their engines from 30 or 40 up to 70 or 80 millions, and sometimes to even more. And we have more lately seen how, by increased attention to the conditions of marine-engine economy, a consumption of from 5 lb. to 7 lb. of coal per indicated horse power per hour has been brought down to from 2½ to 3½ lb.

Something like these reforms has been introduced into portable-engine practice by the agency of the Royal Agricultural Society's quadrennial trials, and we have this year an engine running steadily for nearly three hours with a consumption of but 2½ lb. of Welsh coal per effective or dynametrical horse power per hour, equal probably to about 2⅛ lb. or 2¼ lb. of coal per indicated horse power per hour, the measurement to which most engineers are better accustomed. Put into Cornish notation, 2¼ lb. of coal per effective horse per hour means a duty of nearly 88¾ millions of foot-pounds for each hundredweight of coal, a result which, we need not say, has been but rarely surpassed even in Cornwall.

This result is, of course, a maximum result, obtained by the exercise of the greatest care in design, in construction, and in working. That in the working was perhaps the most remarkable of all, and we say, advisedly that it would have well paid any farmer employing steam power to any considerable extent, as many now do, to have sent his engine driver or drivers to Bury, even from a distance of 200 miles or more, and to have kept him or them in the show yard during the whole period of the trials, to study the wonderful jockying (and we do not employ the term reproachfully) of George Wilkinson with Clayton, Shuttleworth and Co.,s engine, of Robert Celles with Tuxford's engine, of John Bristow with Ransomes and Sim's, and of Whitcombe with the Reading Ironworks', engine, the latter when worked to 50 per cent. above its nominal power, giving the greatest economy of fuel yet recorded, Clayton and Shuttleworth beating on the trials at nominal power. Not perhaps that the care was so much, if at all, greater than that of railway engine drivers, when working, as they lately did on the Great Eastern Railway, by contract; but railway practice is not often accessible to portable engine drivers, nor, differing so much as it does from their own, does it so directly carry home its lessons of example. Even if they be not likely to be generally repeated in every day practice, it should be as interesting to the large farmer—the steam farmer we will call him—as to the engineer to observe the expedients by which a little engine, not working within a warm house, but in the open air, is nevertheless enabled to rival, in its dynamical results for a given weight of coal, the triumphs of Cornish and marine and locomotive practice. Not only is the boiler lagged, but it is sheltered from winds and rain, and there was rain and wind in plenty, and more than enough, last week and this, at Bury. The coal is broken into lumps hardly larger than dice; it is fed to a fire hardly three inches thick (plenty were told, and some, perhaps, believed, that some of the fires were not one inch thick). The distribution of coal upon the grate is as even as the utmost care can make it; the firedoor is never allowed to be open a moment longer than absolutely necessary; the ash pan is carefully cleared of cinders and bits of unburnt coal, to be added to the fire for the final effort when all the clear coal is gone; the ash-pan damper is regulated with the nicest care, and where not tight in all its joints, all openings except at the bottom are carefully stopped with rags, so as to compel the entering air to pass through the whole volume of heated air contained in the pan; the feed-water is heated by waste steam almost to boiling; the safety valves are screwed to slightly more than the working pressure, and the latter is maintained to half a pound at one fixed point on the gage; the slide and expansion valves are, in the best engines, set exactly to the intended work, and the regulater is kept wide open where this is possible, as in many cases it was; the brasses of the engine are left to run as freely as can be tolerated in respect of thumping; the piston packing is in the most perfect condition, neither tight nor loose, as drivers understand the terms; the oiling is assiduous and just sufficient, and everything is done that the driver, with all his wits about him, can think of to prolong the time of work with the quantity of coal so scrupulously weighed out to him. It is here that engine driving, or even boiler-stoking, becomes a profession; and there was a curriculum of technical education, in at least one of its important branches, in the week's trials concluded on Tuesday last. Could the large competing firms make drivers as well as engines, they would surely increase their trade in the latter, and it might even pay, in the way of business, or to educate the former gratuitously, for nothing would more hasten the adoption of steam upon the farm, both at home and abroad, than a general understanding and practice of the best principles of engine-driving, so splendidly exemplified in the trials at Bury.

It is difficult to point to any new feature of design which has attributed to the excellent results attained. It is even difficult to say what the results prove as to many questions of plan and proportions which are often discussed by engineers, and, now and then, by steam farmers. Clayton's double cylinder engine beat his own single-cylinder engine; but this could not have been because of this difference in the number of cylinders, since the double-cylinder engines were worked at 80 lb., while the single cylinders were limited to 50 lb.

This enabled the double-cylinder engines to work more expansively, and possibly it will be said with more expansion than a single engine would bear, and still work with uniformity. With 80 lb. steam, however, the single engines would have run well, cutting off at one sixth stroke, and but one only of the double-cylinder engines tried cut off as short as one-eighth, and only one other as short as one-sixth. The reason for the difference of pressure is, no doubt, that double cylinder engines are now oftener made for plowing, and are better made for this purpose than common portable engines, mostly with single cylinders, which would (not, however, because the cylinder is single) not be safe at 80 lb. As a matter of fact, the best result attained in the trials, the best perhaps on record, was had from a single cylinder engine working to one half more than its nominal power—the system of testing the engines not only to their nominal power, but, subsequently, to one half as much more, having been introduced for the first time at the trials at Bury. So, too, some of the engines, which were not doing particularly well, were observed to have strokes more than 12 inches long, and were hence called long-stroked engines. We heard some good judges assert that the long-stroke engines would be nowhere, yet the best result of all, and that when working to one half more than the nominal power, was obtained with the longest stroke of all, viz., 18 inches.

Without looking forward, at present, to better results than the best that have been booked at Bury, we must hope to see such results become more general, and that consistently with reasonably economical construction and working. At present ordinary portable engines burn, as they burnt at Bury, from 5 lb. to 9 lb. of coal per horse power per hour, or, on the average, twice what they ought. In other words working a 10 horse engine up to 15 horse, for ten hours a day, they burn 7 cwt. to 12½ cwt. per day, so that with coal at 1s. a cwt., the difference in the cost of fuel between the most economical and the most wasteful engine would amount to 9s. per day, and the average difference might be taken at 5s., equal, for even 100 days' working in the year, to the interest on £500, or to that on £350 even if 1s. 6d. extra were paid for a first rate driver. The means of economy lie in sound construction, thorough lagging of the boiler, heating the feed water, liberal expansion, in short, the most miserly care to prevent loss of heat, heat being the true representative of power. All this and the most careful firing and fettling of the engine are necessary to economy. And will other engine makers allow one or two, or even three or four, firms to run off with the great prizes of these Exhibitions? It takes a great deal of money to carry on business in these days of competition, but it is sound policy to expend the money judiciously in building better engines, and with this to keep in sight every means, even to the most refined to secure economy of working. And what wonderful results would be attained, too, by prizes for engine driving as well as prizes for engines. If bets were made on engine races, the winning jockeys would come in for handsome gratuites, as happens with the triumphs at Epsom, at Ascot, and at Newmarket; and, seriously, good engine-driving is just now most wanted of all on the steam farms of England

We are almost amused at reading the above from the *Engineering*. It seems strange, indeed, that such care must be used in the firing of the boilers and the distribution of the coal on the grate; that the "ash-pan should be carefully cleaned of cinders and unburnt coal;" that "all openings except at the bottom—the draft—should be carefully stopped with rags;" that the "feed water should be heated by waste steam almost to boiling; the safety valves screwed to slightly more than the working pressure! and the brasses of the engine left as free as can be tolerated in respect to thumping," etc., etc.

Surely the experiment should have succeeded under such circumstances, if there was any merit, whatever, in the engines. This extreme carefulness to details is impossible in ordinary work, then why should it be observed in competitive trials? The proper test for agricultural as well as for other machinery is simply to try it under the ordinary and extraordinary circumstances of daily use. The suggestion of prizes for engine driving is a good one, and we do not see why that and firing should not be made objects of competition.

The results of the trial referred to in *Engineering* were highly satisfactory, the consumption of coal per dynametrical horse power per hour being 2·54, 2·71. 2·98, and so on up to 7·99, We doubt if equal results have ever been attained in this country. There is no doubt, however, that everything was arranged even to the minutest details to this end. Such results give as much future promise as present gratification.

OFFICIAL REPORT OF PATENTS AND CLAIMS

Issued by the United States Patent Office,

FOR THE WEEK ENDING AUGUST 6, 1867.

Reported Officially for the Scientific American

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67,395.—Machine for Twisting Augers.—W. L. Aldrich, Norwich, Ct., and William Evans, Seymour, Ct.

1st, We claim regulating the twist of augers and bits by means of the rollers, g g, or their equivalents, arranged upon a slide rest, and operating substantially as described.

2d, The combination of end supports, a' b, with the regulating clamps, g g, substantially as described.

3d, The construction of the female back center, b, substantially as described.

67,396.—Screw Plate.—Walter Ashton (assignor to himself and Edward K. Quinn), Utica, N. Y.

I claim, in a screw plate, the chaser, C, gibs, D and E, and set screws, D1 and E1, or their equivalents, in combination, constructed and operating substantially as described and for the uses and purposes mentioned.

67,397.—Bedstead.—Wm. K. Bacall, Boston, Mass.

I claim the folding bedstead, or combination of the head frame, the door part, B, and the auxiliary frame, E, arranged and connected together, and with the case, A, substantially as specified.

I also claim the combination of the legged supporters, C and F, or their equivalent, with the door part, B, and the auxiliary frame, E, arranged and connected togeth erand with the case, A, as specified.

I also claim the combination of the head frame, D, the door part, B, the auxiliary frame, E, and the supporters, C F, arranged and connected together and with the case, A, substantially as described.

67,398.—Bench Plane.—Leonard Bailey, Boston, Mass.

I claim the arrangement of the two parts, A B, of the stock together and with slots, c d, and clamp screws, a b, as described, whereby such parts may be adjusted with reference to each and clamped together, as and for the purpose specified.

I also claim the combination as well as the arrangement of the adjusting screw, F, and nut, E, or the equivalent thereof, and the bent lever with the plane stock. Also the arrangement of the bole, K, in the cap iron, to operate with the adjusting lever, combined with the screw and nut, or the equivalent thereof, and applied to the stock, as set forth.

67,399.—Tweer.—W. W. Ball, Charlestown, Ill.

1st, I claim the combination of the blast tube, A, valve, d, and air chamber, all constructed and arranged as described.

2d, The disk, E, having the steps, e' e' e', operating in connection with the projections, f f f, on the inner surface of the plate, C, and having the series of holes around its margin, and the square central aperture, c, substantially as and for the purpose specified.

67,400.—Inking Apparatus for Printing in Colors.—Thomas L. Baylies and George W. Wood, Richmond, Ind.

1st, We claim two or more separate continuous inking fountains, B B1 B2, in combination with two or more intermediate adjustable sectional rollers, I I1 I2, and other distributing rollers, by which the ink of different colors is transferred from the fountains to, and properly arranged in bands upon, a common roller, substantially as set forth.

2d, The combination of two or more adjustable sectional inking cylinders with the soft intermediate roller, K, and the hard roller, L, substantially as set forth.

3d, The arrangement of two or more sets of adjustable sectional inking cylinders in relation to each other and to the roller to which they transfer their colors, substantially as set forth.

4th, The combination of the distributing rollers, the transferring rollers, and adjustable inking cylinders with the roller, K, substantially as set forth.

5th, In combination with an elastic roller, we claim so arranging the boxes of the latter that they may be locked so as to regulate the play thereof, substantially as set forth.

6th, The arrangement of the frame, G, rack, O1, pinion, N, pulleys, N1 h h1 and h2, and the connecting belts, substantially as and for the purpose set forth.

67,401.—Padlock, etc.—Wilson Bohannan, Brooklyn, N. Y.

1st, I claim, in combination with an oscillating plate, C, to which the notched slides, e, are suitably applied, the parallel moving plate or knife, f, attached to said plate or guide, substantially as described.

2d, The combination of the plate or knife, f, slides, e, and oscillating plate, C, with a vibrating lever arm, which is guided and controlled by a fixed stud, j, or its equivalent, substantially as described.

67,402.—Plate Lifter.—C. F. Bosworth, Milford, Ct.

I claim the combination of the two jaws, A and B, with their respective levers, D, arranged upon a handle, C, so as to operate in the manner herein described.

67,403.—Machine for Making Nuts.—John R. Bridges (assignor to himself and G. O. Faucett), Pittsburgh, Pa.

I claim, 1st, The annular semi-cylindrical or semi-oval recess on the face of the squre die, E, for forming a raised bead around the eye of the nut, all as described and represented in fig. 5 of the drawings.

2d, The bar, G, provided with pins, a a and c c, in combination with the die, E, and standard, I, for the purpose herein before described.

3d, The cutter, D D, when so arranged in a double operating nut machine as to pass the nut bar, from which the nut blank has been severed, to the proper position for feeding into the other end of the machine, substantially as hereinbefore described.

4th, The combination of the blocks, J J1, bottom plate, H, cutter, D, and bar, G, for forming a matrix or nut box to enclose the nut while it is being pressed and punched, and which shall open to release the nut on the withdrawal of the pressing die.

67,404.—Rolling Mill.—Pittman Bright, Philadelphia, Pa.

I claim, 1st, The shaft, D, its collar, i, enlargement, f, and adjustable collar, e, in combination with the shaft, F, its collar, i, enlargement, f1, and adjustable collar, G1, the whole being constructed and arranged substantially as and for the purpose herein set forth.

2d, The collar, G or G1, composed of the ring, m, with its corrugated or notched end and the ring, n, with its rim, q.

67,405.—Umbrella.—John Brown (assignor to William V. Brown), New York City.

I claim a woven umbrella or parasol cover having pockets for the ribs woven into or with the web of which it is formed, essentially as herein set forth.

67,406.—Folding Table.—Julia P. Brown, Boston, Mass.

I claim the combination and arrangement of the cammed shoes and the spring catches, the table top, and the two sets of legs, arranged and applied together and to the table top, substantially as specified, such shoes being made with holes or recesses in their sides to receive the hooks of the catches, as set forth.

67,407.—Marker for Sewing Machines.—Sarah F. Brown (assignor to Chas. W. Brunner), Savannah, Ga.

I claim, 1st, The adjustable bar, A, in combination with the pin, C, and tube, D, all made and operating substantially as and for the purpose herein shown and described.

2d, The toothed pin, C, and spring, E, when arranged as described, for the purpose of holding the tubular pencil holder, D, on the adjustable plate, A, in any desired angle of inclination, as set forth.

3d, The spring, E, when arranged on the side of the perforated tube, D, and when provided with a pointed or sharpened end, as set forth, for the purpose of holding the pencil in the tube and for fitting the same tube to larger and smaller pencils, as set forth.

4th, The plate, A, pin, C, and spring, E, in combination with the tube, D, and spring, E, all made and operating substantially as and for the purpose herein shown and described.

67,408.—Soap Holder.—Richard Bush, South Brooklyn,

I claim, 1st, The soap holder with the revolving bottom, substantially in the manner and for the purpose set forth.

2d, The whole device, as an article of manufacture, when constructed substantially in the manner and for the purposes set forth and described.

67,409.—Seed Planter.—L. A. Butts, Ripon, Wis.

I claim the hoppers, J and L, seed distributers, a and l, seed cups, e and o, shaft, W, driving wheel, V, pullies, p p, conductor, q, lever, U, guide pins, r, guides, u, and rope, K, in combination with the vertically adjustable frame which carries the seeding devices, all arranged and operating as set forth.

67,410.—Telegraphic Instrument.—S. G. Cabell, Quincy, Ill.

I claim, 1st, Operating a telegraph instrument by means of a magnet consisting of a helix interposed between two concentric pieces of soft iron, the inner forming a central core and the outer one a covering for the helix, substantially as described.

2d, The combination of the electro magnets, A and B, with the connecting piece, h, arranged so that by moving it to and fro, the magnets may be connected or disconnected at will, substantially as described.

3d, The combination of the magnet, A, with its vibrating arm, I, and the magnet, B, with its vibrating arm, G, when arranged to form one instrument, and to operate as and for the purposes herein set forth.

67,411.—Razor.—Gouveneur Carr, New York City.

1st, The combination of a razor blade with the guiding gage, substantially as and for the purpose specified.

2d, The combination of the razor blade and guiding gage by means of a hinge joint and holding mechanism, substantially as and for the purpose set forth.

3d, The combination of the two guiding gages, or two-part case, with the razor blade by means of a three-part hinge, or the equivalent thereof, substantially as and for the purpose set forth.

4th, The combination of the razor blade, the stock to which it is hinged, the guiding gage, the connecting hinge, and the holding mechanism, substandally as and for the purpose specified.

67,412.—Sash Pulley.—Henry Cash, Newport, Ky.

I claim, as a new article of manufacture, the combination of the flat place, C, pivot, G, and sheave, F, the said plate being provided with bosses, B, and all constructed and adapted to operate as and for the purposes described.

67,413.—Steam Injectors.—Nathan L. Chappell (assignor to the Chappell Patent Steam Valve, Pump, and Bilge Ejector Manufacturing and Furnishing Company), New York City.

I claim the inlet chamber, B, constructed with a contracted throat, a, and arranged with reference to the steam inlet pipe, D, and chamber, C, substantially as herein set forth for the purpose specified.

67,414.—Last.—Aaron W. Cheever, Lynn, Mass.

I claim the block last, A B, constructed substantially as above described and for the purpose set forth.

I also claim making the draft line straight on the exterior surface of the last from a point near the heel to a point near the ball of the foot, substantially as and for the purpose set forth.

I also claim forming a projection, g, on the toe end of the block of the last, substantially as and for the purpose described.

I also claim increasing the width and reducing the length of the groove in the last proper, as and for the purposes specified.

67,415.—Stovepipe Damper.—Edwin Cox and A. W. Potter, Monroe, Wis.

1st, The shoulder pieces and pins for connecting the segments of a damper, substantially as shown and described.

2d, The collar or shoulder, K, for supporting the damper in combination with a damper in divider.

3d, The thumb latch attached to the end of the lever for opening and closing the damper without bringing the hand of the operator in contact with with heated metal, substantially as shown and described.

4th, The mode of securing the thumb latch and lever by means of pins, substantially as described.

5th, Combination of parts forming our improved damper, substantially as shown and described.

67,416.—Lid for Kettles, Pails, etc.—S. B. Cox, Buffalo, N. Y.

I claim the combination with the grooved india-rubber ring, the fasteners, and the vessel and its cover or lid, the whole arranged and combined substantially as herein set forth, of the flexible conductor pipe, C, secured to the said cover or lid by the screw joint, D.

67,417.—Pump Piston.—F. A. Cramblite, Petroleum Centre, Pa., assignor to himself and Joseph R. Dickey.

1st, I claim making in separate parts the two ends of a piston for operating pumps in oil, salt, artesian or other deep wells, and attaching such parts to the piston rod in such a way that one or both may have sufficient vertical play on the rod to admit of the outward expansion or bulging of the piston-packing, substantially as and for the purposes described.

2d, Filling the contiguous ends of such half-piston to each other so as to leave room between them for the oil or water in the piston to pass out against and expand or bulge the piston-packing, substantially as and for the purposes above set forth.

3d, Packing a piston for deep well pumps by a packing sleeve of leather or other flexible material, in such a way that the ends of such sleeve shall be securely fastened beneath the outer surface of the upper and lower ends of such piston, so as to make therewith tight working joints, substantially in the manner and for the purposes above specified.

4th, Making the half-pistons described counterparts of each other, so as to secure a reversible piston, substantially as and for the purposes described.

67,418.—BUGGY-TOP JOINT AND FASTENING.—Henry M. Curtis, Ypsilanti, Mich.

I claim the main and counter braces, A and C, when combined or joined together, and operating conjointly with the carriage tops, substantially as and for the purpose set forth.

67,419.—APPARATUS FOR RAISING AND LOWERING SHIPS' BOATS.—William. A. Devon, Richmond, N. Y. Antedated July 23, 1867.

I claim the combination of the davit, C, with its cross bar or beam, E, and blocks. D G G, arranged for operation together, in connection with the ropes of the two end tackles, and swinging from a common center, substantially as and for the purposes herein set forth.

67,420.—BED BOTTOM.—Henry Doebele, (assignor to himself and Peter Kries), Philo, Ohio.

I claim, 1st, Securing the ends of the slats, A A, between two plates or strips, B and E, and connecting the latter by means of metal elbow pieces, F F, and holding the whole bottom together by means of screws, C, substantially as set forth.

2d, Combining the above bed bottom with a bedstead, in which are rails, C, and springs, D, for the reception of the bottom, so that the latter can be placed upon the springs, and be securely held in the bedstead without being fastened to the same as set forth.

67,421.—MACHINE FOR MAKING NUTS.—George Dunham, Unionville, Conn,

I claim, 1st, Arranging the cams and hammers, K and K," so that the latter shall act in the double capacity of hammering the blank, and to push it to the punch, o, and from thence in front of the pusher, S, substantially as described.

2d, I claim constructing and arranging the cams and the hammers, K K' K," so that the latter shall act in the double capacity to hammer the blank and hold it until the punch, X, has entered the same, substantially in the manner described.

3d, I claim the combination of the lever, T2, and adjusting screws, a b, with the slide, M, substantially as and for the purpose described.

4th, I claim the employment of the yielding cam, C, in combination with the hammer, K, substantially as described.

5th, I claim the employment of the lifter, Q, for lifting the hammer, K, while it is pushing the nut off from the die, O, substantially as described.

6th, I claim the combination of the anvil block, J, with the hammers, K K K," punch, X, and die, O, substantially as and for the purpose described.

67,422.—BOOT AND SHOE HEELS.—C. Dyer, Jr., and Ellis Drake, Stoughton, Mass.

We claim the elastic studs, F, in the perforated plate, C, clamped by their heads, f, between such plate and the treading surface, B, of the boot heel by means of the center screw, D, fitting into the nut, E, upon the shank, I, all constructed and arranged as herein set forth for the purpose specified.

67,423.—SMUT MACHINE.—Peter T. Elting, Buffalo, N. Y.

I claim, 1st, The combination and arrangement of the revolving stone or iron head, C, with the stationary brush, D, substantially as described.

2d, The concave screen, h2, and brush, I, arranged and operating substantially as described.

3d, The air passages, O and O,' so arranged with reference to the conical flue, n3, and the fan that a current of external air will be drawn in by the action of the fan and pass through the descending sheet of grain for the purpose, and substantially as described.

4th, The double offset, l l', in the annular leg, for the purpose and substantially as herein described.

67,424.—PORTABLE PERCUSSION CAP PRIMER.—James K. Ely and Robert Cook, Franklin, Ohio.

We claim the combination of the spring, c, orifice, f, and lip, n, with the guides or flanges, o o, and box, b, in which the caps are fed forward to the delivery orifice by their gravity, substantially as and for the purpose specified.

67,425.—TEA KETTLES AND OTHER VESSELS.—Sheldon B. Everitt, (assignor to himself and J. H. Bartholomew), Ansonia, Conn.; assignors to Frederick G. G. Nieddinghaus, St. Louis, Mo.

I claim a sheet metal kettle, sauce-pan, or similar deep vessel, whose sides and bottom are not only made seamless of one piece of metal, but which is also provided with a flanged bottom or pit, A, whose depth does not exceed that of the sides of the vessel, substantially as herein set forth.

67,426.—PROCESS OF CONVERTING CAST IRON INTO STEEL AND MALLEABLE IRON.—Friend P. Fletcher and Virgil W. Blanchard, Bridport, Vt.

We claim, 1st, Dispersing or reducing the molten metal to an atomic condition in the presence of the gaseous element or elements contained in the bath, substantially as and for the purpose specified.

2d, The forcible dispersion of a stream of molten metal into a globular or atomic condition when it comes in contact with a jet or jets of a gaseous element or elements, substantially as and for the purpose specified.

3d, The introduction of a secondary jet or jets of a gaseous element or elements, into the bath above, below or beyond the primary one, substantially as and for the purpose specified.

4th, The use of an inclined plane or its equivalent, within the bath, in combination with said bath, as and for the purpose specified,

5th, We claim a secondary furnace or its equivalent, for the purpose of heating the gaseous elements, substantially as and for the purpose specified.

6th, A gate or valve in the main trough or channel, in combination with said trough and the shallow channel and bath, substantially as and for the purpose specified.

7th, The employment or use of the necessary valves in the pipes leading from the boiler and receiver to the bath, for the purpose of regulating the flow of gaseous element or elements into said bath, substantially as and for the purpose specified.

8th, The use of any gaseous element or elements beside those contained in air or steam, used and applied substantially as and for the purpose specified.

67,427.—MODE OF PRESERVING EGGS.—P. Gaughran and L. Sweeney, San Francisco, Cal.

We claim treating eggs for preservation, substantially in the manner as herein described.

67,428.—BUCKLES.—George L. Gerard, New Haven, Conn.

I claim the herein described buckle as an article of manufacture.

67,429.—PUNCHING APPARATUS.—T. E. Harris, Green Bay, Wis.

I claim the improved punching apparatus substantially as herein described and for the purpose set fort .

67,430.—CULTIVATOR.—Samuel L. Heisey, West Donegal, Pa,

I claim the arrangement of the sliding plate, B, with its guide, c, recess, b, in combination with the lever, D, and springs, S x, all arranged and operating substantially in the manner and for the purpose specified.

67,431.—MACHINE FOR STRETCHING HIDES.—Theodore P. Howell and Charles P. Oliver, Essex, N. J,

We claim a machine for stretching hides or skins, having the bar, a, posts, b c and d, bar, e, screw, f and f', beam, g, and knee, h, arranged, combined and operating for the purposes and in the manner herein above described.

67,432.—INNER SOLES FOR BOOTS AND SHOES.—S. W. Huntington, Augusta, Maine.

I claim the improved inner sole for boots and shoes as composed of the woolen body, a, in combination with the sheet, b, of lead, in the manner and for the purposes as described.

67,433.—LIGHTER FOR VESSELS.—Orrin H. Ingram and Donald Kennedy, West Eau Claire, Wis.

We claim removably attaching lighters, B, to the hull of a boat, A, substantially as herein shown and described and for the purpose set forth.

67,434.—KNIFE CLEANER.—Insley Jewett, Boston, assignor to himself and John P. Jewett, Hyde Park, Mass.

I claim the combination and arrangement of the strips of leather, E F, the pieces of india-rubber, C, and the compression screw, e or its equivalent, with the emery receptacle formed of the plates, A B I I, as described.

I also claim the combination of the slotted mouth piece, G, with the strips E F, the pieces of rubber, C D, and the plates, A B I I, arranged as specified.

67,435.—BROILERS.—Henry H. Johnson, New Haven, Conn.

I claim a broiler, A, constructed with an arm, C, provided with one or more shoulders, a b c, and so as to operate substantially as herein set forth.

67,436.—ADJUSTABLE BOLSTER FOR MATTRESSES.—Philip Kraher, Cincinnati, Ohio.

1st, I claim the adjustable bolster, B, operating on hinge, I, with the segment or plate, C, for the purpose as herein set forth.

2d, The cord, G, the pulley, F, the pins, E, the staples or frames, D, the springs, U, all made and combined that both sides of the bolster may be operated at the same time.

67,437.—FEATHERING PADDLE WHEEL.—George A. Keene, Newburyport, Mass,

1st, I claim the arrangement of a paddle wheel or independent floats, having each one wing preponderating in area and weight, pivoted to cross bars, D and E, so as to allow a reciprocating rotary motion through a limited arc, substantially as and for the purpose described.

2d, And the further arrangement of stop, h, in connection with floats having such a preponderating side, and pivoted to cross bars, D and E, substantially as described and for the purpose of limiting such reciprocating rotary motion,

67,438.—LUBRICATOR.—Samuel Lemon, Jr., Hoboken, N. J., assignor to himself and Charles Woodruff, Hunter's Point, N. Y.

I claim the combination and arrangement of the globe, A, tube, B, nut, e, rod, c, with valve, F, and caps, D D', substantially as described for the purpose specified.

67,439.—BRICK MACHINE.—W. O. Leslie, Philadelphia, Pa.

1st, I claim the mold carriage u, constructed and operating substantially as shown and described.

2d, The pressure plate 1, constructed and operating substantially as shown and described.

3d, The track F, constructed and operating substantially as shown and described.

4th, Making the under side of the pressure plate 1, convex, and the upper part of the mold carriage u, correspondingly concave, substantially as shown and described.

67,440.—MODE OF SECURING RUBBER ROLLS TO THEIR SHAFTS.—Charles Manheim (assignor to himself and E. L. Perry), New York City.

I claim a rubber roll having its inner packing of cloth and rubber, wound spirally upon and vulcanized to the shaft, together with its coating, as herein set forth, whereby the rubber is prevented from turning upon the shaft or packing, substantially as described and for the purpose specified.

67,441.—CORN CULTIVATOR.—Albertis Martin, Oquawka, Ill., assignor to himself and J. R. Martin. Antedated July 27, 1867.

1st, I claim the plow frame C, when supported by the rollers m and n, and the arrangement with reference to the frame A, axle B, and the plow beams, D and E, in the manner substantially as described and for the purpose specified.

2d, The semicircular cog wheel I, shaft Y, lever K, crank L, and bar P, in combination with the cog bar H, attached to the frame C, substantially as described and for the purpose specified.

3d, The connecting piece t, in combination with the straps attached to the post F, and beam D, substantially as and for the purpose set forth.

67,442.—BED BOTTOM.—Sam. McDonald, Cincinnati, Ohio.

I claim the supporting rods F, and elastic loops E, sustained by either a firm or a yielding attachment to the bedstead, and operating substantially in the manner and for the purpose set forth.

67,443.—RAILROAD SWITCH.—James McLaughlin and Chas. W. Jones (assignors to themselves and Wm. C. King), Duncannon, Pa.

We claim an elastic self-acting railroad switch, arranged and operating substantially as herein described.

67,444.—CORN PLANTER.—H. S. Mitchell and C. Search, Hublersburg, Pa.

We claim, 1st, The removable slide plate applied to and operating in connection with the reciprocating slide, substantially as and for the purpose described.

2d, The removable slide plate I', provided with the rib or ridge l, arranged to work in a corresponding groove formed in the partition F, in the manner and for the purpose set forth.

3d, The arrangement of the levers N, and rack bar O, in connection with the adjustable followers or coverers, substantially as described.

4th, The reciprocating rod b, provided with the star-shaped burr or head c, and adapted by the reciprocating slide I, in the manner and for the purpose described.

67,445.—FURNACE FOR ROASTING ORES.—David Jones O'Harra and Clark Brown Thompson. Empire City, Nevada.

1st, We claim the combination and arrangement of the hinged circular plate E E', with the inclined oblique hoes, a a a a, all constructed as shown and attached to the endless chain D, substantially as and for the purpose specified.

2d, The arrangement of a series of fire chambers, G G, along the sides of the ore chamber of a desulphurizing furnace at intervals of about twenty-five feet, substantially in the manner and for the purpose set forth.

67,446.—FENCE POSTS.—David Oliver, Oxford, Ohio.

I claim a fence post consisting of two uprights A A, firmly attached to a stone B, by means of a link G, substantially as described.

67,447.—MANUFACTURE OF AMMONIA.—Alfred Paraf, Thann, France.

I claim the process of preparing purified ammonia from ammoniacal stock by distillation, and treating the products by charcoal, substantially as herein before set forth.

67,448.—TRACE BUCKLE.—C. B. Payne, Bloomington, Ill.

I claim the combination of the buckle A B S, lock E, trace F G, having headed bolts F, arranged to pass through slots D C, and operate substantially as set forth.

67,449.—MACHINE FOR DRESSING AND RENOVATING FEATHERS.—G. W. Peabody, East Hampton, Mass., and O. L. Cowles, Westfield, Mass,

1st, We claim the use, in combination with a steam cylinder M, of a feather-dressing machine, of one or more similar valve seats, each having several steam passages radiating therefrom and opening into the space L, substantially as described.

2d, Operating all the steam valves in the cylinder M, by means of a single valve rod arranged within the cylinder, substantially as and for the purposes set forth.

3d, The combined valve key and steam plug, constructed and operating substantially as described.

4th, The arrangement of the drip pipes, placed as described, in combination with the steam cylinder and hollow-flanged bearings, substantially as set forth.

67,450.—ARTIFICIAL FERTILIZER.—Henry E. Pond, Franklin, Mass.

I claim the new fertilizer substantially as before described.

67,451.—METHOD OF SPLICING RAILROAD RAILS.—Daniel R. Pratt, Worcester, Mass., assignor to John P. Verree, Wm. A. Mitchell, and J. Marcus Rice.

1st, I claim the method and arrangement of joining the ends of two railroad rails by the means of springs F, cups E, washers D, bolts B, and nuts C, in combination with two splicing plates A A, made in the manner substantially as described and for the purposes herein set forth.

2d, I claim the construction and arrangement of springs combined with the wooden splicing plates, as shown in Fig. 2, as and for the purposes herein set forth.

67,452.—BOILER.—Joshua R. Purdy and D. C. Barger, Peekskill, N. Y.

1st, We claim the arrangement and combination of the outer pot A, and inner pot B, with legs L L, and projections r r, substantially as set forth.

2d, The double cover C c, attached together by the hooks or standards s s, and eyes e e, or some equivalent device.

3d, The valve V, placed in the cover of the inner pot B, for the purpose of allowing the escape of steam and odor.

4th, The arrangement and combination of the pots A and B, covers G and C, substantially as and for the purposes set forth.

67,453.—WASHING MACHINE.—John F. Riggs and Wm. M. Albin, St. Joseph, Mo.

1st, We claim operating the plunger E, through the medium of the pivoted frame C, connecting rod D, and crank c, of the shaft d, substantially in the manner and for the purpose set forth.

2d, The wheel B, in combination with the legs a a, formed of two parts, connected by a joint or hinge b, substantially as and for the purpose specified.

67,454.—PLATFORM SCALES.—S. E. Robbins (assignor to Elmer Townsend), Boston, Mass.

I claim the construction of the knife-edge bearings throughout the scale, with concave edges fitting upon convex surfaces, as and for the purpose substantially as set forth.

67,455.—DISINTEGRATING FLAX, HEMP, AND OTHER FIBROUS PLANTS.—R. M. Russell, New York City, assignor to George W. Norris, Baltimore, Md.

1st, I claim the process of disintegrating fibrous substances, substantially as herei specified, that is to say, by subjecting the said substances, whilst in a boiler or other suitable vessel, to the action of steam or superheated steam, followed by cold atmospheric air or carbonic acid gas, or both together, producing results substantially as herein specified.

2d, Treating the substantially disintegrated mass, whilst in the disintegrating boiler or other vessel, with the chemical agents herein specified, or their equivalents, in substantially the manner herein specified.

67,456.—PLOW.—Elias Seward, Hamilton, Ohio.

I claim the self-adjusting plow B, made with the convex shoe C, having the angular horizontal base d e e, and curved receding shank h, as a new article of manufacture, constructed and operating in the manner and for the purpose substantially as described.

67,457.—FURNACE.—Joseph Sholl, Burlington, N. J.

1st, I claim the combination of a boiler or oven with a fire box enclosed in an air chamber, and a flue or passage through which heated air from the said chamber is caused to traverse in contact with those parts of the boiler not heated directly by the products of combustion from the fire-place, all substantially as and for the purpose described.

2d, The combination of the above and a flue for conveying the air after its passage round the boiler or oven to the fire-place.

67,458.—CARPENTER'S PLANE.—G. D. Spooner, Rutland, Vt., and L. N. Johnston, Brandon, Vt.

We claim the sliding crosshead C, provided with shoulders b, which bear against the inner surface of the plate B, said crosshead being made to receive the set screw c, and the thumb screw E, which catches in a forked lug d, projecting from the inner surface of the fixed plate B, to operate in combination with the plane iron D, as and for the purpose described.

67,459.—CLOTHES-LINE REEL.—J. D. Starritt, Chicago, Ill.

1st, I claim the combination of two part box A B, with spools F, shaft K, and cord G, substantially as set forth.

2d, The combination of locks r s, shaft K, and two-part box A B, arranged to hold said shaft K, when said box A B, is shut, and loosen it when open, as set forth.

3d, The ratchet wheel m, in combination with pawl P, spools F, and catch, as described.

67,460.—SAFETY COCK.—John Stowell, Charlestown, Mass.

I claim the safety cock, made substantially as described, viz., of the body A, the valve and its seat, the fusible plug, the auxiliary stem and its screws, or the equivalents thereof, the whole being as and for the purpose specified.

67,461.—DUST BRUSH.—Samuel Taylor, Boston, Mass.

1st, I claim, as a new article of manufacture, the floor brush or duster formed in its interior of knots of bristles, and edged with a continuous sheet of bristles, substantially as and for the purpose described.

2d, The method, substantially as described, of edging a brush with a continuous sheet of bristles.

67,462.—INSTRUMENT FOR SETTING JEWELS.—Augustin Thoma, Augustin F. Thoma, and Albin Thoma, Piqua, Ohio.

1st, We claim the spring jaws b b, in combination with the spreading rod d, connected with the handles a, constructed and operating substantially as and for the purpose herein described.

2d, We claim the notch h, on the point of one of the jaws b b', formed for the purpose herein specified,

67,463.—METHOD OF CAPPING AND NICKING THE CAPS OF SCREW HEADS.—Charles E. Thompson (assignor to himself and Orrin W. Swift), New Haven, Conn.

I claim the method of capping the heads of screws and nicking the caps, substantially as herein described.

67,464.—TOOL EXTRACTOR.—R. S. Torrey, Bangor, Me.

I claim the worm s, in combination with the cylinder A, and the sliding arrangement B C C, in the manner and for the purpose described.

67,465.—WINDOW-SHADE FIXTURE.—L. A. Tripp (assignor to himself and S. M. Boyd), Middletown, N. Y.

I claim the combination of the cap E, sliding bolt F, and notched ring G, with each other, substantially as herein shown and described and for the purpose set forth.

67,466.—HARROW.—John E. Van Riper, Dearborn, Mich.

1st, I claim the folding draft bar H, constructed with hinges or other joints, for the purpose described.

2d, The combination and arrangement of the three sections A B C, the link couplings I I and O O, etc., and the folding draft bar H, arranged substantially as described for the purpose designed.

67,467.—SHAMPOOING MIXTURE.—M. J. Vieira, Mendota, Ill.

I claim a composition of a liquid for use in shampooing the hair, compounded of the ingredients substantially as set forth.

67,468.—CAR COUPLING.—Wm. E. Warner, Newark, N. J., and M. J. Palmer, Syracuse, N. Y., assignors to themselves and Arthur Holmes.

We claim the self-locking car coupling, constructed and operated substantially as described in the foregoing specifications.

67,469.—LUBRICATOR.—G. Waters, Cincinnati, Ohio.

I claim a lubricator consisting of the glass reservoir, A, attached to the stem, D, by means of the socket, C, and the elastic packing, B, all constructed and arranged to operate as shown and described.

67,470.—PULLEY.—Thomas A. Weston, Birmingham, Eng.

I claim the aforesaid double chain wheel and endless chain combined in the manner described and represented in the drawing.

67,471.—LIGHTED VENTILATOR FOR SHIPS.—Norman W. Wheeler, Brooklyn, N. Y.

1st, I claim the combination of the glass top, C, and the hood, B, or their equivalents, substantially as described.

2d, I claim the hinged deflecting doors, E E, in combination with the hood, B, provided with a glass top, substantially as described.

67,472.—SASH FASTENING.—M. V. B. White, Ballston, N. Y.

I claim the employment of the lock or stop, C, operating in the recess or mortise, D, cut in the window sash, B, and in combination with the arm, I, and roller, F, in the manner and for the purposes substantially as hereinbefore fully described and set forth.

67,473.—VARIETY FRAME LATHE.—A. C. Wicker, and Lorson W. Williams, Fairhaven, Vt.

1st, We claim the combination of the sliding frame, C, with the standards, B, and the shaft, F, substantially as herein shown and described and for the purpose set forth.

2d, The patterns, I, constructed and secured to the shaft, F, substantially as herein shown and described and for the purpose set forth.

3d, The combination of the upright bearings, J, with the bed plate, A, and patterns, L, attached to the shaft, E' substantially as herein shown and described and for the purpose set forth.

Fourth, The combination of the spring, K, or its equivalent with the sliding frame, C, and bed plate or frame of the machine, substantially as herein shown and described and for the purpose set forth.

67,474.—MILK CAN BOTTOM.—Moses Wiles and J. C. Wock, Fort Plain, N. Y.

We claim the bottom, C, formed of either cast or wrought iron or other material substantially as shown and described in combination with a milk can as and for the purposes set forth.

67,475.—PRINTING PRESS.—B. O. Woods, and W. S. Tuttle, Boston, Mass.

1st, We claim adjusting the tympan with reference to the type bed by appliances as w, the lower end of arms, d, without intending to limit ourselves to the particular appliances shown, substantially as described.

2d, The arrangement of the crank arms, e, and screws, g, in combination with the tympan, and bed plate, substantially as described.

67,476.—PISTON PACKING.—E. B. Allen, Portland, Me.

I claim, 1st, In combination with the part, g, of the piston the arrangement of the segments constructed at p o, and the segments, as shown at q r, in the manner and for the purposes herein described.

2d, In combination with the part, g, of the piston, the arrangement of the segments, p' o', having the channels, t, on the part, p' and the segments, q' r' having the lips to fit into the said channels, t, in the manner and for the purposes described.

67,477.—CHIMNEY CAP.—Michael Anderson, Brooklyn, N. Y.

I claim, 1st, The spiral revolving wings, E, overlapping each other and leaving an open space, F, between them in combination with the cylindrical casing, B, disk, D, and central tube, G, as herein set forth for the purpose specified.

2d, The spiral flanges, G, constructed as described causing a downward circular motion to the atmosphere surrounding the central tube, G, in such a manner as to form a vacuum at its top, thereby increasing the draft of the chimney as herein shown and described.

67,478.—STEAM CYLINDER LUBRICATOR.—E. H. Ashcroft, Lynn, Mass.

I claim, 1st, The combination of the valve, E, cup, A, tube, C, and inner valve, D, constructed, arranged and operating in the manner substantially as shown and described and for the purpose set forth.

2d, The combination of said parts with outer cup, F, arranged, constructed and operating in the manner substantially as shown and described and for the purposes set forth.

67,479.—STEAM GAGE COCKS.—E. H. Ashcroft, Lynn, Mass.

I claim, 1st, The handle, F, constructed in the manner substantially as shown and described and for the purpose set forth.

2d, The combination of handle, F, stem, B, disc, H, spring, d, gage cock, A, bearings, I I, and valve, C, constructed, arranged and operated in the manner, substantially as shown and described.

67,480.—MACHINE FOR GRINDING SAWS.—E. C. Atkins, Indianapolis, Ind.

I claim, 1st, The combination and arrangement of the grindstone, K, and shaft, M, collar, N, adjustable boxes, I, with pins, K' and set screw, O, with the reciprocating bed, G, supported upon rods, u, and springs, t, substantially as and for the purpose set forth.

2d, In combination with the bed, G, rods, u, and springs, t, I claim the carriage, F, and way frame, E, adjustably supported at one end upon the screws, B, substantially as and for the purpose set forth.

57,481.—COTTON SEED PLANTER.—W. C. Banks, Como Depot, Miss.

I claim the seed box, l, having the form herein described and provided with openings, c c, in combination with the finger, g, and guiding box or hopper, F, when arranged and operating in the manner and for the purpose specified.

67,482.—SPRING BALANCE.—W. G. Barker, Detroit, Mich.

I claim a spring balance having its spring, C' connected at one end to an adjusting screw, B, by means of a swivel connection so that said spring can be more or less extended by turning said screws, substantially as and for the purpose described.

67,483.—GANG PLOW.—Robert Baxter, French Camp, Cal.

I claim the head piece or flange in combination with and forming part of the standard in the manner and for the purpose set forth.

67,484.—THILL AND POLE COUPLING.—Edwin Bennett, Oxford, Mich.

I claim the bar, B, which is passed under the axle and spread at its forward part to form a spring for clutching the egg-shaped shaft iron by means of the bolt and screw, E, for the purpose set forth.

67,485.—CHAIR SEAT.—Alanson Bingham, Surry, N. H.

I claim, 1st, The combination of the splint, A, slotted splint frame, D, and strips, E, or frame, F, for combining the ends of the splint, substantially as described.

2d, The combination of the flanged chair seat frame, F, and double reversible seat frames, substantially as and for the purpose set forth.

67,486.—LOOPS FOR BEARING CHAINS.—James Bird, New York City.

I claim making bearing chains with a hollow head, E, so as to receive and hold an elastic cushion, F, substantially as above shown.

67,487.—ADJUSTABLE PARALLEL RULER.—Edward Bostock, Albany, N. Y.

I claim, 1st, The employment in parallel rulers of an adjustable slide having a straight supporting edge thereon, as and for the purpose described.

2d, The combination with such adjustable straight supporting edge one or more guides or rods as and for the purpose set forth.

3d, In combination with such adjustable straight supporting edge one or more guides or rods having knobs or heads thereon as and for the purpose set forth,

4th, Such adjustable straight supporting edge when provided with a graduated scale thereon as and for the purpose set forth.

5th, The combination of the laths, A and B, with the rods, or bars, C C, for the purpose set forth.

6th, The combination of the laths, A and B, rod or rods, C, and the straight supporting edge as and for the purpose set forth.

7th, Providing the guide rods with removable heads to admit of reversing the ruler relatively to a bar, B, so as to place its beveled edges against or away from the material to be ruled for the purpose set forth.

67,488.—SLATE PENCIL SHARPENER.—F. G. Bottner, Bridgeport, Ct.

I claim as an improved article of manufacture, a slate pencil sharpener made and operating substantially as and for the purpose herein shown and described.

67,489.—TUG HOLDER.—T. J. Bottomley, Burlington, Wis.

I claim a holder for tugs or traces, of harnesses constructed and applied to harnesses, substantially as and for the purpose described.

67,490.—HARVESTER.—W. F. Brabrook, South Hardwick, Vt.

I claim the construction and arrangement of the jointed bars, E F, sickles, K K, of unequal length, foot lever, G, chain, b, toothed segment, I, lever, J, pawl, e, on the lever shaft, f, in the bracket, c, substantially as described for the purpose specified.

76,491.—EYELET.—G. B. Brayton, Providence, R. I.

I claim an eyelet made from metal composed of the elements and possessing the characteristics, substantially as described.

67,492.—APPARATUS FOR THE COMBUSTION OF FUEL.—Jacob Biiar, Munich Kingdom of Bavaria.

1st, I claim the employment of solid fuel in a fine state of division and causing it to ignite during its descent through a suitable combustion chamber to which it is supplied in a continuous manner by self-acting feeding apparatus, substantially as and for the purpose hereinbefore described.

2d, The application and use to and in the combustion chambers hereinbefore referred to of stops or obstructions for the purpose of checking or retarding the descent of the finely divided fuel through such chambers and insuring thereby its complete and perfect combustion.

3d, The substitution of an exhaust fan for the usual chimney for creating a current or currents of air through the combustion chamber hereinbefore referred to when such fans are worked in concert with the several fuel feeding apparatus, substantially as hereinbefore described.

67,493.—SPLINTS.—J. L. Burch, Franklin, Tenn.

1st, I claim the mode substantially as herein described of constructing and arranging the reversible splints, A A' A2 and of attaching the same to the injured limb.

2d, The combination of splints, A A1 A2 and D, respectively constructed substantially as set forth.

3d, In combination with the vertical splints, the adjustable sole, E, attached thereto and to the foot, substantially as described.

67,494.—ELEVATED BEDSTEAD.—D. Burnett, Bedford Station, N. Y.

I claim the combination of a bedstead which can be raised or lowered by the devices, substantially as described with the sliding legs, as herein set forth for the purpose specified.

67,495.—APPARATUS FOR STRAIGHTENING SHEET METAL.—Joseph D. Carter, Thomaston, Conn.

I claim the arrangement of a series of rollers in the manner described, by means of which a sheet of iron may be subjected to a series of gradually diminishing bendings as set forth.

67,496.—STEAM ENGINE OIL CUP.—Thomas Chatterton, Cleveland, Ohio.

I claim the plug, E, provided with ports, I J and e, ports, a f, and vent holes, g, as arranged and in combination with the cup, a, for the purpose and in the manner set forth.

67,497.—FURNACE FOR OXYDIZING ORES.—Thomas J. Chubb, Brooklyn, N. Y.

1st, I claim the combination of a revolving cylinder, which is provided with elevating strips or buckets, with a furnace which is constructed with a receptacle for receiving the ore from said cylinder, substantially as described.

2d, The construction of the cylinder, D, with a contrivance for grinding or crushing the ore as it flows therefrom, substantially as described.

3d, The combination of cylinders, E D E, substantially as described.

4th, The receiving hopper, G, and furnace chamber, B, w than elevator, I, and a revolving cylinder, in combination with a suitable furnace, all arranged so as to operate substantially as described.

5th, The construction of the furnace for heating the ore, of a fire chamber, A, flues, b c d, chambers, A1 A2 and B, damper openings, g h, substantially as described.

6th, Providing for conducting the products of combustion into or through the ore treating chambers, or directly off through pipe, P, at pleasure, substantially as described.

7th, Inclining the cylinder, D, toward the furnace so as to effect the return of the ore after each treatment to the receiving hopper, G, substantially as described.

8th. The receiver, H, in combination with a cylindrical screen, E, substantially as described.

9th, The tilting trough, J, in combination with a return spout, L, leading down to the receiver, G, substantially as described.

10th, The arrangement of a series of disconnected pipes, c c d d b b, with relation to the furnace chamber, A, hot air chamber, B, substantially as and for the purpose described.

11th, So constructing an apparatus for treating ore substantially as described, that the operation or treatment can be repeated as often as desired without handling the ore, substantially as described,

67,498.—AMALGAMATORS.—T. J. Chubb, Brooklyn, N. Y.

1st, I claim the employment of a revolving cylinder in combination with lifters, stirrers or agitators, for conveying and stirring ore containing precious metals, which ore is being subjected to the action of the vapor of mercury, substantially as described.

2d, The employment of a revolving shaft with stirrers or projections on it, for stirring, conveying and exposing ore containing precious metal, and while such ore is being exposed to the vapor of mercury, substantially as described.

3d, The arrangement of a condenser, in combination with a mercury still and contrivances for exposing the ore to the action of the vapor of mercury, substantially as described.

4th, Producing a partial vacuum in a mercury retort and appurtenances of an apparatus for amalgamating precious metals, by means of a pump, chimney or their equivalents, substantially as described.

5th, The outer casing or housing for enclosing an apparatus in which the vapors of mercury are used for amalgamating precious metals, substantially as described.

6th, Providing for collecting the vapor of mercury on its way from the amalgamator to the escape-flue or chimney, substantially as described.

7th, Heating the amalgamating chamber in which the vapors of mercury and precious metals are contained, by heat applied upon the outside of the chambers, so as to prevent a too sudden condensation of the mercury upon the inside of said chambers.

67,499.—WASHING MACHINE.—J. B. Coffin, Ashland, Ohio.

1st, I claim the combination of the block, D, board, F, posts, F, board, G, and lever, H, with each other and with the tub, A, substantially as herein shown and described, and for the purpose set forth.

2d, The collar, k, constructed and shown as described in combination with the handle, i, and side pieces, h', of the lever, H, substantially as and for the purpose herein set forth.

3d, The combination of the rubber or equivalent spring, L, with the board, G, and lever, H, substantially as herein shown and described and for the purpose set forth.

4th, Attaching the handles, M, to the lever, H, by means of a rubber or equivalent spring, n, substantially as herein shown and described and for the purpose set forth.

67,500.—CAST IRON BELL.—E. G. Cone, East Hampton, Conn.

I claim a cast iron bell having its shank, B, of malleable cast-iron or other soft metal capable of being drilled, with the body, A, of the bell cast around it, substantially as herein shown and described.

67,501.—GANG PLOW.—Allen T. Covell, San Leandro, Cal.

1st, I claim attaching the beams, A A, to the pole, B, between the reaches, a a, by the rod, C, so that the plows may be made to move up and down swinging on the axle, J, and rod by operating the lever, G, when disengaged, substantially as described.

2d, Attaching the axle, J', and axle bed, J, angularly to the frame, the clips, K K, and adjusting blocks, l l, substantially as described and for the purposes set forth.

3d, the links, D D, attached to the beams or frame and the rigid arms, E E, of the roller operating in them in combination with the beams, A A, and pole, B, substantially as described.

4th, The combination arrangement and combination of the beams, A A, pole, B, reaches, a a, rod, C, axle and axle-bed, J and J', temper blocks, l l, roller, F, and arms, E E, together with links, D D, substantially as described and for the purposes set forth.

67,502.—PATTERN FOR CASTING STEAM PIPE SUPPORTS.—Richard T. Crane, Chicago, Ill.

I claim, in combination with the main pattern, A, one or more pivoted hook patterns, B, arranged and operating substantially as and for the purposes herein specified.

67,503.—STEAM HEATER.—Richard T. Crane, Chicago, Ill.

I claim the combination and arrangement of the headers, B C, and pipes, P, with a steam inlet, A, at the bottom, as and for the purposes described.

67,504.—STEAM HEATER.—Richard T. Crane, Chicago, Ill.

I claim in combination with a series of coils, P, and the headers, B C D, the arrangement of the steam inlet pipes, a b, substantially as and for the purposes specified.

67,505.—STEAM GENERATOR FOR HEATING PURPOSES.—Richard T. Crane, Chicago, Ill.

1st, I claim the arrangement of movable bars, R, in combination with stationary water grate bars, substantially as and for the purposes specified.

2d, I claim the combination and arrangement of the vertical headers, G, and the horizontal pipes, L, substantially as specified and shown.

3d, I claim the combination of the water grate bars, F, with said headers, G, and pipes, L, arranged and operating substantially as specified and for the purposes described.

4th, I claim the arrangement of the pipe or pipes, K, with the pipes, J, and headers, I I, substantially as and for the purposes specified.

5th, I claim the arrangement of the heads, M, when constructed so as to form a water drip for condensed steam, as set forth and described.

6th, I claim the arrangement of the pipes, N, with the receiver, O, so as to form a drip for the condensed steam in said reservoir, and in combination with the pipe, P, substantially as and for the purposes specified.

7th, I claim the combination of the three systems of pipes, F J and L, when connected and arranged in the manner herein set forth and shown and for the uses specified.

8th, I claim the arrangement of a series of scrapers, Y, in combination with a series of horizontal pipes, L, as and for the purposes specified and shown.

67,506.—LOW WATER ALARM FOR STEAM GENERATORS.—Richard T. Crane, Chicago, Ill.

I claim the arrangement of the pipes, B B, and tie, D, with respect to the valves, B, substantially as and for the purposes specified.

67,507.—PAD TREE.—Andrew J. Cronk, Peoria, Ill.

I claim the pad iron as constructed and combined with the bridge, substantially in the manner and for the purpose as herein set forth.

2d, The bridge constructed with D's and combined with the pad iron substantially in the manner and for the purpose as herein set forth,

67,508.—HORSE COLLAR.—Andrew J. Cronk, Peoria, Ill.

1st, I claim constructing a wooden collar combined with metallic bands, nails, and bolts, substantially in the manner and for the purpose as herein set forth.

2d, Constructing a wooden collar with sockets and key plates combined with trace or tug clips, substantially in the manner and for the purpose as herein set forth.

67,509.—BRIDLE BIT.—Oliver Crook, Dayton, O.

I claim the bridle bit, A, having a stiff bitmouth, with rings, B B, rigidly attached at either end, and the anterior portion of these rings having orifices through the center for a strap connecting the driving reins to the headstall, substantially as and for the purpose described.

67,510.—LANTERN.—James E. Cross, Chicago, Ill.

I claim, 1st, The construction of the oil cup with the socket, so that it may be used for oil or with a candle, substantially as herein recited.

2d, I claim the combination of the space, i, of the flange, h, and the catches, j, for attaching the oil cup to the bottom of the lantern.

67,511.—OSCILLATING ENGINE.—Marcellus V. Cummings, Winthrop, Me.

I claim the combination as well as the arrangement of the trunnion passages, o p, with the cylinder ports, q r, and the box, B, and its induction and eduction passages or pipes, d s.

I also claim the combination as well as the arrangement of the two cocks, h i, and the conduits, f g u v, with the conduits, d s, the box, B, the trunnion, a, its passages, o p, and the ports, q r, of the cylinder, the whole being to operate substantially as specified.

67,512.—MODE OF FERMENTING LIQUIDS FOR DISTILLATION AND OTHER PURPOSES.—R. d'Heureuse, San Francisco, Cal.

I claim the introduction of air of the proper temperature into the fermenting substance from below, for the purpose of more thoroughly fermenting the whole mass, and to control the progress of fermentation, substantially in the manner described and set forth.

67,513.—PLOW WHEEL.—Geo. Dodge, Kalamazoo, Mich.

I claim, 1st, A gage wheel for a plow having its hub, B, and axle, C, cast with a chill, for the purpose set forth.

2d, The recess, d, in the exterior of the hub, B, of the wheel, in combination with the slit or slot, e, in the socket, a, substantially as and for the purpose specified.

3d, The combination of the cap, b, with the socket, a, applied to the hub, B, of the wheel, and secured thereon substantially in the manner and for the purpose set forth.

67,514.—STARCH ELEVATOR.—Andrew Erkenbrecher, Cincinnati, O.

I claim the arrangement of ascending endless apron, E, trestle, G, and return trough, J, as and for the purpose set forth.

67,515.—STARCH MAKING APPARATUS.—Andrew Erkenbrecher, Cincinnati, O.

1st, I claim a starch making establishment or factory whose containing vessels and floor are composed wholly or chiefly of cement or masonry, having suitable ducts, gutters, etc, and being formed and arranged substantially as and for the purpose set forth.

2d, Constructing the various receptacles, etc., of a starch factory of stone, marble, or cement, or any two or more of these combined, substantially as and for the purpose herein described and explained.

67,516.—STARCH AGITATOR.—Andrew Erkenbrecher, Cincinnati, O.

I claim the starch agitator composed of gravitating bars, F, loosely connected to a revolving vertical shaft, substantially as and for the purpose set forth.

67,517.—SPIDER OR FRYING PAN.—A. B. Fales, Troy, N. Y.

I claim as a new article of manufacture a spider constructed substantially in the manner and for the purposes herein described and set forth.

67,518.—LATCH AND CATCH.—Jerome B. Farmer, Indianapolis, Ind.

1st, I claim latch bar, B, pivoted between two plates, as shown, in combination with the lock stop, C, when these are used in conjunction, as set forth and for the purposes declared.

2d, A double-jawed catch, the upper jaw serving as the catch proper, while the lower jaw is a tripping incline, to throw the latch into the recess of the catch when a gate or door is shut quick, all as set forth in the foregoing.

67,519.—THREADING AND REGULATING TENSION OF THREAD IN WEAVING AND BRAIDING MACHINES.—Jesse Fewkes, Newton, Mass.

I claim the hook, F, in combination with the hollow cup, H, operated substantially as described for the purpose set forth.

67,520.—MACHINERY FOR CUTTING KEY SEATS.—Daniel Flynn, Hartford, Ct.

1st, I claim the combination of the centering chucks, A A', the tool shaft, E, the tool, K, the slide, L, and the screws, s and s', or their equivalents, for the purposes of a machine for cutting key seats, substantially as herein described.

2d, I claim the slide, L, in combination with the screws, s and s', and reciprocating shaft, E, for raising and feeding the tool, K, substantially as herein described.

67,521.—BED BOTTOM.—Henry A. and Amos Follett, Smithfield, R. I.

1st, We claim a bed bottom composed of two sets of spring bars, e e', in alternation, one end of the bars of each set being held fast and the other end left free to spring, and arranged so that one half, or nearly so, of such bars will have their springing ends at the head and the residue at the foot of the bedstead, all of such bars, being combined with a transverse rail, B, or other suitable fixed support for the same, the improvement being substantially as herein described.

2d, A bed bottom constructed and arranged as above described, in combination with a slat frame, C, or other proper support for the mattress, substantially as described.

67,522.—CULTIVATOR.—John Frank, Webster City, Iowa.

I claim a cultivator or shovel plow having the leg, A, staple, B, strap, C, staples, D D, hook, E, and staple, F, arranged, combined, constructed, and operating substantially as described.

67,523.—HORSE RAKE.—Levi W. Frederick, Gosport, Ind.

I claim, 1st, The arrangement of the thills, A A, the double cross bar, B, and the outside hounds, C C, in combination with the rings, a a, and the short axles, b b, of the driving wheels, D D, constructed and forming together a compact, light and strong body for attaching a horse hay rake, as herein described.

2d, The adjustable rings, a a, in combination with the axles, b b, and the hounds, C C, arranged and operating as herein set forth.

3d, The swinging draft bars, e e, in combination with the hounds, C C, the adjustable guides, d d, and the rake head, E, arranged and operating as herein described.

67,524.—THREAD GUIDE FOR SEWING MACHINES.—H. E. Fröhlich, Easton, Pa.

I claim the wires, B E and F, when arranged substantially as and for the purpose herein shown and described, in combination with the jaws, C, and set screw, D, all to be applied to the buttonhole sewing machine as set forth

67,525.—DOOR SPRING.—Henry S. Frost, Watertown, Ct.

I claim, 1st, The combination of the spring, C, bar, E, and friction roller or pulley, G, with each other and with the door, A, and door frame, B, substantially as herein shown and described and for the purpose set forth.

2d, Connecting the rear ends of the spring, C, and bar, E, to each other by an eye or link, F, substantially as herein shown and described and for the purpose set forth.

67,526.—STREAM FENCE.—John Fryling, Fletcher, O.

I claim the two sills, the curved timbers or anchors, and the slats, as set forth in the drawings and specifications.

67,527.—ROTARY STEAM ENGINE.—Mathias Gabriel, Newark, N. J.

I claim the sliding abutments, E E*, when connected by the yoke or bar, F, and operated simultaneously by the cam, G, on the axis of the rotating piston, D, substantially as and for the purpose set forth.

67,528.—LEAD HOLDER OR PENCIL.—Peter Gabriel, Seymour, Conn.

I claim the combination of the outer and inner tubes, A and B, respectively and stationary center stem or plug, C, substantially as and for the purpose described.

67,529.—COCOA NUT CUTTER AND GRATER.—John Gardner, Philadelphia, Pa.

I claim 1st, the hollow cylinder, D, provided with a perforated periphery to form a grater in combination with the knives, E, and cutters, c, at one end of the same arranged in the manner substantially as and for the purpose set forth.

2d, The hoppers, G H, on the top or cover, F, of the box in combination with the hollow cylinder, D, with its knives and cutters at one end and its perforated periphery, all arranged substantially as and for the purpose specified.

67,530.—TUBE CUTTER.—Henry Getty, Brooklyn, N. Y.

I claim a tube cutting implement provided with a V-shaped cutter, B, operating in combination with the two supporting rollers, F E, all constructed and arranged substantially as shown and described.

67,531.—HYDROSTATIC PRESS.—Charles Graham, Kingston, Pa.

I claim 1st, the combination of the reservoir, C, stationary press ram, D, and pump, E, arranged within said ram as described with a space between it and the latter for collection of sediment or dirt substantially as herein set forth.

2d, The arrangement of the relief valve, d, relatively to the pump, E, ram, D, and ram, F, for operation essentially as described.

67,532.—MOSQUITO NET FRAME.—W. A. Griffeth, Boston, Mass.

I claim the arrangement and combination of the hinge and wire frame in connection with the wire frame held by the socket as applied to a bedstead substantially as described.

67,533.—FEEDING ATTACHMENT FOR COTTON GINS.—S. Z. Hall, (assignor to himself and O Washburn), Camden, N. J. Antedated July 22, 1867.

I claim the reticulated toothed feeding cylinder, B, constructed and operating as herein set forth for the purpose specified.

2d, the combination of the adjustable pulley, K, with the belt, u, which operates the feeding cylinder and the belt or band, J, which operates the ginning saws in such manner that the tension of said belts may be adjusted or regulated by changing the position of the aforesaid pulley substantially as herein set forth.

3d, So arranging the lever, D, in relation to the pawl, g, and in connection with the breast, E, that the same movement of the lever which raises the "breast" shall simultaneously stop the movement of the feeding rollers, e, substantially as herein set forth.

4th, The belts, u and J, operating in connection with the pulley, K, and arranged to actuate the feeding cylinder gluning saws and brushing cylinder substantially as herein set forth.

67,534.—KNIFE CLEANER.—J. F. Hammond, Providence, R. I. assignor to Henry Staples & Co.

I claim the socket, A, the cup, B, with its cup provided with the small openings and the cork, C, or its equivalent all arranged substantially as described and for the purposes set forth.

67,535.—SEWING MACHINE.—H. J. Hancock, New York City.

I claim the combination of the wedge-shaped adjustable disk, K, with the raising and lowering cloth table, I, and stationary foot or presser, H, for operation together substantially as specified and for the purpose or purposes herein set forth.

67,536.—NEEDLE FOR SEWING MACHINE.—H. A. M. Harris, Philadelphia, Pa.

I claim the new article of manufacture constructed substantially in the manner described and constituting a double eye pointed sewing machine needle.

Also the combination with the double eye pointed needle of a shield or cap substantially as and for the purpose described.

67,537.—MODE OF RINGING BELLS.—James Harrison, New York City.

1st, I claim the combination of the lever, m, and cam or eccentric, k, substantially as and for the purpose described.

2d, arranging a pin or rest beneath cam, k, to support it and give it a firm bearing and also curving the under side of the cam, substantially as described.

3d, the combination and arrangement of the movable cam or eccentric, k, with the pawl lever, J, substantially as described.

4th, the combination of the movable cam or eccentric, k, lever, m, and clapper o', substantially as described for the purpose of rotating the bell.

5th, The combination of the movable cam or eccentric, k, and pawl lever, J, with the gearing, H I g F e, worm, d, and wheel, C, substantially as and for the purpose described.

6th, The arrangement in yoke, B, of square hole, n, in the center of round hole, m', for the purpose of receiving the square part, n'', of bolt, o n', substantially as described.

67,538.—STEAM SAFETY VALVE.—J. G. Harrison, New York City.

1st, I claim the combination with a lock-up valve box or case, of a ball or globe faced valve, F, working in a suitable socket or seat and carrying a pendulum weight, G, for operation substantially as and for the purpose herein set forth.

2d, The combination of the removable weights, I, with a globe shaped valve, F, and pendulum weight, G, substantially as and for the purpose specified.

67,539.—NUT AND WASHER.—D. B. Hart, Mentor, Ohio.

I claim the within named device, constructed and operating as described or its equivalent, as a new and original mode for the purpose set forth, and used in either or all of the forms herein delineated and described.

67,540.—ALBUM.—Alfred Hathaway, Charlstown, Mass.

1st, I claim a photographic album with an adjustable index constructed substantially as set forth.

2d, An autographic album with opening, C, in its pages when so constructed that the autographs may be inserted or removed through the side of the page substantially in the manner set forth.

67,541.—BRICK MACHINE.—P. Hayden, Pittsburg, Pa.

1st I claim the reciprocating frame, L, so combined with the plunger J, sliding bottom, i, and mold, K, and so constructed that by its downward movement the brick will be compaessd in the mold, K, as set forth.

2d, The grooved cam, P, in combination with the levers, R and o, and spring catch, r, all made as described, and operating so that by revolving the cam, P, the lever, o, will be moved back and forth, and the wheel, H, be operated.

3d, The device for locking the wheel, H, consisting of the spring pawls, s, and t, the latter being provided with a projecting pin or lug, t', which is operated by a single cam, substantially as set forth.

4th, The follower, O, when secured to the reciprocating frame, L, in combination with the mold wheel, H, all made and operating substantially as herein shown and described.

5th, The stirrers, G', provided with the oblique arms, d, in combination with the knife, c', at one end of the opening, c, whereby the amount of clay necessary for each brick is regulated as herein shown and described.

67,542.—PLOW.—J. C. Henry, Point Douglass, Minn.

I claim the combination of the mold board, C, and the stubble turner, B, arranged constructed and operating in the manner as shown and described,

67,543.—STRAW CARRIER.—William Hiler, Branchport, N. Y

I claim the straw carrier, B, when made and applied to a thrasher and cleaner with its adjustable and reversible devices by the arrangement of the wheels, G H J and K, with the axles and grooved pulleys that actuate the straw carrier in combination substantially as herein specified and for the purpose set forth.

67,544.—SEWING MACHINE.—A. C. Hobbs, Bridgeport, Conn.

I claim in combination with the face plate or needle box, b f, the screw, d, and the cam, e, for adjusting and controlling the proper adjustment of said face plate or needle bar box and the needle bar and needle therein substantially as described.

67,545.—SPIRAL FISSURE NEEDLE.—Samuel Hodgins (assignor to himself and Samuel B. Tucker. Said Hodgins, assignor to M. James Barwick), St. Louis, Mo.

1st. I claim the spiral fissure needle, A B, constructed substantially as and for the purpose herein specified.

2d, The combination with the above of haft or shaft, F, attached by means of the screw, D, and socket, C, or in any equivalent manner substantially as described.

67,546.—MEANS FOR REEFING TOPSAILS.—Fridolf Hook, San Francisco, Cal.

I claim the crutch, g, attached to the lower topsail yard and its friction rollers, n n, together with the segments, d d, movmg on said rollers and attached to their sides, a a, substantially as and for the purpose described.

67,547.—BOAT DETACHING TACKLE.—Lewis Hover, Chicago, Ill.

I claim the bolts, D D, springs, c c, bars, C C, rods, F F, and lever, G, arranged with the links, B B, for attaching or detaching the boat, A, substantially as herein specified.

67,548.—BRICK MACHINE.—W. H. Hovey, Springfield, Mass.

1st, I claim the combination of the lever beam, J, plungers, G G', and connecting rods, K K', arranged and connected substantially as shown.

2d, The combination and automatic arrangement of the parts as follows the gear wheel, M, operating the crank arm, P, and main shaft, l, the latter turning the shaft V, with its pulleys, i and j, and chair gear operating the revolving knives, H H H' H', and crushers, C C', the whole constructed as shown.

3d, One or more sweeps consisting of the arms, b b, having teeth, c c c, one of them operating automatically with the plungers, so that it fills the chambers alternately with clay when the plunger of each chamber has receded in turn, this or these in combination with the plunger, S and G.

4th, I claim the peculiar shape of the dies, g g', so that they taper from an ellipse to a parallelogram, the width and thickness of the brick desired tapering at the sides but not at the corners, substantially as shown.

5th, Arranging the plungers, G G', so that they may be thrown out of gear, allowing the clay to be ground and worked, but not pressed into brick.

6th, The revolving knives, H H H' H', in combination with the troughs, n n', having the grooves, o o o, arranged substantially as shown.

67,549.—BOLT.—O. D. Hunter, Terrysville, Ct.

I claim the bolt, a, plate, c, clasps, d, constructed, arranged, and operating substantially as and for the purpose described.

67,550.—DEVICE FOR CLEANING WEEDS FROM PLOWS.—Jacob Jameson, Philadelphia, Pa.

I claim the wheel, A, attached to the sliding or yielding stem and held down by a spring, when applied to a plow substantially as and for the purpose set forth.

67,551.—STEAM-ENGINE LUBRICATOR.—Henry and Charles Jarecki, Erie, Pa.

We claim the arrangement of the strainer, D, with the lubricator, substantially as described.

We claim the valve, F, the chamber, a, and the plunger, E, arranged substantially as shown and described for the purposes set forth.

67,552.—NAIL EXTRACTOR.—Henry Jeffrey, St. Charles, Mo.

I claim the steel plates, b b, provided with double or single claws, e e, in combination with the bent lever, A, constructed and operating as described.

67,553.—MACHINE FOR MAKING MOLDINGS.—Nicholas Jenkins, New York City.

1st, I claim the adjustable hook, I K L, arranged to operate in connection with a sliding carriage, C, and cutting arbors, B1 B2, constructed and operating substantially in the manner and for the purpose above described.

2d, I claim the round guide, V, mounted concentric to the arbor of a cutter supported above, as described, and rising and sinking therewith without touching the cutter so as to make any considerable friction against the same, substantially as and for the purpose herein set forth.

3d, I claim the employment, on a cutting arbor supported above, as specified, of the stationary guide, T, mounted below the cutter, and adapted to serve as a guide in a variety molding, substantially in the manner herein specified.

4th, I claim fitting the template upon the wood, H, and securing it thereon, in combination with means for moving both in every direction, the whole being arranged relatively to one or more cutters, Q, revolved above, substantially as and for the purpose herein set forth.

5th, I claim, in a wood-working machine, confining and releasing the entire series of templates, G G1, by confining and releasing the outer one alone, substantially as and for the purpose herein specified.

6th, I claim the single head, w, carrying the two or more carriages, C1 C2, and cutting arbors, B1 B2, and their connections, provided with means for raising and lowering the whole together, substantially in the manner and for the purpose herein specified.

67,554.—BED BOTTOM.—Sam. C. Jennings, Wantoma, Wis.

I claim the spring-bed bottom constructed as described, consisting of two sets of springs, G, their inner ends free and their outer ends secured between the bars, H D, the latter resting either upon the side springs, F, or provided with the elastic blocks, J, and resting upon the loops, E, secured to the side rails, A, all arranged to operate as herein set forth and for the purpose specified.

67,555.—MEDICAL COMPOUND.—Nicholas Joly, Paris, France.

I claim the aforesaid albuminous codliver oil paste or cream made by combining codliver oil and sugar with albumen, substantially as herein described, when alcohol is incorporated therewith to conserve it.

I also claim the combination of fish albumen with codliver oil, substantially as herein described.

67,556.—CHAIR AND COUCH.—James E. Jouett, New York City.

1st, I claim, in combination with the frame and shifting apron, the flattened cross bars, b1 and c, the whole arranged and operating in the manner and for the purposes described.

2d, I also claim the cross bar, i, of the shape described, so that it will lie even with the cross bar, b1, as shown and described for the purpose described.

3d, I also claim, in combination with the reversible frame and shifting apron, the apron sticks with their middle portions enlarged, all as and for the purposes described.

4th, I also claim the employment, in combination with the reversible frame and removable sticks of a shifting apron made with a series of pockets, substantially as and for the purpose specified.

67,557.—BANDAGE FOR CHEESE.—H. N. Kimball, Watertown, N. Y.

I claim the application and use of paper as a bandage, in the manufacture of cheese, substantially as herein specified.

67,558.—PENCIL CASE.—John H. Knapp, New York City.

1st, I claim the plated tube, b, in combination with the shell, a, of a pen and pencil case, substantially as and for the purpose set forth.

2d, Making the slide which serves to move the pen clamp or the pencil tube of such a length that it entirely covers up the slit, f, when the pen or pencil tube is moved back, as described.

3d, The arrangement of two removable caps or nuts, h, in combination with the fluted tube, b, and shell, a, constructed and operating substantially as and for the purpose set forth.

67,559.—MACHINE FOR CLEANING AND BLENDING FIBROUS MATERIAL.—A. J. Loiseau, Philadelphia, Pa.

I claim the combination of the rollers, C C C, provided with the straight or curved teeth, G G, enclosed in the perforated box, A, having doors, E F, the whole arranged and operating as and for the purposes herein described.

67,560.—COOKING STOVE.—Peter Low, Cleveland, Ohio.

1st, I claim the grate furnished with the convex rim, t, constructed as and for the purpose herein set forth.

2d, The adjustable flanged and perforated ribbed end pieces, g, constructed in the manner herein described.

3d, The combination of the rim, t, the end pieces, g, and rim, e, the whole constructed and operating substantially as herein described.

67,561.—BRICK MACHINE.—John McDonald, New York City.

1st, I claim, in combination with the platen, B, or its equivalent, adapted to press the brick flatwise, the employment of levers adapted to press the bricks on their edges, as G1 G2, with or wit out the end-pressing lever, H, substantially as herein specified.

2d, I claim, in connection with the above, the within described method of operating said levers, that is to say, mounting the said levers on pivots, g h, carried on the platen, and connecting the upper ends of the levers of the adjustable piece, A2, or its equivalent, all arranged for joint operation as herein specified.

67,562.—TABLE FAN.—W. A McReynolds, Elkton, Ky.

1st, I claim the application of a weight, H, to the rod, E, which drives the oscilating fan frame, D, from the crank wheel, F, of the train of wheels, B, for the purpose of assisting the crank wheel past its center, substantially as shown and described.

2d, Attaching the rod, E, to a slide, I, placed in a radial groove, e, in the crank wheel, F, with a spring, J, bearing against the slide, for the purpose set forth.

3d, Attaching the chain or cord, b, at its center to the drum, c, and having a hook secured to each end of the chain or cord to admit of the weight, C, being suspended to either end of the chain or cord when said chain or cord drum and weight are used in combination with a train of wheels, B, and a swinging or oscillating fan frame, substantially as and for the purpose specified.

4th, The combination and arrangement of the train of wheels, B, with the weight, C, applied as shown, the oscillating fan frame, D, connected to the

crank wheel, E, and the weighted or loaded connecting rod, E, substantially as and for the purpose set forth.

67,563.—TANNING.—John Meehan, Newark, N. J.

I claim the within described process of changing hemlock leather so as to obtain in good part the qualities and appearance of oak tanned leather, substantially as herein specified.

67,564.—PORTABLE FENCE.—Smith Miles, Fabins, N. Y.

I claim the peculiar construction and arrangement whereby each length may be supported at one end by two lateral braces, and at the other by being bolted endwise to the braced end of the next panel on level land, as shown in figure 1, and connected by bolting sidewise as shown in figure 2, for rolling land, substantially as and for the purpose described.

67,565.—WASHING MACHINE.—Philo H. Munson, Franklin Township, Pa., assignor to himself and Elias Brecht, Stonelonia, Pa.

I claim the arrangement of the small rollers, r', with the crank roller, A, pressed down by the lever weight and their connections, all constructed and operated substantially as described.

67,566.—BREAST COLLAR AND SPREADER FOR DOUBLE HARNESS.—John M. Myers, Louisville, Ky.

1st, I claim the construction and arrangement of the looped arms, e e, upon the collar, A, for receiving the neck straps as herein described.

2d, The attachment of the pole strap loop, d, so that it is allowed to have a free lateral play on the bar, C, substantially as described.

67,567.—CLOTHES DRYER.—John J. Newman, assignor to Erwin Wilson, & Co., Middletown, Ohio.

I claim the combination of the hinge, J, arm, F, and pins, E and G, when used in connection with a clothes horse rack, substantially as and for the purpose set forth.

67,568.—BEEF STEAK PREPARER.—Isaac C. Nichols, Union, New York.

1st, I claim the rollers, D E F, when constructed and placed in the relative position to each other, as and for the purpose set forth.

2d, In combination with the above I claim the sliding apron, b, and sliding guide-board, C, as and for the purpose described.

67,569.—WINDLASS.—Capt. D. P. Nickerson, Cleveland, Ohio.

1st, I claim the crown wheel, C, wheels, H J, and lever or shifter, P', in combination with the wheel. J1, worm, L, and windlass, M, as and for the purpose substantially as set forth.

2d, The wheels, D I, shifter, P', and wheel, J, as arranged in combination with the wheel, J1, worm, L, and windlass, M, for the purpose and in the manner as herein described.

3d, The herein described windlass when arranged, so that by shifting the gearing in the manner as above set forth, the power of the windlass is thereby increased, also by reversing the above rotation of said gearing the power will be decreased but the speed augmented, thereby adapting the action of the windlass to moving heavy or light bodies, substantially as specified.

67,570.—SLEIGH BRAKE.—W. A. Niver, Scott, N. Y.

I claim an improved brake for sleighs formed by the combination of the lever dog, E, chain, H, roller, F, and lever, G, with each other, substantially as herein shown and described and for the purpose set forth.

67,571.—SWING.—Aaron B. Nott, Fair Haven, Mass.

1st, I claim an improved swing, formed by the combination of the double rockers, D F and E G, with the supports, A B, and with the frame, J, from which the platform, K, is suspended by the timbers, L, substantially as herein shown and described.

2d, The combination of the springs, o, with the double rockers, D F and E G, substantially as herein shown and described and for the purpose set forth.

3d, The hinge, I, by means of which the movable rockers, F G, are pivted to the stationary rockers, D E, constructed substantially as herein shown and described.

4th, The combination of the rod, N, with the frame, J, and cross-bar, H, substantially as herein shown and described and for the purpose set forth.

67,572.—RAILWAY-CAR SEAT.—E. H. Olmstead, Savannah, Ga.

I claim the construction and arrangement of the arms of the seat, as at c, when said seat is hinged and adjusted in the manner and for the purpose herein described.

67,573.—BROOM HEAD.—T. G. Packer, Mexico, N. Y.

I claim the combination of the concavo-convex crescent-shaped cap A, arms D, binding loops or bands E, hooks F, screw G, binding bar H, and thumb nut I, with each other, substantially in the manner herein shown and described and for the purpose set forth.

67,574.—RUDDER.—J. C. Palmer, New York City.

I claim a rudder so constructed that it may be extended in the manner and for the purpose substantially as described.

67,575.—WASHING MACHINE.—Noyes Palmiter, Scott, N. Y.

1st, I claim the arrangement of the box A, with its slots z z, and ribs a a a, when used in combination with board b, with slots and ribs a', in the manner and for the purposes specified.

2d, The arms B B, constructed as described, and connected to the washboard, when operated by means of the shaft S, wheels F m, crank p, and pitman g, when combined and used for the purposes set forth.

67,576.—APPARATUS FOR CARBURETING AIR.—Francis S. Pease, Buffalo, N. Y.

1st. I claim the combination of the strong-air reservoir, the air pump, and the carbureter, the latter two being contained within the former.

2d, I claim the carbureter constructed as described, with inclined flanged plates in ascending zig-zag series with the air following their under surfaces, substantially as described.

3d, The regulator, constructed as described, consisting of the membrane J, the adjustable rod L, valve I, and the valvular opening, constructed and operating substantially as described.

4th, I claim the inclined flanged plates E, with serrated edges, operating as described.

5th, I claim the arrangement of the series of condensed air holders, constructed of air-tight casks, and combined with an air pump and carbureter, substantially as described.

67,577.—STEAM-ENGINE LUBRICATOR.—T. G. Pelton, Lyons, Iowa.

I claim the combination and arrangement of the valves E and F, and springs C and D, in connection with the pumps, arranged to operate substantially as above stated and for the purpose therein set forth.

67,578.—PORTABLE DOOR FASTENER.—John Pepper, Lake Village, N. H. Antedated July 30, 1867.

I claim a portable door fastener with tapering sides and edges, the sides being smooth for its easy insertion, and the edges nicked or toothed for taking into the wood when turned against it to firmly hold the door, the whole made in one piece, small, compact, and easily carried, as set forth.

67,579.—SOLE-FASTENING TOOL.—Oliver P. Pettengill, Topsfield, Mass.

I claim the combination and arrangement of the series of reversible blocks, B B B B, each made with two separate finishing edges of different sizes, with quadrifacial or prismatic head A, constructed substantially as described.

I also claim the combination and arrangement of the quadrifacial head A, the series of reversible finishing blocks B B B B, the metallic shank e, the handle C, and the counterbalance weight D, the whole being as specified.

67,580.—SAND EJECTOR.—E. W. Poston, Fort Wayne, Ind. Antedated August 1, 1867.

1st, I claim cylinder A, and heads B B', in combination with piston E, and piston rod F, the whole being arranged and constructed in the manner and for the purpose described.

2d, In combination with the above, I claim the bent tube H, in combination with the distributing plates L, and feeder I, all being constructed and arranged substantially as described and set forth.

67,581.—WASHING MACHINE.—M. S. Prentice, Rockford, Ill.

1st, I claim the combination of the bent or bell crank levers D, with the arms c', of the beater C, and with the box or tub A, to which their lower ends are pivoted, substantially as herein shown and described and for the purpose set forth.

2d, The combination of the self-adjusting cheek board F, with the beater or plunger C, and with the box or tub A, substantially as herein shown and described and for the purpose set forth.

67,582.—GATHERING DEVICE FOR SEWING MACHINES.—T. K. Reed, East Bridgewater, Mass.

1st, I claim a gathering device, having a spring-bearing point outside the line of feed to deflect the cloth against a straight edge inside the line of feed.

2d, The combination of such a spring-bearing point with a separator as described.

3d, The combination in a gathering device of a separator, a spring-bearing point outside the line of feed, and a straight edge, for the purposes set forth.

4th, A gathering mechanism, so constructed as to be attachable to the presser foot, and provided with a bearing point outside the line of feed.

67,583.—VALVE FOR STEAM ENGINES.—Edwin Reynolds, Boston, Mass., assignor to himself and James A. Woodberry, Winchester, Mass.

I claim the construction of a valve in the form of a hollow cap, provided with suitable recesses and ports or openings for passages, when arranged to work upon a suitable projecting cap as a seat, also provided with suitable ports or passages, substantially as described, said caps being preferably made conical as a provision for wear.

Also, the compound cam, when constructed and arranged to operate substantially as described.

67,584.—MACHINE FOR SHAVING AXES.—H. C. Reynolds, Manchester, N. H.

I claim the improved machine for shaving axes, constructed as described, consisting of the convex bed A, concave reciprocating slide F, cutters H, upon the handle I, placed between the bars K K, all operating substantially as herein shown and described.

67,585.—BED BOTTOM.—Geo. W. Robbins, Fond du Lac, Wis.

I claim a bed bottom consisting of the spiral spring C, slats D C, springs, F, and spring boards G, when arranged to operate as described and for the purpose set forth.

67,586.—PRINTING PRESS.—Leander Rodney, N. Y. City.

I claim the combination herein described consisting of the rotating impression cylinders advancing continuously in one direction, counterbalanced and passing over a series of stationary forms placed in right lines in two rows, one over the other, substantially as and for the purposes herein set forth.

67,587.—MACHINERY FOR CUTTING BEVEL GEARS.—Charles E. Roper, Canton, O.

1st, I claim the combination of the slide, L, the sliding platform, M, the box, N, and the swivel block, O, constructed and used in the manner and for the purpose set forth.

2d, The combination of the piston, B, box, C, plate, D, arm, E, provided with the tool, R, the bar, F, and standard, G, constructed and arranged substantially as and for the purpose set forth.

67,588.—PAINT BRUSH.—H. Rosenthat, New York City.

I claim the application of dust or sand to the upper ends, C, of the bristles before cement is applied, whereby the spaces between said bristles are completely filled and the end, C, made solid and prevented from being compressed and withdrawn from the ferrule, as herein set forth for the purpose specified.

67,589.—STEAM GENERATOR.—Abram Rowe (assignor to himself, Charles Chandler, and James Duncan), Macomb, Ill.

I claim a steam boiler consisting of a series of concentric chambers, e, opening at their upper end directly into a steam chamber, and provided with the smoke flues, a, of a constantly increasing area from the center outward, said chambers being connected by the lateral tubes or water passages, m, all constructed and arranged substantially as shown and described.

67,590.—GUIDE FOR SEWING MACHINES.—E. Safford and O. H. Masters, Boston, Mass.

We claim one or more adjustable springs, D, with or without the plate, G, in combination with the gage, B, operating substantially as and for the purpose set forth.

We also claim the slotted plates, a, in combination with the gage, B, and the clamping screw, C, or its equivalent, substantially as and for the purpose set forth.

67,591.—THREAD HOLDER AND CUTTER FOR SEWING MACHINES.—J. A. Sawyer, Worcester, Mass.

1st, I claim the combination with the table of a wax threadsewing machine, of a thread holding device to enable the operator to draw up the last stitch, substantially as set forth.

2d, The combination with the table of a wax thread sewing machine, of a thread holder and a knife, substantially as and for the purposes set forth.

3d, The combination with the movable piece, C, and knife, G, of the handle, D, substantially as set forth.

4th, The combination with the table, A, and lever, D, of the adjustable block, F, and spring, f, substantially as and for the purposes set forth.

5th, The combination with lever, D, of the spring catch, I, substantially as and for the purposes set forth.

67,592.—STEAM PUMP.—Rudolph Schmidt, New York City.

1st. I claim the arrangement of the pistons, e e, and small piston, e', upon the rod sliding in the steam chest, G, the vertical rod, h, with collars, i i', operated from the piston, D, substantially as shown and described, whereby the ports for the admission and exhaust of steam are opened and closed, as and for the purpose specified.

2d, The arrangement of the stuffing box, F, whereby the two cylinders are separated, substantially as shown and described.

67,593.—STOVE LID LIFTER.—Geo. B. Scribner, Indianapolis, Ind. Antedated Aug. 1, 1867.

I claim the combination of the several parts, A B C D E, arranged and formed substantially as and for the purpose set forth.

67,594.—COMBINED CHURN AND BUTTER WORKER.—Samuel H. Scribner, Stowe, Vt.

I claim, 1st, The churn dasher, C, constructed of the crosses, d d1, provided with cross pieces, d3 d3, set diagonally to the center, each four of the same being in line with and parallel to each other, constructed and arranged as described.

2d, The butter worker dasher, d, constructed of the cross, k k', beaters, m m, and adjustable rollers, n n, substantially as and for the purposes set forth.

67,595.—CULTIVATOR AND PLOW.—S. F. Seely, Sylvania, O.

I claim the jointed draft rod, I, adjustable link, G, beam, A, standard, C, with oblong slot, d, brace, D, handles, B, share, E, wings, F', cross rod, c, and brace rods, a*, combined, arranged, and operated substantially as described for the purpose specified.

67,596.—PLATFORM SCALE.—Lyman M. Severance, Dixon, Ill.

I claim the combination of the four levers, D D E E, when arranged with respect to the platform and its permanent frame and the rod, F, substantially in the manner and for the purposes herein specified.

67,597.—WASHING MACHINE.—Henry Sidle, Minneapolis, Minn.

I claim the shaft, B, provided with its angular arms, C C, and beveled cog wheel, D, and operated by means of the wheel, E, between the frames, G and H, with its handle, F, in the manner and for the purposes set forth.

67,598.—HEEL MEASURE.—J. T. Siegert, Washington, D. C.

I claim the measure, A, with its curved point, B, and its adjustable flat side, C, with its flat spring, D, when constructed, combined, and operated as herein described and for the purposes set forth.

67,599.—ICE CREAM FREEZER.—W. H. Skerret, Cincinnati, Ohio.

I claim the cylinders, B and C, revolving on the axis, y, in combination with the driving wheel or governor, I, substantially as and for the purpose described.

67,600.—CHERRY STONER.—E. Smith, Farmington, Ill.

I claim the inclined box, A, in combination with slide, H, carrying needles, L, and discharge bar, M, substantially as and for the purpose described.

67,601.—PASTRY CUTTER.—John Stephen, Womelsdorf, Pa.

I claim the rod, A, provided with fork, B, and print, C, upon its ends and provided with four arms, a a a a, projecting from its sides said arms having arranged wheels, D D E F, and cutter, G, and plain wheel, H, all constructed, arranged and used as herein set forth.

67,602.—LADIES THIMBLE.—John Stephen, Womelsdorf, Pa

I claim a thimble provided with the radiating grooves, x x, and at their ends with the grooves in the ring or flange, e, substantially as and for the purpose herein specified.

67,603.—POT HOLE LID FOR COOKING STOVES.—John Stephen, Womelsdorf, Pa.

I claim the use of the lid, A, concave at its top and convex at the bottom with its damper plate, A', and circumferential flange, e, with the stove, G, in the manner as specified.

67,604.—BED BOTTOM.—Washington Stickney, Lockport, N. Y.

I claim the brackets or supports, c c c, india-rubber loops, e e, keys, g g g, rods, h h and d d, in combination with a bed bottom constructed substantially in the manner and for the purpose herein set forth and described.

67,605.—FAUCETS.—J. T. Stilwell, Dowagiac, Mich., assignor to himself and E. P. Townsend.

I claim, 1st, The cylinder, B, constructed substantially in the manner described and used with the plunger, G, and its rod, and the case, H, as and for the purpose specified.

2d, The case, H, provided with the cock, J, and used with the rim weel, M, and its pointer, O, substantially as and for the purpose set forth.

67,706.—SASH FASTENER.—S. E. Strickland, Amboy, Ill.

I claim a sash fastener formed by the combination of the parts, A B C and D, respectively constructed and arranged to operate substantially as set forth.

67,607.—DAIRY CAN.—L. A. Sunderland, Chagrin Falls, O.

I claim the supplementary bottom, D, with radial arms, E, lining, F, and central support or boss, F' as arranged in combination with the can, A, for the purpose and in the manner described.

67,608.—BOILER WATER GAGE.—D. M. Swain, La Crosse, Wis.

I claim the float, A, and its arm, the supports, D, rod, F, arm, G, shaft, b, segment, d, pinion, e, pointer, P, spring, S, arm, H, and shoulder, I, arranged and operating substantially in the manner and for the purposes specified.

67,609.—HORSE RAKE.—B. C. Taylor, Dayton, Ohio.

I claim the bracket fastening, B' constructed with one ear and a flange or housing extending from said ear in front and over the eye of the tooth, in combination with the washer, D', substantially as and for the purpose described.

67,610.—INVALID BED ATTACHMENT.—Norman Teal, Kendallville, Ind.

I claim, 1st, A sick bed attachment attached to an ordinary bedstead, substantially as described for the purpose specified.

2d, The sheet, I provided with the slit, K, and fly, J, in combination with the adjustable rollers, d d, and frame, F, substantially as described for the purpose specified.

3d, The combination of the crosspieces, C, bands, H H', rollers, b b' frame, F, provided with hinged legs, slit sheet, I, with fly, J, and adjustable rollers, d d, substantially as described for the purpose specified.

67,611.—SPIRIT METER AND REGISTERING APPARATUS.—I. P. Tice, New York City.

I claim, 1st, The connection substantially as herein described of the meter with the worm of the still, by means of a blow off pipe of close character and provided or operating with a valve that admits of expulsion of the air without giving motion to the measurer but is self-closing on the flooding of the meter to prevent escape of the liquid at or through said pipe as specified.

2d, The overflow pipe or spout, D, for operation in connection with the valvular box, I, or its equivalent to limit or regulate the finishing supply to the measuring can or cans, essentially as herein set forth.

3d, The combination of the beam, H, rack, l, and pinion, k, for action of the sample-taker, J, as described.

4th, the application of a check valve to the sample can to prevent injection from the exterior, substantially as specified.

5th, The combination with a meter of a detector valve, M, of suitable description, for operation in the manner and for the purpose herein set forth.

6th, The application to a meter, or an index operated by a float on any undue accumulation of liquid in the meter.

7th, The combination of a roller stop, Q, to the measurer, G, of a meter, essentially as and for the purpose herein set forth.

8th, In the registering apparatus of a meter, communicating motion to the several indices which denote the multiples, by means of a shaft, S, having screw threads, r, of different pitch and gearing with worm wheels, T, of a corresponding pitch.

9th, The application to a meter of a proof tester for operation in connection with the registering apparatus of quantities and serving, by means of a weighing can, beam and independent weights, or their equivalents, to actuate a suitable registering apparatus of specific gravities, essentially as specified.

10th, The attachment to a proof tester, operating substantially as described, of a thermometric weight adjuster for automatically adjusting said tester to the variation in weight of a given volume of liquid by fluctuations in the temperature of the latter affecting its specific gravity, substantially as specified.

11th, Controlling the registering apparatus of specific gravities, by means of a templet G' operating in connection with devices in gear with the registering apparatus of quantities in a meter, essentially as herein set forth.

12th, I claim the use of enameled iron or other metal in the construction of the meter safes and for the reservoirs and constructing pipes of the same.

67,612.—FRAME FOR MOSQUITO NETS.—M. L. Treadwell, New York City.

I claim the detachable frame for mosquito nets constructed as described consisting of the supporting rods, B B, sockets, c c', vertical rods, C, having sockets, d, covered rods, D, and horizontal rods, B, with perforated and slotted ends, upon the tops of the rods, C D, parallel rods, F F, having guides, f, and hooks, h, all arranged as described for the purpose specified.

67,613.—HOSE NOZZLES.—James Trees, Greensburg, Pa.

I claim the combination, substantially in the manner described, with a pipe or nozzle of uniform taper of two cones arranged base to base concentrically within the pipe.

67,614.—WATER PIPE.—James Trees, Greensburg, Pa.

1st, I claim a pipe composed of frustra of cones of alternately varying inclination arranged base to base, substantially in the manner and for the purpose described.

2d, The combination, substantially in the manner described, with a pipe composed of frustra of cones arranged base to base, of a corresponding series of cones arranged concentrically within the pipe, for the purpose set forth.

67,615.—CHURN.—Charles A. Van Horn, Chenango, N. Y.

I claim the arrangement of the gear flame, G G G, in combination with the dashers, D and E, and perforated disk, F, all being constructed and arranged substantially as set forth.

67,616.—NUTMEG GRATER.—Louis Von Froben, Washington, D. C.

I claim the hollow cylinder, G, provided with openings, g g, in one end thereof and journalled in the elongated lugs or legs, F F, in combination with the said legs, F F, tube, A, sliding piston, B, finger pieces, D D, and screen, J J, the whole constructed and arranged in the manner and for the purpose specified.

67,617.—CHURN DASHER.—D. F. Wallace and D. T. Cockerill, Ripley, Ohio.

I claim a churn dasher, in form substantially as set forth, when provided with the openings, a a a, also arranged that the several axes of each of the groups, h h h, shall converge outwardly as and for the purposes specified.

67,618.—COFFEE MILL.—Joseph Watrous, Jr., Mystic River, Conn., assignor to the Mystic River Hardware Manufacturing Company.

I claim attaching the basin shaped hopper, f, to the conical case or shell of the mill by the lip, l, hooked flange, e, and inclined projection, n, as specified.

67,619.—BURGLAR ALARM.—Samuel Whitaker, Macon, Ill.

I claim the arrangement of the box, A, with its door, I, rod, J, shaft, x, with its rod, K, pallet, G, and arm, H, bell, D, and respective parts for operating the same when constructed, arranged and used in the manner substantially as and for the purposes set forth.

67,620.—HAT HOOK FOR PEWS.—R. W. Whitney, South Berwick, Me., and Judson W. Shaw, Concord, N. H.

1st, We claim the flanged bracket in combination with the folding hook, arranged and operating substantially as described.

2d, The hook, C, arranged to turn upon a horizontal pivot in bracket, A, and provided with the stop, c, operating in combination with said bracket, substantially as described.

67,621.—STEAM GENERATOR.—S. Lloyd Wiegand, Philadelphia, Pa.

1st, I claim the combination of the external and internal tubes as described with the vessels into which they are inserted and the perforated plate o plates as described.

2d, The construction of screw caps, M, as shown and described.

3d, The making of the internal and external tubes of different metals, so as to produce a galvanic action thereby.

67,622.—COMBINED LANTERN AND FOOT WARMER.—Stephen M. Wists and F. Swift, Hudson, Mich.

We claim the arrangement of the box, A, with case, I, lining, J, plates, H and a, and door, C, as constructed, substantially as and for the purpose specified.

2d, The door, B, as constructed when arranged in combination with the forgoing, for the purpose of forming a lantern and foot warmer, substantially as set forth.

67,623.—PLANING MACHINE.—George E. Woodburg, East Cambridge, Mass.

I claim adjusting the mouth piece, f, of a planing machine in relation to the edges of the cutters by attaching the former to a movable frame, h, which is hung or pivoted so as to operate substantially in the manner and for the purpose specified.

67,624.—RIVET.—John E. Wootten, Cressona, Pa.

1st, I claim a tubular rivet made by coiling a strip of iron, and then welding the same as set forth.

2d, A tubular rivet in which the grain of the iron takes a transverse course at right angles or thereabouts to the axis of the rivet as described for the purpose specified.

REISSUES.

2,710.—HORSE RAKE.—Sylvester E. Ament, Oswego, Ill.

Patented Feb. 9, 1864. Reissued July 26, 1864.

1st, I claim the metallic bearing girdle, D, adapted to be fixed upon the shaft, A, of a revolving rake, A a a, substantially as and for the purpose herein set forth.

2d, I claim forming the metallic bearing girdle, D, of two halves, and applying it to the shaft A, by means of lugs and bolts, substantially as and for the purpose herein set forth.

3d, I claim the metallic bearing girdle, D, provided with one or more pairs of radial or perpendicular faces, W Y, erected, formed or fixed therein or upon, substantially as and for the purpose herein set forth.

4th, I claim in combination with a single handle revolving rake, A a a E, when its locking devices do not depend upon the teeth for resistances, except uniformly upon the whole through the medium of the shaft, A, the employment of one or more pairs of reversed faces, W Y, arranged within the same cylindrical, but separate vertical planes, substantially as and for the purpose herein set forth.

5th, I claim in combination with a single handled revolving rake, A a a E, when its locking devices do not depend upon the teeth for resistances, except uniformly upon the whole, through the medium of the shaft, A, the employment of one or more pairs of reversed faces, W Y, arranged relative to bolts, I and J, or their equivalents, substantially as and for the purpose herein set forth.

6th, I claim the employment of the sectional eccentric peripheries of the flanges 1 and 2, arranged relative to bolts, 1 and J, and to one or more pairs of reversed faces, W Y, substantially as and for the purpose herein set forth.

7th, I claim in combination with a single handed revolving rake, A a a E, when its locking devices do not depend upon the teeth for resistances, except uniformly upon the whole, through the medium of the shaft, A, the employment of two locks, each operating independently of the other, substantially as and for the purpose herein set forth.

8th, I claim the metallic brush or saddle, F, formed with side cheeks, F 1 F2, and with notches or holes, f1 f2, and adapted to serve in connection with the handle, E, and with sliding bolts, I and J, substantially in the manner and for the purpose herein set forth.

9th, I claim bracing the two series of teeth by the employment of two series of braces, P P, arranged to form an additional direct connection from the shaft, A, to the teeth, a a, substantially as and for the purpose herein set forth.

2,711.—SODA WATER APPARATUS.—Edmund Bigelow, Springfield, Mass. Patented June 25, 1859.

1st, I claim the combination of the conduit through which the mineral waters are drawn, and the sirup cans with the ice reservoirs all in one stand or caster, substantially as and for the purpose described

2d, I also claim an air vent in or connected with the valve stem of a measuring faucet as above set forth, or in any manner substantially the same.

3d, I also claim in combination with a sirup caster, substantially as herein described, a measuring faucet or its equivalent, so made that when the discharge port is opened the supply port is closed by proper plug or other formed valves, connected with a stem so arranged that it admits external air into the measuring chamber when the discharge port is opened by the movement of said stem, all substantially in the manner and for the purposes herein set forth.

2,712.—MACHINE FOR MAKING AUGERS.—W. W. Grier and R. H. Boyd, Hulton, Pa. Patented May 22, 1866.

We claim the means substantially as herein described for twisting the blank, in combination with the series of dies for clasping and holding the twist as it progresses, substantially as and for the purpose described.

And also we claim the means by which the twist is given to the blank and which consists of the combination of the instrument having an aperture of the form of the cross section of the blank which slides on the blank the holder to hold the blank or the equivalent thereof, for imparting simultaneously a longitudinal and a rotary motion, the combination having a mode of operation, substantially such as hereinabove set forth.

2,713.—APPARATUS FOR DISCHARGING BILGEWATER FROM VESSEL HOLDS.—August Hermann, New Haven, Conn. Patented Oct. 2, 1866.

I claim the apparatus consisting of a vertical shaft or axle, I K, provided at its lower end with projecting chambers or flanges, T T T, and operating within a cylinder and provided with valves, U, or with valve, Q, or both, the whole constructed and arranged so as to operate substantially as and for the purpose described.

2,714.—HEATING STOVES.—Charles Jones, Philadelphia, Pa. Patented July 17, 1860.

I claim a dust or check-draft flue inside of a heating or cooking stove, also applicable to heaters and ranges, leading from the space or ash-pit below the grate to the space above the fire or into the escape flue or pipe which conducts away the smoke or products of combustion for the purpose of carrying off the dust and ashes when the fire is raked, which flue may be placed either in the rear, in front or at the side of the fire pot or box.

And in combination with the dust flue arranged as above claimed, I claim a damper or other device for closing the flue, F, and making the air or draft draw through the fire substantially as described.

2,715.—HOOP SKIRT WIRE.—J. N. McIntire, New York City, assignee of T. B. DeForest. Patented Nov. 13, 1866.

I claim a metallic strip or wire, coated over with a fibrous substance and afterward openly braided, substantially as described.

I also claim a covered wire composed of a metallic core, a coating of fibrous material, openly braided jacket, and a surface finish of starch, or other glazing compound, substantially as described.

I also claim preparing the wire previous to the application of the first covering with some water proof solution, substantially as described for the purpose set forth.

2,716.—METALLIC CARTRIDGES.—Isaac M. Milbank, Greenfield Hill, Conn. Patented Feb. 19, 1867.

1st, I claim a metallic base, e, of sufficient strength to resist the force of the hammer in exploding the fulminate, in combination with a sheet metal cartridge case when the said base is introduced within the cartridge case, and secured thereto by soldering or brazing, as and for the purposes set forth.

2d, I claim the base, e, soldered or brazed inside the sheet metal cartridge case, a, in combination with the fulminate tube, i, setting within an opening in the base, e, as and for the purpose set forth.

3d, I claim strengthening the base of an ordinary sheet metal cartridge case by a disk or base soldered or brazed within said case, substantially as set forth.

2,717.—INSULATOR FOR TELEGRAPH WIRES.—David Brooks, Philadelphia, Pa. Patented Nov. 29, 1864.

1st, I claim the use, in the manner described, of a hollow cylinder, h, of paper or its equivalent in connecting the glass block, B, to the casing, A, by means or sulphur.

2d, The use of paraffine as an insulating medium in telegraphic wire insulators, in the manner described, or in any other manner by which the same result is attained.

3d, The use in connection with telegraph wire insulators of sulphur or any other porous cement saturated with paraffine.

2,718.—OIL TANK.—J. B. Button, Cleveland, Ohio, assignee of H. Pierce and J. B. Button. Patented Jan. 22, 1867.

1st, I claim the wooden bottom of iron tanks for holding oil when such wooden bottom is placed within the body of the tank and spiked or otherwise secured to the sills which support the tank and to which the body of the

tank is also attached, either directly or with an intervening floor substantially as hereinbefore described.

2d, Also the rim or abutment pieces, F, inserted into recesses in the sills, B B, for supporting the flooring of oil tanks, substantially as hereinbefore described.

3d, Also the combination of the foundation sills, B B, flooring, G, with a metallic tank, H, bolted to the foundation and an inserted wooden bottom, G, also fastened to the foundation, constructed and arranged substantially as hereinbefore described.

2,719.—Swage for Sharpening Saws.—James E. Emerson, Trenton, N. J. Patented June 5, 1866.

1st, I claim swaging the teeth of saws and forming them into suitable shape and width and bringing them to a proper feather or cutting edge at one operation by the combined operation of a die in or on the piece of steel and a blow upon the swage, substantially in the manner and for the purpose set forth.

2d, The swage stock or handle, A, and the pin, B, when combined and used substantially in the manner and for the purpose set forth.

3d, The groove, b, when used in combination with the swage for the purpose of allowing the teeth of the saw to come up to the die as herein set forth.

2,720.—Composition or Paste for Article of Food.—R. M. Livingston, Mobile, Ala. Patented June 4, 1867.

I claim a compound or paste of which cheese is the basis, and the admixture of any suitable seasoning or flavoring ingredients in the manner and for the purpose specified, whether in the ratio described or in any other, substantially the same.

2,721.—Dust Pan.—Joseph Hall Rohrman, Philadelphia, Pa. Patented June 7, 1859.

1st, I claim a dust pan formed with corrugations, substantially as described for the purposes set forth.

2d, I also claim forming the back edges of the pan in the manner described, whereby it is rendered sufficiently rigid without any wiring.

2,722.—Paint for Ship's Bottoms.—James G. Tarr and Augustus H. Wonson, Gloucester, Mass. Patented Nov. 2, 1 63.

We claim a paint made of oxide of copper with a basis and medium substantially as described.

2,723.—Horse-power.—Edsell Totman, Columbus, Pa. Patented March 14, 1865.

1st, In combination with a stationary open wheel, B, having a driving shaft, C, passing through its center and which carries upon one end a pinion open wheel, g, I claim the rotating open wheel, E, and pinion, h, applied on the short arm of a triangular sweep, D, which turns about the axis of said shaft and carries these wheels, E and h, around with it, substantially as described.

2d, Sustaining the revolving sweep, D, by means of a transverse brace, D2, which is applied loosely to a fixed hub, b, through which the driving shaft passes, said sweep being arranged over the stationary wheel, B, and carrying the wheels, E and h, substantially as described.

3d, In conjunction with a sweep, D, which turns freely around a fixed hub, b, and driving shaft, C, and which carries the spur wheels, E and h, upon one end, I claim the use of lower guides, i k, or their equivalents, applied beneath the stationary wheel, B, substantially as described.

4th, The sweep, D, cross brace, D2, hollow hub, b, stationary wheel, B, and the lower guides, i k, arranged and operating in a machine, substantially as described.

5th, In combination with the sweep, D, revolving around a fixed hub, b, and driving shaft, C, and carrying the wheels, E and h, around the stationary wheel, B, I claim the use of a removable shaft, C', carrying a driving pulley, N, substantially as described.

6th, In combination with the sweep, D, revolving around a fixed hub, b, and driving shaft, C, and carrying the wheels, E and h, around the stationary wheel, B, I claim the use of a balance wheel, H, carrying a wrist pin, m, and pitman rod, r, and arranged beneath the supporting beam, A', and frame, A, substantially as described.

2,724.—Cupola and other Melting Furnaces.—Charles Truesdale and Wm. Resor & Co., Cincinnati, O., assignees of Charles Truesdale. Patented May 1, 1866.

1st, We claim the combination with a cupola or blast furnace of a system of tweers having openings so arranged as to discharge a blast of greater volume below than above, as set forth.

2d, The provision in a cupola or melting furnace of one or more vertical series of tweers with graduated or decreasing ventage toward the upper portion of the series, substantially as set forth.

3d, The arrangement of one or more vertical series of tweers which project beyond the common or lining wall, and are protected by vertical piers, substantially as set forth.

2,725.—Spring Hinge.—Charles E. Stanley, Cleveland, O., assignee of Dr. Joseph S. Smith. Patented May 19, 1857.

1st, I claim the construction of a hinge with a tubular joint having a torsion spring therein, and with devices for adjusting and retaining said tension, substantially as and for the purpose described.

2d, The combination of the center pin, screw pin, headed or capped spring, and tubular hinge, constructed and arranged to operate as and for the purpose substantially as described.

DESIGNS.

2,714.—Cannon Stove.—Wm. Caven (assignor to Redway & Burton), Cincinnati, O.

2,715.—Label.—John Fahnestock (assignor to Jas. Buchan), New York City.

2,716.—Stove Top.—Wm. L. McDowell, Philadelphia, Pa.

2,717.—Statuette.—J. S. McKaye and H. G. McKay, New York City.

2,718.—Charcoal Stove.—A. J. Redway (assignor to Redway & Burton), Cincinnati, O.

2,719.—Pocketbook.—Simon & Isaac Schener, New York City.

2,720.—Fork or Spoon Handle.—Joseph Seymour, Syracuse, N. Y.

2,721.—Casket Handle.—Stephen D. Arnold, New Britain, Ct., assignor to P. & F. Corbin Joint Stock Corporation.

2,722.—Trade Mark.—C. O. Benton, Cleveland, O.

2,723.—Plates of a Parlor Stove.—D. S. Colby and Robert Scorer, Troy, N. Y.

2,724.—Post and Fence.—Charles Coats, Rochester, N. Y.

2,725.—Trade Mark.—James B. Crump, Portland, Mo.

2,726.—Lamp Chimney.—Edward Dithridge, Pittsburgh, Pa.

2,727.—Reflector.—Edward Dithridge, Pittsburgh, Pa.

2,728.—Ornamental Star.—John Dundas, New York City.

2,729.—Cook's Stove.—John Martino, Jacob Beesley, and John Currie, Philadelphia, Pa., assignors to C. W. Blandy & Brother, Newark, Del. Antedated July 16, 1867.

2,730, 2,731.—Floor Oilcloth and Carpet Pattern.—Charles T. Meyer, Bergen, assignor to Edward C. Sampson. Two patents.

2,732.—Cook's Stove.—Clement Olhaber, Cincinnati, O., and Nicholas S. Vedder, Troy, N. Y., assignors to Woodrow, Means & Co., Cincinnati, O.

2,733.—Pillar.—Wm. S. Rockwell, Savannah, Ga.

2,734, 2,735.—Plates of a Stove.—Nicholas S. Vedder, Troy, N. Y. Two patents.

2,736.—Plate and Doors of a Stove.—Nicholas S. Vedder, Troy, N. Y.

2,737.—Plates of a Stove.—Nicholas S. Vedder, Troy, N. Y.

2,738, 2,739, 2,740.—Doors of a Stove.—Nicholas S. Vedder, Troy, N. Y. Three patents.

2,741.—Handle of a Fork or Spoon.—Dennis C. Wilcox, West Meriden, Ct., assignor to Meriden Britannia Company.

Inventions Patented in England by Americans.

[Condensed from the "Journal of the Commissioners of Patents."]

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1,776.—Machinery for Rubbing and Dressing Printers' Types.—Patrick Welch, New York City. June 17, 1867.

1,782.—Apparatus for Holding and Lifting Plates and Dishes.—Howard Tilden, Boston, Mass. June 18, 1867.

1,784.—Heating and Annealing Furnace.—The Union Car-spring Manufacturing Company, New York City. June 18, 1867.

1,824.—Combined Feed-water Regulator and Water Gage for Steam Boilers.—Lewson E. Chase, Boston, Mass. June 22, 1867.

1,826.—Nipper.—Wm. S. Millar, Thos. G. Hall, and Albert Michelsberg, New York City. June 22, 1867.

1,837.—Cylindrical or Argand Gas Burner.—Elliott P. Gleason, New York City. June 24, 1867.

1,879.—Self-detaching Coupling for Railway Carriages.—Ernest Von Jeinsen, New York City. June 27, 1867.

1,933.—Manufacturing Cordage, Webbing, etc.—Jesse Fewkes, Newton, Mass. July 3, 1867.

1,967.—Manufacture of Illuminating Gas, and Apparatus Employed in said Manufacture.—Geo. A. McIlhenny, Washington, D. C. July 4, 1867.

1,889.—Blankets Used in Machines for Printing Textile Fabrics, and Mode of Joining Together the Ends of Double Woven Fabrics.—Seth W. Baker, Providence, R. I. June 28, 1867.

1,894.—Adjustable Wrench.—J. P. Lindsay, New York City. June 28, 1867.

1,949.—Manufacture of Soda Water and other Aerated Liquids.—John Matthews, Jun., New York City. July 3, 1867.

1,962.—Breech-loading Fire-arm.—Edwin F. Gunn, Charleston, S. C. July 4, 1867.

1,963.—Combined Ship's Propeller and Steerer.—Frank G. Fowler, Springfield, Ill. July 4, 1867.

1,966.—Steam Engine.—Hamilton Ruddick, Chelsea, Mass. July 4, 1867.

1,970.—Elastic Strap for Garments.—Phineas T. Barnum, New York City. July 5, 1867.

1,976.—Machinery for Manufacturing Metal Tubes.—Chas. G. Smith, Chelsea, Mass. July 5, 1867.

1,991.—Mode of Training Hop and Grape Vines, etc.—Levi H. Whitney, Vallejo, Cal. July 8, 1 67.

2,018.—Machinery for Manufacturing Cards for Combing or Carding Fibrous Materials.—A. B. Prouty, Worcester, Mass. July 9, 1867.

2,035.—Boots and Shoes.—Edward Heaton, New Haven, Ct. July 11, 1867.

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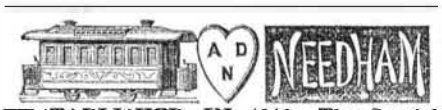

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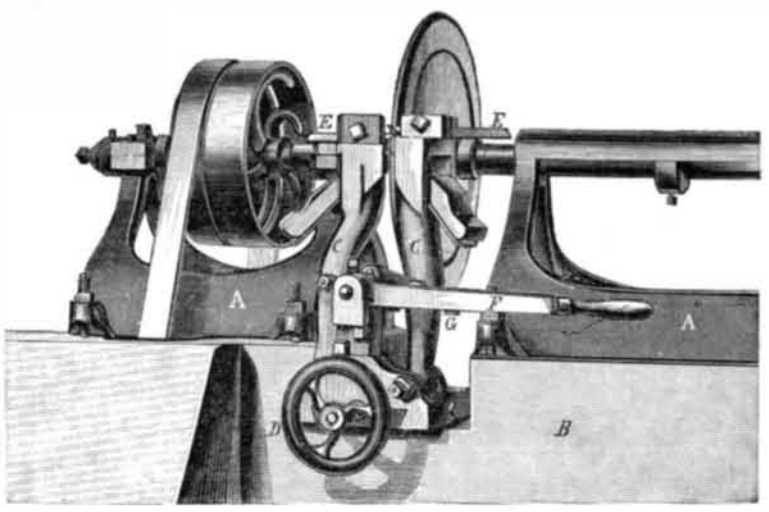
Improvement in Turning Barrel Heads.

The engraving represents an exceedingly simple machine for turning and chamfering the heads of barrels and casks and the bottoms of tubs, pails, etc. It would seem to be a very efficient contrivance for the purpose.

There are two heads or stocks, A, similar to those of an ordinary lathe, mounted upon shears or a frame, B, one spindle —the "live" one—having a fast and loose pulley, and the other—the dead spindle—sliding back and forth by means of a screw and hand wheel in the ordinary manner. To the live spindle is secured a circular flange or head which, of course, rotates with the spindle. There is a duplicate attached to the dead spindle, but turning upon it as a wheel upon its axle. To hold securely the stuff placed between them to be turned, their inner faces are provided with spurs. Secured to the bed of the lathe is a stand which supports two uprights, C, which are pivoted to a table, the lower part or base of which slides by a dovetail slot in the stand and can, with its appurtenances, be moved in or out by means of a screw and hand-wheel, D, as the carriage on a lathe. Thus, the apparatus can be adapted to the different sizes of work to be done.



SPAULDING'S LATHE FOR CUTTING BARREL HEADS.

The uprights are pivoted at their lower ends to suitable stands on the table or carriage, and the other ends are adapted for the reception near their tops of turning tools, E, held horizontally in place by means of set screws, as the tools in a turning lathe are held. Just below them, and set at an angle to chamfer the edge of the head properly, are two plane irons secured in the usual manner. These cutters and planes are advanced to or receded from the work by a hand lever, F, and suitable links, shown plainly in the engraving, and the limit of their approach is determined by a set screw—the head of which is seen under the lever, at G—passing through one of the uprights and setting against the other.

The operation can, from the foregoing description, be readily understood. A square piece of stuff is put in the lathe between the disks and secured by bringing the disks together. Power is then applied and the disks with their engaged material rapidly rotated. The hand lever is then depressed, the cutters engage with the stuff, separate the corners, which are thrown off by centrifugal force, and the planes form the bevel or chamfer.

The device was patented through the Scientific American Patent Agency March 7, 1865, by E. P. Spaulding, who may be addressed at 2,147 Chonteau Avenue St. Louis, Mo.

Use of Distilled Water.

In Mr. Quin's report upon the Paris Exhibition, reference is made to the use of distilled water at the Wallaroo Copper Mines in South Australia, stating that until tanks for collecting rain water had been constructed, "perhaps for the first time in the history of the world, there was a population of some thousands, with all their horses, cattle, sheep, etc., drinking *aqua distillata*." As many readers may not be aware of the fact, it may be interesting here to mention that in the rainless region of the Pacific coast of South America, the entire population of the country between about the 18th and 28th parallels of south latitude, or some 600 miles from south to north, including the important towns of Caldera, Cobija, Iquique, Pisagua, and several minor ports, have for many years derived their supply of potable water from the sea water of the Pacific, distilled in greater part by coal imported from England, and costing above £3 per tun.

Not only is a population of many thousand inhabitants, principally engaged in the mines of this district, as well as a still larger number of beasts of burden and other animals, supplied from this source, but even the locomotives on the Copiapo and Caldera railway, and some steam engines for other purposes, are actually driven with distilled water. For a distance of some thirty to fifty miles inland from the coast, very few natural springs are met with in this rainless desert, and when met with they are seldom sufficiently free from saline matter to be potable.—*Cor. Chemical News.*