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27,606.—James Adair, of Mendota, Ill., for an Improvement in Mole Plows:

I claim the combination of two extensions above claimed, and a hinge-like connection, whereby the coulters and mole are flexible upon each other horizontally independently of one another and immovable upon each other perpendicularly, as and for the purposes set forth.

27,607.—J. W. Adams, of Pleasant Valley, Vt., for an Improved Stave Machine:

I claim the reciprocating bed, H, operated by the pinion, G, and a movable rack, K, and the supplemental yielding and rigid beds, Q, T, in connection with the concave and convex knives, R, S, and pressure rollers, N O P P, all being arranged for joint operation, as and for the purpose set forth.

[This invention consists in the employment or use of concave and convex stationary knives, pressure rollers, and a reciprocating bed operated in a novel way, and the whole arranged for joint operation, whereby staves may be dressed at both sides by a very simple, economical and compact machine.]

27,608.—T. F. Allen, of Dyersville, Iowa, for an Improvement in Brackets for Railroad Car Trucks:

I claim a suspension bracket, D, which is capable of changing its bearing point, and which acts by reason of changing its point of bearing, with a counteracting force against the lateral vibrations of the car body, substantially as and for the purposes set forth.

[This is a very ingenious, simple, and useful invention, as it checks to a considerable extent the preponderance of weight on either side of the truck frame while the car body is vibrating laterally—this checking the preponderance of weight prevents much of the injurious effect on the side springs of the truck. The result is produced by making the bearings of the brackets at their upper ends in the form of the rocker of a rocking chair, this form allowing them to change their point of contact on the truck frame to the same extent that the lower end swings outward, and consequently a leverage to act on the truck frame is obtained, said leverage counteracting the outward movement of the car body.]

27,609.—S. A. Bailey, of New London, Conn., for an Improvement in Wringing Machines:

I claim the combination of the rubber rollers, B, B, with the oscillating guide-board, D, for the purpose of washing and wringing the clothes, and at the same time directing the course of the water, pressed from the clothes into either tub, substantially as set forth.

27,610.—J. S. Barden, of New Haven, Conn., for an Improvement in Steam Pumps:

I claim the arrangement and combination of a steam engine, a pump, two valve chests, and two slide valves, in manner and so as to operate substantially as described and represented.

I also claim the combination and arrangement of the secondary piston with the main pump piston, constructed tubular and having appliances substantially as described, by which it may be either attached in manner and for the purpose as specified.

I also claim the improved balanced valve, and its chest, made substantially as described, in combination with the pressure chamber, t, furnished with an elastic bottom, u, and applied to the valve and chest, essentially in manner and to operate as explained.

I also claim, in combination with the steam cylinder piston, the pump piston and the sliding box of the crank of the driving shaft, the two separate crossheads (or guides for such box, and screws or equivalents so applied to such crossheads, as to enable them either to be drawn together, or forced apart, in manner and for the purpose specified.

27,611.—J. F. Beckwith, of South Alabama, N. Y., for an Improved Hub for Carriage Wheels:

I claim so constructing two metallic plates A, A, which are provided provided with grooves, a, a, that they will clamp and hold the spokes separate and distinct from each other on their edges while they are allowed to bear and press against each other on their faces, substantially as and for the purpose specified.

27,612.—Harkness Boyd, of New York City, for an Improved Trap for Water Closets:

I claim, as a new article of manufacture, the trap or bend for water closet and other pipes, cast in half sections, as specified, whereby the metal is formed of additional thickness at the joints and parts exposed to strain or wear, as set forth.

27,613.—Adolph Brown and Felix Brown, of New York City, for an Improved Sugar-crushing Apparatus:

We claim the arrangement of frames or plates provided with knives or cutters on their underside, and hinged on one end to the frame of the machine, to produce an action similar to the blades of shears, in combination with a movable bed or carriage, for the purpose of cutting loaf sugar in small pieces, substantially as described.

We further claim the arrangement of two or more cutter frames, with their corresponding movable tables combined together, and situated behind or below each other, and giving to the latter a quicker motion than to those situated before them, substantially in the manner and for the purpose set forth.

27,614.—Wm. Bushnell, of Easton, Pa., for an Improvement in Cultivators:

I claim the arrangement of the central beam, A, movable bars, B, B, pivoted connecting bars, C, C, adjustable chain wheel, D, chain, E, and plows, h, as and for the purpose shown and described.

[The object of this invention is to obtain an implement of exceedingly simple construction that will admit of a ready lateral adjustment of its shares, so that the implement as it is drawn along may operate on an area of ground of greater or less width as circumstances may require.]

27,615.—M. L. Byrn, of New York City, for an Improved Corkscrew:

I claim the combined implet screw and handle formed in the manner and for the purposes described, as a new article of manufacture.

[The object of this invention is to manufacture corkscrews possessing greater strength and durability, and which may be made and sold at a less cost than those of the present construction. This invention consists in combining with the gimlet screw a T-handle, and forming the handle and screw in one or in two pieces.]

27,616.—Cullen Casey, of Goldsboro', N. C., for an Improvement in Cotton Cultivators:

I claim the arrangement of the beam, A, scrapers, B, groove, B', and bolt, G, with stock, A', the whole constructed and operating as described for the purposes set forth.

27,617.—G. E. Chenoweth, of Baltimore, Md., for an Improvement in Harvesters:

I claim, first, The laterally adjustable arm, G, pivoted to the frame, as described, for the purpose of changing the position of the inner end of the finger bar laterally in relation to the main frame, to facilitate the folding of the bar to the outside of the wheel, as set forth.

Second, The combination of the trunion piece, H, and hinge-piece, I, with the arm, G, pivoted as specified, for the purpose described.

Third, The adjustable side braces, J, hinged to the frame, and operating substantially in the manner described.

Fourth, The finger-bar, constructed of a tube or rod, in combination with the shanks or sockets of the fingers secured thereon, substantially in the manner described.

27,618.—Geo. Collyer and A. Hamilton Patterson, of Philadelphia, Pa., for an Improved Paddle Wheel:

We claim the sliding paddles, D, shaped and arranged so that each paddle enters the water with a point, and as it enters presents a surface which gradually widens until the full breadth of the paddle is presented to the water, in combination with an eccentric track secured to the side of the vessel on the inside of the space occupied by the wheel, as and for the purpose shown and described.

27,619.—Baldwin Davis and J. M. Scroggins, of Lagrange, Ga., for an Improvement in Plows:

We claim the combination of the beam, L, plate, F, shank, C, notches, D, and wedge, E, with the adjustable brace, G, subsoil point, I, and adjustable moldboard, J, the whole being constructed and arranged as and for the purpose described.

27,620.—James Davis, of Fayetteville, N. C., for an Improved Sewing Machine Stitch:

I claim the formation of the knot stitch, as represented in Fig. 3, substantially as described.

27,621.—Wm. Frank Dean, of Baltimore, Md., for an Improvement in Saddles:

I claim the side adjustable pommel, B, or its equivalent, in combination with a gentleman's saddle, for the purpose of converting the same into a ladies' saddle, substantially as set forth.

27,622.—J. H. Doolittle, of Ansonia, Conn., for an Improved Pipe Wrench:

I claim the combination of the rack, C, on the shank, A, the sliding bar or sleeve, D, fitted on the shank with tooth, b, and hook, E, attached, the latter having an eccentric, d, formed on its inner end, all being arranged to operate as and for the purpose set forth.

[The object of this invention is to obtain a wrench that may be adjusted with the greatest facility to suit different sized pipes, and grasp the same firmly, so that they may be turned or properly acted upon without being liable to slip on the pipe. The invention consists in the employment of a sliding box or sleeve placed on the shank of the implement, and provided with a tooth, in connection with a rack formed at one edge of the shank, and an eccentric formed at the end of a hook which is attached to the sliding box or sleeve.]

27,623.—Joseph L. Dutton, Senr., of Philadelphia, Pa., for an Improvement in Hoisting and Weighing Machines:

I claim, first, The hoisting and lowering apparatus composed of the barrel, D, the brake wheel, H, and brake strap, I, the latter being connected to one end of the hoisting rope, F, and to the lever, M, or its equivalent, in combination with the ratchet wheel, W, and spring pawl, x; the whole being arranged and operating substantially as set forth, so that the application of the brake for the retention of the weight in the position to which it has been hoisted is independent of the weight itself, as specified.

Second, The bar, J, when connected to the hoisting rope, F, and to the graduated lever, V, substantially in the manner and for the purposes set forth.

Third, The sliding link, Q, operated by the lever, S, or its equivalent, and combined with the lever, P, hoisting rope, F, and brake strap, I, substantially as specified, so that the operating of the brake strap and throwing in and out of gear of the weighing apparatus may be accomplished simultaneously by raising or lowering the said link, Q, as specified.

27,624.—Deiderich Fehrman, of Liverpool, England, for an Improvement in the Manufacture of Resin:

I claim the combined process described, having for its object the manufacture of resin, as set forth.

27,625.—Levi Ferguson, of Lowell, Mass., for an Improved Steam Trap:

I claim the arrangement of the annular chamber, H, h, in combination with the valve and diaphragm, substantially as described, for the purpose set forth.

27,626.—Ezekiel Gross, of Goshen Hill, S. C., for an Improvement in Sub-soil Plows:

I claim, in combination with the furrow plow and sub-soiler, the curved brace uniting the beam, the standards and the handles together, and when the sub-soiler is made adjustable on the brace and be substantially in the manner and for the purpose set forth and explained.

27,627.—Cyrus M. Hall and David E. Hall, of Uniontown, Ill., for an Improvement in Cultivators:

We claim the general arrangement and combination of the revolving coulters with knife-edged arms, the shovels, A, made with flukes or bars, the beams, B, B, the cross bar, S, straps, S, rollers, r, r, treadles, P, P, and the pin or pivot on which the beam, B, hangs; all connected as described and for the purpose set forth.

27,628.—R. K. Hawley, of Baltimore, Md., for an Improved Construction of Circular Saws:

I claim a circular saw consisting of segments and backing plates constructed and united as described, and attached to the central flange substantially in the manner set forth.

27,629.—Henry W. Herbert, of Herbertsville, Va., for an Improvement in Marine Propellers:

I claim, first, Adapting the outer form of the submerged portion of a vessel and the surface of the body of a propeller to each other, so that both together shall form a continuous outline, and, at the same time, only a portion of the propeller be exposed to the water, the other portion being enclosed within the body of the vessel, substantially as and for the purposes set forth.

Second, Providing each side of the ship with a curved shield, H, in combination with a system of braces, E E D C, for the purpose of protecting the propeller blades and of bracing together the main body of the ship and that portion of it which is behind the propeller, substantially as and for the purposes set forth.

Third, The application, in a propeller such as described, of the removable blades, J, the tongues, O, of the blades fitting into dovetail grooves in the surface of the body of the propeller, substantially as and for the purposes set forth.

Fourth, Constructing the main side braces, P, of the ship so that they may be used as coal bunkers, substantially as and for the purposes set forth.

[This invention consists in arranging a rotary propeller in the hull of the ship. The ship and propeller are so modeled that the circular or submerged portion of the ship and that of the propeller conform; and when the blades of the propeller are removed the hull with the propeller sets across

the keel, and the ship is strongly braced at the points where it is cut away to admit the propeller. The main braces are made hollow so as to serve as coal bunkers. The arrangement exhibits a great deal of ingenuity, and is, doubtless, a valuable improvement.]

27,630.—Jesse Hanon, Jr., of Taylorsville, Ill., for an Improvement in Drain Plows:

I claim the combination and arrangement of the rod, E, coulters, C, and slides, G, G', with the beam, A, and rod, B, substantially as and for the purpose specified.

27,631.—N. Hoag and Wm. H. Tappay, of Petersburg, Va., for an Improvement in Tobacco Screws:

We claim the arrangement of the several parts combined as constituting the specific machine, for the purpose shown and set forth.

27,632.—Samuel Hoake, of Frederick, Md., for an Improvement in Cultivators. Ante-dated March 9, 1860:

I claim, first, The combination of the jointed shovel shaft, B, slotted shovels, T, T', drag bars, D and d, shafts, S, straps, b, spring detent, e, and guides, g, substantially as described.

Second, In combination with the foregoing I claim the adjustment of wheels, W, on axle, A, by bolt, a, and pins, i, as specified.

27,633.—J. L. Hovey, of Lockport, N. Y., for an Improvement in Pulley Blocks:

I claim the peculiar method of having blocks, A, D, both being suspended from one hook and kept in an upright position by a projection, H, of the collateral block, in so obviating the friction occasioned by the pulleys getting twisted out of an upright position, as above described.

[This invention consists in projecting up from the top of a fixed double pulley block, a hook having an eye in its end, into which is hooked a collateral block with one pulley and sheave, and over this sheave the draw or fall rope is passed, leading from the movable block, the fixed pulley blocks are hung up by a swivel hook which hooks under the fixed block hook; and in conjunction with these fixed blocks is a projecting lip and recess formed, which keeps the fixed blocks in a perpendicular position and the ropes always parallel. The blocks themselves are novel in their form and construction which renders them very strong, and gives great facility in their manufacture.]

27,634.—George W. Hunt, of Muscatine, Iowa, for an Improvement in Plows:

I claim, first, The arrangement of a vertical coupling and adjusting pin, I, which has that portion which passes through the beam round, and that portion which passes through the axle square, in combination with a diagonal adjusting bar, P, a connecting rod, N, and a vertical lever, O, substantially as and for the purpose set forth.

Second, The arrangement of a long slot, W, in the axle, with an upper and under slotted sliding plate, L, L', and the coupling and adjusting pin, I, substantially as and for the purposes set forth.

Third, The arrangement of the beam, A, slotted axle, D, coupling pin, I, slotted plate, L, L', diagonal connecting rod, V, adjusting bar, P, lever, O, driver's seat, C, treadle, M, plow, F, horizontal rotary land side wheel, G, and rotary coulters, H, in the manner and for the purposes set forth.

27,635.—A. B. Hutchins, of Quincy, Fla., for an Improvement in Seeding Machines:

I claim the vibrating hopper, G, in connection with the agitator, or clearer, H', attached to the front part of the spout, H, and passing within the hopper and clearer, being arranged relatively with the spout, H, substantially as and for the purpose set forth.

[This invention, although capable of being used for planting various kinds of seeds, is more especially designed for planting cotton seed. The object of the invention is to insure the proper discharge or distribution of the seed from the hopper, and thereby obviate the difficulty attending the adhesion or the sticking of the seed together, a result due in some cases to moisture and a glutinous exterior caused by giving the seed a fertilizing coat, and in other cases to natural causes, as, for instance, the lint coating on cotton seed.]

27,636.—Edwin Jones, of Chester Cross Roads, Ohio, for an Improvement in Harvesters:

I claim hinging the frame, E, to the inside of the main frame, within the periphery of the wheel, B', in combination with hinging the front to the main frame, by the coupling arm, M, substantially as and for the purposes set forth.

Second, The raker's seat, D', arranged in relation to and combined with the main frame, A, and frame, E, substantially as and for the purposes set forth.

Third, The inclined plane, I, in combination with the heel of the cutbar, substantially as set forth.

27,637.—Frank G. Johnson, of Bellwood, Sag Harbor, N. Y., for an Improved Composition to Prevent the Depredations of Insects:

I claim the composition and mode of attenuating coal tar or tar, with sand or sawdust, and afterwards the coating of the sand or sawdust so tarred with earth, ashes, slaked or ground lime, plaster or guano, substantially in the manner and for the purposes described.

27,638.—Samuel Johnston, of West Shelby, N. Y., for an Improvement in Corn-huskers:

I claim the corn-husker herein described, consisting of fingers, A, B, crossbar, E, knife, D, and spring, S, constructed and arranged to operate in the manner and for the purposes specified.

27,639.—Albertus Larowe, of Cohocton, N. Y., for an Improvement in Self-adjusting Carriage Brakes:

I claim the combination and relative arrangement of the rubber, Z, and swinging brake arm, C, with the end of the brake bar, V, whereby the strain upon the rubber, Z, is borne principally by the rigid end of the brake bar, directly in front of the periphery of the wheel, and not by the hinge of the rubber, substantially as shown and described.

27,640.—John B. Logan, of Blountville, Tenn., for an Improved Andiron:

I claim the arrangement of the bottom frame, A, or its equivalent, in combination with the angular bars, B, or their equivalents, constructed and united substantially as and for the purpose described.

[The object of this invention is to construct an andiron in such a manner that it stands firmly in its place even without the back log on, and that it allows a free circulation of the heat, and that it does not interfere with the removal of ashes or dust.]

27,641.—F. T. Lomont and John Grosjean, of Massillon, Ohio, for an Improvement in Reaping and Mowing Machines:

We claim the arrangement of the hinged frame, consisting of the braces, B, B, and crosspiece, e, in combination with the segmental adjustable frame, C, levers, D, and J, and chain, a; all the parts constructed and applied in the manner and for the purpose specified.

27,642.—Pells Manny, of Waddam's Grove, Ill., for an Improvement in Harvesters:

I claim the arrangement of the wrist pin, a, rod, D, slotted as shown, and connected with the lever, E, the friction roller or bearing, h, and connecting rod, G, arranged for joint operation as and for the purpose set forth.

27,643.—Robert McCain, of Rootstown, Ohio, for an Improved Washing Machine:

I claim, in a washing machine constructed substantially as described, the arrangement of levers and hand and foot bars of the pounding and of the rubbing part of the machine, in their relation to the rubber and the pounder, and in their relation to each other, whereby the operator may move the pounder and the rubber by the foot and hands together, or by the hands alone, as set forth.

27,644.—Thomas B. McConaughey, of Newark, Del., for an Improvement in Seed Planters:

I claim the slide, f, provided with the opening, g, and the seed box, A, with the partition, i, arranged relatively with the slide and its opening, g, as shown, in connection with the opening, d, in the end piece, a, of the seed box, and the projection or scatterer, c, thereon, and the strip, m, on the seed box; all arranged for joint operation, substantially as set forth.

[The object of this invention is to obtain a simple device for dropping corn or other seeds in hills; the device being designed for manual operation, and to enable the operator to see the seed discharged, and also to cause the same to be properly distributed in the hills.]

27,645.—Samuel McGregor, of Logansport, Ind., for an Improvement in Car Seats:

I claim the backs, B B, attached to the seat, A, and connected by the gearing, E F, in connection with the stop, N, arms or levers, H, rods, I, and slides, J, connected to the bars, D, of the backs and provided with the rollers, K K', the seat and backs being provided with the continuous cushion, L, passing around the rollers, K K', with its ends attached to the backs, B; all being arranged substantially as and for the purpose set forth.

27,646.—Henry Napier, of Brooklyn, N. Y., for an Improvement in the Manufacture of Resin:

I claim the within-described method of producing white resin at one continuous operation, substantially as set forth.

27,647.—A. S. Notestein (assignor to himself and L. I. Rogers), of Salem, Ohio, for an Improvement in Seeding Machines:

I claim the arrangement of the foot piece, a, the rocking standard, d, the lever, E, and the seed slide, F, with the rollers, B and C, and covers, H H, when the several parts are connected and used substantially as and for the purpose specified.

27,648.—Jacob Nuessley, of Gowanda, N. Y., for an Improvement in Composition for Tanning Leather:

I claim the employment, for the purpose of tanning, of a composition consisting of the ingredients herein specified, and mixed together in about the proportions described.

[The object of this invention is to enable tanners to use all kinds of wood for the purpose of tanning, and at the same time the leather is tanned much quicker than by the usual process, and by the use of this composition the disadvantages usually attending quick-tanned leather are entirely obviated.]

27,649.—E. T. Orne, of Boston, Mass., for an Improvement in Gas Regulators:

I claim the employment of sawdust or wood filings as a filtering medium for gas burners. I also claim, in combination with the use of said material, the above-described burner, consisting essentially of the cylinder, A, and ring, f, operating substantially as set forth.

27,650.—E. H. Philo, of Half Moon, N. Y., assignor to Charles E. Pease, of Albany, N. Y., for an Improvement in Cider Mills:

I claim, first, The cylinder, C, operating with a liberating movement in connection with quadrants, E and G, and with its teeth arranged to co-operate with teeth, a, a, affixed to partitions, H and J, substantially as described and for the purpose set forth.

Second, The slicing apparatus, S, operating as set forth, in combination with the cylinder, C, and its co-operative apparatus as described, in the above specification.

27,651.—William R. Sanders, of Buena Vista, Miss., for an Improvement in Plows:

I claim the combination and arrangement of the shares, F F, coulter, G G, and movable mold boards, H H, with beam, A, handles, B B, yoke, E, and oblique brace, K; the whole being constructed for operation as described.

27,652.—J. F. Schuffenecker, of Keokuk, Iowa, for an Improvement in Brick Molds:

I claim operating the bottoms of the molds by means of the lever, D, rod, F, wedges, J J, cogs, I I, a, slide, K, and lock bar, O, in the manner and for the purpose specified.

27,653.—Robert T. Smart, I. W. Smart and A. I. Smart, of Troy, N. Y., for an Improvement in the Manufacture of Straw Paper:

We claim the method specified of treating straw or similar vegetable fiber for making white paper by the successive operations of boiling, washing and separating or beating, and then applying the chemicals used for bleaching to the pulp, substantially as set forth.

27,654.—Geo. Smith, of Baltimore, Ohio, for an Improvement in Cultivators:

I claim the arrangement of the hinged teeth, F, shanks, G, ropes or chains, I, roller, J, and lever, K; the whole being arranged for joint operation as described for the purposes set forth.

27,655.—S. F. Van Choate, of Yreka, Cal., for an Improved Magnetic Printing Telegraph:

I claim, first, The employment, in combination with the escapement which controls the operation of the mechanism which drives the type wheel, of the two electro-magnets, E B, arranged in the same circuit, a permanent magnet, G, combined with one of such electro-magnets, as described, and two armatures, E' F', attached to a lever so applied, relatively to the said magnets and escapement, as to be operated substantially as described, to control the escapement by the opening and closing of the main or through current of a line of telegraph.

Second, I claim the employment, in combination with the electro-magnet, W, of the printing circuit, and the permanent magnet, V, that is combined therewith, of a circuit-breaker composed of a ratchet toothed wheel, 42, and lever, 41, or their equivalents, applied and operating substantially as described, to cause the opening of the printing circuit while the type wheel is in motion, and the closing of the said circuit on the stoppage of the type wheel, substantially as described.

Third, I claim combining the lever which carries the armature of the printing magnet with the printing mechanism by means of a notched wheel, X, sliding bolt, 52, cam, 56, and spring, 50, attached to said wheel, and a stop pawl, 50, or their equivalents; the whole applied and operating substantially as described, to cause the unlocking of the mechanism which brings the printing roller into operation on the stoppage of the type wheel, and the re-locking of the said mechanism after the printing operation.

Fourth, I claim the employment, in combination with each other, and with three separate branches of the same main circuit, of a key, O, an intermitting wheel, J, a checkplate, K, and a system of magnets, F F G; the whole operating together substantially as described, for producing the synchronous operation of all the type wheels on a line of telegraph, and effecting the stoppage thereof in a position to prevent their respective printing apparatus the letter corresponding with the depressed key.

Fifth, In combination, with the key, intermitting wheel, check plate and system of magnets, and the three separate branches of a main circuit, as described, I claim the printing circuit-breaker, and the branch circuit, longer than the printing circuit, formed by the coiled wire, 14, or its equivalent; the whole operating as and for the purpose specified.

[This invention consists in certain improvements in magnetic tele-

graph instruments, which improvements reduce very materially the amount of magnetic force necessary to effect the operation of the instruments, and enable them to be worked effectively with a battery of no great power, and without the use of relays or local batteries. Engravings would be necessary to explain the invention clearly.]

27,656.—Wm. Tallman, of Providence, R. I., for an Improvement in Horse-shoe Nail Machines:

I claim the top die, performing the two functions of discharging the nail and forming the top of the case, in combination with the stationary cutter, movable cutter and bottom die; the said bottom die having its face extended to a suitable distance and in proper form for the underside of the case, all arranged and operated substantially as described.

27,657.—James Teachout, of Waterford, N. Y., for an Improved Die Stock:

I claim the combination of the screw, e, and followers, f g g', with the dies, c l c2, and stock, D, constructed and arranged substantially as set forth.

27,658.—Samuel D. Tillman, of New York City, for an Improved Mode of Making Pavements:

I claim a pavement whose surface is composed of alternate elevations and depressions substantially equal in number and surface, and nearly rectangular; the depressions being only long enough easily to admit either cove of the horse-shoe, all their sides nearly vertical and the longest sides nearly crosswise of the street, thus giving sure foothold at the shortest possible intervals, while the wheel runs smoothly upon the elevations without falling into the depressions, as described.

27,659.—Mark Snow, of Auburn, Miss., for an Improvement in Cotton Cultivators:

I claim the combination of the wrapping mold boards, d, hilling molds, e, and fenders, g, when arranged and operating substantially as described.

27,660.—C. W. Wailey, of Lexington, Ky., for an Improvement in Iron Ties for Cotton Bales:

I claim the lugs, a, in combination with the spaces, b, formed at the edges of the loop, and extending any required distance from the ends, so as to unite and form a tie, substantially as set forth.

27,661.—Edward Weakley, of Pana, Ill., for an Improvement in Seeding Machines:

I claim the swinging frame, G, provided with the seed-distributing devices, expanding and vertically-moving bars, k k, and shares, h' j', and attached to the mounted frame, A, by joints or hinges, h, at its front end, and by the chains or cords, r s, and bar, F, at its back; all being arranged as and for the purposes specified.

[This invention consists in the use of seed-distributing devices and share frames attached to a mounted frame, whereby seed may be planted in hills or drills and the ground also pulverized and freed from weeds; the machine being used for either purpose, separately, as may be desired.]

27,662.—R. A. Wilder, of Schuylkill Haven, Pa., for an Improvement in Feed-water Apparatus for Locomotive Engines:

I claim the arrangement, substantially as shown and described, in connection with the feed and overflow pipes and pump of a two-way cock, so that while a constant circulation of water is maintained in said pipes, only such portion thereof as may be desired shall enter the boiler; all as set forth.

27,663.—Seth D. Woodbury, of Lynn, Mass., for an Improved Reclining Chair:

I claim the combination and arrangement of the arms, D and G, seat, B, seat, e, connecting rod, F, set screw, f, supporting arms, J, and leg rest, K, with the folding legs, A A', an adjusted stripe, H and I, substantially as set forth and for the objects specified.

27,664.—Joseph D. Billings, of Rutland, Vt., assignor to himself and E. A. Chapin, of Keene, N. H., for an Improved Speed Register:

I claim, first, The arrangement of the circular rack, D, actuated by any suitable governor, pinion, d, stem, c, and index heads, f g; the latter having a pin, h, projecting from it, by which it is moved over the surface of the dial plate, when the same are combined in the manner and operated as set forth.

Second, I claim, in combination with the striker, K, on the rack, D, the levers, 1 2 3 4, and pawls, l, ratchet wheels, 1' 2' 3' 4' (more or less, as may be desired), with their pins, U, rods, H, with their arms; the whole arranged and combined essentially as represented and described.

I claim the wheel, N, with its lever and pawl receiving a direct motion from the spindle, A, arranged in such a relation to the point or needle, S', that said needle will register every mile passed over by the train of cars, as described, and in combination therewith, I claim the spring rod, M, pawl, R, ratchet wheel, R', and spool, L', for moving the strip of paper upon which the speed and miles are registered at each revolution of the wheel, N; all arranged in the manner and for the purposes set forth.

[The invention consists in the use of a ball governor, of a peculiar construction, which is operated by the axle of the truck wheels through the medium of a vertical shaft, so as to rotate a circular rack to which is connected, by suitable gearing, index heads for registering the number of revolutions the governor is performing—or, rather, the rate of speed at which the train is traveling. Connected with the circular rack, and raising and lowering with it as the centrifugal action of the governor balls increases or diminishes, is a cam projection or striker, which actuates a certain arrangement of levers, and from these a rotary motion is imparted to a system of ratchet wheels, which, through the medium of spring points, arranged in a suitable manner, indicate upon a slip of paper, by perforations, the rate of speed attained in each mile throughout the entire route. A striker upon the governor shaft, fixed to and turning with it, also indicates the miles traveled by means of a lever and ratchet wheel, similar to those for registering the speed of the train during any given distance. The entire mechanism, excepting the governor shaft connecting with the axle of the car wheels, is enclosed in a tight box, with a glass face, so that the superintendent of the road can, at any time, know the rate of speed the train has traveled, either for any one mile in the route or for any number of miles. The engineer or the conductor may also know at any time, by this machine, how fast the train is running.]

27,665.—Philo Blake (assignor to Blake Brothers), of New Haven, Conn., for an Improved Corkscrew:

I claim my improved cork extractor, as made with a lever head, D, affixed to its lifting screw, C, and with a lever screw nut, E, applied to such screw, C, and to the cap of the neck, a, and, substantially as described and represented in the accompanying drawings.

27,666.—Thos. B. De Forest, of New York City, assignor to himself and Wallace & Sons, of Ansonia, Conn., for an Improvement in Lanterns:

I claim connecting the ends of the vertical guard wires to the top and bottom portions of the lantern by bending them into such form as to interlock with said top and bottom parts, and be secured thereto by encircling or keying bands, or their equivalents, substantially in the manner set forth.

I also claim so bending the vertical guard wires as to form in them eyes, as described, in combination with the encircling horizontal guard wire passing through the said eyes; the whole constructed and operating substantially as specified for the purposes set forth.

I also claim arranging the encircling guard wire, p, in such manner

as to be capable of sliding circumferentially in its bearings in the vertical guards, in combination with the coupling nut, c', so connected with said guard, p, that, by turning it, the said guard wire may be distended or contracted, substantially as set forth for the purposes described.

I also claim, in combination with the top cap of the lantern and handle, the connecting link, o, so formed of a single piece of wire as to effectually connect or couple the lantern cap to the handle, and properly support the protector without the aid of any coupling pin or other auxiliary part, as hereinbefore explained.

I also claim forming in the handle, when made of flat metal, a loop, e, to operate in connection with the upper end of the link, o, as specified, for the purpose set forth.

27,667.—Robert W. Geraghty (assignor to himself and Wm. M. Simpson), of Newark, N. J., for an Improved Ventilating Spring Mattress:

I claim the combination and arrangement of the frame, A, with the springs, b, and cords, c, and d, sack, E, hair, K, and outer cover, m, substantially as and for the purposes specified.

27,668.—Henry Hewett, of San Francisco, Cal., assignor to W. A. Sanford, of Pottsdam, N. Y., for an Improvement in Seeding Harrows:

I claim the arrangement of the axle, A, bars, h, shaft, g, cylinders, i, bearing, j, arm, k, holes, l, wheels, B, pendants, d, d, frame, f, castor wheel, D, seed boxes, E E, and slide, F, as and for the purpose shown and described.

[The object of this invention is to obtain a rotary harrow which may be used alone or with a seeding machine, and be adapted for operating a greater or less depth into the earth, as the nature of the earth may require; and also be adapted for operating as efficiently in hard clayey soils as in loose friable ones.]

27,669.—James Hotchkiss (assignor to himself and E. P. H. Capron), of Yellow Springs, Ohio, for an Improvement in Drain Tile Machines:

I claim the combination and arrangement of the spiral wings, h h, situated on the pug mill shaft, the wedge-shaped dividing step block, d, and inclined or obliquely situated die plates, D D, constructed as described substantially in the manner and for the purposes specified.

27,670.—Jacob F. Hunter (assignor to himself, H. A. Hunter and P. P. Keller), of New York City, for an Improvement in Hot Water Apparatus:

I claim the combination of the coils, F G, with the main pipe, J, fire back, A, return pipe, J', and casing, K, when the said coils are both connected with the main pipe, J, and back, A, and otherwise constructed as shown and described, for the purpose set forth.

[The nature of this invention consists in a novel arrangement of pipes with a water back; said pipes communicating with the radiators in the building from the top of the apparatus, and said radiators communicating with the water back by a return pipe, by which arrangement a large heating surface is obtained; with an economy of room, expense, and a proportionate saving in fuel.]

27,671.—Charles Miller (assignor to himself and George Ricardo), of New York City, for an Improvement in Machinery for Manufacture of Piled Fabrics:

I claim, first, The employment, in the manufacture of piled fabrics, of a series of needles, a, for passing the pile threads through a previously woven foundation in rows of loops, and of a single needle, N, operating transversely to the said series of needles, for the purpose of carrying a continuous filling or locking thread through the successive rows of loops of the pile threads, substantially as specified.

Second, The employment, in combination with the series of pile thread needles, a, and the filling or locking thread needle, of a tongue, u, applied and operating substantially as described, to catch and prevent the withdrawal of the filling or locking thread.

Third, The attachment of the nippers, 9, which draw the rods from the pile to the same slider, Q, or its equivalent, which carries the locking or filling thread needle, N, so that the same mechanism serves to operate the said nippers and the needle, substantially as described.

Fourth, The combination of the nippers, 11, and the stop, 12, with the nippers, 9, the whole operating together substantially as and for the purpose set forth.

Fifth, The combination with the two pairs of nippers, 9 and 11, of the stop, 12, the inclined plane, 13, the recess, 14, and the pusher, 15, the whole operating together substantially as and for the purpose specified.

Sixth, Feeding the foundation, i, to the needles, and carrying away the finished piled fabric from the needles by means of a plate, K, or its equivalent, pushing against the rods, 7 7, substantially as described.

27,672.—C. L. Nelson and Oscar Bostwick (assignors to themselves and N. B. Proctor), of Burlington, Vt., for an Improvement in Wood-bending Machines:

We claim the adjustable guide, marked C in the drawing, and adjustable roller, B.

27,673.—Robert Ross (assignor to himself and Geo. J. Stannard), of St. Albans, Vt., for an Improved Horizontal Water Wheel:

I claim the arrangement, in a center-vent water wheel, of the plates, D E, fitted respectively into the scroll and to the wheel, as described, and connected to the frame, G, to operate as and for the purpose set forth.

I also claim, in connection with the above, the projection, h, at the end of the plate, D, when fitted in the socket, i, to leave a space, j, between the projection and the back part of the socket, for the purpose specified.

[The object of this invention is to obtain a center-vent water wheel that may have its capacity readily varied according to the power required, and a uniform speed obtained with a varying power as occasion may require. An engraving and description of this wheel was published on page 156 of the present volume of the SCIENTIFIC AMERICAN.]

27,674.—H. D. Walcott (assignor to H. Williams), of Boston, Mass., for an Improvement in Eyelet Machines:

I claim the nippers, A B, having their jaws, b c, provided with both a punch or cutter and a closing or setting die, substantially as described.

Second, I claim the adjustable piece, g, operating substantially as specified.

RE-ISSUES.

Mary Jane Osborn, of Louisville, Ky., administratrix of William Osborn, deceased, late of said Louisville, for an Improvement in Machines for Pressing Bonnets, Bonnet Frames, &c. Patented Aug. 19, 1856; re-issued Feb. 17, 1857:

I claim, first, The whole of a bonnet frame or similar article at one operation by dies, substantially as specified, whether formed of one or of several pieces and irrespective of the particular size or shape.

I also claim forming the side crown and flaring face-piece of a bonnet frame in one piece or at one operation, as specified.

James W. Reed, of West Roxbury, Mass., assignee through mesne-assignments of Walter Bryant, of Boston, Mass., for an Improved Air-heating Furnace. Patented Oct. 24, 1854:

I claim the improved furnace constructed with its dome, F, closed at top and made to open into the radiator only, through a series of

columns, extending upward into the same, and with a radiator having its bottom plate to cover the entire dome, F, in manner substantially as described.

I also claim the improvement in the construction of the radiator, arranged over the dome of the fire-pot, the same consisting in making its bottom a concave-convex plate or arch, and with the concave side disposed downwards and directly over said dome, whereby the ascending heat from the top of the dome is retained in the concavity of said bottom, and not only made to warm, to great advantage, the air that rushes into the same, but to heat the radiator, so as to improve the draft through the fire-pot and supporting columns of the radiator.

**Pells Manny, of Waddam's Grove, Ill., for an Improvement in Harvesters. Patented April 7, 1857:**

I claim, first, in a new and improved device, the combination of the bar, F, standing at an angle with the wing, C, the bar, S, and the rake, A, arranged in relation to the taper space, R, in the manner and for the purpose substantially as specified.

Second, The combination of the bar, S, and the rake, A, so arranged and operating that the rake, which at first moves longitudinally with the straw, shall afterwards change its relation thereto and compress it laterally against the bar, S, so as to hold it firmly in place until it is deposited at the opening, R, in a compact mass, lying nearly parallel with the direction in which the machine moves, substantially as set forth.

Third, The combination of the elastic metal cap or sheath, c, connecting the divider, b, with the main wing, G, with the reversed hook or bent projecting end, d, of an automatic rake, when said parts are constructed and arranged for joint operation essentially in the manner and for the purposes set forth.

**J. Milton Sanders, of Cincinnati, Ohio, for an Improvement in the Production of Illuminating Gas. Patented July 27, 1858:**

I claim the production of an illuminating gas by passing the vapor of water and hydro-carbon, or its equivalent, mixed previously to decomposition into a retort containing carbon at a high red heat, substantially in the manner set forth.

**Selah Dustin, of Detroit, Mich., for an Improved Low Water Alarm for Steam Boilers. Patented April 26, 1859:**

I claim, first, So combining a steam valve and chamber with a ball or float as that the pressure of the steam in the boiler, in conjunction with the weight of the ball or float, will, when the water falls so low in the boiler that the upward force of the float does not sustain said valve, open said valve and make a free escape of the steam, substantially as described.

Second, I claim, in combination with a valve that is opened by the pressure of the steam and the aid of the ball or float, another valve, e', of lesser area, that closes one end of the steam cylinder so long as the water in the boiler remains at the proper height therein and the pressure of the steam does not exceed a certain amount, substantially as described.

Third, I claim, in combination with a valve opened by the pressure of the steam and by the aid of the ball or float, and which are not resisted by a weight of weighted lever, a steam whistle, bell, or other means of giving an alarm by the escape of the steam, substantially as described.

Fourth, I claim the combination of the float and the differential valve with the steam chamber, for the purpose of opening said valves, by immersing the float deeper in the water to sound an alarm when there existed an excessive pressure of steam in the boiler, substantially as described.

#### ADDITIONAL IMPROVEMENT.

**Joseph F. Pond, of Cleveland, Ohio, for an Improved Washing Machine. Patented Oct. 26, 1858:**

I claim the brake bar with double-ridged upper surface, as described, in combination with hollowed bearings, a, b, and annular slotted bearing pieces, c, lever and rod, arranged and operating with the roller, A, and apron, D, as set forth.

**NOTE.**—More than ONE-THIRD of all the patents granted last week, as reported above, were secured through the Scientific American Patent Agency—MUNN & CO., No. 37 Park-row, this city.

## Notes & Queries

**G. R., Jr., of Pa.**—We believe that it would be a great improvement in the manufacture of glue to employ steam heat in stead of direct fire under the boilers. With steam you can regulate the heat properly, and you will never singe any of the skins. With steam heat, you could also use wooden tanks in place of metal boilers. You can run the steam-pipes back and forth in the bottom of the boiler, but you must use an open joint so as to take them out when desired.

**R. C., of Texas.**—You are mistaken in stating that Haswell gives the strength of boiler iron at from 30,000 to 25,000 lbs. on the square inch. He says: "The tenelle strength of boiler iron is 50,000 to 60,000 lbs. per square inch of section; but at a temperature of 550°, it is reduced to 22,500 lbs." Any good American boiler iron will stand 49,000 lbs., but we do not believe you can get a boiler made of iron that will stand a pressure of 250 lbs. of air on the inch without leaking. For such a pressure, we advise boiler iron of no less than 3/4 of an inch thick. We have no doubt of electrical currents being generated in the earth by under currents of water, because electricity is developed more or less in every case of friction.

**J. S., of Pa.**—Your hydrostatic paradox is quite a neat puzzle; but as your vertical columns of mercury, are in fact, equal, there is in reality, no paradox in it.

**O. S., of Vt.**—We think you will find in Mr. Sprague's second article on "The Obstruction to the Navigation of Rivers caused by the Piers of Bridges," a full discussion of the points which you raise.

**L. B., of Mass.**—A gang of steam boilers, unless they have independent steam connecting pipes to equalize the pressure cannot be safe. One pump is perfectly able to feed all the boilers, if it is of sufficient capacity. Each boiler should have a separate feed-pipe branching from the main pipe of the force pump. The middle boilers generally generate steam fastest, and require a little more feed than the side ones. A feed pump should be able to supply about four times the amount of evaporation. The size of the feed-pump pipe for high pressure engines is obtained by multiplying the diameter of the cylinder in inches by 141. The resultant is the diameter of the feed-pipe in inches.

**Towers, of Pa.**—An immense amount of labor has been expended by astronomers in searching for small satellites revolving about the earth, and it is thought that one at least has been discovered. It is supposed to be about half a mile in diameter and 5,000 miles distant, if we remember rightly.

**S. R. H.**—Your suggestion of a balloon to carry a line ashore from a vessel wrecked on a lee coast has been made before. It seems to us a most excellent plan.

**J. M. R., of Ohio.**—For a popular treatise on natural philosophy, Wells' is as good as any; but if you want a profound and thorough discussion of the principles of the science, we know of nothing superior to Newton's Principia.

**W. B., of N. Y.**—Your illustration of a perpetual motion that would not run is ingenious, but our artists are now so busy that we must forego the pleasure of having it engraved.

**J. B., of Del.**—A body shot into the air will fall with the same velocity as it rises, less, of course, the resistance of the air. When we copied the paragraph of which you spoke from a London paper, we thought of introducing the qualification, but as it is small with a lead or iron bullet, we let it go.

**W. H., of Ill.**—The crystals which you send us are quartz. There are tons of them scattered through all granite regions. They are valueless.

**J. B., of N. C.**—If a 25-horse power engine is sufficient to drive certain machinery, a 50-horsepower engine attached to the same machinery would ordinarily require more wood; this, however, would depend on the circumstances of the case.

**B. M. J., of Ark.**—Your recommendation of a wash for young trees, composed of equal parts of tar, soft soap and hog's lard, we here present to our readers.

**W. B. G., of N. Y.**—Your communication on the model of ships is received. We have been waiting some time for a proper occasion to give our own views on this subject.

**J. B., of Iowa.**—We have never seen Garvey's grometer, and as you doubtless understand the general principle of these instruments, we shall not trouble you with any remarks upon them.

**C. K., of Mich.**—We do not believe your explanation of the light from loaf sugar is correct. Though phosphate of lime is used in clarifying sugar, the quantity of phosphorus left in the refined sugar must be infinitesimal, and not enough to produce visible light.

**J. T. B., of N. Y.**—Wells' Chemistry will be suitable for you. Seely & Garbanati, No. 424 Broadway, this city, keep everything pertaining to the photographic art.

**S. D. T., of Mass.**—The several rays of light separated by a prism can be brought together again, when they are found to produce the original whitelight. Nobody knows why light is refracted.

**O. H. Y., of N. Y.**—We do not know where you can obtain the oxy-calcium apparatus to be used with dissolving views.

**A. A. S., of Va., writes:**—"Are not the majority of newspaper advertisements headed '\$1.200 a year, with \$10 capital, — '\$10 a day'— '\$100 a month,' &c., all humbug, to 'peel the greens'; or are they real plans by which an honest man can make money?" It is rather "green" even to ask the question.

**B. & Co., of Cal.**—Silver ores are not worked in the vicinity of New York, nor do we know a single melting company which imports silver ore to obtain the precious metal.

**J. B. G., of Ga.**—We do not think that glass coffins are made in this country. There are patents on such coffins.

**W. L., of Pa.**—We never doctored a heavy horse in our life, and have therefore no skill in prescribing for such diseases.

**J. T., of N. B.**—We are willing to pay for original contributions of merit, but we do not think the subject of the cause of the aurora borealis would be one of sufficient interest to our readers. You had better communicate with the editors of "Sullivan's Journal," at New Haven, Conn.

**W. F., of —.**—We think we could explain the gyroscopes in fewer words than you employ, but the interest in the subject seems to have passed away.

**J. A. F., of Ala.**—The problem of calculating the force of the sun's attraction on the earth was attacked 170 years ago by the greatest intellect the world ever saw—Sir Isaac Newton. You will find the subject fully discussed in works on mathematical astronomy. For the other points in your letter see Bartlett's Mechanics.

**P. M., of N. Y.**—Our artists are now very busy, but if they get a little leisure we may give you a cut which would explain to your own and other youthful minds the principle of the steam engine. It is something which every boy ought to understand.

**F. M. B., of Wis.**—Your inquiry is not very clearly expressed. We presume you will be answered, however, when we say that if A has taken out a patent on a combination of parts exclusively for sewing wheat broadcast, B would not infringe by employing a similar combination to sprinkle the streets with water.

**G. W. C., of Mich.**—Nitrate of silver should be dissolved in ammonia for mixing with the printer's ink, so as to render it indelible for stencil work. The alkaline ammonia renders the nitrate salt capable of mixing with the oil of the ink.

**J. S., of Ohio.**—We really believe that the most simple and best way to introduce a reform in our measures would be to adopt the French system; but in the absence of any mere law, it would be better to use the centimeter system, with the foot and inch common terms.

**G. A. C., of N. Y.**—You have failed to comply with the rule of this office, which requires all letters to be properly signed with the writer's name—not for purposes of publication, but as an evidence of good faith.

**L. M. P., of Mass.**—Three elements are necessary in calculating horse-power, namely, time, pressure and speed. Nobody can tell "how many cubic inches of 50 lbs. pressure it takes for one horse-power."

**H. D. P. & Co., of Miss.**—There is no fixed depth at which to carry lightning conductors into the ground. They should be carried down to rest in moist soil, that is all. A rod is a conductor; and one that extends 10 feet above the roof and is 40 feet high, will protect an area of 5,024 square feet according to some authors and only 785 feet according to others. Reliable information on this point is much wanted.

#### Money Received

At the Scientific American Office on account of Patent Office business, for the week ending Saturday, March 31, 1860:—

L. & W., of Ind., \$30; H. G., of Mass., \$30; S. S. G., of N. Y., \$25; A. L., of Ga., \$25; T. G. A., of N. Y., \$30; A. J. G., of Mass., \$30; G. W. R., of N. Y., \$60; C. J. S., of S. C., \$25; L. H., of N. Y., \$25; P. B. W., of Ga., \$30; L. B. H., of N. Y., \$30; G. H. M., of Mass., \$30; D. W. A., of Ill., \$25; A. C. of N. Y., \$35; W. P. F., of Conn., \$25; W. J. J., of Ala., \$30; C. F. B., of R. I., \$500; S. B., Jr., of N. Y., \$30; J. H., of Mass., \$32; D. H., of N. Y., \$30; M. W., of L. I., \$30; C. & B., of Ill., \$30; J. H. & A. T. G., of N. Y., \$50; M. A. S., of Ill., \$35; G. W. Van D., of N. Y., \$10; T. G. of Ill., \$25; J. F. H., of Ill., \$15; T. M., of Conn., \$30; J. B. W., of Tenn., \$40; A. C. L., of Mich., \$35; J. R. H., of Conn., \$25; B. & S., of Ohio, \$30; W. M., of Mass., \$30; G. C., of Ill., \$10; J. P., of N. J., \$30; W. D., of N. Y., \$30; A. B. P., of Cal., \$30; S. A. C., of Mass., \$35; B. J., of Ky., \$30; J. J., of N. Y., \$30; R. P. Van H., of Ohio, \$30; C. D., of Mass., \$30; J. B., of N. Y., \$38; S. B. D., of N. Y., \$250; C. C. L., of Pa., \$30; B. I., of N. Y., \$35; R. H. T., Jr., of S. C., \$275; W. C. A., of Mo., \$30; W. D., of Mass., \$35; A. H., of Conn., \$25; J. C. of Conn., \$40; S. F. B., of Mass., \$30; J. B. McC., of Iowa, \$30; F. S., of Ill., \$30; R. & S., of Ala., \$30; C. H. & Co., of N. J., \$30; W. H. D., Jr., of Pa., \$35; A. T. J., of Conn., \$30; J. S., of N. Y., \$30; B. D., of Ohio, \$25; P. M., of Mass., \$35; P. & F., of Ind., \$30; J. J. H., of Md., \$100; E. C., of N. Y., \$30; C. T. B., of N. Y., \$30; J. M., of N. Y., \$30; J. C., of Vt., \$30; J. W. M., of N. Y., \$25; A. W. W., of Conn., \$25; J. D. M., of N. Y., \$26; L. & V., of N. Y., \$55; J. W. T., of Ala., \$55; C. A. B., of Vt., \$25; W. A. H., of N. J., \$30; G. S., of Mass., \$35; E. F. R., of Mass., \$55; D. A. W., of N. Y., \$60; W. & T. S., of N. Y., \$60; W. & T., of Ill., \$25; W. B. G., of Pa., \$30; A. W., of N. Y., \$30; F. F. S., of Ill., \$30; A. T. J., of Conn., \$35; C. B., of N. Y., \$58.

Specifications, drawings and models belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, March 31, 1860:—

J. F. H., of Ill.; W. D., of Mass.; J. W. M., of N. Y.; A. J. G., of Mass.; J. F., of Mass.; L. H., of N. Y.; S. R. G., of N. Y.; P. M., of Mass.; J. D. M., of N. Y.; B. I., of N. Y.; P. J., of N. Y.; C. B., of N. Y.; A. H., of Conn.; S. S. G., of N. Y.; J. C., of Conn.; H. B., of N. J.; J. R. H., of Conn.; P. B. W., of Ga.; G. H. M., of Mass.; A. W. W., of N. Y.; J. H. & A. T. G., of N. Y. (two cases); W. P. F., of Conn.; C. S. I., of Ind.; L. & V., of N. Y.; A. L., of Ga.; T. G., of Ill.; M. A. S., of Ill.; T. M., of Conn.; A. C. L., of Mich.; C. O., of N. Y.; D. W. A., of Ill.; J. R. E., of La.; B. B., of Ohio; W. J. J., of Ala.; A. M. B., of Vt.; W. & T. S., of N. Y.; G. S., of Mass.; J. H. W., of N. J.; W. & T., of Ill.; E. F. R., of Mass.; A. S., of N. J.; A. T. J., of Conn.; E. R. R., of N. J.; P. & H., of Cal.; S. A. C., of Mass.

#### IMPORTANT TO INVENTORS.

**THE GREAT AMERICAN AND FOREIGN PATENT AGENCY.**—Messrs. MUNN & CO., Proprietors of the SCIENTIFIC AMERICAN, are happy to announce the engagement of Hon. JUDGE MASON, formerly Commissioner of Patents, as associate counsel with them in the prosecution of their extensive patent business. This connection renders their facilities still more ample than they have ever previously been for procuring Letters Patent, and attending to the various other departments of business pertaining to patents, such as Extensions, Appeals before the United States Court, Interferences, Opinions relative to Infringements, &c., &c. The long experience Messrs. MUNN & Co. have had in preparing Specifications and Drawings, extending over a period of fourteen years, has rendered them perfectly conversant with the mode of doing business at the United States Patent Office, and with the greater part of the inventions which have been patented. Information concerning the patentability of inventions is freely given, without charge, on sending a model or drawing and description to this office.

Consultation may be had with the firm, between nine and four o'clock, daily, at their PRINCIPAL OFFICE, No. 37 PARK ROW, NEW YORK. We have also established a BRANCH OFFICE in the CITY OF WASHINGTON, on the CORNER OF F AND SEVENTH STREETS, opposite the United States Patent Office. This office is under the general superintendence of one of the firm, and is in daily communication with the Principal Office in New York, and personal attention will be given at the Patent Office to all such cases as may require it. Inventors and others who may visit Washington, having business at the Patent Office, are cordially invited to call at their office.

They are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction of this business they have Offices at Nos. 66 Chancery Lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eprouvettes, Brussels. We think we may safely say that three-fourths of all the European Patents secured to American citizens are procured through our Agency.

Inventors will do well to bear in mind that the English law does not limit the issue of Patents to Inventors. Any one can take out a Patent there.

A pamphlet of information concerning the proper course to be pursued in obtaining Patents through their Agency, the requirements of the Patent Office, &c., may be had gratis upon application at the Principal Office or either of the Branches. They also furnish a Circular of information about Foreign Patents. The annexed letters from the last three Commissioners of Patents we commend to the perusal of all persons interested in obtaining Patents:—

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

CHAS. MASON.

Immediately after the appointment of Mr. Holt to the office of Postmaster-General of the United States, he addressed to us the following very gratifying testimonial:—

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

Your obedient servant, J. HOLT.

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

Your obedient servant, WM. D. BISHOP.

Communications and remittances should be addressed to

MUNN & CO.

Publishers, No. 37 Park-row, New York.