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57,656.—HANDLE FOR BRUSH.—Albert Alden, New York City.

I claim the sleeve, B, which slides on the upper part of a handle, in combination with one or more notches, c, in the top edge of the lower hinged part, A, of said handle, constructed and operating substantially as and for the purpose described.

57,657.—AXLE BOX.—Samuel F. Allen, Chicago, Ill.

I claim, First, Securing oil cellars in place in their boxes by means of removable bottoms, which are constructed and applied substantially as described.

Second, The combination of the fixed pin, h, and the jam nut, g, with the hinged plates, C C, and a suitable cushion, which is interposed between said plates and the bottom of the oil cellar, substantially as described.

57,658.—CAR COUPLING.—John Bailor, Cannon City, Minn.

I claim the application to railway car couplings of wheel springs, swivel links, or shackles, in combination and as herein described, and for the purposes specified.

57,659.—WOVEN FABRIC.—Seth W. Baker, Providence, R. I.

I claim the fabric above described, produced by combining, by means of the mode of weaving described, the body of the fabric formed wholly of cotton or linen, with a face or surface, the weft of which is woolen and which is interwoven with said body or central portion on one or both sides of the same, in the manner and for the purpose set forth.

57,660.—CULTIVATOR.—J. H. Barley, Longwood, Mo.

I claim the iron bars, D D, attached to the plow beams, A A, to support the cross piece, E, a suitable distance above the plow beams, in connection with the plow standards, F F, pivoted to the cross piece, substantially as and for the purpose specified.

I further claim the curved handles, K K, pivoted to the adjustable bar, J, and connected to the bars, F, which are pivoted in the bar, H, and secured to the plow standards, F F, substantially as and for the purpose set forth.

57,661.—RAILWAY SWITCH.—Charles J. Bayer, Poughkeepsie, N. Y.

I claim the connecting of the switch rails, C C, to the main and branch rails, A' B', by means of the bars, D D, substantially as shown, so that the switch rails will be adjusted or moved by the action of the car wheels on the bars, D D, as described.

In a railway switch, adapted to operate substantially as herein described, I further claim having the adjoining sides of the rails, A' B', and the bars, D D, beveled or inclined to form a lock for the bars, D D, as set forth.

57,662.—KNIFE AND FORK.—Frederick C. Beach, Stratford, Conn., and Alexander A. C. Klaucke, Washington, D. C.

We claim the combination with a knife or fork, of a receptacle for pepper, salt, or other condiment, in any manner, substantially as herein described.

57,663.—SOAP.—S. T. Beeler, Wales, Ill.

I claim the manufacture of soap by the combination of the ingredients in the proportion and manner substantially as herein specified.

57,664.—COUPLING JOINT FOR WELL-BORING SHAFTS.—L. Harrod Bell, Carmichaels, Pa.

I claim the device for preventing the two sections from separating by becoming unscrewed, namely, the mortises, h and I, bolt, D, and spring, E, all arranged and operated substantially as set forth.

57,665.—CATAMENIAL SACK.—Joseph C. Benzinger, Catonsville, Md.

First, I claim the expanded flap, M, extending backward from the trough of the sack so as to cover the nates and carry the straps, W W, beyond that part of the person, substantially as set forth.

Second, I also claim the sack made substantially as described, with a flap, M, and a trough, N, in combination with an elastic girdle, substantially as described.

57,666.—ARTIFICIAL LEG.—Douglas Bly, New York City.

First, I claim a set of springs, G G, in combination with the leg, A, and foot, B, forming a universal joint, substantially as specified.

Second, I also claim arranging the series of springs, G G, near the periphery of the socket, C, surrounding the center of motion, in such a manner that the central space will be left open, when said springs are employed between the foot and leg to produce reaction by compression, substantially as described.

Third, I also claim the arrangement of the plate, H, provided with the bearing, L, and the bolt, m, connecting with the spring, I, when used in communication with the toe joint, h, in such a manner as to work over it and produce the necessary leverage, substantially as set forth.

57,667.—GRINDING MILL.—Cornelius Bollinger, Harrisburg, Pa.

First, I claim mounting the fan, K, loosely upon the spindle, C, to adapt it to be rotated independently of the latter, substantially as and for the purposes set forth.

Second, I claim the driver, I, formed with an air passage or passages, i i, to enable the air from the fan to be discharged between the stones through the driver, substantially as described.

Third, I claim the combination with the hoop, L, of the circular plate, L', to form the ventilation passage, L2, as and for the purposes specified.

57,668.—CULTIVATOR.—J. W. Boosinger, Marine, Ill.

I claim, First, The clevis, D', and strap, D2, when constructed and employed substantially as described and set forth.

Second, The combination of the plow beams, D, with the clevis, D', also the combination of the said beams with the devices, E a a', a3, for the purposes and in the manner substantially as described.

67,669.—DRY HOUSE.—John K. Boswell, Richmond, Ind.

I claim, First, The rectangular heater, G, when the same is provided with the cylindrical valves, H H', as and for the purposes set forth.

Second, The combination of the rectangular heater, G, the valves, H H', the openings, K K', and the connecting pipe, b', all arranged and operating substantially as and for the purposes set forth and described.

Third, The arrangement of the movable lattice platform, F, and rectangular heater, G, and valves, H H', substantially as set forth.

57,670.—REFRIGERATOR BUILDING FOR PRESERVING FRUIT, ETC.—James A. Boyer, Greensburgh, Ind.

I claim, First, The combination and arrangement of the pipes, B B, situated one in the lower, the other in the upper part of the chamber, C, the bellows, D, or its equivalent, situated as described, and the series of V-shaped air passages under the ice chambers, so that the air will be drawn from the lower part of the chamber cooled by the condenser, and forced into the upper part of said chamber, substantially as described.

Second, In combination with the above parts, I claim the absorbing chamber, G, constructed and operating as described.

Third, The construction and arrangement of the cooling or condensing apparatus as shown, to wit, having a series of ducts or air passages, a a, inclined in V form, and placed underneath the ice chamber having a V-shaped bottom, the whole being constructed and operating substantially in the manner and for the purpose set forth.

Fourth, The arrangement of the absorbing chamber as shown, to wit, having said chamber provided with a partition plate, e, and pipe, H, constructed and operating substantially as described.

Fifth, In combination with the pipes, B B, or chambers, b' c', connected therewith for ingress or egress of the air, I claim a thermometer and barometer for the purposes described.

57,671.—ORGAN REED.—A. M. Brush, Clayton, N. Y.

I claim an organ reed made of silver either alone or mixed or alloyed with one or more metals.

57,672.—PORTABLE FENCE.—George S. Carlisle, Columbus City, Iowa.

I claim the arrangement of the braces, F F, and end posts, A, relating to each other and operating in the manner and for the purpose herein described.

57,673.—ELECTRIC TELEGRAPH.—Alonzo Chace, Syracuse, N. Y.

First, I claim in combination with the devices above shown for breaking the electric connection upon a telegraph line, that is to say, the block, N, and its appurtenances, and the connecting pole, X, and its appurtenances, made and applied substantially as above set forth.

Second, I also claim the block, N, and its spring, T, in combination with the wires that compose a line of telegraph, substantially as above set forth.

57,674.—WELL TUBE.—John Chandler, Cold Water, Mich.

I claim the perpendicular loop rods, a a, as described in combination with the wire gauze tube, d d, inside supporting spiral coil, e e, cone point, c, and tube, A, substantially as and for the purposes set forth, thereby adding great strength and security to the lower tube.

57,675.—DEVICE FOR FASTENING THE SLATS OF VENETIAN SHUTTERS.—George L. Chapin, Chicago, Ill.

I claim the arrangement and combination of the plate, F, bolt, J, screw, C a, and the notched band, K, substantially as set forth and described.

57,676.—CORN PLANTER.—Barnabas Clark, Mackinaw, Ill.

First, I claim the clutch, G, in combination with the axle, F, cells, c, wheel, B B', arranged and operating in the manner and for the purpose herein specified.

Second, The marker, P, when applied to or used in combination with the loose axle, F, substantially as and for the purpose specified.

Third, The attaching of the openers, J, and colters, L, to the bars, K K', applied to the frame, A, and connected with a foot bar, O, substantially as and for the purpose set forth.

Fourth, The ratchet, Q, on the loose axle, F, in connection with the pawl, R, attached to the lever, S, whe said parts are used in combination with the maker, P, and the seed-distributing device, all arranged substantially as and for the purpose specified.

57,677.—ATTACHING KNIVES TO THEIR HANDLES.—William Clayton, Bristol, Ct.

I claim the recessed bolster, a, of the blade, A, in combination with the tang, D, and nut, d, arranged with the ferrule, c, guard, C, and handle, B, in the manner and for the purpose herein specified.

57,678.—MACHINE FOR CUTTING STALKS IN THE FIELD PREPARATORY TO PLOWING.—G. W. Cole, Canton, Ill.

First, I claim the combination of a cylinder of cutters, O, and its supporting frame, I, with the main frame, A, when said frame, I, is hinged at its rear end to the frame, A, and has a vertical adjustment at its front end, operating substantially as and for the purpose set forth.

Second, The hook, m, constructed as described in combination with the hanging posts, j, arranged substantially as and for the purposes set forth.

Third, The notched or toothed open standard, Q, lever, S, spring catch, e, rod, g, and staple, h, in combination with the frames, A and I, all substantially arranged as and for the purposes set forth.

Fourth, The levers, r, and rods, p, in combination with hooks, m, arranged substantially as and for the purposes set forth.

Fifth, The spring fulcrum, S, in combination with the frame, A, and lever, r, arranged substantially as and for the purposes set forth.

Sixth, The curved arms, y, and lever, w, as described, in combination with the levers, r, and catch, q, all arranged substantially as and for the purposes set forth

57,679.—WASHING MACHINE.—Thomas Cole, Marshalltown, Iowa.

I claim, First, The yielding lever, A A, as applied to the washing machine, substantially as herein described.

Second, I claim the fulcrum wedge, K, in connection with the yielding lever, A A, as applied to the washing machine, substantially as herein set forth.

57,680.—FILE-CUTTING MACHINE.—Henry B. Comer, Pittsburgh, Pa.

First, I claim moving the file blank and its bed through the medium of the cutting tool by means substantially as herein described and for the purpose set forth.

Second, The adjustable lifting arm, m, when used in combination with the lifter, 3, hammer, f, mandrel, d, and cutter, 9, as herein described and for the purpose set forth.

Third, The tool holder, B, provided with spring, o, set screw, 5, and piece, e, for holding the mandrel, d, said holder being used in combination with the lever, 10, spring, g, lifter, n, cam, 1, eccentric lifter, 2, constructed, arranged, combined and operating substantially as herein described and for the purpose set forth.

57,681.—CLOTHES DRIER.—J. C. Connor, Dover, N. H.

I claim the bars, V W X, constructed as described in combination with each other with the horizontal bars, C I J and Y, and with the end pieces, A B F G, of the clothes drier, substantially as described and for the purpose set forth.

57,682.—APPARATUS FOR GENERATING GAS.—Mathias P. Coons, Brooklyn, N. Y.

I claim the internal arrangement of the retort, B, with the cylinder, D, and in the lamp, Fig. 4, the wick tube, J, and also the connecting tubes as arranged, marked I L.

I also claim the application of the safety valve, I, for the purpose and in the manner described and in combination therewith the application of the stop cock, in the manner and for the purpose described.

I also claim generating gas from volatile fluids by introducing the same into a generating retort by capillary attraction, for the purpose and in the manner herein set forth and described.

57,683.—BAG HOLDER.—Gilbert C. Corbin, St. John's, Mich.

I claim the arrangement of the board, a, and expanding holders, m n, operating substantially as described and represented.

57,684.—TWEER.—F. A. Deutenberg, Pittsburgh, Pa.

First, I claim the vertical center blast blacksmith fire tewel or tweer, having the chamber, H, with its dome, E, in which is the hole, J, and an annular channel K, at its top part, substantially as and for the purpose specified.

Second, The bend upward, B C, of the pipe, A, in combination with the receiver, H, dog, E, and door, G, as described and for the purpose specified.

57,685.—FRUIT GATHERER.—Alonzo R. Dinsmore, Auburn, N. H.

I claim the improved fruit gatherer made substantially as described, that is as consisting not only of the hole, the padded annular and disk jaws, and mechanism or means for opening and closing the disk jaw, but of the cloth or flexile conductor and the tubular cushion, arranged as specified.

57,686.—APPARATUS FOR CARBURETING AIR.—Silas R. Divine, New York City.

I claim the use of the chambers, B B B B, when placed one within another and composed of porous or perforated walls, substantially as described.

57,687.—GALVANIC BATTERY.—Joseph Dixon, Jersey City, N. J.

I claim, First, The combination in a galvanic battery of the porous diaphragm and negative metal or element in one and the same cell, substantially in the manner and for the purposes herein-before described.

Second, The graphite cell composed of pure plumbago and clay, or other material of which plumbago is the conducting ingredient, when combined in the proportions, substantially as here-inbefore stated.

57,688.—GANG PLOW.—James W. Donaldson, Daniel Sheets and Allen C. Miller, Suisun, California.

We claim the peculiar construction of the frame in order to obtain sufficient strength for a number of plows by placing the diagonal bars, A2 A3, between the parallel bars, A' A1, and the cross braces, a a1, substantially as described.

Second, The manner of attachment of the plows to their respective portions of the frame by means of the bent braces, C C C C, passing over the top of said frame-work as herein shown in combination with the plows, substantially as described.

Third, The adjustable wheel, E, and scraper, f, with the wheels, G G, scrapers, N H, also the turn plates, H H, and connecting rods, h h1, with upright bars, J J, jointed at the turn plate, H, in combination with the sweep L, substantially as described and for the purpose set forth.

57,689.—BRICK MACHINE.—Richard A. Douglas, Chicago, Ill.

I claim, First, The combination of the series of grinding rollers, a and a', being so geared that one of each pair shall revolve faster than the other with the hopper, d, and the charger, G, when arranged to operate as shown and described.

Second, I claim the charger, G, provided with the chamber, g, and the lubricating reservoir, h, arranged to operate in connection with the hopper, d, substantially as set forth.

Third, I claim the plungers, 1 2 3, and arranged to operate in combination with the molds, J, and the followers, 1' 2' 3', etc., when said plungers and followers are operated by the cams, l m and n, as shown and described.

Fourth, I claim the arrangement of the cam wheels, N, and the accompanying mechanism for operating the charger, G, as set forth.

Fifth, I claim the means substantially as shown for adjusting the hight of the plate, L, and its followers.

Sixth, I claim the means of adjusting the movements of the charger, G, by means of the slotted arm, r, and pin v, substantially as shown and described.

57,690.—PROPELLER FOR STEAMSHIPS.—Arthur Doyle, New York City.

First, I claim the combination of the vertical buckets, a a, with the side beams, b b, the upright arms, c c, the radial arms, h j, and the crank, e, with the shafts, f, as applied either to the side or stern of a ship in connection with the system of balance beams and oscillating bars, constructed, arranged and operated substantially as and for the purposes herein described.

Second, I claim also the combination of the buckets, a', a', with the side beams, b' b', the main central upright arm, c', and the half arms, c2 c2, the radial arms, h' j', and j2, the slide, z, and the crank, e', with the shaft, f', as applied to the side of a ship in connection with the system of balance beams and oscillating bars, constructed, arranged and operated substantially as and for the purposes herein described.

57,691.—ARTIFICIAL LEGS.—John S. Drake, New York City.

First, I claim the malleable cast metal frame for artificial limbs formed in the manner and for the purpose specified.

Second, I claim the straps, i i, of the cast metal frame, A, applied in the manner and for the purposes set forth.

Third, I claim the spring metallic frames for the toes, each attached by a separate rivet or screw so as to be movable, as set forth.

Fourth, I claim the curved metal spring, n, introduced at the ankle joint, with its ends attached to the heel, D, and frame, C, and acting to keep the toes of the foot from dropping, as set forth.

57,692.—OPERATING ORDNANCE.—James B. Eads, St. Louis, Mo.

I claim the combination of a pair or more of gun carriages so connected as to preserve the parallelism of the axes of the guns with a corresponding number of curved tracks so arranged as to cause the said axes to vibrate upon a given point in the embrasure, substantially as described.

57,693.—DEVICE FOR TRANSMITTING MOTION.—Thomas C. Entwistle, New York City.

I claim the combination and arrangement of three bevel gears C D E, and a revolving yoke, F, or its equivalent, to operate substantially as herein specified.

57,694.—NECK-TIE SUPPORTER.—J. A. Eshleman, Philadelphia, Pa.

I claim the bolder composed of the plate, a, and arms, b and b', the whole being constructed and arranged for the reception of a scarf, substantially as and for the purpose described.

57,695.—LUBRICATING BUSH.—S. H. Everett, Milton, Ohio.

I claim the lubricating bush D, having orifices, n, n, or their equivalents, when used in carriage boxes or in bearings for machinery in the manner substantially as described and for the purposes specified.

57,696.—STEAM CARRIAGE.—Mathew Fletcher, Louisville, Ky.

First, I claim the application of a rotary steam engine to each propelling wheel, for stability of carriage, avoiding dead centers, and enabling the driver to have at his command with ease, and by the power of steam to back, turn or advance.

Second, I claim the arrangement of the engine, piston and wheel operating together (or independently), with the piston and wheel on the opposite side of the carriage, for the purpose set forth.

Third, I claim suspending the whole weight of carriage and engine to the axle.

57,697.—TURNING ON AND SHUTTING OFF GAS BY ELECTRICITY.—Samuel Gardiner, Jr., New York City.

First, I claim the wheel D, provided with the non-conducting and conducting surfaces substantially as described, and rotated by a crank whose revolutions are registered by or upon a dial, substantially in the manner and for the purpose described.

Second, I claim the dial with its light and dark segments or portions to indicate in connection with a certain opening or place on the dial plate or other fixed object, the position of the stop-cock or other object for the movement of which the apparatus is designed substantially as described.

Third, I claim the revolving arm and spring tooth, M, m, operating in connection with the stud, c', or its equivalent, to rotate the wheel, D, by engagement with the cogs thereof, as described.

Fourth, I claim the combination of the shaft, D, wheel, D, spring tooth, m, arm, O, and spring detent, N, as and for the purpose described.

Fifth, I claim the arrangement of the key, G, and spring keys, g g' g'', with the portions, d d' d'', constituting the wheel, D.

Sixth, I claim the arrangement of the shaft, B, studs, r r, wheel, s, and detent, S, the pinion, T, spur wheel, U, and dial, V, operating substantially as and for the purpose described.

57,698.—FARM GATE.—Francis Gay, Bedford, Ohio.

First, I claim the shaft, D, arms, H and J, and gate, A, when the several parts are combined and operate as and for the purpose set forth.

Second, I claim the standard, D, face plate, E, and wheel, G, in combination with gate, A, as and for the purpose specified.

57,699.—CULTIVATOR.—William Geahr, New Holland, Pa.

I claim the independent, adjustable and reversible beams, D D, in combination with the upright, E, F, when connected with a suitable frame work, substantially in the manner and for the purpose specified.

57,700.—CULTIVATOR.—George T. Gifford, Monmouth, Ill.

First, The arrangement of the frames, B and A, and movable pivot, L L, for balancing, substantially as described.

Second, The combination of the lever, F, cross bars, E and C, and plows, G G, with the inside frame, for the purposes set forth and substantially as described.

Third, The arrangement of frames, B B and A A, by which the weight of driver supports or tends to lift plows, substantially as described.

Fourth, The slide, s, operating in the axles, as described and for the purpose set forth.

57,701.—SMELTING FURNACE.—John L. Gill, Jr., Columbus, Ohio.

I claim constructing a cupola or smelting furnace in such a manner as to allow of a part of the upper portion (of such cupola or smelting furnace), being made from a hollow steam boiler for generating steam to be used in the production of a blast, or for any other purpose as described above.

57,702.—CAP.—Simon Goldstone, Philadelphia, Pa.

I claim a cap having a series of eyelet holes through the back, opening from the exterior into the space contained between the body and the band, and series of eyelet holes through the band, opening from the interior of the cap into the same space and having an oil silk perspiration shield, the whole arranged and operating with respect to each other, substantially as is herein specified and described.

57,703.—MOP AND SCRUBBER.—William T. Grant, Jacksonville, Ill.

I claim the combination of the brush head, A, the rubber head strip, B, mop, F, handle, C, bar, E E, cylinder, D, catch or pin, o, and arm, g, as and for the purposes set forth.

57,704.—LOCK.—James T. Guthrie, Leesburg, Ohio. Antedated August 17, 1866.

I claim, First, The two bolts, B and B', having springcheeks, C and C', pin, d, and springs, b and b', arranged and operating as above described and set forth.

Second, Guard bolt, D, sliding incline, D', lever, F, spring, G, and catch spring, i, constructed as above described and for the purpose set forth.

57,705.—SHEARS FOR CUTTING BOLTS.—Jones Guthrie, Wilmington, Del.

I claim the combination of the parallel levers, A A, the joint, B, with the connecting plate, E, and movable knife, G, operating against an opposite knife, J, and the set screw, L, all constructed and arranged as herein described, for the purposes set forth.

57,706.—HAY RAKE.—E. R. Hall, Ilion, N. Y.

I claim, First, The suspending or fitting of the rake, G, between swinging bars, F F, connected to the front end of the frame, A, and having an arm, H, connected with the rake head, substantially as and for the purpose set forth.

Second, The lever, I, fitted within the arm, H, in connection with the pins, f f, on the rake head, c, when said parts are applied to a suspended rake, G, substantially as and for the purpose specified.

Third, The lever, L, on the axis, J, provided with the arm, g, connected with the arm, H, by a chain, K, in combination with the pawl, M, attached to lever, L, and the rack, N, secured to a board on the front part of the seat supports, a a, substantially as and for the purpose specified.

57,707.—COMBINED SOWER AND DRILL.—George W. Hall, Augusta, Mich.

I claim, First, The pendent frames, M, carrying furrowing wheels, S, drills, N, for the purpose substantially as described.

Second, I claim a machine for sowing different kinds of grain, when provided with pendent frames, carrying the furrowing wheels and drill tubes, substantially as and for the purposes herein set forth.

Third, The combination and arrangement of the levers, J K V and Y, connected to the slides in the seed box, L, and agitator, X, in the box, O, with the elbow lever, D, and cam, c, all for the purposes and substantially as herein set forth.

Fourth, I also claim the plows when constructed and operated as herein shown.

57,708.—MANUFACTURE OF ARTIFICIAL FUEL.—William Halsted, Trenton, N. J. Antedated August 10, 1866.

The combination, mixture and treatment of the ingredients above mentioned, substantially as above described and intended to produce the same effect.

57,709.—FOLDING CHAIR.—E. Hambujer, Detroit, Mich.

First, I claim the head part, D, having legs, E, in combination with the parts, C B, hinged to each other and with frame, A, provided with pivoted legs, F, and braces, f', arranged and operating substantially as represented and described.

Second, The screw socket, C, in combination with the legs, F, and frame of the part, B, substantially as described and for the purpose set forth.

57,710.—GRAIN BINDER.—Henry Harrier, Indianapolis, Ind.

I claim the cylinder, V, with its square shaft, W, the grain gatherer, T, and the concave, U. I also claim the combination of the spring, a, with the arrangement, L, and the lever, R.

57,711.—ILLUMINATED SIGN.—James Harrison, New York City.

I claim the combination of the close glass cups, C, with the block or raised work, B, of the letters or devices to be shown, and with the back ground, A, substantially as herein described and for the purpose set forth.

57,712.—POWER LOOM.—Philo W. Hart, Stamford, N. Y.

First, I claim the sliding plate, f, applied to work through the lay of the loom, and in combination with the movable trap at the bottom of the shuttle box, substantially as and for the purpose herein described.

Second, The finger, w w, attached to the lay of a loom and operating in combination with the movable trap at the bottom of the shuttle box, substantially as and for the purpose herein set forth.

Third, The spare shuttle box, I, attached to a breast beam or framing of the loom, having a movable trap at its bottom and operating in combination with a shuttle box having a movable trap at its bottom on one side of the lay, substantially as and for the purpose herein described.

Fourth, The combination of the spare shuttle box working on fixed brackets, J J, or their equivalent attached to the breast beam or other fixed portion of the loom, the rock shaft, K, carrying the fingers, w w, and furnished with a pin, z, and the stationary arm, L, the whole operating substantially as herein set forth.

Fifth, The sliding plates, N M, in combination with each other with the lay and one of the shuttle boxes thereon, and with the spare shuttle box, substantially as and for the purpose hereinedescribed.

57,713.—GATE.—B. S. Healy, Cohocton, N. Y.

First, I claim the curved metallic strip, K, in combination with the notched top rail of the fence with the gate post, B, and with the perpendicular support, L, substantially as described and for the purpose set forth.

Second, The combination of the supporting piece, O, with the gate post, B, the perpendicular support, L, and with the shortened bottom rail, G, of the gate, substantially as described and for the purpose set forth.

57,714.—RAKING AND BINDING ATTACHMENTS TO REAPERS.—Marshal D. Higley and Dana L. Columbia, Morristown, Ill.

We claim in an automatic rake for a harvester the combination of the eccentrics, D and E, connecting rods, G and D2, bell crank, G1, and oscillating rake arm, H, said parts being respectively constructed substantially as described.

Second, The oscillating rake arm, H, and parallel rod, H1, adjustably attached to the levers, H2, when used in combination with the eccentric, D, and connecting rod, D2, substantially as set forth.

Third, We claim the wheel, I, with the track, 12, and depressions, I3 and I4, when used for actuating the levers, N1 and M3, respectively, substantially as and for the purpose set forth.

Fourth, The twist head, L, when constructed in two parts, L1 and L2, the part, L2, being arranged to turn on a pivot, the opposed faces of the parts being perpendicular to the axis of rotation, and the said parts being constructed and arranged substantially as set forth.

Fifth, In combination with the twist head, L, we claim the clutches, N N, attached to levers, N1 N1, which have their fulcrums near the center, and are opened and closed by a spring, O, and cam, I, substantially as set forth.

Sixth, In combination with the twist head, L, we claim the nippers, M M1, one being fixed and the other movable, when they are respectively constructed and the movable one actuated substantially as set forth.

Seventh, In combination with a device for binding the sheaf, we claim the revolving arm, R1, for throwing the sheaf from the platform, substantially as set forth.

Eighth, We claim the cam, C, having a dead point, a b, when used in combination with, and for the purpose of giving motion to, the binding arm, G, substantially as set forth.

Ninth, The shield, U and U2, when used in combination with an automatic binding mechanism, substantially as and for the purpose set forth.

57,715.—GUARD FOR RAILWAY CROSSINGS.—Asa Hill, North Providence, R. I.

I claim an improved safe-guard or barrier for railroad crossings, composed of a bar applied to uprights at each side of the roadway in such a manner that the bar may be raised or lowered by means of cranks or pivoted arms in the manner substantially as herein shown and described.

57,716.—TURNING LATHE FOR TURNING SCYTHE SNATHS.—Spencer Hinton, assignor to Withington, Cooley & Co., Jackson, Mich.

First, I claim the two plates, G H, with hollow bugle-mouthed journals, J J, respectively on each, and a pulley, P, on one, G, fastened together in such a position with the pieces, L L, between them, and diametrically opposite to each other, so that the journals, J J', will be in a line with each other, and retain certain gage and knife holders between them, substantially as and for the purpose specified.

Second, The two gage and knife holders, B B, moving toward and from the center of rotation between the plates, G H, substantially in the manner as and for the purpose set forth.

Third, I claim so fitting the ends of gages where the parts of the circle pass each other (when the gages are closed up, as in Fig. 1) into each other, that as they open they will tend nearer to form a complete circle, and when fully open the circle will be complete, as shown in Figs. 3 and 4.

Fourth, I claim attaching the knife and feed knife to gage and knife holders, as herein described.

57,717.—LOOM.—Isaac N. Hodson, Mount Pleasant, Iowa.

First, I claim the cranks, a a', two or more, and cam rollers, F, in combination with the batten, G, and heddle frames, E, constructed and operating substantially as and for the purpose set forth.

Second, The hinged swords, h h' and dogs, k k', in combination with the batten, G, and shuttle blocks, j j', constructed and operating substantially as and for the purpose described.

57,718.—WOOD-BORING MACHINE.—David Hoit, Fort Wayne, Ind.

First, I claim the auger shaft, G, shafts, C and D, and guide posts, B and B', arranged and operating as described.

Second, The shaft, L, screws, J J', nuts, m m', and yoke, M, as and for the purposes set forth.

Third, The arrangement and combination of the parts herein described for giving the auger of a boring machine a perpendicular and horizontal motion independently or simultaneously, in the manner and for the purposes herein set forth.

57,719.—CULTIVATOR.—Jacob Hollinger, Millersburgh, Ohio.

I claim the herein described construction of cultivators, consisting of the beam, A, curved bars, B B, braces, D, shears, C B' B', and handle, E, several parts being constructed, arranged, and operating as and for the purpose set forth.

57,720.—BED BOTTOM.—E. F. Holloway and J. W. Hudelson, Knightstown, Ind.

We claim, in combination with the rails, A, the strips, C, springs, B, and removable slats, D, the said several parts being respectively constructed and the whole arranged for use substantially as set forth.

57,721.—APPARATUS FOR PRESERVING MILK.—Noah P. Holmes, Indianapolis, Ind.

I claim the can, 1, with its double lining, 77, for charcoal, its cylinder with ice, 5, separate lids, 24, and ventilators, 33, for the purpose described, and all arranged substantially as set forth.

57,722.—TRUSS.—T. L. Hough, Philadelphia, Pa.

I claim the combination of the hub, D, spring, m, arm, B, and journal, a, arranged to operate as and for the purpose herein set forth.

57,723.—STAND AND MIRROR.—W. H. Hughes and H. L. Lent, Peekskill, N. Y.

We claim a combined toilet stand, or its equivalent, and mirror, when the latter, by its staff or rod, H, is hung or suspended to the said stand by means of a cord, J, pulley or pulleys, K, and weight M, substantially as described and for the purposes specified.

57,724.—PLOW.—Herbert A. Hummer, Franklin Township, N. J.

I claim uniting the mold board and land side of the plow by a concealed joint, constructed and arranged substantially as and for the purpose described.

57,725.—PLATE FOR ARTIFICIAL TEETH.—George H. Hurd, St. Louis, Mo.

I claim the plate, B, when constructed with the flanges, b, either with or without the suction cavities, b1, so that artificial teeth may be fitted into mouths of bad formation, and secured there, either by suction, or by muscular power, or by both.

57,726.—DENTAL MOLD.—George H. Hurd, St. Louis, Mo.

I claim constructing dental molds, or impression frames, A, so that their edges, b and b', will be wide enough apart to take an impression of the lip muscles and tongue shelf at the same time, substantially as herein described and set forth.

57,727.—BURNING FLUID.—John Jann, New Windsor, Md.

I claim the combination of benzine, sweet oil, and oil of vitriol, in about the proportions and for the purpose described.

57,728.—MANUFACTURE OF POT AND PEARL ASH.—Benjamin F. Jewett, Malone, N. Y.

I claim the process of manufacturing pot ashes and house ashes into pearl ashes, by the use of black muck, substantially as herein specified.

57,729.—APPARATUS FOR CARBURETING GAS.—Algernon K. Johnston, New York City.

I claim the use of the materials above described, for the purposes set forth.

57,730.—CHURN.—J. D. Kellogg, Jr., Northampton, Mass.

I claim the dasher provided, the opening, b, and the inclined surfaces, a c, sloping in different directions, and operating as described.

57,731.—FRUIT GATHERER.—Zebalon S. Kelsey, Huntingdon, Ohio.

I claim the construction and arrangement of the fruit gatherer, as herein set forth.

57,732.—CAR COUPLING.—John Kingsbury, Ravenna, Ohio.

First, I claim the arrangement of the jaws, C, when pivoted together, and to the adjustable stay, B, in combination with the standard, E, springs, J D, chain, F, and windlass, as specified.

Second, The hook, D', and adjustable stays, K, when arranged and pivoted, as set forth, in combination with the spring, N d, and jaws, C, as and for the purpose set forth.

57,733.—SASH LOCK.—D. P. Lacey and J. A. Bartlett, Oxfordville, Wis.

We claim the combination and arrangement of the tumbler, a b f h, lock bolt, d j k, and spring, m and e, substantially as and for the purpose set forth.

57,734.—CORN PLANTER.—Alexander Ladd, St. Lawrence, N. Y.

I claim the slide, B, provided with a hole, e, in combination with the box, A, and the hole, f, in the bottom, e, thereof, when said parts are arranged as shown and described, to admit of the dispensing with the ordinary strike or cut-off; for depriving the hole, e, of superfluous corn or seed, as set forth.

Second, I further claim, in combination with the box, A, and slide, B, arranged as shown, the false bottom, E, having its lower end beveled or chamfered at its under side, substantially as and for the purpose specified.

57,735.—FENCE.—Charles Lee, Winchester (Sandy P. O.), Ohio.

First, I claim the posts, A, when constructed substantially as herein described and for the purposes set forth.

Second, The combination of the loops, C, when constructed as herein described, with the posts, A, and boards, B, substantially as and for the purposes set forth.

Third, The combination of the key or wedge, E, with the posts, A, loop, C, and boards, B, substantially as described and for the purpose set forth.

57,736.—MACHINE FOR TENONING SPOKES.—James Lefeber, Cambridge City, Ind.

First, I claim supporting the gear frames, P or j, upon the movable frame, S, and providing for their vertical adjustment thereon, substantially as described.

Second, I also claim, in combination, the movable frame, S, the gear frame, P, and the carriage, D, substantially as described.

57,737.—LUBRICATING OIL.—Joseph M. Lippencott, Pittsburgh, Pa.

First, I claim the reduction of the gravity of hydrocarbons, or petroleum oil, by the admixture of pine tar, substantially as above set forth.

Second, I claim the use of pine tar in the manufacture of lubricating oils of any desired gravity, in combination with hydrocarbons or petroleum.

Third, I also claim the use of pine tar, in the manufacture of lubricating oils, in combination with hydrocarbons or petroleum, animal oils, tallow, or fatty matter of any description.

57,738.—BARREL FOR PETROLEUM, ETC.—John S. Lipps, Brooklyn, N. Y.

I claim a barrel, for hydrocarbon liquids, provided with an air pipe, c, and escape orifice, a, substantially as and for the purpose described.

57,739.—GRAIN BINDER.—Sylvanus D. Locke, Janesville, Wis.

First, I claim the combination and arrangement of the part, C, pitman, O, constructed substantially as described, crank, t, shaft, A, standard, J, and head, Y, when the whole are constructed, arranged, and used, substantially as and for the purpose set forth.

Second, The combination and arrangement of the part, C, pitman, O, constructed substantially as described, shaft, A, standard, J, and head, Y, and shaft spring, F, when the whole are constructed, arranged, and used, substantially as and for the purpose set forth.

Third, The combination and arrangement of the part, C, pitman, O, projection, m, cylinder, B, pin, D'', shaft, A, crank, p, standard, J, and head, Y, when the whole are constructed, arranged, and used, substantially as and for the purposes set forth.

57,740.—WASHING MACHINE.—M. J. Lourrentz, Leavenworth, Kansas.

First, I claim the reciprocating rubber, I, operated from a rock shaft, J, as shown, in combination with the pressure rollers, C, arranged with springs, E, connected with adjustable bars or slides, F, substantially as and for the purpose herein set forth.

Second, The pounder, M, connected with the rock shaft, J, through the medium of the tubular rod, N, sliding rod, O, and spring, P, substantially as and for the purpose specified.

Third, The operating of the rock shaft, J, through the medium of the toothed segments, m n, counterpoised lever, K, and hand lever, L, all arranged substantially as described.

57,741.—FRUIT PICKER.—C. M. Lunt and W. F. Lunt, Biddeford, Me.

We claim an instrument for picking fruit, constructed and operating substantially as shown and described, that is to say, we claim the combination of the handle, A, rod, B, tines, d, spring, b, cords, e, apron, C, and basket-supporting hooks, f, substantially as shown and described.

57,742.—SLOP HOPPER.—John Marguis, San Francisco, Cal.

First, I claim the construction and arrangement of the stationary hopper, E E, and movable hopper, D D, substantially as described, and for the purpose set forth.

Second, I claim the bowl or pan, G A', or its equivalent, placed upon standards in the bottom of the lower legs, in the outer hopper, or attached to the inner hopper, D, and which forms, together with the lower portion of the movable hopper, and the upper portion of the connection pipe, I, the trap, A'' A'', substantially as described, and for the purpose set forth.

Third, I claim arranging the inner hopper in the stationary or outer hopper, so as to form the upper trap, A, as herein specified and for the purpose set forth.

57,743.—METAL FRAME FOR PIANOS.—Martin Martins, New York City.

First, I claim the tension screw rods, h, and springs, j, in combination with the frame, A, constructed and operating substantially as and for the purpose described.

Second, The L-shaped plank, i, in combination with the lips, e f, of the frame, A, and with the tension screw rods, h, constructed and operating substantially as and for the purpose described.

57,744.—RAILROAD SWITCH.—H. Maxel, E. Fessler, and H. Fessler, Canton, Ohio.

First, We claim the switch box, A, with inner box, N, and windows, C D, with signal, T, arranged in the manner substantially as and for the purposes set forth.

Second, The semi-circular wheel, E, wheel, R, wheel, H, crank, K, lever, J, and spring, b, arranged within the switch box, A, as and for the purposes herein specified.

Third, The shaft, M, attached to the wheel, E, by means of the arm, P, and metallic plate, e, working the rod, F, when arranged and used as and for the purposes set forth.

57,745.—CARRIAGE GEARING.—J. R. McAllister, Richville, N. Y.

First, I claim the brace rods, G G2, secured to the wagon body at one end and at their others respectively to the hind axletree and the head block, E, of the front spring of the said body, substantially as and for the purpose described.

Second, The swinging frame circle, O, o the front head block, E, in combination with the plate or circle, P, fixed to the front axletree, the two being connected together, substantially as described and for the purpose specified.

57,746.—REFRIGERATOR FOR LIQUIDS.—Robert W. McClelland, Springfield, Ill.

I claim a refrigerator for cooling ale, beer, and other liquids, arranged so that the casks may be supported upon slides, E, resting upon the ways, D, in the upper part of the chest, A, and the liquids be conducted by a flexible pipe, G, into a receiver, I, inclosed in the cooling tub, H, and then drawn for use through a faucet, m, passing through the small doors, O, said several parts being constructed and arranged substantially as set forth.

57,747.—GUARD ATTACHMENT FOR CULTIVATORS.—Thomas B. McConaughey, Newark, N. J. Antedated Aug. 28, 1866.

I claim the application of a guard or guards to a cultivator, substantially in the manner as and for the purpose herein set forth.

I also claim the pivoting the bar, F, to which the plate or guard, G, is attached between plates, E E, secured to the cultivator near its front end and provided with a rest, b, substantially as described.

57,748.—PLOW.—John McKinley, Bethesda, Ohio.

First, I claim the point, e, constructed substantially as described.

Second, The combination of the point, e, with the share, c, colter, b, and mold board, a, substantially as herein set forth.

57,749.—BURNING FLUID.—G. H. Mellen and J. C. Hazleton, Washington, D. C.

We claim an illuminating oil composed of the several ingredients named and of the proportions, substantially as set forth.

57,750.—CHURN.—Jacob H. Mendenhall, Cerro Gordo, Ind.

First, I claim the combination of the dasher, H, shaft, G, adjustable gear wheels, E and F, crank shaft, I, and crank or cranks, D, with each other and with the box, A, and cover, C, when said parts are constructed and arranged substantially as herein described and for the purposes set forth.

And second, The combination of the gathering board, J, and spring catch, K, with the dasher shaft, G, substantially as herein described and for the purposes set forth.

57,751.—REVOLVING ORDNANCE.—Nathan L. Milburn, St. Louis, Mo.

I claim, First, The arrangement of the radiating series of barrels to revolve upon a central pin, b, furnished with trunnions, c c, and applied to operate substantially as herein specified.

I claim, Second, The combination of the curved bar, L, the screws, M M, the rock shaft, K, and the clamps, p q, the whole applied in combination with the barrels and carriage, to operate substantially as herein set forth.

57,752.—CORN CULTIVATOR.—L. B. Moore, Janesville, Wis.

I claim the construction of a corn cultivator, by the combination and arrangement of the various parts, substantially as they are described in the foregoing specification, or their mechanical equivalents, when used to produce the said automatic reciprocating motion of the said levers, J J, and shovels, X X, as specified.

57,753.—MACHINE FOR SHAVING HOOPS FOR CASKS.—J. G. Morgan, Colton, N. Y.

I claim, First, The combination of the stationary bar, C, the pivoted bar, E, the knives, H, levers, J and L, and gage, K, substantially as herein described and for the purpose set forth.

Second, The combination of the inclined slotted table, M, the nippers, o, the sliding block, I², strap, S, clutch, t V, lever, W, and drum, T, on shaft, U, with the stationary and pivoted bars, C and E, substantially as herein described and for the purpose set forth.

57,754.—GRINDING MILL.—Ellis Nordyke and Addison H. Nordyke, Richmond, Ind.

We claim the herein-described metallic eye for millstones, when constructed and operating as described.

57,755.—TOOL FOR WORKING WOODEN LEGS.—Edwin Osborne, Philadelphia, Pa. Antedated Aug. 23, 1866.

I claim the plug, D, in combination with the burr cutters, constructed, arranged, and operating substantially in the manner and for the purpose specified.

57,756.—BORING TOOL FOR MAKING WOODEN LEGS.—Edwin Osborn, Philadelphia, Pa. Antedated Aug. 23, 1866.

I claim the combination of the O G, or curved blades, H, with the burr or other cylindrical cutter for forming the orifice in the ankle portion of the artificial legs.

Also, the combination of the head piece, I, with the curved blades, H, and burr, E, for insuring perfect uniformity in depth and gage of cavity, substantially as described,

57,757.—EARTH SCRAPER.—Nelson Peck, Jay, N. Y.

I claim, First, An improved scraper formed by combining the lever, G, bars, F, bars, L, levers, J, and bars, K, with each other and with the frame, L, tongue, B b', scraper, A, and draft bar, D, substantially as described and for the purpose set forth.

Second, The combination of the wheels, N, and axle, O, with the frame, L, of the scraper, A, when the axle, O, is made and attached substantially as herein described and for the purpose set forth.

57,758.—BUCKLE.—John Peckham, New Haven, Conn.

I claim the combination of the frame, A, and tongue, B, formed and hinged together, in the manner herein set forth.

57,759.—HANDLE FOR COAL SHOVEL.—John Pfeifer, Philadelphia, Pa.

I claim the construction of the handle with the metallic neck, B, shoulder, d, and vanes, f f, in combination with the wooden handle, D, substantially as and for the purpose herein specified.

57,760.—PUMP PISTON.—Burrill and Edwin Pickering, West Milton, Ohio, and Barton Pickering, Montgomery county, Ohio.

We claim, First, The vertical part of the packing piece, A, having an inclined surface as represented for the purpose of holding the flaring packing, F, when combined with the rod, C, and valve seat, B, substantially as described and represented.

Second, The arrangement of the pieces, A B, packing, F, valve, E, and pump rod, C, substantially as described.

57,761.—LIGHTING GAS BY ELECTRICITY.—Robert G. Pike, New York City.

First, I claim a plate for deflecting and spreading the gas as it comes from the burner before striking it with a spark so as the more readily to mingle the air with it before striking, and also for the purpose of directing the gas to the place of striking, substantially as described.

Second, I claim the combination of the metallic gauze, a, or perforated plate with the tube or cap or curved plate, and also with the deflector or spreader, substantially in the manner and for the purpose described.

Third, I claim the metallic button, or its equivalent, upon the deflecting plate, operating substantially as described.

Fourth, I claim the combination of the gauze, a, deflector, D, and boss, n, substantially as described.

57,762.—NECK TIE.—James K. P. Pine, Troy, N. Y.

I claim the imitation neck tie, herein described, adapted for use with a turn-down collar, and consisting of paper of any desired quality or thickness, the surface being ornamented by printing, embossing, painting, staining, or otherwise.

57,763.—FLOOR COVERING.—Anson H. Platt, Ann Arbor, Mich.

I claim, First, The application of paper printed in water colors, to heavy base paper, previously made water-proof by the use of my "water-proof compound," as a substitute for oil cloths and carpets, as herein described, under the head of "hand-made variety of paper floor covering."

Second, I claim the application of ornamental figures printed in water colors directly upon heavy strong paper previously made water-proof by the use of my "water-proof compound" (or by any other similar compound), combined with other articles to form a paint, as herein described, under the head of "factory-made variety of paper floor covering."

And third, I claim the "water-proof compound," and "enamel coating," as herein described, for the uses and purposes herein specified.

57,764.—APPARATUS FOR SPREADING CEMENT.—Joseph H. Putte, Cincinnati, Ohio.

I claim, First, A cement-spreading machine whose hopper, B, is provided with an adjustable gate, C, arranged and operating substantially as herein described and set forth.

Second, In combination with the adjustable gate, C, I also claim the trowel, D, as and for the purpose explained.

Third, In combination with the elements of the two preceding clauses, I further claim the set screw, E, or its mechanical equivalent, operating as herein explained and described.

Fourth, In combination with the drum, G, I also claim the pressure roller, I, for the purpose set forth.

57,765.—FENDER FOR CARRIAGE WHEELS.—Stephen R. Rumsdell, Providence, R. I.

I claim, First, A rotating fender provided with a projection at one end and a recess at the other, for the reception of an adjustable center pin, in order that said roller may be placed in or removed from its bearings, or adjusted therein with facility, in the manner described.

Second, A bracket having arms provided with bearings for said rotating fender and set at such an angle with the side of the carriage on which it is placed that the wheel when in contact with said fender shall present to it as large a portion of the surface of its rim as possible, or in other words, shall be nearly or quite at right angles therewith, substantially as set forth.

57,766.—FRUIT GATHERER.—F. J. Rauschert, Buffalo, N. Y.

I claim the combination of the strap, A, pole, D, trough, F, having spout, H, and canopy, R, when all constructed and arranged together, substantially as and for the purpose described.

57,767.—CAR COUPLING.—John H. Reed, New Haven, Conn.

I claim the combination of the toggle or coupling pin, c, rock shaft and crank, h and m, and the spring, e, with its appendages, d, when the whole is constructed, arranged, and combined, substantially as herein described and set forth.

57,768.—LAMP EXTINGUISHER.—Wm. A. Richardson and Henry D. Ward, Worcester, Mass.

We claim the combination of loop, B, cap or cover, C, and operating rod, D, with the tube, A, and top of the lamp, substantially as and for the purposes set forth.

57,769.—TOOL.—Charles Richmond, Worcester Mass.

I claim the improved compound tool, consisting of the wrench socket and double bit, all constructed and arranged substantially as herein described.

57,770.—BED BOTTOM.—E. R. Rison, Kinmundy, Ill.

I claim the combination of the wires or cords, C, the upright supporting pieces, B, the gum elastic springs, F, the plates, E, and screws, D, with each other and the frame, A, of the bed bottom, substantially as herein shown and described and for the purpose set forth.

57,771.—SHAFT COUPLING.—Benjamin Roach, Melrose, Mass.

I claim the arrangement and combination of the disk, D, and its ribs, b b, with the two coupling heads, C C, provided with grooves, a a, arranged in them to receive the ribs, as set forth.

57,772.—HOG TROUGH.—William H. Robbins, Richmond, Ind.

First, I claim the construction of trough, A, with the key or wedge bar, C, and lever, B, all arranged and operating as described.

Second, The equal distribution of the feed to each hog through the length of the trough at the same time, and in equal portions.

Third, This device of alternating the opening in the side of the trough, that more hogs can be accommodated in the same space than if they were all allowed on one side of the trough at the same time.

Fourth, I claim the manner of constructing the trough so that the hogs cannot get into the feed, and each one be entirely alone in his mess, all operating in the manner and for the purpose substantially as set forth.

57,773.—GROUND ROLLER.—C. D. Roberts, Jacksonville, Ill.

First, I claim supporting the outer ends of the axles of rolls, C C, in the hinged or vibrating boxes, a a, and the inner ends of the same in free ends of bars, b b, permitting the rolls thereby to adjust themselves to the inequalities of the ground, substantially as described.

Second, I claim the connecting link or bar, c', in combination with rolls, C C, hinged boxes, a a, and bar, b, when the rolls are arranged one in the rear of the other, as and for the purpose specified.

57,774.—MATERIAL FOR KINDLING FIRE.—C. A. Rose, Columbus, Ga.

I claim, as an improved article of manufacture, a fire kindler, made of compressed pine leaves, as herein described.

57,775.—WATCHMAKER'S LATHE.—Frederick Shaller, Hudson, N. Y.

I claim the standard, B, provided with the slot, F, and formed in one piece with the base, C, and arms, D, in combination with the pins, E, bar, G, and rest, I, the whole being constructed and arranged substantially as herein set forth for the purpose specified.

57,776.—CARD RACK.—E. Safford, Boston, Mass.

I claim, First, The peculiar method of shaping and holding in position the slats, S S' S" S"', etc., substantially as described and for the purpose set forth.

I claim, Second, The combination of the slats made and secured as described, with the board, B, and frame, A, substantially as described, and for the purpose set forth.

57,777.—TRAINING GRAPE VINE.—George S. Salsbury, Clarendon, N. Y.

I claim the peculiar manner of training and trimming of the grape vine, so as to make it self-sustaining, forming its own trellis, substantially as set forth, claiming the described method in its broadest sense.

57,778.—STOVE-PIPE DRUM.—Hans Henrik Senniksen, Richmond, Ind.

I claim the combination of the pipes, B and B' D and D' d and d', and the damper, C, when arranged and operated as set forth and described.

57,779.—RAILWAY CROSSING.—John L. Shaw, Fort Wayne, Ind.

I claim the railway crossing consisting of the bed plates, A, lapped and united as described, and used in combination with the rails, B, substantially as described.

57,780.—MACHINE FOR PIERCING LEATHER.—G. V. Sheffield and J. F. Coburn, Hopkinton, Mass.

We claim the combined arrangement of the feed wheel, R, piercing tool, X, hammer, Y, feed rollers, F2, sliding chisel, R2, or its equivalent, substantially as herein described, and as and for the purpose specified.

57,781.—DIE FOR BOLT-HEADING MACHINE.—John W. Sibbet, Cincinnati, Ohio.

First, I claim improved dies, formed in sections, and upon the several faces thereof, constructed, arranged, and combined with each other substantially as herein described, and for the purposes set forth.

Second, The combination with the above of the headers, K, constructed substantially as described, and for the purpose set forth.

57,782.—GATE.—George W. Sigerfoos, Joseph J. Sands, and George Fry, Potsdam, Ohio.

We claim the combination of the posts, B C D F, rollers, m, stay piece, n, and gate, A, substantially as described and for the purposes set forth.

57,783.—MACHINE FOR MAKING METAL TUBES.—Charles G. Smith, Chelsea, Mass.

I claim, in combination with a stationary triblet or mandrel mechanism for feeding the plate, mechanism for bending part of the plate into a tubular form over the surface of the triblet or mandrel, and mechanism for forming the opposite edges of the plate into a lap joint, the whole operating together to form the plate into a tube, substantially as described.

57,784.—MACHINE FOR SINKING HOLLOW PILES.—William S. Smith, Noyesville, Ill.

I claim the method of excavating solid materials from the interior of hollow piles by means of a current of air, using for this purpose the flexible discharge pipe, as herein described.

57,785.—FRUIT GATHERER.—Young W. Smith, Bristol, N. Y.

I claim the combination of the endless adjusting cords, ff, and loops, k k, with the canvas, A, and bracing stakes, B B, operating substantially in the manner and for the purpose herein specified.

57,786.—TUMBLER WASHER.—John Solter, Baltimore, Md.

I claim the employment of a lever, K, or its equivalent, operating the valve stem, e', and valve, e, when in combination with the rim, n, for holding the tumbler, arranged substantially as and for the purposes set forth.

57,787.—GENERATING GAS FOR MOTIVE POWER.—Daniel E. Somes, Washington, D. C.

First, I claim combining nitro-glycerin with alkali, and converting the same into gas to be used as a motive power.

Second, Combining any kind of oil or fatty matter with alkali, and converting the same into gas to be used as a motive power.

Third, Compressing gas, air, water, steam, or any other liquid or volatile substance, substantially as and for the purpose herein described.

Fourth, The apparatus herein described, or its equivalent devices, for compressing gas, air, water, steam, or any liquid or volatile substance, and using the same as a motive power.

57,788.—APPARATUS FOR CARBURETING AIR.—James F. Spence, Williamsburgh, N. Y.

First, The case, A, provided with two or more air or steam wheels, B B, working in the liquid in conjunction with each other, substantially as and for the purpose set forth.

Second, Heating the oil before it enters the machine by the jacket, E, surrounding the supply tank, D, in combination with a hot air or steam pipe, b, or any other suitable means, substantially as and for the purpose described.

Third, The hot-air chamber, F, in combination with the burner, a, case, A, and jacket, E, constructed and operating substantially as and for the purpose set forth.

Fourth, The float, d, provided with a valve, f, in combination with the liquid supply pipe, g, and case, A, constructed and operating substantially as and for the purpose described.

57,789.—HORSE HAY FORK.—William S. Spratt, West Manchester, Pa. Antedated August 17, 1866.

I claim the combination and arrangement of the rod, b, provided with guide, l, and prongs, g and h, link or rod, c, lever, d, pulley, o, when used in connection with the frame, a a, constructed, arranged, and operating in the manner herein described and for the purpose set forth.

57,790.—MANUFACTURE OF SCYTHE STONES.—Alvin G. Squire, Pelham, Mass.

The cast-steel band and the mode of attaching it to the stone or wood, prepared as above stated, and to be used in connection with such stone or wood for the purpose of sharpening scythes, edge tools, and other implements requiring a sharp edge.

57,791.—CONSTRUCTION OF JOINTED MOLDS.—M. B. Stafford, New York City.

I claim a jointed mold composed of two parts, b b, connected together and constructed substantially as herein shown and described, so that when said parts are closed, a smooth interior is obtained, and the article or substance compressed and molded without leaving any crease, impression, or ridge, as set forth.

67,792.—CULTIVATOR.—Addison F. Stillwell, Fayette, Iowa.

I claim the bar, E, beam, A, and cross bars, G, in combination with the bars, I, projections, b, spurs, f, shares, J, and brace rods, K, all arranged to operate as and for the purposes set forth.

57,793.—ATTACHING ARTIFICIAL TEETH TO BASES.—S. W. Stockton, Philadelphia, Pa.

I claim securing artificial teeth and gums to plastic bases by means of the tenons, d, arranged along on the rear part of that portion of the porcelain blocks which project inward just above the teeth, substantially as shown in the drawings and herein described.

57,794.—CHURN.—Henry C. Stoll, Mokeona, Ill.

First, I claim the arrangement and combination of the twisted parts, B, with the lever, C, and standard, A, as set forth.

Second, The combination of the support, D, slide, L, and dasher rod, F, substantially as described.

57,795.—PROCESS FOR TANNING.—J. N. Sturtevant and Harvey E. Jones, McGregor, Iowa.

We claim the within described process for tanning leather, when used substantially as herein specified.

57,796.—PLOW.—George W. Thompson, Ripley, Ohio.

First, I claim the attaching of the mold boards, F* F*, to the standard, E, by means of the universal joint composed of the swivel bolt, a, and hinge or joint, b, substantially in the manner as and for the purpose set forth.

Second, The brace, F', applied to the beam, A, and land side, F, substantially as and for the purpose specified.

Third, The combination of the land side, F, standard, E, and the mold boards, F* F*, attached to the standard by the universal joint, substantially as and for the purpose set forth.

Fourth, The fastenings composed of the pivoted bars, G G, attached to the beam, A, substantially as and for the purpose specified.

57,797.—ROCK-DRILLING MACHINE.—George Freeman Underhill, New York City.

First, I claim the divided frame work, A, hinged together, having the drill rod, H, arranged in its upper section, B, in combination with the clamping devices for securing the sections of the frame work together, substantially as and for the purpose described.

Second, The arrangement of the sliding or lifting frame, M, tappet shaft, q, and the polygonal-shaped drill rod, H, substantially as and for the purpose described.

Third, The eccentric, V, of shaft, q, yoke or collar, W, lever, Y, arm, A2, frame, B2, ratchet wheel, D2, and pawl, E2, when all arranged and combined together, so as to operate upon the drill rod, substantially in the manner and for the purpose specified.

Fourth, The use of rubber cushions upon the underside of the base portion of the frame work, for the purpose specified.

57,798.—Propelling Apparatus for Boats.—Maurice Vergnes, New York City. Antedated Aug. 3, 1866.

First, I claim the erection of the supporting arms, movable at base and apex, spread at the base for solidity and strength, in combination with the oar arms to guide, steady, and support them, in the manner and for the purpose described.

Second, Hinging the supporting arms upon a carriage set on rail, which can be moved to and fro to vary the dip of the oar in the water, and for the purpose of removing the oar from the water, in the manner described.

57,799.—Steam Engine.—George J. Washburn, Worcester, Mass.

I claim the arrangement in the diaphragm cylinder of the two pistons on the same rod, operated as described.

I claim in its arrangement with the double cylinder and pistons, the single valve controlling the steam openings, substantially as described.

I claim the arrangement of the valve chest, F, double cylinder, A A', and side chests or pipes, K L, the latter communicating, each by a single part, with the chest, F, and simultaneously, by duplicate parts, with the spaces on corresponding sides of the two pistons.

57,800.—Machine for Pressing Tobacco.—Wm. H. Watson, Yonkers, N. Y. Antedated Aug. 21, 1866.

I claim, First, The chain, 5, constructed and operating substantially as described for the purposes specified.

Second, I claim the pressing blocks, 36, constructed and operating substantially as described for the purposes specified.

Third, In combination with the chain, 5, constructed and operated substantially as shown, I claim the pressing blocks, 36, constructed and operating substantially as shown, for the purposes shown.

Fourth, The heating chambers, constructed and operating substantially as described for the purpose specified.

Fifth, In subjecting the tobacco or other substance to be pressed to the influence of heat while under pressure, as shown for the purposes designated.

57,801.—Whiffletree.—George Watt, Richmond, Va.

I claim, First, The construction of a double, single, or treble tree, so that it, by means of one or more of its bent sides, shall form an elastic connection between the draught animals and the object (wagon, plow, etc.), as described.

Second, The attachment of the double tree by its longest side to the plow beam, as and for the purpose described.

57,802.—Weeding Hoe.—W. J. Wells, Sidney, Ohio.

I claim the cross arm, D, having its button, F, and sides, G, bevcled and pointed at its ends, substantially as and for the purpose described.

I also claim, in combination with the above, the side arm, E, for the purpose specified.

57,803.—Driving-rein Holder.—Milton Whipple, Medina, N. Y.

I claim the device herein described, consisting of the parts, A and B, constructed so as to operate substantially as described and designed for holding the driving reins of horses while temporarily leaving a carriage.

57,804.—Knife Sharpener.—Thomas H. White, Orange, Mass.

I claim the arrangement and combination of the circular disks, B B', with the stock, A, and the strap or hone, C, substantially as described and for the purpose set forth.

57,805.—Cooling Lard.—William J. Wilcox, New York City.

I claim the within described method of cooling lard, by passing over or through the same one or more impelled currents of cold air, substantially as and for the purpose described.

57,806.—Evener for Poles for Wagons, etc.—Henry F. Wilson, Elyria, Ohio. Antedated Aug. 15, 1866.

I claim the radial, c, and stationary pin or bolt, b, in combination with curved slot, a, and stationnry pin, d, the whole being constructed in the manner and for the purpose set forth and described.

57,807. — Car Coupling. — George W. Wilson, Abingdon, Ill.

I claim constructing a car coupling of two doubleslottedblocks, A A, with hooks, b b, on one of the prongs, a a, of each block, fitting into corresponding grooves in the prongs, a' a', of the other block, combined with the shackle, c c, and the arms, f f, constructed, arranged and operated as and for the purposes herein described.

57,808.—Magazine Fire-arm.—O. F. Winchester, New Haven, Conn.

First, I claim constructing the tube or magazine, substantially in the manner described, so that the inner tube may be removed, in combination with the carrier, E, breech pin, L, and barrel, A as and for the purpose specified.

The combination of the stop, S, lever, H, and carrier block, E, when arranged to operate substantially as and for the purpose specified.

57,809.—Carriage Thill.—Benjamin L. Wood, Taunton, Mass.

I claim, as my invention, the improved shaft or pole connection as made with a hook, c, and an aperture, d, therein, arranged with the start bolt, a, and to receive a strap or its equivalent, as specified.

I also claim the arrangement of the safety strap, G, to pass through the aperture of the hook, as described.

I also claim the combination of a strap or its equivalent, to go through the eye of the hook, with such hook, and the shaft or its equivalent.

I also claim the arrangement and application of the anti-friction strap, I, with the shaft or its equivalent, and the hook, c, provided with an aperture, d, as and for the purpose described.

57,810.—Wagon Brake.—L. E. Woodard, Cohocton, N. Y.

I claim the combination of the eccentric, L, rod, m, pole H, and friction roller with the brake, e, bars, I I, when constructed for the purposes and substantially as herein described.

57,811.—Water Elevator.—Alfred Woodworth, North White Creek, N. Y.

I claim the pulley, E, keyed on one end of the windlass shaft, a, and having a cylindrical shell, F, placed over it, with a handle or crank, G, pivoted in the shell, and provided with a shoe, c, at its inner end within the shell, in combination with the pivoted bar or stop, H, on the curb, all arranged to operate substantially in the manner as and for the purpose set fort h.

57,812.—Apparatus for Carbureting Gas.—Thomas D. Worrall, New York City.

First, I claim introducing into a gas pipe carbon spirit, for the purpose of enriching, purifying, or increasing the quantity of common gas, water gas, or common air.

Second, Introducing into a gas pipe fibrous material of any desired or suitable kind, for the purpose of drawing up or letting down carbon spirit, so as to vaporize said spirit, for the purposes set forth.

Third, The use of a large gas pipe, into which smaller ones conduct, or out of which they convey any kind of gas, so as to form a reservoir in which said gas can be detained for a long time, while being enriched by the vapors of carbon spirit or other carbonizing fluid.

Fourth, Inner casings of gas pipe of any desirable device, made to hold carbon spirit or other carbonizing fluids, and also to contain fibrous material for holding in suspension and vaporizing the same, while ordinary gas, water gas, or common air is passing through over or under them.

Fifth, The gas pipe, Fig. 1, with chamber in the bottom for holding any carbonizing material, for the purposes described.

Sixth, The gas pipe, No. 2, with chamber and fibrous material stretched horizontally along it, and from which the ends of other fibrous material drop into the carbonizing fluids, and convey them by capillary attraction to those stretched along it, for the purposes set forth.

Seventh, The gas pipe, No. 3, with holes drilled in or through the top, for the purpose of suspending wicking or other fibrous material that shall hang in carbon spirit, and drawing up said spirit, for the purposes set forth.

Eighth, The gas pipe, No. 4, in which strips of wood or wire run along the top of the pipe, on the inside, either across or in a longitudinal direction, for the purpose of holding wicking or other fibrous material, while the lower ends of the same are immersed in the spirit or fluid for the purpose set forth.

Ninth, The gas pipe, No. 5, in which is inserted an inner casing or tube perforated with numerous holes, and through which cotton wicking or other suitable material is drawn, so as to form a perfect retina or net-work, in which the carbon vapors are thrown off, and through which any kind of gas may at the same time pass, for the purpose of being enriched or multiplied thereby.

Tenth, The gas pipe, No. 6, in which is contained a smaller perforated pipe or tube, around which and through which cotton or other fibrous material is passed, and over the whole of which a series of broad bands of wicking or a continuous apron is passed, for the purpose set forth.

Eleventh, The perforated tin or wire gauze inserted in a gas pipe for the purpose of distributing the gas to any or all parts of the pipe, as set forth.

Twelfth, Gas pipe, Fig. 8, with longitudinal partitions with or without coverings of fibrous material to insure that the gas to be enriched may run back and forth, for the purpose set forth.

Thirteenth, Gas pipe, Fig. 9, in which a series of partitions or chambers, each separate or all connected by apertures, is formed, and over which fibrous material is laid, in the manner and for the purpose described.

Fourteenth, Gas pipe, Fig. 10, with loop holes suspended from the top, through which cotton or other fibrous material may pass and be suspended in carbonaceous fluids, for the purposes set forth.

Fifteenth, Gas pipe, Fig. 11, in which is a spiral or screw-shaped pipe, cased or surrounded with fibrous material, around which gases and the vapor of carbonizing fluids may pass, for the purposes set forth.

Sixteenth, Gas pipe, Fig. 12, inside of which is a wire tube, around, along and across which fibrous material may be stretched and from which it may hang suspended, for the purposes set forth.

Seventeenth, The compound gas pipe, Fig. 13, two or more in any connected together, for the purpose set forth.

Eighteenth, Gas pipe, Fig. 14, in which several chambers are cast or otherwise constructed, so as to contain carbon spirit or other carbonaceous fluid, and in which said fluids may be transmitted from chamber to chamber by means of fibrous material, or in which in any other way the fluids may be vaporized, for the purpose described.

Nineteenth, The arrangement in combination with any of my devices of a gas burner, that can be turned and lighted under the reservoir, for the purpose set forth.

Twentieth, I also claim the use of each of the devices seen within the gas pipes, Fig. 5, Fig. 6, Fig. 9, Fig. 10, Fig. 11, and Fig. 14, for use in any other box or chamber, as well as in gas pipes.

57,813.—Eavestrough.—William Yapp, Cleveland, Ohio.

I claim the brace, B, with one end forming a loop and the other a lap, in which is formed a concave, c, in combination with the clamp, c, pivot, a, trough, A, and arm, D, in the manner and for the purpose, substantially as set forth.

57,814.—Lifting Jack.—A. Zink, Lancaster, Ohio.

I claim the shape and construction of the lever jack, when arranged with the shifting link and adjustable catch, as secured thereto, as herein described, and for the purposes set forth.

57,815.—Ditching Machine.—Jacob Ballard, New Antioch, Ohio, and Thomas J. Magee, Cincinnati, Ohio, assignors to themselves and Paul Hults, New Antioch, Ohio.

We claim, First, The arrangement of sliding mold boards, J, lower and upper guides, D and I, elevating mechanism, K L, and adjustable brace, P, or their mechanical equivalents, substantially as set forth.

Second, In the described combination the beam, A, sloping sheath, B, share, C, and the coltere, G and H, as and for the purpose set forth.

Third, The clinometer attachment, W X, in combination with a supporting truck, T, and regulating screw, V, for the purpose explained.

Fourth, The shiftable handle, N, and ditch wheel, O, secured and operated as set forth.

57,816.—Railway Chair.—John W. Draper (assignor to himself and Arthur C. Stowell), Wilmington, Del.

I claim the combination of the plate, A, its beveled lugs, c c', cheeks, C C', and bolts, D D', the whole being constructed, arranged, and adapted to the rail, substantially as and for the purpose specified.

57,817.—Pruning Instrument.—Joseph Evans, Newark, N. J., and Bobert H. Seymour, Bloomfield, N. J., assignors to Henry Seymour, Elizabeth, N. J.

We claim constructing the cutting blade, C, with a groove, a, along its upper back edge, and so arranging in combination therewith, a cap or clamp, D, carrying a pin, b, that the blade will be guided so that it will operate upon the twig with a drawing cut in a direction from a bend in the hook, substantially as described.

Second, The spring lever, E E', in combination with the cutting blade of a pruning knife constructed and applied substantially as described, whereby the knife may be operated in a quick and easy manner.

Third, We claim the combin tion with each other of the diamond-shaped knife, C, hook, B, rod, F, and spring levers, E E', arranged and operating substantially as herein shown and described.

57,818.—Faucet.—John Fahrney (assignor to himself and Samuel Fahrney), Boonsboro, Md. Antedated Aug. 23, 1866.

I claim, First, The cylinder, A, with valve, H, in combination with piston, I, with its openings, a a, its rod, G, sliding through and turning in its center as shown at c d, and the circular plate, J, attached to end of the piston rod, as and for the purposes described.

Second, In combination therewith, the cut-off piston, F, neck, E, with its lower wall removed as shown at M, as and for the purposes described.

Third, The nut, H, with its projection, e, plate, L, and gage screws, f f, as and for the purposes described.

57,819.—Barrel Lifter.—Lucius H. Goff (assignor to Thomas C. Winslow), St. Albans, Vt.

I claim the barrel lifter herein described, the same consisting of a notched bar or lever, B, having hooks, C C, hung upon it, and moving under bands, D, or their equivalents, substantially as herein described and for the purposes specified.

57,820.—Whiffletree.—W. A. Harrall (assignor to himself and McCrellis Gray), Washington, Ind.

I claim the combination of the lever, H, spring, I, arm, G, spring, K, bar, J, band, D, and whiffletree, B, with each other and with the cross bar, a', of the thills, when said parts are constructed and arranged substantially as herein described and for the purpose set forth.

57,821.—Clasp for Holding Neckties and Shirt Collars Together.—Charles M. Hyatt (assignor to Lansingh and Osborne), Albany, N. Y.

I claim the within described attachment for securing the necktie to the collar consisting of the clip, A B, and of spurs, p, combined and arranged substantially as set forth.

57,822.—Molding.—Armon King (assignor to himself and John H. Chapman), Utica, N. Y.

I claim match plates constructed substantially as described and used in connection with patterns forming cores for sand molds, in the manner set forth.

57,823.—Piston for Steam Cylinder.—Mathew B. Mason (assignor to himself and George W. Harris), Aurora, Ind.

First, I claim the arrangement of the L-shaped packing rings, I I', and middle ring, J, as described and for the purpose specified.

Second, The grooved and perforated ring, G, constructed as and for the purpose specified.

Third, The double headed valves, H, constructed and arranged substantially as described and for the purpose specified.

57,824.—School Desk and Seat.—George Munger (assignor to J. W. Schermerhorn), New York City.

I claim as an article of manufacture, a desk consisting of the standards, A, brackets, a, both having their top edges dove-tailed, grooved seat, B, grooved top, C, grooved back strips, c, grooved shelf, E, with stops, f, constructed and combined as and for the purposes specified.

57,825.—Method of Receiving and Discharging Freight.—Newton A. Patterson (assignor to himself R. K. Byrd), Kingston, Tenn.

I claim, First, A frame bridge-way made in sections and provided with upper and lower tracks, D E, substantially as described and for the purpose set forth.

Second, The combination of the cars, G, constructed as described with the sectional bridge-way, and with the revolving cylinders, F, substantially as and for the purpose set forth.

57,826.—Portable Railroad.—Johann N. Petcler, Sheppach, Kingdom of Bavaria, assignor to Alois Peteler, New Brighton, N. Y.

I claim a portable railroad composed of sections, A, turnouts, B, supporting frames, C, bridges, D, crossings, E, and one or more turn tables, F, all constructed, combined and operating substantially as and for the purpose set forth.

Second, The combination of the perforated studs, a, and turn table, F, provided with rails, b, constructed and operating substantially as described, for the purpose specified.

57,827.—Machine for Boring Wells.—Colin Mather, Manchester, Eng., assignor to Charles P. Button, New York City, N. Y.

I claim, First, The adjustable clamp, I, in combination with the drum, C, and rising and falling pulley, J, constructed and operating substantially as and for the purpose described.

Second, The steam cylinder, M, and pulley, J, in combination with the calmp, I, and drum, C, constructed and operating substantially as and for the purpose set forth.

Third, The adjustable table, P, in the reservoir, N', in combination with the sand pump, O, constructed and operating substantially as and for the purpose described.

57,828.—Drill for Boring Wells.—Colin Mather, Manchester, Eng., assignor to Charles P. Button, New York City, N. Y.

I claim, First, The reamer, F, in combination with the drill rod, A, and cutters, C, constructed and operating substantially as and for the purpose set forth.

Second, The sleeve, F, with ratchet teeth, I I', in combination with the circular rack, J J', and drill rod, A, constructed and operating substantially as and for the purpose described.

57,829.—Coffin.—Julian A. Fogg, Stockport, Eng.

First, In the construction of coffins and burial cases, I claim the employment of the metallic corner pieces, joints, or connection, C, as described, whereby great durability and strength are given to the coffins or burial caskets, and a provision for an elaborate ornamentation of the same at little expense, substantially as specified.

Second, I claim as an improvement in coffins and burial cases the arrangement of the plate upon an edge of one of the sides or ends of the coffin or on a bracket or shelf secured thereto in such a manner that the plate will be visible whether the lid be open or closed, substantially as specified.

57,830.—Sand Pump.—Colin Mather, Manchester, Eng., assignor to Charles P. Button, New York City.

I claim the movable seat, b, clack, a, and rod, c, in combination with the barrel, A, and bucket, B, constructed and operating substantially as and for the purpose described.

57,831.—Water Wheel.—Pierre Francois Millott, Paris, France.

First, I claim the combination of a series of buckets open internally and externally to receive the water internally, in the manner described, upon each side of the arms, and discharge it externally, and a series of arms attached at or near the middle of said buckets, to allow the water to be introduced on both sides of them, and connecting said buckets to the shaft, as set forth.

Second, The combination of a series of buckets open as aforesaid to receive water internally and discharge it externally, with the shaft of the wheel and the arms, B B, the said arms, B B, being set at an angle to each other converging from points separated and distant from each other at the inner end to the middle of the bucket, as set forth.

Third, The arrangement in combination with a wheel adapted thereto of two separate spouts in such a manner as to discharge water into the interior openings between the buckets on each side of the arms of the wheel, substantially as described.

Fourth, The combination with the internally and externally open buckets to receive the water internally and discharge it externally, as described, of the projecting flange, e, to retain the water on its entrance into the buckets, as set forth.

57,832.—Coating Sheet Iron with Tin and other Metals.—Edmund Morewood, London, Eng.

First. I claim the slide, B, to receive the sheet or piece of metal to be coated, in combination with a receptacle, C, within the bath of coating metal to convey said sheet or piece of metal to the point of delivery, substantially as specified.

Second, I claim the delivery rollers, F, in combination with the receptacle, C, and an elevating apparatus to raise the sheets or pieces of metal to the delivery rollers, F, substantially as set forth.

Third, I claim wipers or rubbers, G, in combination with delivery rollers, F, to act upon the coating metal previous to the delivery of the sheet or piece of coated metal, for the purposes and as specified.

Fourth, I claim a slide or receptacle, in a bath of melted coating metal, to receive the sheets or pieces of metal at one place and convey them to a different place in said bath, where said sheets or pieces are delivered upward automatically from said bath, as set forth.

Fifth, In combination with an apparatus for coating sheets or pieces of metal, substantially as described, I claim a pair of delivery rollers, one of which is set in yielding bearings so as to provide for varying thicknesses of the sheets, or of the coating, as set forth.

57,833.—Cider Mill.—Hugh Sells, Vienna, Canada West.

I claim, First, The projections, h h, in combination with the case, B, forming the passages, i, substantially as and for the purpose specified and described.

Second, The dovetail-notched rings, G, substantially as described for the purpose specified.

57,834.—Apparatus for Trimming Ships.—William Louis Winans and Thos. Winans, London, England. Patented in England Dec. 21, 1863.

We claim the employment, for the purpose above described, of a movable weight, operated either by steam power, or hydraulic power, or by gearing connected with the propelling engines, as herein set forth.

57,835.—Coupling for Propeller Shafts of Ships.—William Louis Winans and Thomas Winans, London, England. Patented in England, June 20, 1863.

We claim coupling shafts by means of a block or plate, provided

with grooves, in which are inserted cross-pieces, or T-pieces, attached to the ends of the shafts to be coupled, as herein set forth.

57,836.—PROPELLER FOR SPINDLE-SHAPED SHIP.—William Louis Winans and Thomas Winans, London, England. Patented in England June 22, 1863.

We claim, as aforesaid, the application of two large screw propellers to spindle-shaped ships or vessels, in the manner and for the purposes herein set forth.

57,837.—SYSTEM OF CUTTING DRESSES.—Mrs. H. M. Carpenter, Grand Rapids, Mich.

I claim the use of the patterns, constructed and applied, as shown and described, for cutting dresses for women and children.

REISSUES.

2,347.—SALINOMETER.—Benjamin F. Bee, Harwich, Mass. Patented Jan. 9, 1866.

I claim, First, The combination in a salinometer of the closed transparent vessel (for containing the liquor to be tested) and a float for indicating the density of the liquid, the se two operating substantially as set forth.

Second, I also claim the combination in a salinometer of the following instrumentalities, viz: the closed transparent vessel, salinometer float, supply pipe, and escape pipe, all operating in the combination substantially as set forth.

Third, I also claim the combination in a salinometer of the following instrumentalities, viz: the closed vessel, supply pipe, escape pipe, and air valve at the top of the vessel, all operating in the combination substantially as as set forth.

Fourth, I also claim the combination in a salinometer of the following instrumentalities, viz: the closed vessel, salinometer float, and guide for float, the salinometer, all operating substantially as set forth.

Fifth, I also claim the combination in a salinometer of the following instrumentalities, viz: the closed vessel, and closed case communicating therewith for the thermometer, both operating substantially as set forth.

Sixth, I also claim the combination in a salinometer of the following instrumentalities, viz: the closed vessel, salinometer float, and thermometer, all operating substantially as set forth.

Seventh, I also claim the combination in a salinometer of the closed vessel, with an escape valve, having the valve and screw independent of each other, so that the valve may be turned upon its seat to lighten the joint, substantially as set forth.

2,348.—HARVESTER.—M. Easterbrook, Jr., Geneva, N. Y. Patented May 22, 1866.

I claim, First, The combination of the hand lever, C, 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.

Third, The arrangement of the pinions, p and p', upon a pivoted hand lever, substantially as shown in Fig. 3, having its axis or center of motion upon the counter shaft, as and for the purposes set forth.

Fourth, The employment of the pinion, b, of the counter shaft, made independent of the spur gear, B, and connected thereto when desired by one of two intermediate adjustable gear wheels, arranged and operating substantially as and for the purposes set forth.

2,349.—CONSTRUCTION OF CHURN BODIES.—J. C. Hills, Willoughby, Ohio. Patented May 24, 1864.

I claim the above-described construction of a churn body, consisting of the sides, A A, the sheet, A', groove, B B', bars, C C', and E, when constructed and arranged in the manner and for the purpose specified.

2,350.—MANUAL-POWER MACHINE.—Isaac C. Overpeck, Overpeck's Station, Ohio. Patented April 25, 1865.

I claim the two levers, d and e, moving simultaneously toward and from each other, when arranged to operate upon a center wheel, b, or its equivalent, substantially in the manner and for the purpose herein specified.

2,351.—SPINNING MACHINE.—William Earl, Jr., Nashua, N. H. assignee of Thomas Pye, New Hartford, N. Y. Patented Feb. 14, 1865.

I claim, First, The moving of the belt shifter, C, in a spinning machine, by the ordinary operation of the machine, at the point or time when the thread is fully twisted as desired, and the jack is about to be returned for the purpose of winding up the thread in such manner that the belt, R, is partially thrown on to the tight pulley, g, for the purpose of assisting the spinner in running up the jack and in raising a tight bobbin, in the manner and by the means substantially as herein described and set forth.

Second, I claim the moving of the said belt shifter, C, by the ordinary operation of the machine, at the moment when the jack is nearly run up to the required or desired point or place for the piecing up of the thread, and just before it is fully wound upon the bobbins, in such manner that the said belt is thrown wholly off from the tight pulley aforesaid, and upon the said loose pulley, in the manner and by the means substantially as herein described and set forth.

Third, I claim the employment of the crooked lever, A, the oblique lever, B, and the angular lever, D, as arranged and combined, and then the whole in combination with the aforesaid belt shifter, C, in the manner and for the purposes substantially as herein described and set forth.

Fourth, I claim the employment of the chain, E, arranged and combined with the angular lever, D, and the slide bolt, F, in the manner and for the purposes substantially as herein described and set forth.

Fifth, I claim the combination of the slide bolt, F, with the coil or spiral spring, H, the bolt stock, G, and the shoe, b, and with a drop or sliding bar, d, each being arranged and combined in the manner and for the purposes substantially as herein specified, described, and set forth.

Sixth, I claim the drop or sliding bar, d, and the wire or cord, e, connected and combined with the faller, W, and with the shoe, b b', in the manner substantially as and for the purposes herein described and set forth.

Seventh, I claim the employment of the lever, A, having an oblique arm, v, in combination with the lever, n, and with the carriage of the jack aforesaid, by means of the arm or frame, L, containing the friction arm, M, each being arranged and operated in the manner substantially as and for the purposes herein specified, described, and set forth.

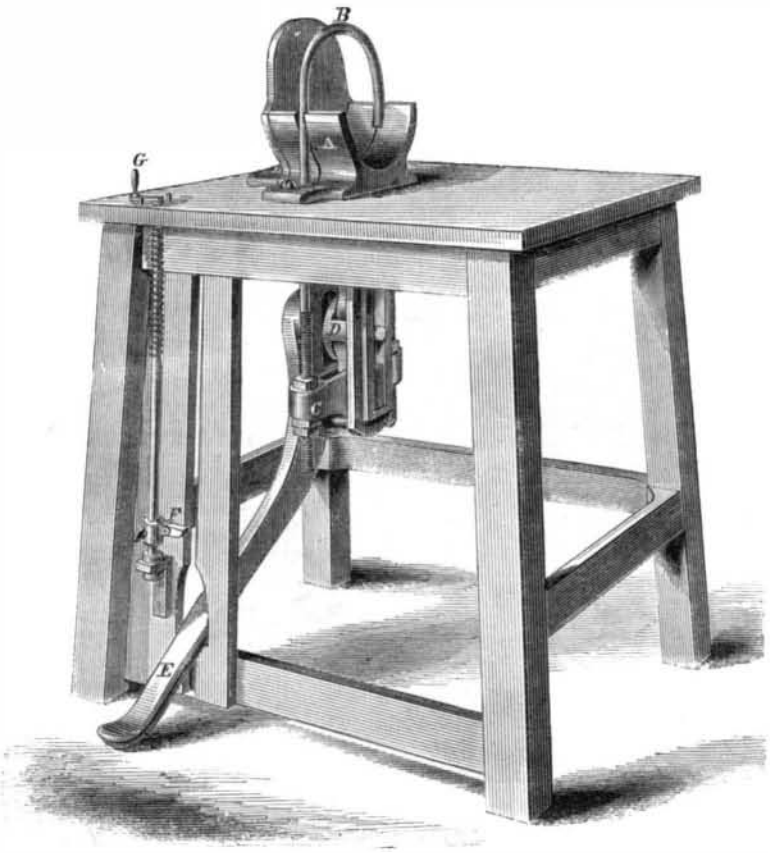
2,352.—HORSE RAKE.—C. W. Warner, Williston, Vt. Patented Nov. 15, 1864.

First, I claim the joints or hinges, b b, on arms, a a, projecting backward from the axle, A, in combination with the rake, G, all arranged as described to admit of the folding of the rake forward upon the thill bar, a*, substantially as set forth.

Second, The method substantially as described and represented of operating the rake by means of the combination of the foot triggers, K K', bar, J, and raking pawl, f g, with the notched bar, h, on the rake head.

Improved Wood-bundling Press.

In cities and large towns where the principal fuel used is coal, the work of preparing kindling wood for starting fires has become an important business. Frequently the wood, saw edinto convenient lengths and properly split, is delivered by a team, the fuel being packed in boxes or barrels. But the public requirements in the cities necessitate smaller and more portable packages. It is customary, therefore, to put the wood up in small bundles secured by a cord. To facilitate this bundling operation is the design of the machine herewith illustrated.



GREENE'S WOOD-BUNDLING PRESS.

It consists of a table having on its upper surface an iron box, A, cut through the sides, at the center, for the reception of the binding cord. A yoke, B, rises above the box and is attached, at either end, to a slide, C, which is moved up and down by means of double levers. The lower one is pivoted to the slide, and the upper one to the frame on the lower side of the table bed. The approaching ends of the levers engage a toggle, D, the shank of which attaches to the treadle, E. By raising the treadle, E, the yoke, B, is raised and secured in place, while the wood is being placed in the box, by the jointed foot, F, which allows the treadle to be raised, but keeps it from falling. When the wood is in the box, by turning the handle, G, the foot, F, is partly rotated, allowing the treadle to move down. A spiral spring brings the foot with its shaft back to place, and the foot can be elevated to any required point by means of a thumb screw.

This appears to be a convenient contrivance for the purpose intended. It was patented July 5, 1866, by Darwin A. Greene, and is manufactured by the Miles Manufacturing Co., 59 Lewis street, New York, whom address for additional particulars.

Patent Earth Borer.

The invention herewith illustrated appears to be one of those simple improvements which, when known, excites surprise that it had not been before discovered. A glance at its advantages is sufficient to demonstrate its efficiency.

The engraving represents a perspective and a sectional view of a simple apparatus now in use, for boring holes for fence posts, wells, driving pipe for oil wells, telegraph poles, etc. It is equally efficient on a large scale as when operated by hand for post holes. By reference to the engraving, the description will be readily understood. The shank, A, is of wrought-iron pipe, for a reason which will be presently explained. It may be made of any length desired, by adding sections as the work progresses, or it may be fitted with a handle, B, for ordinary purposes. To the bottom of the shank a cross arm, *e*, is secured, to which the blades, E, are fastened. F is a semicircular scoop for removing the earth or water, and for sustaining the apparatus in an upright position in boring deep holes. It is secured to the shaft, A, by the radial arms, *h i j*. C is the point of a valve, the stem of which, *o*, extends up through the pipe, *b*, which screws into the lower end of A. This valve is held up against its seat, at the lower end of A, by a spiral spring. The object of this attachment is to destroy the vacuum formed under the borer when it is raised, or, rather, to counteract the downward pressure of the external atmosphere; for the borer with its load of earth fits the hole as a piston fits a cylinder. But upon raising the borer the air rushes down the tube, A, overcomes the resistance of the spiral spring, and allows

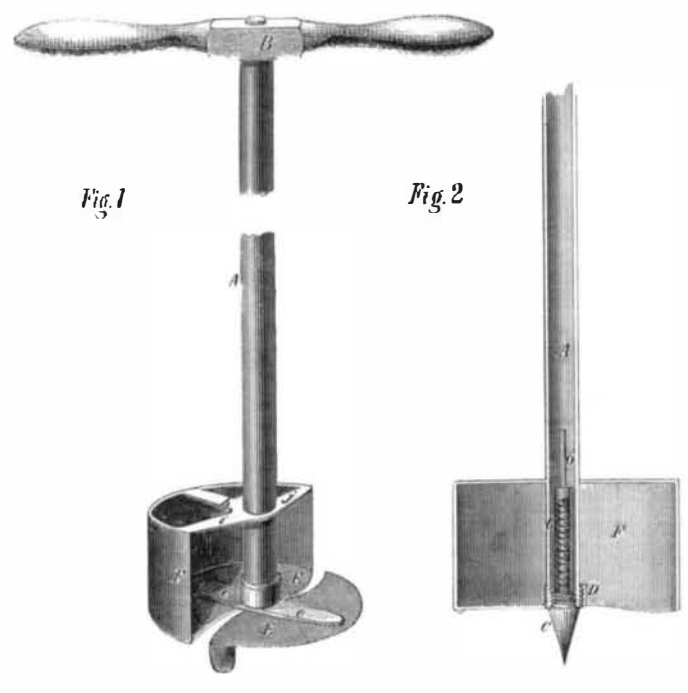


Fig. 1 Fig. 2

CARY'S IMPROVED EARTH BORER.

the apparatus to be lifted. Patented July 31, 1866, by Samuel Cary, of Centerville, Parish of St. Mary's, La., whom address for further particulars.

What is a Metal?

Notwithstanding the boasted exactness of definition which we are accustomed to ascribe to scientific nomenclature, the branch of chemistry is unable to furnish a concise definition, of universal acceptance, by which we can with certainty determine the right of any substance to be ranked as a metal. Authorities differ in their acceptance of what shall, and what shall not, be included under this broad class. The old proverb recurs with redoubled force, "Who shall decide when doctors disagree?"

In this connection, in a late article, the *Mechanics' Magazine* makes the following pertinent remarks:

"We have no general definition of a metal to show us what constitutes any substance metallic or non-metallic. This is very odd, as metals are considered to form such a distinct class from other substances. Besides, chemistry is held to be such a marvelously exact science. Still, the most learned in chemistry are not agreed as to what substances are metals. Some say 'silicium,' which is its name as a metal; others say 'silicon,' which is its name as a non-metallic substance. Then some take into the list of metals arsenic and tellurium, and others reject them. There apparently is no property yet discovered that is common to the whole list of fifty-two metals. Some even go so far as to consider that a metal may be a compound of two gases, nitrogen and hydrogen. In fact, it is altogether uncertain what constitutes a metal and what does not. The word metal, apparently, is just a name, without any distinctive and well ascertained properties attached to it or understood by it. It is hardly in agreement with the pretensions of our chemists that there should be such looseness and uncertainty about the application of a name, and a name of such importance, which represents such a common class of substances."

Securing Lumber on Wagons.

Long lumber is generally loaded on teams with the front ends of the boards much higher than the rear end. The load is secured by ropes, which is not a handy or always effectual means. A correspondent, Y. B., sends us a simple device which is merely a network of strong cords, or small ropes, with two lines attached, one end of which, furnished with rings, is hooked under the wagon, and the other brought up and tied to stakes on the team. The net holds the ends of the lumber. When not in use it can be fastened under or carried in the wagon.

It is said that wool washed on the sheep shrinks thirty per cent in manufacturing.

FROM THE STEAM PRESS OF JOHN A. GRAY & GREEN.