

ers to one end, or nearly so, of the vessel, thence up through the bottom to any part or parts of the interior of the vessel where fresh water is required. By this means a copious supply of fresh water is obtained by condensation or distillation and forced to where it is required for use by the boiler pressure without the necessity of a donkey pump for such purpose. This invention will be very advantageous on board of steam vessels of war or transport or passenger steamers, which carry a large number of persons who necessarily require a large quantity of fresh water. G. R. Vanderbilt, of Mount Vernon, N. Y., is the inventor of this improvement.

**Artificial Limb.**—This invention relates particularly to an improvement in the mode of securing artificial limbs to the stumps remaining from the natural limbs. The invention consists in the use of one or more rollers in the bottom of the cup intended to receive the stump in combination with a strap secured to the covering of the stump and under its center in such a manner that by placing the stump over the mouth of the cup, passing the strap through under the roller at the bottom of said cup and pulling it, said stump is drawn into the cup entirely by the strain exerted by the strap on the covering, and consequently the slipping back of said covering and of the flesh under it is effectually prevented; the invention consists, further, in a wooden disk combined with the canvas covering of the stump and with the strap used for pulling the stump into the cup in such a manner that by inserting a staple into said disk a firm connection can be effected between the strap and covering, and by straining the strap the end of the stump and the bone protruding from the same is entirely relieved from pressure. Joshua Monroe, of No. 560 Hudson street, New York city, is the inventor of this improvement.

herein described, in combination with the stationary aperture or throat, o, and smooth feed rollers, l, the whole constructed substantially as and for the purpose set forth.

**41,904.—Mode of cutting Boots.**—George A. Brown, Milford, Mass.: I claim forming a boot upper by means of two curved cuts, J, J, of increasing radius and interposed pieces, C, D, all as herein shown and described.

**41,905.—Grain Dryer.**—Lewis S. Chichester, Brooklyn, N. Y.: I claim, first, A series of parallel or nearly parallel tables, in combination with a rocker, whereby the grain is passed alternately from end to end over such tables in consequence of the rocking movement, substantially as specified. Second, I claim the metallic tables formed with mortices and overhanging lips, as and for the purposes specified.

**41,906.—Grain Weigher.**—Lewis S. Chichester, New York City. Ante-dated March 14, 1864: I claim, first, Hanging the box, d, on which the bucket swings or turns, by a link taking the centre, 3, on the scale-beam, b, for the purposes and as specified. Second, I claim the crutch, d', and screws, x, in combination with the ox, d, and scale-beam, b, for the purposes specified. Third, I claim the bucket frame, e, receiving the bucket, e', in the manner substantially as specified, in combination with the counterpoise, f, for the purposes set forth.

**41,907.—Collarette.**—C. O. Crosby, New Haven, Conn.: I claim the collarette herein described as a new article of manufacture. **41,908.—Saw-mill.**—Pearson Crosby, New York City: I claim the method of connecting or securing the tubular side pieces, B, B, to the cross-heads, A, A, to wit, having rods, C, welded into the ends of the tubular side pieces to serve as screw bolts for the same, which pass through the cross-heads, and either with or without the plates, D, or other equivalent bearings, at the inner edges of the cross-heads, substantially as herein set forth.

[This invention relates to an improved mode of securing tubular side-pieces to the cross-heads of the gate and sash, whereby a very firm and durable connection of the above-named parts is obtained, and consequently a light and durable gate or sash. The invention further relates to a novel and improved mode of strengthening the cross-heads of the gate or sash, whereby the same are prevented from springing under the strain to which the saw or saws are subjected, and comparatively light draw-heads allowed to be used.] **41,909.—Balanced Slide Valves.**—Henry Davies, Portsmouth, Ohio: I claim the rocker, F, bar, G, levers, H, H, stud, J, diaphragm, D, and radial bars, L, L, applied and operating in combination with a valve, A, having the induction of steam under it face, substantially as herein specified.

[This invention consists in a novel mode of applying a flexible diaphragm in combination with a slide valve, whereby the pressure of steam on the diaphragm is made to counteract that on the valve, and the valve is enabled to work with the least possible amount of friction upon its seat. We expect shortly to publish an engraving of this invention.] **41,910.—Wood-sawing Machine.**—Morris Dewey, Clarendon, N. Y.: I claim the special arrangement of the machine, constructed substantially as described, consisting essentially of the reverse saw and shank, D', D', rock lever, C, pitman, E, lever, I, with notch or notches, to, pawl, K, and the lever, M, provided with pawl, p, and the ratchet, o, o and q, q, substantially as and for the purposes herein set forth.

**41,911.—Railroad Car Window.**—Thomas W. Emery, Buffalo, N. Y.: I claim the combination of the jointed screens, b, b, with the pane, B, or its equivalent slide, and a frame, A, the whole so arranged that when unfolded, the screen, B, serves as a ventilator and dust excluder, but when folded, they are in compact form out of the way, substantially as herein specified. I also claim in combination with the folding screens, b, b, the cover or roof, b', arranged and operating substantially as described.

**41,912.—Folding Saw-horse.**—C. J. Fay, Hamonton, N. J.: I claim a folding or expanding and contracting saw-horse constructed in the manner substantially as herein shown and described. [This invention consists in constructing the horse in such a manner that it may, when not required for use, be folded in compact form, and to effect this the cross-bars at each end of the horse are allowed to work or turn on the bar which connects them at their junction, each pair of cross-bars being connected by a folding brace.] **41,913.—Rock-drilling Machine.**—Joseph S. Foster, Virginia, Nevada Territory: I claim the tube, B, with the drill-rod, I, fitted within it, in combination with the rack, M, pinion, L, pawl, N, wheels, O, P, and spring, Q, all arranged to operate in the manner substantially as and for the purposes specified.

Further claim the combination of the bed, A, plate F, set screws, B, slides, D, tube, H, drill-rod, I, wheels, O, P, pawl, N, shaft, K, and spring, Q, all arranged to form a new and improved device for the purpose specified. [This invention relates to an improved device for holding the drill and rotating the same, and also for adjusting the drill in a more or less inclined position as may be required.] **41,914.—Portable Oven.**—John A. Frey, Washington, D. C.: I claim, first, The arrangement of the inside and outside case of the oven with the partitions, N and O, and fire-box, J, with its flanges to support the roasting racks, return pipes, M, and removable plate, T, as described for the purposes set forth.

Second, The combination of a fire-box having a smoke-pipe connection at each side thereof, with a portable oven having double walls to provide ducts with which the smoke-pipes connect, substantially as shown. **41,915.—Melodeon.**—Reuben Goodrich, Pittsfield, Mass.: I claim, first, The employment in a melodeon or other reed musical instrument, of a sound-board of glass or other sonorous material interposed between the socket-board and the air-receiving chamber of the exhaust bellows, substantially as and for the purpose herein specified. Second, Causing the air after passing through the reeds to pass through one or more slots or narrow openings, d, d, provided at the edge of the sound-board, substantially as herein specified.

[This invention consists, first, in interposing between the socket-board and the reeds and the air-receiving chamber of the exhaust bellows, in a melodeon or other reed musical instrument, a sound-board of glass or other sonorous substance; secondly, in causing the air after it has passed the reeds, to pass through one or more slots or narrow passages at one edge of the sound-board instead of through a hole or holes in the foundation-board directly under the valves, as in most reed instruments now manufactured.] **41,916.—Sewing Machine.**—Wm. S. Guinness, Mount Vernon, N. Y. Ante-dated March 9, 1864: I claim the combined arrangement of the needle-arm, C, the feed

arm, N, the shuttle-holder, G, the carrier, g, g, and the thread regulator or governor, V, V, moving simultaneously in the manner and for the purpose substantially as described and shown in the drawings.

**41,917.—Railroad Car Brake.**—O. J. Harrington, Manchester, Pa.: I claim the combination of the cord, a, weight, u, friction pulley, m, drum, n, shaft, 2, levers, o, g and j, chains, y, h and r, pulleys, 6, 7 q z t and v, when used in connection with brakes, k, each brake being operated by a separate lever, and made self-operative by the means herein described and set forth.

**41,918.—Dipping-frame for the Manufacture of Matches.**—Darwin Helmer, Mohawk, N. Y.: I claim, first, The longitudinal channels, b, b, Fig. 2, on the upper surface of the slats (without restriction as to the number and location of said channels on the upper surface of the slat) when the said longitudinal channels are used in connection with corresponding longitudinal elevations on the lower surfaces of contiguous slats, in the manner and for the purpose substantially as set forth. Second, I claim the longitudinal elevations, c, c, Fig. 3 (whether formed as part of the slat or by additions thereto) on the under surface of the slats when said longitudinal elevations are used in connection with corresponding longitudinal channels on the upper surface of contiguous slats, in the manner and for the purpose substantially as set forth.

Third, I claim the improved slat formed by the combination of the longitudinal elevations on its under side with corresponding longitudinal channels on its upper side and the deepened transverse grooves for the reception of blank match sticks, or its equivalent, when used in the manner and for the purpose substantially as hereinbefore set forth.

**41,919.—Trap Caster for Bedstead.**—David Henderson, Boston, Mass.: I claim, as a new article of manufacture, a furniture caster with the arms, B, liquid cup, G, and spindle, D, cast in a single piece, substantially as and for the purpose described.

**41,920.—Opening and shutting Gas-cocks by Electro-Magnetism.**—John A. Heyl, Boston, Mass.: I claim the arrangement of the lever, G, which carries the armature of the electro-magnet and the pawl for operating the ratchet-wheel of the stop-cock, to work upon a pivot or fulcrum formed upon the plug of the stop-cock, substantially as and for the purpose herein specified. [This invention relates to the opening and closing of the stop-cocks of gas pipes and gas burners by means of a ratchet-wheel on the plug of the cock and a pawl attached to a lever, which carries the armature of an electro-magnet; the pawl being made to operate upon the ratchet-wheel for the purpose of turning the cock, by repeatedly closing and opening the circuit in which the electro-magnet is placed, and so alternately allowing the armature to be attracted by the magnet and drawn back by a spring. The improvement consists in the arrangement of the lever to which the armature and the pawl are attached, to work upon the plug of the stop-cock, which is made to constitute the fulcrum of the said lever, and to obviate the necessity of a separate fulcrum and support, thereby simplifying the apparatus.]

**41,921.—Tobacco Pipe.**—Elijah Holmes, Lynn, Mass.: I claim connecting the bowl and stem of a woodensmoking pipe by means of the knee, B, provided with an oblique conical socket for the reception of the stem, and a flexible flange, f, substantially as set forth and for the purpose described.

**41,922.—Guard-finger for Harvesters.**—A. A. Hotchkiss, Sharon, Conn.: I claim forming the steel facings of guard-fingers with wings, M, M, extending obliquely downward below the under face of the plane portion, C, substantially in the manner and for the purpose herein set forth.

**41,923.—Sewing Machine Button-hole Stitch.**—Charles Rogers Jackson, Brooklyn, N. Y.: I claim the sewing machine stitch herein described suitable for stitching eyelet holes, or edges, by passing the thread or loops through and over the edge of a fabric, the same being formed with a single thread and by a succession of stitches or loops passing into each other, in the manner herein described.

**41,924.—Car Coupling.**—John T. Johnston & Newton T. Smith, Grand Rapids, Mich.: We claim the combined arrangement of the obliquely pivoted plates, B, having apertures, d', and projecting key-shafts, C, with the draw heads, D, and link, E, in the manner herein shown and described. [This invention consists in the employment or use of a link or shackle provided at each end with a shoulder; in connection with catches placed within the draw-heads, and all arranged in such a manner as to render the coupling self-connecting, or "self-acting," as it is commonly termed, and admit of the draw-heads being readily disconnected when desired.]

**41,925.—Tool for opening Boxes.**—Wm. M. Keague, Brooklyn, N. Y.: I claim, as a new article of manufacture, an instrument for opening boxes, constructed and operating in the manner described. [This invention consists in a tool composed of a handle having on one side a toe and on the other a hammer, said toe being attached to the handle in an oblique direction, so that by entering the same between the cover and top edge of a box and depressing the handle the nails are forced out and the box is opened, and by the aid of the hammer the nails can be readily removed from the cover or refastened as may be desired; the toe is prevented from slipping by V shaped notches cut in both surfaces of the same near its opposite edges.]

**41,926.—Cattle Stanchions.**—George A. Keene, Newburyport, Mass.: I claim in combination with the frame, C, and sliding plate, F, the pin, m, rope, p, and lever, O, or their equivalents, substantially as set forth and for the purpose specified.

**41,927.—Magneto-electric Machine.**—Jerome Kidder, New York City: I claim, first, The two helices or systems of helices, H, H', so combined and arranged that the induced current or currents of one may be added to the current or currents of the other, also that the current or currents of one may be made to run in opposition to the current or currents of another for the purpose of cutting off the power, substantially as herein specified. Second, The combination of a metallic strip or wire, t, surrounding a helix and the arrangement for metallic connection, V, V', to connect any desirable points upon said strip, substantially as and for the purpose herein specified. Third, The battery multiplier composed of a system of studs, k, l, m, k', l', m', or their equivalents, and switches, P, P', with suitable battery connections, substantially as and for the purpose herein specified.

Fourth, Making the poles of the electro-magnet, p, and the armature or hammer, p', relatively adjustable toward or from each other without altering the tension of the spring which draws back the armature or hammer, substantially as herein specified. Fifth, The movable clamp, E, applied to the spring, K, which carries the vibrating armature or hammer, substantially as and for the purpose herein specified.

Sixth, The combination of the two bridges, Y, Y', screws, a', b', c', d', e', f', g', h', i', j', and studs, a, b, c, d, e, f, g, h, i, j, the whole applied in relation to the several coils of the helices and to the electrodes, X and Y, to operate substantially as and for the purpose herein specified. [The object of this invention is to enable the character of the currents obtained by an electro-magnetic machine to be varied in a very great degree, more especially with a view to apply electro-magnetism to the cure of disease, though the variations produced may be advantageous for other than medical purposes.]

**41,928.—Mill-stone Bush.**—George W. Landon, Graham, Ind.: I claim the journal blocks, b, b, and keys, a, a', a'', when set in



ISSUED FROM THE UNITED STATES PATENT-OFFICE FOR THE WEEK ENDING MARCH 15, 1864.

Pamphlets containing the Patent Laws and full particulars of the mode of applying for Letters Patent, specifying size of model required and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

**41,898.—Calculating Machine.**—Joseph B. Alexander, Baltimore, Md.: I claim the combination of the separate levers with the separate sets of wheels so that the speed of calculations is gained from right to left, or from left to right, by arithmetical progression as described and represented.

I also claim in combination with the wheels, A, the spring cogs, l, substantially as and for the purpose set forth. I also claim so combining a set of figured drums with suitable means of operating them as that they will show subtraction working in combination with those which record addition, substantially as herein described and represented.

I also claim the combination and arrangement of figured drums, wheel face-plate, and levers, so that addition, subtraction, multiplication, and division may be worked out on one machine, substantially as described.

**41,899.—Cultivator.**—John Austin, Rockford, Ill.: I claim, first, The combination of the shifting driver's seat, D', with the main frame, A, and laterally shifting plows, K, in the manner described, for the purpose of enabling the driver to balance the machine, and control both the vertical and the lateral movements of the plows, as set forth. Second, The combination of the main frame, A, and compound lever-frame, F, G, with the plows, E, K, when the several parts are arranged and operate as described, for the purposes set forth.

Third, The combination of the adjustable driver's seat, the foot-levers, N, and the laterally adjustable plows, K, when severally arranged (relatively to the main frame, A) and operating in the manner and for the purpose described.

**41,900.—Buckle.**—Isaac Banister, Newark, N. J.: I claim the double buckle with the joint bar of one tongue forming the loop for the other's strap, while the one joint bar forms the stop or bearing for the other's tongue, when constructed and arranged substantially as herein specified.

**41,901.—Water Elevator.**—M. C. Bignall, Seneca Falls, N. Y. Ante-dated March 14, 1864: I claim the cross board, E, provided with the opening or passage, k, when said board performs the double office of guiding the counterpoise rope, belt or chain, and of thrusting the lower part of the bucket toward the spout or trough, as arranged with the chain, C, and reel, B, substantially as herein set forth.

**41,902.—Flax and Hemp Machine.**—George W. Billings, New York City. Ante-dated March 5, 1864: I claim the cleaning of flax and hemp by passing the fibre between stationary rope, belt or chain, combined with the scraping part of the lifting bars and feed rolls, the whole being constructed, arranged, and operating substantially as described and set forth.

**41,903.—Machine for breaking Flax and Hemp.**—George W. Billings, New York City. Ante-dated Feb. 28, 1864: I claim the knives or scrapers, k, having the compound motion

position diagonally opposite each other, the set screws, c c c, &c., the rim, f, the lid, E, the tube, d, and the damsel, D, when constructed with the lubricating apparatus, when used in combination for the purpose above described and set forth.

**41,929.—Machine for heading Bolts.**—William J. Lewis, Pittsburgh, Pa. :

I claim a recess or cavity in the gripping dies so constructed as to embrace the bolt head on two sides only, and in combination therewith a header formed with "checks" or projections on its face or front end, so as to catch the bolt head on its opposite sides, whereby the "flash" or "lip" produced by the first stroke of the machine may be driven off, by turning the bolt one-fourth way round, so that the surplus metal will come against the solid portion of the dies, previous to the second stroke, substantially as herein set forth.

**41,930.—Gas Regulator.**—Charles C. Lloyd, Philadelphia, Pa., & Robert M. Potter, New York City :

We claim the combination of the two concentric chambers, E L, communicating at bottom through contracted apertures, d d, the central supply pipe, C, rising vertically within the chamber, L, the annular float, F, bridge, e, conical valve, B, small air hole, f, in chamber, E, and discharge aperture, b, in the upper part of the chamber, L, when the said parts are constructed and arranged and operate as herein specified.

[This invention consists in the arrangement of the liquid which supports the valve float within two chambers communicating with each other only at the bottom, and a novel arrangement of the valve, the float, the inlet passage, and the liquid chambers, whereby greater steadiness of operation is obtained, and whereby the valve would be caused to close and shut off the gas in case of the exhaustion of the liquid.]

**41,931.—Refrigerator.**—Manoah C. Longacre, Cleveland, Ohio :

I claim the combination with the open frame, A E, of the rack, C, removable corrugated plate, F, trough, H, h, and pins, h', all constructed and arranged in the manner and for the purposes specified.

**41,932.—Marine Log and Lee-way Indicator.**—A. E. Logzler, New York City :

I claim, first, the combination of the case, A, slide, E, springs, r, line, v, chip or bucket, G, rack and gearing, j k l m n, indices, h, q, and dial, a, the whole applied, arranged, and operating, substantially as herein set forth.

Second, The balancing of the case, A, on pivots or journals, b, b, substantially as and for the purpose herein specified.

Third, The attachment of the slide, E, gearing, and springs of the log to a plate, C, or its equivalent, which is capable of turning within the case, A, in such manner that by the use of a suitable scale outside of the box, the slide may serve to indicate the lee-way.

**41,933.—Boot and Shoe Heel.**—Josis Miller, Antwerp, N. Y. :

I claim a shell or skeleton metallic heel, in combination with a metallic circular plate closely fitting to the inside of the shell, all constructed and arranged as herewith described.

**41,934.—Artificial Limb.**—Joshua Monroe, New York City :

I claim, first, The roller, a, or its equivalent, applied to the interior of the cup, A, of an artificial limb in combination with a strap, b, secured to the covering of the stump, substantially in the manner and for the purpose herein shown and described.

Second, The disk, f, arranged in combination with the covering, c, of the stump and with the strap, b, and cup, A, substantially and for the purpose specified.

**41,935.—Mode of Construction of Piers, &c.**—George A. Parker, Lancaster, Mass. :

I claim, first, A portable constructing pier supported upon and leveled or adjusted by or to the bed of the stream upon which it rests, substantially as and for the purpose herein specified.

Second, I also claim, in combination with constructing piers, either portable or permanent, the fastening of them to the bed of the stream by screws forced into the same from the top of the pier, substantially as described.

**41,936.—Machine for picking and cleaning Wool, &c.**—Stephen R. Parkhurst, New York City :

I claim, first, A toothed cylinder in combination with a receptacle or hopper, to act as a feeder to carding, picking, and cleaning machines, by conveying to such machines the fibers that are seized by and surround the teeth of such cylinder, substantially as specified.

Second, I claim a vibrating or oscillating comb or detainer in combination with the said feeding cylinder and receptacle, as specified.

Third, I claim the fitted roller, k, in combination with the toothed cylinder, h, and stripper, i, for the purposes specified.

Fourth, I claim the toothed cylinders, g, h and i, and strippers, i and m, arranged substantially as specified, in combination with the feeding cylinder, d, and shell, f, for the purposes and as specified.

**41,937.—Percussion-fuse for Explosive Shells.**—Robert P. Parrott, Cold Spring, N. Y. :

I claim the construction and arrangement of the columns or arms, f, substantially in the manner herein shown and described; so that said arms will be longitudinally strong, but laterally weak, and thus, when rapid rotation is imparted to the shell by discharge from the gun, the arms will bend or break, but at all other times will remain firm and rigid, as set forth.

**41,938.—Geographical Globe.**—Elbert Perce, Brooklyn, N. Y. :

I claim a geographical globe with magnetic properties so that small objects made of steel or iron will be attracted and retained by the force of magnetic attraction, in the manner and for the purpose above specified.

**41,939.—Method of connecting Governors with the Gates of Water-wheels.**—J. W. Pitt, North Adams, Mass. :

I claim the applying of a governor to the gate of a water-wheel, in the manner substantially as described, so that the gate in opening will move with an accelerated or gradually increasing speed, and in closing move with a corresponding diminution of speed to compensate for the varying force of the water at different heights of the discharge orifice, as set forth.

[The object of this invention is to apply a governor to the gate of a water-wheel in such a manner that the gate will be raised with an accelerated or gradually increasing speed, and lowered with a corresponding diminution of speed, whereby the movement of the gate will at all times be proportionate to the volume of water and power required.]

**41,940.—Elastic Carriage Wheel.**—E. L. Pratt & John B. Thompson, Boston, Mass. :

We claim the application of the rubber or elastic cushion, e, to the outer surface of the metallic tire or hoop, d, (which surrounds and keeps in place the felles) when such cushion is surmounted by a metallic protector or band, f, as set forth.

**41,941.—Skimming Apparatus for Sugar Pans.**—Thomas J. Price, Industry, Ill. :

I claim, first, The skimmer, A, in combination with the head blocks, B B, and rods, O O, substantially as and for the purpose set forth.

Second, The rockshaft, J, and levers, D D, and rods, S S, in combination with the head blocks, B B, and rods, O O, substantially as shown and described for the purpose specified.

Third, A skimming apparatus which elevates the skimmer above the boiling juice in its rearward movement until it gets in the rear of the deposit of scum, then drops into the boiling juices, and in its forward movement catches the scum and scrapes it up the inclined end, depositing it in the gutter, as shown and for the purpose set forth.

**41,942.—Bee-hive.**—John E. Richey & C. Hotchkiss, Van Wert, Ohio :

We claim the arrangement of the divisible hive, p, and slide, D, with the ventilating and moth chamber, k, and boxes, d, d, in the manner herein shown and described.

**41,943.—Toy Pistol.**—Reuben Shaler, Madison, Conn. :

I claim the combination and arrangement described of the barrel, B, hammer, C, spring, d, and trigger, E, in the manner and for the purpose specified.

**41,944.—Saddle or Sweat Cloth.**—Robert Spencer, Newark, N. J. :

I claim as a new article of manufacture a saddle cloth shaped to the back of the horse without seam and graduated in thickness,

made or combined substantially in the manner and for the purposes described.

**41,945.—Axle Box.**—Wm. Stechschult, Glandorf, Ohio :

I claim the employment of the spreading noses, e, e, in combination with the linch-pins, C C', projections, d d', groove, b, and axle, B, all in the manner herein shown and described, so that the grease or lubricating material will be caught and spread over the surface of the axle, as set forth.

[This invention consists in the arrangement of two projections or lugs rising from plates or brackets that are secured to the axle by bolts or other suitable means, one or both of said projections being provided with noses or scrapers, in combination with a circular groove in the rear end of the hub or box, and with an oil hole in front in such a manner that the oil contained in a circular groove at the rear end of the hub or axle box, is pushed out and spread on the axle by the action of the scraper or scrapers, and at the same time by having two such plates or linch-pins, one on either side of the axle, the strain of the wheel on the axle is equalized, and the friction reduced.]

**41,946.—Mosquito Tent or Frame.**—John Stewart, New York City :

I claim the telescopic column, A, provided with a windlass, C, ropes or chains, d, e, hinged arms, D, and ropes or chains, i, all constructed and operating in the manner and for the purpose herein shown and described.

[The object of this invention is a simple and portable device, capable of being raised and expanded to form a space enclosed by mosquito netting or of being lowered and folded up so as to occupy but little room when it is not used.]

**41,947.—Grain Dryer.**—R. T. Sutton, Rochester, N. Y. :

I claim the revolving perforated cones, D, conveyors, F, and perforated floors, B B', in combination with the tower, A, air-supply chamber, G, with inlet and outlet openings, H H', and air discharge chamber, G', with openings, g', and suction blower, L, constructed and operating in the manner and for the purpose substantially as shown and described.

**41,948.—Gate and Door-closing Device.**—George Turner, Lansing, Mich. :

I claim a pulley device for the weight, cord or rope of doors and gates, composed of an arm, A, with a fixed vertical pulley, C, attached in combination with an adjustable plate, D, pivoted at A, and having a horizontal pulley, E, fitted to it, all arranged to operate in the manner substantially as and for the purpose herein set forth.

[This invention relates to an improvement in the old and well-known weight and pulley attachment for closing doors, and is also designed to supersede the ordinary weight and chain attachment for closing gates. The invention consists in the employment or use of a fixed and a self-adjusting pulley, arranged in such a manner that the device may be applied to either a right or a left-hand door or gate, and operate equally well in either application, without the liability of the cord slipping from the pulleys in any position of the door or gate, the weight at the same time being entirely out of the way.]

**41,949.—Condenser.**—G. R. Vanderbilt, Mount Vernon, N. Y. :

I claim the employment for obtaining a supply of fresh water on board a steam vessel at sea, by condensation or distillation, of a pipe or pipes, a, c, leading from the boiler to or nearly to one end of the vessel through the bottom and along the exterior thereof to or nearly to the other end, thence to the interior and to the point or points where the supply is required, substantially as herein described.

**41,950.—Helical Spring.**—Richard Vose, New York City :

I claim the use of a metallic bar, varying in width or thickness either from end to end or from center to center, in which it is coiled into a helical spring, substantially in the manner and for the purpose herein set forth.

**41,951.—Gate.**—D. R. Warfield, Muscatine, Iowa. Antedated March 9, 1864 :

I claim the bar, C, with the weight, E, attached in combination with the catch, F, levers, G G, cords, s, and levers, q q, all arranged substantially as and for the purpose set forth.

[This invention relates to a new and improved means for opening and closing gates, to enable a person on horse-back or in a vehicle to open or close the gate without dismounting from the horse or getting out of the vehicle. The invention consists in suspending the gate on an angular pivoted bar placed in a suitable framing and arranged with a catch or fastening and levers.]

**41,952.—Boot Crimp.**—Oliver J. Warren, Chicago, Ill. :

I claim the wedge-formed yoke, E, enclosing the nut, E, and operating to spread the arms, h, b', in the described combination with the crotch, A a a l 2, outer hinged jaws, B B B', and screws, C, arranged and operating substantially as and for the purposes specified.

**41,953.—Washing and Wringing Machine.**—Ephraim B. Wells, Uniontown, Pa. :

I claim in combination with the endless apron, C, the rollers, F J, the latter being elastic for the purpose of placing the moving of the apron, at the will of the operator as described, under the beaters for washing, or without the beaters for wringing only, as set forth and represented.

**41,954.—Churn.**—Amos Westcott, Syracuse, N. Y. :

I claim, first, The use of dasher paddles of the form above described.

Second, The use of stationary dashers of the form above described in combination with the said churn, as above described.

Third, The use of the dasher paddles made as in Fig. 2, so constructed and attached to the shaft, B, Fig. 2, as to move close to the inner sides of the ends of the box of the churn, essentially as above described, in combination with the other parts of the churn as above described.

Fourth, The method of constructing, attaching and securing in place the shaft, B, Fig. 2, so that the same crank can be used upon either the driving wheel at one end of the churn or upon the shaft at the other end of the churn at pleasure, essentially as above described in combination with the other parts of the churn as above described.

Fifth, The use of the blower in combination with the other parts of the churn, essentially as above described.

**41,955.—Machine for making Horse-shoe Nails.**—Milton D. Whipple, Cambridge, Mass. :

I claim, first, The series of pairs of vibrating levers, L M N O, each pair in the series operating at right angles to the next preceding pair, and provided with dies for swaging the blank, substantially as set forth.

Second, In combination with the above series of levers and dies, I claim flattening and finishing the nail by passing it between the rolls, R and S, as described.

**41,956.—Concealed Hinge.**—Frederick Wood, Bridgeport, Conn. :

I claim the enlarged opening, G', in combination with the free hinge-pin, G, constructed and operating in manner as described, or in any other manner substantially the same.

**41,957.—Mosquito Net, a portable article.**—John Zengerler, Chicago, Ill. :

I claim a mosquito net for the head and neck, constructed of netting, B, attached to elastic hoops, A A, and secured to the wearer substantially as herein set forth.

[This invention consists in securing the fabric known as mosquito netting, to elastic hoops of wire, cane, or other material, and of such diameter as to admit of the device being placed over the head of the wearer; the netting being cut of such form as to admit of being snugly fitted to the shoulders and confined closely to the waist in front.]

**41,958.—Mowing Machine.**—Rufus Dutton, Brooklyn, N. Y., assignor to himself and Anthony B. Allen, New York City :

I claim changing the cutting apparatus from front to rear, and

from rear to front of the right wheel of the machine, by means of detaching and reversing the parts of the gear casing, C D, draft-rod, C', cross-bar, A', substantially as set forth in the specification.

I also claim the bend or offset in the cross-bar, A', for depressing the crank end of the casing in rear cutting, and elevating the same in front cutting, substantially as set forth.

I also claim constructing the draft-rod with a bend at one of its ends, and made reversible to adapt it to front and rear cutting, substantially as and for the purpose set forth.

I claim also so attaching the line of draft in a mowing machine as to counteract the tendency of the gear casing to rotate on the axle as well as to prevent the finger-bar from rising above the ground in rear cutting, and pressing upon the ground in front cutting, substantially as set forth.

**41,959.—Skate.**—E. Otis Frink (assignor to himself and S. C. Frink), Indianapolis, Ind. :

I claim the ratchet, A, the cog-wheel, C, the guides, d and d', the spring lever, B, and pawl, g, when the same is operated, constructed, and arranged as described.

**41,960.—Explosive Shell.**—Ralph Graham (assignor to himself and Samuel Booth), Brooklyn, N. Y. :

I claim, first, Forming the shell of two parts, a and b, in the manner specified, and soldering them together, whereby the parts of said shell can be cast of type metal or similar alloys in molds with facility, and when united by soldering, said shell becomes as solid as if cast in one piece, for the purposes and as specified.

Second, I claim the case, g, formed as specified and connected to the rear end of the projectile, when said shell is of such a shape as to allow a space between the shell and chamber sufficient for the gases in the explosion to pass in and eject said shell after the projectile has passed out of the barrel as specified.

**41,961.—Piston for Steam Engines.**—John Hall & Henry Hall, Sen. (assignors to themselves and Henry Jones), Brooklyn, N. Y. :

I claim first, The blocks, H, wedges, G, and ribs, F, or their equivalents in combination with the annular plate, K, and its projections, m, or the equivalent thereto, the whole being constructed and arranged for action on the segments and rings of the piston, substantially as and for the purpose herein set forth.

Second, The arrangement within described of the sliding blocks, H, in respect to the segments for the purpose specified.

Third, The worm spindle, P, the screw spindle, g, with its wheel, M, when the whole is combined with the annular plate, k, and arranged for operating the same, substantially as described for the purpose specified.

Fourth, The use of the single spring, R, for imparting an equal pressure and elasticity to the rings, substantially in the manner described.

**41,962.—Hame Fastening.**—John McLain, St. Mary's, Ohio, assignor to Joseph Chenoweth, Columbia City, Ind. :

I claim the arrangement of slides, B C, adjustable by a screw, d, and holes, c, or by ratchet teeth, f, and spring catch, g, in combination with the bows, a, b, of hames, A, constructed and operating in the manner and for the purpose substantially as herein shown and described.

[This invention consists in the arrangement of curved slides inserted into the ends of the hames, one of said slides being made adjustable by means of a screw passing through the hame and fitting into different holes in said slide, and the other slide being provided with ratchet teeth and made adjustable by means of a spring catch, in such a manner that the hame can be opened and closed and adjusted to the necks of different horses, whenever it may be desired.]

**41,963.—Machine for cutting up Fat.**—Frederick Miller & J. N. McIntire (assignors to said Frederick Miller), New York City :

We claim the employment of the cutter cylinder, A, with its knives, a, the roll, C, and the cutter cylinder, B, with its knives, a', and roll, D, the whole arranged and operating as described.

We also claim the employment in combination with a cutting cylinder of the clearing plates, m, arranged to operate as and for the purposes described.

We also claim the arrangement of the lower cutter cylinder in such manner with the upper, as that the former will clear off the plates, m, of the latter, as described.

We also claim the use of the clearer bar, T, in combination with the cylinder, B, and its plates, m, the whole arranged and operating as specified for the purpose set forth.

We also claim the combination of the two cutter cylinders, one over or in advance of the other, when each is made with special knives and the knives of the two are twisted in opposite directions, as and for the purposes set forth.

**41,964.—Vacuum Engine.**—Isaac Newton, New York City, and Norman W. Wheeler, Brooklyn, N. Y., assignors to said Isaac Newton. Antedated Jan. 13, 1864 :

We claim, first, The use of the single-acting air and circulating pumps, B B, and A A, in combination with each other, and with the surface condenser of a marine engine, when said pumps are connected and operated in relation to each other substantially in the manner described.

Second, The combination of the receiving valves, c, bucket valve, d, a, and every valve, e, when said valves are arranged in respect to each other and to their respective seats and chambers, constructed substantially in the manner described.

Third, We claim the combination of the steam cylinder with the air and circulating pumps, when said pumps are arranged between separate channel plates and steaded by the action of a fly-wheel, substantially as shown and described.

**41,965.—Lamp Burner.**—Rodney L. Smith (assignor to Parkers, Snow & Co.), West Meriden, Conn. :

I claim the wire or rod, C, attached to the under side of the base, a, of the cone or deflector, and bent so as to form a hinge, stop, and catch or fastening, substantially as herein shown and described.

[This invention consists in the employment or use of a fastening, hinge and stop, constructed, arranged, and applied to the burner in such a manner that the cone or deflector may be firmly secured down upon the burner, a hinge attachment for the cone or deflector obtained, and also a stop to prevent the cone or deflector being thrown or turned back beyond a certain position, the parts being all constructed out of a single piece of wire.]

**41,966.—Lathe-rest for trueing Watch Wheels.**—Samuel G. Twambley (assignor to Charles A. Shaw), Biddeford, Maine :

I claim, first, In combination with the staff, A, a file or stone mounted on a spring made adjustable by a screw, substantially in the manner and for the purposes set forth and specified.

Second, I claim in one piece of mechanism the combination of a file and stone when mounted substantially in the manner and for the purposes herein-before described.

**41,967.—Lasting Machine.**—Wm. Wells, Middleton, Mass., assignor to Alfred B. Ely, Newton, Mass. :

I claim, first, The combination of hinged or folding flanges with the end jaws, heel, and toe.

Second, The combination of hinged or folding heel-and-toe flanges with angled side jaws.

Third, So constructing the parts that the hinged end flanges can be folded together over the last when in position by bringing up the side jaws or clamps.

Fourth, Constructing and combining the side clamps and side jaws so as to remove and replace the jaws, as may be required.

Fifth, So constructing the holding mechanism as to adjust the height of the last to the flanges or jaws, substantially as described.

Sixth, The combination of gages with the flanges for fitting on the outer sole.

RE-ISSUES.

**1,634.—Breech-loading Fire-arm.**—The Burnside Rifle Company, North Providence, R. I., assignees of George K. Bacon, Providence, R. I. Patented July 21, 1863 :

I claim the method substantially as described of guiding the movements of the movable cartridge block in a breech-loading fire-arm by the combination of a stationary pin, e, with a compound groove, as herein specified.

1,635.—Self-loading Fire-arm.—Albert Ball, Worcester, Mass. Patented June 23, 1863 :

I claim the mode substantially as described of making the rear part of the barrel or cartridge chamber, and the front part of the charging carriage, that is to say, making the charging carriage with a recess or trough for receiving a cartridge and allowing of the ejection of its shell in manner as explained, and so constructing the breech end of the barrel or the cartridge chamber thereof, that such recess or trough of such charging carriage may, when the cartridge is in place in the bore or cartridge chamber, form part of and complete such cartridge chamber, in manner substantially as described.

I also claim the combination of the ejecting spring, D, with the charging carriage, when constructed and combined with a magazine and barrel, substantially in manner and so as to operate therewith as hereinbefore explained.

I also claim the combination of the locking-piece, P, with its actuating mechanism (viz: the spring, G, and catch, F), with the tumbler, I, and the charging carriage, O, the whole being constructed and arranged in manner and so as to operate together, substantially as explained.

I also claim the charging carriage as made in manner and so as to operate with the magazine and the barrel as described, viz: to receive within it a cartridge from the magazine, to raise it up to the barrel or charging chamber thereof, to form part of and serve as a breech to such chamber, and finally to withdraw the shell of the cartridge therefrom, all as explained.

1,636.—Steam Boiler.—Wm. M. & Jonas B. Ellis, Washington, D. C. Patented Aug. 26, 1862 :

We claim connecting the water-legs, extending continuously from the front to the rear of the boiler, to the shell of the boiler at the point of the working water-line of the boiler, substantially as herein set forth.

1,637.—Steam Boiler.—Wm. M. & Jonas B. Ellis, Washington, D. C. Patented Aug. 26, 1862 :

We claim gradually increasing the area of the tubes from the highest to the lowest tubes, as herein described.

1,638.—Side Lights for Ships.—Enoch S. Hidden (assignee of Enoch Hidden), New York City. Patented June 21, 1863. Re-issued Sept. 8, 1863 :

I claim, first, The combination, substantially in the manner described, of a turning flange arranged, shaped, and operating substantially as specified with a glass frame and suitable interposed packing whereby the packing may be compressed and the frame held shut or have liberty to open under a mode of operation substantially as set forth.

Second, I claim in combination with a glass frame and a turning flange substantially such as are described, a pin and a stop, operating substantially as set forth.

Third, I claim a stationary frame with projecting lugs having long mortices therein in combination with pins projecting from a glass frame, both substantially such as herein set forth, so that the glass frame may be opened and shut, substantially as set forth.

Fourth, I claim in combination with a stationary frame attached to the side or deck of a vessel, a sleeve or ring of lead or other ductile metal, soldered or otherwise joined thereto, so that it can be flanged or turned over the edge of the opening through the vessel, thereby making the joint between the stationary frame, and the vessel water tight, substantially as described.

1,639.—Wheel Skate.—Orasmus M. Vail, Brooklyn, N. Y., and Thomas J. Vail, Hartford, Conn., assignees of Reuben Shaler, Madison, Conn. Patented Feb. 24, 1860 :

We claim a roller skate which is a combination of a foot-stock with rollers made elastic by india-rubber or gutta-percha, the combination operating substantially as herein set forth.

DESIGNS.

1,920.—Nut-cracker.—Eli W. Blake (administrator of the estate of Edward F. Blake), New Haven, Conn.

1,921 to 1,924.—Carpet Patterns (4 cases).—Elemir J. Ney (assignor to The Lowell Manufacturing Company), Lowell, Mass.

EXTENSIONS.

Portable Furnace.—John T. Davy, Troy, N. Y. Letters Patent No. 7,159. Dated March 12, 1850 :

I claim combining with a portable furnace of the usual construction a surrounding heating chamber provided with apertures or slots to admit of the insertion or removal of the flaps combined with the door or flap at top, substantially as described.

I also claim providing the said air-heating chamber with a revolving top provided with a single small door or flap, which by the rotation may be brought directly over the slots in succession and the flaps inserted or removed, substantially as described.

Process of rolling India-rubber cloth.—Francis D. Hayward & John C. Brickford, Colchester, Conn. Letters Patent No. 7,189. Dated March 13, 1850 :

We claim the new or improved process of applying and fixing rubber to cloth by means of rollers; the said improved process being a combination of the method of spreading the rubber by the pressure of rollers, and the method of grinding and fixing it at the same time against and into the substance of the cloth, all as specified.

TO OUR READERS.

PATENT CLAIMS.—Persons desiring the claim of any invention which has been patented within thirty years, can obtain a copy by addressing a note to this office, stating the name of the patentee and date of patent, when known, and enclosing \$1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1863, to accompany the claim, on receipt of \$2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

INVARIABLE RULE.—It is an established rule of this office to stop sending the paper when the time for which it was pre-paid has expired.

MODELS are required to accompany applications for Patents under the new law, the same as formerly, except on design patents, when two good drawings are all that are required to accompany the petition, specification and oath, except the Government fee.

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It is important that all works of reference should be well bound. The SCIENTIFIC AMERICAN being the only publication in the country which records the doings of the United States Patent Office, it is preserved by a large class of its patrons, lawyers and others, for reference. Some complaints have been made that our past mode of binding in cloth is not serviceable, and a wish has been expressed that we would adopt the style of binding used on the old series, i. e., heavy oarboard sides covered with marble paper, and morocco backs and corners.

Believing that the latter style of binding will better please a large portion of our readers, we commenced on the expiration of Volume VII., to bind the sheets sent to us for the purpose in heavy board sides, covered with marble paper and leather backs and corners.

The price of binding in the above style is 75 cents. We shall be unable hereafter to furnish covers to the trade, but will be happy to receive orders for binding at the publication office, No. 37 Park Row, New York.



PATENTS

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

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

MESSRS. MUNN & CO.—It affords me much pleasure to bear testimony to the able and efficient manner in which you discharged your duties as Solicitors of Patents, while I had the honor of holding the office of Commissioner. Your business was very large, and your sustenance of it did not in the least diminish the regularity of energy, marked ability, and uncompromising fidelity in performing your professional engagements. Very respectfully, your obedient servant, J. HOLT.

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

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

THE EXAMINATION OF INVENTIONS.

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

As an evidence of the confidence reposed in their Agency by inventors throughout the country, Messrs. MUNN & CO. would state that they have acted as agents for more than TWENTY THOUSAND inventors! In fact, the publishers of this paper have become identified with the whole brotherhood of inventors and patentees, at home and abroad. Thousands of inventors for whom they have taken out patents have addressed to them most flattering testimonials for the services rendered them; and the wealth which has inured to the individuals whose patents were secured through this office, and afterwards illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! Messrs. MUNN & CO. would state that they never had a more efficient corps of Draughtsmen and Specification Writers than those employed at present in their extensive offices, and that they are prepared to attend to patent business of all kinds in the quickest time and on the most liberal terms.

PRELIMINARY EXAMINATIONS AT THE PATENT OFFICE.

The service which Messrs. MUNN & CO. render gratuitously upon examining an invention does not extend to a search at the Patent Office, to see if a like invention has been presented there; but is an opinion based upon what knowledge they may acquire of a similar invention from the records in their Home Office. But for a fee of \$5, accompanied with a model, or drawing and description, they have a special search made at the United States Patent Office, and a report setting forth the prospects of obtaining a patent, &c., made up and mailed to the inventor, with a pamphlet, giving instructions for further proceeding. These preliminary examinations are made through the Branch Office of Messrs. MUNN & CO., corner of F. and Seventh streets, Washington, by experienced and competent persons. Many thousands of such examinations have been made through this office, and it is a very wise course for every inventor to pursue. Address MUNN & CO., No. 37 Park Row, New York.

HOW TO MAKE AN APPLICATION FOR A PATENT.

Every applicant for a patent must furnish a model of his invention if susceptible of one; or, if the invention is a chemical production, he must furnish samples of the ingredients of which his composition consists, for the Patent Office. These should be securely packed, the inventor's name marked on them, and sent, with the Government fees, by express. The express charge should be pre-paid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by a draft on New York, payable to the order of Messrs. MUNN & CO. Persons who live in remote parts of the country can usually purchase drafts from their merchants on their New York correspondents; but, if not convenient to do so, there is but little risk in sending bank bills by mail, having the letter registered by the postmaster. Address MUNN & CO., No. 37 Park Row, New York.

Patents are now granted for SEVENTEEN years, and the Government fee required on filing an application for a patent is \$15. Other changes in the fees are also made as follows:—

Table listing fees for various patent services: On filing each Caveat...\$10, On filing each application for a Patent, except for a design...\$15, On issuing each original Patent...\$20, On appeal to Commissioner of Patents...\$20, On application for Re-issue...\$30, On application for extension of Patent...\$50, On granting the Extension...\$50, On filing a Disclaimer...\$10, On filing application for Design (three and a half years)...\$10, On filing application for Design (seven years)...\$15, On filing application for Design (fourteen years)...\$30

The Patent Laws, enacted by Congress on the 2d of March, 1861, are now in full force, and prove to be of great benefit to all parties who are concerned in new inventions.

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CAVEATS.

Persons desiring to file a caveat can have the papers prepared in the shortest time by sending a sketch and description of the invention. The Government fee for a caveat is \$10. A pamphlet of advice regarding applications for patents and caveats is furnished gratis, on application by mail. Address MUNN & CO., No. 37 Park Row New York.

EXTENSION OF PATENTS.

Many valuable patents are annually expiring which might readily be extended, and if extended, might prove the source of wealth to their fortunate possessors. Messrs. MUNN & CO. are persuaded that very many patents are suffered to expire without any effort at extension, owing to want of proper information on the part of the patentees, their relatives or assigns, as to the law and the mode of procedure in order to obtain a renewed grant. Some of the most valuable grants now existing are extended patents. Patentees, or, if deceased, their heirs, may apply for the extension of patents, but should give ninety days' notice of their intention. Patents may be extended and preliminary advice obtained, by consulting or writing to MUNN & CO., No. 37 Park Row, New York.

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Messrs. MUNN & CO. are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of their Washington Agency to the Patent Office affords them rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Their success in the prosecution of rejected cases has been very great. The principal portion of their charge is generally left dependent upon the final result. All persons having rejected cases which they desire to have prosecuted, are invited to correspond with MUNN & CO., on the subject, giving a brief history of the case, inclosing the official letters, &c.

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Messrs. MUNN & CO., 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 Eperonniers, Brussels. They think they can safely say that THREE-FOURTHS of all the European Patents secured to American citizens are procured through their agency.

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Circulars of information concerning the proper course to be pursued in obtaining patents in foreign countries through MUNN & CO'S Agency, the requirements of different Government Patent Offices, &c., may be had, gratis, upon application at the principal office, No. 37 Park Row, New York, or any of the branch offices.

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