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Light Colored Copal Varnish.

Take one pound of pale African copal, fuse t in an iron pot, then add a quart of clear hot linseed oil; stir well, then boil until the mixture is stringy. When cool, add two quarts of turpentine and mix well.

Improved Force Pump.

Force pumps in which the piston rod passes through the air chamber, are to some extent objectionable, because the air, after a time, escapes from the chamber through the water and packing, and the pump must then be opened so as to admit a new supply. This objection is entirely removed in the present improvement. The inventor provides the air chamber with a tube, through which the piston rod moves without coming in contact with the contents of the chamber.

In the engraving A is the air chamber, B the tube which separates the piston rod, C, from the air chamber. D is a cup, which receives the lower end of the tube, B; E E is the water line in the chamber; the cup is always below the water, and is thus kept tight, so that neither liquid nor air can ever reach the piston rod from the air chamber.

Another valuable feature of this pump is the cheapness with which it is constructed.—The shell, F, is all cast in one piece, and requires little or no machine finishing; the same may be said of the bed plate, G, and valve plates, *e e e*; in fact, almost the only part that need to be placed in the lathe is the pump barrel, I.

The operations of this pump are as follows: —When the piston rises, the water enters through supply pipe, M, and valve, *f*, into the pump barrel, I. Any water that remained in the pump barrel above the piston, is, by the rise of the piston, forced out through valve *g* into the exit nozzle, J, as shown by the arrow.

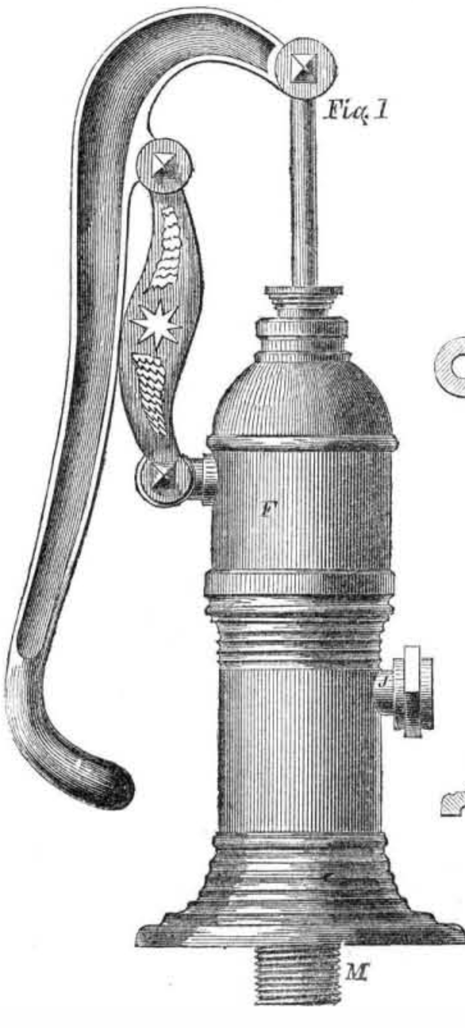
When the piston descends the valve, *f*, closes, valve *h* opens, and the water is forced up out through the nozzle, as indicated by the arrow at valve *h*. The descent of the piston causes a vacuum above, valves *f g*, are closed and valve *i* opened; the water rushes in through valve *i* to fill the vacuum; thus a double action of the piston is obtained, which both lifts and forces in its ascent and descent.

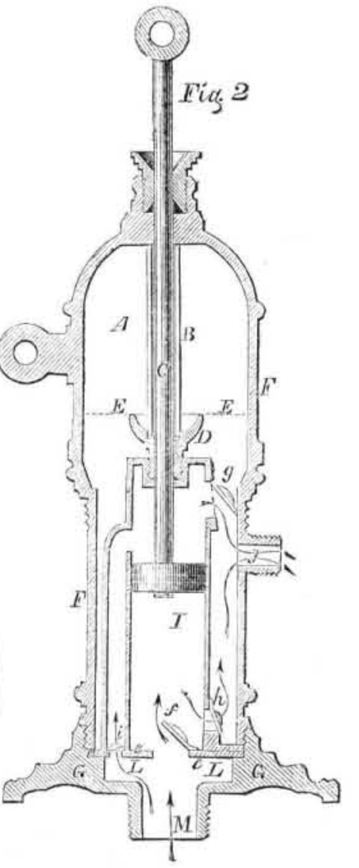
The bottom valve plates, *e*, it will be seen, are detached pieces, yet they are held firm by the combination of the bed plate, G, and shell, F; being thus detached, the valve plates and valves can be fitted much more easily and cheaply than if the whole pump had to be handled; the necessity of a dry sand core in order to form the water chamber, L, is also avoided, and the casting cheapened.

The working parts of the pump are nearly all under water, whereby they are rendered more than ordinarily tight and effective; the water is also received and transmitted in a very direct and effective manner, the openings being all of them easy and liberal; violent agitation and unnecessary movement is thus done away with, and the motive power required to raise the water is lessened.

This pump strikes us as being one of unusual excellence. It is simple, and yet, apparently very effective. Large pumps of this kind could, we should think, be made very cheap, and we see no reason why they will not prove, in use, to be equally as effective, durable, and economical of power as any of the more costly pumps having the same capacity.

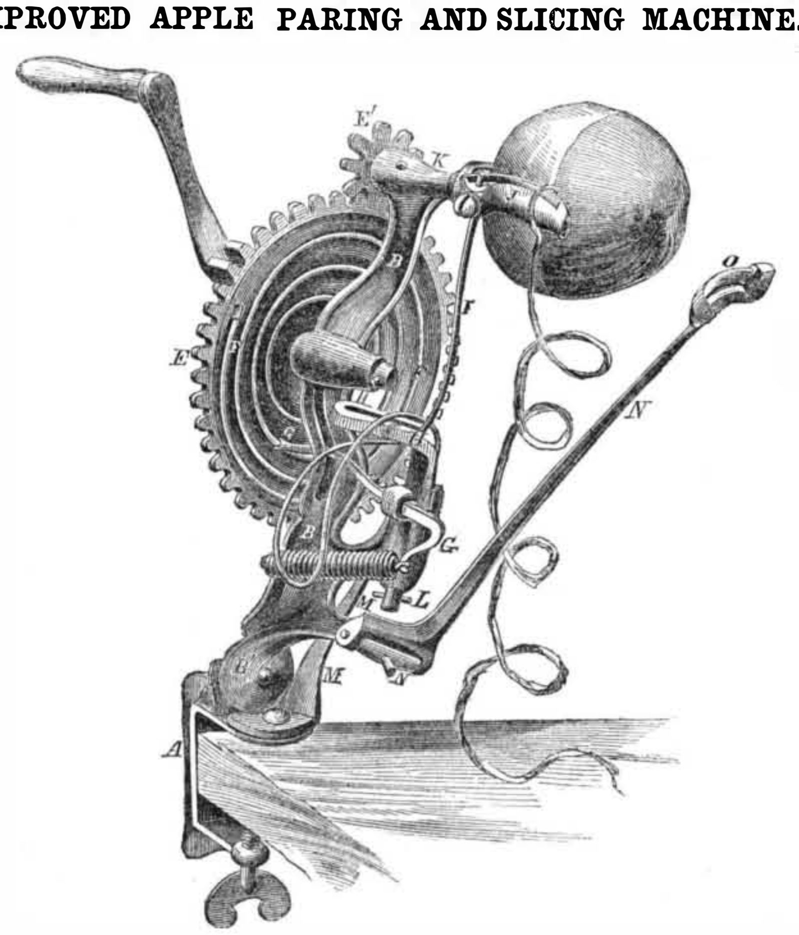
IMPROVED DOUBLE ACTING FORCE PUMP.





The inventor is Mr. Charles N. Lewis, of Seneca Falls, N. Y., and of him any further information can be had. His patent bears date Jan. 1, 1856.

IMPROVED APPLE PARING AND SLICING MACHINE.



Machine for Paring and Slicing Apples.

The accompanying engraving represents an ingenius machine for paring and slicing apples and other fruit, a patent for the parer having been granted to S. N. Maxam, April 10th, 1855, and measures have been taken to secure a patent for the slicer, that being of recent invention. The machine is small, nearly all its parts being of cast-iron, the whole weighing only 2 pounds 10 ounces.

The contrivance is secured to the table by means of the clamp, A, and to this is attached the standard, B, by means of the strong joint at B', which permits the careening of the machine both right and left. E is the driving wheel, motion being given by means of the crank to all the parts. Upon the face of the driving wheel, E, is an inclined scroll, F, upon which one end of the rack bar, G, slides; this rack connects with, and gives motion to, the loop gear, H, which supports and guides the spring rod, I, upon which is affixed the paring knife, J.

The machine being careened, as shown in the cut, an apple is placed upon the fork, K, when by rotation of the crank the driving wheel, E, gives motion to the pinion, E', and thence to the fork and apple, while the scroll, F, acting through the rack bar, G, upon the loop gear, H, the paring knife, J, is thereby passed, during the rotation of the apple, from its base around to its outer end, and effectually *pares* the apple, when—the outer circuit of the scroll, F, having passed the end of the rack bar, G,—the coiled spring attached to the other or lower end of the rack bar, contracts, and returns the rack bar, loop gear, spring rod, and paring knife to their original positions, in readiness to repeat the operation of paring.

Without removing the apple from the fork the machine is now careened in an opposite direction, when the pin, L, which secures the loop gear, H, within its socket, comes in contact with the tripping post, M, causing the partial revolution of the loop gear, and thereby withdrawing the end of the rack bar, G, from the scroll, F, thus permitting the backward rotation of the crank and driving wheel, together with the fork and apple. The slicing arm, N, which is hinged to the standard, B, and sustains the slicing knife, O, is now swung by the left hand and pressed lightly against the apple, which is thereby cut into one continuous slice or ribbon, leaving only the core, in cylindrical form upon the fork.

The careening of the machine perfectly accomplishes the separation of the slices from the parings, while the parabolic curvature of the slicing knife produces such a formation of slices that they do not pack closely together while drying, and yet are not in the least objectionable for immediate cooking.

This is a novel contrivance; that it works well we know from actual experiment. More information may be obtained, by letter, of the proprietors, Maxam & Smith, Shelburne Falls, Mass.

Saltpeter for Butter and Meat.

What office does saltpeter perform in the preservation of butter and meat that is not as well performed by the use of common salt alone? This is an important question, because, if saltpeter exerts no special preservative influence not to be found in common salt then it should not be used in butter nor in the brine of meat, because it has a bitter taste, and must impart more or less of it to butter, especially. We have been assured by those who have packed butter with and without saltpeter, that it is much better not to use it for this purpose. The best plan of salting butter is to use the purest salt only; heat it on the fire before using it, to drive off all the moisture, and apply it warm, when working the butter.

An antedeluvian duck is stated by a Paris paper to have recently been dug out alive in France while cutting a railroad tunnel. The Paris editors are strange ducks, to give currency to such stories.

[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING MARCH 11, 1856.

R. R. CAR BRAKES—Vincent Barness of Washington, D. C.: I claim attaching the frame or brake, C, to the truck, B, by the parallel levers, a, so as to form a self-acting reversible brake, operating as set forth.

HOT BLAST FURNACE—La Fayette Blair, of Painesville, O.: I claim the tunnels, b, diaphragms, h i j k l, and m, division plate, d, and casing, e, arranged and combined as described and for the purpose specified.

VALVES FOR LOCK GATES—Wm. Butler, of Little Falls, N. Y.: I claim the combination of the flange valve, A, and slide valve, B, when said flange valve, A, is hinged to the lower end of the valve, B, and made to operate in the manner and for the purposes described.

ORE WASHER—Wm. L. Carter, of Marietta, Pa.: I am aware that a cylindrical vessel with a forced current of water against the material passing through it, has been used used for washing ores. This I do not claim.

But I claim a conical vessel provided with shovels and pins or projections whose shaft is horizontal, and lower side inclined, so that water introduced at one end shall have a natural flow to the other end, and meet the ores as they pass in an opposite direction, to wash them, substantially in the manner and for the purpose set forth.

INDIA RUBBER BELTING OR BANDING—J. H. Cheever, of Boston, Mass.: I do not claim the mode of preparing the rubber, or of compounding or vulcanizing the fabric, nor the machinery, and therefore, these are all well known to the manufacturer of rubber goods.

Nor do I claim the compounding of fibers of cotton or flax with india rubber, as this has been done for the purpose of packing steam joints, and for other similar purposes; but it has never been done in the manner described; nor has it ever before been used to constitute the fabric known in commerce, by belting or banding.

Nor do I claim by this patent the new process of making fibrous rubber goods in such a form that the fibers are arranged crossing each other in the manner described, for enabling the fabric to resist tension in all directions, and giving it flexibility without elasticity, as I intend to make these the subject of a separate application for Letters Patent.

But I claim the improvement in the manufacture of rubber belting or banding, which consists in compounding fibers of cotton or flax with india rubber, substantially in the manner and by the processes described.

BENCH CLAMP—C. W. Clapp of Wappingers Falls, N Y.: I claim the hook, D, attached to the shank, E, which is formed of two parts, a b, having beveled ends and connected as shown, the shank being fitted in the groove, B, in the bench, and used in connection with the stationary hook, C, substantially as shown for the purpose specified.

WASHING MACHINES—E. B. Clement and S. G. Willie of Barnet, Vt.: We claim the saw teeth shaped rubbers, D D, made and operating substantially as described.

HEATING BUILDINGS BY STEAM—Charles Davenport, of Watertown, Mass.: I claim so connecting the float with the dampers of both the draft and smoke flues by means of the chains, M and L, or their equivalents, that the pressure of the steam within the boiler may be graduated to the temperature of the atmosphere, and the degree of heat required within the building, as set forth.

Second, so connecting the float which actuates the damper of the draft and smoke flues with the cock, X, which admits water from the supply cistern to the boiler, by means of the lever or its equivalent, that while the float is left free to rise to any required distance, it will open the cock whenever the water falls below its level, as described.

SEWING MACHINES—H. R. David, of New York City: I claim the method described and shown of leading the thread to avoid wear or derangement thereto, by combining with the slide, D, in the patent of David M. Smith, of 16th of April, 1850, and on which this is an improvement, the needle, F, constructed with the two eyes and the groove to act in the manner and for the purposes specified.

PREPARING HEMP AND FLAX—Nancy Davy, executrix of Edward Davy, of Crediton, Eng.: I claim the reciprocating plate or plates, f, in combination with holding or retaining rollers, c, for effecting the separation of the fibers of flax and hemp, substantially as described and combined therewith.

I also claim the combination of the hackle bar, operated as described, with the rollers and reciprocating breakers or plates.

PREVENTING HORSES IN CARRIAGES FROM FALLING—R. D. Dwyer of Richmond, Va.: I claim the application of a suitable projecting frame, attached to the most convenient part of the carriage, or to the carriage or front axle, projecting over and between the horse or horses sufficiently far and at a suitable distance above, so that straps, chains, or other suitable fastenings can be attached to the harness round the body of the horse and to the collar, as shown, for the purpose described.

PARALLEL RULER—R. Eickemeyer, of Yonkers, N. Y.: I claim providing the ruler with a movable foot piece, c, and suitable stops, to operate substantially as and for the purpose specified.

TALLOW FOR MAKING CANDLES—Francisco Garcin, of Philadelphia, Pa.: I claim the method described, of bleaching and purifying fat or tallow for the purpose of making candles, the same consisting in the use of reduced nitric and sulphuric acids, alcohol, creta, gallica, slacked lime, camphor, borax, egg shells, and oil of lemon, in the proportions and order set forth.

SPARK CONDUCTORS FOR LOCOMOTIVE TRAINS—P. C. Guion, of Cincinnati, O.: I do not confine myself to any exact form or dimensions; I do not claim the smoke pipe or funnel, or frame, or the yoke or the springs—neither of them by themselves.

But I claim the yoke, Y, with the springs, S S, and the frame, F, as arranged so that the pipe shall have free space and liberty to play by the yielding to the springs to accommodate the rocking motion of the cars, or the up- and down motion without cramping or injuring the pipe, and also to give room for the back-and-forward motion allowed by the car coupling, for the purpose and in the manner set forth.

TANNING—Raselous Gould, of Whitewater, Wis.: I do not claim the use of catechu in the process of tanning, for its use has long been known. I do not claim to have discovered any new property of catechu or niter, or of alum, in relation to their employment in tanning operations.

But I claim that in order to insure the proper exercise of the properties of these substances in tanning, they must be used in a certain manner differing from the mode in which they have hitherto been known to be used. I claim that in order to use these substances effectively for tanning they must be employed substantially according to the processes set forth. And I claim that when these three substances, or their chemical equivalents have been employed together, they have and must fail, as they are to some extent incompatible when so used.

But I claim the use in the process of the tanning of hides and skins for the making of leather of the two solutions described, used, and applied, each separately or at different times and in the order following, viz.: first, by using a combined solution of catechu or any other material its equivalent, as containing the tannic properties, and alum, substantially in the mode of application described, or any mode equivalent thereto.

STRAINING MULLEY SAWS—Theodore Sharp, of North Greenbush, N. Y.: I claim straining the saw by attachings its ends to a pivoted elastic bar, E', substantially as shown and described.

CARRIAGE TOPS—Henry Hayes, of Quincy Ill.: I claim the plate or circle, c, having the slat iron of the front bow projecting from it, working on a pinion on the standard, h, in connection with a spring latch or pawl, fitting into notches in the plate by means of which the top of the carriage is sustained in an elevated or half elevated position substantially as described.

IRONING HATS—S. A. Kinsman and Samuel Field, of Barre, Mass.: We do not claim any peculiar form of hat holder, nor any spring movement to a side flat, nor a fan to regulate the downward movement of the hat block, nor any arrangement of toggles to operate the crown flat, for all of these we are aware are embraced in a patent granted to Dexter Dennis, July 4, 1854.

We claim arranging the cam, 14, so that when operated by the gear, 15 and 17, substantially as described, it will control the vertical movement of the hat block through levers, 21 and N, in combination with the lever, L, arranged substantially as described, to control the lateral movement of the hat block, and thus secure the adequate pressure on all parts of the hat at one time.

HARVESTER CUTTER—I. S. Love, of Beloit, Wis.: I do not claim the cutting blades in their usual form; nor do I claim the other parts, as they have hitherto been used.

Neither do I claim the tooth, X, which may be made either in one piece or more, when used without the tooth, Y. But I claim the use of the clearing tooth, Y, in connection with the cutting tooth, X, as set forth, provided the cutters be distinct, and the spaces between them continue back to the rear of the cutter bar.

I do not limit myself to the exact form or proportions of either, for it is evident that either of them might be slightly varied, without materially altering the effect.

SPIRIT BLOW PIPE—H. N. Macomber, of Lynn, Mass: I claim combining with the vapor jet of a spirit blow pipe, an air jet, f, and a mouth tube, g, so applied to said vapor jet, that air may be blown from the lungs of a person directly into the inflamed current of said vapor jet in order to control, elongate or reduce said current and increase its heating powers, as specified.

I also claim arranging the air jet concentrically within the vapor jet, in order that the effluent current of air may pass into a hollow tube or stream of vapor and flame.

I also claim combining with each main jet tube a lighting vapor jet tube arranged so as to operate therewith, as specified.

MOWING MACHINES—J. J. Mann, of Westville, Ind.: I claim the constructions of the reel frame, I J K K, the same being braced by the rod, L, and the suspension of the reel, F, at the outer extremity of the shaft, G, by the pendent, L.

BENDING WOOD—J. C. Morris, of Cincinnati, Ohio: I claim the clamps, 6, 6, to prevent end expansion and the levers, 7, 7, working on fixed fulcrums when in operation, all substantially as and for the purpose set forth.

REVOLVING FIRE ARMS—Frederick Newbury, of Albany, N. Y.: I claim the following apparatus, substantially as set forth, viz., the combination of the wheel gearing and pawl, with the trigger, by which means the block, C, is revolved; the wheel gearing itself is not claimed.

The priming cap magazine, in combidation with the trigger, to permit the capping of the cone by the trigger.

The spring guard plate to prevent the fire from the upper chamber extending to the lower.

The combination of the picker attached to the hammer with the apparatus operated by the thumb in the act of cocking the hammer, substantially as set forth.

CARRIAGE HUBS—Henry Nycum, of Uniontown, Pa.: I do not claim a hub, the central portion of which is provided with mortises or recesses for the reception of the spokes, as I deem such a hub impracticable from its very nature, as it limits the number of spokes in the hub, or wheel to less than are actually necessary.

Nor do I claim a hub composed of concentric rings of alternate iron and rubber with the spokes abutting against the outer ring, which would so enlarge the hub as to make it useless for my purpose.

But I claim a hub composed of a back and front section, A B, and having a thin metallic tube or ring, E, independent of each centrally placed between them against which the inner ends of the spokes abut when said sections are so made that, in removing the back one, A, the pipe or box of the hub shall also be removed or removable with it to facilitate the properly introducing of a new spoke, substantially as described.

STEAM BOILERS—Leonard Phleger, of Tamaqua, Pa.: —I claim, first, the arrangement of the arched water space, a b c, so that the boiler may be suspended near to the track, in the manner and for the purposes substantially as described.

Second, the arrangement of the arched water space, a b c, the water space, N M, and the water tube, L L', in combination, so that the flame and heat will be never berated in the manner and for the purpose substantially as described.

HARVESTERS—B. T. Rooney, of Philadelphia Pa.: I do not claim, exclusively, double cutters operating simultaneously, nor the use of vibrating cutters nor belts for carrying off the grain to one side of the machine.

But I claim the gear frame with its lugs, u u, in combination with the movable or cutter frame, its bar, W, lugs, t t, and beveled projections, V V, the whole being arranged and constructed, substantially in the manner, and for the purposes set forth.

STRAW CUTTERS—E. P. Russell, of Manlius, N. Y.: I claim the wheel, C, with the rim and cams, O', on the inside of the rim, in combination with friction rollers, h, for raising the box, with the knife, b, attached, and causing it to pass the edge of the stationary knife, which is placed in such a position as to give them the shear cut, as set forth.

Second, I claim setting the box at any angle of about 45 degrees, and hung on a hinge or pivot with a joint or hinge, d', in the bottom, for feeding the straw to the knives, and or allowing the knife, b, to cut, as set forth.

LIME KILNS—Job Sands, of Sand's Mills, N. Y.: I claim having the fire chamber, B', of the kiln so constructed that the bottom will be but a short distance below the door, C, no grate bars being employed, and having an aperture, a, made through the door, so that the air that feeds the fire will act horizontally upon it and nearly in line with the opening, a', for the purpose specified.

PUDDLING IRON—Richard Savary, of Steubenville, O. I claim the arrangement of the cupola, and puddling furnaces, constructed and operating as set forth.

HEATING OR COOKING BY GAS—W. F. Shaw, of Boston, Mass.: I am aware that perforated cones have been used for admitting atmospheric air to ordinnry fuel for promoting combustion; this I do not claim.

But I claim the application of a cone or dome formed of wire gauze or pierced metal to an ordinary wire gauze gas burner, for burning mixed gases and air, in combination with an outer cylinder of wire gauze, or pierced metal, for the supply of atmospheric air, divided into jets, substantially as described.

BOX FOR AXLES—A. E. Smith, of Bronxville, N. Y.: I am aware that the flues have been cast with grooves in them, and that one of these grooves has been made to connect by a tube along the outside of the box, with the face of the hub, so that oil might thereby be poured in, so as to avoid the necessity of taking the wheel off. These grooves cannot be said to act as reservoirs strictly, and they also have taken away too much of the bearing surface, so that the axle wears into the box along the sides of the groove.

I do not claim making slots in the box in the line of the axle or reservoirs communicating with the axle by holes or funnel-shaped apertures.

But I claim the combination of two or more longitudinal narrow slots cut in the direction parallel to the axis of the box with enlarged longitudinal cavities, substantially as described and for the purpose specified.

MORTISING AND BORING MACHINE—G. N. Stearns, of Syracuse, N. Y.: I do not claim a movement of the carriage exclusively of the means by which it is done.

I claim, first, an adjustable cam, in combination with the levers, F K, T, spring, M, pawl, L, pinions, N P, and rack, R, as set forth.

Second, I claim the use of its spring or its equivalent to move the clutch which gives the return motion to the auger.

SOLES OF BOOTS AND SHOES—William Wells and Mellen Bray, of Turner, Me.: We claim operating the knife, R, which is attached to the bar, S, by means of the lever, n rod, m, with plate, l, attached, on which plate the bar, S, rests the ledge, T, on the heel of the stock, F, substantially as shown, for the purpose specified.

I further claim the knives, Q R r, when attached to or connected with an elastic platform, I, substantially as shown, for the purpose specified.

MAKING EXTRACTS—Abraham Steers, of Medina, N. Y.: I claim the described displacing apparatus in connection with the application thereto of heating and cooling agents, substantially as set forth, viz., the said apparatus being composed of the percolator, K, and the receiver, M, separated from each other by means of a perforated diaphragm, or its equivalent, the said percolator having its upper end closed by a metallic cover, supplied with an outwardly opening valve at the same time that the top of said percolator is connected directly with the said evaporating receiver by means of a pipe supplied with a valve or a stop cock, by which arrangement the contents of said percolator can be operated upon, first, by steam generated in the evaporating receiver, and then by the percolation of the menstruum after it has been evaporated and condensed again, substantially as set forth.

REDUCING THE FRICTION OF SLIDE VALVES OF STEAM ENGINES—R. L. Stevens, of Hoboken, N. J.: I am aware that devices have been contrived with a view to effect the reduction of the friction of the slide valves of steam engines by attempting to counteract or balance the pressure of the steam on the valve. But I am not aware that any plan or combination, similar to that which I have described has been used or described before.

I claim the box or balance block, B, constructed substantially as described, in combination with an ordinary slide valve altered as described, said balance block having around the edges of its upper face ledges, L L, which project upward, and are made to fit, around the whole upper face, into a recess, such as described, in the follower, D, and formed by double ledges projecting down from D, and enclosing L, which recess has an india rubber packing in its bottom, against which the said ledges, L, are made to pack steam tight, together with another india rubber joint at the bottom of another similar recess formed by the ledges, L L, and a part of the bonnet, C, into which latter recess one of the ledges of the follower, D, fits tight in the same manner as the ledges, L, fit in the recess.

REVOLVING FIRE ARMS—William Mt. Storm, of New York City: First, I claim extending the casque forward as far as the face of the cylinder, and surrounding it, to form a receptacle for it while loading, in combination with a hinged apron piece, fig. 5.

Second, I claim, in combination with the so arranged barrel and casque, and for locking them together, the solid self-acting locking spring, (as distinguished from a locking lever, having by necessity a hinge to wear loose and c,) said spring being arranged to resist the discharge by its direct tensible strength, as shown.

Third, I claim, in combination with the casque or cylinder receptacle the safety screw, Q, projecting into the recess between the shoulders, r r (or as equivalent, the screw on the cylinder and the shoulders on the casque,) to prevent the cylinder from getting dropped, while loading or capping in action, as explained.

Fourth, I claim the central revolving shaft with the button head, i, forward of the sleeve, G, and both projecting within the central cavity of the cylinder beyond the line of its rear and the fire of the cap, in combination with a revolving wheel located within the stock enclosed from the fire and smoke, all substantially as explained and shown.

Fifth, I claim, in combination with the dog, having an inclined plane or projection at its forward end to meet the purpose of such combination, an adjustable tripping screw, hereby despite of wear, and c, the detachment of the dog from the rear may be effected sooner or later in accordance with the needed distance of revolution of the many chambered cylinder.

Sixth, I claim extending the rear of said dog downward from where it connects to the heel of the hammer and connecting the pawl directly thereto, by which means the pull on the dog by the trigger, directly operates the pawl to push around the cylinder.

Seventh, I claim extending the pawl beyond where it is connected to the downward extension or heel of the dog and connecting the main spring to the part so extended, by which means the pull of the dog on the pawl distends the main spring, while the latter being distended presses the point of the pawl more firmly into the revolving holes or indentations in the face of the revolving wheel, preventing any slip while the revolving cylinder in all points, rendering the use of a pawl spring unnecessary.

Eighth, I claim pivoting the usually fixed end of the main spring, in the manner explained, so that while stationary it shall not be fixed, but free to compensate for its own vibration, and that of the rear of the pawl, thus rendering the use of the usual vibrating or connecting link between the main spring and the rest of the lock unnecessary despite of the immediate connection of the main spring to said pawl.

Ninth, I claim the locking notches in the revolving wheel, c, or its equivalent, in combination with the crest on the dog for the purpose of securing the stoppage and locking fast of the cylinder at the proper position for discharge, as set forth.

Tenth, I claim in combination with the forward shoulder or detent on the head or rear of the trigger, the screw projection or detent on the rear of the head or rear of said trigger to the end, that after said forward detent or hook ceases to act by the dog being thrown off to lock the revolving wheel, C, and thereby the cylinder in place, the hammer shall not immediately fall but be retained on cock, to give opportunity for deliberate aim, as explained, said rear projection or detent catching at this point on the downward prolongation of the heel of the hammer for this purpose, the whole being arranged and acting in conjunction, as explained.

CUTTING IRREGULAR FORMS—H. D. Stover and Jas. W. Bicknell, of Boston, Mass.: We claim combining the guide, f, with the bearings, e, substantially as and for the purpose set forth, and also combining the cutter head with this guide, in such a manner that they shall move up and down together, substantially as specified.

We also claim the combination of the cutter head, arbor, and pivoted bearing, e, so as to allow the cutting angle of the knives to be varied in relation to the table, substantially as set forth, and also combining therewith the mechanism substantially as described for varying that angle gradually in the cutting process.

HARVESTER CUTTERS—Pliny Thayer, of Lansingburg, N. Y.: I claim, in combination with the plates, e, lying loosely on the fingers or guards, but kept from moving by the projections, ff, on the plates and the open counter sinks on the guards, the cutters, d, which are vibrated past those, e, and held to them by the guides and springs, L M, substantially as described.

PLANE STOCK—John B. Thomas, of Cincinnati, O.: I claim the glass face, 3, combined with the case of ferrule 1, or its equivalent, all substantially as and for the purposes set forth.

WRENCH—Erastus Tracy, of Troy, N. Y.: I am aware an auxiliary jaw or griper applied to or inserted within either the movable or stationary jaw of a hand or screw wrench has been used. This I do not claim, it being too expensive in construction and inefficient in its operation to come into general use.

But I claim making the movable jaw in two sections pivoted together, one of which sections embraces the shank and the other forms the clutch by which the whole jaw is held to the shank, and both sections made united, and operating in the manner and for the purposes set forth.

FOUNTAIN PEN—A. F. & C. M. H. Warren, of Brooklyn, N. Y.: We do not claim the plate, G, separately, for they have been previously used, although applied to the pin in a way different to that shown. Neither do we claim a piston for filling the fountain with ink, for they have been also used for the same purpose.

But we claim, first, having the piston, D, and rod C, arranged as shown, or in an equivalent way, so that the piston may be detached from the rod when the tube or fountain is filled with ink, for the purpose specified.

Second, we claim attaching the pen, E, directly to the lower end of the tube, A, by the band, F, and conducting the ink from the tube, A, to the back or convex side of the pen by the wire, g, which is attached to the pen and passes through the apertures, e d, as described.

Third, we claim the plate, G, attached to the back or convex side of the pen, E, in combination with the wire, g, arranged as described, for the purpose of ensuring a regular and even supply of ink to the pen.

FAUCET—Moses Woodbury, of Boston, Mass.: I claim the combination of the handle, constructed as specified, with the stem and the spring, when the latter is placed behind the valve, substantially as set forth.

UMBRELLA RIBS—Charles C. Reed, (assignor to himself, Wm. S. Reinert, and Jacob Schnell,) of Philadelphia, Pa.; I claim the manufacture of umbrella ribs by grooving a cheap material such as hickory, bamboo, or rattan, and securing within the groove a strip of whalebone, substantially in the manner set forth.

DOVETAILING MACHINE—Edwin Wight, of Philadelphia, Pa.: I do not claim the exclusive use of revolving and traversing cutters, as they are employed in a variety of machines.

But I claim the cutting of dovetails of exactly similar size and form on the edges of a number of boards at one operation, by placing the said boards one upon the other, arranging them in the manner set forth, or any other equivalent to the same, and submitting them to the action of revolving and traversing cutters.

GRAIN AND GRASS HARVESTERS—Abner Whiteley, of Springfield, O.: I claim, first, the naarow divider, as described, and for the purposes set forth.

Second, I claim making the divider with that portion forming the under or upper side of the slot removed as the case may be, as set forth.

Third, I claim terminating the shoe, B, at or near the point of the blade which cuts against it, to prevent it carrying grass.

Fourth, I claim extending of the tops of the guards over the edges of the lower portions as described, for the purpose set forth.

Fifth, I claim the double cap, 6 6, as described, i. e., the caps of two guards in one piece, having one shank for attaching it to the finger-piece. But I do not claim one cap having two shanks for attachment.

Sixth, I claim attaching the shanks of the guard caps to the finger-piece as described, for the purpose of preventing straws or blades being carried beyond them to cause clogging.

Seventh, I claim terminating the points of the finger or fingers at or near the points of the blades, for the purposes set forth.

Eighth, I claim making one side and also one edge of the cutter bar, or either of them, a rasp or rough surface as described and as set forth.

LEATHER SPLITTING MACHINES—Elisha Pratt, (assignor to E. Pratt and H. P. Upton, assignors to E. Pratt and Thos. P. Pingree) of Salem, Mass.: I claim so hanging and arranging the lower roll as described, by means of the levers, I, connecting rods, L, and plate, d, or their equivalents, that it may be depressed when required, for the purpose of relieving and adjusting the hide, as set forth.

SECURING THILLS TO AXLES—Matthias Soverel, of Orange, N. J.: I claim the combination of the spiral spring, F, and the catch or nut, E E, and the eye of the bolt, H, fig. 2, and the spiral chamber and slots, c, fig. 1, substantially as described.

BOOT AND SHOE SOLES—Lorenzo Stratton, of Feltonville, Mass., assignor to himself and Luther Hill, of Stoneham, Mass.: I claim the described improvement in the manufacture of shoe soles, viz., striking them up in nests between formers and counter formers, B E F, substantially in the manner set forth.

SEWING MACHINES—Wm. C. Watson, (assignor to Ira W. Gregory,) of New York City: Firstly, I claim the tongue or spring, r, in combination with the needle for insuring the formation of loops on one side only, as described.

Secondly, I claim the gripper for seizing the thread and holding it until the needle has entered the cloth, thus securing the last stitch against slacking up, as described, the whole being constructed and operating substantially as set forth.

BOXING CARRIAGE WHEELS—Chas. Schmidt, of Union, Me.: I claim the method of boxing carriage wheels as before substantially described.

RE-ISSUES.

GRAIN AND GRASS HARVESTERS—Abner Whiteley, of Springfield, O.: I claim, first, changing the angle of the fingers and cutters of reaping and mowing machines while the machine is in motion and the finger-piece resting on the ground as described, and for the purposes set forth.

Second, I do not here claim oscillating the finger-piece about an axis within itself irrespective of the relations between the main frame and the master wheel shaft.

But I claim so constructing the machine (as described or otherwise, the result being substantially the same) that the driver, while the team is in motion, and the boxes of the master wheel shaft being rigidly connected with the main frame to change the angle of the fingers and cutters without moving the finger-piece from the ground.

SPLITTING MATCH SPLINTS—Benona Howard, of New York City, assignee of Lewis Smith, late of Brandon, Vt.: First, I claim, the use of the arrangement of the four cutters, arranged and operating substantially as set forth, in combination with the cutter frame or box for the purposes described, and also the use of the cutters and cutter frame, arranged and operating as described, in combination with an adjustable cap or clearer plate, for the purpose of holding the blocks of wood while under the action of the cutters, substantially as described.

Second, I also claim the jointed levers or their equivalents with or without springs at their backs, for the purposes set forth, and their combination with their cutters and crank motion or their equivalent device for working or operating a crimper for crimping or matting the surface of blocks of wood.

Third, I also claim the use of the crimping or compressing levers or their equivalents, in combination with the bed board, M, for crimping and matting the lower surface of the blocks, substantially as described.

Fourth, I also claim the use of the shafts, R, and ratchet feed wheels or equivalents, for the purpose of feeding the block through the machine, in combination with the adjustable cap or clearer plate and bed board, when used for the purpose of splitting blocks of wood.

ADDITIONAL IMPROVEMENT.

EXCAVATING MACHINES—J. J. Savage, of New York City: I claim the adjustable brace, A', or its mechanical equivalent, in combination with the oscillating connecting arms, H H, the combination being substantially in the manner and for the purposes set forth.

I claim the adjusting guide, B', or its mechanical equivalent, constructed and operating substantially in the manner and for the purposes described.

I claim the tipping scoop, X, having a stationary back firmly bolted and braced to the scoop staff, which back forms a rest or shoulder for giving firm support to the scoop in its excavating operation, the scoop being constructed and affixed to the staff, and operating in the manner and for the purposes substantially as specified.

A Strange Accident by Burning on a Railroad

We learn from the Richmond (Va.) *Dispatch*, of the 12th inst., the particulars of a terrible accident on the Seaboard and Roanoke Railroad, which took place near Margarettsville, N. C. A correspondent of the *Dispatch* says:—

"The accident occurred about 16 miles south of this, near the station known as Margarettsville. The trestle-work at that place is some thirty feet high, and had long been regarded as very insecure; in fact, the engineer had just "shut off" steam, intending to cross at a slow rate of speed, when the engine left the track, and was followed by the whole train, consisting of an express car, a baggage and mail car, and two passenger cars. Before any of those on the train had time either to reflect or act, it was found that the cars were on fire, and, horrible to relate, no less than four persons were literally roasted in the flames. Every car was also entirely consumed. Even the wood-work on the locomotive and the entire mail and express freight was so thoroughly destroyed that nothing remained but a pile of ashes, with here and there a brass lock, to mark the scene of devastation."