red light, undoubtedly the effect of contrast. The thickness of the superposed mass was not enough to show a greater effect than the almost complete absence of the red, and a great diminution of the yellow. The ice was perfectly compact, limpid, and with few air bubbles.

Origin of the Connecticut Clock Business.

Bishop, in his "History of American Manufactures," says that the wooden clock manufacture was commenced in Waterbury, Conn., by James Harrison, in 1790, on whose books the first is charged January 1, 1791, at £3 12s. 8d. In East Windsor the brass clock manufacture was carried on by Daniel Burnap. Specimens which are still preserved are said to be nowise inferior in workmanship to the best English clocks of that or any later period. Clocks were also made in East Hartford by a Mr. Cheeny. In 1793, Eli Terry who had been instructed by Burnap in the business as practiced by him and Cheeny, removed from East Windsor, where he had carried on clock-making, to Plymouth, in Litchfield County. His subsequent enterprise and improvements in the art in that place entitle him to be considered the parent of the manufacture in Connecticut. At that time, Thomas Barnes, of Litchfield, and Gideon Roberts, of Bristol, were also known as clock-makers. The kinds of clocks made by these were brass and wooden clocks, with long pendulums, and their price was, for a wooden clock and case, from $18 to $48, the higher priced ones having a brass dial and dial for seconds, and the moon's age, and a more costly case. Brass clocks with a case, cost from $38 to $60. So limited was the sale at those prices, that three or four hundred constituted a stock in trade, and they were carried out for sale by the maker on horseback, the case being procured by the purchaser at from $5 to $30, according to his taste. Terry made both kinds, using a hand engine for cutting the teeth of the wheels and pinions, and a foot lathe for the turned work. In November, 1797, he patented an improvement in clocks, watches, and time-pieces, covering a new construction of an equation clock, showing the difference between apparent and mean time. In 1802, in which year Willard of Boston took a patent for his time-pieces, Terry began the business on a larger scale by water power, and, five or six years after, his success in making them by the thousand, which had been ridiculed as chimerical, enabled him greatly to extend the manufacture, which others now commenced on the wholesale system. In 1814 he introduced a new era in the business by commencing on the Naugatuck river the manufacture of the shelf or mantel clock, which he patented in 1816. The cheapness of these created a wide demand. Several improvements made by him in the mechanism, and the later progress in machinery generally, have increased the annual production in that State to hundreds of thousands, and given to every household a clock, equal to the old ones, at a cost of $2 and upward. His descendants have been engaged in the business to the present time, and his pupil, Chauncey Jerome, since 1821.

Apart from the importance of horological machines in every department of life, and especially in relation to science and business, there are few of the mechanic arts which have furnished more numerous and striking examples of great and useful inventions among its members than the clock and watchmaking business. Many, both in Europe and America, have first exercised in this way their ingenuity, which has afterward conducted to discoveries of universal utility. Rittenhouse, Fitch (also a native of Connecticut), Whittemore, who, before any of the above, also constructed without a model, an efficient wooden clock, Dr. Franklin, and others, might be named. Clock-makers are said to have been the first who employed *special machines* for their manufactures, the wheel-cutting engine having been invented by Dr. Hooke about 1655, and the screw-cutting lathe by Hindley, a clock-maker of York, England, in 1741. The fusee engine and slide rest, the value of which are known to all mechanicians who use metal, are of later introduction, although the latter, in an imperfect form, was used at Rome in 1648, and attained its present form in 1772.

The Assembly of Connecticut, in October, 1783, awarded a patent for fourteen years to Benjamin Hanks, of Litchfield, for a self-winding clock. It was to wind itself by the help of the air, and to keep more regular time than other machines. The principle was made use of in New York and elsewhere.

Practical Application of the Transparency of Metals.

Metals have generally been considered as opaque bodies, not permitting the passage of light through their substance. It is, however, very easy to show, by the use of an extremely thin film, as of gold or silver deposited upon glass, that light passes quite freely through it, and this property has latterly been turned to very good advantage. One of the earliest applications was as a substitute for the ordinary soot-blackened or colored glass, used in observing the sun during an eclipse, or at other times; and the silvering of the objective glass of the great telescope of the Paris Observatory has permitted an investigation of the sun's disk such as could not otherwise be prosecuted. Viewed through a lens, or even a plane glass thus silvered, the sun appears of a soft, blue'sh color, very sharply defined against a black background, formed of the sky. All the peculiarities of the solar image, the different spots and foci in their variations of intensity, and the less luminous marginal regions, are shown with the greatest clearness, and even the filmiest clouds and vapors which seem to sweep over the disk can be readily perceived. The examination can be kept up any length of time without strain to the eyes. The physiological influence is very different from that of colored glasses, the use of which is sometimes very objectionable. Since all the different rays of light pass through the metal (although greatly tempered) except the outermost red rays, which are excluded, together with the dark heat rays, the silver must be deposited in the usual galvanoplastic or chemical manner, so as to form a very delicate film. Gold and platinum may also be used, but silver possesses several advantages.

This property, in the part of metals, of greatly subduing the rays of light without extinguishing them to any extent, and of excluding almost entirely the rays of heat, is now applied to other practical purposes. Weak eyes can use spectacles thus prepared to the greatest advantage, where colored glasses are not to be thought of. For persons whose business keeps them before a glowing fire, such glasses are invaluable, since the sight is not strained by the light, nor the eye-ball injured by the heat, which is measurably excluded. Screens of glass, to be placed before fires, have also been made on the same principle.

By inserting plates of glass thus treated in the panels of doors, or using them as window panes, it will be easy to observe from within all that is going on outside, while it will be impossible to see into the room unless there be another window on the opposite side, so as to show through. The application of the silver to the glass converts it into a mirror, which reflects the light, and to the observer is as opaque as mirrors are generally. The use of such windows wherever an observer within has occasion to notice persons outside without being seen, will be readily understood in the case of prisons, workshops, stores, etc., where, however, as already remarked, there must be but the one opening. The platinized glass has been found most convenient for this purpose.

These few illustrations of a general principle, capable of a great variety of practical applications, show, at the same time, how often the man of science, seeking for the solution of some problem in his theoretical investigations, reaches a result capable of a thousand uses in every day life, which are eagerly caught up and turned to profitable account.—*Phil. Ledger.*

Brunel's Mishaps.

Although Brunel died at the comparatively early age of fifty-three, it is even matter of surprise that he lived so long. He had more perilous escapes from violent death than fall to the lot of most men. We have seen that at the outset of his career, when acting as assistant engineer to his father, in the Thames Tunnel, he had two narrow escapes from drowning by the river suddenly bursting in upon the works. Some time after, when inspecting the shafts of the railway tunnel under Box Hill, he was one day riding a shaggy pony at a rapid pace down the hill, when the animal stumbled and fell, pitching the engineer on his head with great violence; he he was taken up for dead, but eventually recovered. When the Great Western line was finished and at work, he used frequently to ride upon the engine with the driver, and occasionally he drove it himself. One day, when passing through the Box Tunnel upon the engine at considerable speed, Brunel thought he discerned between him and the light some object standing on the same line of road along which his engine was traveling. He instantly turned on the full steam and dashed at the object, which was driven into a thousand pieces. It afterwards turned out to be a contractor's truck, which had broken loose from a ballast train on its way through the tunnel. Another narrow escape which he had was on board the *Great Western* steamship, where he fell down a hatchway into the hold, and was nearly killed. But the most extraordinary accident which befell him was that which occurred while one day playing with his children. Like his father, Sir Marc, he was fond of astonishing them with sleight-of-hand tricks, in which he displayed considerable dexterity; and the feat which he proposed to them on this occasion was the passing of a half-sovereign through his mouth out at his ear. Unfortunately, he swallowed the coin, which dropped into his windpipe. The accident occurred on the 3d of April, 1843, and it was followed by frequent fits of coughing, and occasional uneasiness in the right side of the chest; but so slight was the disturbance of breathing that it was for some time doubted whether the coin had really fallen into the windpipe. After the lapse of fifteen days, Sir B. Brodie met Mr. Key in consultation, and they concurred in the opinion that most probably the half-sovereign was lodged at the bottom of the right bronchus. The day after, Mr. Brunel placed himself in a prone position on his face upon some chairs, and bending his head and neck downwards, he distinctly felt the coin drop towards the glottis. A violent cough ensued, and on resuming the erect posture he felt as if the object again moved downward into the chest. Here was an engineering difficulty, the like of which Mr. Brunel had never before encountered. The mischief was purely mechanical; a foreign body had gone into his breathing apparatus, and must be removed, if at all, by some mechanical expedient. Mr. Brunel was, however, equal to the occasion. He had an apparatus constructed, consisting of a platform which moved upon a hinge in the center. Upon this he had himself strapped, and his body was then inverted, in order that the coin might drop downward by its own weight, and so be expelled. At the first experiment the coin again slipped towards the glottis, but it caused such an alarming fit of convulsive coughing and appearance of choking that danger was apprehended, and the experiment was discontinued. Two days after, on the 25th, the operation of tracheotomy was performed by Sir Benjamin Brodie, assisted by Mr. Key, with the intention of extracting the coin by forceps, if possible. Two attempts to do so were made without success. The introduction of the forceps into the windpipe, on the second occasion, was attended with so excessive a degree of irritation that it was felt the experiment could not be continued without imminent danger to life. The incision in the windpipe was, however, kept open by means of a quill or tube, until May 13, by which time Mr. Brunel's strength had sufficiently recovered to enable the original experiment to be repeated. He was again strapped to his apparatus; his body was inverted; his back was struck gently, and he distinctly felt the coin quit its place on the right side of his chest. The opening in the windpipe allowed him to breathe while the throat was stopped by the coin, and it thus had the effect to prevent the spasmodic action of the glottis. After a few coughs the coin dropped into his mouth. Mr. Brunel used afterwards to say that the moment when he heard the gold piece strike against his upper front teeth, was perhaps the most exquisite in his whole life. The half-sovereign had been in his windpipe for not less than six weeks!

OFFICIAL REPORT OF PATENTS AND CLAIMS

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70,675.—MEAT MANGLER.—A. T. Adams, Indianapolis, Ind.

I claim the combination of the two jaws with the plates, l l, bars, m m, and springs, n n, all arranged and operating as and for the purpose specified.

70,676.—MOTH-PROOF CASE.—James W. Aikin and John H. Stone, Philadelphia, Pa.

We claim a sheet metal moth-proof case for a lady's furs, having the perforated central cylinder A, and the recess, b', in combination with the cylinder, B and the elastic band ring, b'', the said parts being constructed, arranged, and combined to operate together substantially as and for the purpose described.

70,677.—NEEDLE MACHINE.—Walter Aiken, Franklin, N. H.

I claim the machine or combination, substantially as described, for the purpose set forth, that is, as composed of the rotary cutter, A, the grooved rest, E, the series of rotary arbors, K, their carrier or wheel, I, and operative mechanism, the shaft, F, and the mechanism for revolving and moving it longitudinally, and the bolt, s, and mechanism for operating such bolt, substantially as explained.

70,678.—MACHINE FOR MAKING THE TONGUES OF MACHINE KNITTING NEEDLES.—Walter Aiken, Franklin, N. H.

I claim the combination of the carriage, C, the feeder, G, the bowl-forming dies, w v, and the flattening dies, d'' e', all provided with mechanism for operating them, substantially as described.

I also claim the combination of the carriage, C, the feeder, G, the nicking and bowl-forming dies, n' o' w' v', and the flattening dies, d'' e', all provided with mechanism for operating them, substantially as set forth.

I also claim the combination of the carriage, the feeder, the bowl-forming dies (or the latter and the nicking dies), and the punch, f', and punch die, g', all provided with mechanism for operating them, substantially as set forth.

I also claim the combination of the carriage, the feeders, the bowl-forming dies (or the latter and the nicking dies), the punch and punch dies, and the rounding dies, h' i', all provided with mechanism for operating them, substantially as specified.

I also claim the combination of the carriage, the feeder, the bowl, the punching dies (or the latter and the nicking dies), the punch and punch die, the rounding dies, and the separting dies, k' l', all provided with mechanism for operating them, substantially as explained.

70,679.—HOT AIR FURNACE.—Biddle Arthurs, Pittsburgh, Pa.

I claim the drum or heater of sheet or plate iron, with an opening in its bottom and front, connecting with a fire space, c, of brick, the edges of the heater or drum around such opening having flanges, i, built into the furnace walls, constructed and arranged substantially as described for the purposes specified.

70,680.—SAW.—James E. Atwood, Trenton, N. J., assignor to himself and Cyrus H. McCormick, New York city.

I claim the tooth, A, when held in its position by ratchet, c c c, for the purpose herein described.

60,681.—CARRIAGE WHEEL.—Charles C. Ayers, Chelsea, assignor to himself and Henry A. Breed, Lynn, Mass.

I claim the combination as well as the arrangement of the metallic annulus or inner tire, D, with the wooden felly and the spokes and hub, as explained.

I also claim the combination as well as the arrangement of the metallic annulus or inner tire, D, with the wooden felly, the hub, spokes, and outer tire as described.

I also claim the combination as well as the arrangement of the metallic annulus, D, the wooden felly, the springs and chambers therein, the spokes, and the hub, as described, the hub, under such a combination of the spokes with it and the felly being suspended from the upper half of the felly and on springs, while the wheel may be in revolution and use.

70,682.—CONSTRUCTION OF SALVERS.—Seth C. Babbitt, Meriden, Conn, assignor to the Meriden Britannia Company.

I claim the mode or process of stiffening the rim or outer edge of a soft-metal or Britannia salver, substantially as described.

I claim a Britannia or soft-metal salver constructed substantially as described.

70,683.—TRUSS.—Charles A. Baker, Auburn, N. Y.

I claim the front pad or plate, E, provided with the rod, A, auxiliary pad, B, and straps, D G and H, all constructed and arranged substantially as and for the purpose set forth.

70,684.—CHALK-LINE REELS.—James Bathgate, Cincinnati, O.

I claim the combined arrangement of the reel, C c, chalk receptacle, D, cap, E, apertures, F G, and line, H, all constructed and employed as and for the purposes specified.

70,685.—MACHINERY FOR LAYING AND TWISTING ROPE.—Stephen Bazin and James A. Bazin, Canton, Mass.

We claim the sliding guide pulley, N, in combination with the crane, M, and the winding reel, O, operating substantially as described for the purpose set forth.

We also claim the rolls, v, so arranged as to revolve simultaneously, in combination with the fleeters, b', and the guide pieces, a', or their equivalents, for the purpose of insuring the equal delivery of the strands, substantially as described.

70,686.—TAPERING DRILL.—Jason A. Bidwell, East Boston, Mass.

I claim, 1st, A twisted reamer, c, which is adapted to serve, in conjunction with a spirally grooved drill, a, for making tapering holes in metal, substantially as described.

2d, The construction of a cutting shoulder, e, upon the shank c', of a twisted reamer, c, substantially as described and for the purpose specified.

70,687.—BED BOTTOM.—Albert Bingham (assignor to Wm. T. Mudget), Newtonville, Mass.

What I claim as my invention in a spring bed bottom is as follows, that is to say, having its bolster piece, D, its series of pins, e, and slats, g, supported by springs, f, so as to be movable vertically together thereon, and so that each slats may move independently of the bolster piece and its guide pins, the whole being substantially as described.

I also claim the improved spring bed bottom as constructed, not only with each of its slats, supported at its foot or lower end on a stationary cross bar, but as having a bolster piece, D, series of pins, e, and slats, g, supported by springs, f, so as to be movable vertically together thereon, and so that each slat may move on its spring independently of the bolster piece and its guide pins, the whole being substantially as specified and represented.

70,688.—MACHINE FOR FINISHING WOOLEN CLOTH.—Edwin Birkenshaw, Ashuelot, N. H.

I claim my improved arrangement of the two teasling cylinders, the shearing mechanism, and their two sets of feed rollers, one teasling cylinder under such arrangement being disposed over the other, as described.

I also claim the combination and arrangement of the series of rollers, D D, etc., with the shearing mechanism, the feed rollers, and the two teasling cylinders, as ranged in manner as described and represented.

I also claim the combination, as well as the arrangement of the bridge, F, the series of rollers, D D, etc., the shearing mechanism, the feed rollers, and the two teasling cylinders, arranged as described, the said feeding cylinders and feed rollers being provided with a series of guide rollers arranged with the n, as described, and the rotary shearer brush and the teasling cylinders being provided with mechanism for operating them, substantially as hereinbefore explained.

70,689.—CAR COUPLING.—Luther Boyd and Philip Kriegbaum, Springfield, Ohio.

We claim the movable head, B, as constructed in combination with stationary head, C, slides, e e, and springs, d d, all arranged and operating in the manner and for the purpose herein set forth and described.

70,690.—EVAPORATION AND VAPORIZATION.—M. S. Bringier Ascension Parish, La.

I claim, 1st, The application of one or more series of tubes of small diameter to the external surface of boilers, kettles, or other vessels, as herein described for the purpose set forth.

2d, The use of a revolving coil of wire gauze, or the equivalent thereof, inside steam-boilers, as herein described for the purpose set forth.

3d. The combination of one or more series of small tubes externally applied to boilers, with an internal revolving coil or cylinder of wire gauze, or its equivalent, as herein described for the purpose set forth.

70,691.—PROCESS FOR EXTRACTING SACCHARINE MATTERS FROM SUGAR CANE.—M. S. Bringier, Ascension Parish, La.

I claim, 1st, Extracting saccharine matter from sugar cane, or other vegetables containing it, by maceration and disintegration, as herein described, when the same is effected by the process and apparatus I have described, or any other which is substantially the same in its mode of operation.

2d, The combination of the receiving-boiler, A, steam pipe, B, pipes H, C, and D, with the shaft, E, when the latter is provided with the disintegrating appliances herein described, for the purpose set forth.

70,692.—MOP WRINGER.—Oscar M. Brooks and Elisha J. Matteson, Janesville, Wis.

We claim, 1st, The inclined supports, e and h, when pivoted at opposite ends of the horizontal yokes, H, and used to support two parallel and similarly operating rolls, B B, substantially as described.

2d, The combination and arrangement of a treadle, F, pivoted at the ends of two horizontal yokes, H, with the connecting links, f and g, springs, i, inclined supports, e and h, and horizontal yokes, H, when the whole are constructed, arranged and used substantially as described.

70,693.—WASHING MACHINE.—Alexander R. Campbell, Cheltenham, Mo.

I claim the rock shaft, e, semi-circular corrugated dasber, E, corrugated dash board, g, smooth dash board, h, shafts, k, cross bar, M, braces, n, cover, o, standards, d, dove-tailed slots, q, and the corrugated circular and square ends of a washing machine, all in combination, when constructed and operating substantially as shown and specified.

70,694.—MODE OF ATTACHING FERRULES TO HANDLES.—Asa L. Carrier, Washington, D. C.

I claim the ferrule, b, constructed and applied to tool handles, umbrellas and canes, substantially as described and operating as and for the purposes set forth.

70,695.—HORSE HAY FORK.—William Carroll, Hillsdale, Mich., assignor to himself and S. H. Rhodes, Clyde, Ohio.

I claim the toggle joint, E, springs, D, and nibs, I, in combination with the tubular shaft and rod, substantially as and for the purpose set forth.

70,696.—CAR TRUCK.—S. A. Chase (assignor to himself and Stephen Smith), Boston, Mass.

I claim, 1st, The combination with the main axles and wheels of a car truck of the upper rollers when supported in elongated bearings, substantially as and for the purposes described,

2d, The combination with the journals, c c, of their elongated bearings and lubricating chambers, substantially in the manner and for the purposes set forth.

70,697.—JOURNAL BOX FOR CARS.—G. H. Clemens, Baltimore, Md., assignor to himself and Henry A. Chadwick, Washington, D. C.

I claim, 1st, The hollow box, E, having the blocks of wood arranged therein, said box being formed spherical on its upper surface to permit of its adjusting itself to the journal, as herein described.

2d, In combination with the box, E, constructed as described, I claim the case composed of the parts, G and H, constructed as set forth.

70,698.—CHAIR.—Harrison Cole, Cincinnati, Ohio.

I claim the three-legged chair standard, A, in combination with the brace, A, and the lugs, C C C and C' C' C', for attaching it to the floor and chair bottom, substantially as shown.

70,699.—DOOR AND WINDOW FASTENER.—Washington J. Corthell and Philip Richards, Boston, Mass.

We claim the combination and arrangement of the knob and shank, d and c, the projection, f, a d the spring, h, with the bolt, b, constructed with its recess, e, moving back and forth in the case, a, substantially in the manner and for the purpose above set forth.

70,700.—HORSE HAY FORK.—J. S. Culver, Springport, N. Y.

I claim the attaching of shoulder pieces to the main stem of the hay elevating fork, substantially as and for the purpose described.

70,701.—BRACKET FOR LAMPS.—Robert Devereux (assignor to himself and Bernard H. Muehle), Buffalo, N. Y.

I claim the circular rim, A, having an opening, D, for the purpose and substantially as herein set forth and described.

70,702.—BLIND STAPLE.—Frank Douglas, Norwich, Conn.

I claim as a new article of manufacture a blind staple of corrugated wire, as herein described.

70,703.—BLUING PAPER FOR LAUNDRY PURPOSES.—Theodore Dreidel, Cincinnati, Ohio.

I claim the prepared bluing paper for laundry purposes, substantially as set forth.

70,704.—MODE OF PRODUCING HYDROGEN GAS.—Cyprier Marie Eessié Du Motay and Charles Raphael Maréchal, Metz, France.

We claim the method of and means for producing or generating hydrogen gas, substantially as herein set forth and described.

70,705.—MODE OF PRODUCING OXYGEN GAS.—Cyprier Marie Eessié Du Motay and Charles Raphael Maréchal, Metz, France.

We claim the method of and means for obtaining oxygen gas from atmospheric air, substantially as and for the purposes herein set forth and described.

70,706.—CLOTH-FOLDING MACHINE.—Henry Dunphy, New Yorkcity.

I claim, 1st, The arrangement for holding the folders in the machine consisting of the clamps, e, in combination with the cheeks a a, of the holders, B, the whole constructed and operating substantially as described and specified.

2d, The rollers, F F, provided with narrow rings of leather, rubber, or other similar material, in combination with the folding apparatus, substantially as described and specified.

3d, The hinged ironer, D, in combination with the folding apparatus, substantially as described and specified.

4th, The laterally and back-and-forward adjusting, retaining, and stretching apparatus consisting of the roller, n, bar, p, and traversing blocks, o and r r, in combination with this apparatus, substantially as described and specified.

5th, The roller, n, tapering toward both ends for spreading and stretching the cloth in combination with the laterally and back-and forward adjusting mechanism and the folding apparatus, substantially as described and specified.

70,707.—STEAM ENGINE.—Charles E. Emery, Brooklyn, N. Y.

I claim, 1st, Lining the interior surfaces of the cylinders of engines operated by steam or heated gas with glass, porcelain, enamel, or equivalent substance, in manner substantially as described to produce the results specified.

2d, The combination of the cylinder, X, with the cylinder, N, or its equivalent.

3d, The elongated piston, A, in combination with the lining or protecting material, x x.

4th, The combination of the pipe, b, with the piston rod or trunk, all substantially as and for the purposes herein set forth.

70,708.—PAPER FILE.—William Fallon, Washington, D. C.

I claim the combination of a folding extension back to file binders with flap in front, and india-rubber strap with reinforce on each end and clasps for same, as described herein.

70,709.—SALT SIFTER.—William A. Fenn, Wolcott, N. Y.

I claim, 1st, The araangement of the plate, C, in combination with the bottle or case, A so as to operate in the manner described.

2d. In combination with the above, I claim the arrangement of a spring so as to return the plate, substantially as herein set forth.

70,710.—MOLDS FOR CASTING STEEL INGOTS.—John E. Fry, Johnstown, Pa.

I claim the series of iron ingot molds, c e, in combination with the sand core, a, constructed substantially as hereinbefore described for the purpose set forth.

70,711.—BELT CUTTER.—Moses C. Goodale (assignor to himself and Louis Godder), Lowell, Mass.

I claim the arm, f, with its punch seat, h, when arranged to operate substantially as described and fully set forth.

Also the arrangement and construction of the knife, b, awl, n, and punch, e, in combination with the pliers, k and m, all for the purposes substantially as herein described.

70,712.—APPARATUS FOR BURNING HYDROCARRON OILS.—Mathew T. Gosnell, Baltimore, Md.

I claim the combination and arrangement of a tube or pipes B B, a perforated hearth, B, a valve or valves or inlets (for admission of atmospheric air), D D, with a boiler, A, and furnace, E, or their equivalents, in the manner and for the purposes set forth.

70,713.—DEVICE FOR THE ADJUSTMENT OF LOOKING GLASSES IN DRESSING CASES.—Alfred A. Gray and William C. Hyde, Detroit, Mich.

We claim the hinge and movable hinge plate, the thumb screw, or screw that secures the hinge plate, and the mode of adjustment, substantially as and for the purpose set forth.

70,714.—SASH FASTENER.—E. Herbster (assignor to himself, T. Tripp and E. F. Brown), Chicago, Ill.

I claim, 1st, The combination of wheel, D, having holes, b b etc., with pin, E, arranged to operate in sleeve, F, having slots, h and n, for the purpose of locking sash, substantially as herein set forth.

2d, The combination of wheel, D, spring, C, pin, E, sleeve, F' and key, T arranged to wind said spring up and to fasten sash, substantially as and for the purpose set forth.

70,715.—PAPER-RULING MACHINE.—William O. Hickok, Harrisburg, Pa.

I claim the application thereto of a stationary table, G, so that it will operate in combination with the web, E, cords, F, and feed rolls, D D', substantially in the manner described and set forth for the purpose specified.

70,716.—WRAPPER FOR NEEDLES.—Jason Hill, Astwood, near Redditch, England.

I claim, in combination with a wrapper in or on which needles are placed or stuck, an incision or flap at or near the upper left hand corner for forming a cover for and for gaining access to the tops of the needles, substantially as and for the purpose described.

70,717.—CLUTCH FOR HAY ELEVATORS.—N. D. Hinman, Stepney Depot, Conn.

I claim, 1st, The arrangement described of the levers, L and N, with the yoke, R, and pulley, E, when constructed so as to operate in the manner and for the purpose substantially as set forth.

2d, The combination of the levers L M and N, when constructed so as to operate as and for the purpose specified.

70,718.—POCKET CUTLERY.—Peter S. Hoe, New York city.

I claim the combination, in a single instrument, of a knife, pincers and bodkin arranged to open and shut like a pocket knife, substantially as described and specified.

70,719.—SCRAPER.—William J. Horner, Cincinnati, Ohio.

I claim, in combination with the divided and hinged beam, A B C, shovel, D, and handles, E, the tongue, F, self-locking catch, G, and trigger, L, substantially as and for the purposes set forth.

70,720.—HAY OR COTTON PRESS.—Frank Horton (assignor to himself and Albert Horton), Silver Creek, N. Y.

I claim, 1st, Attaching the draft chains, C, to the follower, B, at points inside of the press frame, A' (the sides of the press box being slotted longitudinally for the passage of the chains) for the purpose described.

2d, Leading the draft chains, C, when placed within the press box over the sheaves, C', and obliquely to or nearly to the center of the windlass shaft, D, in the manner and for the purpose described.

3d, The locking device applied to the top covers, F and G, and side door, I, composed of the lever, H, hinged loop, h1, and staple or hook, h2, substantially as described.

70,721.—MODE OF PREVENTING THE EXPLOSION OF LAMPS.—Edward Howard, Redhill, England.

I claim the application of the long tube, A, before named and the substitution for the usual openings of a groove in the collar of the vase, C, so that by no opening can the flame of the lamp reach the gas in the vase.

70,722.—INVALID BEDSTEAD.—S. P. Johnson (assignor to himself and Charles B. Whittemore), Portland, Me.

I claim, 1st, The double-swinging lever, g, as and for the purposes set forth.

2d, The arrangement of the folding legs, 1 2 3, etc., having the pins on their inner sides, with the folding braces having the longitudinal and transverse slots, as and for the purposes described.

3d, The arrangement and combination of the rod, k, lever, j, ratchet, n, and pin, m, as and for the purposes set forth.

70,723.—CORN-POPPER.—Edward G. Kinsley, Stoughton, Mass.

I claim the corn-popper, as made with the perforated divisional partition, B, extended across its box, A, of woven wire, substantially as described, and for the purpose as specified.

70,724.—WATCH ESCAPEMENT.—William H. Lamb, San Francisco, Cal.

I claim, 1st, The construction of an escapement for timepieces, in such a manner as to pass the teeth upon opposite sides of the balance staff, thereby giving an impulse on both the right and left vibration, substantially as herein described.

2d, Unlocking pin, g, from the teeth, n, of the escape wheel, by the the liberating pin, on the balance staff coming in contact with the end of the detent lever, d, substantially as described; and,

3d, The combination of the wheels, D and E, operating on each, side of the balance staff by means of the notched rollers, b and c, or their equivalent, and the liberating pin, i, operating on the end of the detent lever, d, and the pin, g, the whole operating as and for the purpose herein specified and described.

70,725.—CHURN.—C. H. Lee, Oskaloosa, Iowa.

I claim the churn, A, provided with a turret, in combination with a mouth piece, B, so constructed as to admit a free circulation of air in the churn, and at the same time prevent the cream from escaping, substantially as herein set forth and described.

70,726.—BLIND FASTENING.—Goodrich Lightfoot (assignor to himself, and Joseph B. Lightfoot), Elgin, Ill.

I claim the jointed rod, L, in combination with hinges, e and e", when constructed and operated substantially in the manner and for the purpose specified.

70,727.—INSULATOR FOR LIGHTNING-RODS.—Thomas J. Lockhart and Josiah Locke, Pittsburg, Pa.

We claim the application to lightning-rod insulators of the metallic shank, E, as herein described, or any other substantially the same, and which will produce the intended effect.

70,728.—SAW.—James K. Lockwood, Alpena, Mich.

I claim a circular saw, constructed with more or less slots, D, upon radial lines from the eye toward the periphery, and terminating in holes, C, in combination with the oblong holes or slots, E, for the purposes substantially as set forth.

70,729.—CAR COUPLING.—Samuel L. Loomis, Byron, N. Y.

I claim, in a draw-head or bumper of a railroad car, a spring so constructed and arranged as to serve the purposes of sustaining the pin until the link enters, and holding the link horizontal for the purpose of coupling, substantially as described.

And, in combination with a spring constructed and arranged as above claimed, I claim a coupling-pin with a shouldered end or point, as and for the purposes set forth.

And, in combination with a pin having a shouldered near the point, I claim a projection or plate, H, in the bumper or draw-head.

70,730.—HARVESTER.—Charles W. Marsh and William W. Marsh, Shabbona, Ill.

We claim, 1st, The arrangement of the several pulleys, C E, and G, with tightening or adjustable pulley, D, so that an open belt, H, may give motion to both drums, K and L, of band of rakes, M, and revolving platform, N, substantially as and for the purpose described.

2d, We claim the adjustable pulley, D, on slide, d, working in groove in plate, f, as described.

3d, We claim the adjustable frame, A, when used in connection with the tightening or adjustable pulley, D, substantially as and for the purpose specified.

70,731.—RAILROAD TRACK.—Henry McCan, Hanover, Ohio.

I claim the construction and arrangement of the base and tread rails, A B, in combination with the chairs and ties, D E, and adjusting bolts, F, in the manner substantially as set forth.

70,732.—MODE OF OBTAINING MOTIVE POWER FROM PETROLEUM AND OTHER OILS.—Robert D. McCreary, Oil City, Pa.

I claim, 1st, The process herein described of producing motive power from oil without wholly destroying its lubricating or illuminating properties, or its value for refining or for other purposes.

2d, I further claim the combined process of partially evaporating oil to obtain motive power, without destroying its valuable properties, and using the resultant gages for fuel or illumination after their expansive force has been or partially so spent in driving the engine.

70,733.—PUMP.—John H. McGowan, and Theodore H. McGowan, Cincinnati, Ohio.

We claim a suction pipe coupling, E E', in connection with a pump cylinder or cylinders A, so constructed as that, when attached to the pump, it will form a reservoir, which will maintain a constant supply of water, and in which the pump cylinder is partly or wholly submerged, substantially as described, and for the purpose specified.

70,734.—COWL OR CHIMNEY CAP.—Charles G. Miller, Cincinnati, Ohio.

I claim the parts, B D E F H I, upon the top of a chimney, arranged substantially as described.

70,735.—DROPPER FOR HARVESTERS.—Lewis Miller, Akron, Ohio.

I claim, 1st, An apron for holding the falling grain, that is wound up and unwound by a traveling roller, and rack and pinion attachments, substantially as described.

2d, Also, in combination with a traveling roller, and an apron wound up and unwound by it, a holding-bar or board, that is thrown into and out of action by the roller, substantially as and for the purpose described.

70,736.—FAN-BLOWER.—Warren P. Miller, San Francisco, Cal.

I claim a blower, consisting of two or more wheels, constructed and operated in manner as described.

70,737.—PRESERVATIVE BLACKING FOR LEATHER.—William B. Moore, Winchester, Mo.

I claim a blacking and leather preservative, composed of the ingredients hereinbefore named, and compounded in the manner and in the proportions substantially as described.

70,738.—MACHINE FOR SETTING UP STAVES IN BARRELS.—James A. Morrell, Chicago, Ill.

I claim, 1st, The buttons, c, provided with the springs, e, substantially as and for the purposes specified.

2d, The adjustable truss-hoop supporter, D E, constructed and operating substantially as set forth.

3d, The hoop or band, C, for keeping in place and supporting the lower ends of the staves, substantially as specified.

4th, The lock or stop, a, for holding the truss hoop supporters in place, substantially as described.

5th, The standard or cylinder, A, base, B, and buttons, c, in combination with the truss supports, D E, and truss-hoop, F, substantially as and for the purposes specified.

70,739.—LAND ROLLER.—E. F. Olds, Lyon, Mich.

I claim, 1st, Hanging the rollers by means of their shafts or gudgeons to a central adjusting frame, so constructed and arranged that said rollers may be weighted more or less on either side by means of said frame, and the rollers rendered self-adjustable to the surface of the ground, as and for the purpose substantially as set forth.

2d, The central adjustable frame, E, constructed so as to be weighted, in combination with the rollers, B, substantially as and for the purpose set forth.

3d, The caster-wheels, L, and springs, M, in combination with the frame, C, and rollers, substantially as and for the purpose set forth.

70,740.—FLASK FOR CASTING TWEERS.—Beneville C. Painter, Mechanicsburg, Pa.

I claim, 1st, in combination with the sections, A B, of the flask, the partitions, I K, and false or removable bottom, D, arranged as and for the purpose described.

2d, Also, in combination with the previously made tube, G, the ferrule, c, and slide, F, in the section, B, for the purpose of molding in the tube, and removing the finished casting from the flask, substantially as described.

70,741.—LIGHTNING CONDUCTOR.—William G. Pike, Philadelphia, Pa.

I claim, 1st, A lightning conductor, consisting of a cylindrical or flattened tube or gasket of woven, braided, or plaited wire, terminated at its upper end by a solid point, substantially as shown and described.

2d, The angular rod, e, for connecting separate branches of the tubular conductor, constructed substantially as set forth.

3d, The combination of the wire tube, a, solid point, b, inserted rod, c, and insulators, d, arranged and constructed in the manner and for the purpose substantially as set forth.

70,742.—MIXING AND DRYING CYLINDER.—Leman B. Pitcher, Salina, N. Y.

I claim the crooked arm, A, the head, B, with the feeding hole, b, therein, each separately and in combination, with each other, and each also in combination with the cylinder, C, made and operated substantially as and for the purpose described.

70,743.—STEAM ENGINE CUT-OFF.—George W. Rawson, Cambridgeport, assignor to himself and Michael Hittinger, Somerville, Mass.

I claim the combination of the slide valve, the two gates, their openings and mechanisms, substantially as described, for operating such gates in manner as specified.

I also claim the said mechanism or combination, substantially as described, for operating the gates of the slide valve through the agency of a governor, and the mechanism for producing the longitudinal movements of the slide valve, such mechanism or combination first mentioned consisting of the tripper, p the notched slide bars, g g, the pawls or catches, m m, the springs, k k, the arms, f f, and the studs, r r, the whole being arranged and applied to the steam chest and the slide valve, substantially in manner and so as to operate as hereinbefore specified.

70,744.—HARVESTER.—George Riemer, Fayette, N. Y.

I claim the combination, with the sickle bar, H, and grooved wheel, G, provided with the rim, a, and made removable from its shaft, of the friction roller, I, arranged and operating in the manner and for the purpose herein set forth.

70,745.—BRIDLE BIT.—A. H. Rockwell, Harpersville, N. Y.

I claim, 1st, The mouthpiece, A, when composed of three links, d e, and e', and when combined with the sliding bars, f f', and with the rings, g g', or their equivalents, all made and operating substantially as herein shown and described.

2d, The bars, f and f', when made to slide on a flexible mouthpiece, when connected with the nose strap, B, and when made and operating substantially as and for the purpose herein shown and described.

70,746.—STEAM GENERATOR.—Robert E. Rogers, and James Black, Philadelphia, Pa.

We claim the boiler, A, having the enlargement, a, formed so as to project at or about a right angle with the body of the boiler, in combination with the circulating tubes, B, when the upper ends of said tubes are inserted straight into the enlargement, a, and the lower ends of said tubes are bent and inserted into the lower portion of the body of the boiler, A, substantially as set forth.

70,747.—HAND CORN PLANTER.—McCollum Russell and Alfred G. Burdick, Mill Rock, Iowa.

We claim, 1st, The plunger, E, provided with a pocket, e, regulating slide, J, and metallic end, K, in combination with the opening in the bottom, D, of the seed chamber, brush, d, and springs or scrapers, B B C C, substantially as and for the purpose set forth.

2d, The cell or pocket, e, in combination with the regulating slide, J, and brush, d, substantially as and for the purpose described.

3d, The combination and arrangement of the stop, I, strap, H, pin, h', button, L, and plunger, E, substantially as and for the purpose specified.

70,748.—CONSTRUCTION OF BUTT HINGES.—D. C. Sage, Middletown, Conn.

I claim 1st, The attachment of butt hinges to door casings and doors by means of hooks and plates, substantially as described.

2d, The construction of the leaves of hinges with hooks, a a, or their equivalents, upon them, for being received by perforated plates, B, substantially as described.

3d, The washers, d, of hardened metal, and detached from the pintle of the hinge, applied in recesses at the joints of the hinge, substantially in the manner and for the purpose described.

70,749.—COAT AND HAT HOOK.—J. B. Sargent, New Haven, Conn.

I claim a coat and hat hook, consisting of the plate, C, and hook or hooks, A or B, or both, on which the knob, D, is secured by a rivet or screw passing therethrough, in the manner described.

70,750.—SNAP HOOK.—J. B. Sargent, New Haven, Conn.

I claim, 1st, The double tongue, D, in combination with the hook, A, when constructed so as to operate substantially as described.

2d, The thumb-piece, E, in combination with the tongue, D, of a snap hook, so as to lock and secure the snap when closed.

70,751.—SAW SET.—Amos M. Shafer, Camden, Ohio.

I claim, 1st, The screw standard, H h, and hand nut, I, in combination with the spring, F, constructed and operating substantially as and for the purpose set forth.

2d, Preserving the parallelism of the sliding rest, P, with the anvil, and at the same time changing its relative hight with said anvil, by sliding the inclined edge of the said rest in brackets, M M, M' O', substantially as described.

70,752.—COG CHAIN.—Thos. Shaw, Philadelphia, Pa.

I claim the chain link, as constructed, for the purpose specified.

70,753.—CORN PLANTER.—William H. Shepherd, College Corner, Ohio.

I claim, 1st, The grain-dropping frame consisting of the cross beam, I, and grain slides, J J', arranged substantially as shown.

2d, The blocks, O, to indicate the position of the hills, as set forth.

3d, The provision of side beams, F F', pin, f, slot, f', and screw, e, for the purpose stated.

4th, The provision for liberating the hinged piece, L', allowing of the spouts M, to swing clear of the ground, as stated, and for the purpose set forth.

5th, The arrangement of the parts, h h' h'', for the purpose of disconnecting the seeding frame from the crank, G, as and for the purpose set forth.

70,754.—MODE OF SEPARATING VEGETABLE MATTER FROM ANIMAL FIBERS.—Henry Sherwood, London, Great Britain.

I claim, 1st, To disaggregate vegetable fibers or substances by means of their exposure to gaseous sulphuric anhydride, and to anhydrous chlorohydric gas, each used alone or together, or in mixture with other gases not being the elements of water; but I do not claim the use of vapors produced by evaporating the sulphuric or muriatic acids of commerce, except the oxygen of the aqueous particles contained in those vapors be first eliminated, or caused to enter into chemical combination with some other element to form an oxide.

2d, I claim, in an instrument necessary for making use of gaseous agents, the combination of air-tight rollers, a and b, to receive substances into a cavity filled with an atmosphere of gases, and to deliver them from it, with any known mechanical arrangement applicable to receiving the substances from the ingress-rollers and delivering them to the egress rollers, (one of such arrangements being given as an example, e,) acting substantially, and capable of modification, as described.

3d, I claim to prepare vegetable fibers for paper making and other uses, by submitting them to the action of known agents in closed cisterns containing liquids at a low heat, (under 100° centigrade,) but under pressure of air or of liquids.

70,755.—MACHINE FOR TEMPERING FILES, SAW BLADES, AND OTHER ARTICLES.—John Small, St. Louis, Mo.

I claim, 1st, in a machine which is adapted for tempering files or plates and confining them between clamps during the tempering process, constructing the box containing said clamps wholly or partly of glass, substantially as described.

2d, The construction of the grated clamps, D D', with bracing ribs upon their backs, in combination with double-acting screw shafts for moving these clamps, substantially as described.

3d, The arrangement of the clamps, D D', in inclined planes within a bath or box, A, and upon double-acting screw shafts, E, operated and operating substantially as described.

4th, The hinged plate or apron, J, applied to the jaw, D, in combination with movable hooked rods, g, substantially as described.

5th, The standard, H, provided with pulleys, h h', upon its upper end, over which ropes or chains pass, which are attached to the hinged apron, J, and also to the cross head of hooked rods, g, substantially as described.

70,756.—SPRING ROCKINGCHAIR.—Edmund Smith, Jr., Worcester, assignor to Albert Goodspeed, Hubbardston, Mass.

I claim, in combination with the frame and seat of a chair, the springs, a a' a'', with their opposite ends fastened respectively towards the front and rear of the chair, all arranged and combined substantially in the manner and for the purposes above set forth and described.

70,757.—STEAM GENERATOR.—Jas. T. Smith and John Walter, Baltimore, Md.

We claim, 1st, The interior series of boilers, A, connected with tubes, n, and supplied with caps, s, at each end, the whole constructed and operating substantially as set forth.

2d, The mud-sills, E, pipes, H, in combination with the outside tier of boilers, A, operating as and for the purpose substantially as herein described.

3d, The goose neck branch pipes, L, in combination with the central tier of boilers, A, constructed as and for the purpose substantially as set forth.

70,758.—LOW-WATER INDICATOR.—L. Franklin Smith, Philadelphia, Pa.

I claim, 1st, The arrangement of the water gage, O, chambers, P and P', and three-way cocks, M and Q, in relation to the boiler, and with reference to the expanding tube, C, and fixed rod, G, substantially as described and for the purposes specified.

2d, The arrangement of the weight, N with the lever, H, and arm, h, for closing the valve, K, substantially as described.

70,759.—CASKET HANDLE.—William M. Smith (assignor to himself and the Meriden Britannia Company), West Meriden, Conn.

I claim the employment of attachments, D, or their equivalents, having tags, E, in combination with the depressions formed in the plates, B, substantially as and for the purpose described.

70,760.—SASH STOP.—Henry Soggs, Columbus, Pa.

I claim, 1st, The combination and arrangement of the pinion, E, and winch, F, applied to the jamb, with the rack bar, D', and friction rollers, f', applied to the sash in the manner and for the purpose set forth.

2d, The spring catch, G, in combination with the winch, and operating in the manner and for the purpose.

70,761.—PROCESS OF PREVENTING DECAY IN WOOD.—J. H. Taylor, New York city.

I claim, 1st, The chemical combinations of the above-named agents, in the manner described, for the purpose of preserving wood and other fibrous materials from decay.

2d, The combination of these potent antiseptics in the form of vapor, acting in accordance with known chemical laws, in the manner and for the purpose described.

70,762.—GATE.—G. L. Templeton, Pierceton, Ind.

I claim the cam, H, made of round wire, or similar material, and secured to the inner wing, E, in combination with the outer slotted wing, F, roller, I, gate, A, and frame, B, having a slot, J', arranged and operating substantially as and for the purposes set forth.

70,763.—CARRIAGE JACK.—Isaac Varney, Kenebunk, Me.

I claim the arrangement and combination of the arm, D, toothed slide, C, gear, b, casing, a, centrally-pivoted pawl, e, and spring pawl, t r, on the hollow cylinder, B, substantially as and for the purposes set forth.

70,764.—WELL TUBE.—Joseph Wagner, Newcastle, Pa.

I claim, 1st, The perforated stem, C, of the point, b, encased within the tube, A, in combination with the slot, a, and pin, b, substantially as and for the purpose described.

2d, The combination of the point, B, constructed as described, with the perforated stem, C, perforated tube, A, slot, a, and pin, b, substantially as and for the purposes described.

70,765.—FOUNTAIN PEN.—Michael Wagner (assignor to himself and Herman Witte), Cincinnati, O.

I claim the winged bristle socket, J K, sheath, C D F, scallops, E, slot, L, and stud, H, slot, G, combined, arranged, and operating as and for the purpose specified.

70,766.—MANGLE.—H. Wehdeking, Edgerton, O.

I claim, 1st, Tightening the linen bed and shortening the same, by the ar

rangement of the arms, A A A A, holes, a a, and pins, b b b b, in combination with the stationary arms, B B, substantially in the manner as herein described and shown.

2d, The construction and arrangement of the legs or lower part of the mangle, in combination with the rods, i i, substantially in the manner and for the purpose as herein described and shown.

3d, The arrangement of the wooden spring, J, rubber springs, I I, rods, i i, rollers, F and H, in combination with the arms, A A A A, and arms, B B, and the legs of the mangle, substantially in the manner and for the purpose as herein described and shown.

70,767.—COMPOSITION FOR INKING ROLLERS AND PADS.—J. M. Wilbur, Cleveland, O.

I claim the composition for ink rollers or pads consisting of the ingredients in about the proportions herein given, as and for the purpose specified.

70,768.—HORSE POWER.—Wm. H. Wiley, Fredonia, N. Y.

I claim, 1st, Extending the frame of the machine laterally across and beyond the circular track travelled by the horses, and providing the same with slides for the reception of a drag saw cross head and with bed pieces for the horizontal shaft pillow blocks, in the manner and for the purposes described.

2d, Securing the pinion spindles, D, to the table, C, at varying distances from the center thereof, so that different sizes of pinions to gear with cog rim, F, and spur wheels to gear with pinion, b', may be used, as and for the purpose set forth.

70,769.—EGG STAND AND BOILER.—Edward P. Woods and Daniel Sherwood (assignor to Woods, Sherwood & Co.,) Lowell, Mass.

We claim, as a new article of manufacture, an egg stand and boiler, constructed substantially as described and for the purposes specified.

70,770.—MACHINE FOR MAKING WIRE DISH STANDS, ETC.—Edward P. Woods and Daniel Sherwood, (assignors to Woods, Sherwood & Co.,) Lowell, Mass.

We claim, 1st, The spiral grooved head or former, constructed substantially as described and specified.

2d, The combination of the spiral grooved head or former with the bar, G, substantially as described and specified.

3d, The combination, with the spiral grooved head or former, of the slots, c c c c, substantially as described and specified.

70,771.—MORTISING MACHINE.—Charles L. Zeidler, Cincinnati, Ohio.

I claim, 1st, The arrangement of continuously vibrated bell crank, D, having the arm, G, and wrist, g, connected on one side by pitman, H, to the chisel bar, and on the other side to a wrist, K, actuated by an obliquely slotted slide, L, under control of the operator, constructed and operating substantially as and for the purpose set forth.

2d, The arrangement of fast and loose sleeves, Q and R, upon the chisel-shaft or stem, engaging and releasing pawls or catches, S and T, cord, U, and pulley, V, in combination with the catch or trigger, H, and tappet, I", rack and pinion, v' I', and actuating and balancing springs, W and N, constructed and operating substantially as and for the purpose set forth.

70,772.—DITCHING MACHINE.—Isaac V. Adair (assignor to himself and Peter Wyckoff,) Varick, N. Y.

I claim, 1st, The arrangement of the wheels, A, axles, B, frame, C, pulley, B', band, A', endless chain of buckets, U, frame, S, adjustable brace bars, C' and D, and frame, F, with each other, substantially as herein shown and described and for the purpose set forth.

2d, The frames, F and C, when connected together by the adjustable bar, R, and draft chain, P, substantially as herein shown and described and for the purpose set forth.

3, The combination of the gage wheel, H, straps, I and J, lever, K, chain, L, and lever, M, with each other, and with the frames. C and F, substantially as herein shown and described and for the purpose set forth.

70,773.—PRINTING PRESS.—Edwin Allen, Norwich, Conn.

I claim the combination of the adjustable or sliding taper rollers. L, with inking roll shaft, k, hung and controlled essentially as described, and disks, K, for operation together, substantially as and for the purpose or purposes herein set forth.

70,774.—STEAM ENGINE.—Ernesto Ansaldi, Leghorn, Italy.

I claim the arrangement of the steam ports, passages, valves, and chests, as described, with the piston of two steam cylinders and their connections, to act in combination with each other, for the purpose of mutually assisting each other for overcoming the dead points of their strokes when accomplished by the means substantially as described and illustrated in the drawings.

70,775.—BELT LACING.—Holland C. Babcock, Cincinnati, O.

I claim the belt lacing provided with a pointed or stiffened tip, B or B', a slit, C, and secured for packing in a coiled form by tag, D, or its equivalent, substantially as and for the object stated.

70,776.—CAR COUPLING.—Peter Baker, Oakland, Md.

I claim, 1st, The coupling pin, B, provided with the flange, e, in combination with the hinge, E, and lever, C, when arranged to operate substantially as herein described and for the purpose set forth.

2d, The draw head, A, when arranged to be adjusted vertically in combination with the frame, G, substantially as herein described.

70,777.—ELEVATOR.—Jas. S. Baldwin, Newark, N. J.

I claim, 1st, The use of the apron, B, and the apron, C, or equivalent yielding edges, substantially as set forth.

2d, The secondary platform, F, and its apron, D.

3d, The balancing of said aprons in the manner set forth.

70,778.—ATTACHING BOLSTERS TO KNIVES.—Henry Barber, Greenfield, Mass.

I claim attaching the bolsters upon the tang by means of projections, a a' and b b', upon each side of the bolsters, the projections being clinched on the top and bottom sides of the tang, substantially as and for the purpose shown.

70,779.—CULTIVATOR.—Morgan Barnett and Eli Wood, Hardinsburg, Ind.

We claim, 1st, The plough frames formed by the combination of the beams, G, standards, E, and adjustable brace bars, I, with each other, substantially in the manner herein shown and described and for the purpose set forth.

2d, Pivoting the beams, G, upon the forward side of the axle, B, by means of the rods or bolts, J, and clips, K, substantially as herein shown and described and for the purphse set forth.

3d, The combination of the locking keys, P, with the forward ends of the beams, G, and with the rods or bolts, J, substantially as herein shown and described and for the purpose set forth.

4th, The combination of the guide frames, M, with the beams, G, and rods or bolts, J and N, substantially as herein shown and described and for the purposes set forth.

5th, The combination of the levers, L, with the beams, G, and guide frames, M, substantially as herein shown and described and for the purpose set forth.

6th, The combination of the graduated stop-lever, O, with the beams, G, and guide frames, M, substantially as herein shown and described and for the purpose set forth.

70,780.—HAM-SLICING HOLDER.—John Baumgartner and Lawrence Angster, Newark N. J.

We claim the guard or arm, B, the brace, F G, the lever, and rack, E, operating together in manner substantially as and for the purposes described and set forth.

70,781.—SEEDING MACHINE.—R. Baxter, French Camp, Cal.

I claim, 1st, The seed box, constructed as described, and provided with a rod and prongs, so located that a part of the several prongs only is in the box, and that at the front side thereof, as and for the purpose described.

2d, The elbow lever, operated by a pin on the plow wheel, and operating the rod with its prongs, in combination with the said rod, in the manner and for the object set forth.

70,782.—BEEHIVE.—James M. Beebe, Casadaga, N. Y.

I claim the series of frames, C C, constructed and bound together, as described, when said frames are used within the casing, A B, formed, as herein set forth, with honey boxes, F F, space, bottom board, I, and openings, e d, the whole constructed, arranged, and used in the manner and for the purposes set forth.

70,783.—HORSESHOE.—Jacob Behel and John Perrine, Rockford, and John M. Buell, Ogle county, Ill.

We claim, 1st, The movable clips, a1 and a2, when constructed and attached substantially as set forth.

2d, The combination of the movable clips, a1 a2, and shoe, A, having bevelled recesses, x, to receive the same, substantially as described.

3d, The combination of the movable clips, a1 a2, and the shoe, A, constructed with corresponding recesses, x, and projections, c c, substantially as described.

4th, The combination of the movable clips, a1 a2, and shoe, A, constructed with stationary clips, v, and projections, c and k, substantially as described.

70,784.—STEAM ENGINE SLIDE-VALVE.—E. H. Bellows, Worcester, Mass.

I claim, 1st, A four port balanced valve, E, constructed and operating substantially as and for the purposes set forth.

2d, The combination with the steam chest, A, having a projection or flange, c, of the valve, E, substantially as set forth.

2d, The combination with valve, E, of cap, H, and projections or flanges, c d ff and ears, e e, substantially as and for the purposes set forth.

70,785.—CULTIVATORS.—Alfred C. Belt, Goresville, Va.

I claim, 1st, The reversed arrangement of the alternate teeth of the cultivator, as described.

2d, The cultivator teeth arranged in reversed positions, as described, in combination with the adjustable colter.

3d, The grooved or recessed beam, in combination with the flanged teeth secured thereto, as described.

4th, The forward tooth, provided with the perforated sifter mold board, in combination with a following tooth having the reversed arrangement described, for the purpose set forth.

70,786.—POTATO PLANTERS.—John E. Bendix, New York city, and Morris Dietsch, Westchester, N. Y.

We claim, 1st, A carrier wheel, C, provided at its circumference with cups or buckets, d, in combination with a suitable hopper and tubular seeding stock, substantially as and for the purpose specified.

2d, The lever, J, and vertical holding post, K, arranged and operating in relation with each other, and with the sliding bar, G, of the covering blade, substantially as and for the purpose specified.

3d, The sliding bearing, f, arranged in relation with the shaft which carries the cupped or bucketed carrier wheel or wheels, C, and the gearing connecting the said shaft with the driving axle, whereby the movement of the carrier wheel or wheels, with reference to the hopper and seeding stocks, may be stopped without interfering with the progressive motion of the machine, substantially as herein set forth.

70,787.—ADJUSTABLE WATCH KEYS.—J. S. Birch, New York city.

I claim, 1st, Sitting the barrel, A, of a watch key, diagonally, substantially as herein shown and described, and for the purpose set forth.

2d, Forming the lower part of the barrel, A, cone or pyramid shaped, that is to say, decreasing in size towards the shank or stem, a, substantially as herein shown and described, and for the purpose set forth.

3d, The combination of the sleeve or slide, B, and nut, C, one or both, and whether made in one or two pieces, with the slit barrel, A, of the watch key, substantially as herein shown and described, and for the purpose set forth.

70,788.—GRINDING MACHINE FOR CIRCULAR SAWS.—Thos. Birch, Covington, Ky., and Adam Sowden, Cincinnati, Ohio, assignors to Ritter, Hogan and Sowden, Cincinnati, Ohio.

We claim, 1st, The provision, in a machine for grinding circular saws, of a pair of driving friction pulleys, adapted to grasp the saw at a shifting point diametrically opposite, or nearly so, to the point of impact of the grindstone, and having a corresponding approach toward and recession from the saw's center in the act of grinding, substantially as and for the purpose set forth.

2d, The arrangement of the saw carriage and driving pulley carriage, caused to automatically advance and recede with unequal velocities in paths parallel to the grindstone's axis, for the purpose explained.

3d, The arrangement of the paired friction driving pulleys, Z Z', made to grasp the saw on opposite sides thereof by means of pressing springs, b b', and set screws, c c', for the purpose set forth.

4th, In combination with the said friction driving pulleys and accessories, we claim the arrangement of travelling gearing and shaft, Y Y', e e e', and stationary gearing, e", as represented.

70,789.—BARREL COVER.—Calvin Bird, Dorchester, Mass.

I claim the combination of the flush handle with the strengthening cleat and guard plate, substantially as described.

70,790.—SETTING STEAM BOILERS.—C. T. Boardman, Pawtucket, R. I.

I claim, in combination with the cylindrical boilers, B B, tubular boiler, G, and walls, A, of a setting, the pier, H, and horizontal partitions, J J, arranged substantially as specified.

70,791.—GALVANIC BATTERIES.—Charles Boulay (assignor to Jean David Schneiter), Paris, France.

I claim putting each of the electro motive metals of each element in direct contact with any suitable exciting matters or mixtures of them in the dry or slightly moistened and more or less coarsely pulverized state, which exciting matters or mixtures of them are to act on their respective electro motive metals, or other electro motive bodies embedded in them, by attracting moisture from any suitable exciting liquid or solution, from which they are kept separate by a suitable porous partition or a diaphragm, substantially in the manner and for the purposes described, and illustrated in the annexed drawings.

70,792.—HOUSE VENTILATORS.—Robert Boyd, Evansville, Ind.

I claim, 1st, A ventilator so constructed that pure air may pass into the room, and foul or impure air may be passed therefrom, substantially in the manner herein shown and described.

2d, The outer cylinder, B, with the openings, G, H and J, and the frame, A, combined and arranged substantially as described.

3d, The inner cylinder, C, or its equivalent, arranged and operating substantially as and for the purpose set forth.

70,793.—RAILWAY-AXLE BOX.—C.B. Boynton, St. Paul, Minn.

I claim the arrangement and combination of the rubber, A, under the washer of bolt, B, the inside construction of cover, C, also the flange, E, fitting on to the shoulder at the top of box, D, as herein described and for the purpose set forth.

70,794.—GATE LATCH.—Mark J. Briar, Oxford, Ind.

I claim a latch for gates, etc., composed of latch lever, I, link piece, K, lever handle, L, arranged together substantially as and for the purpose described.

70,795.—SASH FASTENER.—Geo. Brosius, Ranch's Gap, Pa.

I claim the combination of the cam lever, D, spring, E, or its equivalent lever, F, arm, K, bolt, L, and cord, G, in the manner and for the purposes substantially as above set forth and described.

70,796.—APPARATUS FOR DRAWING TIRES FROM ENGINE-DRIVING WHEELS.—Wm. H. Bryant, Chicago, Ill.

I claim the apparatus for drawing tire from wheels, herein described, constructed and operating substantially as herein set forth.

70,797.—CARRIAGE-TOP BUTTON HOLES.—S. A. Budd, Cleveland, O.

I claim the combination of the spring, a, washers, A D, and disk or cap, C, with the curtain, substantially as and for the purpose set forth.

70,798.—HARVESTER.—John Burke, Sycamore, Ill.

I claim, 1st, The combination of slotted plates, F F', provided with notches attached to the front end of gear frame, A, with standard, D, provided with corresponding notches at back end of said gear frame, so that said gear frame may be thus raised or lowered equally at both ends, and parallel with main frame, substantially as set forth.

2d, I claim the combination of slotted plates with rachet, consisting of plates F F', and dogs, G G', substantially as described and for the purpose specified.

3d, I claim the dogs, G G', for the purpose specified.

70,799.—CAR AXLE.—Samuel S. Burt, Marquette, Mich.

I claim the yoke, D, in combination with the axle boxes, C C, axle, B B, and car wheels, A A, substantially as and for the purpose described.

70,800.—AIR ENGINES.—John R. Cameron, Pittsburg, Pa.

I claim, 1st, The combination of the vacuum chamber, A, and the hot air chamber, C, when constructed and arranged as described.

2d, The fire box, B, with its blast pipe, d, and the water cistern, E, in combination with the vacuum chamber, A, constructed and operating substantially as herein set forth.

3d, The inner lining, b', for the purpose of forming more rapidly a vacuum in A, and also the bellows, D, in combination with the vacuum chamber, A, substantially as herein described for the purposes specified.

70,801.—CREEPING ROBES FOR INFANTS.—M. M. Cashman, Boston, Mass.

I claim forming a creeper, by uniting a skirt, A Ai Aii, with a wrapper, Aiv Aiii Aii, substantially as shown and for the purpose set forth.

70,802.—ROTARY ENGINES.—Edwin Chapman, Rochester, Minn.

I claim, 1st, The arrangement of the steam chamber, e, aperture, g, and packing, r, with reference to the piston, D, and shaft, E, as herein described for the purpose specified.

2d, The construction of the piston, D, provided with the opening for discharging steam into the cylinder, and opening, f, for exhausting the steam through the shaft, substantially as herein shown and described.

70,803.—MOTOR FOR OPERATING SEWING MACHINES.—Wm. Z. W. Chapman, New York city, H. C. Goodspeed, Plainfield, N. J., and Edwin Reed, Bath, Me.

We claim a sewing machine motor, in which is a barrel enclosing the coiled spring, the equalizing fly wheel, the train of gears, regulating cone pulleys, c c, connected by a band which is operated by a sliding rack and pinion, all constructed and combined as described, and for the purpose set forth.

In combination with the above we claim the brake apparatus, constructed as described and for the purposes set forth.

In like combination we claim the arrangement of the cover of the table, provided with an aperture, which, while shut will expose the arm and plate, and when open will neither disturb the machine nor carry any part thereof with it.

70,804.—LEVELING ATTACHMENTS TO AGRICULTURAL IMPLEMENTS MOUNTED ON WHEELS.—Benj. F. Cook, Olema, Cal.

I claim the application of a wheel, F, provided with a rim, a, bevelled so as to form inclined planes, and interposed between the rear axle and bolster of the machine, substantially as and for the purpose set forth.

I also claim the combination of the wheel, F, and the capstan or winch, H, substantially as and for the purpose specified.

I further claim the brake, e, arranged in relation with the drum, dx, of the capstan or winch, H, and connected to the lever, Gx, when said parts are used in combination with the wheel, F, for the purpose set forth.

70,805.—ROOFING.—Geo. Cook, Paris, Ill.

I claim, 1st, A tile, B, of earthenware, stoneware, or other suitable material, having the parts, D E F G H, substantially as shown and described.

2d, In combination with the tile, B, I claim the cap, G, having a groove, g, as and for the purpose set forth.

3d, In combination with the tile, B, I claim the hasp, C c c', as and for the purpose stated.

4th, In combination with the elements, D E F H, I claim the bead, I, and grooved comb, J, for the different sides of the roof peak, as and for the purpose set forth.

70,806.—SILENT BOLT FEEDER.—Jacob Cornwell, Kalamazoo, Mich.

I claim, 1st, The revolving platform, m, provided with a scraper, f, in combination with the revolving platform, n, substantially in the manner set forth.

2d, In combination with the subject matter of the above, I claim lever, L, and band, s, substantially as described.

70,807.—LOW WATER DETECTOR.—Clemoire F. Cosfeldt, Jr., Philadelphia, Pa.

I claim, 1st, The arrangement within the boiler of the valve seat, B, support, E, and the independent slotted valve, C D, having shank, b, and rod, d, as and for the purpose described.

2d, The regulating screw, d, one end protruding through the slot, c, and the other end resting on the support, E, substantially as and for the purpose described.

70,808.—CLOTHES WRINGER.—E. Hall Covel, New York city.

I claim, 1st, The double slotted standards, A A, in combination with the conical box, N, and levers, H H, substantially as and for the purpose herein recited.

2d, The double bail or semi-circular levers, H H, jointed together, and forming thereby a fulcrum for each other, with the boxes, N, attached thereto, or cast thereon, and having the springs and adjustable nut on the ends, as and for the purpose described.

70,809.—APPARATUS FOR CARBURETING AIR.—William F. Cozzens and J. H. Jones (assignors to themselves and Leopold Bouvier), St. Louis, Mo.

We claim, 1st, The combination of the condensing or forcing apparatus, A, with the carbureter, B, substantially as set forth.

2d, The combination of the trays, B2 and B3, and the injection pipes, b5 and apertures b4, when arranged as and for the purposes set forth.

70,810.—CHEESE PRESS.—E. J. Crane, Laporte, Ind.

I claim the platform, A, the studs, B B' and C, the connecting bar, E, the levers, D D', the pressing stud, F, and the table, G, arranged, combined and operating substantially as shown and described for the purposes herein set forth.

70,811.—CONSTRUCTION OF SHEET METAL BOXES.—Martin H. Crane (assignor to Crane, Breed & Co.), Cincinnati, O.

I claim the mode of stiffening and ornamenting vessels made of sheet metal by the use of composite ribs or mouldings of wood and metal, soldered to the exterior or interior surface of the vessel, substantially as set forth.

70,812.—VENTILATING DEVICE FOR RAILROAD CARS.—Wm. G. Creamer, Brooklyn, N. Y.

I claim the construction and attachment of ventilating plates to the sides of railroad cars, to admit air and exclude rain and cinders, and present a flush surface, substantially as specified.

70,813.—BOAT HOISTING APPARATUS.—A. F. Crosman, Steamer Ossipee, U. S. N.

I claim, 1st, The drums, D D, upon the shaft, E, secured to the side of the vessel between the davits, and provided with a rope, G, passing through the side of the vessel, all arranged as described, whereby the manipulations of the rope, G, operate the tackle ropes, a a, simultaneously, as herein shown and described.

2d, The arrangement of the links, J K, hooks, L, metallic mousings, M, hooks, N, and vertically sliding bar, f, for detaching the boat from the tackle blocks, as herein shown and described.

70,814.—METHOD OF STARTING AND STOPPING CARS.—Alonzo G. Crossman, Huntington, N. Y.

I claim, 1st, The cylinder, L, and piston, K, in combination with the wheels, D, E and F, and suitable connections, the whole operating in conjunction with the axle, G, substantially as set forth.

2d, The combination with the cylinder, L, piston, K, and wheels, D, E and F, of the clutches, a and b, substantially as and for the purpose specified.

3d, The combination with the piston, K, and cylinder, L, of the rack, R, spur wheel, S, and crank, T, substantially as and for the purpose set forth.

70,815.—FAUCET FOR STOVE RESERVOIRS.—John B. Crowley (assignor to himself and Chamberlain & Co.), Cincinnati, O.

I claim, 1st, The provision, in a stove reservoir, or boiler, of the spout, B, having within the reservoir a plug or valve, D, whose stem extends and is operated above the top of the reservoir, substantially as and for the purpose set forth.

2d, The arrangement in a stove reservoir of the spout, B, having within the reservoir the upturned seat or inlet, C, and self-closing valve or plug, D, whose stem or handle extends through an orifice, e, in the reservoir lid, and is confined in lugs or guides, G H, substantially as set forth.

70,816.—CORN HARVESTER.—John P. Culp, Quincy, Ill.

I claim, 1st, The wheels, D E F H I I', the shipper, G, cutter, K, and reel, L, arranged as described, in combination with the sustaining wheels, B, and shaft, a, of a corn cutting machine, as set forth.

2d, The jointed arms, c c, in combination with the cutter, K, and reel, L, arranged and operating substantially as and for the purpose set forth.

3d, The combination of the latch, O, and the trap-falls, N N N', in the bed of a corn cutting machine, when arranged and operating substantially in the manner and for the purpose described.

4th, The roller, P, with its arm, i', and the latch, m, when combined with the frame and bed of a corn cutting machine, and arranged and operated substantially as and for the purpose set forth.

70,817.—ASH SIFTER.—J. Warren Custer, Trappe, Pa.

I claim the arrangement of the wire sieve, D, having a wire around its circumference, when secured within a circular box, A, by means of the jaws, E E, formed in said box, and the spring, G, in the manner and for the purposes set forth.

70,818.—SASH SUPPORTER AND FASTENER.—Amos Cutter, East Boston, Mass.

I claim the combination of the arms carrying the rollers or wheels holder, F, and thumb screw, G, or its equivalent, substantially as and for the purpose described.

70,819.—GATES.—Orlean Doud (assignor to himself and Isaiah Rowe), Dansville, New York.

I claim, 1st, The combination of the rail, A', with the pin, b, and post, B', with cap, a, and metal plate, C, with the gate, A, having a segmental bar, D, all constructed, arranged and operating in the manner and for the purposes set forth.

2d, The latches, d d, rod, i, lever, e, spring, g, used in connection with the gate, A, and post, B, with its pins, x x, for the purposes set forth.

70,820.—CAPSTANS.—Jacob Edson, Boston, Mass.

I claim, 1st, Constructing the base of two cone-shaped disks, or shells, one of which is reversed so as to give double bearings, B B, and B' B', for the standard or spindle, H.

2d, The unguent receptacle at the top of the base, and surrounding the standard or spindle, H, made substantially as and for the purpose set forth.

3d, The extending of the fleeting cleats above the joint which separates the head from the body of the capstan, substantially as described and for the purpose set forth.

4th, Combining with the body of the capstan the head and cap, N, made in one piece, substantially as and for the purpose set forth.

5th, In placing the upper bearing of the capstan in the top of the cap or head, N, substantially as and for the purpose set forth.

6th, The combination of the draining pipes, L L, with the receptacles, K K, substantially as described and for the purpose set forth.

70,821.—WHEEL BARROW.—David B. Ellis, Ypsilanti, Mich.

I claim the diagonal brace, bracing and strengthening both the body and legs of the barrow against lateral and perpendicular strain and pressure, substantially as described.

70,822.—MARBLE SHOOTER.—Wm. F. Falls, Boston, assignor to Ira Steward, Milford, Mass.

I claim a marble shooter having its parts constructed and arranged to operate and adapted to the projection of marbles of varying size, substantially as set forth.

70,823.—DOOR HOLDER.—C. J. Fisher, Waukon, Iowa.

I claim the combination of the cam lever, E, frames or plates, B and C, and bumper, F, with each other, substantially as herein shown and described and for the purposes set forth.

70,824.—CROOK FOR MUSICAL INSTRUMENTS.—Isaac Fiske, Worcester, Mass.

I claim a crook for musical instruments made of one piece of metal and formed into shape substantially as set forth.

70,825.—WORK BOX.—James S. Fletcher, South Bend, Ind.

I claim a revolving or turning work box with apartments within it for containing sewing articles accessible as set forth, and constructed as described and represented, out of solid rings, C C, as set forth and explained.

70,826.—COMPOSITION FOR COATING SHIPS' BOTTOMS.—Geo. A. F. Fowke, Westminster, Great Britain.

I claim the composition, in its forms, I, II, and III, and in its application and use, as hereinbefore in this specification described, for the purpose of coating the bottoms of iron and wooden ships, floating docks, and other similar structures and submarine works, and thereby preventing them from fouling and the ravages of the worm.

70,827.—SLEIGH BRAKE.—C. Gardiner, Esperance, N. Y.

I claim, 1st, The pawls, G, their upper ends wedge shaped and pivoted in the corresponding wedge-shaped mortice in the bent lever, E, whereby the pawl is permitted to yield to the backward movement of the sleigh, all arranged and constructed as herein set forth for the purpose specified.

2d, The connecting rod, e, embracing the bar, A', and the tongue, A", connected by the pin working in the slot in the tongue, its lower part extending to the neck yoke, all constructed and arranged as described, in such a manner that the length of the stroke of the pawl, G, shall be governed by the length of the slot in the tongue, as herein set forth for the purpose specified.

70,828.—RAILROAD GATE.—E. K. Gardner, Orville, Ohio.

I claim the gates, D D, levers, m m and n n, arms, i i, and movable rails, C C, all combined substantially in the manner and for the purpose set forth.

70,829.—CAR COUPLING.—Samuel Gissinger, Lawrenceville, Pa.

I claim the pivoted buffer, A, provided with link opening, O, pin opening, 2, plate, R, and locking pin, f, when used in combination with lever, g and r, chain, m, and springs, n and s, constructed, arranged, and operating substantially as herein described and for the purpose set forth.

70,830.—TOOL REST.—Wm. Gleason, Rochester, N. Y.

I claim, 1st, The employment of the triple screw system, substantially as herein set forth, for the purpose of adjusting vertically the cutting tool of engine lathes without loosening it.

2d, The arrangement of the eccentric clamping shaft, Y, in connection with the clamping screw, S, and rest, D, substantially in the manner herein shown and described and for the purpose set forth.

70,831.—METAMORPHOSCOPE.—E. A. Goodes (assignor to himself, E. L. Miller, and W. H. Morford), Philadelphia, Pa.

I claim, 1st, The combination of two or more endless belts of different lengths, furnished with sections of figures or pictures, substantially as and for the purpose specified.

2d, The combination of the endless belts furnished with sections of figures or pictures, the rollers, A* a b c, and the top plate or cover, e, formed with an opening, f, substantially as and for the purpose specified.

70,832.—TRAVELING BAGS AND VALISES.—Nicholas Groel, Newark, N. J.

I claim as an article of manufacture the struck-up metallic corner pieces, D, when constructed and applied in the manner described to valises and traveling bags, for the purpose specified.

70,833.—DRYING ATTACHMENT FOR PAPER RULING MACHINES.—R. J. Groshans, Buffalo, N. Y.

I claim, 1st, The application of a revolving fan to paper ruling machines for the purpose of drying the paper, and causing the same to be discharged smoothly into the box prepared to receive it, substantially as set forth.

2d, The manner of constructing the fan, substantially as shown and described, to wit, having the fan composed of pasteboard, tar-board, or an equivalent material fitted on pins, c, in the shaft, and retained in position by springs, B, substantially as shown and described.

70,834.—TAG HOLDER.—A. Grushus, St. Paul, Minn.

I claim the tag holder made substantially as herein described.

70,835.—TREADLE FOR SEWING MACHINES.—Thomas J. Halligan, New York city.

I claim, 1st, The construction and arrangement, substantially as herein described, of the treadle shafts, C D, with their treadles, A B, for operation in unison and whereby said shafts are made the one to support and protect the other, essentially as herein set forth.

2d, The combination of the treadle shafts, C D, arranged as described, with their treadles, A B, driving arms or levers, E F, pitmen, G H, and double-throw crank, I, of or to the revolving shaft, K, substantially as shown and described.

70,836.—STOVEPIPE DAMPER.—Griffen B. Halsted, N. Y. city.

I claim, 1st, The notched friction ring, in combination with the spurred shaft of the damper, substantially as and for the purpose specified.

2d, The friction ring constructed with a cam-like surface, whereby the compression of the pipe may be increased by turning the friction ring with reference to the damper shaft, substantially as and for the purpose specified.

3d, The damper, B, constructed with the angular groove, e, and the lips, f, arranged in relation with each other substantially as described, whereby the damper may be readily attached to its spurred shaft, as set forth.

70,837.—LOOM.—Marion McDonald Hankins, Vandalia, Ill.

I claim, 1st, The combination of the straps, C C, and rollers, D E, for operation substantially as specified, to work the pickers by the action of the lay.

2d, The arrangement of the picker levers, B B, constructed as described, springs, F, or their equivalents, and the lay, substantially as herein set forth.

3d, In combination with the levers, B B, the connecting straps, G G, rollers b pickers, H H, and check straps, I I, for operation with each other and the lay, as shown and described.

4th, The means, substantially as herein described, for operating the treadle roller, T, consisting of rods, J J, lever, K, shaft, L, spring, N, rod, O, and clutch and lever, Q P, essentially as specified.

70,838.—MEDICAL COMPOUND.—John Harrigan, East Boston, Mass.

I claim the above described medicine, compounded as described and for the purpose set forth.

70,839.—AMALGAMATOR.—F. G. Hesse, San Francisco, Cal.

I claim, 1st, The narrow annular amalgamating chamber, A, formed by a revolving cylinder, D, and an inner cylinder, either stationary or revolving with D, constructed for very high speed, and in combination with a hydraulic device to cause a current of air to pass through said chamber, for the purpose substantially as described.

2d, The use of an extra current within the chamber, A, for the purpose of discharging pulp without interfering with the amalgamating current, substantially as described.

3d, The manner of producing this current by means of a centrifugal head and guide blades, substantially as described.

70,840.—PENCIL HOLDER FOR COMPASSES.—Wm. G. Hillegass, Philadelphia, Pa.

I claim the removable pencil holding attachment for carpenters compasses the same consisting of the clamp, B, made adjustable by a set screw, c, substantially as and for the purpose herein shown and described.

70,841.—STEAM ENGINE.—John M. Hirlinger, Red Rock. Pa.

I claim slide, H, as constructed, in combination with the slotted cylinder, the bolt or shaft, G, and the piston, B, for operating the valve, D, by means of its pin, E, extending into a recess in said piston, in the manner substantially as and for the purposes specified.

70,842.—PUMP.—John M. Hirlinger, Red Rock, Pa.

I claim the slide valves, a and d, constructed as described, in combination with the stock and piston, arranged as and for the purpose specified.

70,843.—MENSTRUAL RECEIVER.—S. L. Hockert, Chicago, Ill., assignor to himself and Jared Thompson, Sr., Milwaukee, Wis.

I claim the construction and combination of ring, a, sack, b, and arm, c, for the purposes and in the manner substantially as hereinbefore shown.

I also claim the combination of ring, a, sack, b, arm, c, and cord, for the purposes and in the manner as hereinbefore set forth, or their equivalent.

I also claim a combination of ring, a, sack, b, arm, c, cord, i, pad, e, projection, a, set screw, d, belt, f f, and buckle, g, for the purpose and in the manner hereinbefore set forth

70,844.—TUBE WELLS.—D. Cyrus Holdridge, Lodi. Wis.

I claim the tubular point, B, and screw, f, in combination with the pipe, A, when arranged to operate as described and for the purpose set forth.

70,845.—MACHINE FOR MAKING THE LINKS FOR CABLES AND OTHER CHAINS.—Alfred Homfray, Witley Lodge, England.

I claim, 1st, The sliding shaft or ram, and mandrel which it carries, in combination with the anvil and the jaws for holding the link, and tappets for closing said jaws, substantially as and for the purposes herein shown and described.

2d, The combination with the sliding shaft or ram and its mandrel, of the welding ram or hammer and die, arranged and mounted in the frame of the machine, substantially as and for the purposes set forth.

3d, The combination of the mandrel, its shaft, and the welding hammer and die, with the anvil, link-holding jaws, and tappets by which said jaws are closed, substantially as herein shown and specified.

70,846.—DOOR FASTENING.—Nelson Hornaday, West Elkton, Ohio.

I claim the combination of hooks, A A C, bar, B, with the catches, D E O, when the several parts are constructed, arranged, and operating conjointly in the manner and for the purpose specified.

70,847.—MOLDING-FACING MACHINE.—Robert Howdon (assignor to Crane, Breed & Co.), Cincinnati, Ohio.

I claim, 1st, The construction of the dies of a molding facing machine in two or more adjustable parts, for the purpose set forth.

2d, The arrangement of frame, A, movable dies, C C' C'', and set screws, D, or their equivalents, for the purpose set forth.

3d, The auxiliary die, I i, in the described combination with the rear die C, of a two or more part molding-facing apparatus, for the purpose explained.

70,848.—SELF-ADJUSTING THILLS.—Arah H. Howe, Brookfield, Vt.

I claim, 1st, The independent shafts, B B, connected together by the strap, C, and to axle, A, by means of the rod, a, whereby one of said shafts may be used independent of the other, as specified.

2d, The arrangement of the shafts, B B, low-draft whiffle, D, rods, a a, and connecting straps, in the manner substantially as and for the purposes set forth.

70,849.—MACHINE FOR FILLING MARSHES.—George Howell, Philadelpbia, Pa.

I claim, 1st, An excavating boat constructed for partial and varied submergence, having the chamber, B, pipe, G, side plate, a, and with or without the inner plates, J, substantially as described and for the purpose set forth.

2d, In combination with such a boat, I claim the air-tight reservoirs and pipes connected therewith, substantially as and for the purpose set forth.

3d, I claim in combination with such a boat, the stirrers, e, on the shafts, F, substantially in the manner described and for the purpose specified.

70,850.—AUTOMATIC TIGHT-ROPE DANCER.—Wm. Humans (assignor to himself and Charles Williams, Jr.), Boston, Mass.

I claim, 1st, A jointed figure, balanced as shown, in comotnation with a pulley wheel, c, provided with cranks or arms, d, through which motion is imparted to the legs of the figure as the pulley passes over a cord, on which it is supported, substantially as described,

2d, I claim the combination of the hinged arm or detent, e, and cord, g, or its equivalent, attached to the arm of the figure, substantially as and for the purpose set forth.

70,851.—PADDLE WHEEL.—Wm. Hunter, Detroit, Mich.

I claim a paddle wheel constructed with radial arms, B, and floats, D, which are rigidly attached to the end of one arm, and, extending in front thereof, are secured on the opposite edge of the next preceding arm, or to the rim, C, in such manner as to form an acute angle at its upper edge, and form a diagonal bracing for the arms, substantially as described.

70,852.—PAPER FLOUR SACK.—John M. Hurd, Auburn, N.Y.

I claim, 1st, Crimping or softening a strip or band around near the top of the paper flour sack, as and for the purpose specified.

2d, The combination of the plain rolls, G H, or their equivalents, with two or more sets of crimping rolls, when all are used for the purpose above specified.

70,853.—REEL AND SWIFT.—Ezra Hutson, Brockport, N. Y.

I claim, 1st, The sleeve, C, in combination with the pivoted arm, B, substantially as and for the purpose specified.

2d The combination of plates, K K', arms, D D, sleeve, C, and arm, B, as and for the purpose set forth.

3d, Spring, f, wheel, d, sleeve, C, and arm, B, all combined substantially in the manner and for the purpose described.

70,854.—SHRINKING TIRE.—J. B. Jackson and M. R. Jackson, Rochester, Iowa.

We claim the stationary jaw, C, and movable jaw, D, in combination with the screw, F, gripes, G, and keys, H, constructed and arranged to operate substantially as and for the purpose set forth.

70,855.—YOKE FOR GRAIN ELEVATORS.—Eliza Jane Jewell, Brooklyn, N. Y., administratrix of the estate of T. E. Jewell, deceased.

I claim, 1st, Making the yokes of grain elevators of cast iron, constructed substantially as and for the purpose herein shown and described.

2d, The adjustable guide arrangement at the ends of a metal yoke, when consisting of the flanges, c, plates, e, gibs or guides, f, and set screws, g, all made and operating substantially as described, in combination with the tenons, b, on the uprights of the stationary frame, A, arranged as described.

70,856.—LAMP.—Melvin Jincks, Dansville, N. Y.

I claim the employment of a gas tube which shall extend from the mouth of the wick tube to the first floor of the shell, for the purpose of retaining and consuming the gas generated in the lamp, when arranged in combination with non-conductor, B, shell, A, and extinguisher, E, as herein set forth and described

70,857.—COMPOUND TOOL FOR PUNCHING AND SHEARING.—J. C. Jordan, Watertown, Wis.

I claim the combination of the frame, A, lever, C, cogged segment, D, pinion, E, handle, F, shears, B G, cam, H, box, L, mandrel, I, punch, M, and die, f, all arranged and operating substantially as herein described and represented.

70,858.—FIREPLACE.—Israel Kepler, Corry, Pa.

I claim in connection with the common corrugated grate back, the corrugated extension plate or back, H, projecting over the fire and condnuing up to the throat of the flue, as and for the purpose herein described and represented.

70,859.—SHEEP TROUGH.—Frank Ketcham, Monongahela City, Pa.

I claim the sheep trough of the form and configuration substantially as and for the purposes herein shown and described.

70,860.—DOOR LATCH.—Edward King, Taunton, Mass.

I claim the combination of the hub, F, to knob spindle, having extension arm, H, in combination with a latch bolt carrying pawl, I, when all arranged together for operation substantially as and for the purpose described.

70,861.—SHEEP SHEARS.—Brainerd Kingsley, Sharon, Mich.

I claim 1st, The bands, G G, and handle, I, arranged to hold and operate cutters, J, substantially as set forth.

2d, The combination of cutters, J J, and m m m, with levers, B C, bar, A, bands, G, and handle, I, as set forth.

3d, The plate, E', bar, A, posts D and E, arranged to support bands, G G, and lever, C, substantially as described.

70,862.—NUT-TAPPING MACHING.—Jas. Kirkley, Chicago, Ill.

I claim 1st, The arrangement of a gang of die boxes, a gang of taps, a gang of rotating and vertically sliding spindles, in the relation shown to gears, and a shaft, O, the parts above named being constructed and operated substantially as herein described.

2d, The arrangements of the oil receiver, G, oil-supply reservoir, F, pipes, d e, and forcing-pump, a, in combination with the die bed and vertically sliding and rotating spindle carrying taps, substantially in the manner and for the purpose herein described.

3d, The combination, with the nut tapping machine, constructed and operating substantially as herein described, of an automatic lubricating and oil-elevating apparatus, constructed and operating substantially as herein described.

4th, The arrangement of the levers, R, weight, W, links, R', treadles, S, and vertically-sliding and horizontally-rotating spindles, carrying taps, H, in relation to one another and to the die-bed, D, substantially in the manner and for the purpose described.

70,863.—MACHINE FOR CUTTING PAPER STOCK.—Abijah L. Knight, Baltimore, Md.

I claim 1st, The combination of the crank shaft, G, pitman, F F, knife-block H, guide-frame, I, and knives, i and C, substantially as and for the purpose specified.

2d, The combination of the crank shaft, G, pitman, F, having the pin, e, lever, L, pawl, p, ratchet, r, idle-wheels, O and P, feed-rollers, M, M', N N', and feed-table, T, all constructed and arranged substantially as and for the purpose set forth.

3d, The paper-stock cutting machine above described, consisting of the parts specified in clauses one and two of this claim, combined and arranged together substantially as described, for the purpose of cutting and preparing paper stock.

70,864.—MACHINE FOR MOLDING PULLEYS.—Thos. Knowles, Robert Knowles, and Samuel Knowles, Jersey city, N. J.

We claim a machine or apparatus for molding wheels or other work of curvilinear character, having for its elements a pillar or post, A, horizontally swinging and radially adjustable ram, D, carrying a vertically adjustible ram or pattern-holder, I, and dividing gear for adjusting the swing of the horizontal ram, substantially as specified.

70,865.—COMPOSITOR'S COPY HOLDER.—P. A. La France, Elmira, N. Y. assignor to himself and H. R. Kendall, New York city.

I claim 1st, The board, A, when provided with the extension, b, and roller, c, or their equivalents, and with the spring finger-bar, C, for holding the manuscript, substantially as and for the purpose herein shown and described.

2d, The board, A, when provided with the extension, e, or its equivalent, and with the indicating sliding bar, D, substantially as and for the purpose herein shown and described.

3d, The board, A, when provided with grooves, h h, or their equivalents, and with slotted plate or plates, E, or their equivalents, substantially as herein shown and described.

4th, The board, A, when arranged as described, so that it can be moved laterally on the type-case, B, and when provided with the spring finger-bar, C, sliding indicator-bar, D, and extension bars, E, or equivalents, all made and operating substantially as and for the purpose herein shown and described.

70,866.—BOLT FASTENING.—V. Lapham, El Paso, Ill.

I claim the bolt fastening, D, formed by the combination of the hinged parts, d1 and d2, pivoted catch, d3, and rubber spring, d4, or equivalent, with each other and with the bolt, C, substantially as herein shown and described and for the purpose set forth.

70,867.—LAMP.—James Lee, New York city.

I claim 1st, The combination of the wooden case, B, with the oil reservoir, A, substantially as herein shown and described and for the purpose set forth.

2d, The interposition of a wooden connection, b2, between the neck, a', of the oil reservoir, A, and the cap, C, substantially as herein shown and described and for the purpose set forth.

3d, Forming air passages, D, in the neck of the lamp, leading beneath the cap, C, from the external air to the interior of the oil reservoir, A, substantially as herein shown and described and for the purpose set forth.

4th, The adjustable extension pedestal, formed by the combination of the parts F and G, springs, f', and stop, g', with each other, and with the case, B, substantially in the manner herein shown and described, and for the purpose set forth.

70,868.—FISHHOOK.—A. I. Lenhart, New Brunswick N. J.

I claim the hook, B, pivoted to the bar, A, provided with the shoulder, b, and having the spring, d, bearing against it, in connection with the slide, c, having the spring, D, attached, and the hook or hooks, C, all arranged substantially as and for the purpose set forth.

70,869.—SHAFT COUPLING.—W. E. London, (assignor to J.A. Fay & Co.), Cincinnati, Ohio.

I claim a shaft coupling, constructed as herein specified, to wit: one half keyed on firmly in the usual manner, the other half provided with an adjustable clamping device, as herein specified and for the purposes described.

70,870.—HORSE RAKE AND HAY SPREADER COMBINED.—J.M. Low, Portlandville, N. Y.

I claim 1st, The arrangement of the revolving toothed shaft, M, and its supporting frame, K, the axle, A, and frame, C, of the rake substantially as herein shown and described and for the purpose set forth.

2d, The combination of the gear wheels, N and O, shaft, P, gear wheels, Q, and R, one or more shafts, S, and the gear wheels, T and U, with each other, and with the drive wheels, B, frame, K, and tedder-shaft, M, substantially as, herein shown and described and for the purpose set forth.

3d, The combination of the toothed reciprocating clearer shaft, B', with the revolving toothed tedder-shaft, M, and with the frame, K, substantially as herein shown and described and for the purpose set forth.

4th, Operating the reciprocating clearer shaft, B', from the shaft, P, by means of the eccentric wheel, E', or its equivalent, and the pitman, D', substantially as herein shown and described and for the purpose set forth.

70,871.—QUILTING FRAME AND CLOTHES DRYER.—Geo. A. Mallory, and J. J. Fish, Oxford, New York.

We claim the adjustable slotted standards, A A, cross-rail, B, arms, C C, and cross-rods, g g, constructed and arranged to serve as a quilting frame and clothes horse combined, substantially as described.

70,782.—PREPARING WOOD TO BE USED IN THE MANUFACTURE OF PAPER AND FOR OTHER PURPOSES.—C. K. Marshall, New Orleans, La.

I claim 1st, As a new article of manufacture and commerce, wood chips and saw-dust, reduced to a fine flour or powder, substantially as described.

2d, The use of the flour, obtained as above described, as an ingredient in the manufacture of paper.

70,873.—FURNACE FOR DESULPHURIZING AND REDUCING ORES.—Jabez Maunton, (assignor to himself and Wright Duryea, Wm. Ennis, J. H. Van Riper, A. P. Cummings, and J. Wendell Cole), New York city.

I claim 1st, The combination with a reversible draft in or through them, essentially as specified, of the fuel chambers, E E, and intermediate reducing chamber, F, said chambers being chargeable from above, and communicating with each other at or near the base, substantially as and for the purpose or purposes specified.

2d, The combination with a reversible draft, operating as described of regenerators, D D, fuel chambers, E E, and intermediate reducing chamber, F, said fuel and reducing chambers connecting with each other at or near the base, and chargeable form above, essentially as herein set forth.

3d, The vertical regenerators, D D, with their draft inlets or outlets, e, arranged below, in combination with the fuel chambers, E E, and intermediate reducing chamber, F, for action as described.

4th, In combination with the vertical regenerators, the spray water pipes, K, essentially as and for the purpose specified.

70,784.—FURNACE FOR HEATING PURPOSES.—Jabez Maunton, (assignor to himself, Wright Duryea, Wm. Ennis, J. H. Van Riper, A. P. Cummings, and J. Wendell Cole, New York city.

I claim the combination of the fuel chamber, C C', arranged to connect for combustion at the base, and regenerators, F F', in connection with said chambers at or near their tops, for operation with a reversible draft substantially as specified.

70,875.—RAILWAY SUPERSTRUCTURE.—J. Audley Maxwell, Savannah, Ga.

I claim in the construction and arrangement of the superstructure of railroads, the combination of the ties, A A and B, string pieces, C, chair, H, and knees, K, in the manner and for the purpose herein described.

77,876.—MACHINE FOR PLANING METALS.—Wm. McPherson, New York city.

I claim 1st, The cross-traversing screw, G, or its equivalent, and driving gear, as herein specified, so arranged to the cross-cutting tool in a planing machine as to operate relatively to the cutting tool, A, and table, W, substantially in the manner and for the purpose herein specified.

2d, I claim in combination with the longitudinal and transeverse feeding mechanism of the planer, the adjustable uprights, E E, arranged to operate substantially as and for the purposes herein set forth.

3d, The hinged braces, 2 and 4, in line with the axis of and in combination with the adjustable inclined uprights, E, and bed of the planer, substantially as and for the purposes herein specified.

70,877.—HAND LOOM.—S. C. Mendenhall, Richmond, Ind.

I claim 1st, The application to hand looms of the endless metal-eyed belt or metallic chain, B b, in combination with the spurred pulleys, C, D, the whole being arranged and combind for the purpose of driving the cam shaft, A.

2d, The described arrangement of endless metal-eyed belt or metallic chain, B b, spurred pulleys, C and D, pitmen, P P, and batten, Q.

3d, The described arrangement of the endless metal-eyed belt or metallic chains, B b, spurred pulleys, C and D, pitman, P P, and batten, Q, and the crank, D', when said crank has such a position on its pulley as to give and time the motions of the batten, and the cam shaft, a and for the purposes set forth.

4th, I claim the reversible plate, S, with its slot, u, or its equivalent, for the purposes set forth and described.

70,878.—BLEACHING STOCK FOR PAPER.—S. T. Merrill, Beloit, Wis.

I claim the introduction into a close-covered rag engine or other close vessel, provided with an agitator, of chlorine gas, or the disengaging of the latter from a chlorine solution contained within the box of the engine or other vessel, for the purpose of bleaching paper stock, substantially as set forth.

70,879.—SLIDE FOR EXTENSION TABLE.—Elisha Mets, (assignor to himself and A. Cram), Rochester, N. Y.

I claim in combination with the oblique grooves, substantially as herein shown and described, the bent coupling or locking irons, h, for the purposes set forth.

70,880.—AWNING.—S. Miller, and J. S. McClellan, Champaign County, Ohio.

We claim 1st, The two rollers, B B, in combination with rollers, F, canvas, H, arms, G, boards, K K, and cord, I, constructed and operating as described, and for the purposes set forth.

2d, The arranging boards, K K, so as to form a shelter to roller, F, in combination with roller, F, canvas, H, arms, G, boards, K K, and cord, I, constructed and operating as described, and for the purposes set forth.

70,881.—MACHINE FOR TEMPERING SKIRT WIRE.—J.H.Monk Brooklyn, N. Y.

I claim a pair of grooved rollers, adjusted substantially as specified, in combination with the pot or bath for melted metal for tempering wire for skirts, etc., in the manner set forth.

70,882.—WASHING MACHING.—Allan Neilson, Allegheny City, Pa.

I claim, 1st, The corrugated conical rollers, E, when arranged with level lower surfaces and when secured to a swinging frame, C, the axes of which rollers cross each other, substantially as and for the purpose herein shown and described.

2d, The flexible washboard, G, consisting of laths that are secured together by strings or wires, a a, operated by a treadle, F, substantially as set forth.

3d, The combination of the treadle, F, cords, a, box, H, and flexible board, G, with each other and with the rollers, E, all made and operating substantially as herein shown and described.

70,883.—DISH WASHER.—Edwin Norton and J. S. B. Norton, Boston, Mass.

We claim the combination as well as the arrangement of the revolving frame, E E', with the crib, K K, made substantially as described and for the purpose set forth.

70,884.—HOOK FOR TRAVELLERS.—William R. Oatley, Rochester, N. Y.

I claim the two hooks, A B, connected by a swivel joint, and constructed and arranged substantially in the manner as and for the purpose set forth.

70,885.—FANNING MILL, GRAIN AND SEED SEPARATOR.—Harrison Ogborn, Richmond, Ind.

I claim, 1st, The trough, 13, situated under and at the lower end of the upper grain board with a removable side, i3, substantially as and for the purposes described.

2d, The combination of the adjustable trough, I3, with the upper grain board, I1, forming the bottom of the front part of the shoe, I, and the adjustable screen, J, substantially as and for the purposes described.

3d, The combination of the upper grain board, i1, with the adjustable side, i3, of the trough, I3, substantially as and for the purposes described.

4th, A hopper consisting of the side boards, E, with converging grooves, e, the sliding board, F, and adjustable swinging board, H, substantially as and for the purposes described.

5th, The combination of the swinging board, H, lever, E, provided with a spur or tooth, e1, and the rack, e2, substantially as and for the purposes described.

6th, The vertical circular rim, R, secured to the fannings, Q, substantially as and for the purposes described.

7th, The rod, p, with its bent part, p', and the lever, n, substantially as and for the purposes described.

8th, The rod, p, in combtnation with the linked rods, m and m', wrist, v and wheel, V, substantially as and for the purposes described.

9th, The belt wheel, W, pivoted loosely on the pin, w, and provided with three sets of holes, K K1 and K2, for the purpose of giving either circular, side or end motion to the shoes, substantially as and for the purposes described.

10th, The arm, l, rigidly attached to the shoe by means of which motion is transmitted to the shoe, substantially as and for the purposes described.

11th, The combination of the arm, l, rigidly attached to the shoe, pulleys, V W, and belt to give circular motion to the shoe, substantially as and for the purposes described.

12th, The combination of the arm, l, pulleys, V W, and rod, v', to give either side or end motion to the shoe, substantially as and for the purposes described.

13th, The pins, g2, on the cleats of the sliding doors, G', substantially as and for the purposes described.

70,886.—RAILWAY CHAIR.—Nathaniel F. Page (assignor to himself and Elijah Whitney), Rutland, Vt.

I claim as my invention the combination as well as the arrangement of the cap, C, with the part, A, made with the two lips, a b, to receive the rail and the cap, substantially as specified.

I also claim the arrangement of the recess of the lip, b, at an obtuse angle with the rail-supporting surface of the chair, such chair being provided with two lips, a b, and a cap, C, as set forth.

70,887.—CARD HOLDER FOR TRUNKS.—William L. Paine, Boston, Mass.

I claim the within-described card holder for trunks consisting of the strips or plates, B C, in combination with points or projections, or their equivalent, for holding the card securely in place, substantially as set forth.

70,888.—FRICTION CLUTCH PULLEY.—C. D. Palmiter (assignor to S. A. Webb), Oswego, N. Y.

I claim, 1st, The device herein shown and described of connecting the pulley, B, with the shaft, A, consisting of a movable wedge, l, and an eccentric pivoted friction pad, j, which are made and operated substantially in the manner herein shown and described.

2d, The hinged lever, C, spring, h, stationary arm, C, and sliding wedge, l, in combination with each other and with the shaft, A, and pulley B, all made and operating substantially as herein shown and described.

3d, The combination and arrangement of the arm, C, having arm, d, elbow-shaped bar, D, pivoted thereto, and having the arms, f g, and pad, j, spring, h, set screw, i, wedge, l, sliding sleeve, E, pulley, B, and shaft, A, as herein described for the purpose specified.

4th, The pad, j, when attached to the arm, D, at the point of connection of the arm, f g, and out of line with the axis, A e, whereby the revolutions of the pulley, B, in one direction clamps the edge of the pad in line with the axis, A e, and increases its bite, and the revolutions of the pulley in the opposite direction turn the pad out of the line of said axis and releases its bite, as herein described for the purpose specified.

70,889.—BLACKING BRUSH.—Charles A. Paret, Nashville, Tenn.

I claim the arrangement of the staples, D D, loop, F, elastic band, E, scraper, B, spring, C, and groove brush stock, A, as herein described for the purpose specified.

70,890.—ASH SIFTER.—Daniel E. Paris, Troy, N. Y. city.

I claim, 1st, A bail to an ash sifter used separately from an ash pan or constructed with hooks or lugs at either end of the bail so as to engage with an ash pan surrounding or inclosing the sifter and so that both sifter and pan can be moved by the bail or the sifter separately.

2d, A double self-acting lifter to an ash pan or ash sifter so constructed with hooks or other means of moving the pan or sifter but not attached or attachable to them except while in actual use or in vertical position, as herein described and explained.

70,891.—STRAW CUTTER.—Hiram Parks, Athens, N. Y.

I claim the notched feed bar, K, when provided at its front with teeth in combination with the pin, b, on the oscillating lever, I, all made and operating substantially as herein shown and described.

70,892.—BLACKING BOX HOLDER.—Thomas King Payson, New York city.

I claim the box holder, A, with its lid carrier, B, provided with set screws, f, or other equivalent means for securing the box and its lid and setting the same relatively to each other, also facilitating the accommodation of different sized boxes in the one holder, substantially as shown and described.

70,893.—INKSTAND.—Stephen Perry and Joseph John Perry, London, England.

We claim, 1st, The employment of a hollow stopper formed of vulcanized india-rubber, or other suitable elastic material, in combination with the reservoir, A, tube, D, and cup, D1, for the purpose and substantially in the manner set forth.

2d, The tube, D, formed with the protuberance, D2, and fitted into the stopper, C, for the purpose and substantially in the manner set forth.

3d, Forming a stopper, cup and tube, in one piece of hard and soft rubber combined, substantially as described.

70,894.—EDGE PLANE.—J. E. Plummer, Binghamton, N. Y.

I claim the construction and use of a "reversible edge plane," substantially as described and represented for the purpose set forth.

70,895.—BOLT FOR DOOR.—George A. Pridham, Newark, N J.

I claim the plate, A, as constructed and used in combination with the bolt, E, provided with screws, G and F, as and for the purpose set forth.

70,896.—GRAIN DRILL.—Hiram Pulse, St. Paul, Ind.

I claim, 1st, The upper box or hopper, F, having the two doors, g g', and throats, H G', for optional discharge of the grain either through the screen or otherwise, as set forth.

2d, The slides, O and Q, adjusting lever, P, clamp, p, and slotted bar, p' combined and arranged substantially as and for the purposes set forth.

3d, The cross bolt, B, and nuts, 1 2 3 4 5 6, in the described combination with the beams, A A', sheaths, C C' C'', and draft rod, Y, for the purpose specified.

4th, The slotted brackets, r, and slotted segmental arcs, r', in combination with the rear wheel, R, and driving belt or chain, S, as and for the purpose specified.

5th, The notched spouts, D, in combination with the valves, n, and winged shares, N n', for the purpose described.

6th, In the described combination with the screen, I, and screen chamber, F', of my grain drill, I claim the removable drawer, J, for the purpose specified.

7th, The notched rod, W w, and spring, f, for the purpose specified.

8th, The caster wheel, T, slotted bracket, U, and bolt, V, for supporting the front end of the implement in combination with the adjustable rear wheel, R, as and for the purpose set forth.

70,897.—DISCONNECTING HORSES FROM VEHICLES.—John Rancevan, Carthage, Ohio.

I claim, 1st, The socket, C, provided with the spring backing, e, in combination with the bolt, c, stay strap eye, d, and cords, l and G, arranged and constructed substantially as described and for the purpose specified.

2d, The pivoted hammer, f, guard, f''', revolving lever, F, spring double tree strap, E, and double tree, D, arranged as described upon the tongue or other desirable part of the vehicle, and operated substantially as described and for the purpose set ferth.

70,898.—COMBINED HARROW AND SEEDER.—Benjamin Randall, Adams, N. Y.

I claim, 1st, The shaft, J, in the seed box, I, provided with the radial arms b, and rotated by means of suitable gears from one of the wheels, B, when the same is in combination with the scattering board or plate, M, and all arranged substantially as described and for the purpose set forth.

2d, The slide, K, perforated with the V-shaped holes, e, and fitting in the seed box, I, in combination with the perforated bottom, L, of the seed box which is perforated with circular holes, f, and the scattering board or plate M, the whole being constructed, arranged and operating substantially as and for the purpose specified.

3d, The combination of the harrow connected with the truck or mounted frame and the distributing apparatus applied to said frame, all arranged substantially in the manner as and for the purpose set forth.

70,899.—APPARATUS FOR TETHERING ANIMALS.—David W Rawson, Croydon, N. H.

I claim the band, m, with the hook or hooks, b, and the flange, d, on the cap, c, to be applied to any tether in which a cap or socket turning on an upright stake or bar is used.

70,900.—TOBACCO PRESS.—Thomas N. Read, Danville, Va.

I claim, 1st, The shrouding box, A, provided with false sides, A A, substantially as and for the purpose described.

2d, The hinged cross head, C, when combined with the screw, E, as and for the purposes and operating in manner substantially as specified.

3d, The truncated conical body, G G, in combination with socket, f, toe, e, and band, H, substantially as and for the purposes above set forth and described.

70,901.—CARPENTERS' SQUARE.—C. H. P. Robinson (assignor to himself and John B Robinson) Bellport, N. Y.

I claim a carpenters' square provided with a slot, a, in the manner and for the purpose described.

70,902.—COMPOUND TOOL FOR CUTTING, PUNCHING, AND UPSETTING IRON.—John J. Rose, Elmwood, Ill.

I claim, 1st, The curved lever, F, pivoted in the frame, A, in combination with the slide, E, and lever, B, whereby the latter in its downward movement presses upon the inner end of the lever, F, whose outer end forces the slide inward to upset the iron held by the clamps, C D.

2d, The combination of the eccentric, L, upon the eccentric lever head, H, yoke, K, and slotted side piece, a1, with the plunger, J, and punch, I, as herein described, for the purpose specified.

3d, The construction and arrangement of the main lever, B, pivoted between side plates, a1 a2, at their rear ends, lever, F, slide, E, clamps, C D, and hand lever, H, with flange, k', as herein shown, for the purpose specified

70,903.—DOOR SPRING.—Cyrus W. Saladee, Newark, Ohio.

I claim the combination of the box, A, mandrel, C, spring, E, and plates D and K, with an arm, B, and stirrup, F, constructed and operating substantially as described, and for the purposes set forth.

70,904.—SCHOOL DESK AND SEAT.—J. P. Scott, Lewisburg, Pa.

I claim, 1st, The arrangement of the school desk, B, supported on the sliding standards, A A, and the seat, C, hinged to the slide pieces, b b, and supported by the segment arms, c c, constructed, combined, and operating, as and for the purposes herein described.

2d, The lid, f, hinged to the desk, B, in combination with the folding brackets, g g, in such manner as to fold on the top or close the hollow receptacle for books in the desk, arranged as herein set forth.

70,905.—APPARATUS FOR PUNCHING SHEET METAL.—Morris Seiferth, Morristown, N. J.

I claim, 1st, Securing the punch, C, in the bed plate, B, by means of the holder, G, and screw, e, and making it adjustable up and down by means the screw, b, substantially as herein shown and described.

2d, The application to the punching machine herein described of the auto-

matic lifter, i, by which the plate is raised off the punch, substantially as and for the purpose herein shown and described.

3d, The bar, h, lever, l, and spring, k, in combination with the cam, g, on the shaft, D, and with the stationary punch, C, all made and operating substantially as herein shown and described.

70,906.—SKATE.—G. W. Shearer, Crown Point Center, N. Y.

I claim the combination of the levers and springs between the blade and foot rest of a skate, when arranged and applied thereto, substantially as and for the purpose described.

70,907.—MAIL BAG.—Luther M. Sims, Lincoln, Ill.

I claim the case, C, constructed and used with the bag and its flap, a, substantially in the manner and for the purpose set forth.

70,908.—CARRIAGE JACK.—Joshiah B. Small, Boston, Mass.

I claim my improved carriage jack, as constructed with its notched lifter or slider, arranged with guide posts in manner as described, and as having two toggles and a forked lever, and a stop, h, thereof, arranged and combined together, and with one of the posts, in manner as specified.

70,909.—COOLING AIR AND OTHER SUBSTANCES.—Daniel E. Somes, Washington, D. C.

I claim, 1st, Atomizing liquids, by means of a fan-blower, substantially as described.

2d, Cooling air or liquids, substantially as set forth.

3d, The devices or their equivalents, substantially as set forth, for cooling air and liquids.

70,910.—ELASTIC PACKING FOR THE JOINTS OF DOORS, LIDS, AND THE LIKE.—Daniel E. Somes, Washington, D. C.

I claim, 1st, An elastic tube, having a flange, lug, or plate, or more than one of either, or their equivalents, substantially as herein described, and for the purpose set forth.

2d, An elastic tube, prepared by splitting, as in fig. 9, or by making holes, f, as in fig. 12, or in any equivalent manner, for the purpose set forth.

70,911.—CAR BRAKE.—Charles Spofford (assignor to Charles Spofford, Walter E. Hawes, Charles Hersey, and Francis C. Hersey), Boston, Mass.

I claim the eccentric-gear, M N, when used with mechanism for operating the brakes of railroad cars, etc., substantially as described.

I also claim the friction wheel, T, in combination with a slotted bar, w, and shipper, 7, for taking the power from the periphery of a car wheel, C, to wind up the brake, substantially as set forth.

70,912.—MACHINE FOR PRESSING BONNETS.—Solomon Squier, and Horace Squier, Monson, Mass.

We claim, 1st, The combination of the jointed presser, F f, pressure-bars, L, pressing-frame, A C D E, block, B, heater, b', suspension rod, G, lip plates' m n, and supplementry heaters, h h, as herein described, for the purpose specified.

2d, The block, B, when attached to the frame, A, by a slide hinge, b, so that different sized blocks may be used to press hoods of varying proportions, by the same machine, without changing the jointed presser, as herein set forth.

70,913.—FISH HOOK.—Elisha Sterling, Cleveland, Ohio.

I claim the combination with the hook, A B, sliding extension hook, a, and the counter extension hook, b, constructed substantially in the manner and for the purpose set forth.

70,914.—GOLD SEPARATOR.—William C. Stiles, Nevada City, Cal.

I claim, 1st, The arrangement of the openings, o o, protected by screens, s s, and ledges, l l, upon an inclined vibrating table, T, having a series of transverse ledges, l l, for the purpose of separating the gold dust from dirt, substantially in the manner described.

2d, The combination and arrangement of a series of foraminated water troughs, w w, with an inclined vibrating table, T, having openings, o o, and ledges, l l, substantially as and for the purpose set forth.

70,915.—VENTILATING DEVICE FOR BOOTS AND SHOES.—Amos Stocker, Watertown, N. Y.

I claim, 1st, The instrument seen in figs. 5 and 6, letter, C, in combination with a boot or shoe.

2d, I also claim the extra insole, with its spring or springs, in combination with the valve, as seen in fig. 6, letter, C, substantially as described, and for the purposes set forth in the specification.

70,916.—GRINDING MILL.—Giles M. Stone, St. Louis, Mo.

I claim the adjustable roller, B, operating in connection with the front edge of the chute, T, for the purpose of grinding the lumps which pass between the upper rollers before reaching the second rollers, as herein shown and described.

70,917.—MACHINE FOR FLANGING AND WIRING METALLIC PLATES.—Orson W. Stow, Plantsville, Conn.

I claim the combination, as well as the arrangement, of the adjusting screw bearing, L, with the rocker-shaft, K, and the roller-shaft, C, its shoulder, h, and clamp-nut, M, or their equivalents.

I also claim the combination and arrangement of the set nut, T, the rocker shaft, K, and the adjusting bearing, L, applied to the shaft and the case or frame of the machine, substantially as specified.

I also claim the application of the front box, of the shaft, C, to such shaft and the case or frame, I, so as to be capable of being moved in one arc with the shaft, and endwise with such shaft, as described.

I also claim the case or frame, I, as made and applied to the rocker shaft journals and the bearings of the two shafts, and so as to encase the gears, substantially as described and represented.

70,918.—HARVESTER.—A. W. Tucker, Waxahachie, Texas.

I claim suspending the finger bar and its appendages from a curved beam, D, pivoted to the rear of the frame of the machine, and adjustable in any desired position, as set forth, so as to set the finger bar at any desired hight, in combination with the pivoted extension, E', of the finger bar, and the chain and lever, h, all being constructed, arranged, and operated in the manner and for the purpose set forth.

70,919.—FAUCET.—John E. Tucker, Boston, Mass.

I claim a faucet, composed of pipe, B, with stem, C, and plug, D, with its grooves, e, pipes, G and A, and packing-ring, E, all constructed, arranged, and operating in the manner as and for the purposes set forth.

70,920.—MODE OF PREPARING CLOTH FOR RECEIVING LITHOGRAPHIC AND OTHER IMPRESSIONS.—Charles Volkmar, Jr., New York city, assignor to himself, Wm. P. Myers and Thomas Hediem, Baltimore, Md.

I claim the process for preparing cloth for receiving lithographic, photographic, or other impressions, substantially as described.

70,921.—SELF-CLOSING HINGE.—Caspar Vetter (assignor to himself and Peter Schneider), Cincinnati, Ohio.

I claim, 1st, The combination, with a self-closing door, or shutter hinge, operating by gravitation and by a spring, substantially as shown, of the angular or non-circular top or head, B, and socket, K, permitting the door, when mounted, to gravitate to any desired position, as described.

2d, In combination with the spring, J, I claim the inclined edges upon collar, C, and socket, G, having depressions, g g', and prominences, c c', substantially as shown and described.

79,922.—GUIDES OR CLAMPS FOR HARNESS FRAMES.—Adolph S. Villee, Lancaster, Pa.

I claim the protecting guides, formed of strips, A B, with blocks or ends, C, arranged substantially as shown and described, for the purpose specified.

70,923.—SCREW DRIVERS.—T. D. Voorhees, Easton, Pa.

I claim the rotating thimble, C, with the flange, D, when applied to a screw driver, substantially as and for the purpose set forth.

70,924.—GRATE COMBINATION.—John Wallace, Louisville, Ky.

I claim the semi-circular tile, B, and grate, A, when the same are constructed and combined substantially as described and for the purpose set forth.

70,925.—PAPER RULING MACHINE.—Edmond A. Warren, Brooklyn, N. Y.

I claim, 1st, The rotating cylinder, C, provided with shafts, D D, having fingers, E, to grasp the sheets of paper to be ruled in connection with the pen-beam, O, provided with pens, Q, and all arranged to operate in the manner substantially as and for the purpose set forth.

2d, The adjustable cams, N, at one end of the cylinder, C, in connection with the arm, M, on the shaft, J, provided with fingers, K K, for presenting the sheets to the cylinder, C, substantially as shown and described.

3d, The adjustable cams, T, at one end of the cylinder, C, in connection with the arm, S, on shaft, P, having the pen-beam, O, attached, substantially as and for the purpose specified.

4th, The cords, U U', arranged in relation with the cylinder, C, and working respectively over the rollers, Z Z' Y Y' V, to operate substantially in the manner as and for the purpose set forth.

70,926.—WAGES INDICATOR.—Windsor N. White, Winchendon, Mass.

I claim the said wages indicator, or combination and arrangement of the cylinder, divided and marked substantially as described, with the slotted case or its equivalent, and the scale applied to such case, as set forth.

70,927.—CHIMNEYS.—A. S. Whittemore, Willimantic, Conn.

I claim the combination of a tile chimney, or flue, A, with an air pipe, C, the latter encompassing the former, and communicating with the external air and the compartments within the building, substantially as and for the purpose specified.

I further claim the elastic bands, B, fitted in the annular recesses, f, in the flanges at the ends of the tiles, substantially as and for the purpose set forth.

70,928.—AXLES AND AXLE BOXES.—David Wigger, New York city.

I claim, 1st, The rings, c d, fitted within the journal box, in combination with the collars, e, f, on the journal, Ax, substantially as and for the purpose specified.

2d, The arrangement of the packing ring, n, within the annular nut, C, and in relation with the journal, Ax, packing rings, h, and flange, g, substantially as and for the purpose specified.

70,929.—SELF-SETTING GAME TRAP.—Alfred Wilkin, McConnellsville, Ohio.

I claim, 1st, The combination of the shaft, B, operated by a spring or weight, arms, D, short lever, E, and lever, G, with each other, for the purpose of setting and tripping the trap, substantially as herein shown and described.

2d, The combination of the quadrant, I, and spear, K, with the arms, D, of the shaft, B, substantially as herein shown and described, for the purpose of killing the animal.

3d, The combination of the curved pivoted piece, L, connecting rods, N, elbow levers, O, and hinged platform, R, with each other and with the arms, D, of the shaft, B, substantially as herein shown and described, for the purpose of throwing the dead animal out of the way.

4th, The combination of the lever, T, and hooks, U and V, with the elbow levers, O, and quadrant, I, substantially as herein shown and described and for the purpose set forth.

70,930.—BELT FASTENER.—David Wigger, New York city.

I claim, 1st, The plates, B B', when firmly secured to the ends of the belt, and when shaped as described, so that they can only be disengaged by moving the ends of the belt aside, substantially as herein set forth.

2d, The plates, B and B', when made as set forth, in combination with the bolt, a, the same being made and operated substantially as and for the purpose herein shown and described.

70,931.—LANTERN.—Moses B. Wright, Meriden, Conn.

I claim the perforated metal cap, D, top, a, chimney, C, shell, B, and perforated metal band, d, all combined in the manner substantially as set forth.

70,932.—DICE BOX.—Justus E. Zender, New York city.

I claim, 1st, As a new article of manufacture, a hand dice box made of metal, substantially as and for the purpose described.

2d, I also claim a hand dice box, lined with cloth, or any equivalent material therefor, whether such dice-box be made of metal or any other suitable material, substantially as and for the purpose specified.

REISSUES.

2,797.—MACHINE FOR BOLTING AND CLEANING CLOVER-SEED.—John C. Birdsell, South Bend, Ind.

I claim, 1st, The combination in a machine for threshing and hulling clover seed, of the bolts, A A', with the cranks, D E E, guide rods, F F, arms, G G H H, and connecting rods, B B', or their equivalents, in the manner and for the purpose set forth.

2d, I claim the combination, in the machine above described, for threshing and hulling clover seed, the trough, I, with the endless conveyer, J, in the manner and for the purposes specified.

2,798.—PITMAN CONNECTION FOR HARVESTERS.—Hiram L. Wanzer, New York city.

I claim, 1st, Connecting the pitman, B, to the pitman wheel, A, of a harvester, by means of a round or polygonal pin, a, having an eccentric projection, d, and made substantially as and for the purpose herein shown and described.

2d, The tapering pin, a, when arranged in combination with the pin, d, the washer, e, and nut, b, all made and operating substantially as and for the purpose herein shown and described.

3d, I claim the pin, i, in combination with the packing, k, all made and operating substantially as and for the purpose herein shown and described.

[NOTE.—FIFTY-ONE patents in the above list were obtained through the Home Office of the SCIENTIFIC AMERICAN.—EDS.]

PENDING APPLICATIONS FOR REISSUES.

Application has been made to the Commissioner of Patents for the Reissue of the following Patents, with new claims as subjoined. Parties who desire to oppose the grant of any of these reissues should immediately address MUNN & Co., *37 Park Row, N. Y.*

66,362.—CLOTHES WRINGER.—C. H. Knox, Mount Pleasant, Iowa. Dated July 2, 1867. Application for reissue received and filed Oct. 21, 1867.

1st, I claim the double cog wheel, P, and double pinion, S, substantially as set forth.

2d, The combination of Cog wheel, P, and pinion, S, with rollers, D D, substantially as and for the purpose set forth.

3d, The arrangement and combination of lever, M, hinged to box, A, roller, L, rods, K, levers, I, and plate, G, arranged to operate upper roller, D, as set forth.

26,327.—NURSING BOTTLE.—Milo S. Burr (assignee by mesne assignments of Francis J. La Forme), Boston, Mass. Dated Nov. 29, 1859. Application for reissue received and filed Oct. 19, 1867.

I claim my said improved nursing bottle, having its body, A, composed of glass or other suitable material, and provided with an elastic nipple or mouth piece, f, and a flexible or pendulous tube, C, applied thereto substantially in manner and so as to operate as and for the purpose set forth.

I also claim in a nursing bottle otherwise properly organized, the use or employment of a flexible or pendulous tube, substantially as and for the purpose set forth.

I also claim the application of a gravitating tip or tube, c, to the lower end of the flexible tube, C, substantially as and for the purpose set forth.

68,398.—OVERSHOE.—Henry G. Tyer, Andover, Mass. Dated Sept. 3, 1867. Application for reissue received and filed Oct. 30, 1867.

I claim a boot or shoe constructed with an elastic gore or gores of vulcanizable material, when the said gore is inserted into the shoe before vulcanization and during the process of construction, and the whole completed by vulcanization substantially as set forth.

63,770.—CENTRIFUGAL MACHINE FOR DRAINING SUGAR AND OTHER SUBSTANCES.—David M. Weston, Boston, Mass. Dated April 9, 1867. Application for reissue received and filed Nov. 2, 1867.

1st, In the construction of centrifugal machines for separating liquids from other substances, I claim suspending such machines at the top by flexible connections operating substantially as described.

2d, The combination of the spindle, D, and its accessories, with the socket, R, and its india-rubber bushing, C, or other equivalent spring connection, to form a flexible and elastic bearing for the shaft, E, by which the cylinder may be suspended substantially as described.

3d, The employment in a centrifugal machine of a hollow shaft, and a spindle or axle on which it runs, to support the cylinder or basket, substantially as described.

4th, So forming and arranging the driving pulley, F, upon the shaft, E, that it shall surround the spring bearing, substantially in the manner and for the purpose described.

5th, The construction of the openings, I, in the bottom of the cylinder, in such machines, and the valve, J, for the purpose of closing the same, substantially as described.

6th, The combination of the cylinder, G, the hollow shaft, E, the driving pulley, F, the spindle, D, its elastic bushing, C, and socket, B, to form the operative part of a centrifugal machine, substantially as described.

57,006.—GAS MAINS.—I. N. Stanley, Brooklyn, N. Y. Dated Aug. 7, 1866. Application for reissue received and filed Nov. 2, 1867.

I claim as an improvement in hydraulic mains for gas works, the combination with the main C, of the external supply tubes D, cast with or made separately from and attached to the main, and communicating with the same below the water or fluid therein, substantially as and for the purpose herein set forth.

34,088.—BASKET.—Lansing Marble and Townsend North, Vassar, Mich., assignees of Lansing Marble aforesaid. Dated Jan. 7, 1862. Application for reissue received and filed Nov. 2, 1867.

1st, I claim a basket formed of two series of overlapping splints, A A', substantially as described, and fastened in any suitable manner.

2d, Fastening hoops, a a B and C C, in combination substantially as and for the purpose described.

2,847, whole No. 33,851.—GANG PLOW.—Wm. B. Ready, Sacramento, Cal. Dated Dec. 3, 1861. Application for reissue received and filed Nov. 1867.

1st, I claim the curved beams, A, when used in connection with a gang plow, or a series of plows connected together by cross bars, B B B, constructed and operating as and for the purposes herein set forth.

2d, The arrangement of the arms, G, wheels, I, and lever, J, when attached to the right hand arms, G, and connected to the central beam, A, as and for the purposes set forth.

3d, The arrangement and application of the draft at any point or place below the top of the standard of the plow, as specified and described and for the purposes set forth.

56,189.—HORSE RAKE.—George Deal, Wilmot, Ohio. Dated July 10, 1866. Application for reissue received and filed Nov. 6, 1867.

I claim the combination and arrangement of the hinged arms, I I, adjusting screws, H H, or their equivalent, tooth roller, D, and rake teeth, L L, substantially as and for the purpose herein specified.

☞ NOTE.—*The above claims for Reissue are now pending before the Patent Office and will not be officially passed upon until the expiration of 30 days from the date of filing the application. All persons who desire to oppose the grant of any of these claims should make immediate application to* MUNN & CO., *Solicitors of Patents, 37 Park Row, N. Y.*