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ARRANGEMENT OF STEAM COILS IN EVAPORATING VESSELS—H. O. Ames, of New Orleans, La. : I claim the arrangement of the convolute curved radiating pipes, E E, the pockets, F F, the straight water pipes, G G, and the steam and water chambers, B C, in the manner substantially as described.

[This is an improvement in the arrangement of the steam radiating pipes with pockets, to collect the water of condensation, and pipes to return the same to a waste chamber, whereby a uniform temperature is obtained over the whole horizontal area of the pan, and great facility is afforded for relieving the steam pipes of water.]

SEWING MACHINES—William F. Barnes, of Buffalo, N. Y. : I do not wish to be understood as claiming any particular mode of operating my improvements in sewing machines, or any precise shape of parts, as these may be varied without changing the principle of my invention.

I disclaim the patent of T. J. W. Robertson, dated May 23, 1855, and the patent of S. S. Turner, dated August 29, 1854. But I claim the looper strip or point, T, when secured to the revolving rod or piston, V, and arranged and operating in combination with the step or looping aperture, G, spring, N, and cylinder, P, in the manner and for the purpose specified.

Second, I claim the cloth-guiding apparatus, F F a a2, and t and t', as constructed, arranged and operating in combination with the feeding device, for the purpose specified.

DRAIN PLOW—Moses Barrowman, of Buffalo, N. Y. : I do not claim either of the bearing or adjustable wheels described, nor the arms, levers, or shafts by which they are supported, when separately considered.

Nor do I claim their combination or arrangement differently than as set forth.

Neither do I claim the combination of the outer or cutters with the winding trough or circular conveyor, as that has been done before.

But I claim, first, the center piece, A, for the purpose of a main frame or support for the other parts of the plow, substantially as set forth.

Second, I claim the arrangement and combination of the adjustable wheel, G G, the arms, H H, shaft, K, lever, J, and segment, I, relatively to each other and the plow, as described.

MACHINERY FOR BRAIDING CORDAGE—James A. Brazin, of Canton, Mass. : I do not intend to restrict myself to the use of the particular number of spools mentioned in the description, it being obvious that by varying the size of the circular geared plate, g, any number of spools which can be divided by three can be used.

I claim the combination of the gears, m, m, geared circle, 9 9, and gears, o, o, with their curved arms, whereby one spool and its strand is made to travel around two stationary ones, and thus form an interlocking twist, as described.

I also claim with the above combination of devices the use of a series of double gears, o, o, o, whereby the spools can be revolved in either direction, according to the direction of the twist of the yarns.

I claim the combination of the gears, m, m, geared circle, 9 9, and gears, o, o, with their curved arms, whereby one spool and its strand is made to travel around two stationary ones, and thus form an interlocking twist, as described.

Second, I claim the arrangement and combination of the adjustable wheel, G G, the arms, H H, shaft, K, lever, J, and segment, I, relatively to each other and the plow, as described.

MANUFACTURING BRAIDED CORDAGE, WEBBING, &c.—James A. Brazin, of Camden, Mass. : I claim my improvement in the manufacture of cordage, webbing, or other similar fabrics, which consists in laying up or so combining the strands as to form an interlocking twist, in which each and every strand passes around and interlocks with two others, as set forth, and thereby brings the strain equally upon each strand.

GRINDING MILLS—Bachus A. Beardsley, of Waterville, N. Y. : I am aware that conical or semi-spherical shells, toothed both on their upper and lower surface, and encompassed by toothed cases, have been previously used.

And I am also aware that rotating toothed shells, perforated to allow the bark to pass through, have been used, for such device was previously patented by me, the Letters Patent bearing date February 4, 1843.

But I am not aware that conical or semi-spherical toothed shells have been used in connection with stationary arms and toothed cases and arranged as shown, so that any number of shells may be used, and the mill made of any desired grinding capacity, and at the same time rendered capable of being operated with a comparatively moderate expenditure of power, and also rendered capable of being graduated to grind fine or coarse, as desired.

I do not claim, therefore, any of the described parts, separately considered.

But I claim, first, The alternate combination of grinding shells, C G, with shells, F I, the shells, C G, having a smaller diameter or curve than the shells, F I, so that by merely duplicating the above parts, and employing them in connection with cases, D H, as shown and described, the capacity of the mill is correspondingly increased.

Second, I claim providing the shell, G, with a guard, g, which fits into a rebate, h, in the upper part of case, D, so that shell G may be moved vertically at pleasure without the escape of the contents of the mill between the edges of said shell and case, substantially as described.

[A notice of this invention will be found on another page.]

SOCKET FOR TOOL HANDLES—William Bennett, of New York City : I do not claim, broadly, the socket having the form described, when used independently of the wedge.

Neither do I claim the wedge, when inserted into the end of a handle, and both handle and wedge driven into a socket or space having sides parallel with each other, whether such space or socket be closed or open at the bottom.

But I claim a tapering socket, made widest at the bottom or closed end, in combination with the wedge, B, constructed as described and for the purpose specified.

COTTON SEED PLANTERS—Edward F. Bostrom, of Newnan, Ga. : I do not claim separately any of the parts, irrespective of the arrangement shown.

But I claim the combination of the screw, F, and shaft, E, placed within the seed box, D, and provided with beaters, a, the whole being arranged to operate as and for the purpose set forth.

[This invention consists in a novel distributing device, whereby a proper and uniform discharge of seed from the hopper is insured, and also in a peculiar arrangement of furrow share, covering blades, clearers and gages. These are provided so that the furrows that receive the seed are made of a uniform depth, the seed properly covered, and all trash, such as weeds, sods, &c., prevented from entering the furrows while they are being formed, and the seed covered.]

MACHINES FOR TURNING SELVAGES IN CLOTH—John Y. Boyd, of Charlestown, Mass. : I claim a combination of the following devices, or their mechanical equivalents, viz., one or more guiding ledges, B C, a bending or creasing roller, C, a shoe or turning cam, b, and one or more flattening or pressing rollers, a, applied together and to a table or bed, A, and so as to operate substantially in manner and for the purpose as specified.

And in combination therewith I claim the press board, d, arranged with respect to the table, and the said devices for turning and pressing the selva of the cloth, substantially in manner and so as to operate on the cloth as specified.

ROTARY SAWING MACHINES—Harvey Brown, of New York City : I do not claim this device for setting the block, as I have it already in a patent granted to me for a sawing machine, dated November 10, 1857. In arranging the carriage in reference to the saw it should be so placed that the plane of the saw shall be at the center of the block to be sawed.

What I claim is the arrangement of the hoop or band saw, operating vertically within a circular horizontal carriage with adjustable feed motion, by which there is a continuous motion of both saw and carriage, all operating in unison with reference to the desired end, when in motion, substantially in the manner and for the purpose set forth.

COATING METALLIC SURFACES—William Butcher and William A. Butcher, of Philadelphia, Pa. : We do not claim the coating described, nor the application of a coating or varnish, which is impervious to air, vapor, or water, to the surface of metals, to prevent the oxidation of said metals.

What we claim is the process of coating metallic surfaces described, consisting of heating the metal to be coated to about 350° of heat, containing the mixture prepared as described, and in placing the metal to be coated in a baking oven, heated to about 200° of heat, to harden the coating, all as set forth.

PANTOGRAPHIC TELEGRAPH—Giovanni Caselli, of Florence, Italy : I do not claim the general use of electricity for producing fac-similes upon chemically prepared paper, or other material.

But I claim the mode of rapidly transmitting the fac-similes of writings, drawings, cyphers, and arbitrary signs in colored characters, upon ordinary white or chemically-prepared papers, substantially as described.

I also claim the mode of receiving and transmitting different dispatches at the same time, and with a single wire, as described.

I also claim the use of local piles, with circuit always closed, for the production of the characters in chemically-prepared paper, as described.

SEWING MACHINE—Samuel Comfort, of Morrisville, Pa. : I do not claim broadly the passing of the loop of the needle thread over a shuttle, by a lateral movement of the needle, or the imparting of a feed motion to a fabric by a similar motion of the needle, or the exclusive use of a discoidal shuttle, in which the spool is central with the case, as the devices for accomplishing these objects are set forth in patents already granted.

But I claim first, The rocking frame, G, as operated by the crank, F, and constructed substantially as described, with its concave shuttle race in combination with the stationary shuttle.

Second, Imparting to the needle an upward and downward, combined with a lateral vibrating movement, by means of the rocking frame, G, and levers, H and J, as operated by the crank, F, substantially in the manner set forth.

Third, The vibrating concave shuttle race, K, with its lips, r and r', in combination with the discoidal shuttle, L, and adjustable retaining plate, M.

Fourth, Sustaining the needle in the slot, v, of the shuttle race during the time that the said needle is, by its lateral motion, imparting the feed motion to the fabric.

UPSETTING TIRE—G. W. Cooper, of Morenci, Mich. : I claim the jaws, G, attached to rods, f, which are provided with springs, g, and have a vertical movement, as well as a rotating one, and the inclined planes, h, in the plate below the jaws, C, the above parts being used in connection with the stationary jaws, F, the jaws being applied to the ledges, b, of the plates, B D, and arranged as and for the purpose set forth.

[A notice of this improvement will be found in another column.]

MODE OF OBTAINING MOTIVE POWER—Peter Daniel, of Franklin county, Ky. : I claim the arrangement of pulleys, 1 2 3 7, wheels, 3 4 5, lever, 1, belt or cord, J, shafts, S and S', and pulleys, K K, with the cords F F, weights, o, car, E, railroad, c, and the levers, B B', pulleys, P and f, cord, C, and wheel, M, when all are operated in the manner set forth and for the purpose described.

ROLLING RAILROAD BARS—Giles Edwards, of Johnstown, Pa. : I claim the manner shown and described of arranging or disposing old rails, in forming a "pile" for the purpose set forth.

[A full description of this invention is given in another column.]

APPARATUS FOR SKINNING BEELS—Adam Emeish, of Jerusalem, N. Y. : I claim the holder or clamp formed of the frame, C, connected with a spring treadle, E, and provided with spurs, d, d, and the knife, G, and lever blade, F, arranged relatively with each other, as shown, the above parts being fitted in or attached to a frame, A, and used in connection with a gripper, T, and ripping knife, K, or their equivalents, substantially as and for the purpose set forth.

[See description in another column.]

ROTARY SHINGLE MACHINE—R. Freeman, of Fond du Lac, Wis. : I claim the horizontal rotating plate or carriage, E, circular saw, C, stationary and setting beds, F G, and jaws, c, d, in connection with the roller K, and arm, o, the whole being arranged to operate substantially as and for the purpose set forth.

[This invention consists in the employment of a horizontal rotating carriage, circular saw, setting plate or bed, and does, so that it will saw shingles with the proper taper from a series of bolts, very quickly.]

LATHES FOR TURNING OVAL FRAMES—John William and George Gardner, of New York City : We neither claim the device for obtaining the eccentric motion of the frame, nor causing the cutters as well as the frame to revolve.

But we claim constructing oval picture frames by the application of the revolving cutters, N and P, to the frame, Q, when the latter is caused to revolve in an oval path, and when the cutters are so arranged as to act simultaneously, one cutter to form the inside, and the other cutter the outside molding of the frame, as set forth.

ELECTRIC SIGNAL LIGHTS—Samuel Gardiner Jr., and Levi Blossom, of New York City : We claim the combination of a platinum coil, C, or its effective equivalent, which is illuminated by electricity, with a transparent signal lantern, B, said combination being effected by arranging the coil, C, within the lantern, B, upon two conducting wires, D D, which are connected with an electro-galvanic battery.

BUTTON FASTENING—Lester Goodwin, of New York City : I do not claim the employment of two parallel stationary bars with arms forcibly bent at right angles in different directions to fasten, and which must be forcibly bent back again when removed, for that is recognized as a well-known idea.

But I claim making one right-angled piece, M D A E, movable on its perpendicular leg, in and embraced by a band, B, to another right-angled piece, M D C G, and depending upon it for support. And the controlling of the position of the movable right-angled piece by a spring, F E, and the confining the spring, F, obstructions, L, on the surface, H K, swept by it, substantially confined as represented.

PANTALOONS—Benjamin J. Greely, of Springfield, Mass. : I claim making up the back part of pants with a lapel and elastic straps, A, instead of seaming them, as they have invariably been made, also the cutting of the top part or waistbands of pants, so as to be perfectly and pleasantly suspended at only two points, as C.

SEED PLANTERS—Richard B. Ground, of Marine Town, Ill. : I claim the arrangement of the respective parts of the planting apparatus with the adjustable three-fold frame-work of my improved corn planter, substantially in the manner and for the purpose set forth.

INK ROLLERS—Alpheus A. Hanseom, of Suco, Me. : I claim First, The employment of the several parts specified for the purpose of adapting the carriage to different sized forms, as set forth.

Second, Supporting the ink roller, B, in the rolling carriage, C, constructed in the manner set forth, and regulating and stationing said roller, by means of screws, a, a, and nuts, c, c, for the purpose of making an adjustable hand roller for inking type, the peculiarities and advantages of which are fully described.

RING CLAMPS FOR ENGRAVERS, &c.—Thomas R. Hopkins, of Petersburg, Va. : I claim the adjustable encircling spring, D, arranged in the end of the stock, A, C, and attached to an adjustable rod E, substantially as and for the purpose set forth.

[This invention consists in an adjustable ring clamp or hand tool for jewelers' or engravers' use, its office being to hold and firmly clasp, rings of different diameters, during the operation of filing out and engraving names or devices on the inner side, or circumference of the same. It also answers for holding watch wheels while cutting out the open spaces between the rim and center, to form the arms; and, in fact, serves generally as a useful and simple hand tool for jewelers and engravers to use during the performance of a variety of operations similar to those above stated. We regard this as a most excellent little tool, and think the jeweler or engraver would be greatly benefited by possessing himself of it.]

CULTIVATORS—William A. Hopkins, of Vicksburg, Miss. : I claim the arrangement of the beam, A, transverse beam, B, handles, C, bolts, D, shares, E, standards, F, and stays, G, when the several parts are constructed and united as described, and not otherwise.

HORSESHOES—William E. Hubbard, of Randolph, N. Y. : I claim the combination of the hooks, B, the screw nut, c, being condensed as a part thereof, with the stiff unyielding shoe, A, for the purposes as set forth.

TYPE CASE FOR PRINTERS—Wm. A. Hunter, of Bryan, Ohio : I claim making the bottom of a type case of a metallic screen or other perforated material substantially in the manner and for the purpose described.

I also claim the sliding shaft, C, in combination with the perforated bottom, B, of a type case, substantially in the manner and for the purpose described.

SCREW PICKET—Oliver Hyde, of Benicia, Cal. : I claim the application of a loose swivel to the top of a coarse threaded screw, in combination with a catch, or lug, under the head of the screw, so that in connection the swivel becomes the lever to turn the screw into the ground.

BANK AND OTHER LOGS—Wm. Johnson, of Milwaukee, Wis. : I claim, first, Interposing between the keyhole of the lock, and the racking stump or thrust plate of the bolt, centrally pivoted horizontal tumblers, which, by the act of the key alone are brought into proper position to allow the unlocking movement of the bolt, when the key is withdrawn, the whole being constructed and capable of being operated as set forth.

Second, So connecting the sliding bridge plate to the sliding guard plate that the latter shall move to bring its slot in line with the slot in the socket by the motions of the bridge plate, and allowing the bridge plate motion only under the key shall be withdrawn from the socket, as described.

Third, Interposing between the horizontal tumblers and the pin or stud of the bridge plate an angular lever constructed as and operated by the means described.

Fourth, The arrangement of the bolt plate with the bridge plate and the guard plate in their relation to each other and the moving parts of the lock, so that while being operated by the same means, they have different periods of motion, as set forth.

PIPE COUPLING—David Kalmweiler, of Wilmington, N. C. : What I claim as my improvement in swiveling elbow joints for pipes for conveying gas, steam, or water is, combining with the male section, a, of the joint, an axial stem or rod, b, which passes into and through the female section, c, said stem having upon its projection end a screw thread to receive a tightening nut, d, and the joints, w and x, being provided with suitable washers, all as set forth.

MACHINES FOR CLEANING DAGUERRETYPE PLATES—Charles Ketchum, of Peru, N. Y. : I claim elements made as specified with the projections, J, as set forth; also the means for holding them in position with respect to each other, and the means for giving motion to the cleaners, when arranged as specified.

HARVESTERS—Wm. F. Ketchum, of Buffalo, N. Y. : I claim, first, The plate, E E, as a substitute for the usual main frame section, mainly within the rim of a driving wheel whose hub and spokes or supporting plates are placed at the outside laterally of the rim, as described.

Second, The internal zigzag groove in combination with the rock shaft, with its arms for vibrating the cutters, the whole arranged and operating as described.

Third, Supporting the boxes for the main shaft and the rock shaft upon a plate, or its equivalent placed mainly within the rim of the driving wheel, as set forth.

SKIRT HOORS—Martin Landenberger, of Philadelphia, Pa. : I claim constructing hoop skirts of a knitted fabric with elastic hoops interlooped in the same, substantially in the manner and for the purpose set forth.

ILLUMINATING COVERS FOR VAULTS, &c.—Elijah P. Leonard and P. H. Jackson, of New York City : We do not claim the supporting the plate of glass at their edges or circumference, as that is old. Nor do we claim the use of glass generally for the within named purpose.

We claim, first, The use of a plate or plates of glass in vaults covers, platforms, pavements, sidewalks, decks or for similar purposes, which plate or plates are supported from below, substantially in the manner specified.

Second, We claim thimbles, pins, or their equivalents, passing through perforations in a plate of glass or plates of glass, and formed with, connected to or resting on a suitable support beneath the plates of glass, substantially in the manner and for the purposes specified.

Third, We claim grooving or notching the edges of the plate of glass for the purpose of receiving projections, occupying said grooves or notches, and thus protecting the edges of the plate of glass from injury, as specified.

Fourth, We claim the use of perforated plates of glass for pavements, sidewalks, decks, platforms, vault covers, &c., prepared substantially in the manner and for the purposes described.

CANS FOR PRESERVING FOOD, &c.—Azul Storrs Lyman, of New York City : I claim the employment of the float surrounded by the protecting liquid, in combination with a vessel having an arrangement for discharging its contents, substantially as described for the purposes specified.

BEDSTEAD—Norman Lanphear, of Monmouth, Ill. : I do not claim the invention of circular or elliptical springs.

But I claim the arrangement of those parts of bedstead with each other which serve for stretching and

securing permanent elasticity in the bottoms thereof in the manner and by the means specifically set forth.

KNIFE AND SPOON CLEANER—James Macnish, of Berlin, Wis. : I claim an improved new article of manufacture, to wit, a machine combining three disks C D E, the faces of which are adapted for cleaning large and small knives and the periphery of one of the same for sharpening knives, and the peripheries, a, f, of the other two for cleaning the front and back of spoons and forks, substantially as set forth.

CARTRIDGES—G. W. Morse, of Baton Rouge, La. : I claim the case secured in the cartridge case in either of the modes described, and all equivalents thereto for the purpose mentioned.

I also claim the combination and arrangement of the percussion cap and perforated disk, as described and for the purpose mentioned and any and all equivalents thereto.

NET FOR CATCHING FISH AT SEA—Benj. Merritt, Jr., of Charlestown, Mass. : I claim combining a seine or net with the hull of a navigable vessel substantially in the manner, and so as to operate therewith as described.

I also claim the mode of spreading the ends and outer edge of the net, viz., by the booms, f, f, the sprits, d, d, and the hauling tackles, h, h, arranged and applied together and to the vessel as specified.

I also claim the combination of the brailing line, l, and the lifting tackles, i, i, and m, with the net, its booms and the masts.

GAGE COCK AND ALARM WHISTLE—Alexander Miller, of Cleveland, Ohio : I am aware that a steam whistle has been so combined with a valve, and with a float that when the water in the boiler becomes low, the descent of the float will operate the valve and allow steam to escape to the whistle and give alarm, and it is upon this combination that my improvement bears, but I do not claim to have invented the combination nor the means or devices irrespective of their arrangement by and under which such combination may be made useful, and therefore—

What I claim is the described arrangement of the steam alarm whistle and gage cock, with the jointed lever, H, m, n, when constructed and operating in the manner and for the purpose set forth.

HAND DRILL—H. H. Packer, of Boston, Mass. : I claim the combination of the cylindrical shells, A', and m, with the feedscrew and screw handle, substantially as and for the purpose specified.

VAPOUR LAMPS—Wm. H. Racy, of Saint Augustine, Fla. : I claim the employment or use of a tube, H, and burner, K, arranged with a lamp or fountain, as shown, or in any way, so that the flame which is fed direct from the burning material within the fountain may serve as gas-generator to supply the illuminating flame, M, that issues from burner, K, and this I claim irrespective of any particular means which may be employed for supplying the illuminating flame with oxygen.

[A description of this invention will be found on another page.]

CHURNS—Alfred Rose, of Pen Yan, N. Y. : I claim the cam wheels, E E, and the part, D, constructed and arranged in the manner represented and for the purpose set forth.

APPARATUS FOR MANUFACTURING WHITE LEAD—R. Rowland, of New York City : I claim the combined manufacture of vinegar and white lead, and for the purpose of carrying on both simultaneously and without injury to the one or the other, namely, fitting the [lots of vinegar vats, D (when said vats are placed in a room below the corroding room)] to the floor, C, of the corroding room, substantially as above described in combination with covers, E, provided with openings, u, and valves, d, or any equivalent means for regulating the supply of acid or altogether closing up the communication between the interior of the vats and the corroding room when necessary, all substantially as described and represented in the drawings.

WASHING MACHINE—Perry C. Rude, of Morgantown, Va. : I claim, in combination with the plunger, G, the concave rack formed of stationary ribs, f, and lining ones, g, so that the water behind the rack shall be jetted through the openings, i, in the stationary ribs into the clothes, substantially in the manner set forth.

COOKING STOVES—Silas T. Savage, of Albany, N. Y. : I do not claim the employment of hot air to heat an oven.

But I claim the arrangement of air tubes across the main flue of a cooking stove, for the purpose of receiving and transmitting the caloric of the fuel to the walls of an oven by a current of heated air, substantially as set forth in the specification.

GRINDING MILLS—William Scarlett, of Kenosha, Wis. : I do not claim broadly the screw rod with nut at the top for adjusting the grinding surfaces. Nor do I claim broadly the employment of crushing knives or blades above the grinding surfaces.

But I claim, first, The combination of the screw rod, B F J, thimble, c, g, and separated hubs, E K e m n o, in the particular manner shown, and for the purposes described.

Second, The arrangement of the conical feed plate in the bottom of the hopper, loosely over the central box of the central screw, and so as to be adjusted vertically by means of set screws, independently of the crushing and grinding devices, in the manner and for the purposes set forth.

Third, The arrangement of the cutters, g, so that their vertical edge shall only nearly touch the horizontal edge of the cutter, S, and thus ensure the crushing of the corn, &c., between the same, at a point near the center of the mill, substantially as and for the purposes set forth.

[This invention relates to an improvement in that class of grinding mills which are constructed of cast iron, generally termed portable, and operated usually by animal power, for the purpose of grinding corn and cob and other substances used as food for stock. The invention consists, first, in a novel arrangement of certain parts, whereby these parts are connected in the simplest possible way, and the construction of the mill rendered very simple, and the principle bearing of its working parts kept continually in a perfectly lubricated state. Secondly, There is a peculiar device with which ears of corn may be crushed with a moderate expenditure of power. Thirdly, An adjustable feed plate is used, placed within the hopper, so as to regulate the supply of small grain to the mill, and prevent the choking and clogging of the same.]

GRAIN SEPARATORS—H. H. Seeley and Philander Griswold, of Hudson, Mich. : We do not claim operating the shoe, B, by means of the eccentric, F', for this is a well known mechanical device, used for analogous purposes.

But we claim forming the fan box, C, of two parts, c d, and the fan, D, made also in two parts, so as to have one portion of the fan for each compartment of the box, and having the slides, F F, attached to the box, C, to regulate the admission of air into the opening, f, between the parts, c d, of the fan box, the whole being arranged as and for the purpose specified.

FIRE AND BURGLAR PROOF SAFES—Theodore Sharts, of Albany, N. Y. : I claim an improved new article of manufacture, to wit, a fire and burglar proof sectional cast iron safe, which has the junction between its sections accomplished by means of tongues and grooves, g h i j e, and maintained by means of screw rods, E E, which have their ends entirely hid from sight and inaccessible to burglars, when the safe is finished, by flowing melted metal, p p', over and around the same, as set forth.

[A notice of this improvement will be found on another page.]

STAVE MACHINE—William M. Sloane, of Buffalo, N. Y. : I claim operating the two rotary cutters, R R, in a vertically moving frame, F, substantially as set forth. Second, I claim the arrangement of the cutters, R R and P, relatively to the revolving bed, A, former, L, and feed rollers, for the purposes and substantially as set forth.

Third, I claim the cam, K, when constructed according to the formula and used for the purpose as set forth.

SEED PLANTERS—George Smith and A. G. Perry, of Clyde, Ohio : We claim the shaft, O, and spring, P, adjustable spring box, Y, pulley, H, lever, L, seeding cylinder, R, hopper, S, and the cultivator, as described when the whole are constructed and arranged for operation conjointly, in the manner and for the purposes set forth.

SEWING MACHINES—E. Harry Smith, of New York, N. Y. : I claim revolving the shuttle by means of a series of drivers, B, on the surface of a disk that is arranged to rotate at an angle to the plane of the shuttle's rotation, by which a continuous motion is given to the shuttle, while the drivers operate in such a manner that the needle and its thread are unobstructed in their action, substantially as specified.

CHURN—William H. Tambling, of Berlin, Wis. : I claim arranging a rotating semi-sphere, H, on the upper side of the upper dasher, of reverse acting or forward and back acting churns, substantially as and for the purposes set forth.

FOUNTAIN PENS—Susan E. Taylor, of East Cambridge, Mass. : I do not claim a pen combined or provided with a fountain or reservoir stationary within the handle or penholder, and having a conduit leading from it in a manner so as to conduct ink from the fountain to the pen. Nor do I claim providing such fountain or reservoir, conduit and pen, with a piston to move in the reservoir. Nor do I claim furnishing the fountain with a stop cock arranged in the conduit and to regulate the supply of fluid to the pen. Nor do I claim providing the upper end of the reservoir or fountain with a screw cap, one or more air holes so arranged as to be covered by the screw cap.

But I claim an improved fountain pen, made with a penholder and a separate adjustable fountain, applied so as to be movable with the holder, substantially as and for the purpose as described.

I also claim when the tubular reservoir is provided with a piston and discharge opening, a small air hole, g, through the side of the reservoir, so that the piston, besides being able to perform the office of elevating the ink into the fountain, may be made to cover the air hole more or less, and to operate as a valve to it, substantially in the manner and for the purpose as described.

SEWING MACHINES—John Thomson, of Worcester, Mass. : I do not claim broadly the use of a device separate from the looper for the purpose of spreading the second thread, as such a device has before been proposed. Neither do I claim a double looper to open the loop of needle thread and form a single chain stitch, as such a device has heretofore been used, and may be seen in the patents of Wm. Sage, June 30, 1851, and Rixford & Dimock, Jan. 19, 1855; but neither of these devices are used with or applicable to spreading the second thread to form a loop for the needle, because the device that spreads the said second thread must move between the looper having the eye for the second thread and the under side of the bed of the machine, for if said device moved at the side of the looper the said second thread would draw from its eye down between the two parts, and the spreader become useless. Therefore I claim the spreading finger, 8, acting between the bed of the machine and the looper, i, that carries the second thread in such a manner that both enter the loop of needle thread, and then the spreader, 8, extends the loop of second thread as it draws from the eye of the looper to the cloth, substantially as and for the purposes specified.

BRAD PUNCH—John Thorndike, of North Weare, N. H. : I claim the cylinder, A, C, provided with the rod, B, punch, A, and rod, F, the rod, B, having a spiral spring, D, placed around it, the above parts being used in connection with the reserve box, E, placed relatively with the cylinder, C, and the whole arranged to operate as and for the purpose set forth.

[A notice of this improvement will be found in another page.]

PROPELLER—William Thurber, of Olean, N. Y. : I claim the falling face of the blade in combination with the rear inclined surface, P, and the filling, Q, on the back of the blade, the construction and operation being substantially as set forth.

MACHINE FOR RESAWING LUMBER—E. H. Titus, of Wilkesbarre, Pa., and John Sharp, of Phillipsburg, Pa. : We are aware that boards or "stuff" have been presented and fed obliquely to saws for the purpose of sawing in taper form, and we, therefore, do not claim broadly such operation.

But we claim the tilting frame, D, provided with feed and pressure rollers, f, n, and also with the planer, j, and jointing cutters, t, if desired, the frame being applied to the machine and arranged to operate substantially as and for the purpose set forth.

[This invention consists in having the feed rollers, pressure rollers, rotary planers and jointing cutters fitted within an adjustable frame, in such a manner that the rollers are rendered susceptible of an independent adjustment to conform to the varying thickness of boards or other "stuff" to be resawed, and the frame, at the same time, allowed to be tilted or inclined so that the "stuff" may be presented obliquely to the saw when required—the whole being so arranged that the stuff may be resawed into strips or pieces with parallel or taper sides as occasion may require, and in either case planed and jointed at the same time.]

BURNING FLUID LAMPS—Hiram Todd, of Columbus, Ohio : I do not claim the application of a water chamber around the wick tubes of lamps, to apply water to the wick to extinguish the light or any such device.

But I claim the arrangement of the water chamber, D, with the tubes, B, C, and wick tube, I, constructed and operating as and for the purposes set forth. I also claim the arrangement of the safety valve, F, and tube, E, with the wick tube, I, in the manner and for the purposes specified.

COTTON GINS—J. Alexander Ventress, of Woodville, Miss. : I claim in combination with the ribs set close up to the saws, forming of a clear space between the ribs at that point where the cotton carries the cotton through them, to prevent said cotton from being brought in contact with said ribs, substantially as and for the purpose set forth.

METHOD OF FASTENING THE WICK TUBE OF LAMP CAPS—William W. Wylie, of Longmeadow, Mass. : I claim the method of fastening the wick tube and spindle for raising and depressing the wick in lamp attachments, without the use of solder, in the manner described.

I claim no other part of the attachment.

SEED PLANTERS—Augustus Wales, of Pontiac, Ill. : I claim the arrangement of the two cranks, g, to the wheel, f, the pitmans, h, h, the levers, i, i, j, and rollers, D, D, with gates, E, E, provided with slides, c, c, all being constructed and operated in the manner set forth and for the purpose described.

BEDSTEAD—C. A. Warner, of Bristol, Conn. : I do not claim either of the parts separately considered, as I know they have been in use.

But I claim the arrangement of the staples and pins, C, D, pulleys, B, spindle, F, ratchet, G, pawl, H, in the manner and for the purpose as described.

ATTACHING AND HOUSING PROPELLERS—William Webster, of Jefferson county, Washington Territory : I claim, first, The sliding ports, G, H, I, (of any shape required by the form of hull and propellers), and con-

nected apparatus by which they are operated for covering and uncovers the propellers, substantially as specified, in combination with the trunk, J, and trap hatch, P.

Second, The pipe, F, leading from the propeller chamber to the pump well, as and for the purpose described.

Third, The mode of attaching and detaching the after propeller blades as and for the purpose specified in combination with the slide ports and propeller chambers.

Fourth, The air chambers in the bow and stern as arranged relatively to the propeller recesses or chambers, substantially as and for the purpose described.

FIRE LADDERS—Joseph Welte, of Buffalo, N. Y. : I do not claim the ladders described, nor their combination, nor the extension thereof, by any means. Neither do I claim hinging the ladders to the carriage.

I claim the combination of the right angled levers, B and P, (hinged to the carriage) with the frame, B, and windlass, E, for the purpose of elevating the ladders and lowering the foot thereby easily to the ground, and for detaching the same from the carriage, substantially as set forth.

I also claim the combination of the right angled frame, h, h, including the wheels, i, i, with the top most ladder, for the purposes as set forth.

SEWING MACHINES—H. B. West and H. F. Willson, of Elyria, Ohio : We claim the spring looper bar in combination with the eccentric, I, and the oscillating fork, J, and stationary projection, N, against which the outer end of the looper bar strikes, for the purpose of carrying the looper bar back and forth as required and giving it two intermittent or stop motions, carrying the looper into a position where the needle will pass through it, and allowing the spring again to recoil immediately after the needle has passed through said loop—the whole being constructed in the manner and for the purposes described.

USE OF DENTISTS' PATTERN PLATES—William M. Wright, of Pittsburg, Pa. : I make no claim to the casting of such work, the process being described in the Dental Journal of 1852.

But I claim the use of metallic pattern plates or their equivalents, made as described for the purpose set forth and specified.

OBTAINING PURE SULPHUROUS ACID—Joseph Albrecht, (assignor to Charles E. Rull), of New Orleans, La. : I do not claim to have made any new discovery in chemical science, but I have applied known principles of science in such new and useful manner as to greatly improve the act of making pure sulphurous acid on a large scale.

I claim the described process for the purification of sulphurous acid gas by absorbing the acid into water or an alkaline solution, and the subsequent expulsion therefrom by the use of heat or steam, substantially as set forth for the purposes described.

ORE SEPARATOR—Hezekiah Bradford, (assignor to Horatio Bogert), of New York, N. Y. : Having thus pointed out what distinguishes my invention from the old and well known hand jig, the mode of construction which I have tried with success, and the modifications which I have contemplated the better to distinguish the character of my invention from merely formal changes.

What I claim, is making the sieve box, which has an up and down motion, with apertures above the sieve or the equivalent thereof, when acting in and in combination with water or a surrounding tank or trough, substantially as and for the purpose specified.

I also claim in combination therewith, the partition, or its equivalent, in the water tank, substantially as specified, to keep the matter which is washed over separate from the substances which pass through the meshes of the sieve, as set forth.

I also claim covering the surface of the sieve with particles of matter of larger size than the meshes of the sieve, that they may lay on and not enter or pass through such meshes, but act as valves to such meshes as described when such mode of operation is to be employed for separating substances of different specific gravity, which have been prepared and assorted so as to be of less size than the meshes of the sieve that they may pass through such meshes freely, substantially and for the purpose specified.

DOUBLE ACTING GUN LOCK—Elisha Brey, (assignor to himself and J. S. Swartley), of Pensacola, Fla. : I claim the swivel hammer, H, in combination with the center swell pin, C, or its equivalent, constructed, arranged and operating substantially as and for the purpose set forth.

CONVERTING PEAT INTO CHARCOAL—J. Burrows Hyde, (assignor to Anna M. Hyde), of New York, N. Y. : I claim the process described of converting peaty matters, into charcoal by previously submitting them to heat in a drying chamber, described and heated as set forth, and by carbonizing the material and subsequently cooling the same in the manner set forth.

SASH FASTENER—Solomon Carhart and Wm. Moore of Brooklyn, N. Y., assignors to James H. McWilliams, of New York, N. Y. : We claim the hinged drop, a, and plate, d, attached to the lower sash in combination with the plate, f, attached to the upper sash when the said drop, e, is kept beneath the edge of the plate, f, by means of the bolt, Q, or its equivalent, substantially as and for the purposes specified.

APPARATUS FOR RECTIFYING—Ethan Campbell, (assignor to Henry Thayer), of Cambridgeport, Mass. : I do not claim that the pan, condenser, column or receivers are of my invention.

But I claim the general combination of the different parts, with the attachment of the air pump so as to produce the effect desired.

I claim combining with the rectifying column, B, the vertical discharge pipe, j, and the series of horizontal pipes which connect it with the column, B, as set forth.

SEWING MACHINES—Thomas A. Dugdale, (assignor to himself and John A. Burbank), of Richmond, Ind. : I do not claim giving motion to the shuttle and feeding device by means of the vibrating motion of the needle arm. I do not claim the spiral groove, cam, eccentric or inclined plane, neither separately nor combined, as they have before been used.

But I claim the construction of lever, I, with its circle at the end, through which upright, F, works in combination with stud, j, and slot, f, and eccentric, M, and feed hand, m, the whole being constructed, arranged and operated substantially as described and for the purposes set forth.

DEVICE FOR SECURING CUTTERS IN ROTARY PLANING MACHINES—Sands F. Fortman, (assignor to Henry Z. Drew), of New York, N. Y. : I do not claim a beading or rebating cutter attached to the cylinder of a planing machine in itself.

But I claim securing a beading or rebating cutter into a slot in the stock of a planing machine cylinder by pressure from the straight cutter or knife, and from a screw running nearly parallel with the axis of the rotary cutter, substantially as and for the purposes specified.

SEWING MACHINES—Westley Miller, of Cambridge, N. Y., assignor to himself and Wm. P. Prescott, of New York, N. Y. : I do not claim a looper moving in the arc of a circle, as that has before been used. Neither do I claim moving such looper by a disconnected lever. But I claim the hooked heel piece, l, and straight side, l, on the looper stock, g, in combination with the finger, h, having a reciprocating motion on the slide, f, whereby the necessary motions for taking a loop pausing during the ascent and commencement of the descent of the needle thread are given from the continuously reciprocating finger, h, without the use of springs, as described and shown.

QUILTING FRAME—John King (assignor to himself, Wm. Hegbie, Henry Link, and G. R. Comstock, of Little Falls, N. Y. : I claim the arrangement of the shafts, C, G and H, and connecting bar, R, operating substantially as and for the purpose described.

DRAWING ROLLERS—S. P. Spencer (assignor to himself, S. S. Spencer and H. Boardman), of Lancaster, Pa. : I claim providing the lower roller with grooves, d, and the upper roller with leather collars, c, the said collar, c, being garraged to run into the grooves, d, substantially as and for the purposes described.

[This invention consists in a certain construction of drawing rollers, which not only insures a much more perfect drawing, but reduces the first cost of the rollers, and also the cost of keeping them in repair.]

REVOLVING FIREARMS—F. D. Newbury, (assignor to R. V. De Witt, Jr.) of Albany, N. Y. : I claim, first, The trigger, T, formed, fitted and operating as described, for the purpose of cocking the hammer, revolving the cylinder, holding the cylinder in the act of firing, and firing the piece.

Second, The combination of hammer, its pin, b, the trigger, and the ratchet wheel, formed and arranged substantially and for the purposes set forth in this specification.

APPARATUS FOR HEATING TIRES—J. J. White (assignor to himself and Francis Fox), of Philadelphia, Pa. : I claim the casting, B, with its revolving grate and lid, in combination with the fire chamber S, and fan, R, or other equivalent blowing apparatus, when the whole are arranged for joint operation, substantially as and for the purpose set forth.

VALVE GEARING FOR STEAM ENGINES—J. E. Allen, of New York City : I do not claim the use of a sliding toe, like g, applied to the arm of the valve rock shaft.

But I claim the arrangement of the swinging plate or open arm, F, with its two pointed swinging piece, H, or equivalent, substantially as described in combination with the single rock shaft, B, its arm, L, and movable toe, g, to operate the two induction valves as described.

[A notice of this improvement will be found in another column.]

RAILROAD CAR BRAKES—H. M. Collier, of Binghamton, N. Y. : I claim the arrangement and combination of the rock shaft, R, with the spring, H, and the axle boxes, I, I, substantially as shown and described.

DESIGNS.

STOVES—James Horton (assignor to David Stuart and Richard Peterson), of Philadelphia, Pa.

STOVES—Joseph A. Reed (assignor to David Stuart and Richard Peterson), of Philadelphia, Pa.

COOKING STOVES—G. Smith and H. Brown (assignors to Leibbrandt, McDowell & Co.), of Philadelphia, Pa.

COOKING STOVES—G. Smith and H. Brown (assignors to Leibbrandt, McDowell & Co.), of Philadelphia, Pa.

Recent Patented Improvements.

The following inventions have been patented this week, as will be found by referring to our List of Claims:—

VALVE GEAR FOR STEAM ENGINES—John F. Allen, of New York, has invented an improved valve gear, which consists in a certain arrangement of parts for operating the valve rock shaft of a steam engine in such a manner as to effect the induction of the steam at the proper time, and cut it off, at various points in the stroke. The invention can be used with both slide and poppet valves.

GRINDING MILL—An improved mill for grinding bark for tanning purposes, has been invented by B. A. Beardsley, of Waterville, N. Y. It consists in the employment of a series of conical toothed grinding shells, stationary toothed arms, and toothed cases, arranged relatively with each other, so that the grinding capacity of the mill is greatly augmented.

DEVICE FOR UPSETTING TIRES—G. W. Cooper, of Morenci, Mich., is the inventor of this device, which consists in a novel arrangement of the jaws or clamps which grasp the tire or bar to be upset, and which, owing to their peculiar arrangement, will allow the bar, while being compressed or upset, to be firmly pressed down upon its bed. This renders the device much more efficient than those now in use.

PORTABLE SAFE—The object of this invention is to obtain a safe for domestic or family use, and one that may be constructed at a comparatively small cost, be perfectly fire-proof, and though small, be sufficiently large to contain jewelry, and small valuables. Theodore Sharts, of Albany, N. Y., is the inventor.

BRAD PUNCH—John Thorndike, of North Weare, N. H., has invented an implement, the object of which is to facilitate the driving of brads, and consequently expediting the labor of "sticking" or attaching molding or beading to various articles of joinery, cabinet and similar work.

DEVICE FOR SKINNING EELS—This invention, which is certainly novel, and to the use of which we hope the eels will soon become accustomed, consists in the employment of a clamp or holder and decapitating knife, used in connection with a griper and ripping knife, or their equivalents, whereby the desired work, viz., the skinning of eels, may be performed very expeditiously, and in a manner far preferable—i. e., to the operator, not

the eels—to that done by hand. The inventor is Adam Emeigh, of Jerusalem, N. Y.

IMPROVED PROCESS OF MAKING OLD RAILS INTO NEW ONES—Old railroad rails are taken, and with them the "pile" is formed, so that the labor and expense of the preparatory rolling of each old rail into flat bars, as at present practiced, is avoided, and new rails are rolled direct from the old ones, equally as good, in every respect, as the ones rolled or constructed by the old process. Giles Edwards, of Johnstown, Pa., is the inventor.

LAMP—W. H. Racey, of Saint Augustine, Fla., has invented an improved lamp, the object of which is to supply the flame with a large or requisite amount of oxygen, without the employment of the glass chimney, that is generally used at present. This lamp is more especially adapted to burn coal oil, and other substances rich in carbon, although it is applicable to any light-producing material. The illuminating fluid known as coal oil, gives, when properly consumed, a beautiful light, but on account of a chimney having to be added to the lamp, it could not be moved from place to place; with this lamp it can, and therefore this invention will do much to encourage the use of this cheap source of illumination.

Dudley Observatory.—A Row.

This institution, not yet fairly under weigh, has got into trouble, and the trustees have summarily removed Mr. B. A. Gould from the post of Superintendent Astronomer, for alleged impertinence and incivility, and also for his want of attention to what they conceived to be the business of the Observatory. The Albany *Alycus* contains a full and spicy account of the whole proceedings, to which we would refer such of our readers as may be further interested.

This matter is akin to the troubles which for some years past have disturbed and nearly destroyed the usefulness of the American Association—a small clique who have their headquarters at Cambridge, Mass., and whom the Albany trustees designate as the "wise men of the east," assume to dictate and rule in all matters of science, and attempt to ostracise all who do not in some way bow before the great New England university. These men have studiously resisted all attempts to introduce practical topics for discussion in the Association, and do not consider the thoughts and suggestions of any enterprising mechanic as at all worthy of their attention. They would much rather discuss the question "Why roosters crow at night," or the "mathematics of phylotaxis," or still better, spend their time in self-adulation.

Since the above was written, Mrs. Dudley has requested a majority of the trustees to resign, and the Scientific Council has also reprimanded them. Altogether it seems as if our quiet gubernatorial city was going to be the scene of a great disturbance, and, until the difficulty is settled, we hope that the stars will not miss their accustomed watching. Really these quarrels in an institution designed for the world's benefit make the combatants look very small, and cause the world to lose its appreciation of men of science.

Facts about Gunpowder.

The heat given out by the combustion of gunpowder is 1,145° Fah. The temperature of the flame must be 5,390°. The tension of the gases at the moment of explosion does not exceed 4,373 atmospheres, in place of 50,000 or 100,000, at which it has been estimated. The amount of force exerted by one pound of gunpowder is 221,240 pounds raised one foot high.—*Cosmos*.

Explanation.

Owing to the publication in this number of our paper of the report of the decision in Goodyear's case, we are compelled to postpone the continuation of the articles on boilers and furnaces until next week, when we will give the third of the series.