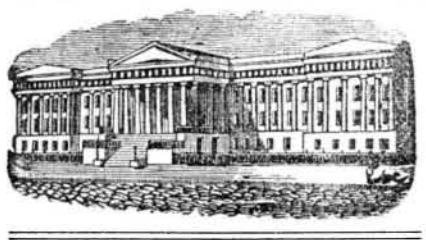

[Reported officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JUNE 16, 1857.

MOLD BOARD FOR REVERSIBLE PLOWS—Henry S. Akins, of Berkshire, N. Y.: I do not make an unqualified cl im to the mold board composed of rods, for that has been known and used before in plows to turn furrows one way.

Neither do I claim turning the share and mold board of a plow to both sides of the land side, as that is a well known operation.

I claim providing a reversible plow with a mold board susceptible of torsion, or of being twisted to the right and left by means of being composed of a series of rods or bars of any desired number, so construcied and arranged with the other parts of the plow that they can be placed and held alternately in the different positions and directions required for turning alternate right and left furrows.

BRINE EVAPORATORS—Chas. W. Atkeson, of Henderson, Ky.: I am aware that a series of horizontal tubes has been combined with the flue of a vertical cylindrical steam boiler, and therefore I do not claim said arrangement.

But I claim combining a series of horizontal heating tubes with a vertical flue or chimney, when said flue or chimney is combined with an inclosing vertical casing, which has an enlargement at its upper end, entirely above the uppermost of the said heating tubes, substantially as set forth.

CARD PRINTING PRESSES—Franklin L. Bailey, of Boston, Mass.: I do not claim the combination of feeding guides with the bed against which the card is to be pressed.

But I claim applying the guides, I I, to the bed, substantially as described, that is, so that they may spring or move away from and towards it, and thus not only relieve the card from contact with and friction against the surface of the bed, while such card is descending in the guides, but also to operate the knife and allow it to move backward, substantially as specified.

I also claim arranging the guides, I I, so as to incline back from the vertical plane, the same being for the purpose of supporting the card and enabling the guides to be used without any front lip, as described.

I also claim the combination of the spring card holder, M, with the card rest or stop, K, and the feeding guides or mechanism, and the bed and platen, the said card holder being applied to the stop, K, so as to operate substantially in the manner and for the purposes set forth.

I also claim applying the feed and pressure rollers in a rocker frame combined with the vibrating frame, F, and provided with adjustments, arranged so as to enable the rocker frame to be tipped a little as occasion may require, to cause the continuous sheet of paper or cardboard to operate properly with respect to the position of the form on the platen.

I also claim arranging on the shaft, R, and so as to operate with the stationary roller, as described, and with the feeding roller, a spring pressure roller, U, to act against the edge of the sheet of card, so as to maintain its opposite edge in a proper position with respect to the type.

LATHS FOR BUILDINGS—John L. Brabyn, of New York City: I claim the forming of the interstices in the form of a dovetail, or its equivalent, and the back support for the mortar in the laths themselves, and entirely independent of anything that may be placed behind them, by grooving one or both edges of the lath on one side, and leaving the other side the full width, so that when the same are in place their edges shall join at the back side, to prevent the plastering material from pressing through between the laths, the grooves forming the clinches to hold the mortar firmly in place, substantially as set forth.

SAFETY ATTACHMENT FOR HATCHWAYS—James Bridge, of Augusta, Me.: I claim the guards or fenders, C, attached to the arbors, D, which are secured to the underside of the doors, B, and connected with the flooring by the chains, b, the above parts being used in connection with the inclined flanches, f, and springs, E, substantially as described for the purpose set forth.

[By this improvement when hatch doors are raised, fenders are thrown automatically in proper position to prevent persons from accidentally falling down the hatchway. Such an invention is much needed in this and other cities, where so many persons have lost their lives by falling down unguarded openings.]

HYDRANT—Joel Bryant, of Brooklyn, N. Y.: I do not claim anti-freezing hydrants or water pipes.

But I claim hydrants and water pipes with two main cylinders, A and B, and a cylindrical bottom part, F, with openings, g g, in cylinder, B, and openings, e e and d d, in the bottom part, F, operating in connection with each other for the admission and discharge of water, substantially as described and for the purpose set forth.

STOCK FOR BENCH PLANES—Joel Bryant, of Brooklyn, N. Y.: I claim the construction of bench planes having an opening with a backward inclination made by the dispensing with or the removal of the lower edge or lip of the plane stock (as existing in bench planes of ordinary construction) the said opening being made for the purpose of avoiding the annoyance produced by splinters or small pieces of wood fastening into the recess as formed by the said lower edge or lip of the plane stock and the bevel of the plane iron in common bench planes, substantially as described for the purpose set forth.

SPLITTING LEATHER—Dexter H. Chamberlain, of West Roxbury, Mass.: I claim the described rigid and beveled hoop knife for splitting leather, operating in the manner substantially as set forth.

HARVESTERS—Nicholas Clute, of Dunnsville, N. Y.: I claim the racking apparatus described, consisting of the endless belt, I 3, carrying arms or rakes, K K, when used in combination with the endless clearing apron, L, curved and elevated platform, K', all arranged to operate in the manner and for the purposes set forth.

CORK MACHINE—Edward Conroy, of South Boston, Mass.: I do not claim the employment or use of expanding cutters for cutting corks, bungs, etc., irrespective of the arrangement shown, for expanding cutters, have been previously used, although differently arranged from the plan shown.

But I claim the expanding cutters attached to the rods or bars, P, and operated by the plate, R, attached to the rod, N, the rods, P, having pins, g, passing through their upper ends, which pins are allowed to slide laterally in their recesses, h, as the rods are actuated by the plate, R, the above parts being arranged substantially as described for the purpose set forth.

I further claim, in combination with the cutters, f, arranged and operated as shown, the cams, K, and bed, L, for feeding the stuff to the cutters.

[The expanding cutters in this machine are operated in a simple manner by the stuff as it is fed in, so that they gradually expand in the course of operation, and cut out bungs and corks of a tapering or conical form, rapidly and with facility.]

ROLLER TEMPLE FOR LOOMS—Warren W. Dutcher, of Milford, Mass.: I claim the described improved roller temple case made with a cylindrical recess, for the reception and protection of one head or end of the toothed roller, in the manner as specified.

BUTTER WORKERS—Chas. W. Gage, of Homer, N. Y.: I claim the combination of rollers, C C and C', within scrapers, E and E', connected and operating in the manner and for the purpose set forth and described.

MAKING AXE POLLS—Richard H. Cole, of St. Louis, Mo.: I claim first, Constructing a die box of three permanent and three movable sides, arranged and operating substantially as set forth.

Second, I also claim arranging the vertically acting cutter, e', and the projecting portions of the sections, p t, of the die box, or their equivalents, in such a manner in relation to the other parts of the machine that the said enumerated parts will operate substantially in the manner set forth.

Third, I also claim combining the oval punches, b e, with the opposite movable sections, c d, of the die box, when the said die box is furnished with a sharp edged side, p, which acts in conjunction with the said oval punches, in converting a rectangular shaped blank into a properly shaped axe poll, substantially as set forth.

Fourth, I also claim cutting a rectangular shaped solid blank from the end of a bar, and then driving said blank into a die box, and converting it into a properly shaped axe poll, substantially in the manner set forth.

INVALID BED ELEVATORS—D. Stringham Dunning, of New York City: I claim, the jointed bars, C C, connected by the cross pieces, D D, the cranes, B B, attached to the upright, A, the winches formed of the sliding pulleys, K K, and gear, G I, the ropes or chains, i, attached to the pulleys, k, and cross pieces, D, of the bars, C, the whole being combined and arranged substantially as shown and described for the purpose set forth.

[By this invention, perfectly helpless invalids may be raised from their beds with ease and facility, and if required, moved from place to place in an apartment.]

STEAM PRESSURE GAGES—Joseph L. Eastman, of Boston, Mass.: I do not claim the elastic diaphragm, nor the disk bearing thereon, nor the multiplying lever bearing upon the disk, nor the compensating spring acting upon the lever, nor the mechanism which actuates the index.

But I claim the arrangement of diaphragm, I, disk, M, bearing against the diaphragm, multiplying lever, C, compensating spring, R, and index, substantially as set forth.

MAKING CAST IRON MALLEABLE—A. K. Eaton, of New York City: I claim the employment of oxyd of zinc in the production of malleable iron castings, in the manner specified, so that the articles, whilst under this treatment, will have continually presented to them, a fresh supply of decarbonizing material.

DEPILATING COMPOUND FOR HIDES—A. K. Eaton, of New York City: I claim the depilating process described, consisting in the employment of the ingredients mentioned, in the manner set forth.

SCREW CUTTER—Jas. M. Evarts, of Westville, Conn.: I do not claim the chuck for adjusting the dies nearer to or further from each other, for that is a well known device.

But I claim the rotary dies, C, placed within sliding or adjustable plates or sockets, B, attached to the chuck, A, or an equivalent device, for the purpose set forth.

[Instead of having the cutting dies stationary, and the rod to be cut rotating, as in the usual method of cutting screws, the rod to be cut is held stationary in this improvement, and the dies rotate. The latter are secured within adjustable sockets placed in a concentric chuck, and are peculiarly constructed and arranged; they are really a succession of slow revolving cutting wheels, which continually bring fresh cutting surfaces into action on the rod. The cutters endure much longer than the ordinary screw cutting dies, and are an excellent improvement.]

MOTION FOR PRESERVING ROLLING CONTACT, &c.—George P. Gordon and Frederick O. Degener, of New York City: We claim supporting or hanging a reciprocating bed or plate, B, upon supports, C C, placed obliquely, or out of parallel with each other, substantially as described, so that the face of such bed or plate shall, as it is moved back and forth, work in contact with the periphery of a cylinder, or with a fixed point or line, or act intermittently against a swinging bed or plate, as set forth.

[This invention is especially adapted to type and lithographic presses, also to those for die sinking, for obviating the great amount of friction attendant upon their operation.]

CORN PLANTERS—Ives W. McGaffey, of Buffalo, N. Y.: While not claiming a swinging frame carrying the seed boxes and plows, and by which the plows are raised or lowered as described,

I claim hanging said swinging frame, E, by boxes, F, upon fixed sleeve boxes, G, arranged around, but distinct from, the axle, C, to insure freedom of the axle against resistance encountered by the plows, without, in the swinging of the frame, E, varying the relative concentric position of the axle and seed distributing devices thereon to the seed boxes.

CHAIRS FOR INVALIDS—James G. Holmes, of Charleston, S. C.: I claim the arranging of the joint by which the seat and back are attached and move, so that it shall correspond with the hip joint of the human frame, that is, placing it above the seat, and in advance of the back, substantially in the manner and for the purpose set forth.

I also claim arranging the knee joint in the chair or seat to correspond with that of the human knee joint of the person occupying it, substantially as described.

I also claim the frame-work of metal or other material, by which all the joints and pivots, excepting that of the separate apron which moves with and supports the leg from the knee down, are combined either with or without the arm rest, as may be desired, as set forth.

SEED PLANTERS—Solomon T. Holly, of Rockford, Ill.: I claim the employment or use of the indicator, b', connected with the valve, U, arranged and operated as shown for the purpose set forth.

[The indicator of this seed planter shows, when its outer end is depressed, that the valve is open, and the seed permitted to drop. Its object is to insure the dropping of the seed at the precise places, and the attendant, by a lever, can control the depositing of it—a very necessary arrangement to insure correct planting.]

BEDSTEADS—Peter Hinds, of Kendall's Mills, Me.: I claim a turn up bedstead, constructed substantially as described, with two sets of sockets in its bed posts, and with movable or secondary posts, provided with connecting levers or bands, by which, when the bed is turned up into a vertical position, the bedding may be maintained in place, as specified.

ANIMAL TRAPS——Henry Hackman, Jr., of Pequa, Pa.: I am aware that tilting platforms are used for catching animals, and various kinds of levers, springs and weights are attached to operate such platforms. These I do not claim.

I claim the combination of the self-acting spring board, G, with the platform, B, horizontal spring, I, and lever, M, constructed, arranged and operating substantially as described, for the purpose of assisting in throwing off the animal as the platform tilts.

SEWING MACHINES—Daniel Harris, of Boston, Mass.: I am aware that a looper or hook has been before made and used for effecting the same purpose as my looper—namely to take the loop from the side of the needle and lay it open under the point thereof—by having reciprocating horizontal and rotary movements imparted to it. I therefore do not claim these peculiar movements of a looper.

Neither do I claim moving a hooked needle vertically through a fixed bearing up through a feed bar, to take the thread from the cloth, as my looping apparatus is not for such purpose.

I claim the arrangement of the mechanism described for operating the reciprocating looper, and giving its rotation or partial rotation, for the purposes set forth; that is to say—

I claim the combination of the inclined slot plate, m, the pin, n, and the stud, q, or their equivalents, they operating as above described to produce the proper movements of the looper.

RUDDERS—Robert S. Harris, of Galena, Ill.: I claim the application of an outer or second rudder attached to and working on the common rudder.

I also claim the short tiller held and worked by stationary chains or ropes, as above described, for the purpose named.

SAFETY POCKETS—Horace Harris, of Newark, N. J.: I am aware that Joseph Cotton has a patent for spring bolt and catch for fastening plates connected with pockets I do not use or claim any of his devices.

I claim the wire frame, with the spring, C, for throwing it open, constructed in the manner described.

GAS GENERATORS—Augustus A. Hayes, of Boston, Mass.: I claim my improved gas retort, substantially as described and represented, that is, with only one chamber and with a compression conduit, arranged wholly or partially outside of the chamber of the retort, and so as to pass directly into the stand pipe, and have an entrance or opening into its front end, to be closed either by the door of the retort or by a separate small door, or its equivalent, as circumstances may require.

I also claim combining with the gas retort and its compression conduit, a means substantially as described, for diminishing the internal area of the passage of the gas through the conduit, in order to produce the amount of compression of the vapors in the chamber which may be required, according to the kind of coal or other material used, the retort by such means being adapted to the decomposition, in the manner set forth, of any bituminous coal or other gas-producing material.

CUTTING APPARATUS OF HARVESTERS—M. G. Hubbard, of Penn Yan, N. Y.: I am aware that the cutters of reaping and mowing machines have been attached to the cutter bar by means of a single bolt or screw to each cutter, and consequently I do not claim such mode of fastening.

Neither do I claim the device patented to Wm. Hovey, April 29, 1856, and from which my invention radically differs.

But I claim the mode of attaching the cutters, c, to the cutter bar, y, substantially in the manner, by the devices, and for the purposes set forth.

SCOURING AND SETTING LEATHER—Peter E. Hummel, of Pulaski, N. Y.: I claim the revolving table or bed, H, in connection with the reciprocating head formed of the frames, a, attached, in which the shafts, d d, are fitted, the shafts being provided with sockets, k, and adjustable counter poises, a, substantially as shown and described for the purposes set forth.

[The work performed by this machine has been hitherto executed by hand labor. The hide is placed on a revolving table, and the tools for scouring, smoothing and stretching it are placed in a frame over the table, and made to act with such a graduated pressure as the attendants find necessary to produce the best effects on all parts of the hide. It does its work expeditiously and in a superior manner.]

PLOWS—C. B. Ingersoll, of Morris, Ill.: I claim the standard, A, in combination with the standard arms A', A'', and shear bar, E, constructed and arranged in the manner and for the purpose set forth.

[This invention prevents all possibility of the land side of the plow becoming clogged while plowing in damp and marshy soils. The improvement consists in attaching the landside handle to a support projecting out from the rear of the plow standard, instead of to the shear bar, and thus avoiding any obstruction to the escape of the soil.]

FOOT STOVE—J. W. Lefferts, of Brooklyn, N. Y.: I claim the lamp D, fitted or placed within the cylindrical chamber, C, of the box B, the lamp being constructed in annular form, so as to have a passage, b, through its center to feed the flame within, and the box B fitted within the case, A, the box B being provided with the perforated or reticulated plate, d, plate e, with passages, f, and draught pipe, g, the whole being arranged substantially as described for the purpose specified.

[This portable foot stove is heated by a lamp arranged within a small metal box within the case of the stove, in which it is held perfectly in place, without the possibility of being thrown out or jolted about. It is a good and safe foot stove for carriages and sleighs.]

PLOWS—E. D. and L. W. Legg, of Speedsville, N. Y.: We claim the combination of the adjustable cutter and the reversible mold board, when operated substantially in the manner and for the purpose fully set forth and described.

RAILROAD SNOW EXCAVATORS—S. Y. Ludlum, of Oyster Bay, N. Y.: I claim the tilting box or scoop F, attached to the sliding frame, B, and provided with the rod or cutter, D, and hinge sides, o, one or both; the frame being attached to the truck, A, and the box F and rod or cutter D, operated by the locomotive through the medium of the cord or chain, r, the whole being arranged substantially as described for the purpose set forth.

[This is a snow digger, lifter and depositor, designed to remove deep snow from tracks when the common snow plow is unfit to perform the work. A scoop, having a cutter, is attached to a sliding frame placed in front of the locomotive, and this scoop digs into the snow, lifts up a scoopful on the sliding frame, and tilts it to one side of the track, the engine doing the work.]

SOWING GRAIN IN DRILLS—Frederick Moehlmann, of Belleville, Ill.: I do not claim a double chambered hopper, nor a turning reversible partition for separating the chambers of the same.

Neither do I claim broadly the use of a distributor composed of two circular slotted plates, one placed above the other and one stationary, and the other capable of turning irrespective of the position of the slots in said plates relatively to one another, and the form of the slot in the upper plate.

But I claim having the curved slot of the upper stationary plate terminate in the form of a scroll or letter C, and the slot of the lower plate arranged in such relation to the same, that as the lower plate turns, the seed in order to escape, as they are forced along on a curve by spurs of the turning plate, shall be compelled to take a direction toward the axis of the plate, and thus be saved from being cracked or broken by being compressed between the terminations of the upper and lower slots substantially as set forth.

[These improvements made by Mr. Moehlman in the seed drill are very useful, and worthy the attention of farmers generally. They effectually prevent the cracking or mashing of the grain in its passage to the seed tube, and also provide for a free and regular feed from the hopper, and likewise enable a farmer to plant either wheat, rye or oats with one implement with unerring certainty.]

CORN PLANTERS—Wm. T. Pepyer, of Rising Sun, Ind.: I claim, first, the arrangement of the flanges, B, b, on the periphery of the wheel, a, when used in connection with the plate, n, scrapers d, and receiving or conducting spout, e, or their equivalents, the whole being arranged and operating in the manner substantially as and for the purposes set forth.

Second, The rocking seed box, l, having its lower end held stationary during the act of planting, by contact with the ground, and operated automatically by the power by which the machine is drawn forward; in the described combination with the falling floors, f f g g, and seed measuring and delivering mechanism, n o p, operated by means of racks, j, by depressing the box against the ground as set forth.

VALVE CONNECTIONS FOR STEAM ENGINES—B. L. Phillips, of Providence, R. I.: I claim interposing the jointed bars or rods, L L', to be operated upon by the cams, O O', or their equivalents, between the valves and the connecting block F, substantially as and for the purposes set forth.

[This invention is applicable to puppet, slide, or rolling valves. It consists in certain devices and their arrangements for connecting the cut-off valves with the valve gear through which they derive motion from the engine. The valves are allowed to be closed suddenly, by springs gravitation, or by the pressure of the steam, to cut off the steam at various points in the stroke, without disconnecting them from the mechanism as is done in other contrivances for giving valves a "tripping movement."]

CORN PLANTERS—Sylvanus Richardson, of Jericho, Vt.: I claim the seed cylinder, 10, operated by spring 12, in combination with slides 6 and spring valve 7, constructed in the manner and for the purposes set forth.

VALVE GEAR FOR STEAM ENGINES—Saml. Swartz, of Buffalo, N. Y.: I claim, first, The tappet or valve lifter upon a wheel or segment, and giving said wheel or segment a rotary motion, in combination with a reciprocating motion for the purposes substantially as set forth.

Second, I claim arresting the reciprocating motion of the said wheel or segment, and commencing its rotary motion at a point where its rotary motion will cause the tappet to strike the valve toe on a line, (or nearly so,) drawn through the center of the joint, and perpendicular to the line of reciprocating motion for the purposes and substantially as described.

CONDENSING APPARATUS FOR SALT AND GASES—J. C. Fr. Salomon, of Baltimore, Md.: I claim the combination of a series of blast pipes, c, and free air or water passages, c', with a succession of receivers, k, arranged and operating substantially in the manner and for the purposes set forth.

STAMP LABEL STICKER—Coleman Sellers, of Philadelphia, Pa.: I claim the combination of the lips or flanges, or their equivalents, in the label holder, with the follower, or its equivalent, for the purposes above specified, when said lips or said follower, or their equivalents are made of such form as to cause the stamps or labels to bulge out beyond the face of the stamp holder, substantially as described.

I also claim the attachment of the follower, or its equivalent, with the handle, to convey the pressure directly to the stamps or labels, substantially as described.

REFRIGERATORS—J. C. Schooley, of Cincinnati, O.: I do not claim the use of an opening to admit external air into ice, nor do I claim the use of an opening to allow air to escape after having passed into the preserving chamber.

Neither do I claim the use of a partition between the ice and preserving chamber, with its openings above and below: I do not claim any of them separately.

But I claim the employment of the double register, r, and openings, c d, in combination with the partition, g, and the openings, f m, the whole arranged and operated substantially in the manner and for the purposes set forth.

BENDING SHEET METAL PANS—E. A. Smead, of Tioga, Pa.: I claim the two levers, L L, operated through the medium of the arms, r r, which are attached to the sliding bar, I, the lips or jaws, t, of the levers working over the blocks or beds, N, the parts being arranged specifically as shown for the purpose set forth.

WIRING TIN PANS—E. A. Smead, of Tioga, Pa.: I claim the combination of the segment bar, P, vibrating bar, Q, and bed R, the bar P, being operated from the sliding bar, I, through the medium of the link, a, and the bar Q, being actuated by the beveled or inclined projections, b, the whole being arranged as described for the purpose set forth.

[These two improvements in machinery by Mr. Smead for making tin pans—one for bending the metal and the other for wiring the pans—enable the tinsmith to make such utensils of a superior quality. The devices and operation of these machines are not like those of common rimming and wiring machines for pans, but are constructed and operated on the principle of swedging and die pressing, and thereby produce beautiful and accurately finished work—free from the rough seams so common in such pans.]

GANG PLOWS—Joseph Sutler, of St. Louis county, Mo.: I claim the combination of the plows, D, with the frame B, and pivot O, arranged and operated in the manner and for the purpose set forth.

PROPELLER CANAL BOATS—G. W. Swartz, of Buffalo, N. Y.: I am aware that what are called iron boats have heretofore been constructed. I am also aware that boats are built of wood, using iron bolts, rods, bars, screws, &c., &c., for the purpose of connecting and fastening the wood parts together, and for strengthening and protecting the same. I make no claim to such,

Neither do I claim the combination of iron and wood as material used in the construction of vessels.

Neither do I claim substituting iron for wood, or wood for iron, in the construction of any part or parts of a boat or vessel.

I claim so forming the recesses in the plates that they may protect the propeller, and give direction to the current of water moved by the propeller, substantially as set forth.

ELEVATING WATER BY COMPRESSED AIR—Archibald Thomson, of Detroit, Mich.: I do not claim the raising of water by compressing or forcing air into a chamber or reservoir, irrespective of the means employed for attaining efficiently said result,

But I claim the reservoir or tank A, formed or provided with two compartments, b c, which are provided respectively with valves, e g l m, operated as shown, the compartment, b, being provided with the air forcing pipe B, and eduction pipe C, the two compartments by the action of the valves communicating intermittently by means of the pipe, d, and passage f, the whole being arranged substantially as described for the purpose set forth.

[This invention has for its object the raising of water in a steady, continuous stream, at any required hight. It consists in having an air pump connected with a tank immersed in a stream or well, the tank being provided with valves and divided into two compartments, so arranged, that by forcing air into one of the compartments, a continuous stream of water is forced up from the tank to a hight commensurate with the power applied to the pump.]

CULTIVATOR PLOWS—Micajah Tolle, of Newport, Ky.: I am aware that various forms of hoes and harrows having their teeth placed obliquely with the line of draft, have been employed, both for removing clods and covering seed, and also that oblique arrangements of teeth in various forms exist commonly in harrows, cultivators, &c.

I claim the bracket, c, in combination with the plow beam, d, constructed, arranged and operated in the manner substantially as and for the purposes set forth.

EXCAVATING MACHINES—Alonzo Taggart, of Warrentown, Mo.: I claim the free draft connection of the scraper by chains, c c, in combination with the balancing suspension chains, a a, and the opposite stay chains, b b, arranged and operating in connection with frame and windlass, substantially as and for the purposes set forth.

SMUT MACHINES—James Tompkins, of Liberty, Pa.: I claim constructing machines for cleansing grain of two cylinders, one placed within the other, and of two setts of beaters secured to one shaft passing through these cylinders, the whole so arranged that grain being cleansed may be subjected to two separate and distinct agitations in the one machine, substantially in the manner described.

MOWING MACHINES—J. B. Wardwell, of Methuen, Mass: I claim supporting the finger bar and cutting apparatus from the main shaft, substantially as described.

PROPELLING VESSELS IN SHOAL WATER—J. W. Wetmore, of Erie, Pa.: I claim the arrangement of the arms, g h and k l, and e f and i j, in relation to each other and to the crank shaft and toothed wheel, as and for the purposes set forth.

GAS GENERATORS—E. W. Whitehead and J. L. Conklin, of Newark, N. J.: We claim the construction and arrangement of the retort as described, having two flues on opposite sides for strengthening the same, and leaving a larger portion of the walls of the retort for the direct action of the fire in the manner and for the purposes specified.

UMBRELLAS AND PARASOLS—James Willis, of London, Eng. Patented in England March 24, 1855: I claim my manufacture of the runner and slider and top joint collar as made with its notched flange of drawn or rolled metal bent into a ring, and constructed in manner and applied thereto, substantially as described.

I do not claim confining either the rib or the spreader of an umbrella frame to its grooved notched ring or

flange of the slider or top ring by means of a circular wire.

Nor do I claim confining said wire in place by twisting its ends together in the usual way.

But I claim my method of confining the wire in the flange, viz., by means of a flange made tubular or with a groove and space formed to admit and receive the circular split ring of wire, as described and bent down laterally on the ring and between the spreaders or ribs as specified, the same not only causing the wire to be grasped between each two joints of the spreaders or ribs, but providing a smooth flange without any projections likely to tear or injure the cloth cover of the umbrella.

MACHINE FOR SKIVING BOOT COUNTERS—William Butterfield, of Boston, and Bradford Stetson, of Uxbridge, Mass., assignors to themselves and Elmer Townsend, of Boston, Mass.: We claim the combination and arrangement of the secondary or adjustable feed roller and skiving cutter with the driving and feeding shafts, and the primary or stationary feed rollers and skiving cutter, the whole being made to operate as specified.

MACHINES FOR GRADUATING LINEAL MEASURES—S. C. Hubbard, (assignor to C. C. Hubbard,) of Middletown, Ct. Ante-dated Dec. 16, 1856: I claim, in combination with dies for imprinting the figures and transverse lines upon the rule, graves or points, arranged and held as described for marking the gage or longitudinal lines on the rule as described.

I also claim the pressure disk, D, with one or more indentations on its periphery corresponding to the knuckles of the joints of folding rules when this is combined with giving to the disk thus constructed a self-acting reverse motion, to bring it back after each impression of a rule to the precise point whence it started, substantially in the manner and for the purpose specified.

STEAM PRESSURE GAGES—J. H. Miller and John Kailey, (assignors to themselves and John Danner) of Canton, O.: We claim the bell-shaped end of the mercury tube, d, and the manner of fastening the gum elastic floor to the bottom of said bell-shaped tube, d, by being clamped between the glass, d d, and the metal, P P, thus securely protecting the mercury from air, steam and water; this we claim when arranged and combined substantially as set forth for the purpose specified.

GAS STOVES—Patrick Mihan (assignor to himself and Robert B. Fitts,) of Boston, Mass.: I do not claim arranging a gas distributing tube and an air and gas mixer between two concentric surfaces provided with air inlets arranged so that air may pass with gas through the perforations of the mixer or cap only, as my arrangement involves something more than this,

Neither do I claim an annular gas burner arranged between two radiators, and having passages for air to pass between it and each radiator, and to the flame that may be generated above the exit holes of said burner, as I employ an air and gas burner, and not a mere gas burner.

Nor do I claim simply making the air and gas mixer or cap in a conical form, nor do I claim combining with a gas burner an ascending and descending flue, one being concentric with the other, and whether the descending flue is either within or without the other.

Nor do I claim the construction of gas stoves as described on pages 86 and 87 of Webster's Encyclopædia, my invention differing essentially therefrom,

I claim arranging an annular gas distributing tube, G, a perforated or wire gauze mixer, I, two radiators, C and D, an air space within the radiator, C, and air inlet spaces, B E, the one leading air above, and the other below the surface of the mixer, substantially as described this arrangement involving, inclining the gas mixer, I, and the radiator, C, in opposite directions with respect to one another substantially as described.

I also claim the arrangement of the secondary radiator K and its discharge tube M, with reference to the radiator, C, the open air space within the latter, and the chamber, F, and the air and gas burning apparatus disposed at the bottom of said chamber, as specified.

SCREW WRENCH—G. C. Taft (assignor to H. W. Mason), of Worcester, Mass.: I do not claim the mere addition of auxiliary screws to the wrench of the said Coes, and made with threads reversed in pitch with respect to the pitch of those of the primary screws.

But I claim arranging the nut G, between the two male screws, F and K, in connection with applying the auxiliary female screw, b, and its support, I, with reference to the handle and shank, substantially as specified.

PORTABLE STEAM SAWING MACHINE—S. R. Wilmot, of Watertown, Conn., and R. G. Fairbanks, of Brooklyn, N. Y.: We claim attaching a portable steam sawing apparatus to the object to be sawed, by attaching apparatus at one side of the saw only, as set forth.

We also claim the combination of an adjustable live clamping apparatus with the stock of a portable sawing apparatus the several parts of the combination being constructed and combined substantially as set forth.

We also claim combining the stock of a steam sawing apparatus with the mechanism for actuating the saws by means of feeding mechanism constructed and operating substantially as herein set forth, so as to feed the saw, into the object to be sawed, while the latter remains stationary.

We also claim locking the saw, and the mechanism winging therewith, to the stock, in the manner set forth, so that the parts of the machine may be rigidly connected with each other, so as to facilitate their removal from place to place.

We also claim connecting the swinging members of a portable steam sawing apparatus with the stock at a point intermediate between the pivots and the extremity of the stock as set forth.

LADIES' SKIRTS—E. F. Woodward, of Brooklyn, N. Y.: I claim the employment of the spiral stiffener or cord for stiffening ladies' skirts, &c., together with the saturation thereof in manner set forth, and for the purposes specified.

FAUCETS—D. N. B. Coffin, Jr., of Newton (Center), Mass., assignor to the Boston Faucet Company: I claim the combination of the annular lifter or lifters guide and pin substantially as described, with or without the top incline for closing the valve shown in fig. 12.

I also claim pivoting the annular lifter or lifters at m.

SPRING BED BOTTOMS—George W. Dow, (assignor to himself and Walter F. French,) of Lynn, Mass.: I do not claim supporting a set of slats on springs arranged longitudinally in a bedstead or frame.

But I claim my improved spring bedstead or bed bottom, as made with two series of rests or bearers, BB, two elastic bands or belts, C C, and a series of transverse bars or slats, D D, arranged together, and in the bed frame, substantially as described.

PREPARING LIQUID ROSE PINK—John W. Perry, (assignor to James W. Gates,) of Boston, Mass.: I claim the combination of the ingredients described for producing a transparent liquid rose pink, to be used in imitating rose wood, &c., the same consisting of potash, ground red saunders wood, and gum shellac and water, mixed substantially in the proportions described.

KEEPER FOR LOCKS AND LATCHES—Andrew Patterson, of Birmingham, Pa., (assignor to J. H. Jones, of Pittsburgh, Pa.: I claim the employment, in combination with a blunt or round ended latch bolt in a double faced or reversible lock case of a keeper, the face of which is curved or made concave, in the manner substantially as described and set forth.

KNITTED FABRICS—Joseph Vickerstaff, (assignor to Martin Landenberger,) of Philadelphia, Pa.: I do not claim exclusively the production of a knitted fabric ornamented by the transposition of threads of different colors.

But I claim as a new article of manufacture a fabric knitted with threads of differing colors, and composed of two separate thickness, interlocked during the process of knitting, at any required intervals, by transposing the threads in such a manner that a knitted fabric may be produced, both sides of which shall present a plain uninterrupted surface of loops, and free from the loose unknitted threads common to other ornamental knitted fabrics.

VENTILATING VAULT AND PLATFORM LIGHT—John C. Wolvin, (assignor to George Peckham and himself,) of New York City: I do not claim ventilating holes and a gutter for vault lights in itself, as these have before been used.

But I claim the manner specified of securing the glass sections in place by the combined operation of the rebate 1, and clamping plate, f, as specified.

I also claim the groove, 3, in the flange, 2, on which the glass rests, to retain a cord of india rubber or other elastic material or cement, and make a tight joint with the glass, as specified.

I also claim the gutter, 5, formed at the center, c, of the radial bars, b, in combination with the perforated clamping plate, f, and pipe, g, as specified.

RE-ISSUES.

LOCOMOTIVE TENDERS—Ross and Thomas Winans, of Baltimore, Md. Patented May 23, 1854. Ante-dated May 9, 1854: We claim the tender with an upper and lower platform, in combination with and for the purpose of feeding with greater convenience the furnace of a locomotive steam engine, having upper and lower feeding holes, substantially as described.

LOCOMOTIVE FIRE-BOX—Ross and Thomas Winans, of Baltimore, Md. Patented May 9, 1854: We claim, in the construction of locomotive fire boxes, the downward and rearward inclination of the top or roof, in combination with the flat grate surface and the usual feeding hole or door, and with or without the fuel feeding boxes through the roof, as described.

GUIDING LINE FERRY BOATS OR FLYING BRIDGES—Wm. A. Jordan, of Thibodeaux, La. Patented August 5, 1856: I claim adjusting the boat, A, relatively with the cable or rope, x x, by the means described, or by any mechanism, when said mechanism is so arranged as not only to effect the adjusting or turning the boat, but also to retain it when adjusted, for the purpose set forth.

[This is an improvement on an old and useful method of moving ferry boats, and consists in having adjustable devices for setting a boat more or less obliquely with a rope stretched across a river, from bank to bank, the boat being connected with the rope by traveling pulleys, and held in the proper position to be moved across the river by the force of the descending current. When the boat has made a passage across to one side, the devices are shifted to set it in proper position to make the return trip, making the water of the river the ferry motor.]

FLOURING MILL—Joseph Weis, of Bordentown, N. J. Patented Jan 29 1856: I claim the tapering burr, F, when covered with steel plates, G, having teeth in disjointed lines, and oblique with the axis of the burr, in combination with the steel pieces, h, having also oblique teeth, but inclined in a contrary direction to those of the burr, and being dovetailed into projections cast to the shield, H, the said projections forming longitudinal grooves. I, running lengthwise on the cone and crossing the inclined dress, substantially in the manner and for the purposes set forth.

DESIGN.

STOVES—S. W. Gibbs, of Albany, N. Y.

ADDITIONAL IMPROVEMENT.

CUTTER FOR BORING WHEEL HUBS—Leonard S. Mearing, of Fall River, Mass. Patented October 4, 1853: I claim, first, an additional reamer in connection with the shaft, c, for the purposes set forth.

Second, I claim a serrated, notched, sickled or ragged edge of reamers, or as at y y and w w, for the purposes set forth.

The Missouri Lead Mines Again.

MESSRS. EDITORS—Permit me, through the columns of the SCIENTIFIC AMERICAN, to answer the many inquiries that have been made of me since the publication of my short note in your paper of the 9th ult. I presume all those who have written me on the subject are readers of your paper, and I therefore send you an answer to their inquiries.

I am by profession a physician, actively engaged in the duties of my calling, and in no way connected with the mining business. I had no speculation in view; my object was to direct the attention of mineralogists to the rich deposits of lead in this region.

The railroad alluded to is the south-west branch of the Pacific Railroad, which commences at St. Louis, and runs forty miles west to Franklin Depot, where it bifurcates; one branch leads up the Missouri river and terminates at the mouth of the Kansas river, on the western boundary of the State; the other branch runs through the counties of Laclead, Webster, Green, Lawrence, &c., and terminates in this county, it being bounded on the west by the Shawnee Indians. The river branch is completed to Jefferson City on the Missouri river; our branch is under contract to this place, and we think it will be completed to Massey's iron works by fall.

The general government gave to the State of Missouri the alternate sections of land extending back six miles on either side of the road, except where the land had been entered; in this case, they have the privilege of going fifteen miles on either side to get the quantity to make the six miles on either side.

The land where most of the lead has been discovered belongs to the railroad company, but no rent has yet been paid by the miners, as, by the terms of the grant, they are not allowed to dispose of the land until the road is finished to within twenty miles of the land proposed to be sold, so that the company, if they see proper, can sell their land twenty miles west of the finished work as they progress with it; but it is not expected they will sell any of the land until the road is completed, which, by the terms of the contract, will be four years from last December. The State has endorsed the bonds of the company for four and a half millions of dollars, and with the credit which the lands will give them, they will have ample means to finish the road to this place. Boonville on the Missouri river is the point to which we now haul our lead. Its price in St. Louis is six and one-half to seven cents per pound. Capital is wanted to pay for mineral as it is brought to the furnace. The smelters are generally responsible men, but owing to the great difficulty of getting lead to the river their means have become exhausted. Mineral can now be bought for cash at from twelve to fifteen dollars per thousand.

The lead is found at from twelve to seventy-five feet from the surface. The machinery needed is for pumping out the water and hoisting the mineral to the surface of mines. I think, from the description I have seen in the SCIENTIFIC AMERICAN of A. L. Archambault's portable steam hoisting and pumping engine, that it would be the very thing needed in the mines.

The face of the country is generally good, and well adapted to agricultural pursuits. There is a great quantity of land yet vacant in this country, but speculators are busy entering it every day; in a few years it will all be gone. The government price is $2·50 per acre for its reserved lands, six miles on either side of the road. A geological survey of these lands was made by Prof. Swallow; his opinion is that mineral will be found all through this and the adjoining counties.

H. S. CHENOWETH.

Neosho, Mo., June, 1857.

State Fairs for 1857.

The following State Agricultural Societies have designated the time for holding their exhibitions:—

Name.	Where held.	Date.
Indiana,	Indianapolis,	Oct. 4—10
Pennsylvania,	———	Sept. 29, Oct. 2
New York,	Buffalo,	Oct. 6—9
Ohio,	Cincinnati,	Sept. 15—18
Canada East,	Montreal,	Sept. 16—18
E. Tennessee,	Knoxville,	Oct. 20—23
Illinois,	Peoria,	Sept. 21—24
Iowa,	Muscatine,	Oct. 6—9
Kentucky,	Henderson,	Oct. 12—16
Maryland,	Baltimore,	Oct. 21—25
Massachusetts,	Boston,	Oct. 21—24
U.S. Ag'l S.'y,	Louisville, Ky.,	Sept. 1—6
Vermont,	Montpelier,	Sept. 30, Oct. 2
Virginia,	———	Oct. 28—31
W. Tennessee,	Jackson,	Oct. 27—30
New Jersey,	N. Brunswick,	Sept. 29, Oct. 2

The American Institute has taken a lease of the Crystal Palace for its next Fair in October, and will receive machines from July 5th up to the opening of the exhibition.

How Rain is Formed.

To understand the philosophy of this phenomena, essential to the very existence of plants and animals, a few facts derived from observation and a long train of experiments must be remembered. Were the atmosphere everywhere, at all times, at a uniform temperature, we should never have rain, hail, or snow. The water absorbed by it in evaporation from the sea and the earth's surface would descend in an imperceptible vapor, or cease to be absorbed by the air when it was once fully saturated. The absorbing power of the atmosphere, and consequently its capability to retain humidity, is proportionably greater in warm than in cold air. The air near the surface of the earth is warmer than it is in the region of the clouds. The higher we ascend from the earth the colder we find the atmosphere. Hence the perpetual snow on very high mountains in the hottest climates. Now, when from continued evaporation the air is highly saturated with vapor—though it be invisible—if its temperature is suddenly reduced by cold currents descending from above, or rushing from a higher to a lower latitude, its capacity to retain moisture is diminished, clouds are formed, and the result is rain. Air condenses as it cools, and, like a sponge filled with water and compressed, pours out the water which its diminished capacity cannot hold. How singular, yet how simple, is such an admirable arrangement for watering the earth?

Notes on Science and Foreign Inventions.

SULPHUR AND THE GRAPE DISEASE.—For several years past, the grape vines of Europe have suffered from a peculiar disease, by which the wine product has been greatly reduced. This evil has been severely felt in France, where the annual value of the grape crop amounted before the disease to over 300,000,000 francs, but which has been reduced to less than one-half. It has been found that the application of flour sulphur to the vines three times during one season cures the disease, and it is expected that its general application regularly pursued will bring all the vineyards of France back to their former fruitful condition. If the same disease should visit the vines on our continent, the above information will be very useful to those who cultivate the grape. The sulphur is mixed with some salt and water, and is applied with a brush.

BALLASTING VESSELS WITH WATER.—An excellent plan of ballasting vessels with water is coming into very general use in England. It is principally adapted for iron vessels, but is also applicable to those of wood. A large iron screw steamer, 250 feet long and 35 feet beam, for carrying coal, was recently launched at Newcastle, England, and constructed for water ballasting, as all vessels which carry coal from Newcastle to London have generally no return cargo, and must put in ballast to make the trip. Sand, gravel and stones have heretofore been used for ballast; the loading and unloading of such involves considerable labor and expense, but water ballast is cheap and only requires to be pumped in and out of the hold, and this is easily done, especially in a steamship. The above steamer has engines of 150 horse power, and capable of carrying 1500 tuns of coal. It has been found that the cost of carrying coal cargoes decreases in proportion as the size of the vessel is increased. This hint ought to be of some value to our Pennsylvania friends.

WATCH PROTECTOR.—A device for protecting a watch or purse in the pocket has been invented by Robert Mair, of the Royal Engineers, England. It consists of a circular slip of metal fitted into the pocket, embracing the watch tightly by means of a spring, which the weight of the watch is sufficient to bring into action. A button attached to the bottom of the device in the pocket is connected with a secret cord or ribbon outside, which the wearer pulls, and releases the spring to allow the watch to be taken out when required. This appears to be a very simple safeguard against pocket-picking. It is stated that it holds the watch so firmly that it cannot be removed forcibly without tearing the pocket. There is an American patent by Ruggles, which, in addition to the above, makes a loud ringing sound when the watch is drawn from the pocket. We consider Ruggles' decidedly preferable. The article is manufactured at Fitchburg, Mass.

PRINTING PRESS DRIVEN BY A COLUMN OF WATER.—In the town of Stirling, Scotland, the printing press of the *Observer* newspaper is operated by a column of water 450 feet high, conducted through a pipe only two inches in diameter, we are told, leading from the top of the rock on which the castle is built. The press is driven by a small water engine, the column of water to which is shut off and let on by a cock similar to that on the steam pipe of an engine. There are many situations in our country where a small high column of water could be applied to such like useful purposes, employing a small turbine wheel as the motor for applying the power. The press of the Boston *Traveler* is driven by the water of the Cochituate aqueduct, which is allowed to act on a rotary engine. The amount paid for water rent makes this more expensive than steam, but it greatly economizes space, a valuable consideration in the center of a city.

POISON IN THE FINE LACE MANUFACTURE.—Our wealthy ladies who wear fine Brussels lace are ignorant of the sad fact, we believe, that in its preparation the poor female operatives often lose their lives by inhaling a poison employed in removing finger marks from it. The poison is the carbonate of lead, applied in the form of powder, in the finishing operation. A portion of this is inhaled by those who use it, and their health soon gives way. Good wages are generally paid to those lace operatives, but so unhealthy is the business—so fatal has the lead poison proven in its effects—that it is only a work of dire necessity to engage in it. It is a sad reflection that many a rich piece of lace worn by a lady has cost not merely a high price in money, but the life of a fellow being. Lace manufacturers have long endeavored to find a suitable harmless substitute for carbonate of lead, but hitherto in vain, we understand.