastings, Waltham, Mass.:

I claim the combination and arrangement of the tube projection forming chamber, f, with the finger and ring forming parts, a b d, made as described.

I also claim the combination and arrangement of the eye former, c, or c c', the tube projection forming chamber, f, ring former, d, and the finger dies, a b, the whole being substantially as and for the purpose specified.

54,899.—Fodder Cutter.—Thomas Hazard, Wilmington, Ohio:

I claim, First, the provision of the guard or mouthpiece, H, having the slotted arm, I i, and screw bolt, N, and being formed and adapted to operate in connection with the throat, G, and knife, K, in the manner explained.

Second, The arrangement of obliquely moving knife, K, pressure board, 12 arm, 13, and roller, 14, for the purpose described.

54,900.—Machine for Making Cigars.—Isaachar A. Heald, Carlisle, Mass.:

First, I claim mounting the roller, D, in such a manner that it can be moved in the arc of a circle, without throwing it out of gear, substantially as and for the purpose set forth.

Second, I claim forming a filler or body of a cigar, by rolling it between two disks more or less inclined, substantially as shown and described.

Third, I claim smoothing and cutting the wrappers for cigars, substantially as herein shown and described.

Fourth, I claim cutting the end of the cigar off, by moving it past a knife fixed in position, substantially as shown in fig. 1, and herein described.

Fifth, I claim the socket or cup, t, arranged to operate substantially as described, to hold and form the end of a cigar ready to receive the wrapper.

Sixth, I claim providing the surface of the rollers with a series of cavities increasing in size and depth toward the center and decreasing toward the end of the rolls, as shown and described.

Seventh, I claim the revolving and sliding fingers, e', for seizing and holding the wrapper, substantially as set forth.

Eighth, I claim holding the end of the wrapper upon the cup, t, or other device more unyielding than the cigar itself, said device being arranged opposite to the end of the cigar and caused to revolve with it, for the purpose of drawing the wrapper sufficiently tight.

54,901.—Corn and Seed Planter.—John L. Heisey, Elizabethtown, Pa.:

First, I claim the radiating rods, M, with their markers, N, across the periphery of the wheels, supported by and made adjustable by the loose cog wheels, G' G2, in combination with the gear, I, shifting and turning levers, E, and side toothed pulley, D, all on the seeding or roller shaft, B, arranged and operating substantially in the manner and for the purpose specified.

Second, I claim the combination of the seed valves, when placed in the bottom of the spouts, P, and operated in unison with the markers, N, simultaneously actuated by the seeding or roller shaft, B, with its gearing, I, and depressing loops, F, arranged substantially in the manner and for the purpose set forth.

Third, I also claim the adjustable mold board-like side plate, x, adjustable on the supporting bars, T, of the shovels, R, constructed and operated in the manner specified.

54,902.—Bed Bottom.—A. R. Henderson and James Ford, Andover, N. Y.:

We claim the combination of the side rails, C D, hanging webbing, G, double slats, E F, arranged in the manner and for the purpose herein specified.

54,903.—Window Sash Spring.—Foster Henshaw, Washington, D. C.:

I claim the construction of the steel wire spring with its incline slot at top, in which the grooved axle of the roller operates and is combined as herein described and for the purposes set forth.

54,904.—Bung for Beer Casks.—Michael Hey, Philadelphia, Pa.:

I claim the sharp edged disk flure, 3, when applied to operate upon a flat seat in a ventilating beer bung, as and for the purpose described.

54,905.—Air Compressing Pump.—Birdsill, Holly, Lockport, N. Y.:

First, I claim the combination and arrangement of the air and water reservoir, L, with the water extension, B', of the pumping cylinder, B, operating substantially as described.

Second, I also claim the cylinder, B, constructed substantially as described in combination with the reservoir, L, and water extension, B'.

54,906.—Steam Engine.—William Cleveland Hicks, New York City:

I claim the arrangement of the cylinder, valvular pistons, and steam admission and exhaust passages, substantially as herein described, to operate in the manner and for the purpose set forth.

54,907.—Disinfecting Composition.—Fred. Hoffman and Robert Wendler, Brooklyn, N. Y.:

We claim a disinfecting compound made of charcoal and hydrated oxide of phenyl, substantially as described.

A disinfected compound of charcoal hydrated oxide of phenyl and burned lime as described.

A disinfecting compound made of charcoal, hydrated oxide of phenyl, burned lime, and hypochloric acid, and with or without the addition of an indifferent vegetable cellulose, as specified.

54,908.—Window Shade Fixture.—Joseph Horner and Silas Van Doren, New Brunswick, N. J.:

We claim the brackets, B B, for supporting a roller, D, constructed with flanges which are applicable to the top of the frame, substantially as shown and described.

Second, Attaching the roller to its journals, by forming in its ends a T-shaped groove into which is inserted an L-shaped arm or plate extending from each journal, substantially as shown and described.

54,909.—Manufacturing Flexible Tubing.—David K. Hoxsie and Thomas L. Reed, Providence, R. I.:

I claim in combination with flexible gas tubing, as a finish for the same, a covering of webbing or braid of many single strands, plaited in minute stitch-like wales, substantially as described for the purpose specified.

54,910.—Process of Building Concrete and Mortar Walls for Buildings.—Ebenezer Hunt, Danversport, Mass.:

First, I claim the construction of concrete or mortar walls for dwelling and other houses by the use of cores made of sand, loam, or some other cheap material, so arranged within the molds which form the walls as to leave a space for the concrete or mortar forming the exterior surface of the wall, and from this outer face of the wall projections of the same material extending perpendicularly from top to bottom and inwardly as far as the contemplated thickness of the wall, strengthened, if required, by horizontal projections of the same material at proper distance, substantially in the manner and for the purposes set forth.

Second, I claim the building of posts, fences, roofs, floors, flagstones and other like structures of concrete or mortar, or their equivalents, by the use of cores, substantially in the manner and for the purpose set forth.

54,911.—Stove Pipe Drum.—Frank P. Hunt, Medina, N. Y.:

First, I claim the interior perforated cylinders, I and K, and the perforated disks, J and L, constructed and arranged substantially as described in combination with each other and with the exterior cylinder, A, substantially as and for the purpose set forth.

Second, The combination of the damper, O, with the interior cylinder I, and the exterior cylinder, A, substantially as described and for the purpose set forth.

54,912.—Heat Radiator.—Jacob B. Hyzer, Janesville, Wis.:

I claim the combination and arrangement of the flues, F, and hot air chamber, T, (when constructed with the partition, U, and damper, S), with the flues, C, hot air chamber, I, and return flues, H, substantially as and for the purpose set forth

54,913.—Car Coupling.—Marshall Ingersoll, Grafton, Ohio:

I claim the arrangement of the coupling hooks, C, connected to the springs, g and a, in combination with the lifting hook, J, lever, m, pawl, E, and bumpers, operating in the manner and for the purpose set forth.

54,914.—Hay Rack for Wagons.—Albert Jackson, Clifton Springs, N. Y.:

First, I claim in connection with the frame, A, the detachable bars, B, constructed of two parts, a a, and fitted to the frame in the manner substantially as shown and described.

Second, The removable wheel fenders, G, attached to the cleats, E E', H, on the bars, B B B I, substantially as and for the purpose set forth.

Third, The removable boards, F F, placed between the cleats, E E, substantially as described.

Fourth, The combination of the frame, A, bars, B, fenders, G, and ladder or guard, L, all arranged substantially as and for the purpose specified.

54,915.—Attachment to Gas Fixtures.—Bernard Jacobs, New York City:

I claim the spring valve, b, or its equivalent, in combination with the pipes, A and B, or in the joints between two pipes bearing a similar relation to each other as said pipes, substantially as and for the purpose set forth.

54,916.—Shuffle Hoe.—J. D. Jenkins, Jackson, Ill.:

First, I claim the combination of a rake and a hoe blade, A, when arranged to operate substantially as described.

Second, Making the blade, A, with a concave bottom surface and connecting this blade to the forked head at a point which is beneath the rake teeth, substantially as described.

54,917.—Collecting the Light Oils from Oil Wells—John Johnson, Saco, Me. Antedated May 10, 1866:

I claim the separating and gathering at the wells, a new article of commerce, viz: the light condensable vapors which rise with petroleum and which may be pumped off, under any suitable seal and condensed, substantially as herein set forth.

I also claim volatilizing and condensing the condensable products from petroleum at the wells, by forcing air or gases through petroleum as carriers of the light products, for the purpose herein described.

54,918.—Calks for Horse Shoes.—Frederick Judson, Jersey City, N. J.:

I claim the tapering calks, C C, constructed as described in combination with the projections, B B and tapering sockets, A A, of the shoe, A, arranged and operating in the manner and for the purpose herein described.

54,919.—Reading Desk.—Ernst Kast, Waterbury, Conn.:

I claim the reading desk, A, provided with an adjusting shank, B, in combination with the tubular arm, C, which is adjustable on the vertical column, D, and with the table, E, constructed and operating substantially as and for the purpose described.

54,920.—Machinery for Forming Flanges upon Boiler Heads.—Joel F. Keeler, Pittsburgh, Pa.:

I claim the rotary tables, b d and e e, in combination with the cone, g, or their equivalents, for the purpose set forth.

54,921.—Broom Head.—John Kiefer, Hamilton, Ohio:

I claim the two series of leaves, a a a, and a' a' a', in combination with the central continuous leaf, b, each of which is provided with teeth by punching the sheet metal, as described, and so arranged as to be capable of self-adjustment upon the stalks of broom corn constituting the wisps, when compressed thereon, in the manner and for the purpose herein set forth.

54,922.—Alarm Whistle.—Patrick Killin, Mount Healthy, Ohio:

I claim the bellows, B, in the cylindrical chamber, A, the spring, C, rod, D, and whistle or horn, G, constructed and operated as above described and for the purpose set forth.

54,923.—Machine for Making Tin Fruit Cans.—August Kollenberg, Owensboro', Ky.:

I claim the combination with the adjustable cylinder, A, of the retaining lever, C, arranged to operate substantially as described.

54,924.—Heating Stove.—Leonard Lakin and Norman Hall, Brodhead, Wis.:

We claim the construction of a stove with its fire chamber surrounded by a smoke chamber and an open space between said fire and smoke chambers, and the conveyance of heat and smoke from the one chamber to the other, by means of the flues, in such manner as to secure three heating or radiating surfaces and a draft of air between said fire and smoke chambers, substantially as herein set forth.

54,925.—Car Wheel for Lubricating Purposes.—John W. Latcher, Albany, N. Y. Antedated, May 7, 1866:

First, I claim forming an oil reservoir, B, in the body of independent revolving car wheels and the oil retained therein for gradual use, by means of plugs, d, in combination with stationary journals, C, substantially as described.

Second, Forming an oil reservoir in such a manner as shall compromise unequal shrinkage, as shown and described.

54,926.—Sewing Machine.—William M. Leavens, Philadelphia, Pa.:

First, I claim preventing the operation of the thread carrier, F, by throwing it back and securing and retaining it in that position, so that the stitch may be changed without further modification or substitution of the parts, substantially as described.

Second, I claim securing and retaining the thread carrier, F, in a position to prevent it from operating by means of lever, P, pin, n, arm, m, or their equivalents, substantially as described.

54,927.—Pea and Bean Sheller.—W. K. Lewis, Boston, Mass.:

I claim the serrated wheels, I, placed on a shaft, D, over the front part of the apron, C, when used in combination with the endless apron and rollers, B B, and as an auxiliary feed for said rollers, for the purpose specified.

54,928.—Buckle.—Henry Loewenberg, New York City:

I claim a buckle having sectional cross bars with points turned toward each other, and that will hold and be adjustable on both straps without being permanently attached to either, and constructed substantially as herein described and represented.

54,929.—Device for Opening Fruit Cans.—William W. Lyman, West Meriden, Conn.:

I claim the fulcrum bridge or yoke, d, and lifting lever, e, substantially as and for the purpose as described.

54,930.—Churn Dasher.—David W. Maurice, Springfield, Ohio:

I claim an improved churn dasher, constructed and arranged substantially as herein described for the purpose set forth.

54,931.—Refrigerator.—James McKelvey, Ogdensburg, N. Y.:

I claim the filter, J, in combination with the ice chest, I, and refrigerating chamber, H, arranged substantially in the manner and for the purpose set forth.

54,932.—Manufacture of Paper Pulp.—Harrison B. Meech, Fort Edward, N. Y.:

First, I claim the method of treating hay, hemp, flax, and other grasses for the manufacture of paper, substantially as described.

Second, Using liquors in a rotary boiler prepared in the manner and for the purpose herein set forth.

54,933.—Making Coffee.—Josiah V. Meigs, Washington, D. C.:

First, I claim making coffee by inclosing the ground coffee in an immersed chamber through which hot water is forced, substantially in the manner herein described.

Second, The combination of the kettle or boiler with the coffee chamber, when arranged and operating substantially in the manner and for the purpose set forth.

Third, The combination of the coffee tube with a check, substantially as and for the purpose described.

Fourth, Cleansing the coffee tube by condensing the steam in it, as described.

Fifth, The combination of the coffee pot and inclined planes, I J, substantially as and for the purpose described.

54,934.—Breech-loading Fire-arm.—J. V. Meigs, Washington, D. C.:

First, I claim reciprocating the breech block vertically by reciprocating the guard, or its equivalent, horizontally.

Second, The combination of the trigger with the dog and sliding guard, to fire the gun, and lock, or release the breech block, substantially in the manner described.

Third, The combination of the reciprocating guard and vertically sliding breech block with the bar carrying a rebate to correspond with the recess of the barrel for the purpose of removing the cartridge case, substantially as described.

54,935.—Lamp.—Rufus S. Merrill, Boston, Mass.:

First, I claim the method herein described of insulating the wick tube from the cap of the vessel by the interposition of a non-conductor of heat, in the manner and for the purpose set forth.

Second, I claim the combination with a cap provided with a socket to contain the insulating cementing substance of the wick tube provided with an annular plate, to prevent its being moved within the cementing matter.

Third, As an attachment to and in combination with the wick tube, I claim the chambers or reservoir arranged in the manner and for operation as described.

54,936.—Loading Attachment to Hay Wagons.—James Madison Miller, Greenwood Township, Pa.:

I claim the wheel, m m, attached to the wagon wheel in combination with the wheel, N, lever, D, bar, E E, and the crane, P O O, when the same are constructed in the aforesaid combination, for the purpose set forth in the manner described.

54,937.—Water Wheel.—John C. Miller, Amsterdam, N. Y.:

I claim as an improvement in water wheels, the arrangement of the spiral or helical scroll, H, F, and curved buckets, C, of the wheels, D, when constructed and operating in the manner and for the purpose herein specified.

I further claim the combination of the helical or spiral scroll circular bottom plate and curved buckets, when applied in connection with a water wheel which receives the water at its center and discharges it from its periphery, in the manner substantially as herein described.

54,938.—Heating Stove.—Geo. Rodney Moore, Lyons, Iowa:

First, I claim the construction of a fire chamber with a part, H, shelving inwardly and terminating at any desired distance above the grate, I, for the purpose and in the manner herein set forth.

Second, I claim the recess or chamber between the fire, J, the plate, H, and door, D, as and for the purposes described.

54,939.—Machine for Attaching Clasps to Skirt Hoops.—C. Newmann, New York City:

I claim the cup-shaped receptacle with flanged edges to its conducting chute, constructed, arranged and operating substantially as described and represented.

54,940.—Feed Water Heater.—John Nicholson, Allegheny City, Pa.:

I claim the steam chamber, A, furnished with an inlet, B, and outlets, C e, for steam, and placed within a water chamber, D, which is connected to the steam boiler by pipe, x, and to the supply of water by pipe, O, the whole being constructed, arranged and operating substantially as herein described, and for the purpose set forth.

54,941.—Spring Balance.—John K. O'Neil, Kingston, N. Y.:

I claim the arrangement of any desired number of springs, so that by detaching or attaching they may be used either separately or conjointly for a weighing instrument, substantially in the manner herein described, for the purposes set forth.

54,942.—Cotton Seed Planter.—Albany Packham, Prestonville, Ky.:

I claim the inverted conical hopper, F, in combination with the rotary spiral toothed strip or seed distributor, G*, with bar, H, attached, all arranged on a mounted frame to operate in the manner substantially as, and for the purpose herein set forth.

54,943.—Lime Kiln.—Halsey Pelton, Erie, Penn.:

I claim making the furnaces of lime kilns, with upper openings or doors for admitting coal in combination with horizontal doors or openings for admitting wood, so that either kind of fuel can be used, substantially as described.

Second, I also claim the blocks, G, made substantially as described for filling the iron part of a furnace when coal is to be used as fuel, and for conducting the coal to the grate, as above shown.

Third, I also claim making the body of a lime kiln substantially as above described, that is to say, with a metallic outer cylinder, a fire brick or equivalent lining, and a non-conducting material between the two, with a projecting base for the arrangement of flues.

Fourth, I also claim making a horizontal flange on the inside of the metallic cylinder, I, for the purpose of separating the upper part of the inner lining from the lower part, substantially as above described.

Fifth, I claim the arrangement of the grate, H, and base of the kiln, in the manner and for the purpose herein specified.

54,944.—Medical Compound.—E. B. Perry, Knoxville, Ill.:

I claim the within described compound made of the ingredients set forth, and mixed together, substantially in the manner specified

54,945.—Apparatus for Making Extracts from Bark, Etc.—Francis W. Perry and John H. Pierce, Woburn, Mass.:

First, We claim a revolving and self-emptying leach for extracting or displacing tannic acid from bark, substantially as herein described.

Second, We claim the combined arrangement, substantially as herein described, for revolving the leach and introducing steam thereto, or any analogous device to produce the same results, when used for extracting tannic acid from bark for tanners use.

54,946.—Harvester.—John G. Perry, South Kingston, R. I.:

First, I claim the centrally open rim or axle, z, or its equivalent of the main wheel, C, in combination with the frame, B, constructed substantially as herein described and for the purpose set forth.

Second, I claim the brace rod, J, passing through the open wheel, C, or axle, z, in combination with the drag bar or shoe, V, connected to the frame, B substantially as described and for the purpose set forth.

Third, I claim the combined hand and foot lever, s a, arranged for raising either or both ends of the cutting apparatus, substantially as described and for the purpose set forth.

Fourth, I claim the arrangement of the bevel gears, a m, crank, b, or its equivalent and pitman, S, in combination with the open wheel, C, or axle, Z, and main frame, B, substantially as herein described and for the purpose set forth.

54,947.—Horse Rake.—William M. Platt, West Liberty, Ohio:

I claim the arrangement of engaging and releasing mechanism, J K L M N P, all constructed and operating as and for the purpose specified.

54,948.—Boot Jack.—Asahel Pierpont, New Haven, Conn.:

I claim the combination of the two parts, A and D, for a folding boot jack, when hinged laterally and constructed, arranged, and fitted for use, substantially as herein described and set forth.

54,949.—Vegetable Slicer.—J. C. Plumer, Boston, Mass.:

I claim the disk, P, with the raised cutting edges, E E', as described, in connection with the support, S, and receptacle, R, all substantially as and for the purpose specified.

54,950.—Method of Preparing Vacuum Vessels for Condensing Milk, Etc.—Julius R. Pond, New Hartford, Conn.:

I claim treading metal with an oily or greasy substance, substantially such as set forth, or its equivalent, in the manner and for the purpose substantially as described.

54,951.—Corn Harvester.—William E. Prall, Knoxville, Tenn.:

I claim the combination of the cutter provided with the ratchet edged upon its under side, cutter bar, R, provided with a lip, S, and friction wheel, P, when arranged and operated substantially as and for the purpose set forth.

54,952.—Lock.—D. A. Pratt, New York City:

First, I claim the employment or use of the movable lip, c, on the key, C, in connection with a notch in the stationary plate, B, attached to the lock, or to the escutcheon on the door, arranged in such a manner that the one will, as the key is turned in order to lock the door, engage automatically with the other, substantially as set forth.

Second, The tumbler, E, arranged within the plate, B, so as to be operated by the turning of the key in the manner shown, or in any equivalent way, so as to serve as a guard to the key hole to prevent the passing of a rod or instrument through the key hole to act upon the lip, c, and thus admit of the key being turned from the outer side of the door.

Third, The combination of the lip, c, upon lever, d, applied to the key, C, the arm, k, the notch, b, in the plate, B and the rotary tumbler, E, all arranged and applied to operate in the manner substantially as and for the purpose set forth.

54,953.—Sash Fastening.—D. A. Pratt, New York City:

I claim the sash fastening in a sash frame with its catches, d, placed on separate rods, d d', arranged and constructed as described, so that the point of contact with the stile, B, of the window, is at the center of frame of the fastener, b.

I further claim the combination of the catches, secured laterally to the levers c c', end springs, e, applied to the frame, A, arranged to operate with the notches on the stile, B of the sash, in the manner and for the purpose herein specified.

54,954.—Shoe Jack.—Levi H. Proctor, East Sangers, Mass.:

I claim the combination and arrangement of the arms, d c, the spring, o, the grooves, i i, the racks, k m, and the sets of teeth, f g, with the heel and toe rests, F G, the plate, C, and its plates, E E, the whole being substantially as and to operate as described.

I also claim the arrangement and application of the pin, p, the bolts, r, and spring, s, and nut, t, with the heel rests, F.

I also claim the application of the curved bar, H, to the plate, B, by means of the socketed projection, w, the hole, b', and the ears, y y, arranged as described, whereby the two may be connected or disconnected as circumstances may require.

54,955.—Car Coupling.—George Quick and John N. Wallis, Fleming, N. Y.:

First, I claim the swinging bolt, F, when combined with the link, A, slotted piece, K, and shaft, G, in the manner and for the purpose described.

Second, The arrangement, as described, of shaft, G, with its arms, J and I, and slotted piece, K, to release the coupling of the cars without passing between them, in the manner and for the purpose described.

Third, The combination of the hook, N, upon the link, A, with the lug, M, or shaft, G, so that the withdrawal of the link the coupling will be restored to its nominal position as herein described.

54,956.—Hay and Cotton Press.—Thomas D. Read, F. R. Read, and Cyrus Dorrel, Rising Sun, Ind. Antedated May 3, 1866.:

I claim the combination of the levers, d e and i, rollers, f and h, inclined plate, g, and notch, j, in the guide of the beater, constructed as above described and for the purpose set forth.

54,957.—Manufacture of Dyes and Colors.—George H. Reed, Boston Mass.:

I claim, First, As a new manufacture or composition of matter, and as a new article of commerce, liquid dyes produced from vegetable or mineral coloring matters, so mixed and prepared with the proper proportion, or quantity, or mordants, and glycerin, alcohol, pyroxylic spirit, or naphtha, or either of them, that the same will endure both heat and cold, and may be kept for any period without undergoing change, and will produce a complete and effectual dye upon either silk, or woolen cloth, or fabric, at one application.

Second, I claim the process of making liquid dyes in all colors by the mixture and preparation of coloring matters, and mordants, either of vegetable or mineral origin, or both, with the addition of glycerin, alcohol, pyroxylic spirit, or wood naphtha, or either of them, in such manner that the dyes will endure both heat and cold, and may be kept for any length of period without undergoing changes, and will produce a complete and effectual dye upon either silk, or woolen cloth, or fabric, at one application, in the manner substantially as above set forth.

54,958.—Fifth Wheel for Vehicles.—Uel Reynolds, New York City:

I claim a stop guard for preventing the wheels coming in contact with the body, formed by projections or stops upon the fifth wheel, substantially as set forth.

I also claim the anti-friction rollers, and jaws in combination with the fifth wheel circle or arcs, as set forth.

54,959.—Balance Valve for Steam Engine.—Thomas Richards, Lansingburgh, N. Y. Antedated May 7, 1866:

I claim the within described arrangement of the ports in valve seat and valve, so as to make the steam and exhaust ports balanced, under any pressure of steam, substantially as set forth.

54,960.—Cane Mill.—John W. Richardson, Daniel L. Davis, and Wm. C. Howell, Sligo, Ohio:

We claim, First, The provision, in a cane mill, of the series of feeding chopping, crushing, and expressing apparatus, arranged and co-operating as set forth.

Second, The combination of the revolving sickle-formed knives, E, throat piece, F, and intermittent feed mechanism, G g g' H I J K, substantially as set forth.

Third, In a cane mill, arranged and operating substantially as described, we claim the nozzle, z', when used for injecting steam upon the cane while in the operation of being crushed, for the purpose set forth.

54,961.—Sash Fastener.—W. J. Ross, Worcester, Mass.:

First, I claim the combination with the case, A, of the lift piece, C, lever, D, with its locking projection, J, and springs, f, substantially as set forth.

Second, Making or coring out the case, A, as seen at h, in combination with the use of spring, f, as and for the purpose stated.

Third, The combination with the projections, d and e, on the end, F, of lever, D, of the edge, g, as and for the purpose stated.

54,962.—Tool for Removing Scale in Boiler Tubes.—Philip C. Rowe, Boston, Mass.:

I claim, in combination with a cutter head, the tubular screw, d, and its internal screw, i, arranged to operate substantially as described

Also, in combination with the piece, c, supporting the nut for the screw, d, the turn-buckle clamping device, substantially as set forth, and the construction and arrangement of the parts described, by which the cutters of the head are adjusted, substantially as specified.

54,963.—Gang Plow.—Jacob L. Runk, James H. Brown, and Elias M. Morgan, Nashville, Ill.:

First, I claim the plow beam, attached to a bolster, the latter being hinged or pivoted to the axle or carriage, substantially as and for the purpose described.

Second, Attaching the draft-rod to the beam in such a manner as to utilize the draft of the team in raising the plows from the ground, when the forward support of the beam is removed.

Third, the combination of the beam, A, and tongue, G, or its equivalent, affixed to the carriage, with the toggle, V U, the latter forming a brace, when straight, and a means, by deflection, of depressing the fore end of the beam.

Fourth, the combination of the beam, A, tongue, G, or its equivalent, and the notched stay hook, X.

Fifth, the arrangement of the hand lever, S, connecting rod, T, beam, A, and carriage or tongue, operating as described.

Sixth, The arrangement of the hand lever S, connecting rod, T, toggle, U V, beam, A, and tongue or equivalent, substantially as described and represented.

Seventh, Attaching the draft rod to a point so far removed from the fore end of the beam, and above and near the axis of vibration of the latter, as to maintain the draft point, when the plows are out of the ground, at or about the same hight as when in working position.

Eighth, The combination of the beam, hinged to the bolster of the foot board and pivoted hand lever, as described and represented.

Ninth, The seat post, pivoted to the carriage and beam, substantially as and for the purpose described.

Tenth, The arrangement for the lateral adjustment of the tongue, for the purpose described, consisting in the pivoting of the tongue on a vertical bolt in the axle, and the side braces adjustable as to length, as described and represented.

54,964.—Boiler for Culinary Purposes.—Sarah E. Saul, New York City:

I claim the combination of the hinged cover, b, and tube, C, arranged relatively with the boiler, A, and escape pipe, a a d', constructed and operating in the manner and for the purpose herein specified.

54,965.—Washing Machine.—Emery Sawyer, Millbridge, Maine:

I claim the hinged cover, with its washing ribs, C, when operated by the cam wheel, G, as and for the purpose described.

Also the wringing box, working between the arms, f, and furnished with the rubber bottom and screw pressure, as and for the purpose described.

54,966.—Instrument for Cutting Finger Nails.—Charles C. E. Schwartz, Philadelphia, Pa.:

First, I claim the plate, A, the circular shaped opening, a, and the straight opening or guide, b, substantially as specified and set forth.

Second, The combination of the plate, A, the circular opening, a, the straight opening, b, the sliding knife, B, and set screw, d, and the serrated edges or files, e, as specified and described.

54,967.—Brick Press.—David W. Seeley, Albany, N. Y.:

First I claim a brick press which is so constructed that the brick will be supported on two opposite sides during the act of releasing the other sides of the brick, substantially as described.

Second, The combination of a reciprocating mold box, D, a reciprocating piston, E, and a platen, G, the piston and platen having each an irregular motion, and all operating so as to press and release bricks, substantially as described.

Third, Discharging the bricks from the pressing devices, substantially as described.

Fourth, Constructing the ends of the rectilinear moving piston and platen, substantially as described.

54,968.—Slide Valve for Steam Engines.—John F. Shearman, Brooklyn, N. Y.:

First, I claim the cover, g, forming a termination to the exhaust pipe, h, within the steam chest, in combination with the exhaust port, 3, passing through the slide valve, substantially as and for the purpose specified.

Second, I claim the arrangement of the exhaust pipe, h, and cover, g, to the exhaust port of the valve, and the expansion joint or stuffing box on the valve chest, around the exhaust pipe, as and for the purposes specified.

54,969.—Mode of Ventilating Grain.—John Shone, Blackwoodstown, N. J.:

First, I claim combining with the main tubes, C C, the auxiliary vertical tubes, G, and horizontal tubes, H, constructed, arranged, and operating substantially in the manner and for the purpose hereinbefore described.

Second, The combination of the cap pieces, C', with the main tubes, C, substantially in the manner and for the purpose specified.

Third, Combining the perforated tubes, I, with the sides of the bin, substantially as and for the purpose set forth.

54,970.—Artificial Leg.—S. P. Sleppy, Wilkesbarre, Pa.:

First, I claim the combination of the lever, a, connecting rods, d and f, thigh, c, leg, e, and foot, g, in the manner and for the purpose described.

Second, The combination of the straps, j j j and i, with the lever, a, thigh, c, leg, e, foot, g, connecting rods, d and f, all arranged and operating substantially as described.

Third, The combination of lever, a, straps, i, and connecting rod, d, substantially as described.

54,971.—Gas Burner.—J. Lawrence Smith, Louisville, Ky.:

I claim a gas burner, constructed as herein described, with an aluminium tip, to adapt it to resist corrosion, and to be readily and safely cleansed.

54,972.—Mechanical Movement.—Peter J. Smith, Philadelphia, Pa.:

I claim the combination of the two shafts, A and A', arms, D and D', rods, E and E', and the radius rod, F, the whole being arranged and operating substantially as and for the purpose herein set forth.

54,973.—Tumbler Washer and Cooler.—D. M. Somers, Washington, D. C.:

I claim the combination of the tumbler rest, D, the spring, K, and valve, J, when constructed and operated, substantially as herein described, and for the purposes set forth.

54,974.—Hen's Nest.—Hiram Stevens, New Haven, Conn.:

I claim the construction and arrangement of the box, C, within a case, A, so as to operate substantially in the manner specified.

54,975.—Railway Truck.—Hiram Strait, Cincinnati, Ohio:

I claim, First, The arrangement or combination of car wheels, brackets, springs, and cross and longitudinal ties, either with or without the rubbers, substantially as herein specified.

Second, The grooved or flanged rubbers, (either adjustable or fixed) attached to either the ends of the brackets or to brakes, to remove all obstacles from before the car wheels, substantially as herein specified.

54,976.—Stovepipe Damper.—Daniel Sweeney and Stephen Sweeney, Constableville, N. Y.:

I claim, First, The damper composed of the annular concave disk, a, and cap, e, in combination with the cross bar, E, constructed and operating substantially as and for the purpose described.

Second, Also the perforated diaphragm, D, in combination with the damper, C, and cross bar, E, constructed and operating substantially as and for the purpose set forth.

54,977.—Horse Rake.—Benjamin C. Taylor, Dayton, Ohio:

I claim, First, The supporting pieces, p and q, constructed and arranged substantially as described, and for the purpose specified.

Second The adjustable spring bar, b, when arranged with reference to the springs, s s, and the rods, o o, substantially as and for the purpose specified.

54,978.—Treating Oil.—H. C. Taylor and D. M. Graham, Cleveland, Ohio:

First, We claim the treatment of petroleum and other similar hydrocarbons by means of nascent hydrochloric acids, chlorine, flourine, or other equivalent chemical reagents, so as to change the constitution of the oil, and purify it, substantially as herein described.

Second, We also claim the use of sulphuric acid, nitric acid, or salts containing these, or either of them, when used in combination with other materials, such as herein described, or their equivalents, for the purpose of treating petroleum or other hydrocarbons, as described.

54,979.—Composing Stick.—William T. Tillinghast, Dayton, Ohio. Antedated May 7, 1866:

I claim the gaging slide, B, screw shaft, g, and clamping nut, h, in combination with check blocks, c c c, and the checking bar, b, constructed and operating as above shown, and for the purpose set forth.

54,980.—Refrigerator.—Peter A. Vogt, Buffalo, N. Y.:

I claim the arrangement of the induction air passage through the drip pipe l, and extension pipe, m, in combination with the trap, k, or its equivalent, whereby the air entering is carried to the top of the ice chamber and cooled in its passage, substantially as set forth.

54,981.—Nail Machine.—Rivera Ward, Alder Creek, N. Y.:

First, I claim the arrangement of a movable fuel box, C, with adjustable bottom e, in combination with the furnace, A, feed rollers, n o, hammers, H H*, and shears, M M*, substantially as and for the purpose set forth.

Second, Imparting to the nail rods a retrograde motion before cutting, and a forward motion after cutting, by means substantially such as herein described, or any other equivalent means, for the purposes specified.

Third, The oscillating guide, G, in combination with the M-shaped anvil, I, constructed and operating substantially as and for the purpose set forth.

Fourth, The hammers, H H*, in combination with M shaped anvil, I, constructed and operating substantially as and for the purpose described.

Fifth, The oscillating jaw, M*, in combination with the feed lever, F, clamps, S and t, disk, E, and feed rollers, n o, constructed and operating substantially as and for the purpose described.

Sixth, The dog, h, and pin, i, in combination with the arms, p p, rod, m', lever, n', bolt, q', and jaws, M M*, constructed and operating substantially as and for the purpose set forth.

Seventh, The rock shaft, y', and tappet, t', in combination with the jaws, M M*, and cam, K, constructed and operated substantially as and for the purpose described.

Eighth, The tappet, b2, in combination with the studs, a2, on the cam, K, and with the arms, j' b', jaws, M M*, and rock shaft, g', substantially as and for the purpose set forth.

Ninth, The ratchet wheel, c2, and stud, g2, in combination with the catch, h', spring, u', arm, j', and with the rods connecting said arms with the jaws, M M*, substantially as and for the purpose set forth.

Tenth, The disk, k', with its cavity, p', in combination with the dog, i2, catch, h', and hammer, H, substantially as and for the purpose described.

Eleventh, The hand lever, N, with springs, o2, in combination with the catch, c2, and hammer, H*, constructed and operating substantially as and for the purpose described.

Twelfth, The combination of the catch, s2, dog, j2, disk, k2, and catch, h2, with the hammers, H H*, substantially as and for the purpose described.

Thirteenth, The spring catch, b2, in combination with the annular grooves, w 2 w2*, in the cam, K, and with the hand lever, N, constructed and operating substantially as and for the purpose set forth.

54,982.—Rock Drill.—Owen G. Warren, New York City:

I claim loading the shaft with the collar weight, to render unnecessary a high lift for rapid boring.

54,983.—Steam Engine.—George J. Washburn, Worcester, Mass.:

I claim the arrangement of the piston, B B', and valves, D D', the latter being respectively actuated by one piston and the means of actuating the other piston, substantially as described.

54,984.—Process of Refining Hydrocarbon Oil.—Philipp Weisenberger, Pittsburgh, Pa.:

I claim the above described process of purifying distilled petroleum or other liquid hydrocarbons, without the aid of any alkalies, by means and with the use of water at 212 degrees Fah. or approximate degrees of temperature, in the manner specified.

54,985.—Shade Hook.—Samuel White, Philadelphia, Pa.:

I claim the combination of the socket, A, screw rod, B, and nut, d, the same constituting an improved device for holding and regulating the tension of the cords used for raising window shades.

54,986.—Hat and Cap.—William H. White, West River, Md.:

First, I claim making metallic or hard rubber sweat bands, with flanges, as and for the purposes set forth.

Second, The combination of a sweat band, with a hat rim or cap visor, when made in one piece.

Third, The combination of a metallic or hard rubber sweat band with a wrapper provided with draw cases and draw springs, substantially as herein set forth.

54,987.—Potato Masher.—A. L. Whitney, Brooklyn, N. Y.:

I claim an implement consisting of a suitable handle and provided with a series of arms, l, constructed, arranged and operating substantially in the manner described, and for the purpose specified.

54,988.—Tweer.—Levi Wilkinson, New Haven, Conn.:

I claim a cast-iron tweer, when constructed, shaped (both inside and

onlside), and fitted for use, substantially as herein described and se forth.

54,989.—Fence.—Samuel B. Williams, Sheridan, N. Y.:

In combination with the iron stapled-shaped posts, I claim the scarfed and scored rails, arranged substantially as described.

And in combination with the posts and rails, I claim the iron rod or wires extended between the tops of the posts, as described.

54,990.—Securing Bits in Braces.—William Wimmer, Elizabethport, N. J.:

I claim the combination of the entire socket, A, the sliding ring. C', and the catches, B B, each of said catches being formed with a flange, a, and a nose, b, to dispense with the customary pivot pins, and all arranged as herein described, so that the torsional strain shall be sustained by solid socket, and the bit firmly secured within said socket, by the noses, b b, engaging beneath its head.

54,991.—Means for Holding Glass Bottles.—John Wood, Brooklyn, N. Y.:

I claim the adjustable holder for receiving and retaining articles of glass while being heated and formed, substantially as speified.

54,992.—Flying Machine.—John Wootton, Boonton, N. J.:

First, I claim in combination with a parachute, A, constructed substantially as described, the arrangement of one or more screw propeller, placed underneath said parachute and operated by a suitable engine, and arranged on a movable frame, N, operated in the manner and for the purpose substantially as described and set forth.

Second, I claim the parachute, A, composed of a large ring or hoop, B, with numerous rods or braces, G G, running from the central frame to the ring, thereby making it into a continuous arch, or rigid circle, said circle to be covered with oil cloth or its equivalent on the underside of the rods or braces, and to be held in its proper or rigid position, at right angles with the frame of the machine by rods or braces, C and C', fastened to the ring, B, and to the top, D, and lower part, D', of the frame of the machine, substantially as described and set forth.

Third, I calm in combination with the parachute, A, and the propeller wheels, M M, arranged as described, the coil of their copper pipes, P, when arrang d in the manner and for the purpose as specified.

Four h, I claim in combination with a flying machine, constructed as described, the arrangement for hoisting up and lowering the car from the machine, substantially in the manner and for the purpose set forth.

Fifth, I claim in combination with the car of a flying machine arranged and constructed as set forth, the wheels, f, rollers, R, and springs, Q, when arranged in the manner and for the purpose substantially as described and specified.

54,993.—Apparatus for Washing Paper Pulp.—Larnard M. Wright, Fort Edward, N. Y.:

I claim the adjustable arms, S, in combination with a shaft, A A, cog wheels, B and C D F K L and M, with their shafts and the clutches, H and H', and the pullyes, 1 2 3 4 and 5, and the rack, R, R, and the guide, x x x x, substantially as and for the purposes described.

Second, I claim broadly the application of an adjustable revolving beater or washer to a tub or vat containing stocks to be beaten or washed in the manner and for the purposes above described.

Third, I claim broadly the reciprocating, or back and forward or right and left motion which may be given to the revolving arms, s, by which they rotate both ways.

54,994.—Flour Sieve.—Charles E. Yager, Hudson, N. Y.:

I claim the attachment consisting of the removable radial frame, C', with the clamp and set screw, a b c, carrying the rotary scrapers, D, shaft, e, and crank, f, arranged and operating with reference to each other, when applied to a circular flour seive, substantially as herein set forth, for the purpose specified,

54,995.—Seed Drill.—Elijah Young, Fayetteville, Mo.:

First, I claim extending the mold boards of the plows, D, out behind the other parts of the plows as and for the purpose set forth.

Second, I claim the rock shaft, H, the lever, H, and links, g g, or their equivalents, in combination with the beam, E', and tutes, C', when employed for the purposes herein set forth,

54,996.—Blind Fastener and Operator.—James Aborn (assignee to Henry H. Gibbs) Providence, R. I.:

I claim the hinge provided with the arm, e, in combination with the connecting bar, S, and the sliding bolt, G, the whole being constructed and operating substantially as described and for the purpose specified.

I do claim the combination of the apparatus employed as described for swinging the blind with a series of notches in the sliding bolt, G, and a button or key, d, substantially as described.

54,997.—Punching Machine.—George A. Alger (assignee to himself and Waldo Whitney) Manchester, N. H.:

I claim the use of two revolving cams and collars or double cam on the punch bar, one cam to set the punch to the thickness of the metal plate or other material, and the other cam to force the punch through the metal plate or other material to be punched.

54,998.—Hoop Skirt.—Anna M. Bardwell (assignor to C. D. Clapp and H. C. Bardwell) Amherst, Mass.:

I claim, First, The combination of the hoops, C, and tapes, B, B', the ends of the hoops being arranged as described in the manner and for the purpose herein specified.

Second, I also claim in combination therewith the tubular fastening, D, with a loop at one end, made substantially as shown.

54,999.—Hand Corn Planter.—Orson Billings, Lagrange, Ohio, assignor to himself and Russell H. Penfield and Homer Penfield, Elyria, Ohio:

I claim, First, The angularly shaped rubber spring having the two upper surfaces plain and the lower surface convex, and having the inner end cut at right angles to its axis, and the outer end cut at such an angle, that when adjusted, and the handle of the machine is extended that it just corresponds to said angle, thus obtaining an equal pressure on all parts as described and set forth.

Second, I claim spring, D, inclined apron, E, and seeding slide, F, in combination with the inserters for the purpose of delivering said seed to said inserters in a uniformly divided state, in the manner described and set forth.

55,000.—Device for Attaching Handles to Hoes, Rakes, Etc.—Alexander Boydon (assignor to Alfred Fales and Erastus P. Carpenter), Foxboro, Mass.:

I claim the stationary jaw, B, in combination with a movable jaw, F, operated by a screw nut, C, or equivalent device, for receiving and holding the implement, substantially as described.

I also claim in combination with the above, a blade or other implement provided with a lip, projection or recess, substantially as and for the purposes set forth.

55,001.—Guide for Boom Jaws.—Mellen Bray, Newton, Mass, assignor to himself and William Woodbury, Chelsea, Mass.:

I claim the guide piece, d, in combination with the boom, C, and saddle, D, substantially as and for the purpose set forth.

55,002.—Welt Trimmer.—John Brooks (assignor to himself and Joseph Brooks), North Bridgewater, Mass.:

I claim as my invention, the improved welt trimmer as made not only of the guard, C', and grooved handle or stock, A, but with the long knife, B, to fit into the groove of the stock, and be confined by means, substantially as described.

I also claim the arrangement of the lip, f, with the guard, C', and the knife, B, when arranged with, and applied to the stock, substantially as described.

I also claim the combination and arrangement of the adjusting screw, g, with the knife stock and guard arranged and applied together, substantially as specified.

55,003.—Sash Supporter.—Charles E. Condon, (assignor to himself and G. B. Hammer), Harrisburgh, Pa.:

I claim the bar, a, with the reversed notches, arranged to operate in connection with the hook, e, substantially as shown and described.

55,004.—Apparatus for Tempering Steel.—C. B. Cottrell (assignor to himself and Nathan Babcock), Westerly, R. I.:

I claim in the draw tempering of steel the employment of a vessel constructed substantially as described so as to admit of the temper ing process, and prevent the ignition of the tallow, oil, or other oleaginous tempering medium, as herein set forth.

I also claim the employment of an independent perforated basket for holding the steel, in combination with oil vessel, constructed substantially as herein described.

55,005.—Machine for Folding Paper Collars.—John J. Currier (assignor to himself and James H. Plaisted), Boston, Mass.:

First, I claim a machine consisting of plates, C and D, a roller, G a beam, F, and guide, H, constructed and operating substantially as described and for the purpose specified.

Second, I also claim the two plates, C and D, in combination with the roller, G.

Third, I also claim the plate, C, in combination with the roller, G, substantially as and for the purpose specified.

Fourth, I also claim the mode of perfecting the fold by guiding the roller, G, under the plate, C.

55,006.—Machine for Shaping Wood.—John Dane, Jr., Newark, N. J., assignor to W. J. Dudley and W. U. Dudley, New York City:

I claim, First, The vise or clamp, I, arranged to rotate upon a pivot, K, which attaches it to the table, H, substantially as and for the purpose herein specified.

Second, The vertically movable frame, G, carrying the revolving cutter, spindle, and tracer, and the horizontally-sliding cross head, F, carrying the said frame, arranged in relation to the universally-movable table, H, upon which the work is placed, substantially as herein described to operate as set forth.

55,007.—Fly Trap.—James Emery and Joseph E. Gott (assignors to James Emery), Bucksport, Me.:

We claim the said improved fly or insect trap as composed of the box with a foraminous top and partition, or its equivalent, the tapering mouth or entrance frustum, the escape opening with its valve or damper and the receiver or glass bell, arranged together substantially as specified.

55,008.—Clothes Sprinkler.—William P. Gannett, Boston, Mass., assignor to himself and Isaac Gannett, Chicago, Ill.:

I claim the clothes sprinkler herein described, the same consisting of a water reservoir, provided with a valve, the air passage through the stem of which is so made that the opening of the valve establishes a communication through the air passages of the stem with the interior of the reservoir, and the closing of the same shuts off or closes such communication, substantially as and for the purpose specified,

55,009.—Rock Drilling Machine.—Walter Hyde (assignor to Deborah A. Ballou), New York City:

I claim, First, The eccentric gear, J K, in combination with the platform, A, handle, D, and hammer, E, constructed and operating substantially as and for the purpose specified.

Second, The slot, E, on the bracket, F, in combination with the eccentric gear, J K, and hammer, E, constructed and operating substantially as and for the purpose set forth.

Third, The curved rod G, and double cranks, H, in combination with the eccentric gear, J K, and hammer, E, constructed and operating substantially as and for the purpose described,

55,010.—Heddle Motion for Looms.—Barton H. Jenks and Robert B. Goodyear (assignors to Barton H. Jenks), Philadelphia, Pa.:

First, We claim giving the draw bars, J', a reciprocating motion of graduated degrees diminishing throughout the series by means of the cross bars, I' I'', and the slotted and removable frames, E' E'', substantially as described.

Second, We claim the combination of the supporting bar, X, with the draw bars, J', shaped substantially as described.

Third, We claim giving to the ratchet, S, which operates the cylinder, Q, a double-acting motion by which the operator can vibrate the lathe without making a mistake or losing a twill, substantially as described.

Fourth, We claim the combination of the ratchet, S, pawl, R', pin, R'', and incline, S'', substantially as described.

Fifth, We claim the lifting cross head, W, in combination with the loose cam, W', operated substantially as described.

Sixth, We claim the combination of the loose cam, W, with the crank, N, and clutch pieces, W3, attached to it, or their equivalents, substantially as described.

55,011.—Loom.—Barton H. Jenks and Robert B. Goodyear (assignors to Barton H. Jenks), Philadelphia, Pa.:

First, We claim regulating the movements of the shuttle boxes and also the picking motions by two or more sets of pins on the same chain, when these motions are imparted from the chain through the intermediary means, substantially as described.

Second, We claim the combination of the box chain, P, lever O, the double arm, M, the forked swivel, J, and eccentric disk, H, or their equivalents, for operating the pick, substantially as described.

Third, We claim the combination of the knuckle lever, U, attached to the breast beam, v, with the stop rod, X, to stop the loom and so prevent the yarn from being broken, when the shuttles fail to leave the box, substantially as described.

Fourth, We claim the combination of the sliding rod, E, arm, G, sliding tappets, C' C'', and caps B' and B'', operating substantially as described.

55,012.—Magazine Fire-arms.—Nelson King, Bridgeport, Conn., assignor to O. F. Winchester, New Haven, Conn.:

I claim forming an opening through the frame relatively to the carrier block and magazine, and in combination therewith, so that the magazine may be charged through the carrier block from one side of the arm, substantially in the manner herein described.

55,013.—Apparatus for Preserving Dead Bodies.—Jacob Kinsman, Sen., assignor to himself and Frederick J. Nagle, Reading, Pa.:

First, I claim the combination of the perforated supporting plate, B, with the box, A, substantially as described, and for the purpose set forth.

Second, The combination of the perforated adjustable head supports, E, with the perforated plate, B, and the box, A, substantially as described, and for the purpose set forth.

Third, The combination of the neck box, O, provided with a cover, o', and exhaust pipes and stop cocks, O'', with the perforated plate, B, and box, A, substantially as described, and for the purpose set forth.

Fourth, The combination of the detachable part, N, with the box, A, substantially as described, and for the purpose set forth.

Fifth, The combination of the board or shelf, I, with the hinged legs, H, and with the box, A, substantially as described, and for the purpose set forth.

55,014.—Furnace for Annealing Sheet Iron.—Joseph Malone, assignor to himself and George Wettengil, Temperanceville, Pa.:

I claim constructing a furnace for annealing sheet iron and other articles, having a fire-chamber at one end, and an annealing chamber, surrounded at top and bottom, and both sides with flues for the passage of the flame, hot air, and products of combustion, constructed and arranged substantially as, and for the purposes hereinbefore described.

55,015.—Seams for Sheet Metal Ware.—Peter H. Niles, Boston, Mass., assignor to himself and Augustus Russ, Cambridge, Mass.:

I claim the socket joint, e, formed by the articulation of the socket, a, and the bead, d, substantially and for the uses and purposes above described.

55,016.—Mode of Attaching the Sides of Sheet Metal to each other.—Peter H. Niles, assignor to himself and Augustus Russ, Cambridge, Mass.:

I claim the lips, b and c, interlocked so as to form the rivet joint, a, substantially and for the uses and purposes above described.

55,017.—Stove Pipe Damper.—Ephraim Parker, Marlow, N. H., assignor to Alfred A. Parker, Orange, Mass.:

I claim the above described arrangement of annuli, A B, and a concavo-convex disk, C, namely in a conic frustum, and with the convexity of the disk extending within the damper, in the manner and for the purpose as specified.

I also claim the damper as made with the series of annuli, and the disk arranged in a conic frustum, and with each ring or annulus concavo-convex, asset forth.

55,018.—Peat Machine.—Julio H. Rae, Syracuse, N. Y., assignor to himself and Edwin L. Buttrick, Milwaukee, Wis.:

First, I claim enlarging the corners or angles of the opening, R, through which the peat is received into the conveyer chamber, P, substantially as described, in combination with the conveyers, I.

Second, I also claim contracting the diameter of the condensing and delivering tubes for a port on of their length, and then enlarging their diameter towards their discharge ends, substantially as described.

Third, I also claim making the outer portions of the tubes, J, square or straight on their under sides, substantially as described.

Fourth, I also claim making the upper sides of the tubes, J, at their discharging ends of an elevated form, so that the peat discharged therefrom will shed falling water, substantially as described.

Fifth, I also claim the combination of the conveyers, I, with the condensing and delivering tubes, J, substantially as described.

Sixth, I also claim the arrangement and combination of the driving shaft, O, and its spur wheel, M, with the conveyers I, and the pinions, N N, of the conveyer shafts, in combination with shaft, B, substantially.

Seventh, I also claim the arrangement and combination of the driving shaft, O, with the vertical shaft, B, and the wings and blades, C, the cutter arms, E, and the propeller, F, and the perforated steam pipe, "G," substantially as described.

55,019.—Horseshoe.—Henry Schreiner, Philadelphia, Pa. assignor to himself and Wm. H. Bowyer, Tamaqua, Pa.:

I claim a nailless shoe for horses and mules, consisting of the sole, A, clips, b c c', belts, d d', and nutted screw bolt, e, the same being constructed, combined together, and applied, as and for the purposes described.

55,020.—Stove Door.—Robert Simpson, assignor to Joseph Pratt and Charles C. Wentworth, Boston, Mass.:

First, I claim the arrangement in combination with the door, D, of the guide bars, x, damper, V, rack, R, pinion, W, and its shaft, H, passing through slot, P, of the damper, substantially as described.

Second, The arrangement in combination with door, D, of the twin buckle, F, bars, E, and stops, s, substantially as described for the purpose stated.

55,021.—Spring for Beds.—Lewis Smith, assignor to himself and Geo. F. Ryder, Foxboro, Mass.:

I claim the duplex spring composed of the ring, C, and the two springs, A B, formed and arranged substantially as described as represented.

55,022.—Pump.—E. L. Staples, assignor to James E. Rust, Nashville, Tenn.:

I claim connecting to the piston, B, of a pump, a chamber, B', open at its inner end, and connected to the piston by bars or rods, C, said chamber having a hollow piston rod screwed into its closed outer end, substantially as described.

Second, I also claim in combination, the pump cylinder, A, the piston, B, and the chamber, B', connected with it the hollow piston rod, G and the side eduction pipe, I, substantially as shown.

55,023.—Cover for Sewing Machines.—Augustus J. Thompson, Malden, Mass., assignor to himself and A. B. Lincoln, Roxbury, Mass.:

I claim the sliding hanged cover in combination with a sewing machine table, when constructed and operating substantially as and for the purpose set forth.

55,024.—Rotrary Harrow.—Henry Thompson (assignor to himself, D. C. Haskell, and C. H. Haskell,) Rockland, Me.:

I claim the revolving harrow head, made of the series of rotary wings, B, their studs, e, the harrow teeth, a, and arms, A, or their equivalent, the whole being arranged substantially in manner, and so as to operate as described.

55,025.—Water Drawer.—John W. Wheeler, assignor to H. H. Wheeler and S. R. Boardman, Cleveland, Ohio:

I claim a water elevator as described having a circular curb, A, and spout, B, bucket, J, with valve, K, and tripping lever, M, windlass, G, with brake, U, lever, S, and hook, r, all combined, arranged, and operating in the manner substantially as set forth.

55,026.—Apparatus for Raising Sunken Vessels.—Thomas Whittaker, (assignor to himself and Wm. P. Simpson) Buffalo, N. Y.:

First, I claim the tube, n, in combination with the air cask, E, or its equivalent, constructed and arranged substantially as and for the purpose set forth.

Second, In combination with the cask, E, and tube, n, I also claim the pawls, o o, operating in the manner and for the purpose described.

Third, I also claim the combination and arrangement of the pendent bars, D D, provided with the curved arms, b b, guide frame, B B, with windlass, F, and guide rope, l, for lowering casks to submerged wrecks, constructed and operating substantially as set forth.

55,027.—Knitting Machine.—James G. Wilson (assignor to the Union Seamless Knitting Machine Company), New York City:

First, I claim providing the needles of that class of knitting machines in which stitch hooks are used to throw off the stitches, without any longitudinal movement of the needles or closing of their beards, with additional hooks or projections, b b, at their back, so constructed, arranged and operating in combination with the stitch hooks as to confine the last formed loops on the needles, while the previously formed loops are being taken off from the needles by the stitch hooks, substantially as herein described, whereby I am enabled to dispense with the operation of the pressers at the time of taking off the loops, and to take off the loops simultaneously for many immediately adjacent needles.

Second, Giving the pressers, v v, a movement in a vertical line only, but of such character that they are removed from between the needles and out of the way of the yarn guides and stitch hooks at the time the latter operates to throw off the loops.

Third, Making the stocks in the arms, V V', of the stitch hook bar, V, of curved form substantially as herein described.

55,028.—Rudder for Vessels.—Peter Dinzey, Island of St. Bartholomew, West Indies:

I claim the rudder, B, with its shaft, C, and pinions, e, in combination with the segment, D, the whole being arranged and operating substantially as and for the purpose specified.

55,029.—Sewing Machine.—James Hayes, London, England:

I claim the stud, I, in combination with the hooked instrument, H, for opening and holding the loop of the looper thread, in the manner herein represented and described.

55,030.—Apparatus for Obtaining Motive Power.—Robert W. Thompson, Edinburgh, Scotland:

I claim the obtaining and applying of motive power by means of pistons or diaphragms revolving in a cylinder in a continuous manner, but connected to an external shaft having a different axis from that of the cylinder, so that their velocities vary, that of one or more increasing whilst that of the other or others decreases, and vice versa, the parts being constructed and arranged, and working, substantially in the manner herein described.

55,031.—Reducing Wood Fibers to Paper Pulp.—Henry Voelter, Heidenheim, Kingdom of Wurtemberg, Germany:

First, I claim the use of mill stones, N N, constructed and operating substantially as described, for reducing particles of wood to paper pulp.

Second, The combination of the rake, H, projection, I, sieve, J, and pipe, K, and K', with the box, B, and stone, D', the whole being arranged and operating substantially as, and for the purpose set forth.

Third, The spring pawl, b, and ratchet, a, constructed and operating in combination with the shaft, F, and pulley, 9, substantially as and for the purpose specified.

Fourth, The elastic cushion or spring, d, in combination with the crosshead, 15, and rod, 11, for the purpose set forth.

Fifth, The block, e, formed substantially as described in combination with the stone, D', and boxes, G G', the whole being arranged and operating substantially as for the purpose set forth.

Sixth, The boxes or crosspieces, G G', constructed with parallel slides, for the purpose specified.

Seventh, The tanks, I, L1, and, L2, with their gauze cylinders, R, and paddle wheels, W W', the whole being constructed and arranged for joint operation, substantially as and for the purpose set forth.

Eighth, The vibrating basket, P, arranged and operating in the tank, L, for the purpose described.

Ninth, The rotating comb, K, and the scraping plate, m, in combination with the cylinder, R, the whole being constructed and operating substantially as for the purpose specified.

Tenth, The hopper, V, with its sliding door, n, and rotating fluted cylinder, v, arranged in respect to the tank, L2, substantially as and for the purpose described.

Eleventh, The tanks, Y Y1 and Y2, with their gauze cylinders, R2, and R3, paddle wheels, W2 W3, sieve, v, rollers, y, and plates, z, the whole being constructed and operating substantially as and for the purpose set forth.

Twelfth, The bands, h h, of leather or other suitable, material secured to the rollers, y y, for the purpose specified.

55,032.—Petroleum Stove.—Oscar F. Morrill, Chelsea, Mass.:

First, I claim providing the perforated air-heating tube with a shield having an extended base and a contracted top, the shield surrounding the tube with their tops united and operating substantially as described.

Second, Also the base shield surrounding the wick tube and the opening through the reservoir top where this shield enters and discharges into the space between the perforated airheating tube, and its shield substantially as described.

Also the expansion of the wick tube, k, at its top into a cup, l, of such size, form, and location as to receive and steady the perforated air tube, m, holding it properly in place with reference to the wick, and also receiving any fluid overflow therefrom.

Also the combination and arrangement of the spunned wick tube wheels, r, on one side of the wick, with counteracting smooth-surfaced yielding presser rolls, q, on the other side of the wick, substantially as described.

55,033.—Apparatus for Cooking by Coal Oil Burners.—Oscar F Morrill, Chelsea, Mass.:

I claim the deflector, c2, placed within the cylinder, b, to give an upward tendency to the lateral currents of heated air, substantially as set forth.

I also claim placing an interceptor plate between the fuel reservoir and the flame chamber, as set forth.

I also claim making the interceptor plate, n, the wheel for regulating the hight of the wick, substantially asset forth.

Also the vapor passages, c', for conducting vapor from the reservoir into the cone.

Also in combination with such passages, the ring, b', for preventing lateral escape of such vapors.

Also supporting the plate, n, or wick tube, r, upon points or projections, v, to insulate the reservoir from the head of the flame, substantially as described.

Also the construction of the top of the tube, n, or the plate, r, with projections, t, to centralize and keep in position the outer dissemminator when they are arranged in the manner described.

Also the conical or tapering tube for so supporting the inner dissminator, as to permit it to be adjusted, substantially as described.

Also placing in the inner chimney, S, a tube which is insulated from the oil reservoir, substantially as set forth.

REISSUES.

2,248.—Waterproof Fabric.—Ruben G. Allerton, New York City. Patented Jan. 23, 1866:

I claim the waterproof fabric formed in the manner specified.

2,249.—Magazine Fire-arm.—Joshua Gray, Milford, Mass., S. S. Bucklin, Providence, R. I., and William G. Langdon, Malden, Mass., assignees by mesne assignment to Joshua Gray, Milford, Mass. Patented Dec. 20, 1864:

First I claim the rack, F, arranged below the sector, D, for the purpose described.

Second, Moving the cartridge-carrier from the magazine to the barrel, and vice-versa, by passing it through a longitudinal slot in the breech-pin and sliding the latter over it.

Third, So constructing the end of the cartridge lifter as to cover the post of the magazine when the piece is used as a breach-loader.

Fourth, The slot, L, to guide the cover, or end, K, of the cartridge carrier, as described.

Fifth, The cartridge extraction, M, in combination with the arm, N, provided with the knob, c, or its equivalent, as described.

Sixth, The cam, R, in combination with the hooked lever, S, or their equivalents, for the purpose of withdrawing the cartridge case without uncovering the magazine, when it is required to use the piece as a breech-loader.

Seventh, The guide pin, H, in combination with the groove, J, for stopping and guiding the breech pin as described.

Eighth, The combination of a breech-loader, a cartridge shell extractor and a convertible magazine stop, substantially as described.

2,250.—Mode of Melting and Aggregating Iron Chips, Turnings, Etc.—E. C. Huserick, Lake Village, N. H. Patented March 13, 1866:

I claim the within described process of protecting iron chips, shavings, turnings, or other fine particles of iron, and preventing them from being burned and blown away by mixing them with water or a solution of clay or earth or other material, in water, or with any liquid capable of producing the same result.

2,251.—Felted Fabric.—Moses A. Johnson, Lowell, Mass. Patented Jan. 5, 1864:

I claim the sheet felted fabric herein described having one or both surfaces coated with a film of sizing, as set forth, but the body of the fabric not saturated or impregnated with the sizing material.

2,252.—Writing Tablet.—George Munger, New Haven, Conn. Patented Sept. 27, 1859:

I claim a new article of manufacture, to wit: An argillaceous surfaced wood writing slate which is formed by uniting two or more layers of veneering or thin wood, and thin coating the exterior surfaces of the compact mass with a composition of slate emery or other similar argillaceous material, substantially as and for the purpose set forth.

2,253. — Apparatus for Carbureting Air.— George Odiorne, Boston, Mass. Patented Nov. 1, 1864:

First, I claim so constructing and arranging a float in connection with a suitable air forcing apparatus as to invariably cause the air to be forced through the liquid hydrocarbon, in the manner herein described, that is to say, by dividing the volume of air into uniform streams which shall flow from or escape through apertures at the periphery of the float, as set forth.

Second, The air forcing apparatus herein described, the same consisting of a hollow drum having a series of buckets or chambers arranged upon the periphery of the same and communicating with the interior thereof, all as specified.

Third, I claim the combination of the air forcing apparatus and float arranged and operating with regard to each other as described.

2,254.—Surface Condenser.—Thomas Prosser, New York City. Patented Dec. 15, 1857. Antedated Oct. 31, 1854:

I claim a condenser consisting of two hollow slabs or other equivalent chambers connected together by concentric tubes and communicating with each other by means of the annular spaces formed by said tubes, said slabs and tubes being arranged within a cistern, and operating substantially as herein specified.

2,255.—Surface Condenser.—Thomas Prosser, New York City. Patented Dec. 15, 1857. Antedated Oct 31, 1854:

I claim a surface condenser constructed to obtain distilled water from the condensing water, by making the heat of the steam to be condensed, converts a portion of the condensing water into vapor, and afterward condensing such vapor by the cool incoming condensing water, by means of a distilling condenser, substantially as herein described.

2,256.—Direct-action Engine.—Thomas Thatcher, Danville, Pa. Patented Dec. 1, 1863:

First, I claim the two tappet levers, J J', applied and combined with each other with the valve and with the plungers, C' C', substantially as herein described.

Second, The rim or casing, h h, around the exhaust post of the valve seat in combination with the two cavities, g and j, in the valve, substantially as and for the purpose herein specified.

Third, The arrangement of the cylinder, A, pump cylinders, B B', plungers, C C' and E, piston, F', and tubes as constructed and operating in the manner and for the purpose herein described.

DESIGNS.

2,323.—Goblet.—Charles Ballenger (assignor to McKee & Brothers), Pittsburgh, Pa.

2,324.—Wheel of a Harvesting Machine.—Amos Rank, Salem, Ohio.

2,325.—Trade Mark.—Samuel F. Stone (assignor to himself and Levi H. Stone), Providence, R. I.

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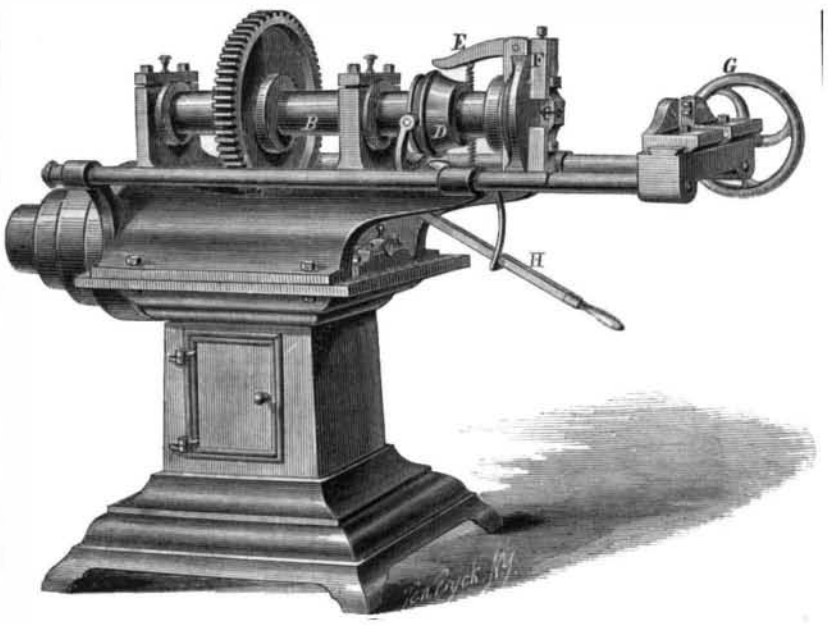
Improved Bolt Cutter.

If there be any that read this article who, in earlier days, have been compelled to cut bolts in a vise with stocks and dies, they may remember what meager results followed after a hard day's toil. A pitiful little heap that a man could carry in his pocket was all the reward of ten hours' tugging on the handles of the stock. It is good to think of these things sometimes when we pick up bolts and strip the threads off or trample them under foot as rubbish.

Many bolt-cutting machines have been introduced in the past few years, and there is room for more, although each one has its peculiar features.

In this engraving we have shown a new machine which is a good one. It is capable of cutting threads on bolts of any practicable length from twenty inches to twenty feet. This is a great advantage in many instances, especially in bolts for bridge work, bolts for the gallows frames of marine engines and similar structures.



THOMAS & SEAMAN'S BOLT CUTTER.

It also runs back clear of the thread, thus avoiding the back set to the top of the thread, which is often given by the drag of the dies in backing off. It is easily and instantly set to take bolts of any size. In detail the machine consists of a framing, A, in which the revolving mandrel, B, works. This has the dies at one end, C, which are operated as follows:—

When the machine is started, the cone, D, is shipped up so that the ends of the levers, E, resting on it are raised. These levers being fastened, or having a fulcrum on the die plate, depress the dies so that they may engage with the bolt to be cut; this is held between the jaws, F, operated by the hand wheel, C. It is easy to see that so soon as the bolt is cut the handle, H, when lifted, disengages the dies from the bolt so that it can be readily taken back without running on the thread, thus saving time and avoiding injury, as before explained. The mandrel, B, is hollow and allows the bolt to enter it while the carriage is drawn along with the guides, I.

The base of the casting is occupied as a closet for the dies and other tools. It cuts at the rate of 1,000 ¾th bolts, two inches of thread, in ten hours, larger and smaller in proportion. Taps and dies from ½ inch to 1½ inches, also counter shifts and pulleys go with each machine. For further information address Thomas & Seaman, Box 1,476, Elmira, N. Y.

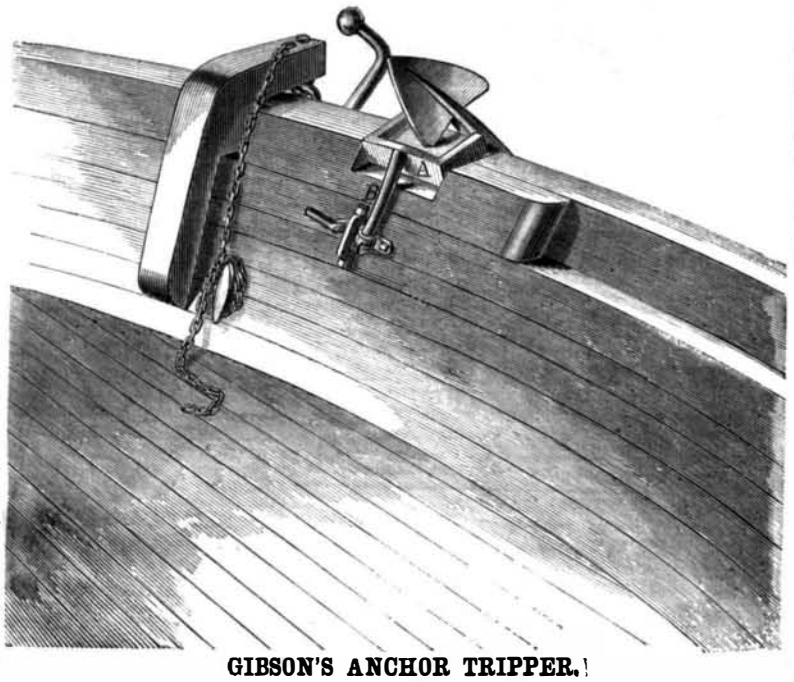
Improved Anchor Tripper.

The object of this invention is to drop an anchor from a vessel's bow without the trouble and labor of hoisting the flukes off the rail and swinging the anchor to cat-head which requires time; and the vessel, being in a sea-way, the chain often gets foul around the stock, and the anchor is always knocking and picking the bow to pieces.

With the advantage of the tripper the anchor is always ready and requires one man only to drop any anchor from the bow of a vessel without delay, which, in a close anchorage, is of great importance. It consists in so forming or arranging, on the upper edge and the inner side of bulwarks of a vessel's bow, a resting surface or support for the fluke of an anchor, that, when desired, by simply releasing or unfastening the said support, the anchor will readily fall by its own weight.

The invention consists in a casting, A, supported on gimbals and furnished with a projecting bar, B. The latter has a staple, C, which confines it in a certain position. The staple has a handle which permits to be wound up and down. When the casting is fixed, as shown in the engraving, the inclination of it is in-board, and tends to hold the anchor firmly by its fluke, but when the handle of the staple is pushed down, the projecting bar is set free, and the weight trips the casting, A, so that it permits the anchor to fall overboard.

This invention was patented through the Scientific American Patent Agency on Dec. 5, 1865. State rights for sale. Address Clendenen Gibson, Port Richmond, N. Y. More & Chapman, ship chandlers, agents, No. 304 West street, New York.



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Of 177 lighthouses destroyed during the rebellion, 69 have been re-established.

Another New Developer.

Having read and tried most of the different new developers that have lately come to light, and not finding any of them equal to the following one, which I have used for some time in my gallery, I now send it to you for the benefit of the photographic fraternity. I claim for this developer the following (that is to say, as herein set forth! I don't intend to take out a patent)—Cheapness, the ease with which it is made, less time in the camera, no fogging, and an extra roundness to the picture when printed from the negative developed with it. It can be used immediately after being made, and it has the important improvement of preventing the collodion from cracking or peeling off. There is no necessity for dashing or wasting the developer by overflowing the plate with it, as most operators do; for this developer flows as even and free as any collodion. One ounce is abundance for a 4-4 plate.

FORMULA.

Just as I use it. Put one quart of water in a half-gallon or five-pound bottle; dissolve in it (after being pulverized) six ounces of protosulphate of iron; shake well until dissolved (any kind of water will do, but distilled is always preferable for mixing of chemicals in the business); then add to it twelve ounces of good cider or wine vinegar; shake it well; then add again to it one ounce of sulphuric acid; shake again well. Then put in another bottle or vessel one quart of water; add to it the white of one egg, or one ounce of the white; shake it, beat it, or mix it well up with the water; then pour it into the already mixed solution; shake it all then well up; filter it, and it is ready for use.

RECAPITULATION—Water, ½ gallon; vinegar, 12 ounces; sulphuric acid, 1 ounce; albumen, 1 ounce. The cost of half a gallon or five-pound bottle of this developer will not be over 15 cents, when heretofore the alcohol alone, that generally was put in the old developer to make it flow, cost more than that amount; so I say, good-bye acetic acid and alcohol for developing purposes! I never produced as good negatives, in all respects, with the old developer as I now do with this present one; and I hope the time is not far distant when another new developer will be given to the world, by which the time of sitting will be all but instantaneous, so that we then can certainly catch expressions as well as pictures; for there is no doubt but what the latent image is made immediately when the plate is exposed to the rays of light through the camera. All we now want is, *the real developer.—Humphrey's Journal.*

FROM THE STEAM PRESS OF JOHN A. GRAY AND GREEN