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47,781.—Brush.—Albert Alden, New York City :

I claim the notched segmental plates, B, in combination with the head, A, handle, C, and with the pivot, a, and spring catch, b, all constructed and operating in the manner and for the purpose set forth.

47,782.—Hoisting Apparatus.—George Ambrose, New York City :

I claim, First, a hoisting apparatus which employs an elevator, C, adapted for receiving and holding in place rods, or other portable vessels, guide-ways, A, A, pulley rope, C, pulleys, s, b, and drums, e, f, g, together with a brake, all arranged and operating substantially as described.

Second, Providing the elevator, C, with racks, which are adapted for receiving and retaining in place portable rods, s, s, substantially as described.

Third, Spring latches, m, m, and levers, n, n, in combination with the guides A, A, and elevator or bod-rack, C, substantially as described.

47,783.—Kitchen Range Boiler.—Joseph H. Ash, Brooklyn, N. Y. :

I claim the improvement herein described in the manufacture of copper boilers, the same consisting in forming, in each head of the boiler, a suitable groove or channel having parallel concentric walls perpendicular to the bottom extending entirely around the same, in which the body of the boiler is placed, and soldered in any proper manner, substantially as above described, and for the purposes specified.

47,784.—Machine for Lubricating Bullets.—Albert Ball, Worcester, Mass. :

I claim, First, the combination with a cylinder or proper receptacle for holding the bullet, of an opening to admit the lubricating matter to the groove in the bullet, and a vent hole for the escape of the air, substantially as described.

Second, The combination with a cylinder or chamber for holding the bullet of a reservoir or reservoirs for holding the lubricating substance, and a plunger or its equivalent for forcing the lubricating matter while cool into the grooves in the bullet, substantially as set forth.

Third, The combination with the bullet cylinder, C, of the piston, D, and valve, H, substantially as described.

Fourth, The construction and arrangement of mechanism in such a manner that bullets may be sized, and their groove or grooves filled with a lubricating substance at one and the same operation.

47,785.—Shears for Marking Cut-le.—Silas D. Baldwin, Chicago, Ill. :

I claim, First, The adjustable blade, I, when provided with a conical-shaped edge so as to give it a shear cut.

Second, The slot, h, in the back of the blades, I, and J, in combination with the screw, b.

Third, The combination of the conical edged blade, J, handles, A, and B, with the set screw or guard, D, to regulate the width and depth of the incision.

Fourth, The plate, F, provided with the projection, G, and slots, c, d, or e.

Fifth, The conical blade, H, in combination with the projection, G.

Sixth, Placing two or more shear blades on a single arm of a pair of shears.

Seventh, In combination with the cutting devices herein described, I claim the adjustable blade or die, J, in the manner and for the purpose set forth.

Eighth, The lubricating depository or cup, C, when attached to the handle or arm of a pair of shears.

Ninth, The combination of the slotted plate, F, blades, I, or H, spring, E, and guard, D, with the handles, A, and B.

47,786.—Gas Burner.—John A. Bassett, Salem, Mass. :

I claim a burner for burning carburetted air or gas, having the parts arranged and constructed substantially as herein described and set forth.

47,787.—Gas Burner.—Herman Berg, Union Hill, N. J. :

I claim a gas burner provided with a chamber, c, containing pulverized carbon or other absorbent material, and with a spring valve, g, closing up on an aperture, f, by the pressure of the gas, substantially as and for the purpose set forth.

47,788.—Rendering Pan.—Andrew Black, New York City :

I claim, First, The radial openings, a, a, sliding dampers, b, b, and split horizontal circular flues, D, K, the whole arranged in relation with each other, and with the fire-place and pan, substantially as herein described for the purpose set forth.

Second, The combination of the perforated false bottom, G, and the rotary stirrer arranged between the said false bottom and the bottom proper of the pan, substantially as and for the purpose herein specified.

Third, Providing a melting pan with a cover, N, having an outlet to a drain or sewer, but otherwise closed, substantially as herein specified.

Fourth, The employment in combination with the cover of a melting pan having one or an outlet to a drain or sewer, of a system of collecting plates, R, R, gutters, n, n, q, or other equivalent surface for the collection of condensed steam or other vapors eliminated from the melted fat contained in the said pan, and the conveyance of the same to the outlet of the cover, substantially as herein specified.

Fifth, In combination with the cover of a melting pan having only an outlet to a drain or sewer, I claim a condenser arranged between the said outlet and the drain or sewer, substantially as and for the purpose herein set forth.

47,789.—Bed Bottom.—Charles D. Blinn, Port Hudson, Mich. :

I claim the bed bottom above set forth, constructed substantially as herein described.

[This invention consists in a novel construction of spring-bed bottom, the elasticity of which is produced altogether by wooden slats connected to each other and to the bedstead in a peculiar way, so that the frame of the bed bottom is affected by pressure on any part of it, and its different parts are made to bear a share of the load.]

47,790.—Steam Boiler.—Charles T. Boardman, Pawtucket, R. I. :

I claim, First, The arrangement of the two cylindrical boilers, A, A, the tubular boiler, B, and the laterally inclined connecting water legs, C, C, substantially as and for the purpose herein specified.

Second, In combination with the two cylindrical boilers, A, A, tubular boiler, B, and walls, D, D, of their setting, I claim the pivot, F, and connected parallel upright walls, F, arranged substantially as herein described.

Third, I claim the gas and air-mixing chamber, H, bridge-wall, I, and air duct or ducts, b, in combination with each other, and with the bridge wall, J, pier, E, and ash pit, a, substantially as herein set forth.

47,791.—Automatic Boiler Feeder.—Joseph N. B. Bond, New York City :

I claim the expansible pipe, B, arranged in combination with the tank E, and boiler A, substantially in the manner and for the purpose set forth.

[This invention consists in the employment or use of a pipe made of brass or some other material, which expands greatly by the influence of heat, said pipe being secured in suitable rigid bearings at a level with the mean water-line of a steam boiler, and made to communicate with the water and steam space of the same in combination with a tank, situated above the boiler, and supplied with water from a suitable reservoir, and also made to communicate with the steam and with the water space of said boiler in such a manner that when the water in the boiler sinks below the mean water-line the expansible pipe is exposed to the direct action of the steam and thereby caused to buckle up, and by this action a cock is opened and steam admitted to the upper part of the tank, causing the water contained therein to sink down into the boiler, and when the water rises above the mean water-line, the expansible pipe cools off and recedes to its original position, and the further supply of water to the boiler is stopped.]

47,792.—Steam-Engine.—George B. Brayon, Boston, Mass. :

First, I claim the variable and self-adjusting cut-off, arranged and operated by the governor as described, for equalizing and rendering uniform the act of steam-engines.

Second, The combination with the ordinary slide or D-valve of auxiliary steam ports and slide valves, under the arrangement and for operation in the manner substantially as set forth.

Third, The method herein-described of connecting the oscillating arm with the slide or D-valve, affording yielding connection so as to admit of the valve reciprocating along the plane surface of, and in contact with, the valve face.

Fourth, The method herein-described of operating the auxiliary valves, hung upon the end of an inlet balance beam by means of a rocking lever, yet so as to admit of traverse motion of the balance beam, together with the main valve, substantially as shown and described.

Fifth, The regulating the action of the auxiliary or cut-off valves by means of the cam, expansible by the action of the governor, substantially as set forth.

47,793.—Oil Ejector.—Abel Brear, Saugatuck, Conn. :

I claim in combination with my arrangement of the oil or discharge tube and the blast tube of an ejector, the lower socket, A, constructed with a central passage, a right through it, and with an annular cavity, by surrounding the said passage and communicating with the nozzle, c, arranged within the said passage, substantially as and for the purpose herein specified.

47,794.—Preventing and Removing Scale in Steam Boilers.—Jacob Buzby, Philadelphia, Pa. :

I claim the use of gambar for removing scale from steam boilers as described.

47,795.—Evaporator.—Wm. Canning, New York City :

First, I claim the construction of the rotating disk or disks of a rotary evaporator of a conical or dish form, substantially as and for the purpose herein specified.

Second, The arrangement of such disks in such a manner that they overlap each other upon a hollow central shaft, in which there are openings between the said disks, substantially as and for the purpose herein set forth.

47,796.—Ship's Defensive Armor.—Stephen D. Carpenter, Madison, Wis. :

I claim wrought-iron or steel perforated plates, with dovetail corrugations and the chilled cast-iron facing and backing, with the attached staples, all for the purposes and substantially in the manner herein described.

47,797.—Bed Bottom.—P. G. Chase, Berlin, Wis. :

I claim the improved spring-slat for bed bottoms or analogous purposes, consisting of a camber slat, B, in combination with the spring tension rod, D, connected to the slat at or near its ends, for the purpose of increasing its power of resisting depression, substantially as described.

47,798.—Identifying Ticket for Railroads, Etc.—Anning S. Chittenden, Bergen County, N. J. :

I claim the combination of the several parts herein described to form an identifying railroad or other ticket, substantially as herein set forth and for the purposes described.

47,799.—Broom.—John M. Clark, Dayton, Ohio :

I claim the thin, elastic and yielding wrapper represented in Figure 1, constructed and applied to the brush and handle of a broom, in combination with the ribs, e, e, in the manner substantially as, and for the purpose set forth.

47,800.—Baling Press.—F. F. Cornell, Jr., New York City :

First, I claim the formation of a close chamber in the press by means of the traveling sides of the chamber, substantially as described.

Second, I also claim the side slip, N, in combination with the traveling sides of the press, for facilitating the removal of the finished bale from the press, substantially as described.

47,801.—Iron Railing for Fence.—Sommers Crowell, Philadelphia, Pa. :

I claim constructing the railings, B, with the recesses, C, on each side, having the open side of the recesses on one side of the railings, alternating with those on the other side, thereby forming openings without the use of cores, for the reception of the horizontal bars, A, substantially in the manner hereinbefore described.

47,802.—Washing Machine.—Ephraim Culver, Shelburne, Mass. :

I claim the combination and arrangement of chest, O, and lid, B, with perforated division boards, c, c, and beater, D, and wheels, E E F, E, and lever, I, and connecting rod, h, operating in the manner and substantially as above set forth, for the purpose specified.

47,803.—Percussion Fuse for Explosive Shell.—John A. Curran, U. S. Army :

I claim the combination of the plunger, h, spring, l, detent spring, j, weight, k, and arm, o, when constructed and arranged to operate as and for the purposes herein specified.

[This invention consists in so constructing a shell as to place the preponderance of its weight forward of the middle of its length, and in forming a groove in its forward part, and fitting a soft metal ring therein.]

47,804.—Boring Tools for Artesian Wells.—Henry H. Daniels, Philadelphia, Pa. :

First, I claim the instrument composed of the plates, A and A', levers, B and B', and guided bar, D, with its projections, ii, the whole being constructed and arranged in the manner and for the purpose herein described, and illustrated in Figures 1, 2 and 3.

Second, The modified instrument composed of the plates, A and A', levers, B and B', guided bar, D, with its pins, g, g, or their equivalents, the whole being arranged and operating substantially as and for the purpose herein set forth.

47,805.—Rock Drill.—Julius C. Dickey, Saratoga Springs, N. Y. :

I claim the drill, A, with a circular cutting edge, in combination with the recess C, for the purposes set forth.

47,806.—Saw-setting Machine.—Charles Diston, Philadelphia, Pa. :

I claim, First, in combination with the hammer and anvil of a saw-setting machine, the automatic mechanism herein described or the equivalent to the same, for supporting the back edge of the saw, and elevating and lowering the same in the manner and for the purpose specified.

Second, The feed lever, O, in combination with the cam, H, and spring, G, or their equivalents, whereby the within-described movement is imparted to the said lever, for the purpose specified.

Third, The ledge or projection, d, and plate, e, arranged in respect to the anvil as set forth, for the purpose described.

47,807.—Harvester.—John A. Dodge, Auburn, N. Y. :

First, I claim the main frame, A, when cast in one single piece in the form and manner herein described.

Third, In combination with the frame, A, I claim the combination and arrangement of the wheels, e and f; the gear edwheels, g and h, and the shafts, c and d, when the shaft, c, is placed beneath the shaft, d, for the purpose of placing the piston wrist as nearly in lieu with the cutter bar as possible.

Fourth, In combination with the arm, C, and the pulleys, J and a, I claim the lever, H, situated and operating as described.

Fifth, In combination with the main frame of a harvesting machine, and the lifting bar, b, I claim the stirrup, I, as described and set forth.

Sixth, I also claim the self-adjusting pulleys, pivoted at the foot of the reel post, substantially as and for the purpose set forth.

47,808.—Apparatus for Grinding and Amalgamating Ores.—M. B. Dodge, New York City :

I claim the attaching of the shoes to the muller by pivots, or in such a manner that they will work or adjust themselves from a center or from a hinged or pivoted point, with or without springs, substantially as set forth.

47,809.—Breech-loading Fire-arm.—William H. Elliot, Plattsburgh, N. Y. :

I claim, First, The combination of a hammer, d, with a swinging breech plate, c, and a brace, e, when these devices are pivoted together substantially as described.

Second, Attaching the main spring, k, to swinging breech plate, c, by means of a pivot, u, substantially as and for the purpose herein specified.

Third, So arranging the attachments of a main spring to a hammer and to a swinging breech plate that the power of the main spring shall tend to throw the breech plate forward when the chamber is closed, and to throw it back when the chamber is open, substantially as herein shown.

Fourth, Operating upon the point of the trigger to prevent it from catching into the full-cock notch by means of cam, s, when both the breech plate and hammer are thrown back together as herein described.

Fifth, So constructing and operating the hammer and brace in combination with a swinging breech plate, that said hammer and brace cannot both be moved at the same time, substantially as and for the purpose herein set forth.

47,810.—Composition for Lining Petroleum Barrels.—John Fox, Philadelphia, Pa. :

I claim the composition made substantially as above described, for sealing barrels and other vessels as set forth.

[This invention is designed to make wooden vessels impermeable to liquids, and it consists in applying to its interior surface a composition which will fill its cracks and joints and fill and cover the pores of the wood of which the vessel is made, so that liquids of a highly penetrative character, such as petroleum, cannot pass through the vessel.

47,811.—Manufacturing Watch Keys.—George H. Fuller, Pawtucket, R. I. :

I claim making a winding key or key pipe in the manner and on the principle substantially as herein described.

47,812.—Drill Bit.—Wm. W. Grier and Robert H. Boyd, Hulton, Pa. :

We claim a drill or bit having the notch or recess at its central point as above described, in combination with the serrated cutting lips, a' a', substantially as shown and described.

47,813.—Sheep Rack.—Benjamin Griffin, Lawrence, Mass. :

I claim the covers, C, the swing doors, E, and the trap doors, H, for the purposes herein set forth.

47,814.—Machine for Making Tobacco Pipes.—Martin R. Griswold, Watertown, Conn. :

I claim, First, The combination of the spindle, E, constructed and operating substantially as described, with the cutter, B, as and for the purpose specified.

Second, The carrier, L, constructed and operating substantially as described with the spindle, E, combined as and for the purpose specified.

47,815.—Toy Spring Gun.—Albert Hall, New York City :

I claim the receiver, E, spring, C, and trigger, D, constructed and arranged, and combined with each other and with the slatted barrel, B, substantially as herein specified.

47,816.—Blind Fastening.—Samuel Hall, New York City :

I claim the fastener, a, constructed substantially as described for the purpose specified.

In combination with the window sash, B, I claim the hasp lock or its equivalent, constructed substantially as and for the purpose specified.

47,817.—Lock.—Wm. Hall, Brookline, Mass. :

I claim, First, Fastening the hub by means of the right hand screw, H, through the case of the lock, and the left hand screw, H', or vice-versa, combined with the check nut, v.

Second, Making the stump in two parts, S and S'.

Third, The peculiar arrangement of the lever, L, and the key, T, so that at the time the cog-wheels are thrown out of gear the ball shall be immovable.

Fourth, The hollow adjusting screws, g, g', g'', all of which operate substantially as described and for the purpose set forth.

47,818.—Pulverizing Tailing from Gold Washers.—James H. Hanchett, Beloit, Wis. :

I claim, First, The grinding disk, C, constructed as shown, and provided with the shaft, B, having the feather, b, thereon as and for the purpose set forth.

Second, I claim the grinding disk, D, provided with the internally geared flange, d, constructed and operating as and for the purpose herein set forth.

Third, In combination with the disks, C and D, and shaft, B, I claim the gear wheels, F and E, E, E, when all the parts are arranged to operate as and for the purpose herein set forth.

47,819.—Drilling and Boring Machine.—Herman Haupt, Cambridge, Mass. :

I claim, First, The employment in machinery for drilling or boring rocks or other hard substances, operated by steam or other electric fluid, of a momentum feed, as described, i. e., a mechanism to finely connect the piston rod with the drilling tool or tool holder in such a manner as that the hold shall be suddenly and automatically released at or before the completion of its forward stroke, to allow of the self-adjustment of the tool in relation to the rock, in accordance with the penetrability and the progress of the work, substantially in the manner set forth.

Second, In steam drills, or drills operated by air or other elastic fluid, I claim the combination, with a hollow piston rod, when used as a tool holder, of a gripper box arranged in the rear of the cylinder and back of the piston rod, substantially as set forth.

Third, In a drill operated by steam or other elastic fluid, I claim the momentum feed, as described, when applied to the translatory movement in combination with a positive rotary feed of the drilling tool, and whether the two feeds are simultaneous, reciprocating or intermittent in their action with respect to each other, substantially as set forth.

Fourth, The arrangement concentrically with the drill or tool of the gripper box, containing a series of wedges held in place to firmly grasp the tool, through the agency of a spring in combination with a stationary anvil ring forward of the gripper box, for operation as set forth.

Fifth, In combination with the gripper box, operating as described, I claim the arrangement for driving the wedges home against the tool to grasp the same with the full head of steam or the actuating power by causing the rear end of the hollow piston rod to butt against the heads of the wedges, as described.

Sixth, In combination with the gripper box, constructed and arranged as described, I claim the follower to expand the wedges, for the purpose of releasing the drill tool or tool holder, substantially as set forth.

Seventh, Recessing the stationary cheek or anvil ring so as to leave projecting studs corresponding to similar studs in the forward end of the gripper box, in such manner as that the momentum feed shall be alternated by blows under full head of steam, substantially as set forth.

Eighth, In combination with the means described for producing rotary motion of the tool, I claim the auxiliary ratchet and dog or the mechanical equivalent thereof, for the purpose of preventing the tool from turning back after each rotation, substantially as set forth.

47,820.—Railroad Chair and Coupling.—Wells Hendershott, Batavia, N. Y. :

I claim making a rail chair and coupling, with a base plate, g, g, with square flanges, f, f, for the side pieces to rest against, with side or splice pieces, b, b, having squared shoulders, h, h, said splices and base being fitted or spiked to the cross-ties through longitudinal flanges of each side of the rail or bolts may be secured by a key, all constructed substantially as described and for the purpose herein set forth.

47,821.—Embossing and Seal Press.—B. B. Hill, Chilcopee, Mass.:

I claim the employment of the fly, h, arranged between the die, n, and bed, a, substantially as aad for the purpose described.

47,822.—Fruit Basket.—J. S. Hoard and C. M. Miles, Vineland, N. J.:

We claim the above described berry and fruit basket, constructed as above set forth, as a new article of manufacture.

[This invention consists in a fruit basket composed of any suitable thin material, such as paper, bark or veneers of wood, the body of which is made by interlocking the two edges which come together when the material is bent to a conical or circular form, the bottom being made by dropping a circular piece of suitable size down into the basket.]

47,823.—Apparatus for Cooling Beer.—Julius Hoefler, New York City:

I claim cooling beer, or other liquids, (by) causing the same to flow downward in the open hollow of the metal pipe, E, and by causing the cold water to rise upward in the enclosed space of said pipe, E, substantially in the manner and for the purpose described.

47,824.—Carpenter's Gage.—Martin Horton, Brooklyn, N. Y.:

I claim the adjustable brad, f, in combination with the brad, d, in the slide, c, arranged and operating substantially as and for the purpose described.

47,825.—Composition for Lining Barrels.—Benoni H. Howell, New York City:

I claim the composition specified for lining barrels for petroleum, etc.

47,826.—Apparatus for Japanning.—Geo. Wolsey Hubbell, Derby, Conn.:

I claim the plan of drawing off or removing the liquid japan from the articles japanned, keeping said articles stationary, whether this is effected by means of the mechanism herein before described, or by means of a pump, syphon or any mechanical process whereby the liquid japan is removed from said articles leaving them stationary.

47,827.—Device for Covering Rollers for Wringers.—R. B. Hugunin, Cleveland, Ohio:

I claim the clamp plates, A, A, moving or folding blades, B, B, and projections, C, C, substantially as and for the purposes specified.

47,828.—Apparatus for Separating and Concentrating Ores.—Andrew Hunter, Solano Co., Cal.:

I claim the formation of the troughs, B, B, with metallic bottom alternately inclining and level, as shown by line, a, b, c, d, substantially as described, and for the uses and purposes set forth. I also claim the combination of these troughs with the troughs, E, E, G, G, stop-cock, H, hangers, D, D, spring, S, S, or their equivalent, by adjustable connecting rods, I, giving an oscillating and vibrating motion, all substantially as herein before set forth.

47,829.—Knitting Machine.—Edward E. Kilbourn, New Brunswick, N. J. Patented in France, Jan. 6, 1864:

First, I claim the combination of the carriage of a travelling needle in a knitting machine, with the mechanism for moving it past the other needles of the machine in such manner that it can be readily disengaged from said mechanism and re-engaged therewith, substantially as set forth.

Second, the combination of the instrumentality through which the pattern mechanism operates upon the traveling needle, or upon the instrumentalities for withdrawing or replacing the regular needles, with the carriage of said needle, or of said instrumentalities, substantially as set forth.

Third, the arrangement of the movable cam plates in a knitting machine above the devices which they operate upon, substantially as set forth.

Fourth, the arrangement of the pattern mechanism of a knitting machine above the needle carriage, substantially as set forth.

Fifth, the combination of the pattern barrel of a knitting machine with mechanism for changing its relationship to the device upon which its pins operate, substantially as set forth.

Sixth, the arrangement of the pins of a pattern barrel in two helical lines commencing at the opposite ends of the barrels, substantially as set forth.

Seventh, the combination of a cam for restoring the withdrawn needle with a carriage, substantially as set forth.

Eighth, a needle and divided into divisions, which are so combined with the machine that a division may be displaced and replaced, substantially as set forth.

Ninth, the combination of a removable division of the needle bed with instrumentalities for counterbalancing its weight, substantially as set forth.

Tenth, the combination of a removable division of the needle bed with a needle holder, substantially as set forth.

Eleventh, the combination of a traveling needle with a needle bed divided into divisions one of which may be displaced and replaced, substantially as set forth.

Twelfth, the combination of a transferring prong with a needle bed divided into divisions, one of which may be displaced, substantially as set forth.

Thirteenth, the combination of a removable division of the needle bed with its support by devices which permit a transverse movement, substantially as set forth.

Fourteenth, the combination of a series of reciprocating needles with two thread guides, one of which can be thrown out of gear when a single strip of work is being knit, the whole operating substantially as set forth.

Fifteenth, the combination of the thread guide carriage with catches that connect and disconnect it with the mechanism for imparting motion to it, substantially as set forth.

Sixteenth, the combination of the needle carriage with two sets of bumpers for operating two thread guides, substantially as set forth.

Seventeenth, the combination of the sinkers at the inner side of a division of the needle bed which remains in place, with a lifter, substantially as set forth.

Eighteenth, the depression of the yarn between the thread guide and the last needle fed with yarn, by an instrumentality which is separate from the thread guide and effects the depression substantially as set forth.

Nineteenth, the combination of the thread guide carriage with devices for gripping the yarn which are independent of the thread guide.

Twentieth, the combination of the needle cam bar with a movable cam block operating to withdraw one of the needles to a less extent than the others, substantially as set forth.

Twenty-first, the combination of the under supports of the needles of a knitting machine, with devices which permit their adjustment laterally, as set forth.

Twenty-second, the combination of the stocks of the under supports with a rock shaft, substantially as set forth.

47,830.—Horse Power.—D. W. Hunt, San Francisco, Cal.:

I claim, first, The ball governor, J, in combination with the toggle, M, and shoe, O, the latter being attached to a swinging bar, N, or its equivalent, and placed in relation with the balance wheel, E, all being arranged and applied to a horse-power, substantially as and for the purpose herein set forth.

Second, The endless platform, D, provided with chains, P, P, constructed of cast iron links, J, having longitudinal grooves, k, to receive plates, l, which are attached to the links by rivets, m, substantially as herein set forth.

Third, The brake or stop attachment composed of a pulley, Q, bearing on the belt, H, and attached to the lever, R, in combination with the shoe, S, interposed between the short arm, u, of said lever, and the pulley, G, to operate in the manner substantially as and for the purpose herein set forth.

Fourth, The cams, w, w, on the shaft, V, in the supplemental frame, T, in connection with the pawl, W, and the perforated wheel V, or its equivalent, for adjusting the inclination of the frame, A, and endless platform, D, substantially as described.

Fifth, Hanging the frame, A, in the supplemental frame, T, by means of journals, b', b', attached to the sides of the frame, A, underneath and in line with the balance-wheel shaft, B', substantially as and for the purposes herein set forth.

47,831.—Table for Hospitals.—Sarah J. A. Hussey, of Cornwall, N. Y.:

I claim the above described adjustable table in combination with the head rest, substantially as set forth.

I also claim the foot rest and drawer bookholder in combination with the table as specified.

47,832.—Shears for Cutting Iron Bolts.—George W. Hyatt, Auburn, N. Y.:

I claim the shear bars, B, B, pivoted to the bar, A, as shown for the purpose already described.

47,833.—Stove Pipe Drums.—Jacob B. Hyzer, Janesville, Wis.:

I claim, first, A heat radiator when constructed and arranged substantially as herein described and set forth.

Second, The combination of ascending and descending flues and an inner hot air space with a straight flue regulated by a single damper substantially as described.

Third, Constructing the radial plates with a series of orifices or holes, substantially as and for the purpose set forth.

47,834.—Fruit Jar.—Charles G. Imlay, Philadelphia, Penn. Antedated December 6, 1864:

I claim, first, The use of the metal screw cap, c, for the purpose of locking any form or variety of glass stopper upon a glass jar, as described.

Second, I claim the glass stopper and cap, v, j, when fastened by screw thread to the jar in the manner described.

Third, I claim a metal cap, whereby inclined slots in the cap and by projections, or lugs or portions of screw thread in the neck of the jar, it locks a glass stopper to a glass jar, and the same when no glass stopper is used.

Fourth, I claim the use of the hollow tube plug, v, k, and plug, v, x (with two apertures at its base), for locking the aperture inside of the jar as described.

Fifth, I claim all and each of the described and figured stoppers, when used in combination with my locking caps.

47,835.—Artificial Arm.—Hiram A. Kimball and Andrew J. Lawrence, Philadelphia, Pa.:

I claim, first, The arrangement of the levers, b, b', j, j' and n, in combination with the spring, h, to open and shut the fingers in the manner substantially as above described.

Second, The lever, s, by means of which the motive power acts upon the fingers when the fire-arm is in any position, said lever being constructed and arranged, substantially as described.

Third, The bars, v, v', in combination with the catch, y, and rest, A, whereby the fire-arm is held in any desired position, the whole constructed and arranged substantially as described.

Fourth, The employment of the elastic strap, D, by which the artificial arm is held in position without chafing or confining other parts of the body, substantially as described.

47,836.—Shoulder Supporter.—J. W. Kimball, Boston, Mass., and John Mahady, Cambridge, Mass.:

I claim a combination of shoulder straps, with an attaching strap, substantially as and for the purpose described.

47,837.—Double Window.—T. S. Lambert, Peekskill, N. Y.:

I claim the combination of the convertible stop, F, and its molding, J, and the sashes, G and H, with the frame, A, in the manner and for the purpose substantially as set forth.

Second, The combination of the material, k, with the stop, F, the molding, I, the sashes, G and H, and the frame, A, in the manner and for the purpose substantially as set forth.

47,838.—Rotary Fan.—George Leach, Elmira, N. Y.:

I claim the combination of the fan shaft and the disk, with wings attached thereto.

I also claim the described taper form of wings in combination with the disk, substantially as described.

47,839.—Fanning Mill.—George Leach, Elmira, N. Y.:

I claim the slide board, k, whose front edge is adjustable and operative for the purpose described at all points longitudinally of the effective length of the sieve, g, in combination with the notched adjusting handle, l.

47,840.—Farm Gate.—Joel Lee, Galesburg, Ill.:

First, I claim the swivel guide and friction wheel, for the purposes set forth.

Second, The combination of the gate, A, the post, B, the stop, C, the block, H, and the car, I, with the swivel guide and friction wheel, all arranged substantially as and for the purpose specified.

47,841.—Burglar Alarm.—Andrew J. Loomis, Madrid, N. Y.:

I claim the combination of the plate, A, the hammer with its axial shaft, E, and spring, F, the catch, G, the whole arranged substantially as described, and applied in the manner and for the purpose specified.

47,842.—Lock.—Walter K. Marvin, New York City:

I claim, first, The combination with the movable stump and movable tumblers, of a system of leverage, arranged substantially in the manner herein described, so as to prevent detection of the position of the gates or notches in the tumblers, as herein set forth.

Second, In permutation locks, having rotary tumblers or wheels, I claim the friction brake or brakes, in combination with the eccentric, arranged and operated substantially in the manner and for the purpose set forth.

47,843.—Button.—Edward Maynard, Washington, D. C.:

I claim a metallic collet or base, for the buttons having tongues or points stamped out centrally therefrom, substantially in the manner and for the purpose herein set forth.

And I claim, also, as a new article of manufacture, metallic fasteners for buttons, formed of a polygonal or cylindrical shank, having tongues or points projecting from the ends thereof, substantially in the manner as and for the purpose herein set forth.

47,844.—Process for Tanning.—B. H. McNulty and Wm. McKern, Mansfield, Ohio:

First, We claim the tanning process herein described, the same consisting in agitating the liquid by a rotary dasher, E, or equivalent mechanical means, while under pressure within the vat, substantially as and for the purposes set forth.

Second, The apparatus used in the above process, comprising the vat, A, lid, A', packing, a, nozzle, D, braces or retainers, C, and dasher, E, combined and arranged in the manner herein described and represented.

47,845.—Cook Stove.—Henry Mitchell, Richmond, Ind.:

I claim the combination and arrangement of the plate, C, containing the damper, B, at the upper front corner of the oven with the flues, I, J, and K, and the location of the guide plate, A, and of the pipe, H, by means of which the heat is taken by the shortest and most direct route entirely around the oven.

47,846.—Lightning Rod.—S. J. Mitchell, St. Louis, Mo.:

I claim the separator or division of the main point, A, into two bars connecting by means of branches, d, with the stem, B, of the rod, substantially as described.

[The object of this invention is to produce a lightning rod which will conduct the fluid with more certainty to the conductor or main rod, while it also presents a great number of attaching points or a large attracting surface without enhancing the difficulties of construction or the cost.]

47,847.—Device for Pulling on Boots.—F. H. Moore, Boston, Mass.:

I claim, first, Forming one or more apertures in the leg of boots or shoes, and providing the edge of such aperture or apertures with a convex border or flange, in the manner substantially as hereinbefore described, and for the purposes set forth.

Second, I claim as an article of manufacture, boot or shoe lugs having, for the purposes set forth, one or more bordered or flanged apertures, substantially as herein described.

Third, I claim as an article of manufacture a boot or shoe the legs of which, for the purpose of pulling on said boots or shoes, are provided with one or more bordered or flanged apertures substantially as described or set forth.

47,848.—Friction Match.—S. C. Moore, Boston, Mass.:

I claim putting the lighting or burning substance on one end or side of the stick, and the lighting or igniting substance on the other end or side of the spint or match, substantially as described.

47,849.—Bed Plate for Paper-mill Engines.—Oliver Morse, Needham, Lower Falls, Mass.:

I claim so applying the grinding plates or knives to the bed as to allow of their being raised or lowered relatively thereto, substantially as hereinbefore set forth.

I claim the combination of the steel grinding knives with the clamp bar when the latter are constructed with a series of slots, substantially in the manner and for the purpose hereinbefore set forth.

C, carrying projections which traverse oblique grooves in the position to be rotated in combination with the ratchet teeth, D, and pawl, E, as described.

Second, The described dress to the face of the rasmer, consisting of serrations or teeth which run in the reverse direction on the different sides.

47,851.—Musical Instrument.—Ira F. Munson, Washington, D. C.:

I claim, first, The use of glue, gelatin, or other analogous substance, in the manufacture of musical instruments, or parts of such instruments, for the purpose of obtaining increased volume of tone and sonorousness, substantially as described.

Second, Uniting parts of musical instruments together by means of the material of which such parts are composed, for the purpose of obtaining homogeneousness, substantially as described.

Third, The use of a water-proof composition in the manufacture of musical instruments, or parts of instruments, substantially as described.

47,852.—Knitting-machine Needle.—John L. Otis, Florence, Mass., and Samuel L. Otis, Manchester, Conn.:

We claim, first, The recess, d, in the needle shank, to operate in combination with the stop, c, on the latch, substantially as and for the purpose set forth.

Second, Making the needle and latch of one thickness and operating them in the same slot of the needle bed, as specified.

Third, The stop, e and curved point of the latch, in combination with the cam, g, constructed and operating substantially as and for the purpose described.

47,853.—Machine for Ornamenting Jewelry, Plate, Etc.—O. S. Parmenter, Providence R. I.:

I claim the machine for ornamental engraving, constructed and operating in the manner and on the principle substantially as described.

47,854.—Shafting.—Franklin P. Perego, Indian Valley, Cal.:

I claim the combination and arrangement of the guide blocks, C, C, C, with the set screws, G, G, and the friction rollers, D, D, D, D. Also the manner of connecting the two sections by means of the slideways, H, H, substantially as set forth.

47,855.—Seeding Machine.—S. M. Prentice, Southington, Ohio:

I claim the seed box or hopper, D, resting at its back end upon a spring, F, substantially as shown, and for the purpose of feeding and supplying the seed uniformly to the distributing wheel, C, as set forth.

[This invention relates to a new seeding machine designed for general use for planting various kinds of seed, and it consists in the employment of a self-adjusting hopper, in connection with a seed-distributing wheel, and a adjustable shears or teeth.]

47,856.—Corset.—Clarissa Preston, Detroit, Mich.:

I claim a combined corset and supporter arranged with hooks or clasps, a, in front and made to lace in the rear, and provided with a bustle, B, and extension brace, g, substantially as and for the purpose set forth.

[This invention relates to a combined corset and supporter made to lace in the back and to clasp or hook in front, so that its width can be readily adjusted, and provided with an extension bustle, the brace of which is made to extend part way or all round the body, and which may be cut separate from the corset and attached to it or formed with the same, as may be desirable. The extension brace is adjusted to the requisite width by a hook catching in different slots or in any other suitable manner, whereby the same can be readily accommodated to the body of the wearer.]

47,857.—Horse Rake.—O. E. Randall, Lewiston, Maine:

I claim the combination of the bars, F', arms, i, shaft, E, and teeth, G, G, all constructed, arranged and operating substantially as set forth.

[This invention consists in having the rake composed of a series of bars, constructed in a novel way and placed loosely on a shaft or rod with the teeth attached to each bar; the said rake being applied to a mounted frame having its wheels at a less distance apart than the length of the rake, so that the ends of the latter may project beyond the wheels, all being arranged in such a manner that all the advantages of the ordinary wooden and wire tooth rakes are retained while their disadvantages are avoided.]

47,858.—Mode of Propelling Railroad Cars.—S. G. Randall, New York City:

I claim the air-supply pipe, a, provided with suitable spots, b, and applied in combination with the movable reservoir, C, and car, A, substantially in the manner and for the purpose set forth.

47,859.—Boots and Shoes.—T. K. Reed, North Bridgewater, Mass.:

I claim a boot and shoe having the construction substantially as specified.

47,860.—Adjustment for Optical Instruments.—C. B. Richards, Hartford, Conn.:

I claim the employment, in combination with the adjustable parts of an optical instrument, of one or more anti-friction wheels, and a friction roll, operating to effect the adjustment to focus, substantially in the manner hereinbefore clearly described, for the purpose set forth.

47,861.—Machine for Shaving and Nicking Wood Screws.—D. M. Robertson, East Boston, Mass., and Jason A. Bidwel, Boston, Mass.:

We claim the vibrating adjustable saw frame, R, in combination with the link, T, and cam, T', which operate the frame and move the saw, as described.

We claim the rotating saw, S, in combination with the right-angle hand screw nuts, arranged to adjust and hold the saw opposite the center of the arbor, E, substantially as described.

47,862.—Solar Camera.—Herman Roettger, Philadelphia, Pa.:

First, I claim a camera stand constructed with two adjustments at right angles to each other, for the purpose of following the path of the sun by a single motion, substantially as shown and described.

Second, The grooves, k, k, m, m, in combination with a rigid camera box, as shown and described for the purpose set forth.

Third, The double chamber, S and B, when used to form a rigid camera box provided with slide grooves, as shown and described.

47,863.—Car Truck Frame.—D. B. Rogers, Pittsburgh, Pa.:

First, I claim the sustaining beam, made substantially as described and for the purposes set forth.

Second, The suspending or resting of car bodies, substantially as described and for the purposes set forth.

47,864.—Screw Propeller.—John B. Root, New York City:

I claim a screw propeller the blades of which have a curvature forward or in the direction of the revolution, combined with such a hollow curvature of the faces as is produced by a diminution of the pitch from the periphery toward the axis of the propeller, substantially as herein specified.

Second, The hollow rearward conical extension, C, of the hub attached to the body, B, thereof by being fitted into a groove, f, in the body and secured by a central bolt, I, which passes through the said extension and is screwed into the end of the propeller shaft, substantially as herein described.

47,865.—Machine for Cutting Leather.—J. F. Severence, East Bridgewater, Mass.:

I claim the combination of the presser bar, F, and its knife-holding opening, h, with the feed wheel, G, or the same and a knife, K, substantially in the manner and as to operate therewith, as specified.

I also claim the combination of the two sliders, E, L, and their clamp screws or the equivalent thereof, with the presser bar, F, its knife-holding opening, h, and a stationary arm, D, arranged with respect to the feed wheel, G, substantially as hereinbefore set forth.

I also claim the combination of the gage, m, with the upper ill-

der, L, and the presser bar, F, when combined with a feed wheel in manner and so as to operate therewith and with a knife, substantially as hereinbefore explained.

47,866.—Water Meter.—John Sheffield, Pulneyville, N. Y.:

I claim the combination of the wings, a, shaft, D, gate, b, and inlet passage, O, all arranged to operate substantially as specified. [This invention consists in adopting the principles of construction of the ordinary central discharge water wheel to the purposes of a water meter.]

47,867.—Game Board.—John Smith and E. M. Nutter, Feltville, Mass. Antedated March 3, 1865:

We claim the game board, as constructed, with the rotary cannon, the battery and the cavities, arranged substantially as described.

47,868.—Boring Well.—John Y. Smith, Alexandria, Va.:

First, I claim, in combination with a steam cylinder, whether arranged concentrically or eccentrically with said cylinder, a gripper box or other instrument, to intermittently hold and release the rope or cable, substantially as and for the purposes set forth.

Second, I claim the combination with a steam cylinder and gripper box, arranged as described, of a mechanism for intermittently rotating said box while firmly holding the tool, substantially as and for the purposes set forth.

Third, I claim a mechanism for producing intermittent rotation of the rope continuously in the same direction, in combination with a mechanism for simultaneously untwisting the rope, substantially as set forth.

Fourth, I claim the combination with a gripper box or the mechanical equivalent thereof for rotating the rope continuously in the same direction, I claim a drum around which the rope is wound, when said drum is hung in a frame revolving in the manner and for the purpose set forth.

Fifth, I claim the method herein described of producing a self-adjusting automatic feed of the rope.

Sixth, I claim the method herein described of regulating the force of the blow, substantially as set forth.

Seventh, I claim the means herein described, or the mechanical equivalent thereof, for producing self-adjusting automatic feed, which also serves to regulate the force of the blow.

Eighth, The method herein described of rotating the drum to withdraw the tools and return them with great rapidity, substantially as set forth.

47,869.—Safety-valve Rubber.—John Y. Smith, Alexandria, Va.:

First, I claim a combination with a safety valve, constructed in the usual manner, as described, a metal disk of a resistance calculated to explode under a pressure exceeding that of safety.

Second, The construction of the valve of three parts, substantially as herein described and for the purposes set forth.

Third, In combination with a safety valve, constructed and operating as described, I claim the stop-cock for the purpose set forth.

Fourth, In combination with a valve and valve case, provided with a stop-cock, as described, I claim the pendant rod fast to the disk, substantially as set forth.

47,870.—Rock Drill.—John Y. Smith, Alexandria, Va.:

I claim, first, A rock drill composed of three or more cutting blades when recessed in the center or at the point of intersection of said blades, substantially as set forth.

Second, Forming the cutting edges of a three or more bladed rock drill by bevelling one side of said blades in such manner as to tend to rotate the drill when striking a blow and to tighten the screw joint, substantially as set forth.

Third, Forming cutting edges upon the recessed portion of the blades, substantially as and for the purpose set forth.

47,871.—Oil Ejector.—John Y. Smith, Alexandria, Va.:

First, I claim the combination with a suitable main tube and stationary valve seats of a central revolving steam or air cylinder provided with suitable valves constructed and operating substantially as hereinbefore described, so that the steam or air is ejected into the space surrounding said cylinder, in the manner and for the purposes set forth.

Second, In combination with the above, I claim the employment, at suitable intervals and interposed between the sections of the outer tube of valve chambers, for the admission and retention therein of the liquid raised by the injection of steam or other elastic fluid, substantially as set forth.

Third, In combination with the interior cylinder and surrounding valve chambers, I claim the slip joint attachment, so as to admit of the perfect vertical adjustment of the valves into their respective seats, substantially as set forth.

Fourth, In combination with two concentric cylinders, I claim making the valves and valve seats in the form of spherical caps or unites the cylinder sections by ball joint attachment so as to yield to lateral adjustment, substantially as set forth.

Fifth, In valve chambers constructed as described, and in combination with hemispherical valves, I claim forming annular channels in the manner and for the purpose set forth.

Sixth, I claim the employment in an apparatus for raising liquid by direct action of steam and in combination with and as a lining of the steam cylinder of a hemp hose, whether or not boiled in linseed oil, substantially as set forth.

Seventh, I claim the combination of a steam cylinder closed at the base with a hinge trap or valve, operated by a cord or rod in the manner and for the purposes set forth.

Eighth, In combination with a spherical valve I claim the employment of a steam deflector shield operating substantially in the manner and for the purpose set forth.

47,872.—Horse Rake.—Moore Smith (assignor to himself and P. W. Wellington), Worcester, Mass.:

I claim the combination of the sliding rake head, A, with the clutch, G, clutch projections, g and d, clutch lever, E, and cam, I, when constructed and operated substantially in the manner and for the purposes stated.

47,873.—Apparatus for Treating Ores.—Robert Spencer, New York City:

I claim the projecting metallic vessels, which are used in the process of roasting ores, by coating their exposed surfaces with a fire-proof enamel, substantially as described.

47,874.—Apparatus for Treating Ores.—Robert Spencer, New York City:

First, I claim applying a series of revolving or oscillating wings or paddles within a vessel, E, which is constructed with a central ridge, a, over which the currents of mercury are interrupted in their passage from one side of the vessel to the other, substantially as described.

Second, The use of a double concave bottom amalgamating vessel, having revolving agitators arranged within it, substantially as described.

Third, The receiving troughs, c, c, in combination with a perforated cover, E, to the amalgamating vessel, substantially as described.

Fourth, Conducting the waste water from the amalgamating vessel into the chamber, D, substantially as described.

Fifth, The feeding vessel, H, in combination with two or more movable cylinders, B, communicating with said vessel, substantially as described.

Sixth, The use of a water chamber, D, partially surrounding an amalgamating vessel, whether it is mounted over a furnace or not, substantially as described.

Seventh, The combination of one or more rotating or oscillating cylinders, B, with an amalgamating vessel and a furnace, C, substantially as described.

47,875.—Meat Cutter.—Le Roy S. Starrett, Newburyport, Mass.:

First, I claim the combination of the walking beam, I, pitman, H, crank shaft, E, G, pawl, A, rack, P, and rotary bed, O, arranged and operating as specified.

Second, The combination of the horizontal plate, K, pendant rods, g, knives, L, rods, J, L, and guide rod, M, constructed and arranged in the manner and for the purposes described.

47,876.—Lath Fastening.—J. M. Stone (assignor to himself, G. L. Davis, and G. A. Wiley), North Andover, Mass.:

I claim clamping the piece, c, to the piece, b, and this to the way or frame, a, by one adjustment, the construction and operation being substantially as described.

47,877.—Method of Securing Bushes for Bungs to Barrels.—Thomas Summerfield, New York City:

I claim securing metallic bushes for bungs in barrels by means of nails clamped in the inner side of the stave by the lever anvil, substantially as set forth.

47,878.—Hoisting Apparatus.—Joseph A. Talpey, Somerville, Mass.:

I claim the improved tackle or hoisting apparatus consisting of two sprocket pulleys arranged, constructed and geared together, and operating in conjunction with the endless chain and the loose block, substantially as specified.

I also claim so applying the lower sprocket pulley that it may be disconnected from the upper one and keyed or fastened in position in the manner and for the purpose substantially as set forth.

47,879.—Keel for Ships and Other Navigable Vessels.—J. B. Tarr, Chicago, Ill.:

I claim the horizontal keel, c, when constructed and applied as herein specified so that its upper surface will be nearly parallel with the ship's bottom and its edge on the lee side will present an acute angle to the water, while the ship is careened to any extent.

[This invention is designed for vessels navigating the lakes, and which are often compelled to sail in shallow waters, and consists in a keel which expands laterally on each side of the center of the vessel's bottom so as partially to inclose a large body of water on either side.]

47,880.—Car Truck.—Edwin Thurston and James R. Letyard, Covington, Ky.:

First, We claim the construction and use of skeleton iron bolsters, B and C, which admit of great strength and durability and can be placed in the center of bearings or side bearings.

Second, The construction and use of the cast end piece, A, which serve to stiffen or brace arch bars and lower bolster, also serve as a guide for topbolster to work in, and in connection with bolster, forming a truck combining strength, durability and lightness with ease of access in all its parts for repairs.

47,881.—Base-burning Stove.—W. B. Treadwell, Albany, N. Y.:

First, I claim the fire pot, C, with the flaring lip extended, e, f, in combination with a base-burning stove, which has a coal-supply magazine, G, substantially as and for the purpose set forth.

Second, The combination of the flaring lip extended, e, f with the beveled brick, E, substantially in the manner and for the purpose described.

Third, The arrangement of perforated valve, I, chamber, K, flues, J and H, and the branch flue, N, with a base-burning stove, constructed substantially as described, for the purpose set forth.

47,882.—Machinery for Coiling Springs.—G. L. Turner, New York City:

First, I claim, in machines for coiling steel springs, whether used for coiling volute spirals or other steel or metallic springs, the employment and use of the collars, b and b', on the mandrel, and the bushings, G and G', in the socket of the rotating arbor which receives the mandrel, in combination with the mandrel, E, and the rotating arbor, C, substantially as and for the purposes above described.

Second, I claim, in machines for coiling spiral springs, the employment and use of a base or head block, such as that shown at G, or its equivalent, with holding or gripping devices, such as those here shown and described, or their equivalents, in combination with the mandrel, E, the worm, P, the guide, n, and the collar, M, when used for producing spirally-formed springs, with parallel ends on the said mandrel, substantially as and for the purposes above set forth.

Third, I claim in machines for coiling metallic springs of a spiral form, the employment and use of a movable collar, such as those here shown at M, or its equivalent, in combination with the worm, P, the mandrel, E, and the guide, n, when used for the purpose of making that end of the spring which is next to the said collar perpendicular, to the axis of the mandrel, substantially as and for the purpose above set forth.

Fourth, I claim the employment and use of a guide such as that shown at n, or its equivalent, in combination with the mandrel, E, the worm, P, and the collar, M, when used for the purpose of suddenly checking the diagonal movement of the end of the bar and of keeping in its necessary vertical position, that is to say, at right angles to the mandrel and guiding it at right angles with the face of the mandrel preparatory to forming that end of the spring parallel, substantially as and for the purpose above described.

Fifth, The worm, P, or its equivalent, in combination with a coiling mandrel, when used for coiling spiral springs, substantially as above described.

Sixth, I claim, in machines for coiling spiral or other steel springs, the employment and use of a friction band, T, or its equivalent, in combination with the worm shaft, P, and the frame, F, and their equivalents, when used for the purpose of coiling metallic springs, substantially as above described.

Seventh, I claim the employment and use of adjustable guides, such as those shown at W, W', S and S', or their equivalents, in combination with the sliding table, U, or their equivalent carriage, and when used for the purpose of guiding the work in the bar vertically and of guiding it diagonally between the threads of the worm and the face of the mandrel during the process of coiling the spring, substantially as herein set forth.

Eighth, The distance gage, X, or its equivalent, applied upon the sliding table, U, or other equivalent carriage, to operate substantially as above described.

Ninth, I claim the employment and use of the cams, R, R, in combination with the frame, P, and the worm, P, the office of said cams being to elevate and hold in proper position the frame, P, and the worm, P, during the operation of coiling spiral springs, substantially as above set forth.

Tenth, I claim the employment and use of the collar, Z, constructed above, and secured adjustably to the sliding arbor, D, in combination with the cap lever, Q, constructed as above, for the purpose of holding the said arbor stationary during the operation of coiling volute, spiral or other metallic springs, substantially as above described.

47,883.—Cutting and Pressing Hay, Etc.—Rosewell Wakeman and Joseph L. Ballance, Port Deposit, Md.:

We claim the hay cutter, so combined with a hay press, and so arranged and operated as to discharge the cut hay into the pressing box, in combination with an automatic stamp, g or packing apparatus, substantially as and for the purposes herein set forth.

Second, We claim the manner of fastening the doors of the packing or pressing boxes, as herein described.

Third, We claim the combination of machinery herein described, for pressing cut hay into bales.

47,884.—Apparatus for Washing Ore.—James Watson, Cliff Mine, Mich.:

I claim the use of a long tie or trough, suspended so as to vibrate against a revolving cam or other device for giving to it a vibrating shock, in combination with a series of movable stops, constructed and arranged substantially as and for the purposes hereinbefore set forth.

47,885.—Attaching Cranks to Machinery.—Amos Westcott Syracuse, N. Y.:

I claim a crank, constructed with the hole, c, and slot, D, Fig. 1, in the arm thereof, in combination with the flat-shanked screw, B, Fig. 1, by which it can be attached to the shaft, substantially as above described.

47,886.—Rolling Mill.—Elbridge Wheeler, Feltville, Mass.:

I claim uniting the projecting ends of the rolls or shafts by means of a link or yoke, substantially as and for the purpose described.

I also claim the holding of the sections of dies or rings or their shafts, by means of screw threads cut upon the shafts, and a nut or nuts run up against them, substantially as described.

I also claim the fitting together of the sectional rings or dies, by means of countersinks upon one and a projection upon the next adjacent one, to break the joint between them, and the projecting forming of a pin upon the article being rolled, substantially as described.

47,887.—Stovepipe Drum.—Thomas Whitson, Woodstock, Ill.:

I claim a heat-radiator for use in connection with a stove, consisting in a base, B, and a cover, E, provided with the partition, C, and F, connected by the flues, H and J, and return flues, L, and provided with the valves, D and G, and with or without the transverse pipes, K, substantially as described.

47,888.—Forming Tubes of Sheet Metal.—Moses G. Wilder, West Meriden, C. N.:

I claim the process of forming tubes of thin sheet metal, by compressing blanks of greater breadth than the development of the perimeter of the required tube into that perimeter, substantially as set forth.

47,889.—Valve for Artillery Harness.—Warren H. Wilkinson, Springfield, Mass.:

I claim as my invention the improved artillery valve, as made with the hollow or concave, a, to fit and rest upon the seat of the saddle, substantially in manner as described.

I also claim the combination and arrangement of the bottom or girth straps, e, e, with the valve made with the arched or concave bottom, as described.

I also claim the combination and arrangement of the four side eyes, b, b, b, and their straps, c, c, c, with the valve, made with the arched or concave bottom, as described.

47,890.—Cooling Stove.—Charles J. Woolson, Cleveland, Ohio:

I claim a detachable curved iron plate, when arranged in relation to the oven and fire plate of cooking stoves, in the manner and for the purpose herein set forth and as described.

47,891.—Curtain Fixtures.—Jacob B. Bailey, New York City, assignor to Samuel E. Bailey, Springfield, Mass.:

First, I claim the ring socket, c, receiving the end of the curtain roller, in combination with the clamping piece, d, introduced and actuated as and for the purposes specified.

Second, I claim a spanned spool, with an opening through its center for the curtain roller, the said spool being retained in place by attaching the cord, b, substantially as specified.

Third, I claim a contractile india-rubber band, applied substantially as specified, to create friction for preventing the weight of the curtain turning the roller.

Fourth, I claim a curtain roller, in which friction as applied to sustain the curtain in any position, in combination with two cord spools wound in opposite directions, for the purpose and as specified.

47,892.—Machine for Manufacturing Boxes of Sheet Metal.—George W. Bentley (assignor to himself and Charles S. Hine), New York City:

I claim, First, In combination with the frame, F, provided with the shafts, a and l, and lever, h, the burr wheels, c, k, p and q, when the same shall be constructed and operated substantially as shown, for the purposes specified.

Second, I claim the adjustable bearing, m, with its adjuncts, when the same shall be combined, substantially as shown, for the purposes specified.

47,893.—Water Meter.—Geo. F. Blake, Medford, Mass., assignor to himself, Peter Hubbell and Job A. Turner, Boston, Mass.:

First, I claim so constructing the plungers or pistons of water meters that they shall perform the function of valves, and thus do away with the necessity for independent valves and their connections, substantially as specified.

Second, In combination with the foregoing, I claim making the plunger at each cylinder control the supply and exhaust of its twin or opposite cylinder, in the manner described.

Third, Passing the supply water through the body of the plungers, by means of water ways, arranged and operating substantially in the manner and for the purpose set forth.

47,894.—Whiffletree Irons.—Wm. M. Bryant (assignor to himself, John B. Wheeler and John R. Evans), Washington, D. C.:

I claim constructing the ferrules, A, for swivels or whiffletrees, with the stops or shoulders, d, e, and inclined or bevel, f, substantially in the manner and for the purpose described.

Second, In combination with the subject matter of the first clause of my claim I claim the turning stem, B, with its locking pin, j, substantially as described.

Third, In combination with the subject matter of my first and second clauses of claim, I claim the screw-fastening, k, substantially as herein described.

47,895.—Fire Pot for Stove, Etc.—William Ennis (assignor to himself and Osborne Macdaniel), New York City:

First, I claim the method of generating steam in the fire-pot retort here, as and for the purpose herein described.

Second, The construction of the steam generator, A, combined with the feed-pipe, a, leading into the steam chamber, m, and the escape pipe, b, leading into the superheater, B, as and for the purpose herein described.

Third, The combination of the steam generator, A, the superheater, B, and the retort, C, connected with the pipes, a, b and c, as and for the purpose herein described.

Fourth, The construction of a retort, divided by partitions into chambers or sections, formed of one or more pieces as and for the purpose herein described.

47,896.—Oiler.—William H. Hart (assignor to himself and Gilbert Rogers), Meriden, Conn.:

First, I claim the construction of an oiler, substantially as described, having two oval sides, so that the double spring consequent upon the described construction of the same may be obtained, substantially as set forth.

Second, The construction of an oiler with the double spring in the two sides, as claimed, in combination with the use of the rubber in the top of the cap, and pressing upon the tube, substantially as set forth, using for that purpose any suitable metal or material to accomplish the desired result, or that will produce the intended effect.

47,897.—Well Boring.—Henry Howson (assignor to William Wharton, Jr.), Philadelphia, Pa.:

I claim, first, The combination of the crank, I, its pin and the lever, Q, with the drill rod or rope of well-boring apparatus, the whole being arranged and operating substantially as set forth for the purpose specified.

Second, The arrangement substantially as described of the driving shaft, H, its winding barrel, J, the clutch, K, or its equivalent, cog wheels, L and M, or equivalent driving gear, the crank shaft, h, and beam, Q.

Third, The lever, T, adapted to the boring rod or drill rope, and constructed for grasping and releasing the same, substantially as set forth.

Fourth, The said grasping and releasing lever in combination with the bent or curved guides, V, V, or their equivalents, whereby the said lever is caused to turn laterally to a limited extent, in the manner and for the purpose described.

Fifth, The combination of the s, id grasping lever with the chain or cord, g, or the equivalent to the same.

47,898.—Stocks for Holding Screw Cutting Dies.—E. C. C. Kellogg (assignor to himself and James E. Coleman), Hartford, Conn.:

I claim, first, The slotted plates, D, D', and screws, e, e', e', in combination with each other and with the stock and dies, substantially as and for the purpose herein specified.

Second, The cavity, b, in the handle, a', having a female screw thread, e', at its mouth, in combination with the pin wrench, E, having a male screw thread, e'', near its head, substantially as and for the purpose herein specified.

47,899.—Tool for Opening Boxes.—E. C. C. Kellogg (assignor to himself and James E. Coleman), Hartford, Conn.:

I claim the within described instrument, consisting a box opener and a scraper, having the parts arranged and combined as herein set forth.

47,900.—Machine for Polishing and Dressing Stone.—E. H. Lewis (assignor to himself and N. Baldwin), Kingston, N. Y.:

I claim the slide, C, with adjustable clamp, D, and stops, d, in combination with the plate, A, and hand lever, E, or its equivalent, constructed and operating substantially as and for the purpose set forth.

47,901.—Casting Pipes.—Thos. J. Lovegrove (assignor to himself and Henry Baldwin, Jr.), Philadelphia, Pa.:

I claim, First, Making hollow castings by rolling the mold containing the molten metal down an inclined plane, substantially in the manner described.

Second, The combination of flanges on a rotating mold with a railway, for the purpose of giving the mold a parallel movement, as set forth.

47,902.—Breech-loading Fire-arm.—Wm. H. and George W. Miller (assignors to Edmund Parker), Meriden, Conn.:

I claim, First, The breech block, C, hinged to the top or sides of the barrel, A, and provided with a wedge-shaped projection, a, to fit in a

corresponding recess in the cone seat, all the said parts being con- structed substantially as herein specified, so as to admit of a con- version of a muzzle-loading to a breech-loading gun without change in the construction or arrangement of the stock, lock, or hammer.

47,903.—Thill Tug.—William H. Noyes (assignor to him- self and Charles H. Wheldon), Homer, N. Y. I claim a metallic thill tug composed of two parts, A, A', connected by a joint, B, and provided with a chafing ring, E, substantially as herein shown and described.

[This invention relates to a metallic thill tug for harnesses, and it consists in connecting the tug of two parts connected by a joint, and providing the tug with a lining or inner ring of India-rubber or other, or other suitable material, which will prevent the chafing or rasation of the thills; the chafing ring or lining, in consequence of a peculiar construction of the tug being capable, when worn by it, of ready removal from the tug and replaced by new.]

904.—Cultivator.—Edward Phifer, Trenton, N. J., as- signor to himself and James M. Grover, Lawrence- ville, N. J. I claim, First, The combination in a cultivator of longitudinal frame pieces, adjustable at both ends to cultivate any width of row, with an axle on wheels adjustable to any width of furrow, substantially as and for the purpose described.

Second, The combination of an adjustable frame, with one adjust- ment for the tooth, with a separate adjustment for the shank, when both are flexible when changing the position of the cultivator tooth, and rigid when the tooth is at work, substantially as and for the purpose described.

Third, The combination in the cultivator of one or more rigidly held teeth, or plows, with an adjustable mechanism, substantially as described, whereby the driver can control at pleasure the operation of the teeth, singly or in series, as set forth.

47,905.—Sewing Machine.—George Rehfuss (assignor to the American Button-hole Sewing Machine Co.), Philadelphia, Pa. I claim, First, The arm, I, with its notched projection, K, or its equivalent, when arranged to vibrate round the needle to operate on the thread held by the loop carrier, m, substantially as described.

Second, The sleeve, H, with its spiral opening, I, and arm, I, in combination with the needle bar, D, and pin, F, the whole being ar- ranged and operating substantially as and for the purpose specified.

Third, The guard, n, arranged on the plate, L, in respect to the looper, m, substantially as set forth for the purpose described.

Fourth, The rod, E, and lever, G, in combination with the needle bar, D, and its spiral spring, A', the whole being arranged and oper- ating substantially as and for the purpose set forth.

47,906.—Surveying Instrument.—Karl Schou (assignor to himself and G. H. Hull), Lafayette, Ind. I claim, first, a surveying instrument provided with a wheel, B, in dex, L, cylinder, E, and tracing device or pencil, substantially in the manner and for the purpose set forth.

Second, The method herein described of adjusting the speed of the pencil cylinder according to the grade or formation of the ground over which the instrument is drawn, consisting of the pendulum weight, J, carriage, F, friction disk, I, wheel, Y, and cog wheels, A, Y, Z, or any equivalent means.

Third, The method of regulating the motion of the pencil or trac- ing mechanism according to the formation of the ground, substan- tially as herein set forth, consisting of the wheel, S, friction disk, C', pinion, F, cog wheels, G', P, and toothed rack, A', or any equivalent mechanism.

Fourth, The combination of the pendulum weight, J, carriage, I, P, cog wheels, S, friction disks, C', paper cylinder, E, rack, A', with tracing device and index, K', all constructed and operating substan- tially as and for the purpose set forth.

Fifth, The slow lever, W, in combination with the pendulum weight, J, and sleeve, C, in the construction of the coupling ends of the pendulum weight in either direction causes the car- riage to move towards the centre of the wheel, R.

[This invention relates to a surveying instrument which serves to record the distance between two or more points on the surface of the ground and also to trace on a strip of paper the distance and the general formation of the ground between said points.]

47,907.—Coupling Shafts of Boring Tools.—Albert A. Wilson, Green Point, N. Y., assignor to himself and Hoffman Atkinson, Rouseville, Pa. I claim providing the sleeve in connection with any two parts of the stem or shaft of tools, and arranging the same in combination with the key, substantially as and for the purpose described.

Second, The combination of the screw thread, G, shoulder, e, shoulder, a, and sleeve, C, in the construction of the coupling ends of well bored shafts or stems, substantially as and for the purpose herein described.

47,908.—Excavator.—James Hodges, of Penny Hill, Bagshot, England. Patented in England, June 17, 1865. I claim, First, The excavating of peat or other substance by means of rotating screw excavators, one or more arranged with shield and scraper, or their equivalents, all placed on or connected with a floating vessel, or a carriage mounted on wheels, substantially as de- scribed.

Second, The squeezer composed of the rotating cylinder, provided with pockets and a series of pressure rollers, or their equivalents, when used in connection with the screw excavators, for the purpose specified.

Third, The pulping machine, composed of the perforated dia- phragm and revolving knives, arranged within a suitable case to operate substantially as described.

Fourth, The combination of the screw excavators, endless elevators or carriers, squeezer device, and pulping mechanism, all ar- ranged on or applied to a floating vessel, or a vehicle mounted on wheels, substantially as and for the purpose herein set forth.

47,909.—Printing Ink.—Anatole A. Hulot, Paris, France. I claim, First, The manufacture of typographic ink, capable of being washed out when printed on movable adhesive and postage stamps, labels or designs requiring to be dated, signed, marked, or otherwise written upon with common ink, as hereinbefore described.

Second, The application of the said typographic ink to the print- ing of typographic or copper plate stamps of all kinds, either with delicate colors and fast colors; and to relieve stamps with colored grounds and delicate vignettes for envelopes, to bank notes and other documents, where it is required to prevent the printing from being washed out.

Third, The application of the said ty ographic ink to imitate wa- ter color pictures, with one or more colors, and printed on paper or vellum, and also to printing in tinctorial colors on silk, cotton, wool, and other textile fabrics.

47,910.—Telegraphic Posts.—Francis Webb Shields, No. 3 Delahay street, Westminster, England. Patented in England, October 6, 1864. I claim the construction of telegraph posts of separate parts, one of which is suitable for being driven into the ground, while the other is provided with means for securing the insulator, and is suit- able for being attached to the part in the ground, substantially as herein described.

REISSUES.

1,963.—Raking Attachment to Harvesters.—Robert D. Brown, Covington, Ind. Patented April 7, 1863. Reissued Feb. 21, 1865. I claim the continuously revolving rake, B, carried forward over the platform and back beneath the same by means of driving chains, helts, or their equivalents, and elevated to its working position dur- ing its forward motion and retracted in passing beneath the plat- form by means of a crank arm, D, or its equivalent working in a slot, for the purposes specified.

Second, I claim governing the position of the rake teeth by the partial rotation of the rake head, which travels parallel with the cutter bar, by means of an endless belt or chain when the said rotat- ion is effected by the traversing of a wrig attached to the rake head, in a slot of the required configuration.

Third, The intermittent cradle, F, operated as desc ibed, in combination with the continuously revolving rake, B, for the pur- pose set forth.

1,964.—Harvester.—Edwin Jones, Cleveland, Ohio, as- signor of Charles Tinker and J. A. Sprague, Man- tua, Ohio. Patented Aug. 4, 1857. I claim, First, Arranging the finger bar, or beam in a mowing ma- chine, upon the right hand side of the frame which supports the driver and gear, and on a line, or nearly so, with the front of said frame, in combination with supporting it in such position so that the entire finger beam, or either end thereof, independent of the other end, and without twisting or straining the joints or connections, can freely rise and fall to conform to the inequalities of the ground, independent of the up and down motions of the up and down motions of the main frame, while the front of the bar, and points of the guards are also free to rock or roll up, and then back again to the same horizontal plane, upon an axis of motion near the back of the finger beam, and independent of the up and down motions of the hinged support from which the finger beam de- rives its progressive motion.

Second, The combination with the main frame of a mowing ma- chine, of a narrow finger beam, for sustaining a reciprocating cutter bar and cutters so hinged and supported that the entire bar, or either end thereof, independent of the other end, and without twist- ing or straining the joints or connections, can freely rise and fall to conform to the inequalities of the ground, independent of the up and down motions of the main frame, while the front of the bar, and points of the guards are also free to rock or roll up, and then back again to the same horizontal plane, upon an axis of motion near the back of the finger beam, and independent of the up and down motions of the hinged support from which the finger beam de- rives its progressive motion.

Third, The combination in a mowing machine with the shoe which supports the heel of a hinged or floating finger beam free to rise bodily or at either end, as described, of a knuckle or stop, separate from the hinge, to prevent downward deflection when the beam is raised, substantially as described.

Fourth, The combination with the main frame of a mowing ma- chine, of a hinged floating finger beam free to rise bodily or at either end, as described, independent of the up and down motions of the main frame, so combined therewith as that the driver from his seat on the machine can elevate at pleasure the finger beam and cutters in nearly a horizontal position, to pass obstructions.

Fifth, The combination in a mowing machine, with a floating hinged finger beam, free to rise bodily, or at either end, as described, independent of the up and down motions of the main frame, of a mechanism so constructed and arranged that the driver from his seat on the machine can elevate not only the entire beam, but either end thereof at pleasure, to pass obstructions.

Sixth, The combination with a hinged finger beam in a mowing machine, of a hinged lever and small groover beam, in such a manner that the joint or outer end of the finger beam can be elevated above the heel to pass obstructions, and the weight thereof thrown upon the small wheel which serves as the fulcrum of the lifting lever.

Seventh, Hinging the shoe to which the heel of the finger beam is attached in a mowing machine, to a support which extends back and divides, and is in turn hinged to the frame which supports the gearing by its two ends or branches, whereby said hinged support is rendered more firm and secure.

Eighth, The combination of lever, X, wheel, Y, and rod, A, with hinged lever, Z, when applied to a hinged floating finger beam, sub- stantially as and for the purposes set forth.

Ninth, The combination of the main frame, A, hinged floating finger beam, draft tongue and wheels, B and C, substantially as described.

Tenth, The combination of lever, X, wheel, Y, and rod, B, with hinged lever, Z, when applied to a hinged floating finger beam, sub- stantially as and for the purposes set forth.

Eleventh, The arrangement of the pendant, K, with the pitmen, I and L, as and for the purposes set forth.

Twelfth, The combination and arrangement of the gears, C, D, D', and G, G', substantially as set forth.

1,965.—Magazine Fire-arm.—Edward Stabler, Sandy Springs, Md. Patented March 14, 1865. I claim, First, Limiting or arresting the movement of the carrier block, in the class of fire-arms herein described, at any desired point, for the purpose of converting the arm from a repeater into a single loader, substantially as described.

Second, I claim the lever, B, or its equivalent, in combination with the rotating carrier block, of a magazine gun, operating as and for the purposes herein set forth.

1,966.—Ship Knee.—Robert Thomas, Buffalo, N. Y. Patented July 19, 1864. I claim a ship knee, made partly of wood (as represented by the chuck, H), and partly of iron (as represented by the iron-plate piece, G), for the purposes and substantially as set forth.

1,967.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented April 17, 1855. Reissued April 26, 1859. I claim, First, In a harvesting machine where the cutting appar- us is placed oppost to or nearly oppost the center of the driving wheel, so constructing the main frame that the rear cross timber shall project inwardly at an angle towards the center line of the machine, substantially as represented by the cross timber, A3.

Second, A gear frame, C, having suitable bearings formed there- for supporting the crank, or hub, wheel shafts with the gear- ing mounted thereon, in a compact working position, substantially as described.

Third, A gear key, F, in combination with the gearing shaft, D2, constructed and used substantially as described.

1,968.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented April 17, 1855. Re-issued April 26, 1859. I claim a hinged supporting piece, H, having sockets, H', formed therein for holding diverging fingers, B, thereby forming a skeleton track clearer, substantially as described.

1,969.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented April 17, 1855. Reissued April 26, 1859. I claim, in combination with a cutting apparatus placed in rear of a line drawn through the front of the driving wheel, and a grain platform having a side delivery, a seat for the raker, supported upon or by the main frame, and located behind the line of the cutters and at the side of the grain platform, and so arranged that the raker may sit facing the falling grain and deliver the grain at the side of the platform in the rear of the main frame, substantially as set forth.

1,970.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented April 17, 1855. Reissued April 26, 1859. I claim, First, Providing and using a strengthening bar in the con- struction of a hinged floating finger beam, to give additional strength and stiffness to the platform, for the purposes and substan- tially as described.

Second, The combination of a removable grain platform, with a short finger bar and main frame of a mowing machine, substan- tially as described, for the purpose of converting a mowing machine into a reaping machine, without change of finger bar or cutters, the combination and connection being such that the strength of the grain platform is united with the strength of the finger bar to prevent the platform or finger bar from materially bending or springing when the machine is used for reaping grain, substantially as described.

1,971.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented April 17, 1852. Reissued April 26, 1859. I claim, First, Forming a recess in the outside shoe in rear of the cutters, substantially as shown at K, and for the purpose set forth.

Second, The locks or catches, Z, Z', formed in the clamp, for the purposes set forth.

1,972.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented July 20, 1855. Reissued July 8, 1856, and again reissued April 19, 1859. I claim, First, So connecting the cutting apparatus, having a shore and separate finger bar to the main frame of the machine that it may be adjusted to different heights for reaping, or lowered to the ground, without changing the position of the main frame, substantially as described.

Second, Connecting the finger bar to the grain side of the main frame and supporting it by one end only, by means of an adjustable device and the inwardly projecting ends of the cross pieces of the main frame, substantially as set forth.

Third, The use of K, and locking bolts, I, applied and used for the purpose and substantially as set forth.

1,973.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented July 20, 1852. Reissued July 8, 1856, and again reissued April 19, 1859. I claim, First, Making the outer and inner shoes broader in front of the finger bar as shown at J and m', for the purpose of bracing the guard fingers laterally.

Second, So constructing skeleton guard fingers and arranging them on the finger bar that they will mutually brace and support each other forward of the finger bar, substantially as set forth.

Third, The bearing piece, Z, placed between the outer shoe and guard finger for the support of the outer end of the cutter bar, substantially as described.

1,974.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented July 20, 1852. Reissued July 8, 1856, and again reissued April 19, 1859. In combination with a short finger bar and a shoe by which it is connected to the main frame of the machine and a cutting apparatus located in rear of a line drawn through the front of the driving wheel, a quadrant-shaped platform so arranged that the cut- ter may be delivered therefrom at the side of the platform and in rear of the main frame, substantially as set forth.

1,975.—Harvester.—Cyrenus Wheeler, Jr., Poplar Ridge, N. Y., assignee by mesne assignment of E. B. For- bush. Patented July 20, 1852. Reissued July 8, 1856, and again reissued April 19, 1859. I claim, First, In combination with a cutting apparatus and a quadrant-shaped grain platform, and both located in the rear of a line drawn through the front of the driving wheel, a rake, supported by a pivoted connection on the main frame in rear of the axis of the driving wheel, and so arranged that it will sweep over the platform and deliver the grain in the rear of the main frame, substantially as set forth.

Second, A movable fulcrum upon which the rake is suspended, and operated in the manner substantially as described.

EXTENSIONS.

Machine for Arranging and Feeding Screw Blanks.— Thomas J. Sloan, New York City. Patented Feb. 25, 1851. Reissued March 29, 1853, and extended Feb. 24, 1865. I claim the lifters which select and lift the blanks, etc., from the hopper, substantially as specified, in combination with ways or con- duc- tors, or the equivalents thereof, substantially as specified, into or onto which the blanks, etc., are transferred, as specified.

And I also claim giving the lifters, or to the inclined or their equiva- lents, a lateral motion, in combination with a stopper detector, sub- stantially as specified, for the purpose of arresting the operation of the lifters until a further supply is required, as specified.

And, finally, I claim the sliding carrier, with its recess for receiv- ing and holding the screw blanks, substantially as specified, in com- bination with the spring fingers, substantially as specified, for taking the screw blanks from the carrier and presenting them to the jaws, as specified.

Steam Engine Governor.—Junius Judson, Rochester, N. Y. Patented March 4, 1851. Reissued Feb. 28, 1865, and extended March 3, 1865. I claim as my invention communicating the action of a governor to its valve or valves, gate, or equivalent regulating device, in such a manner that when the speed of the engine or motor becomes low, either from increase or resistance to overcome, or from diminution of pressure of the motive power, the said valve or equivalent will be accelerated or caused to move through a comparatively large space, to uncover or cover a comparatively large area of the valve or gate opening, so as to add to, or take from, the engine or motor, by a given change of its speed, comparatively large amounts of power; and, also, when the speed becomes high, either from dimunition of resistance to overcome, or from increase of pressure of the motive power, the said valve or equivalent will be by a like change of speed retarded or caused to move through a comparatively small space, to uncover or cover a comparatively small area of valve opening, so as to add to or take from the engine or motor comparatively small amounts of power, for the purpose of securing, as nearly as may be, uniform speed of the engine or motor, under all variations of the power of resistance, substantially as herein set forth.

Steam Drilling Machine.—Joseph W. Fowle, Boston, Mass. Patented March 11, 1851, and extended March 6, 1865. I claim the combination of a direct action steam drill, in which both engine and drill are mounted on a frame, which slides in a swnging frame, capable of being adjusted in any required position with the apparatus, substantially as hereinabove described, which is connected with and actuated by the crosshead of the engine, for causing the sliding frame to move along the swinging frame toward the rock.

Design for a School Desk.—Wm. P. Uhlinger, Philadel- phia, Pa. Patented Oct. 8, 1861. Extended March 20, 1865. I claim the ornamental and construction of the cast-iron uprights, B, constituting, in combination with a table, C, back, D, and seat, a new and original design for a school desk, as above set forth and represented in the annexed drawing.

Window-curtain Fixtures.—Silas S. Putnam, Dorches- ter, Mass. Patented April 15, 1851. Reissued March 31, 1857. Extended March 23, 1865. I claim attaching the curtain to its roll by a piece or strip, which fits into a groove in the roll, and is secured thereto by caps at the ends, in the manner substantially as herein set forth.

Compound Metallic Door for Vaults, Safes, Etc.—Ira L. Cady, New York City. Patented April 29, 1851. Extended April 29, 1865. I claim a door or wall for a vault or safe, made by securing to each other, at a certain distance apart, two plates of sheet metal, pro- vided with a rim or curb, and filling the vacant space between them with imalleable cast-iron poured in white melted, substantially in the manner herein described.

Limekiln.—Richard E. Schroeder, Rochester, N. Y. Patented May 6, 1851. I claim the flues, d, d, encircling the cupola, and provided with ap- ertures or flues, e, e, e, for admitting the heat and flame to the action upon the limestone from various points, substantially as de- scribed, in combination with the air chamber, k, encircling the cu- pola, as described, and

I also claim the aperture, p, and passage therefrom, for saving the heat arising from the manufactured lime while being removed, all operating conjointly in the manner and for the purpose herein fully set forth.

Manufacture of India-rubber.—Henry B. Goodyear, New Haven, Conn., administrator of Nelson Goodyear, deceased. Patented May 6, 1851. Reissued (No. 556) May 18, 1858. Extended May 5, 1865. I claim the combining of sulphur and india-rubber or other vul- canizable gum, in proportions substantially as specified, when the same is subjected to a high degree of heat, substantially as speci- fied, according to the vulcanizing process of Charles Goodyear, for the purpose of producing a substance or manufacture possessing the properties or qualities substantially such as described; and this I claim whether the said compound of sulphur and gum be or be not mixed with the other ingredients, as set forth.

Manufacture of India-rubber.—Henry B. Goodyear, New Haven, Conn., administrator of the estate of Nelson Goodyear, deceased. Patented May 6, 1851. Reissued (No. 557) May 18, 1858. Extended May 5, 1865. I claim the new manufacture or substance hereinabove described, and composed of india-rubber or other vulcanizable gum; and sul- phur, in proportions substantially such as specified, and, when incorporated, subjected to a high degree of heat, as set forth, and this I claim whether other ingredients be or be not used in the prepa- ration of the said manufacture, as herein described.

Mode of Preventing the Entrance of Dust, Etc., into Railroad Car.—Edward Hamilton, Chicago, Ill., as- signor to Nelson Goodyear, deceased. Patented May 27, 1851. Reissued Feb. 15, 1853. Extended May 8, 1865. I claim inducing outward currents of air through the windows of

railroad cars to prevent the entrance of dust, etc., by the action of the surrounding air on deflectors combined with the sides of the car substantially as specified, and operating on the principle set forth.

Coffin.—An Act for the Relief of the Heirs of Salmon D. Plisk, deceased. Approved Feb. 17, 1865. Patented Nov. 14, 1848. Reissued March 6, 1860:

First, Claims the manufacturing of coffins of cast or raised metal, when made substantially in the form and manner above described; that is to say, corresponding nearly with the human form, and making the coffin in two nearly equal parts or shells united by a flanch, substantially as set forth.

Second, The manufacture of coffins of raised or cast metal, in two shells each, formed with recesses of greater or less depth, which shall respectively constitute a portion of the receptacle of the corpse, thus approximating the coffin more nearly in shape to that of the human body than could otherwise be done.

Revolving Frame for Drying Fruit and other articles.—J. C. Dickey, Saratoga Springs, N. Y. Patented June 3, 1851:

I claim the center, E, with three or more arms to support a cord, netting or other cloth, for the purpose of exposing cloths, clothes, glue, fruits, seeds, etc., with facility to be dried; so constructed that the arms may be raised up and brought together, to expedite the collection of the articles dried, and so that it may be conveniently removed when not in use, substantially as described.

PATENTS GRANTED FOR SEVENTEEN YEARS. MUNN & COMPANY,

In connection with the publication of the SCIENTIFIC AMERICAN, have acted as Solicitors and Attorneys for procuring "Letters Patent" for new inventions in the United States and in all foreign countries during the past seventeen years. Statistics show that nearly ONE-THIRD of all the applications made for patents in the United States are solicited through this office; while nearly THREE-FOURTHS of all the patents taken in foreign countries are procured through the same source. It is almost needless to add that, after seventeen years' experience in preparing specifications and drawings for the United States Patent Office, the proprietors of the SCIENTIFIC AMERICAN are perfectly conversant with the preparation of applications in the best manner, and their transaction of all business before the Patent Office; but they take pleasure in presenting the annexed testimonials from the three latest ex-Commissioners of Patents.

Messrs. MUNN & Co.—I take pleasure in stating that, while I held the office of Commissioner of Patents, MORE THAN ONE-FOURTH OF ALL THE BUSINESS OF THE OFFICE CAME THROUGH YOUR HANDS. I have no doubt that the public confidence thus indicated has been fully deserved, as I have always observed, in all your intercourse with the office, a marked degree of promptness, skill, and fidelity to the interests of your employers. Yours very truly, CHAS. MASON.

Judge Mason was succeeded by that eminent patriot and statesman, Hon. Joseph Holt, whose administration of the Patent Office was so distinguished that, upon the death of Gov. Brown, he was appointed to the office of Postmaster-General of the United States. Soon after entering upon his new duties, in March, 1859, he addressed to us the following very gratifying letter.

Messrs. MUNN & Co.—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents, while I had the honor of holding the office of Commissioner. Your business was very large, and you sustained (and I doubt not justly deserved) the reputation of energy, marked ability, and uncompromising fidelity in performing your professional engagements. Very respectfully, your obedient servant, J. HOLT.

Hon. Wm. D. Bishop, late Member of Congress from Connecticut, succeeded Mr. Holt as Commissioner of Patents. Upon resigning the office he wrote to us as follows:

Messrs. MUNN & Co.—It gives me much pleasure to say that, during the time of my holding the office of Commissioner of Patents, a very large proportion of the business of inventors before the Patent Office was transacted through your agency; and that I have ever found you faithful and devoted to the interests of your clients, as well as eminently qualified to perform the duties of Patent Attorneys with skill and accuracy. Very respectfully, your obedient servant, Wm. D. BISHOP.

THE EXAMINATION OF INVENTIONS.

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

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E. A. H., of Ill.—Allotropic sulphur gradually returns to its normal condition. The new atomic weights adopted by Miller, we judge, are coming into general recognition.

A. M. D., of Mass.—Perhaps niter might be separated from maple sugar by crystallizing the sugar. The best plan would be not to put any niter into the sugar.

W. A. B., of Conn.—There is much difference of opinion in regard to the best kind of water wheel. In the cotton manufactories of New England undershot breast wheels were in almost universal use, but they are now being superseded to a great extent by turbines. All the best turbines you will find illustrated in the SCIENTIFIC AMERICAN.

W. W., of Me.—Any substance which will coagulate vegetable albumen tends to preserve timber from decay. Corrosive sublimate is the most efficient, as it gives up its chlorine, which combines with the albumen to form muriate of albumen. Perhaps the chloride of zinc acts in the same way.

A. S., of Conn.—The only use of oil on a belt is to make it soft and pliable, when it gets dry and hard; besides, there is a certain glutinous consistency to coarse, heavy oils, which, in connection with the dirt adnat in the shop, cause the belt to adhere well to the surface of the pulley.

W. F. R., of Mass.—The training requisite for a person desiring to become a locomotive engineer or engine-driver, is to work for three or four years where such machines are built, keep his eyes open, his ears open, read and study all he can, ask questions, and, in short, become thoroughly conversant with his prospective business. If he cannot get a situation then he is not worth one, and will never be. We will add that the common way is to "fire" on an engine for six months; at the end of that time the man that never saw a locomotive before is supposed to be capable of running one.

A Reader, of Me.—We can only direct you to the columns of the SCIENTIFIC AMERICAN for a practical recipe on a tin dip.

W. A. S., of N. Y.—The beverage called soda water is water impregnated with carbonic acid. Water has the property of absorbing its own volume of carbonic acid gas at all pressures, and the beverage is prepared by compressing the gas with a force pump, thus multiplying the quantity in a given volume, or by simply generating the gas in a close vessel containing the water in such quantity as to produce pressure. Carbonic acid taken into the lungs produces immediate death, but in the stomach it is agreeable, and congenial to most systems.

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