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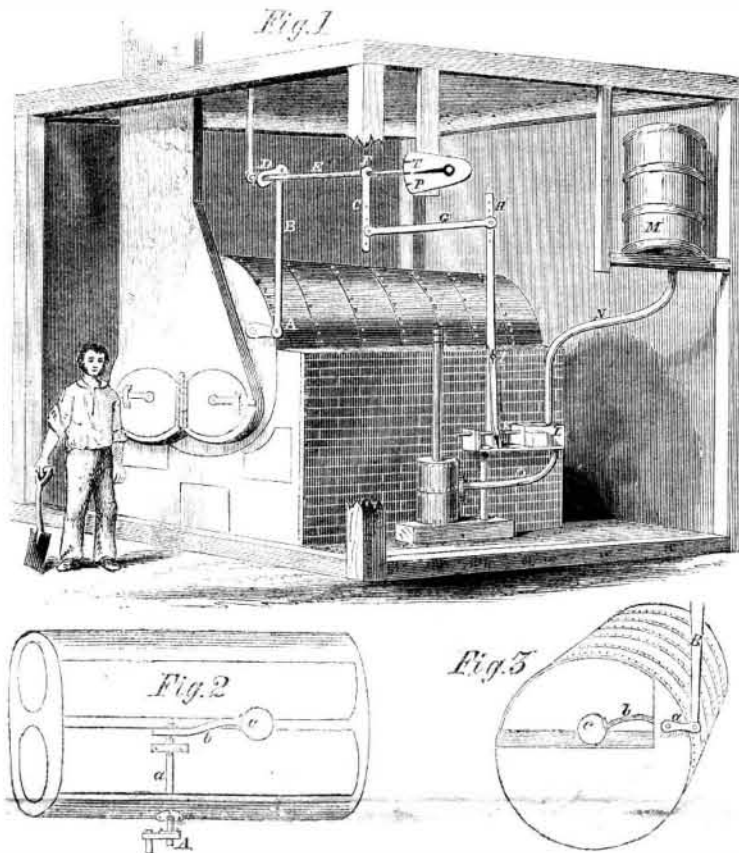
### Salmon Cultivation.

There are some persons, who, if they were to find a canary flying in our woods, would immediately conclude it was a native of our forests, and that all who had asserted it to be of African origin were in error. This seems to be the system of reasoning pursued by our cotemporary, the *Pittsburgh Dispatch*, in regard to salmon. It asserts that the opinion which has heretofore prevailed regarding salmon requiring periodical visits to the sea is erroneous. It says "we presume that those (salmon) propagated in the lakes know as little of salt water as an inland farmer's boy." No fact has been more clearly demonstrated than that the salmon in our lakes make and require periodic excursions to the sea. Salmon is indeed a salt-water fish, and only comes to fresh-water rivers for the purpose of spawning. At one period they swarmed in Oneida lake and Fish creek (in New York), where not one has been found for a number of years. If they had propagated and remained in these waters according to the *Pittsburgh Dispatch*, they would be found there still. The reason why they are never found there now is owing to a barrier erected at Oswego in the form of a dam, which prevents their annual salt and fresh water excursions. As our cotemporary has referred to the SCIENTIFIC AMERICAN as having taught erroneous doctrines on this subject, we must say that our opinions are formed upon practical experience, not vague theory.

It has been proposed that a bye-wash should be built at every dam on our rivers and creeks once frequented by salmon, for the purpose of allowing them to pass up to old spawning grounds. With the artificial cultivation of young salmon, as has been successfully practiced of late years in France and Great Britain, and dams formed with shutes up which the salmon might run to spawn, we have no doubt but the Merrimac, Connecticut and Hudson rivers would once more abound with these delicious fish. This is a subject which deserves wide spread attention, and as summer is at hand, we present these thoughts for the purpose principally of having them acted upon in their proper season.

**SALT.**—The application of two to four hundred pounds of salt to the acre has been found to be of great advantage in promoting the growth of all plants and trees. Warm soils of the inland districts, and especially those that have been dressed liberally with animal manure, are the most benefited. A dressing of salt upon a grass lawn will often increase growth and thicken-up the plants far more than a coating of animal manure.

## COLMAN'S BOILER WATER REGULATOR.



There is little doubt that a great number of the explosions which take place upon our western river steamboats, are caused by an inefficient supply of water to the boilers, and the boiler becoming red-hot, a great quantity of water is thrown into the spheroidal state, and the moment the boiler cools, either from the fire lowering or the introduction of fresh fuel, the water bursts into steam and causes the horrible accidents that are so often detailed in the newspapers.

The subject of our illustration is a device invented by J. L. Colman, of Vincennes, Ind., for preventing such catastrophes, and is seen in Fig. 1, in perspective, applied to a boiler. Fig. 2 is a plan of the boiler showing the float, and Fig. 3 is an end view of the boiler, with part removed for the same purpose. On the float arbor, *a*, outside the boiler is a crank, *A*, which can be placed either in the front, or at the side of the boiler, to which the float, *c*, is connected by an arm, *b*. The pitman, *B*, extends from *A* to a crank, *D*, on a rocker shaft, *E*, to which, at a point, *F*, the rod, *C*, is attached. A link, *G*, is connected with *C* and the lever, *H*, which vibrates in the oblong hole, *I*. The lower end of *H* is forked, and has the pin, *K*, of a piston of the slide valve of a water chest, *L*, in the fork, so that any variation in the level of the water is immediately caused to open the slide valve correspondingly; thus, if the water be fallen very low, then the slide valve is opened wide; if the water only falls a little, then the slide valve is only opened to admit a small quantity of water, so that the boiler is always kept properly full by this automatic arrangement. The cistern, *M*, should be kept full of water, and the water flows from it through a pipe, *N*, to the slide valve, *L*, and from that by a pipe, *O*, to a heater. On the end of *E* is a pointer which indicates, on a dial or segment, marked *T P*, the position of the water in the boiler, any deviation from the straight line

showing that either too much or too little water was in the boiler. If the force pump be in order and the cistern be always kept full, there can be little danger of an accident to a boiler which is supplied with one of these regulators. It should be borne in mind that the float should always be placed between the flues, so that it will not be likely to rest on either of them but will always float on the water.

This valuable invention, which has given every satisfaction where it has been applied, was patented March 15, 1859, and the inventor will be happy to furnish any further information upon being addressed as above.

### Cutting Sugar Cane—Bagasse Furnaces.

A correspondent residing at St. James, La., recently directed our attention to the subject of improved plantation implements, and suggested that a machine for cutting sugar-cane in the field would be an important and useful invention; and he also stated that a furnace for using the expressed cane for fuel was much wanted. In answer to these propositions as presented on page 204 of the present volume of the SCIENTIFIC AMERICAN, Mr. Evan Skelly, of Plaquemine, Parish of Iberville, La., an intelligent and experienced plantation engineer, assures us that a machine for cutting sugar-cane in the field is impracticable. He has for the past fifteen years been an attentive observer of all things connected with planters' interests, and he visits various parts of Louisiana every year so that his means of obtaining correct information on the subject are extensive and varied. He has never seen sugar-cane standing erect in the field, but always lying "helter-skelter" across the rows, twisted and bent up in every fantastic form. The cane stalks vary greatly in height; and as each has to be cut at a particular joint, no machine can be constructed to make such distinctions in cutting them.

Our St. James correspondent suggested

an improvement in furnaces to evaporate a hogshead of sugar with one cord of wood, instead of four or five as now used. Mr. Skelly states that such a proposition is preposterous. The sugar-cane of Louisiana contains only six per cent of saccharine matter in the juice, and a hogshead contains 1,100 lbs. of sugar; therefore, no less than 17,200 lbs. of liquid must be evaporated to produce this quantity. As a cord of wood can only evaporate 8,160 lbs. of liquid (according to Haswell), it follows that, with a furnace perfect in every sense, more than two cords of wood are necessary to the evaporation of 1,100 lbs. of sugar.

In 1858 Mr. Skelly secured a patent for a furnace for burning the bagasse (crushed cane) as fuel, and it seems to have been very successful. In the evaporation of eleven hogsheads of sugar only one and a half cords of wood are used with the bagasse, and with this evaporation steam is also furnished for grinding the cane, clarifying, granulating, and the pumping engine. This result is strong evidence in favor of the efficiency of this furnace, which was illustrated and described on page 308 of Vol. XIII. of the SCIENTIFIC AMERICAN.

### Nutritive Qualities of the Onion.

The onion deserves notice as an article of great consumption in this country, and it rises in importance when we consider that in some countries, like Spain and Portugal, it forms one of the common and universal supports of life. It is interesting, therefore, to know that, in addition to the peculiar flavor which first recommends it, the onion is remarkably nutritious. According to analysis, the dried onion root contains from twenty-five to thirty per cent of gluten. It ranks, in this respect, with the nutritious pea and the grain of the East. It is not merely as a relish, therefore, that the wayfaring Spaniard eats his onion with his humble crust of bread, as he sits by the refreshing spring; it is because experience has long proved that, like the cheese of the English laborer, it helps to sustain his strength also, and adds—beyond what its bulk would suggest—to the amount of nourishment which his simple meal supplies.

### Utilizing Steel Grindings.

In reducing steel tools, such as saws, &c., on grindstones, the detritus is esteemed of so little value as to be allowed to pass away as waste. In Sheffield, England, where so many steel tools are manufactured, attention has lately been directed to utilize this waste, and with some success. It contains about fifty per cent of metal, and the rest of sand grit. By washing, the sand is carried off, and the metal being heavier, it settles to the bottom of the vessel and is saved. After this it is smelted in a crucible and run into ingots, and is found to pay handsomely for the trouble thus bestowed on it.

### Tomatoes.

The following method of preparing tomatoes for the table, we are assured by one who has made the experiment, is superior to anything yet discovered for the preparation of that excellent vegetable:—

Take good ripe tomatoes, cut them in slices, and sprinkle over them finely pulverized white sugar, then add claret wine sufficient to cover them. Tomatoes are sometimes prepared in this way with diluted vinegar, but the claret wine imparts to them a richer and more pleasant flavor, more nearly resembling the strawberry than anything else.





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[Reported officially for the Scientific American.]

\* \* \* Circulars giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

**CULTIVATORS**—Milton Alden, of Auburn, N. Y.: I claim the described arrangement and combination of the adjustable shares, B, the frame, A, and the raised thills, C, which are made out of one piece with the handle, D.

[The thills are made of one piece with the handles, and are connected with the frame by means of braces, in such a manner that the thills pass over the growing crops, and that the same are in a horizontal position when attached to the horse or other draft animal, and the frame is so arranged that it can be adjusted to rows of different width, and a larger or smaller number of shares can be attached to it.]

**MACHINE FOR SAWING SHINGLES**—Wm. H. Auld, of Brighton, Iowa: I claim the adjustable saws, C, C, in connection with the reciprocating bolt carriage, L. I also claim the arrangement of the notched racks, I, gearing, x k, weight, r, pins, s, s, levers, v v a', and bars, x b', attached to the bolt carriage, in connection with the stops, a, for automatically feeding the bolt, M, to the saws, C C.

[A circular saw is employed in this machine to cut the shingles from the bolt. The object of the invention is to facilitate its working by saving the time usually lost in "rigging back," and also by materially limiting the movement of the bolt.]

**MACHINES FOR SEPARATING STONES, &c., FROM CLAY**—Charles Bamberg and Roman Blaser, of Chicago, Ill.: We claim the conical rotating screen, C, in connection with the separator, F, placed within suitable boxes, A, G, constructed and arranged relatively with each other to operate.

[A conical screen of knives is connected with a separator, and placed in a suitable box provided with discharge spouts, and this forms the invention, the object of which is to separate large gravel, stones, and all coarse foreign substances from clay preparatory to its manufacture into bricks, pottery, &c., in order that the articles will not be injured by cracking during the baking process, an accident which often occurs where there is any foreign substance in the clay.]

**SOLE-CUTTING MACHINES**—Jacob Batchelder, of Salem, Mass.: I claim, first, The particular and relative arrangement of the levers, e, e, and e', e', with the cranks, n, p, and f f', for giving the required motions to the cutting knives.

Second, The use and arrangement of the adjustable and intermediate gage board, w', whereby each alternate sole can be cut of equal or unequal width.

**STRAW CUTTERS**—John Bean and Benj. Wright, of Hudson, Mich.: We claim the arrangement and combination of the knife, C, lever, D, and rock shaft, E.

**RAILROADS FOR STREETS**—S. A. Beers, of Brooklyn, N. Y.: I claim the construction of upright self-sustaining rails of cast or other iron, with car and carriage track combined, to be laid in public streets and highways, and for no other purpose.

**BRICK MACHINES**—H. T. Beggs, of Liberty, Va., and James Allen, of Lynchburg, Va.: We claim the combination of the bevel wheel, C, cast with the culis, P, therein, for the reception of the molds, D, the plungers, E, with the friction rollers and axles, F, circular inclined plane ring, g, and guard, h, and top plate, I, when these several parts are constructed and arranged for joint operation.

**SKATE FASTENING**—Edward Behr, of New York City: I claim drawing or tightening the toe and heel straps, G, E, of the skate around the foot or the wearer, by means of the screw rods, F, I, and nuts, d, i, fitted in the stock, A, one end of the straps being attached to the stock, A, and the opposite end to the nuts by means of the cords, b, i, or their equivalents.

[This improvement in skates obviates the necessity of buckles, and at the same time places the fastening so that there is no fear of the pantaloons being torn by it.]

**SHIPS' STOW BLOCKS**—A. J. Bentley and Wm. H. Allen, of New York City: We claim the arrangement of rollers and wedges.

[In this block the rope runs between wedges provided with rollers, and the moment the wedges are released, they are pressed together by two helical springs, and the more the rope is pulled, the faster it is held between the edges.]

**CORN PLANTERS**—L. F. Bingham and N. O. Pierce, of Chicago, Ill.: We claim the arrangement of the rotating planter, A, square tube, I, beam, O, lever, N, "spat down" or leveler, 12, and screw, v.

[With this mode of securing the mouth of the mail bags, it is impossible for mail robbers to get access to the contents of the bag. The contrivance is very simple, consisting simply of a jointed rod which holds the two flaps or jaws together. This rod is held in place by a lock and staple. We regard this as a capital device, and should regard our mail, valuable as it is, perfectly safe if placed in bags having the same applied to them.]

**MANUFACTURE OF PAPER AND PAPER PULP**—James Brown, of London, England. Patented in England June 10, 1887: I claim the treatment of paper and paper material with glycerine, substantially as described, to be employed for printing or other purposes.

**PLOWS**—C. M. Bryan, of Wright City, Mo.: I claim attaching the moldboard, D, by means of the bolts, h, h, i, passing through cleets, b, b, at the inner side of the moldboard and into the landside, E, and handle, c', the bolts, g, d', and the brace bar, d.

[Some plows have reversible moldboards, and a share at each end, so that both may be used, and as one share becomes dull and worn, it may be displaced by reversing the moldboard, and the new one put in its place. This invention is an improvement on such plows, and consists in the peculiar arrangement of the parts, or the method of attaching or applying the moldboard to the plow, whereby the moldboard may be readily adjusted on the plow, and at the same time firmly secured to it, so as to prevent the possibility of the casual movement of the moldboard.]

**MACHINES FOR LOADING HAY**—S. V. Essick, of Moultrie, Ohio: I claim the adjustable frame, d, the rake, j, the rakers, h, and m, and the conveyers, g and l.

**MACHINES FOR SOWING FERTILIZERS**—T. J. Burrall, of Geneva, N. Y.: I claim the arrangement of the revolving cylinder, a, divisions, k', and adjustable perforated slides, 3, 3.

**MACHINES FOR SPLITTING LEATHERS**—D. H. Chamberlain, of West Roxbury, Mass.: I claim inclosing the cutting blade within an external casing throughout its entire length.

**CONVERTIBLE CARRIAGE SHAFTS**—R. J. Colvin, of Lancaster, Pa.: I claim, first, The attachment of removable shafts, by means of adjustable braces, I, I, and the hinged caps, Z Z, of the pole crab, N.

Second, The curved or segment bars, A, forming a transverse horizontal slot in which the shafts are supported at their rear end, both when separated in the ordinary way, and when united together as a pole.

Third, The hinged and pivoted thill attachment for accommodating the width of the same to the different positions of the clips upon the axle.

**BUTTERFLY VALVES**—Nathan Cope and Wm. Hodgson, of Cincinnati, O.: We claim the arrangement and combination of the curved slotted plate, E, valve-box, B, stops, F F', and slotted valve lever, G.

[An engraving and description of this invention will shortly appear in our columns.]

**GRAIN SEPARATORS**—J. B. Crist, of Evansville, Ind.: I claim the arrangement of the blast passage, G, fan, B, screen, I, and riddle, K, with chute, L, attached, placed within the case or box, A, and in relation with the spouts or discharge passages, d e f N.

[This invention is in the peculiar arrangement of a fan, blast spout, riddle and screen, and discharge passages, whereby the cleaning of grain and the separating it from all foreign substances is performed very expeditiously.]

**PLOWS**—E. Davidson, of Batesville, Ark.: I claim the combination of the bar, e, stirrup, c, rod, f, with the adjustable supplemental land-side, F, share, G, and the stationary share, E, and land-side, C.

[The employment of a supplemental land-side and share, when properly arranged and applied to the plow constitute this invention, whereby, by a very slight adjustment of the parts, the plow may be rendered available for turning a furrow or as a subsoil plow, answering equally well in either capacity.]

**FENCE POST**—H. T. Dewey, of Sandusky, O.: I claim the combination of the ribbed post, A, and horizontal flange plate, C, when jointed to each other.

[This is an improvement designed to facilitate the planting of posts, and to secure them in a vertical position when planted.]

**CULTIVATORS**—Wm. C. Doss, of Lavacca, Texas: I claim the arrangement of the triangular frame, A, B, E, of shares, J K, with moldboards that may be taken off at pleasure, scraper, N, and cultivators, L M.

**FURNACES FOR HEATING BUILDINGS**—B. W. Dunklee, of Boston, Mass.: I claim combining with the fire-pot and its dome one or more gas circulating pipes, G, arranged with respect to the same, and in the hot-air chamber of the case, E.

I also claim the arrangement of the hot-air discharge pipes, c, c, and the wings, d, of the arch of the fire dome.

I also claim, in connection with air-register to the front of the ash-pot, an air-pipe, v, carried through the air-chamber and into the rear part of the ash-pit.

I also claim the combination and arrangement of the hoc valve, u, and the plate or door, r, with the flue, n, the pipe, h, and the opening, t.

**METHOD OF COMPENSATING FOR EXPANSION AND CONTRACTION OF METALLIC FENCES**—Lewis Eikenberry, of Easton, Pa.: I claim the method of making provision for expansion and contraction in an iron lattice or other open work fence.

**STRAW CUTTERS**—Stephen Elliott, of Richmond, Ind.: I claim the arrangement of the board, E, cross-piece, F, rods, J and G, and lever, H, with boards B and D, canvas, C, rods R and S, and levers, v, Q.

**SMOOTHING IRON**—Andrew Ellison, of Boston, Mass.: I claim attaching the handle, A, to the separate heater or block, B, by means of the guide, h, and slot, D, the angular recess, E, and lips, c, c, and the latching devices, a, F.

**METHOD OF STRAPPING WOOD IN BENDING**—John I. Field, of Syracuse, N. Y.: I claim the method for cutting nesting metallic straps for bending timber, when the parts are so arranged as to operate in connection with the forming frames.

**SEED PLANTERS**—D. S. Fisher, of Mauckport, Ind.: I claim the combination and arrangement of the spring hoe, J, adjustable spring roller, I, with the seeding and regulating apparatus.

**HARROWS**—J. H. French, of Syracuse, N. Y.: I claim the combination and arrangement of three triangular harrows, in such a manner as to form one triple triangular harrow, by connecting the angles with flexible joints or couplings, which admit of the free vibration of the parts, and their ready adaptation to the inequalities of the ground.

Second, I also claim constructing triangular harrows of metallic bars or flat strips of metal, by folding over the same in such a manner as to form one triple triangular harrow, the draught strain of the teeth upon one side, shall counteract that upon the other; and forming the couplings at the same operation, by folding in links or hooks at the angles, no bolts being required to secure them, in consequence of the self-bracing of the parts.

**CORN PLANTERS**—R. B. Gilbert, of Sutherland Springs, Tex.: I claim the arrangement of the share s, coverers, i, conductor, c, cylinder, d, and hopper, e, wheel, g, and scraper, p, for joint operation.

**MAIL BAGS**—Richard Gornall, of Baltimore, Md.: I claim the employment with a mail bag, constructed with a socket, G, and furnished with a lock, or other safe fastening of the plates, B, B, which terminates in nearly complete tubes, D, D, and with the jointed rod or bolt, H, provided with a hasp or other similar attachment.

[This mode of securing the mouth of the mail bags, it is impossible for mail robbers to get access to the contents of the bag. The contrivance is very simple, consisting simply of a jointed rod which holds the two flaps or jaws together. This rod is held in place by a lock and staple. We regard this as a capital device, and should regard our mail, valuable as it is, perfectly safe if placed in bags having the same applied to them.]

**RAT TRAPS**—Henry Gortner, of Irville, Ohio: I claim the rotating disks, C, C, connected by the plates, b, b, in connection with the treadle platform, C', plates, c, c, and bar, d, and the supplemental platform, D, the whole being fitted to the box, A.

[This is a self-acting trap, composed of a treadle and bait platform, arranged in connection with a supplemental platform and revolving disks, and a box, so as to form a very simple, cheap and efficient means of catching rats.]

**MECHANISM BY WHICH EMPLOYEES REGISTER THEIR TIME**—Benj. T. Harris, of Brooklyn, N. Y.: I claim, first, The manner of mounting the cylinder, D, on the spring barrel, f, and with the connecting coupling, 3.

Second, I claim the binding plate, d, fitted and acting to retain the ends of the paper to the cylinder, D.

Third, I claim the arrangement and manner of constructing the slides, i, i, and impression point, m, m.

Fourth, I claim the rollers, l, and their pawls, o, u, p, in connection with the slides, i, i, and openings, k, u, in the front plate.

**CORN PLANTERS**—Saml. E. Hartwell, of New York City: I claim the arrangement of the slide, d, shoe, c, and hoe, i, connecting and acting in the manner and for the purposes substantially as specified.

**SEEDING MACHINES**—Saml. Henry, of Chenoa, Ill.: I claim the slide bar or seed-distributor, G, with slide, H, fitted therein and placed relatively with the seed-box, F.

[The object of this invention is to obtain, by a very simple means, a machine that will sow various kinds of seed either in drills or broadcast. To effect this a distributor is employed, in connection with an adjustable slide applied to a seed-box, the whole being properly arranged for the purpose.]

**HARVESTING MACHINE**—Moses G. Hubbard, of Penn Yan, N. Y.: I claim the conformation of the intermediate fibers of a reaping and mowing machine, having a conical form with a straight outline from point to heel, so as to present a straight, gradual taper on the underside as well as above.

I also claim the safety flanch, s, for securing the pitman connection.

**MACHINES FOR BREAKING COAL**—Chas. W. Kennedy and Richd. T. Brown, of Williamsburg, N. Y.: We claim the arrangement and combination of the polygonal spiked drum, E, spiked crushing-plate, and spiked clearing-plate, I.

[To break coal by this invention an intermittently rotating, polygonal spiked drum is used, and a spiked plate, so that very little coal is wasted as dust, and the work is quickly performed.]

**RAILROAD CAR BRAKES**—Lewis Kirk, of Reading, Pa.: I claim, first, The arrangement of the hand-wheel, J, and the rod, K, in combination with the pump, B, so that, by depressing the rod, K, the pump is placed in working order, and that the same can be operated by means of the hand-wheel, J.

Second, The arrangement of the spring catch, k, which is attached to the piston rod, d, of one of the pump cylinders, in combination with the bell crank, l, or its equivalent, which is operated by means of an eccentric, m'.

Third, Arranging the coupling, M, on a rod, p, in such relation to the spring catch, k, and the cock, E, that by excess of pressure on the coupling the rod, p, is turned sufficiently to open the cock, E, and to depress the spring catch, k.

[In this invention hydrostatic pressure is employed for operating the brakes, and the pumps used can either be operated by hand or by the pressure which the car exerts on the couplings.]

**MAIL BAGS**—Thos. J. Lamin, of Baltimore, Md.: I claim the placing of the staples or buckles on the flap of the bag or pouch, so that when the flap is turned down, said staples or buckles will pass through the grommets.

I also claim the manner of forming the seams of the bag or pouch, so that they cannot be cut open and re-sewn from the outside of the back without instant detection on looking at the seam, as its whole character must be changed in any such attempt or effort.

**APPARATUS FOR CONDUCTING WATER TO CISTERNS**—James Lewis, of New Orleans, La.: I claim making the change in openings from the box, A, or its equivalent, by the employment of a weight containing water supplied from a roof, when the weight can lose the water it contained, and thus reduce its force of gravity to allow another change to be made, by which the water is conducted in separate directions from and to the cistern.

**JIB-HOOK FOR VESSELS**—Chas. L. Linnell, of Truro, Mass.: I claim the application of the after jib-hook to the bowsprit by means, not only of the slide rod applied to the bowsprit, but the slider connected with the boom.

**SPOKE SHAVE**—Benj. Tolman, (assignor to himself and A. T. Ramsdell), of Pembroke, Mass.: I claim an improved spoke shave, constructed with an adjustable knife and an adjustable throat-gage, arranged and applied to the stock and so as to move with respect to one another.

**BENCH PLANE**—Wm. S. Loughborough, of Rochester, N. Y.: I claim, first, The combination of the screw, 2, which takes effect in the projection, R, spring or yielding cap, C, bit, B, and screw, 1, for the purpose of varying the cut of the bit, and at the same time, and proportionally, the space of the throat, the base of the bit, B, being the fulcrum upon which it swings when said changes are made, the said combination being applicable for the adjustment of the bit in all kinds of planes.

Second, The adjustable parallel fence, F, constructed with diagonal slots, D, for the set screws, Y, said fence being applicable to match planes, and also the stop, P, with the slot running up diagonally from the face, the set screw, K, and the guide pin, N, keeping it in position, said stop being applicable to panel plows and dados.

**IMPROVED ROTARY ENGINE**—Saml. D. Lount, of Summerville, Mich.: I claim the arrangement and combination of the rotating head, I, provided with sliding pistons, and placed eccentrically within the case, A, the saddles, M, applied to the pistons and the valves, N O.

[This rotary engine or pump is so arranged that the water or steam under pressure securely packs all the joints and prevents leakage, while it ensures the action of the machine.]

**APPARATUS FOR LAYING METAL LEAF ON MOLDINGS, &c.**—Robt. Marcher, of New York City: I claim the method of laying leaf metal on moldings and other surfaces by means of a roller.

And I also claim operating the roller in laying leaf metal on surfaces by the force of capillary attraction.

And I also claim the combination of the rails, the table for holding the book of leaf metal, and the means for holding the article to be gilded or silvered, or the equivalents of the said elements, in combination with the roller.

And, finally, I claim the combination of the roller and rails, or equivalent guide ways, with the rebate or equivalent gage.

**RAILROAD SWITCH**—T. Mayhew, of Poughkeepsie, N. Y.: I claim the employment or use of the adjustable platform, E, in connection with the switch bar, B, and gearing, d, h, h', h'', h''', springs, c, e, and stops, i, g.

[The object of this invention is to prevent accidents attending the carelessness of switchmen in failing to properly adjust the switch after moving it in line with a track to accommodate a passing train. The invention consists in the employment of a movable platform arranged in connection with certain gearing, a switch-bar and springs, whereby the attendance of the switchman is rendered imperative at every adjustment of the switch, and while the train is passing over it, and the return movement of the switch to its normal position after being temporarily moved is fully insured.]

**PUMP BOXES**—John Munson, of San Jose, Cal.: I claim constructing the pump boxes of the rings, a, bands, e, provided with the uprights, g, g, and the traverse plates, h, when the boxes, thus constructed, are provided with the valves, l, fitted thereon.

I further claim securing the lower box, C, in the bottom of the cylinder, A, by means of the traverse plate, h, on said box, and flanch, a, secured to the inner side of the cylinder.

[These boxes can have their packing secured to them with the greatest facility, and the valves kept in proper position and working order.]

**PLANT PROTECTORS**—Eli Mosher, of Flushing, Mich.: I claim the arrangement and combination of the following sides, a a' a'', cover B, and fastening cord, b.

[These protectors are simply rectangular wooden boxes covered at the top with gauze or some other material which will admit the sun's rays, air and moisture, and at the same time exclude the insects; the boxes being set over the plants they are to protect. The object of the invention is to render the boxes capable of being folded when not in use, so that they may be stowed away very compactly, and still very readily unfolded and secured in an open state when designed for use, and also folded or collapsed with equal facility when they are to be stowed away.]

**WIND-MILLS**—Wm. McAllister, of South Reading, Mass.: I claim the series of narrow sails, 1 2 3 4, attached to vertically sliding rods, a b c d, and united by means of the cords, s, s, and operating in combination with the adjusting ropes, l.

**PLOWS**—James C. Moulthrop, of Bucyrus, Ohio: I claim giving the beam, B, longitudinal and vertical motion by means of the bearing plates, d', slots, c c', short rear bolt, b, and long vibrating front bolt, f.

**MANUFACTURE OF FELT HATS**—James Monach, of Rahway, N. J.: I claim the corrugation of the brims of felt or soft hats by the employment of dies on both sides of the brim, whereby the corrugation is attained without stretching the brim, both the surfaces being finished at one operation.

**ROASTERS**—James Mulligan, of New York City: I claim the detachable journal bearings, b, b, constructed so as to be clamped on to the edges of the openings in the stove or range and receive the spit, c.

**PLOWS**—Williamson Nichols, of Floyd County, Ga.: I claim the arrangement of the forked beam, G, segmental head, F, holes, g, bolts, 4 and 5, clevis, i, stock, H, handle, L, rivet, c, and holes, 1 2 3.

**BRIDLES**—R. B. Norvell, of Huntsville, Ala.: I claim the cord, F, attached to a bridle or halter by passing the same through the bit rings or halter rings, and over the pulleys, c, c', or their equivalents, and under the throat of a horse or other animal.

[An engraving and description of this was published on page 272 of the present volume of the SCIENTIFIC AMERICAN.]

**IRON TIES FOR COTTON BALES**—James Nuttall, of New Orleans, La.: I claim the combination of the plate, s, and movable clasp, c, when made use of in confining the hooks, a, and b, as a fastening for iron ties for cotton bales.

**CLOTHES FRAME**—Henry A. Nutting, of South Amherst, Mass.: I claim a clothes frame composed substantially of the rod or stem, c, the two hubs, A, B, and the two sets of arms, D, E.

**CULTIVATORS**—Isaac B. Palamontain, of Tarboro', N. C.: I claim the arrangement of the beam, A, stock, B, center bar, B, standard, F, wings, G G and J, share, D, and seat, H, for joint operation.

**HORSE HAY-RAKES**—George S. Reynolds, of East Bethel, Vt.: I claim the arrangement of the boxes, k, arch arms, h, elastic spring, g, shoe, d, strap, t, frame, r, and strap, l.

**TOOLS FOR MANUFACTURE OF FIRE-ARMS**—Augustus Rebetey, of Norwich, Conn.: I claim the use of a crank shaft, A B C, to carry a cutter, I, such crank shaft suspended at the centres of an engine lathe, or any similar machine, and receiving its motion from the counter shaft of such lathe, or similar machine, for the purpose of cutting an eccentric shaped slot in the barrel of a pistol, or anything else.

**WATER-WHEELS**—Sylvanus Richardson, of Jericho, Vt.: I claim the construction and arrangement of the shutes formed by irons, g and i, and the arrangement of openings in plate, f, in Fig. 3, and corresponding openings in plate, f, in Fig. 5, and the arrangement of plate, c, c, and wheel, e, e, e, and case, a, and draft tube, d, and the combination of the same.

**HEMP BRAKES**—John W. Rinehart, of Lexington, Mo.: I claim the particular manner of operating the beater frame, K, to wit, by means of the lever, j, links, k, k, lever, l, shaft, C, arm, m, connecting rod, n, and crank, o.

[A swinging or oscillating frame is provided with swords or beaters, and placed on a suitable frame that is provided with suitable stationary beaters, between which the oscillating ones work. The oscillating frame is operated from a rotating shaft and hemp, in this machine, can be quickly broken and the fibers perfectly separated.]

**HERNIAL TRUSSES**—S. S. Ritter, of Philadelphia, Pa.: I claim the construction of a surgical truss having a short spring, with one or more plates of metal, extending in front about half round the body, and held by a strap or straps, forming the other half of the girdle, when the said spring is curved, as shown, for the purpose of making a more agreeable pressure on the hernia, and for fitting the ends of the spring better to the hips, thus rendering the truss more comfortable to the patient.

Second, I claim the described pad, having a central prominence surrounded by a groove and ridge, when the face of said pad is made in one piece.

**APPARATUS FOR VULCANIZING RUBBER**—Edwd. A. Roberts and Wm. J. Demorest, of New York City: I claim the general arrangement of the stove, boiler and vulcanizing chamber.

**GRAIN SHOVELS**—David B. Rogers, of Pittsburgh, Pa.: I claim the so bending a plate of iron into the shape of a shovel as to form a socket for the handle out of the same piece of iron.

**CLOCK DIAL**—S. E. Root, of Bristol, Conn.: I claim the combination of a clock dial, B, metallic back, A, frame, C, as a new manufacture, specifically, as and for the purpose described.

**PRINTING PRESSES**—Stephen P. Ruggles, of Boston, Mass.: I claim, first, The combination of two screws having different sized threads, and operating together substantially as described, to give a greater motion to a plate, or its equivalent, at one time, and more power at another time, as may be desired.

I also claim connecting two such screws together, and to the lever or bar that actuates them, by a strong helical spring, that, by being wound up, becomes a clamp, so as to put the two screws in action one after the other, substantially as described.

I also claim running out the bed of the press on inclined ways for the purpose of increasing the distance between the bed and platen, which makes a better entrance for the frieket, bla kets, sheet, turn, &c., by affording more space when they are being run under the platen, as described.

**AUTOMATIC PRIMER FOR FIRE-ARMS**—Jacob Rupertus, of Philadelphia, Pa.: I claim, first, The sliding slide lever, B, applied in combination with the hammer, to constitute a portion of the thumb-piece thereof, and with an interposed spring, l, substantially as described.

Second, Constructing and applying the feeding piston, q, to roll within the magazine, substantially as and for the purpose set forth.

Third, Attaching the feeding piston, q, which drives the priming forward in the magazine to a spring or flexible driver which winds on and off a spring barrel, substantially as and for the purpose described.

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

PUMPS—John Selser, of Williamsport, Pa.: I claim, first, Draining the standing-pipe, D, and relieving the air-chamber, C, from pressure by allowing the water to escape upward through the cylinder, B, whenever the plunger rod, E, is sufficiently depressed, thereby draining the pipe without draining the pump itself, substantially in the manner set forth.

Second, The splash plate, G, with its aperture, O, when used in connection with the vertical termination, D, of the discharge pipe, substantially as and for the purpose set forth.

SHAFTING FOR ENDLESS CHAIN HORSE-POWERS—Theodore Sharp, of Bloomington, Ill.: I claim the sliding shaft, A, with its slotted or mortised hubs, R, R, constructed and operating in the manner and for the purpose substantially as described.

SEED PLANTERS—David M. Smith, of Springfield, Vt.: I claim the combination of the following devices for operating the dropping slide, viz, the spring, k, the rack, C, the pinion, D, the rack lifter, m, the groove, r, of the rack, and the latch, u, arranged substantially as specified.

I also claim the application of the rack lifter, m, to the rack, so as to be adjustable thereon, in the manner and for the purpose as set forth.

I also claim combining with the rack, C, and apparatus carried by it, the latch elevator, v, for moving the rack out of gear with the pinion and holding the rack from slipping or being thrown backward, the object being not only to prepare the rack for causing the machine to plant the seed dropping of seed in the right place, but to hold the rack out of gear with the pinion while the machine is being moved over the ground and it may not be desirable to have it plant seed.

ROTARY STEAM-ENGINES—Mathew Smith, of Pittsburgh, Pa.: I claim the combination and arrangement of a revolving cylinder, steam chest, cam yoke, supply and exhaust passages, with a stationary cam, supply and exhaust chambers, when arranged, combined, and operated as described, and for the purposes set forth.

LATHES FOR TURNING IRREGULAR FORMS—Charles Spring and Andrew Spring, of Boston, Mass.: We claim the combination of a gripping chuck, by which an article can be so held by one end as to present the other free to be operated upon, with a rest preceding the cutting tool, when it is combined with a guide cam, or its equivalent, which modifies the movement of the cutting tool, all operating together for the purpose set forth.

APPARATUS FOR SUPERHEATING STEAM—George A. Stone, of Roxbury, Mass.: I claim a steam jet, or the equivalent thereof, located substantially in the position and serving the purpose specified, in combination with a superheating apparatus, which is heated by a portion of the gaseous products of combustion, and is otherwise substantially as set forth.

RAKING ATTACHMENT FOR HARVESTING MACHINES—Geo. Tatlock, of Salem, Ind.: I claim operating the rake-head, D, which is pivoted to the sliding bar, C, through the medium of the rotating shaft, r, connecting rod, p, rock-shaft, l, connected respectively with the rod, p, and sliding bar, C, by the arms, k, o, in connection with the arm, E, attached to the rake-head, the loop or guide, d, attached to the arm, E, and the bars or arms, g, h, attached to the platform, the whole being arranged substantially as and for the purpose set forth.

[This is an improvement in that class of raking devices in which a rake-head is made to traverse the platform in a direction parallel with the sickle, or at right angles with the line of draft. The object of the invention is to give the above motion to the rake-head, and also the necessary rising and falling movement of the same at the termination of its strokes, by a very simple means that may be readily applied to harvesters and admits of being directly connected to the driving-wheel.]

BUREAU BEDSTEAD—H. L. Thistle, of New York City: I claim combining the bedstead frame with the wardrobe, or other case, by means of the hinged links and movable slides, substantially as described, whereby the bedstead may be lowered to a low level, and by any other construction before known, while at the same time it can be let down by a single movement, and within a space no longer than the bedstead, and without the necessity of first drawing out part of the structure from the wall, or making joints in the side-rails, or pieces, the hinged links and slides giving to the structure all the foregoing advantages, as set forth.

And I also claim, in combination with the bedstead frame connected with the case by the hinged links and slides, the weighing of the head end of the frame to balance the weight of the foot end when lifting it up, and thereby facilitate the manipulation, substantially as described.

And I also claim forming the support for the foot end of the bedstead frame by a hinged panel, substantially as described, so that the said support, when the bed is thrown up, shall form part of the front of the wardrobe, or other piece of furniture, as set forth.

HARVESTING MACHINES—Saml. Thomas, of Burnett, Wis.: I claim the false pole, K, B, with its attached sliding case, E, C, which may be adjusted at pleasure, so as to prevent side draft and pressure upon the rear horse, in the manner and for the purpose specified.

ROTARY HARROWS—Geo. W. Toleman, of Augusta, Ky.: I claim the arrangement of the frame, A, shaft, B, iron circle, l, roller, 2, rods, B, C, and rod or hook, 4, operating conjointly, as set forth, and for the purposes specified.

STOVES—John Van and Henry V. Barringer, of Cincinnati, Ohio: We claim the swinging grated door or hearth, h, and sliding and swiveling register, g, in combination with the supporting legs, r, and stove, A, arranged and operating substantially as and for the purposes set forth.

HILLSIDE PLOWS—Edwd. Van Camp, of Beadington, N. J.: I claim making the share, the landside and the landside beam of hillside plow, each in one piece, and uniting them together to the moldboard and beam, in the manner and for the purpose set forth, thus making a cheap, strong and efficient plow for hillside plowing.

GRAIN SEPARATORS—James Vaughn, of Magnolia, Ill.: I claim the arrangement and combination of the semi-cylindrical hopper, F, having a depression, b, in its center, with the screen, E, buckets, d, spout, D, fan, J, and spout, I, as and for the purpose shown and described.

[This is an improvement in that class of corn-shellers and separators in which a revolving screen is employed as a portion of the separating device. The invention consists in attaching to the outer side of such screen a series of oblique scrapers and buckets, and having the screen fitted in or over a semi-cylindrical concave hopper, the parts being arranged so as to facilitate the gathering and conveying of the shelled corn from the concave hopper to the elevating device.]

MEAT SLICER—Wm. Vine, of Hartford, Conn.: I claim the beveled lip, T, and the pendant, G, for the purpose described, in combination with the other parts of the dried meat slicer, substantially as set forth.

LOOK—Thos. K. Webster, of Lawrence, Mass.: I claim the guard or fender, E, as described in the specification, and for the purpose described.

CHURN—Leonardo Westbrook, of New York City: I claim the use of the projecting rim, X, X, and the revolving disk, C, working over the same, in combination with the fixed and revolving radial dashers, and with or without the regulating thumb-screw, s, all constructed and operating substantially as described and for the purposes set forth.

ICE-PICK—Milton White, Howard White, Henry F. White and Joseph White, of Philadelphia, Pa.: We claim the combination of the ball, A, and tube, B, B, sliding upon the stem, C, C, in such a manner that the blow may be struck upon the head of the stem, substantially as described.

STOVES—John Geo. Widmann, of New York City: I claim the arrangement and combination of the gas tubes, d, with the cylinder, D, and fire openings, b, so that the gases which arise from the heating of the coal will be compelled to pass down into the fire, as shown and described.

[By this arrangement of the flues of a stove the whole heat developed in the combustion of coal is made available, and little or none passes up the chimney.]

HARVESTING MACHINES—Hosea Willard and Robert Ross, of Vergennes, Vt.: We claim, first, The arrangement and combination of the hinged bar, J, with the lever, I, substantially as and for the purpose shown and described.

Second, The arrangement and combination of the adjustable spring, b, bar, D, adjustable rod, f, spring, h, and finger bar, G, as and for the purpose shown and described.

[This is an improvement on a patent granted to the same inventor November 3, 1857, and the object of the present invention is to retain or support the finger bar more fully than formerly, so that it will not be strained or racked by use, but be kept firmly in position. The finger bar is facilitated in its motion when temporarily raised from the ground, and as regards the throwing up of its front edge and placing it higher or lower to cut the crop the desired height. It also separates the standing from the cut grass, so that the edge of the standing grass will be left perfectly erect as the machine moves along.]

HARVESTING MACHINES—William H. Wilson, of Denton, Md.: I claim, first, The combination of the vibrating sector, A, rack, p, lattice frame, C, and carriage, j, with the beam, B, or its equivalent, and the rake, D, the several parts being arranged substantially as described, for the purpose set forth.

Second, In combination with the rake, D, having its center driven backward and forward over the platform, the swiveling plate, f, ratchet, r, and pawl, n, and adjustable shifting stop, g, or its equivalent, whereby the rake is turned upon its center and caused to sweep the grain off, as specified.

Thirdly, In combination with the rake, D, having its center driven back and forth over the platform, as specified, the guiding-plate, w, and rolls, p, p', or their equivalent, which guide the rake, so that it will be in the proper position to sweep across the platform after having discharged a sheaf, as described.

Fourth, The combination of the rod, M, with the rod, s, arm, r, cam, y, and spring, N, the whole arranged and operating as and for the purpose set forth.

Fifth, The stop, h, arranged as described for the purpose set forth.

COMBINED METALLIC STREET CURB AND GUTTER—Wm. E. Worthen, of New York City: I claim the compound metallic curb and gutter, constructed substantially in the manner specified, whereby advantages, substantially such as are set forth, are attained.

PLOWS—T. J. de Yampert, of Shohola, Pa.: I claim, first, A revolving cone having under-cut or overhanging curved flanges or wings that extend entirely from the base to the point of the cone, so that it will revolve upon its shaft or journal by the resistance of the earth alone against it and without being driven by other forces, as described.

I also claim, in combination with a cone furnished with spiral under-cut flanges, and revolving by the resistance of the earth against it, the moldboard and landside for turning over the loosened earth and directing the plow in its path, substantially as described.

[This plow is provided with a rotary share that facilitates its motion through the land, and more thoroughly breaks up the soil.]

PREVING KNIFE—G. G. Belcher, (assignor to himself and Jos. S. Hill), of Worcester, Mass.: I claim, first, Arranging the blade of a knife in such a manner that it opens and closes by turning one or both parts of the handle, substantially as specified.

Second, The pins, i, i', on the blade, B, arranged in combination with the slots, h, in the plates, a, a', of the handle for the purpose of operating the blade, and keeping the same rigid when it is opened as well as when it is closed, substantially as set forth.

Third, The slide, C, or its equivalent, arranged in combination with the eye, d, for the purpose of securing the two parts of the handle together, substantially in the manner described.

[The object of this invention is to make the blade of the knife perfectly rigid with the handle when the knife is opened, and at the same time it is so arranged that it can be opened and shut quite easily without any danger of cutting the fingers.]

BOOT-CRIMPING MACHINES—James D. Black, (assignor to himself and Ezekiel Hallett, Jr.), of Boston, Mass.: I claim machines for crimping boot-legs, in which the "hitch-on" is raised by the hand of the operator, pivoting the device by which the "hitch-on" is raised to a spring clock, or its equivalent, for the purpose set forth.

Second, I claim the peculiar construction of "hitch-on" described, the movable jaws, p, being temporarily closed upon both sides, by a spring, r, so that they may be separately opened, as set forth, for the insertion of the leather, and may be permanently closed by a single screw, as described.

HAND-PLANE—Simson S. Dodge, of Sunapee, N. H., assignor to himself and Edmund Burke, of Newport, N. H.: I claim, first, The curved adjustable cap iron, D, constructed and operating substantially as described.

Second, The combination of the adjustable cap iron, D, with the bolt, H, the set screws, G, G, the thumb screw, E, and the breaker, C, constructed and operating substantially as described.

KNAPSACKS—William Griffiths, (assignor to himself and Joseph H. Lambert), of Philadelphia, Pa.: I claim a military knapsack, having the usual frame or case, made and adapted thereto, so as to be convertible, substantially as and for the purposes described, as an improved article of manufacture.

CORN-PLANTERS—Wm. H. King, (assignor to himself and Nelson Colson), of Charleston, Ill.: I claim, first, In combination with the cams, L, and the arm, M, the arrangement of the rods, o, in such relation to the seed cells, c, that they push out the corn contained in the same, substantially as described.

Second, The arrangement of the marker, g, in combination with scraper, h, so that the same never fails to make a clear mark in the track of the driving wheel, substantially in the manner set forth.

[This is an excellent corn-planter, easily operated, and not liable to get out of order.]

SEED-DRILLS—Chas. Learned, (assignor to himself and Geo. P. Stevens), of Indianapolis, Ind.: I claim the guard, or series of straps, K, in combination with the toothed roller, G, and elastic guard, J, when operated in connection with the roller, H, and agitator, I.

MAKING STEELS FOR SHARPENING KNIVES—Saml. Lee, (assignor to Chas. S. Fomeroy), of Taunton, Mass.: I claim the combination of these devices, so that by their continued action they shall produce a steel with sharp ribs or edges, in the direction of its length, substantially as set forth.

COOKING STOVES—Henry G. Leonard, (assignor to Lemuel M. Leonard), of Taunton, Mass.: I claim so constructing and arranging one or more of the oven plates of the stove, that it or they can be removed, and the fire or flues cleaned, and the plates replaced, substantially as described, without loosening or separating the plates which form the outside of the stove.

I also claim making one or more of the interior flue plates, so that it can be removed and the flue cleaned, and the plate replaced, substantially as described, without loosening or separating the plates which form the outside of the stove.

SINGLE THREAD STITCHES—James S. McCurdy, (assignor to Elias Howe, Jr.), of Brooklyn, N. Y.: I claim a single thread interloped stitch, in which each successive loop is encircled by a tight coil of the thread of the preceding loop, substantially as described.

DEVICE FOR SUSPENDING AND LIBERATING SHIP'S BOATS—Daniel P. Mealey, (assignor to himself and A. H. Hays), of Washington, D. C.: I claim the hanger, constructed with a seat or seats, or the ring of the boat to rest upon, in combination with the seat formed in the tumbler, in such manner that the seat or seats of the hanger shall coincide with the seat in the tumbler, so that a large proportion of the weight and strain may be supported by the hanger, which increases the power of the device to resist strains, and facilitates the unlatching of the tumbler, substantially as described.

I also claim, in combination with the arrangement of the opening, E, in the tumbler, in combination with the seats, c, c, and that portion, m, of the hanger which rises above and overhangs them, in such manner that when the seats of the hanger and tumbler coincide, the mouth of said opening will pass and be enclosed by the hanger, in the manner and for the purposes described.

I also claim, in combination with the tumbler and hanger, arranged as described, extending the legs of the hanger below the range of motion of the opening in the tumbler, so as to form a cut-off to the passage of the ring, and thus prevent it from being carried round with the motion of the tumbler, substantially as described.

I also claim, in combination with a boat detcher, making a recess or shoulder, f, in the tumbler, in combination with a snus or projection, g, on the dead-eye, whereby the connection of the ring of the boat with the tumbler may be made with one hand, when necessary, substantially as described.

CHURN—James O. Merrill, (assignor to Wm. A. Swain), of Chichester, N. H.: I claim the arrangement of the oscillating lever, L, and its weight, W, with the vibrating shaft, M, the vibrating lever, E, the auxiliary levers, F, F', and the alternate reciprocating dasher arms, G, G', with their dasher, N, N', constructed and operating substantially, as set forth, by which the oscillating power of the pendulum is applied to the process of churning butter.

FACITIOUS ENAMELED LEATHER—James W. Munroe, (assignor to John Southworth and Wm. R. McKenzie), of Fall River, Mass.: I claim, as a new article of manufacture, the within-described artificial leather, composed of two or more thicknesses of cloth, united by cement and varnish, as set forth.

MACHINES FOR DIGGING AND GATHERING POTATOES—Jonathan B. Parvin, (assignor to himself and Elias Stratton), of Heighstown, N. J.: I claim the combination of the weed-cutter, D, and roller, C, when mounted on a swivel and applied to a potato digger, substantially in the manner and for the purpose described.

I also claim hinging the frame that carries the plow and the endless apron, K, on the shaft, c, when used in combination with the lever, links and rolls, by which the operator from his seat can raise up, lower, or hold up the plow and apron, substantially as described.

I also claim the combination of the adjustable endless apron, k, ho izontal and vertically vibrating grate, Q, and the elevating apparatus, substantially as described.

BAKING COOK—G. W. Randall, (assignor to Reuben J. Todd), of Boston, Mass.: I claim the wash basin cock, or faucet, as made with cold and hot water inlet passages, d, e, and the column passage, h, arranged in the socket, C, and column, A, and with respect to the discharge spout, B, substantially as described, in order to enable a person, by turning the movable part, or parts, to discharge either cold or hot water, or a mixture of the same from the faucet, or to close off both hot and cold water induction passages as circumstances may require.

TOOLS FOR MANUFACTURING PISTOLS—Augustus Rebetey, of Norwich, Conn., assignor to the Manhattan Firearms Manufacturing Company of New York City: I claim the use of a frame, constructed as described, having a profile in one plate of it, to shape and finish a corresponding recess in the side plate of a pistol, by means of a revolving cutter, governed by the outlines of said profile.

ROTARY CUTTERS AND MODE OF OPERATING THEM FOR MOLDS—Frederick Schute, (assignor to himself and Philip P. Weiss), of Philadelphia, Pa.: I claim a revolving cutter, with any convenient number of double cutting edges of the form of the tongue, groove, bead or hollows to be cut—one cutting edge being the reverse of the other in each pair, so that one cutting edge only of each pair shall have a cutting effect, when the cutter revolves in one direction—the other edge to cut when the cutter revolves in a contrary direction, the other edge to cut when the cutter revolves in a contrary direction, and so that one cutting edge of each pair shall act as a guard, to prevent the adjacent edge from penetrating too deep into the wood, when the said cutter with double-cutting edges, thus constructed, is secured to a spindle capable of having the direction of its rotation readily reversed, as and for the purpose set forth.

STEAM ENGINES—G. F. Lombard, of New Orleans, La., Patented in England Oct. 10, 1859: I claim, first, The relative arrangement of two cylinders, four pistons, two rocking beams, two steam chests with valves, and the specified connections which combine and operate the same, in the manner and for the purpose set forth.

Second, The application of the exhaust steam of the engine to the crank, or eccentric shaft, through a fly-wheel, constructed and combined with the engine and crank shaft, substantially as and for the purposes set forth.

STEAM ENGINE—J. A. Whipple, (assignor to James Whipple and B. F. Cooke), of Boston, Mass.: I claim the described intermittent rotary engine, consisting of the cylinder, F, the heads, e, and pistons, h, h', operating in the manner substantially as described.

STEAM AND WATER GAGE—Cornelia H. Williams, of Williamsburg, N. Y. (administratrix of the estate of Augustus Williams, deceased), assignor to Anthony Pollak, of Washington, D. C., assignor to A. N. Clark, of Beverly, Mass.: What is claimed as the invention of the deceased is, first, Combining the vessel separate and distinct from, but connected to the boiler by means of two pipes, as described, containing a float having an indicator, or pointer, attached thereto, with the transparent tube, or steam chamber, when said parts are constructed and arranged in relation to each other, to operate in the manner and for the purpose substantially as set forth.

Second, The general arrangement of the instrument for forming an alarm water-gage by combining with the indicator water-gage constructed as described, a whistle attached to a separate chamber containing a valve arranged to be operated by the float, so as to admit steam to said whistle to give alarm, when required, substantially as set forth.

HORSE-SHOE MACHINE—J. B. Collen, (assignor to himself and Pascal Yearsley), of Philadelphia, Pa.: I claim, first, Bending the heated bar of iron to the requisite form, by applying it to a revolving former of the shape of the inside of the shoe, when the said former is arranged to hold the bent iron, while it is acted upon by the dies, as set forth.

Second, The combination of the revolving former, q,

with the cutter, x, when the latter is so arranged, in respect to the former, that the edge of the cutter shall coincide, or nearly coincide with the circular path traversed by the outer edge of the former, and when the cutter is hung to the movable bar, y, or its equivalent, as set forth and for the purpose specified.

Third, The die, N, the spindle, Q, its former, g, and the sleeve, S, in combination with the counter-die, T, on the spindle, u, when the whole of the parts are arranged in respect to each other for joint action, substantially as and for the purpose specified.

CORK MACHINE—Albert Albertson, (assignor to C. C. Bean), of New York City: I claim, first, The stationary cylinder, D, d, or any substantially equivalent device, when employed to grip a cork by its periphery so as to effectually prevent its rotation while being cut by a rotary cylindrical cutter.

Second, The feed rollers, F, H, H' (with or without the band G) arranged and adapted to rotate a cork by friction upon its periphery, while under the action of a longitudinal cutter.

RE-ISSUES.

COFFEE-POTS—Wm. H. Elliot, of Plattsburg, N. Y. Patented January 25, 1859: I claim, first, The combination of boiler, a, still worm condenser, b, conducting plate, g, and the external opening of the still worm at c, when these devices are so arranged in relation to each other that an opening to the external air shall be provided for the non-condensable gases, while the condensable vapors are reduced to a liquid without coming in contact with the condenser water, and then turned by conductors into the boiler.

Second, The arrangement of the joint, c, below the spout, so that vapor can pass through the spout without first passing the joint, as set forth.

Third, The employment of conductors in combination with the condenser, for the purpose of filling the water joint, or keeping it full, as and for the purpose specified.

MOWING AND REAPING MACHINES—J. W. Mulley, of Amsterdam, N. Y. Patented Dec. 16, 1856: I claim, first, Connecting the frame of the platform with the frame carrying the driver and raker's seat, in the manner substantially as set forth, namely, securing the relative position of the two frames by means of the brace, J, in the rear, and the laterally inclined drawhook in front, when the above parts are constructed and arranged as described.

Second, The shoe, k, in combination with the tongue attachment in front thereof, the said shoe being constructed and arranged substantially as described to perform the functions, as set forth.

Third, The rod, A, and the rails, 5, connected in the manner described, in combination with the pole, N, the rocking shaft, 3, and the lever, 2, the whole being constructed, arranged and operated in the manner specified and for the purpose set forth.

Fourth, I claim the arrangement in relation to the driver's seat of the lever and mechanism connected therewith for raising and lowering the cutter bar, substantially as set forth, whereby the sickle may be raised in the manner described.

ADDITIONAL IMPROVEMENT.

MODES OF VENTILATING RAILROAD CARS—D. H. Fox and John Fink, of Reading, Pa. Patented May 8, 1855: We claim, as an improvement on our patent aforesaid, the construction of the fan-chambers, D, D', with outlets at each extremity, and their combination with the other portions of the ventilating apparatus, as described.

EXTENSION.

STOVES—F. L. Hedenberg, of New York City. Patented May 7, 1845: I claim the particular manner as set forth, in which I arrange and combine the flue and air-heating spaces, and the pedestal of my stove, the hot-air space being between the ascending and descending draught, the descending draught spreading around the base of the stove.

DESIGNS.

WATCH GUARDS—George Blanchard, of New York City.

STOVE PLATE—J. W. Lane, of Newton, N. J.

NOTE.—We may safely presume that there never were so many patents issued from any Patent Bureau in the world in one week, to the clients of a single solicitor, as were issued to ours during the past, ending May 10, and which will be found as above. Out of the number issued, thirty-two of the cases were prepared at the home office of the SCIENTIFIC AMERICAN, exclusive of a number which were solicited through our branch office at Washington. Some may inquire, "Can so many cases be properly prepared in one establishment per week?" Our answer to such inquiry is, that not only does each individual case receive just as much thought, time and care at our hands as if we had only six applications to prepare every week, but we are enabled to give much better attention to each case, from the fact that we are thus enabled to command the best ability and most genuine talent on such matters. Each case presented to us by the inventor is not only examined by the members of the firm, but the aid of an examiner or engineer who is specially conversant with the peculiar branch of mechanics or class of manufacture to which the invention relates, is called in, and if any difficult points arise in the preparation of the papers in the management of the case, the advice and experience of the whole examining corps is brought to bear upon it, and thus the applicant for a patent often gets the combined knowledge and talent of six or eight experienced persons in preparing his case, and no application has the attention of less than three persons in its preparation, be it ever so simple. By pursuing this system, we have won the confidence of our clients, and that we are daily adding to the number of them, each week's issue of patents satisfactorily proves.

INVENTIONS EXAMINED at the Patent Office, and advice given as to the patentability of inventions, before the expense of an application is incurred. This service is carefully performed by Editors of this Journal, through their Branch Office at Washington, for the small fee of \$5. A sketch and description of the invention only are wanted to enable them to make the examination. Address MUNN & COMPANY, No. 37 Park-row, New York.

A chemist at Lyons has discovered the means of removing, instantaneously, from the hands, the stains produced by nitrate of silver, in photography. It is simply to put linsed in the water used.

[We find the above in an exchange, and as it is likely "to go the rounds," we may save many a photographer the trouble of trying the experiment, by informing him that it is a myth, and the Photographic Society of France have contradicted it.