RECENT AMERICAN INVENTIONS.

Breech-loading Firearm.—This invention, secured to B. F. Skinner and A. Plummer, Jr., of Mystic Bridge, Conn., consists in a certain mode of applying a breech which opens and closes by a swinging movement transverse to the barrel, whereby, in the closing movement of said breech, its front face is caused to leave a slight movement toward and from the rear end of the barrel, and in its opening movement the said face is caused to have a corresponding movement away from the barrel. It also consists in an improved arrangement of a locking device for locking the breech in a closed condition, whereby great facility is afforded for unlocking it, and the re-loading of the piece, after its discharge, can be performed very expeditiously. It has also a certain improved means of applying and cocking the hammer or other device employed, in combination with such a breech, to effect the explosion of the priming.

Hoop Skirt.—This invention is intended to remedy a great defect which has existed in all the skirts previously manufactured with hoops of metal. Owing to the inflexibility of such hoops in an upward and downward direction the front parts of those hoops whose back parts are pressed down in sitting, are thrown upward, raising the front of the dress in an objectionable manner. The invention consists in so constructing one or more of the hoops of a skirt with joints, or otherwise, that while a desirable degree of inflexibility in an upward and downward direction is preserved in all other parts of the said hoops, they are made capable of an easy flexure in such direction, at convenient points on each side, to enable their front parts to fall and hang over the front of the seat when the wearer is sitting down. George Mallory, of Watertown, Conn., is the patentee.

Elevating Machine.—David L. Miller, of Madison, N. Y., has secured an invention relating to that class of portable elevating machines which are mounted upon wheels and used in clearing new-made land of stones and stumps. It consists in the manner of arranging the windlass so as to cause the strain in lifting to be equally divided upon three wheels. It also consists in the manner of operating the windlass by a worm screw and worm wheel, whereby a continuous motion is given to the windlass, producing great power, the worm screw being so arranged in relation to the wheel that it can be easily disengaged therefrom to allow the windlass to be operated with great speed when it is desired to unwind or wind up the chain preparatory to applying the power to elevate the stump or stone from its bed.

Bellows.—The object of this invention, which is particularly applicable to organ bellows, is to enable the performer or operator to increase the force of the wind at pleasure. The invention consists in the arrangement of an additional reservoir with a movable part in combination with the ordinary bellows, and connecting with the same by a suitable tube or air trunk, in such a manner that the pressure of the air acting on the movable part of the additional reservoir produces an additional pressure on the top of the bellows, and that by this application the power of the wind itself is employed to act like a movable weight put on or taken off from the bellows at pleasure. Invented by E. D. Stuart, Brooklyn, E. D., N. Y.

Enameling Jewelry.

The white enamel of watch dial plates is composed of ground flint glass, and the oxide of tin. The enamel in a pasty condition is laid upon the polished metal, and all the free moisture is absorbed by applying a dry cotton cloth to it, after which it is smoothed on the surface and permitted to become dry. It is now placed within a muffle, and subjected to a powerful heat in a furnace. Several thin coats of enamel, frequently four, are laid upon the top of one another, each fired and rubbed down with a fine file and polished with a burnisher. Blue enamel is obtained by mixing cobalt with an opaque white enamel. The protoxide of copper affords the color for red enamel.

HORSE POWER AND STEAM PRESSURE.—One indicated horse power with expansion requires per hour—

17.9 lb. weight of steam, at 10 lb. pressure.
15.5 lb. weight of steam, at 20 lb. pressure.
14.1 lb. weight of steam, at 30 lb. pressure.
13.2 lb. weight of steam, at 40 lb. pressure.
12.6 lb. weight of steam, at 50 lb. pressure.
12.1 lb. weight of steam, at 60 lb. pressure.

ISSUED FROM THE UNITED STATES PATENT OFFICE

FOR THE WEEK ENDING FEBRUARY 18, 1862.

Reported Officially for the Scientific American.

*** Pamphlets giving full particulars of the mode of applying for patents, under the new law which went into force March 2, 1861, 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.

34,399.—J. C. Adams, of Baltimore, Md., for Improvement in Combined House, Bridge, Boat and Wagon Body:

I claim the described house, or its equivalent, which can be converted into the uses set forth.

34,400.—J. S. Barden, of New Haven, Conn., for Improvement in Crank and Cross-Head Connection for Steam Engines:

I claim the combination and arrangement of the flanches, o o, grooves, i i, and rail bearings, k l m, with the three friction rollers, and the crosshead, A, the whole being applied to a crank and a piston rod and to operate substantially as set forth.

I also claim the combination of the semi-tubes, F G, with the rollers when applied, and to operate within a rail frame, A, as described.

34,401.—C. H. Burgess, of Sandwich, Mass., for Improvement in Doors for Reverberatory and other Furnaces:

I claim constructing the doors of reverberatory and other furnaces, with the water space described, in combination with the arrangement of the pipes essentially as set forth.

34,402.—M. L. Callender, of New York City, for Improvement in Hydro-carbon Burners:

I claim, first, The relative arrangement of the cone, d, and the interior deflector, I, with its shield, b, for the purpose of burning hydro-carbon oils with or without a chimney in the manner specified.

Second, I claim a burner so constructed as to increase the length of its metallic connection between the flame and the body of the lamp and the wick tube, without adding materially to its height, using for that purpose, the spiral coil, B B′, on which the cone, d, is mounted.

Third, I claim the new and cheap method of forming the levers, s s′, from the metal of which the body of the burner itself is constructed by which means the springs to hold the chimney in position and the body of the burner are made simultaneously from one piece of metal.

34,403.—Paul Casamajor, of New York City, for Improved Apparatus for Making Vinegar:

I claim, first, The method of creating an artificial draft by inspiration or suction, substantially as described and for the purpose set forth.

Second, The rotary apparatus, substantially as described and for the purpose set forth.

34,404.—J. Clarke and D. French, of Syracuse, N. Y., for Improved Composition for Pavements, Roofing and other Purposes:

We claim the described composition substantially as and for the purposes set forth.

34,405.—M. C. Cogswell and A. G. Williams, of Buffalo, N. Y., for Improvement in Grain Driers:

We claim, first, the double head, c, having an air chamber, C′, and hollow journal, D, for the purposes and substantially as described.

Second, We claim the combination of the double head, c, with perforated distributing air tubes, F, for the purposes and substantially as described.

Third, We claim the combination of the double head, c, hollow journal, D, distributing air pipes, F, and lifting buckets, I, with the case, A, for the purposes and substantially as set forth.

34,406.—James Collins, of Farmington, Ill., for Improvement in Cultivators:

I claim, first, The combination of the perpendicular draft rods, f f′, depending from the transverse bar, a a′, and braces, h h, extending back from the lower part of the said draft rods to the axletree, all constructed and arranged as described and for the purposes stated.

Second, I claim the combination of the clevis, g, and draft rods, f f, when constructed and operating as and for the purposes set forth.

Third, The crank levers, k k′, and adjusting nuts, x, constructed and arranged in connection with a corn plow on wheels, in the manner and for the purposes set forth.

Fourth, The combination of the cross bar, a a′, draft rods, f f′, braces, h h′, clevis, g, adjusting levers, k k′ and p p′, curved axletree, e e′, and seat, m, all substantially as and for the purposes set forth.

34,407.—Hannah D. Conrad, of Dayton, Ohio, for Improvement in Setting and Threading Needles in Sewing Machines:

I claim, first, In combination with a sewing machine, the improved needle threader and setter described, pivoted or hinged to the needle arm or bar to the needle bar socket.

Second, And in combination with the improved needle threader and setter pivoted or hinged, as described, I claim the stop, k, for the purposes set forth.

Third, In combination with the funnel, F, I claim the screw, J, for adjusting the eyes of needles of different sizes opposite the termination of the funnel.

34,408.—E. T. Covell, of New Bedford, Mass., for Improvement in Lamps:

I claim placing the slitted deflector, d, over the wick tubes, g and f, for the purpose of enabling my said lamp to produce a flat flame from a tubular wick, substantially as represented; but this I only claim when air is permitted to flow through the space within the wick tube, g, for the purpose of aiding in the production of a more perfect combustion than has ever before been produced in an oil lamp.

When a slitted deflector is placed over the tubular wick of a lamp, I also claim supporting the said deflector in such a manner that it can be turned to any desired position, independently of the wick tubes of said lamp, substantially as set forth.

34,409.—Henry Craig, of Cleveland, Ohio, for Improvement in Microscopes:

I claim the lens, E, when constructed as set forth.

34,410.—A. B. Davis and Thomas Crook, Jr., of Philadelphia, Pa., for Improvement in Corn Shellers:

We claim the angular strip, a, on the wheel, K, arranged in respect to the stripper wheels, L and L′, substantially as set forth for the purpose specified.

34,411.—G. B. Davis, of Chicago, Ill., for Improvement in Water Filters:

I claim, first, The tub or pail, A, divided into two compartments, C D, by a horizontal partition or false bottom, B, in combination with the filter case, G, perforated at its side or sides, provided with an internal perforated, cone, d, and fitted or arranged on the false bottom, B, to operate substantially as and for the purpose set forth.

Second, The combination of the partition or false bottom, B, in tub, A, filter case, G, cocks, E K, and air tube, J, when all arranged substantially as and for the purpose specified.

Third, The combination of a double-walled tub or pail, A, with the false bottom, B, and filter case, G, arranged as shown to form combined filter and cooler, as set forth.

[The object of this invention is to obtain a filter which will thoroughly cleanse water, and which will not only admit of being readily cleansed when filtering, but will not be so liable to become foul as those of ordinary construction.]

34,412.—Francis Deluce, of Boston, Mass., for Improved Centering Implement:

I claim the implement for drilling central holes, constructed and operating substantially as set forth. Also in combination with the said improvement, the means described, or the equivalent thereof, for changing the relative position of the drill.

34,413.—Augustus Destouy, of New York City, for Improvement in Sewing Machines:

I claim in a machine provided with a table or support for the material to be sewed to rest upon, and a feeding and thread controlling device. I claim the combination of the following elements constituting a sewing mechanism adapted to the manufacture of boots and other like articles, viz., an awl and a forked needle, the former for piercing the material and the latter to carry the under thread through it and a stationary thread case and a rotating hook, the former for holding the upper thread and the latter to seize and carry the under thread loop over and around the thread case so as to lock in the thread fed out from said case, the whole being arranged substantially as described to operate in the manner and for the purposes set forth.

34,414.—Wm. H. Devalin, of Sacramento, Cal., for Improvement in Rotary Engines:

I claim the combination of the pistons, H, boxes, I, rods, g, cross-heads, J, rollers, j, cams, K n, and springs, i, all constructed, arranged and operating in the manner and for the purposes shown and explained.

34,415.—Joseph Dodin, of New York City, for Improvement in Lamps:

I claim the particular shape of the plate of metal combining the mode of locking together at A, and clasping the tube at n, substantially as described.

34,416.—J. H. Doughty, of Adamsville, Ohio, for Improvement in Churns:

I claim the combination of the channels, i k, formed and arranged as described, when used in connection with the cylinder, G, piston, F′, and valve, J, arranged and operating substantially as and for the purposes set forth.

34,417.—Thaddeus Fairbanks, of St. Johnsberry, Vt., for Improvement in Platform Scales:

I claim the described application or arrangement of a fractional scale arm, H, and a movable counterbalance weight, I, relatively to the scale beam and to operate therewith, substantially as specified.

I also claim the arrangement of the superior lever, C, and the post, F, with respect to the stand or base of the platform of the scale.

34,418.—Henry Farmer, of Pontiac, Michigan, for Improvement in Vegetable and Root Cutters:

I claim, first, The use of the cylinder, C, constructed in the manner and for the purpose set forth.

Second, The employment of the sections, E, hinged and provided with knives, a a, as and for the purposes specified.

34,419.—Albert Fuller, of Cincinnati, Ohio, for Improvement in Faucets:

I claim, first, A faucet having an interior elastic tube, by the compression and expansion of which the flow of liquid may be regulated or prevented, substantially as described.

Second, The application of the conoidal tube, D, to the elastic tube, C, for the purpose of securing the latter, substantially as described.

34,420.—O. T. Gilman, of Washington, D. C., for Improvement in tools:

I claim the employment of the claw, C, in combination with hammer, A, for forming three tools in one, substantially as specified.

34,421.—E. D. Gould, of Lockport, N. Y., for Improvement in Channeling Tools for Harness Makers:

I claim a channeling tool constructed substantially as described, with the sliding knife, or knives, c d, and adjustable spring knife, e, operating substantially in the manner set forth.

I also claim constructing the knife, e, with a segmental spring shank in combination with the adjusting screw, n, substantially as and for the purposes set forth.

34,422.—J. D. Green, of U. S. Army, for Improvement in Breech-loading Firearms:

I claim the combination of the sliding and revolving plunger or breech plug, I, with the rod, K, when the hand lever, L, by which the breech plug is revolved, is attached to the rod, as set forth.

34,423.—J. J. Hirschbuhl, of Louisville, Ky., for Improvement in Military Ammunition Box:

I claim the described ammunition box having an apartment, E, for a powder flask and separate boxes, B C D, attached to one side by hinges so as to open outward, for the reception of balls, percussion caps and cartridges, when arranged in the manner and for the purpose described.

[An engraving of this invention will soon be published in the SCIENTIFIC AMERICAN.]

34,424.—William Hodgson, Jr., of Philadelphia, Pa., for Improvement in the Manufacture of Graduated Glass Measures:

I claim the forming of graduated glass measures and the graduations thereon at one operation in a press mold so constructed, marked and shaped that all vessels made in the same mold will be precisely alike as regards form and capacity, and will have graduations so arranged in respect to that form and capacity that the same accurate measurement may be made of all vessels alike, as set forth.

34,425.—M. W. House of Cleveland, Ohio, for Improvement in Electric Baths:

I claim, first, The insulater, J, for the support of the basket, b, for the purpose described, in combination with the insulated rotating seds, t, and traversing holes, e, when arranged and operating as and for the purpose specified.

Second, I claim the head plate, C, when hinged to the insulator, J, in such a manner that the distance between the plate and head of the patient can be increased or diminished, for the purpose of concentrating or diffusing the electrical current through the part exposed to its action.

34,426.—G. W. Howard, of Pontiac, Mich., for Improvement in Oil Tanks:

I claim constructing an oil tank with an open bottom, in combination with buoys or floats, substantially in the manner described, whereby the upper edge of the tank is always kept above the surface of the water, and the tank may readily be floated from place to place, or rise and fall with the tide, as described.

34,427.—Edgar Huson, of Ithaca, N. Y., for Improved Machine for Raising Carriages:

I claim such a combination of lever loop joints and ratchets for a carriage jack, as that when the weight is raised and the lever pressed down against the standard the slide is supported and upheld without any fastening, by the support of the loop, which falls outside the joint, D.

34,428.—T. A. Jenckes, of Providence, R. I., for Improved Water-Proof Fabric:

I claim the fabric in which flocks or fibers and india rubber or other allied gums are combined with cloth or other base by means of pressure, so as to become integral portions of the new napped water-proof fabric, substantially as described; the same being a new manufacture.

34,429.—G. R. Kelsey, of West Haven Conn., for Improvement in the Manufacture of Buckles:

I claim a buckle in which the bow and loop is made of one piece of wire, when the ends of the cross bar, c, are clinched around the opposite parts, a and b, of the bow and loops, to strengthen the buckles, as described.

34,430.—Rhodolphus Kinsley, of Springfield, Mass,, for Improvement in Tompion for Firearms:

I claim, first, A tompion consisting of a wooden pin, split in two parts throughout a portion of its length, and having a spring of metal, rubber or other suitable substance inserted between these two parts to force them against the bore of a gun, substantially in the manner and for the purpose described.

Second, Forming the pin or shank part of the tompion smaller at the middle than at each end, for the purpose and in the manner substantially as set forth.

34,431.—A. Kline, of Philadelphia, Pa., for Improved Match Safe:

I claim the match safe, A, having its lid, B, applied and arranged to operate in relation to the same in the modes described and set forth for the purpose specified.

34,432.—I. W. Knapp, of New York City, for Improvement in Bakers' Ovens :

I claim combining with the fire chamber of the mechanical bake oven, known as the "reel oven," a flue or passage way, provided with a suitable damper, leading from the fire chamber to the chimney, and so arranged with relation to the perforated bakihg chamber, containing the reel and bread pans, as to conduct smoke, gases, &c., (heretofore allowed to pass into the baking chamber,) directly from the fire chamber to the chimney, substantially as described.

34,433.—T. S. Lambert, of Peekskill, N. Y., for Improvement in Camp Stoves :

I claim the combination of the sectional cylinders with the draft pipes or flues, C D H, constructed as described, and with the smoke flue and cover, substantially as set forth.

34,434.—R. S. Lawrence, of Hartford, Conn., for Improvement in Forging Apparatus :

I claim an auxiliary weight and belt combined with the pulley or drum of a drop, or with the belt or strap, or other appliance, used to raise the drop weight, for the purpose set forth.

34,435.—John Le Ferre, of Charlestown, Mass., for Improved Metal for Sheathing Ships :

I claim a sheet of copper or of copper alloy, coated with tin, substantially as set forth.

34,436.—Jacob Longyear, of Grass Lake, Mich., for an Improved Boring Machine :

I claim the arrangement of the independently-adjustable carriage bars, I I, with the carriage, L, adjustable stop, M, and the series of boring bits, H H H, all as shown and described.

[This invention relates to a machine which is designed for boring a number of holes simultaneously, or at one operation, such, for instance, as are required in blind stiles to receive the tenons of the slats. The object of the invention is to facilitate this kind of work and reduce the cost of construction of the manufactured article, by not only expediting the boring operation, but by also dispensing in this department of work with supesior mechanics hitherto required.]

34,437.—Henry Lyon, of Brooklyn, N. Y., for Improved Cork Sole for Boots and Shoes :

I claim the improved waterpoof cork sole made from fine, or granulated cork, as set forth in this specification.

34,438.—M. M. Mackerley, of South Salem, Ohio, for Improved Corn Planter and Lime Spreader Combined :

I claim the box, F, the plow, N, the valve, D, the box, H, the eccenuric, Q, the connecting-rod, c, pins, e e, valves, I, box, J, and dog, f, the whole to be constructed and arranged with respect to each other, substantially in the manner described for the purpose specified.

34,439.—Almeron McKenney, of Maumee, Ohio, for Improvement in Grubbing Machines :

I claim, first, The employment of the hollow axle, A, constructed as specified, and provided with the flanges, a a, and projections, b b, as and for the purpose specified.

Second, The employment of the wheels, B B, and the hollow levers, C, as constructed and used in connection with the hollow axle, A, for the purpose specified.

Third, The combination of the ratchet hooks G G, the rachet wheels, E E, the lever, C, the bars, J J, and counter balance, K, constructed and arranged as specified.

Fourth, The metallic jaw, e, provided with flanges, and a slot for longitudinal adjustment, when bolted to the lever as and for the purpose specified.

Fifth, The employment of the clevis, constructed in the manner described and used with the axle provided with lugs, as and for the purpose specified.

Sixth, The employment of the bolt, *i*, with eccentrics and handle in connection with the levers and ratchet hooks, to prevent the wheels from becoming locked too soon, substantially as specified.

34,440.—D. L. Miller, of Madison, N. J., for Improved Elevating Machine :

I claim the worm screw, K, and manner of arranging the boxes, f g, of the same, so that it can be easily disengaged from the worm wheel, J, in combination therewith, and with the windlass, L, draft chain, i, box frame, I, inclined stud, G, and brace, H, platform, A, and longitudinal beams, a a′ b b′, the whole mounted upon wheels and arranged in the manner and for the purpose set forth.

34,441.—Joseph Miller, of Paris, Ohio, for Improvement in Horse Rakes :

I claim, first, The arrangement of the protuberances, K K′, straps or chains, i j, rollers, M, spur, N, and stops, L, in connection with the foot levers, I J, to facilitate the elevation, depression and holding down of the rake, as explained.

Second, The combination of the standard, G, seat, H, and vertical foot lever, I J, the levers being mounted upon the standard, G, the latter secured to the axle, A, and all arranged in the manner and for the purpose shown and explained.

34,442.—C. R. Morehouse, of Cardington, Ohio, for Improvement in Rat Traps :

I claim, first, The arrangement of the rod, G, spring, d d, plate, I, and trigger, J, as and for the purpose specified.

Second, The arrangement of the doors, C C, the bars, H H, and the rod, G, in the manner and for the purpose specified.

34,443.—John Norton, of Rosherville, England, for Improvement in Mode of Splitting Stumps of Trees, Timber, &c.:

I claim the general system or mode of spliting stumps of trees or large blocks of timber, by the of use cartridges of percussion powder, as described.

34,444.—James Old, of Pittsburgh, Pa., for Improvement in Pumps for Deep Wells :

I claim the use of a hollow piston-rod or pipe, extending through the lowest valve, as well as through the upper valve or plunger of pumps, and furnished with a valve at top of the hollow piston rod or gas pipe, constructed and arranged substantially as described, for the purpose of allowing of the escape of gas or fixed air from the bottom of deep wells, without interfering with the operations of the valves of the pump.

Second, Also the combination of a hollow piston rod for the plunger of a pump passing through all the valves of the pump cylinder, with a flexible tube and valve at the top of the hollow piston rod, constructed substantially as and for the purpose described.

Third, Also the use of a check valve seated in the pump chamber, directly above and in addition to the ordinary upper and lower pump valves, for the purpose of sustaining and relieving the plunger of the pressure of the column of oil, or other liquid, in the pump tube above the valves, when there is a partial vacuum in the pump chamber on the up-stroke of the plunger.

Fourth, Also the use of an air-vessel attached to piston rod of a pump, for the purpose of checking the too rapid descent of the plunger and of keeping up the upward flow of the column of water, oil or other liquid in the pump tube, above the valves, during the descent of the plunger, substantially as described.

34,445.—C. H. Packard, of North Bridgewater, Mass., for Improved Clothes Wringer :

I claim, in a wringing machine whose upper elastic roller is supported in a rocker frame, the arrangement of the springs, K K, between the feet, B B, and the arms, c c′, in combination with so constructing and applying the rocker frame that its upper end or arms, f f′, may both be elevated at the same time, or either of them, as may be desirable, whereby the said springs and rollers are caused to operate, substantially in the manner as set forth.

34,446.—Oscar Paddock, of Watertown, N. Y., for Improvement in Operating Dampers in Stoves :

In combination with a stove, when the same is provided with two upright pipes, C C′, communicating with and sustaining horizontal fluesarrangedin relation to each other, substantially as described, I claim the arrangement of the valves, J J′, operating within the said pipes, so as to open and close simultaneously by means of connecting rods, or their equivalents, for the purposes set forth.

34,447.—W. H. Pierce, of East Cambridge, Mass., for Improvement in Guards for Lanterns :

I claim the band or ring, C, as constructed and applied to the ribs, c, and made to operate therewith, substantially in the manner and for the purpose set forth.

34,448.—J. S. Rankin, of Madison, Ind., for Improved School Desk :

I claim building the frame work of a series of school desks on a continuous central wooden joist or beam, I, running fore and aft; the desks and joist being mutually framed into each other, substantially as set forth.

34,449.—B. F. Skinner and A. Plummer, Jr., of Mystic Bridge, Conn., for Improvement in Breech-Loading Firearms :

We claim, first, The arrangement of the eccentric axis of the swinging breech, in a position oblique to the axis of the bore or barrel, substantially as and for the purpose specified.

Second, The combination of the needle bolt or hammer, F, with its spring, G, inclosed in the swinging breech, B, with the slide, J, and trigger, h and I, in the frame, A, or their equivalents, operating substantially as described.

Third, Though we do not claim broadly setting up the breech of a breech-loading firearm by means of a screw, we claim the employment, for setting up the breech, of a screw, D, which also serves as one of two centers on which the breech swings, to open and close, substantially as and for the purpose specified.

34,450.—R. N. Stewart, of Philadelphia, Pa., for Improvement in Gas Burners :

I claim, in combination with the plate, B, arranged as described, the hinged cap, C, and clearing plate, D, constructed, combined and arranged to operate substantially in the manner described, and for the purpose specified.

34,451.—A. Stockwell and B. D. Humes, of Millbury, Mass., for Improvement in Looms :

We claim, first, The lever, N, forced by a spring against the yarn on the beam, and connected with the slide bar, L, by a link, M.

Second, The tension arm, O, operated substantially as set forth.

Third, The slide bar, L, the rocker lever, E, with its pawl and ratchet mechanism, the shaft, D, the levers, K J, the movable worm, C, and its gear as applied to the yarn beam.

We also claim the combination of the pawl, U, and its rack, with the yarn-delivering and taking-up mechanisms, constructed in manner and so as to operate substantially as specified.

34,452.—L. B. Tyng, of Lowell, Mass., for Improvement in Railroad Joints or Chairs :

I claim a rail coupling constructed and consisting of a single piece, embracing the combination of features, substantially as set forth, and its combination with railroad rails, that is to say, I claim a stiffening rib, o, formed and constructed longitudinally in or upon the base of a rail coupling, composed of a single piece, having a spring bow to clasp the rail base, and jaws to clamp the rail stem and rivet or bolt thereto. I do not intend by this to limit my invention and claim to the particular form and construction of rib represented in the drawing, but to such form or forms and construction of rib as may be most convenient and will produce the same effect. I also claim the combination of the rigid jaws, with a spring bow in the aforesaid rail coupling, substantially as set forth.

34,453.—O. C. Washburn, of Philadelphia, Pa., for Improved Composition for Making Oil Cloth :

I claim the new mode of making coating paste for the manufacture of oil cloths, in all their varieties, by a combination of carbonate of ammonia, white vitriol, boiled oil and water, substantially as set forth.

34,454.—William Weitling, of New York City, for Improved Stitch for Buttonholes :

I claim a stitch work for edging and buttonholes, this stitchwork being a combination of three threads, by which combination the one thread, when passing through the cloth loop checks the other when passing round the edge of the cloth, and both of these being loop-checked on the other side of the cloth by the thread of the shuttle, or its equivalent, as set forth.

3,455.—J. W. Wilcox, of West Roxbury, Mass., for Improved Mode of Preventing Corrosion of Steam Boilers, Vats, Tanks, &c.:

I claim so purifying the water as it passes from the condenser to the boiler of the steam engine as to free it from all metallic salt destructive to iron, in the manner substantially as described.

Second, I claim the rupture or breaking of any galvanic or electric current that would otherwise exist between the steam boiler, and all other connecting steam or water fixtures that may be composed of metals that are electro negative to iron, substantially in the manner and for the purposes set forth.

34,456.—Hosea Willard, of Vergennes, Vermont, for Improved Clothes Bar :

I claim the construction of the bracket, A, with a projecting shelf, D, and stirrups, a, substantially as shown and described, in combination with the bars, B, whereby the inner ends of the bars, B, will bear against the shaft, D, which will resist the weight placed upon the bars and keep them in a horizontal position, all as set forth.

The arrangement of the bars, B, to fold toward and radiate from a common center, in combination with the bracket, A, as shown and described.

[See engraving on another page.]

34,457.—S. D. Woodbury, of Lynn, Mass., for Improvement in Camp Stoves :

I claim, first, Forming the fire chamber of two sections of a conical or other tapering form, that enables one section to be placed within the other, substantially in the manner and for the purpose described.

Second, I claim forming a sectional stovepipe of tapering pieces, when said tapering pieces are susceptible of being dismembered from each other and from the stove itself, and the parts held together by the wedging of the pieces themselves when the stovepipe is drawn out or erected, substantially as described.

34,458.—J. W. Browne, of New York City, assignor to J. M. Van Wagner, of Summit, N. J., for Improvement in Weather-Strip Molding :

I claim the new manufacture of improved weather-strip molding, substantially as described.

34,459.—Elliot Dickerman, of Middlefield, Conn., assignor to Metropolitan Washing Machine Company, of Middletown, Conn., for Improvement in Clothes-Wringing Machines :

I claim constructing the frame of a clothes' wringer, in two or more parts, connected together in the manner of a vice or tongs, so as to form a movable jaw, operated at a point or points above the tub or vessel and adapted to clamp the machine upon said tub or vessel, substantially in the manner set forth.

34,460.—E. S. Bennett (assignor to himself, James Thoubboron and Lydia Brown), of Brooklyn, N. Y., for Improvement in Locks :

I claim the bent or angular keyhole, formed substantially as shown, in combination with the divided key shank, e, connected by the universal joint, f, for the purpose specified.

34,461.—John Dillingham (assignor to Jesse Follet), of Turner, Maine, for Improved Fender or Sheath for Boots and Shoes :

I claim, first, The connection or union of the covering, for the upper leather and sole of the toe of the boot or shoe, in one entire piece of metal or other substance, as novel, and, therefore, my improvement.

Second, I also claim as novel the peculiar form of the sheath, whereby the covering for the upper and under leather of the shoe or boot is connected by a central flange to support it; therefore not liable to get out of place.

34,462.—H. P. Gengembre, of Tarentum, Pa., assignor to G. W. Howard, of Pontiac, Mich., for Improved Method of Storing Oils :

I claim the method described of storing oils, in order to prevent leakage from hydrostatic pressure.

I also claim storing oils in tanks constructed with tight sides, but open at bottom and immersed in water, in order to relieve the sides thereof from hydrostatic pressure, substantially in the manner described.

34,463.—E. J. Hall, of Highgate (assignor to himself and C. P. Stimets), of Vermont, for Improved Spring Caster :

I claim the combination of a roller caster, with a spiral spring or springs, C, when the latter are suspended to a plate, b, resting or bearing loosely on a shoulder or bearing, a, on the arbor, B, to admit of the free rotation of the arbor without effecting the tension of the springs, as set forth.

[The object of this invention is to combine a special spring or springs with an ordinary roiler caster, in such a manner that an elastic or yielding support will be given the article of furniture to which the caster is applied, and, at the same time, allowed to perform its special function precisely the same as if the spring or springs were not applied to it.]

34,464.—T. S. Lambert (assignor to J. S. Wright), of Peekskill, N. Y., for Improvement in the Mode of Constructing Garments :

I claim, first, The application of the elastic band to reta in the garment in its proper position at the waist, in the mann er set forth.

Second, The application of the elastic band to retain the garment in the proper position at the neek, in the manner set forth,

Third, The making the garment of such proportions at the waist and neck, as are set forth.

Fourth, The application of the elastic cords, in front in combination with the fly, as set forth.

Fifth, The combination of the elastic bands at the neck and waist, and the combination of the elastic bands at the neck, waist and bottom of the garment, as set forth.

34,465.—Charles Kirk (assignor to Charles Monson and Stillman Moore), of New Haven, Conn., for Improvement in Dry Gas Meters :

I claim so constructing and operating a dry gas meter that the alternate expansion of the two apartments of the double bellows, while it measures the gas will regulate the opening and closing of the valves, which admit the gas alternately into the apartments, to be measured, and after being measured allow it to pass out for use, when the whole is constructed, arranged and fitted for use, substantially as described.

Second, I claim the method of opening and closing the two pairs of valves, by means of the valve rod, i, and the helical springs, l and m, when they are arranged, connected and fitted to produce the result, substantially as described.

Third, I claim the described method of registering the quantity of gas thus measured by the alternate expansion of the two apartments of the double bellows, by means of the slide and clog or hand, substantially as described.

Fourth, I claim the use of the additional bellows, N, to counteract the varying pressure, in the main, when fitted to close its induction valve by its own expansion, and to allow it to be opened by its own contraction, substantially as described.

34,466.—Thomas Newcomb, of Kingston, Mass., and C. C. Newcomb, of Warren, Maine, assignor to Thomas Newcomb, of Kingston, Mass., for Improved Stump and Rock Extractor and Elevator :

We claim the described improved arrangement of the detaching springs or devices, K K, with respect to the pall bars, G′ H′, and the brake, I.

We also claim the combination of the pulley hangers, N N, with the sprocket wheel, D, the supporting frame, B, and the mechanism for operating the sprocket wheel.

We also claim the arrangement of the hanger or staple, a, with respect to the sprocket wheel and its rotating machinery.

34,467.—Henry Newhouse (assignor to N. S. Bouton), of Chicago, Ill., for Improvement in Machines for Cutting Twist Moldings :

I claim, first, The grooved wheel, a, with the switches or their equivalents, substantially as described.

Second, The knife holder, B, constructed and operated substantially as described.

Third, The knife shifters, b b, in combination with the knife holder, used in the manner and for the purpose specified.

Fourth, The combination of the cylinder, C, with the spiral grooves thereon, or their equivalents, for directing the knife, substantially as and for the purpose specified.

Fifth, The knife guide, ring, D, with its guide, d, in combination with the spiral grooves of cylinder, C, as specified.

Sixth, The combination of the knife holder and its adjusting mechanism, with wheel, E, and the knife-guiding mechanism, operating automatically as and for the purpose specified.

34,468.—Adam Oot (assignor to himself and M. S. Clark), of Minetto, N. Y., for Improvement in Camp Stoves :

I claim making a portable stove in separate plates or sheets, attached together by staples and keys, so as to be readily taken apart and put together, substantially in the manner and for the purpose described.

34,469.—W. E. Prall (assignor to himself, Harry Eastman and W. A. Witham), of Maineville, Ohio, for Improved Evaporating Pans for Saccharine Juices :

I claim, first, A series of evaporating pans, descending from the front of the furnace to the chimney, as shown and described.

Second, In the described combination with a descending series of evaporating pans, the arrangement of side defecators, F F, isolated from the fire, and communicating with the first and second evaporating pans in the manner and for the objects stated.

Third, I claim the fenders, O, when used in the described connection, with a series of evaporating pans, descending from the front toward the chimney.

34,470.—J. E. Walcott (assignor to W. H. Blackler), of Boston, Mass., for Improvement in Process of Electroplating Iron and other Metals with Copper :

I claim the process of electroplating with copper, substantially as described.

34,471.—N. W. Wheeler, of Brooklyn, N. Y., assignor to Simon Stevens, of Lancaster, Pa., for Improvement in Tracter motive Engines :

I claim, first, The combination of the traction drum, A, driving wheels, B B, and guide wheels, c c c c, substantially as and for the purposes described.

Second, Supporting the feed water tank, E, within the drum, A, and upon the frame, D D, by means of the brackets, R R, the whole being arranged substantially as described.

RE-ISSUES.

1,276.—George Mallory, of Watertown, Conn., for Improvement in Hoop Skirts. Letters Patent dated Oct. 19, 1858.

I claim providing for the vertical flexure of one or more of the hoops of a skirt at the sides thereof, by means of flexible pieces, or their equivalents, operating substantially as and for the purpose specified.

DESIGNS.

1,538.—P. H. Drake, of Binghamton, N. Y., for Design for a Bottle.

1,539.—J. W. Hayes, of Newark, N. J., for Design for a Trade Mark on Sword Blades.

1,540.—Victor Meyer, of New York City, assignor to Alden Sampson & Sons, of Manchester, Maine, for Design for Floor Cloths Pattern.

1,541.—G. B. Owen, of New York City, for Design for a Clock Case.

New Publications.

TOM TIDDLER'S GROUND; a Christmas and New Year's Story, for 1862. By Charles Dickens.

THE BROKEN ENGAGEMENT; or Speaking the Truth for a Day. By Mrs. Southworth.

THE FLOWER OF THE PRAIRIE. By Gustave Aimard.

The above are new publications, just issued by Frederick A. Brady, No. 24 Ann street, New York City.

CASTLE WAFER; or the Plain Gold Ring.

TREASURE TROVE; or Accounts of Irish Heirs. By Samuel Lover.

THE WARDEN. By Anthony Trollope.

These are recent publications by Messrs. Dick and Fitzgerald. This firm has evinced excellent taste and judgment in the publication of these works. The style is admirable, especially "The Warden." It reminds us of the excellent edition of British Classics, by Bernard Touchnitz, of Leipsic.

MISTAKES OF EDUCATED MEN. By John S. Hart, LL. D., Editor of the *Sunday School Times*, and late Principal of the Philadelphia High School. 12mo., muslin, gilt, Price 50 cents. Published by J. C. Garrigues, No. 148 South Fourth street, Philadelphia.

PATENTS FOR SEVENTEEN YEARS.

The new 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.

The duration of patents granted under the new act is prolonged to SEVENTEEN years, and the government fee required on filing an application for a patent is reduced from $30 down to $15. Other changes in the fees are also made as follows :—

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 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 law abolishes discrimination in fees required of foreigners, excepting reference to such countries as discriminate against citizens of the United States—thus allowing English, French, Belgian, Austrian Russian, Spanish, and all other foreigners except the Canadians, to enjoy all the privileges of our patent system (except in cases of designs) on the above terms.

During the last sixteen years, the business of procuring Patents for new inventions in the United States and all foreign countries has been conducted by Messrs. MUNN & CO., in connection with the publication of the SCIENTIFIC AMERICAN ; and as an evidence of the confidence reposed in our Agency by the Inventors throughout the country, we would state that we have acted as agents for more than FIFTEEN 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 we have taken out Patents have addressed to us most flattering testimonials for the services we have rendered them, and the wealth which has inured to the Inventors whose Patents were secured through this Office, and afterward illustrated in the SCIENTIFIC AMERICAN, would amount to many millions of dollars! We would state that we never had a more efficient corps of Draughtsmen and Specification Writers than are employed at present in our extensive Offices, and we are prepared to attend to Patent business of all kinds in the quickest time and on the most liberal terms.

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 reply written corresponding with the facts, free of charge. Address MUNN & CO., No. 37 Park-row, New York.

Preliminary Examinations at the Patent Office.

The advice we 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 we may acquire of a similar invention from the records in our Home Office. But for a fee of $5, accompanied with a model or drawing and description, we 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 proceedings. These preliminary examinations are made through our Branch Office, corner of F and Seventh-streets, Washington, by experienced and competent persons. More than 5,000 such examinations have been made through this office during the past three years. Address MUNN & CO., No. 37 Park-row, N. Y.

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 prepaid. Small models from a distance can often be sent cheaper by mail. The safest way to remit money is by draft on New York, payable to the order of 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.

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, under the new law, is $10. A pamphlet of advice regarding applications for Patents and Caveats, in English and German, furnished gratis on application by mail. Address MUNN & CO., No. 37 Park-row, New York.

Foreign Patents.

We are very extensively engaged in the preparation and securing of Patents in the various European countries. For the transaction of this business, we have offices at Nos. 66 Chancery-lane, London; 29 Boulevard St. Martin, Paris; and 26 Rue des Eperonniers, Brussels. We think we can 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. Anyone can take out a Patent there.

Circulars of information concerning the proper course to be pursued in obtaining Patents in foreign countries through our Agency, the requirements of different Patent Offices, &c., may be had gratis upon application at our principal office, No. 37 Park-row, New York, or either of our Branch Offices.

Rejected Applications.

We are prepared to undertake the investigation and prosecution of rejected cases, on reasonable terms. The close proximity of our Washington Agency to the Patent Office affords us rare opportunities for the examination and comparison of references, models, drawings, documents, &c. Our success in the prosecution of rejected cases has been very great. The principal portion of our 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 us on the subject, giving a brief history of the case, inclosing the official letters, &c.

Assignments of Patents.

The assignment of Patents, and agreements between Patentees and manufacturers, carefully prepared and placed upon the records at the Patent Office. Address MUNN & CO., at the Scientific American Patent Agency, No. 37 Park-row, New York.

It would require many columns to detail all the ways in which the Inventor or Patentee may be served at our offices. We cordially invite all who have anything to do with Patent property or inventions to call at our extensive offices, No. 37 Park-row, New York, where any questions regarding the rights of Patentees, will be cheerfully answered.

Communications and remittances by mail, and models by express (prepaid), should be addressed to MUNN & CO., No. 37 Park-row, New York.

TO OUR READERS.

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 is required to accompany the petition, specification and oath, except the government fee.

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.

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 inclosing $1 as fee for copying. We can also furnish a sketch of any patented machine issued since 1853, to accompany the claim, on receipt of $2. Address MUNN & CO., Patent Solicitors, No. 37 Park Row, New York.

RECEIPTS.—When money is paid at the office for subscriptions, a receipt for it will always be given ; but when subscribers remit their money by mail, they may consider the arrival of the first paper a *bona fide* acknowledgment of our reception of their funds.

NEW PAMPHLETS IN GERMAN.—We have just issued a revised edition of our pamphlet of *Instructions to Inventors*, containing a digest of the fees required under the new Patent Law, &c., printed in the German language, which persons can have gratis upon application at this office. Address MUNN & CO., No. 37 Park-row, New York.

Notes and Queries

L. G., of Vt.—You cannot obtain a patent for making horse-power link of wrought, instead of cast-iron. It is a mere change of one material for another in the fabrication of an article. Any one would have a right to do this.

H. G., of Pa.—A patent was granted July 9, 1857, in England, to C. Logie, for a projecting claw, having serrated edges attached to a musket for tearing off the ends of cartridges.

M. R. F., of Mass.—Starch has been employed for mixing with soap. You will find a statement to this effect on page 382, Vol. XI. (old series) SCIENTIFIC AMERICAN. Potatoes, wheat, and silicate of soda have also been used as soap mixtures. No patent can therefore be obtained for starch or such vegetable substances as those in which it is the principal ingredient.

S. G., of Mich.—You can run your water wheel at any speed you please by adjusting the load and gearing. It is customary to run large wheels at a speed of 6 or 7 feet per second at the periphery.

C. N. B., of Pa.—We will pass your questions in relation to photography over to Professor Seely, editor of the *American Journal of Photography*, who will doubtless answer them to your satisfaction We think well of the wrench, but you can judge of it as well as we can.

R. W., of Conn.—You will find a description of the composition and the method of its application, for making enameled leather, on page 358, Vol. XI. (old series) SCIENTIFIC AMERICAN.

E. A. T., Wis.—Babbitt metal is composed of 25 lbs of Banca tin, 2 of antimony, and half a pound of copper. They are first melted together, and run into ingots, then used to line journal boxes by re-melting and casting. Melt the copper first, and add the antimony, then the tin, very cautiously.

G. R., of Mass.—Oxalic acid is not only injurious to the hands when used in polishing brass, but is a dangerous poison also. We do not think you require any acid to scour brass when you use fine emery. Diluted sulphuric or muriatic acid, if you employ it warm, will answer just as well as oxalic acid. Try warm water and the emery first ; if this does not answer, try dilute muriatic acid, which is cheaper and just as good as oxalic acid. The pickle to which you refer for brightening brass is dilute muriatic acid.

J. K. W., of Kansas.—There is no published work on American Millwrighting and Milling, that comes up to the practice of the present day. A work on this subject by a thoroughly competent person, should meet with an extensive circulation.

E. M., of N. Y.—In selling a patented article, it is not necessary to put the patentee's name on it.

B. L., of Mo.—We regret that we cannot give you information about the proper use of sulphur in the cure of asthma. We copied the paragraph from a foreign journal and have no means of getting at its origin. We hope peace and good order will soon be restored to your State.

S. P. Myers, of La Grange.—Please to inform us in what State you reside.

M. C. B., of Min.—If you are guilty of misrepresenting the date of your patent to the purchaser it would affect your standing in a court of justice.

M. A., of Pa.—There would be no gain by the admission of the steam between the two pistons to act upon both simultaneously. It has been erroneously supposed by more than one person with whom we have been acquainted, that there would be a gain, and we have known of models being made with a view to the application for patents on engines with such system of pistons.

S. P. N., of N. Y.—The mode of charging a piece of steel with magnetism, is to place one end of a magnet against the piece and rub it the whole length; repeating the operation always in the same direction.

V. J. M., of Ohio.—We know of no substance that can safely be relied upon to take the scale from steam boilers.

B. F. R., of R. I.—When General Fremont had command in Missouri, he organized a corps for signalizing in the night by means of the electric light. In the few cases in which circumstances would permit, this light might doubtless be used for watching the motions of the enemy.

G. D. H., of Ohio.—Overman's work on the manufacture of iron was published in 1850 by Henry C. Baird, of Philadelphia.

J. R. K., of Mich.—After many trials, the engineers of the Metropolitan Mills in this city have adopted the following plan for mill steps. A steel cylinder, an inch in diameter, is inserted into the axis of the spindle at its lower end, and this rests upon two or three disks of steel, of a diameter equal to that of the cylinder, which are placed loosely in a cylindrical cavity in the step. The disks revolve one upon another but with a motion slower than that of the spindle ; the spindle's motion being divided among them

C. C. P., of Ohio.—Twelve pounds of fresh water have been evaporated into steam from a temperature of 212° with 1 lb. of coal, but we have not heard of marine boilers evaporating more than 9 lbs. of salt water. From 6 to 8 lbs. of water are more usually evaporated in marine boilers.

E. W., of N. J.—Many patents have been taken out for faucets, and it is quite possible that you may have been anticipated. You had better send us a sketch of your device and have a free examination made. Such would be the most prudent course to pursue. Your wheel is old and impracticable. The same thing has been frequently prepared by searchers after a perpetual motion.

T. H. I., of Mass.—We advise you to study some good work on Natural Philosophy as the most useful for a young mechanic apprentice.

S. I. F., of Wis.—There is no good practical work published known to us on plain and ornamental painting embracing "house painting," fancy lettering, and carriage painting.

A. S., of Pa.—Blue stars in fire works are composed of powder in meal, 8 ounces, saltpeter, 5 ounces, sulphur 2½ ounces, isinglass, 2 ounces, and a little alcohol. Two ounces of strontian added to the same mixture will make a crimson light. Be careful in mixing these substances, and dry them perfectly afterward, or they will not produce the desired result.

G. F. S., of Mass.—More heat is produced from coal by burning it directly, than by first converting it into illuminating gas and then burning the gas—for heat is consumed and lost in making gas. Experiments are now in progress in France for testing the economy of gas engines. Your other question involves the fallacy known as perpetual motion, which is necessarily a fallacy from the laws of nature. Your question of the relative explosiveness of mixtures of illuminating gas and atmospheric air, and those of hydrogen and atmospheric air involve so many considerations that we shall not take the trouble to investigate it.

D. S. V., of Mich.—Your plan for forcing vegetation by carrying steam through drain tile in the ground is entirely impracticable. The steam would be condensed very soon after leaving the boiler. Hot air is used in this way for some greenhouses, but for fields it would be too expensive.

A. D., of Wis.—It is impossible for us to give an opinion of your alleged improvement in straw cutters without the aid of a sketch and description. We do not understand what you wish to claim.

J. D. R., of Pa.—When two railroad trains meet upon a double track road and pass each other, the reason why the tone of the bell becomes flattened to the ears of the passengers after passing is this. A high note is formed by a greater number of vibrations in a second than a low note, and as the bell is borne away from the passenger it takes each succeeding vibration a longer time to reach his ear, and thus he hears fewer in a second. The common telegraph wire casts a shadow much broader than itself because the sun is broader than the wire. The shadow is not a perfect shadow, but a penumbra. The heated air rising from a stove, refracts rays of light passing through it, and thus prevents them from reaching the floor or wall ; producing a shadow as effectually as if the rays were reflected.

C. G., of N. Y.—Sebastopol before the siege was scarcely more than a collection of forts. They were sea-coast fortifications, but with provision as usual for defence on the land side.

A. E. J., of Ohio.—We have no doubt that your opinion is correct, that it would be impossible to raise cotton in the northern part of Ohio. The fact that the vine grows well there, is no evidence that cotton would. Black Hamburg grapes are ripened in the open air in the north of England.

SPECIAL NOTICE—FOREIGN PATENT.—The population of Great Britain, is 30,000,000; of France, 35,000,000 ; Belgium, 5,000,000; Austria, 40,000,000; Prussia, 20,000,000; and Russia, 60,000,000. Patents may be secured by American citizens in all of these countries. Now is the time, while business is dull at home, to take advantage of these immense foreign fields. Mechanical improvements of all kinds are always in demand in Europe. There will never be a better time than the present to take patents abroad. We have reliable business connections with the principal capitals of Europe. Nearly all of the patents secured in foreign countries by Americans are obtained through our agency. Address Munn & Co., 37 Park row, New York. Circulars about foreign patents furnished free.