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**KETTLES FOR TRYING OILS**—J. L. Alberger, of Buffalo, N. Y. : I claim a horizontally-placed cylindrical boiler or tank, surrounded by a steam jacket, or having the steam admitted directly into it, when said boiler or tank is capable of being turned over in its cradle, and have all its contents run out at the man-hole, as described, and this I claim whether said boiler be used in connection with a condenser or without it, substantially as set forth.

**CURTAIN FIXTURE**—Thomas C. Baldwin, of Newton, Mass. : I claim the detaching chamber, b, and passage, i, in their combination and arrangement with the journal bearings of the two bearing blocks, G, H, and with the rotary friction ratchet, its spring, and the pulley being arranged at one end of the curtain roller, substantially as described, and for the purpose specified.

I also claim the arrangement of the rotary friction ratchet spring and the pulley at one and the same end of the curtain roller, or so that the said ratchet may turn on the journal projecting from the said pulley, in manner as described for the purpose and to obtain the advantage as described.

**TACKLE BLOCK**—W. B. Barnard, of Waterbury, Conn. : I do not claim inventing a bushing provided with friction rollers, in a pulley or tackle block, for the purpose of diminishing friction, for such device has been previously used.

But I claim a tackle block, having its bushing, B, secured and adjusted to the pulley, A, by means of a nut, C, as shown and described.

[This is an improvement in what are known as the anti-friction tackle blocks—those which are provided with a bushing containing friction rollers. The invention consists in a novel way of securing the bushing in the pulley, so that it will be firmly secured therein, effectually prevented from turning, and at the same time have no tendency to weaken the pulley—an objection generally attending other anti-friction blocks.]

**TOOL FOR CUTTING KEY SEATS IN WHEELS AND PULLEYS**—James Barton, of Cleveland, Ohio : I do not propose any particular mode of driving this shaft through wheels and pulleys, as I may do it by means of any of the mechanical powers with which sufficient force may be obtained.

But I claim the employment of the shaft, A, provided with a series of cutters, which are adjustable, the two being so arranged that by passing them through the hole or bore of a wheel or pulley, a key seat is finished parallel with the bore, as is fully set forth.

Second, The employment of a tapering circular step or wedge between the cutter shaft and the bore of the wheel or pulley on the opposite side from the cutters while the key seat is being cut, for the purpose of cutting a tapering key seat, as is fully described.

**SEED PLANTERS**—James F. Beckwith and Adin G. Gage, of Alabama, N. Y. : We claim, first, The combination of the raising lever, L, with the arrangement as described with the marking wheel, for the purposes set forth.

Second, The combination of the cranks on the axle of the marking wheel, when arranged as described with the markers, whereby the exact positions of the measuring recesses in the seed-deliverer are indicated to the driver.

**PIPE TONGS**—James R. Brown, of Boston, Mass. : I do not claim making one jaw of a pair of pipe tongs adjustable in distance from or with respect to the other, by means of a screw.

But what I claim in the crossed lever jaw pipe tongs is, the described arrangement and application of the adjusting screw with reference to the fulcrum pin, the slot, and the hooked jaw lever, the same being for the purpose as specified.

**PHOTOGRAPHIC PLATE SHIELD**—Henry Bryant and R. D. O. Smith, of Washington, D. C. : We do not claim the application of the door to the plate shield, for that has been used before.

But we claim the application of the bent wire or its equivalent, substantially for the purpose of opening and closing the door on the inside of the camera, in the manner and for the purpose as described.

**SCISSORS**—Joel Bryant, of Brooklyn, N. Y. : I am aware that scissors have been made with rigid plates of metal vibrating upon their blades, for the purpose of holding and keeping the edges of the blades in contact with each other, as in John Allender's scissors.

But I am not aware that scissors have ever been provided with springs in any way or manner, for the purpose of forming a joint that will produce and retain a uniform pressure, preventing the necessity for tightening the blades, and obviate the result of wear from use, as described and set forth; consequently, disclaiming all other modes of constructing scissors.

I claim the exclusive use of scissors when provided with a spring or springs connecting with the rivet and blades, substantially as described, and for the purposes set forth.

**APPARATUS FOR ASSORTING EGGS**—Henry Burt, of Newark, N. J. : I claim the arrangement of the perforated surface, b, for receiving the eggs and excluding the light, as described.

I also claim the mirror, d, in combination with the above, arranged substantially and for the purpose specified.

[This invention was illustrated and described on page 96, this Vol., Sci. Am.]

**FIRE ENGINES**—Lyander Butten and Robert Blake, of Waterford, N. Y. : We claim placing the cylinders diagonally to the line of the rockshaft, substantially in the manner and for the purposes set forth.

We do not claim contracting the air vessel at its base or its point of attachment to the water ways or channels of fire engines.

But we claim combining with the horizontal water way or channel, i, the air chamber, d, divided into two compartments by the contraction, f, at about one-half the height of said air chamber above its base or point of attachment to said water way, substantially in the manner and for the purposes set forth.

We claim in combination with the hour glass contraction of the air chamber, the ring enlargement, e, of the rockshaft, as set forth.

**EXTENSIBLE LIFE RAFT**—Calvin Furbush, of Kittery, Me. : The flexible joints I do not claim, as they have been before used.

I claim the combination of the diagonal braces, g, sleeves, i, and guide bars, l, with the tubular floats, a, in the manner set forth, and for the purpose specified.

**SEWING MACHINES**—S. S. Burnet and William Broderick, of Chicago, Ill. : We do not claim the arrangement of spring pressure pad shown in the patent of A. H. Boyd said arrangement employing a spring for keeping the pad in contact with the cloth, while we employ a spring simply for throwing the pad out of contact with the cloth.

We claim, first, The employment of the rocker, F, in combination with the cranks, I, J, of the driving shaft, and the needle bar or slide, C, in the manner substantially as specified, for giving the required motions to the needle bar to accomplish the formation of the loop, and simultaneously allow the shuttle tube to pass through the loop before the loop is drawn tight, and thereby accomplish the interlocking of the two threads, and the drawing of the stitch tight on the cloth, as set forth.

Second, The employment of an auxiliary adjustable thread guide, N, in combination with the rocker, F, and stationary thread guide, N', N', in the manner substantially as specified, for the purposes of governing and adjusting the amount of thread for each stitch.

Third, The employment of the segment friction plate N<sub>2</sub>, hung on a horizontal axis, and constructed and operating as described, with or without index pointer, f, in combination with the thread guides, N<sub>1</sub> N<sub>2</sub>, substantially as specified, for the purpose of causing a greater or less tension upon the upper or needle thread.

Fourth, The employment of a vertical sliding unyielding pressure bar, P', formed of two pieces, m, n, which are right and left screw-tapped, and coupled together by an adjustable link nut, l, in combination with a jointed pivoted feeding and holding-down pad, O, o, and a vertically and late ally-acting cam, s, t, of the rocker, in the manner substantially as specified.

[The arrangement of this machine is very different from other double thread or shuttle machines in use. The downward motion of the needle to supply the thread for a stitch, the partial upward motion to bow or loop the thread, the second downward motion of the needle to open the loop for the free passage of the shuttle through it, and the complete upward movement of the needle to form the stitch on the cloth, are effected by simply a rocker-arm combined with the driving shaft. The amount of thread supplied is controlled simply by an adjustable arm of the rocker. The tension is regulated in the most perfect manner by an adjustable segment wheel, so arranged that the thread bears on a greater or less surface, as the necessity of the case may require. The feed is effected by any anti-spring pressure pad; the pad being combined with the rocker arm, so that it is forced down rigidly upon the cloth at one stage of the operation, forced forward at another, and then released and thrown upward by a spring. We certainly regard this a most excellent machine; and as to the value of the patent, no remarks are necessary, as this will be evident from the comprehensive character of the claims.]

**HARVESTERS**—Nicholas Clute, of Dunnsville, N. Y. : I claim the construction and arrangement of the several parts, substantially as described, for the purpose of allowing the ends of the rakes to pass over and around the reel, in the manner and for the purpose specified.

I claim the pulley, O<sub>2</sub>, when arranged to tip or vibrate the rake teeth at the top of the inclined plane, as described, and release the grain and straw, and let it fall into the trough or box, substantially as specified.

**CUT-OFF VALVES FOR STEAM ENGINES**—J. M. Colman, of Milwaukee, Wis. : I claim the arrangement and combination of the flap valves, c, c', valves, B, B', jointed toes, h, h', rods, i, i', levers, K, K', and governor, G, as and for the purposes shown and described.

[This invention consists in a certain mode of applying flap valves to operate in combination with slide valves, whereby the former are rendered capable of cutting off steam from the slide valves suddenly, at such point in the stroke of the engine as may be determined by a governor, or other adjustable contrivance.]

**PUMPS**—Asahel Cooley, of Springfield, Ill. : I disclaim suction chamber, A, cylinder, B, and air chamber, C, as they do not differ materially from others in use.

First, I claim the parts, E, G, F, s and c, c, composing the piston and its valves, when combined with the hollow piston rod, D, substantially as described.

Second, I claim the parts, H, K and L, constructed as described, when combined with the hollow piston rod, D, for the purposes and in the manner described.

**HOSE COUPLING**—James C. Cooke, of Middletown, Conn. : I do not claim flanges or locking parts having one-half of the coupling provided with a male, and the other half a female part, as I am aware that such is not new.

Neither do I claim, broadly, making both halves of my coupling alike.

But I claim the female parts, a, in combination with the male parts, c, c, arranged and made to operate substantially for the purposes specified.

**ARRANGEMENT OF CUTTERS FOR TURNING HUBS**—George Cooper, of Berlin, Wis. : I claim the arrangement in the same machine of the adjustable preparatory and main cutter stocks, D, E, furnished with suitable cutters, in combination with any ordinary turning lathe or revolving centering shaft, substantially as and for the purposes set forth.

[This improvement is designed for use in connection with a centering lathe. The preparatory and finishing cutters stand opposite the space existing between the two cone centers of the lathe, and are ranged so that the preparatory cutters can first be brought into action to reduce the hub block to the form of a hub, and then the second set of cutters, to finish or complete the hub.

Neither do we claim, broadly, the levers, m, n, for retaining the seed so that it may be dropped from the lower ends of the tubes, g.

But I claim arranging the levers, l, and plates, j, which form the dropping device, with the levers, m, n, in the tubes, g, as described, whereby the above-named parts are rendered capable of being operated simultaneously by the simple action of the bars, u, on the ends of the levers, l.

[This invention consists in a novel means employed for operating the seed-distributors, and in a peculiar arrangement of the seed boxes and tubes, whereby the same, when necessary, may be readily raised and lowered by the operator. The invention is more specially designed for planting corn or maize, but may be used for other seeds, as they can be dropped in check rows, or planted closely in drills.]

**SHUTTER-FASTENER**—John McGerrah, of Philadelphia, Pa. : I claim the application of the brace to the under leaf of an ordinary hinge, and the nut as a continuation of the axis of the segment on which revolves the upper leaf of the hinge, which is secured by the brace and the pin securing the embrace of the brace and nut.

**SUPPORTING INSULATOR FOR LIGHTING RODS**—N. N. McLeod, of St. Louis, Mo. : I claim cutting the groove in the edge of the glass as to form the elliptical shape shown at A', Fig. 1, whereby the insulator is attached to the building in the manner described.

And I also claim the combination of the two straps, d, d, with the glass, and with the pointed conductor, constructed and arranged substantially in the manner set forth, for the purpose specified.

**FURNACES OF STEAM BOILERS**—F. P. Dimpfel, of Philadelphia, Pa. Patented in England, May 24th, 1856. I claim the passages through the water spaces entering the combustion chamber or extension of the furnace, as described.

I also claim the means, substantially as described, for providing for the perfect consumption of the finer particles of fuel and products of combustion, as set forth.

**STEAM TRAP**—Frank Douglas, of East Liverpool, Ohio : I do not claim the combination of a valve or valves with a float, to act as a steam trap, or for any purpose where the escape of water is to be provided for, but the escape of steam prevented.

But I claim, first, The arrangement within the box, A, of the horizontal cylindrical chamber, C, the two disk valves, E, E', with their interposed adjustable stem, f, the levers, F, F', and connections of said levers with the float, substantially as set forth.

Second, The spherical float guard, H, applied within the box, A, and in relation to the inlet passages, h, h, substantially as and for the purpose set forth.

[This invention consists in a certain mode of applying and arranging two disk valves and the connections on the same with a float; and it further consists in a guard applied to protect this float from the action of the steam.]

**SEEDING MACHINES**—Warren Drummond, of Woodbridge, N. J. : I claim the elastic rollers, K, arranged relatively with the slides, j, to operate as and for the purpose set forth.

[In this machine there are two improvements—one in the seed-distributing device, and the other in the means for raising and lowering the front part of the machine, so that the shares may, when necessary, be raised free from the ground. The invention is designed for planting seed in hills or drills, more especially for planting in hills and in check rows; and the improvement in the distributing device is intended to prevent its choking or clogging, and also the breaking of the seed as the seed cells are drawn under with the cut-off—a contingency which frequently occurs with the ordinary seed cut-off.]

**BLIND OPERATOR**—L. N. Fay and William Mason, of West Warren, Mass. : The spirally flanged plate, F, and segment worm wheel, G, have been previously used, but arranged in a different way from the plan shown and described; said plate, F, and worm wheel, G, will be found described in Letters Patent granted to us, and bearing date August 4th, 1857.

Therefore disclaim the plate, F, and segment worm wheel, G, when considered separately, or irrespective of the attachment connected thereto, for adjusting the blind slats, a.

But we claim the spirally flanged plate, F, and worm wheel, G, when attached to the stop, A, and used in connection with the slotted bar, H, stop, q, and the slat-adjusting device formed of the arms, j, k, shaft, l, and spring, o, the whole being arranged to operate as and for the purpose set forth.

[The object of this invention is to obtain a simple device whereby a window-blind, by simply turning a knob, may be opened, and also retained at any desired point, without raising the sash. The blind slats can also be adjusted, or opened or closed, by turning the same knob when the blind is closed.]

**HOT AIR FURNACES**—Jno. R. Ferguson, of Brooklyn, N. Y. : Disclaiming the devices used, separately considered.

I claim the combination and arrangement of the various parts, as described, for the purpose specified.

I also claim the evaporation pan, L, in the hot air chamber of the furnace, when made adjustable vertically for the purpose specified, as set forth.

**DEVICE TO PREVENT INJURY FROM RUPTURE OF THE MAIN SPRING OF WATCHES**—David Bucklin Fitts, of Holliston, Mass. : I do not claim simply making the barrel separate from the main wheel, or any other gear of the "train" of a watch.

But what I claim consists both in the separation of the barrel and the main or other gear wheel of the train, so that the two can revolve independently of each other, as described, and the application thereto, substantially as specified, of mechanism described, and termed a "reverse motion," the same being for the purpose as explained.

**SEDIMENT COLLECTOR FOR STEAM BOILERS**—Hiram H. Havens, of New York City : I do not claim a vessel and blow cock in which there are vertical openings, as these have been used, and do not collect the sediment, by the ebullition throwing the same over horizontal edges.

I am also aware that a dish or horizontal vessel has been located below the surface of the water to receive the ebullition, therefore I do not claim the same, but in this instance no provision was made for a variation in the change of water-level, and unless the alternate edges and openings rise above the water, and are so formed that steam or sediment once thrown over by the ebullition cannot escape, the object sought will not be accomplished.

I claim the vessel, a, fitted with a blow-off pipe, in combination with the rings, e, e, or their equivalents, presenting alternate horizontal edges and openings from the highest to the lowest water gage or level, for the purposes and as specified.

**SEWING MACHINES**—Albert H. Hook, of New York City : I claim the combination of the levers, m, n, arm, k, spring, o, and cam, p, constructed and arranged substantially in the manner and for the purpose set forth.

**SEEDING MACHINES**—R. W. Hunt and M. Kennedy, of Galesburg, Ill. : We are aware that seed-dropping slides have been previously used, in which cut-off plates have been attached to cover the tops of seed holes while the lower ends are opened, and we therefore do not claim such device.

Neither do we claim, broadly, the levers, m, n, for retaining the seed so that it may be dropped from the lower ends of the tubes, g.

But I claim arranging the levers, l, and plates, j, which form the dropping device, with the levers, m, n, in the tubes, g, as described, whereby the above-named parts are rendered capable of being operated simultaneously by the simple action of the bars, u, on the ends of the levers, l.

[This invention consists in a novel means employed for operating the seed-distributors, and in a peculiar arrangement of the seed boxes and tubes, whereby the same, when necessary, may be readily raised and lowered by the operator. The invention is more specially designed for planting corn or maize, but may be used for other seeds, as they can be dropped in check rows, or planted closely in drills.]

**SHUTTER-FASTENER**—John McGerrah, of Philadelphia, Pa. : I claim the application of the brace to the under leaf of an ordinary hinge, and the nut as a continuation of the axis of the segment on which revolves the upper leaf of the hinge, which is secured by the brace and the pin securing the embrace of the brace and nut.

**SUPPORTING INSULATOR FOR LIGHTING RODS**—N. N. McLeod, of St. Louis, Mo. : I claim cutting the groove in the edge of the glass as to form the elliptical shape shown at A', Fig. 1, whereby the insulator is attached to the building in the manner described.

And I also claim the combination of the two straps, d, d, with the glass, and with the pointed conductor, constructed and arranged substantially in the manner set forth, for the purpose specified.

**PRINTING PRESS**—David E. James, of Utica, N. Y. : I claim the arrangement and combination of the lever-arms, as described, through which the operations of the press are performed, including the use of the spring, S, which permits the extension of the lever, q, while the carriage is at rest, as described.

I also claim, in combination with the said arrangement of leverage, the swinging post, V, and its connection with the lever, O, as described, the whole being arranged and operating substantially the manner set forth.

**PUMPS**—A. L. Keeperts and George Palmer, of Littlestown, Pa. : We claim the combination of the main pump, r, with the reservoir, a, and ascension pipe, b, elastic spring valve, V, the whole arranged in relation to the proportions existing between the valves and pipes, operating as described, and for the purposes set forth.

**CORN PLANTERS**—David Ladd, of Dearborn, Mich. : I do not claim as my invention any of the mentioned parts of this machine separately.

But I claim the peculiar arrangement of the frame, A, shafts, B, B', axle, C, with cavities, a, a, wheels, D, D', box, E, plows, F, F', tubes, G, G', scrapers, H, H', rod, I, attached to axle, C, when made and used as described, and for the purposes set forth.

**SEEDING MACHINES**—Daniel Markham, Austin S. Markham and David Eldred, of Monmouth, Ill. : We do not claim, broadly and separately, the wheels, i, provided with buckets, j, for distributing seed, for they have been previously used.

Neither do we claim a board or plate, I, so placed relatively with the hopper, as to receive the seed and scatter the same, for such board or plate has also been used, as also has the perforated slide bar, G, which we consequently disclaim.

But we claim the arrangement of the rotating shaft, F, provided with distributing wheels, i, having buckets attached, the slide bar, G, the plate, I, and adjustable strips or bottom, h, substantially as shown, whereby seed may be planted from the same seed box, either in drills, check rows, or broadcast, as may be desired.

[In this seeding machine, the seed-distributing devices are arranged in one and the same hopper, and the deflecting plates, seed-conveying tubes and shares are arranged so that the seed may be planted in check rows, in drills, or broadcast, as may be desired.]

**PRESERVATION OF FLESH FOR FOOD**—Nathan B. Marsh, of Cincinnati, Ohio : I am aware that the arteries of animals have been injected with saline and aromatic solutions in such manner as to fill the capillaries and veins, for the purpose of curing and flavoring the flesh.

But I am not aware that saline fluids have ever been transmitted in a current through the arteries, capillaries, and veins, so as to insure permanent action of the saline matters upon the flesh.

Nor am I aware that refrigerant fluids have ever been used or injected for the purpose of abstracting the animal heat; nor am I aware that that object has ever been accomplished by injection; consequently, I do not claim the filling the arteries, capillaries, and veins of animals with saline or aromatic solutions *per se*.

I am also aware that animals have been killed by knocking on the head, and then wounding the heart by a knife thrust from above the sternum, or through the parietics of the chest, in such manner as necessarily to wound important arterial branches, and divide the extremely vascular tissues of the heart *per se*.

But I am not aware that animals have ever been bled or slaughtered by cutting in the median line, or opening the chest, and then wounding the heart or its vessels.

Nor am I aware that animals have ever been bled by opening the abdomen, and then incising the *vena cava* or *aorta*; consequently I do not claim bleeding the animals by wounding the *vena cava* or *aorta*.

First, I claim preparing *cas* masses for injection, and injecting the same, in the manner set forth.

Second, I claim the injecting or transmitting of the saline solutions at a temperature below or above the freezing point, or thereabout, as set forth, so that the flesh may be cooled from within outward.

Third, I claim the injection of portions of the carcasses, as well as the whole, with the solutions indicated, in the manner set forth.

**SCREW-NECK BOTTLES**—John L. Mason, of New York City : I claim a screw-neck or nozzle of a jar or bottle in combination with a groove separating the thread from the shoulder of the bottle or jar, as described.

I also claim a screw on the exterior of the neck of a bottle or jar, in which the neck extends above the screw thread, and the thread vanishes into the neck of the bottle or jar, substantially as described.

**GAGE COCK**—Richard L. Mills, of Lancaster, Ohio : I do not claim, broadly, the invention of the double valved stems, so arranged that when one valve is withdrawn from its seat, the other shall be drawn into its seat, and thus stop the escape of steam, without packing, for I am aware that such devices are old.

But I claim the arrangement and combination of the lining tube, C, and cap, E, containing the adjustable seats, c, g, with the double valve stem, D, as and for the purposes shown and described.

[By a certain arrangement of two conical valves on a screwed stem, in combination with a female screw and a peculiar way of arranging two conical seats within the cock, all packing for the stem is dispensed with, and yet the escape of steam around the stem when the cock is open, is effectually prevented.]

**APPARATUS FOR HOLDING SHEEP**—S. Minnick, of Hopewell, Ohio : I claim the adjustable cock, D, E, F and G, in combination with the neck piece, I, and extension levers, M, L, arranged and operating in the manner and for the purpose set forth.

**VALVE GEAR OF STEAM ENGINES**—Edward Moran, of New York City : I claim operating the valves by means of a valve guide, D, substantially as described, the movements of which are regulated by projecting cams, arranged as described.

I also claim the reversing apparatus, as and for the purposes set forth.

I also claim presenting and withdrawing the cams that give motion to the guide, so as to bring the cams into motion at the proper time to produce the desired valve motion, as specified.

**VALVES OF STEAM ENGINES**—Alden R. Morrill, of Northfield, Vt. : I am fully aware of the invention of devices claimed in the United States patents numbered 11,607 and 10,454; I do not claim such.

Nor do I claim a piston valve having two heads.

Nor do I claim arranging a steam chest between two cylindrical valve cases, each of which not only has a passage leading from its outer end to the steam cylinder, but a separate ejection passage, the same being as shown in the United States patent numbered 13,276.

What I claim is, my improved construction and arrangement of the valve case, its injection and ejection ports, with respect to the steam chest and the double-headed piston, made in manner to operate within such valve case, substantially as described.

I also claim, when the valve case is made tubular and open at both ends, as described, making it separate from the steam chest, and so as to rest on the bottom of the latter, and confining it therein by means of screw bolts, e, extending through the top plate of the steam chest, and made to rest on the said valve case, essentially as described.

I do not claim the application of safety valves within a steam chest and to a covering plate and slide valve, in manner as shown in the said patent, No. 11,607, that is, so that the steam, in order to move the safety valves, has to pass through the slide valve.

But I claim my improved arrangement of the safety valves and their conducting passages; with reference to the double-headed or slide valve, in which arrangement the steam, in passing to the safety valves in order to raise them, does not pass through the double-headed piston or slide valve, but through passages, x, x, arranged on the opposite sides thereof, as described.

**MACHINE FOR CUTTING CURVILINEAR SURFACES ON ANGULAR PIECES OF WOOD**—George Muller, of Sacramento, Cal. : I claim a convex plane bit, with edges beveling inward toward the center, for cutting smooth chamfers of any shape on the edges of railing for express wagons, or on other pieces of wood, and the stand or rest connected therewith in the same machine by means of jaws movable in the frame; the rest or stand may be secured in any desired angle toward the plane to obtain a chamfer of any desired depth and bevel, and also of different shapes.

**UNDER-DRAIN FLOWS**—James Nevison and Edward Newton, of Morgan, Ohio : We claim the adjustable weighted roller, *o*, in combination with the plow and drags, as set forth, and operating conjointly, for the purpose described.

**AUGER FOR WOOD**—Martin Norris, of Broad Brook, Conn. : I claim the attachment applicable to the common auger, but, or other boring tool in use, and adjustable in the machine and in connection with said auger, or other boring tool, substantially as and for the purpose specified.

**SCOURING THE ENDS OF RAILWAY BARS**—John F. Peabody, of Salem, Mass. : I claim the improved mode of constructing the chair and rails, the same consisting in making the said chair with the two reverse dovetailed recesses, and the rails with dovetails to enter such recesses, the whole being arranged substantially as and for the purpose described.

I also claim constructing the dovetailed recessed flange cap, with a projection extending below it in connection with making the base plate, of a durable material, with a recess to receive such projection, the same being in manner and for the purpose specified.

**LADIES' HOOP SKIRT**—S. Peberdy, of Philadelphia, Pa. : I claim the combination of a spiral stay, with the fabric, which constitutes a lady's skirt, when said stay is formed by winding a flexible strip or rod made of one piece, or of a series of pieces spliced or united together continuously round the skirt from the bottom to the top of the body of the same, substantially as and for the purposes set forth.

**VALVE GEAR OF LOCOMOTIVE ENGINES**—Chas. J. C. Petersen, of Davenport, Iowa : I claim, first, Connecting the eccentric ring, from which the slide valve is operated to the spring which rests on the journal-box of the axle, on which the eccentric plate or cam fitting into said ring is fastened, so that the up-and-down motion of the axle has no influence on the motion of the slide valve, the whole being arranged substantially as described.

Second, In combination with the eccentric ring attached to the spring, I claim the arrangement of the cam, *F*, in connection with rods, *J* and *L*, and the rocking piece, *K*, whereby the slide valve is thrown wide open, before the piston has accomplished one quarter of its stroke, and which rods and rocking piece are so constructed that the motion of the slide valve may be reversed by raising or lowering, *G*, from one step of the rocking piece to the other one, the whole being arranged and constructed substantially as set forth.

[In this invention the slide valve is operated by means of an eccentric ring, which is connected to the spring resting on the journal box of the axle, to which the eccentric plate or cam working in said ring is attached, so that the motion of the slide valve is not changed by the up-and-down motion of the axle. This eccentric ring is connected to a rocking piece with two steps, one below and the other above the pivot on which it rocks, so that the motion of the slide valve may be reversed by changing the position of the rod which connects the valve with the locking piece from one step to the other. The cut-off valve is also operated by an arrangement of arms, so placed in combination with a slide that the point at which the steam is cut off may be changed by raising or lowering the slide.]

**PASTING APPARATUS FOR BAG MACHINES, &c.**—S. E. Pettis, of Mansfield, Mass. : I am aware that rolls placed in open bottoms of vessels have been used and rolls having cavities or cells to convey the paste to the paper; these I do not claim.

But I claim controlling the flow or draft of the paste when carried from a reservoir, by a wheel or roll placed in a passage through the bottom of said reservoir, the roll receiving its motion from the passage of the paper under it, when said controlling is effected by means of the piece, *D*, and screw, *E*, in the manner and for the purposes set forth and described.

**STEAM ENGINE**—Rufus Porter, of Washington, D.C. : I claim furnishing steam-engine cylinders with balance valves, *E F*, combined with lifting shafts, *G*, and so arranged that both induction and eduction valves communicate with the same port, substantially as described.

I also claim, in combination with balance valves, arranged as described, so connecting the induction valves to a governor, by an arrangement of mechanism substantially as described, that the said induction valve shall be so regulated by the governor as to admit into the cylinder such quantities of steam as shall be required to maintain a proper and uniform motion of the engine.

**PUMPS**—O. W. Preston, Jr., of Corning, N. Y. : I do not claim the application of springs to valves, except in the use of single springs, in connection with double valves acting alternately to close double eduction ports of pumps; therefore,

I claim the employment of the elastic band, *u*, or its equivalent, serving to close the valves, *t*, and also as a means to keep said valves in place, substantially in the manner and for the purposes specified.

I also claim the construction of the piston, *B*, with the concave cleft plates, *d' d'*, in combination with the packing disks or rings, *b b*, and double adjusting piston rod, *c k*, all arranged substantially as and for the purpose set forth; at the same time disclaiming all other modes designed to effect similar purposes, not substantially equivalent thereto.

**BRACE POST FOR FIELD FENCES**—Cornelius Quackenbush, of Huron, N. Y. : I claim the arrangement of the supporting braces, *B*, and connecting brace, *C*, pivoted together and combined with the fence sections in such a manner that the weight of the fence continually acts as a firm supporting and clamping together the sections, substantially as specified.

**HARVESTERS**—Wm. Schnebley and Thos. Schnebley, of Hackensack, N. J. : We claim, first, The arrangement and combination of the pendulous lever, *E*, and slide, *G*, with the scolloped wheel, *B*, as and for the purposes shown and described.

Second, Securing the frame, *J*, to which the finger-bar is attached to the main frame, by means of the universal joint, *L*, and the bar, *K*, fitted in the guide, *I*, on the main frame, or an equivalent arrangement, so that the sickle may rise, and fall bodily to conform to the inequalities of the surface of the ground, and at the same time be rendered capable of being placed directly over the main frame to facilitate the transportation of the machine, substantially as described.

[In this machine the motion of the sickle may be checked or stopped when desired. The sickle may be also raised or lowered, or retained at any desired height from the ground, and is so connected to the machine that the latter may be readily moved from place to place without operating the former.]

**STOP GATE FOR CANALS, &c.**—J. W. Sprague, of Rochester, N. Y. : I claim, first, The use of the revolving frames, *A A*, and their combination with the cross timbers, *B C D E*, and with the planks, *H I*.

Second, The use of the revolving lever, *O*, in connection with the check chain, *T*, as described.

**CRIMPING BOOT SOLES**—Bradford Stevens and Lorenzo Stevens, of Stoughton, Mass. : We claim the said article or boot sole crimping made of the bifurcated and grooved block, or its equivalent, and the holders applied thereto, substantially in manner and to operate as specified.

**CORN-SHELLING MACHINES**—G. W. Tolhurst of Liverpool, Ohio : I do not claim placing the levers or jaws, *D D*, on an inclination with the face of the machine, nor do I claim the press rollers, *F F*, knowing they have been before used, but the power for feeding in the ear of corn to the shellers in other machines has been given by the operator's hand until it reached the press rollers, when it was finished by a rotary motion being given to the press rollers for that purpose, the jaws being insufficient to feed. I use the press rollers only to keep the cob from revolving while it is being acted upon by the feed wheels and shellers, no power being applied to my press rollers; therefore—

I claim the combination of the spur wheels, *D' D'*, *D'' D''*, with the levers or jaws, *D D*, these several parts being constructed, arranged, operated and operating in the manner and for the purpose specified.

**STRAW CUTTERS**—Peter Van de Sande (assignor to himself and Martin Vanderwolf), of Rochester, N. Y. : I do not claim a rotating cutter wheel, with knives or cutters attached, so arranged that the cutters work against the mouth of the feed-box, as this is an old device.

But I claim operating the feed rollers, *I* and *J*, by means of the worm, *H*, on the shaft of the cutter wheel, when combined with the adjustable feed gate, *K*, pressure plate, *L*, and weighted lever, *M*, for regulating the pressure of the feed, and preventing the choking of the rollers, and keeping the straw uniformly compressed at the point of cutting during the progress of the knife, substantially as set forth and described.

**SEEDING MACHINES**—John W. Vandiver, of Shelbyville, Mo. : I do not claim the seed distributing device formed of the perforations, *C*, in the bottoms of the seed boxes in connection with the perforated vibrating plates, *F*; nor do I claim the bars, *L*, hinged to the frame, *A*, with the nuts, *M*, attached to serve as guides for keeping the rows parallel at equal distances apart; neither do I claim the rollers, *K K*, with concave peripheries, nor the covering shares, *p*, for the above parts have all been previously used.

But I claim the bars or rods, *j*, pivoted within the said conveying tubes, *E*, and having elastic plates, *l, l*, attached, the upper ends of said bars or rods being connected with the vibrating plates, *F*, of the seed distributing device, substantially as and for the purpose set forth.

[By a peculiar construction and arrangement of the furrow shares in connection with a seed-conveying device placed within the hill as it is dropped, so that the seed of each dropping will be planted in the hills at suitable distances apart most favorable for its perfect growth and cultivation.]

**PROPELLERS**—Washington Van Dusen, of Philadelphia, Pa. : I claim the arrangement and combination of the frame, *D*, block, *B*, paddles, *A*, cranks, *G*, rods, *H*, and slots, *S*, substantially as and for the purposes shown and described.

[This invention provides for and gives additional strength to the blades or propellers, and enables them better to overcome any resistance they may meet with.]

**APPARATUS FOR HOISTING AND STORING ICE**—H. Van Steenburgh and Joel Egnor, of Catskill, N. Y. : We do not claim the use of inclined planes, with endless chains to carry the ice up in the direction of the plane, but we claim the method of transporting ice upon inclined planes, by carrying the ice up between parallel endless chains, having bars extended between said chains, to hold the ice and propel the same; the planes being pierced with openings, for the passage of the ice to the successive stories of the ice-houses and the propelling bars being so arranged that the descending bars shall not interfere with the free passage of the ice through the openings in the plane.

We further claim the use of the hatches described, to close the openings in the plane, in order to permit the ice to pass beyond a lower to an upper story of the ice-house the whole apparatus substantially as described and set forth in the specification.

**MACHINE FOR PLATING NAIL HEADS**—William H. Van Gieson, of Newark, N. J. : I do not claim the construction of the die and punch for closing the shells upon the heads of the nails; neither do I claim the arrangement of several such dies in an intermittently rotating table, as such construction and arrangement have been used in machines for the same purpose; neither do I claim the inclined grooved nail feeder with the rollers, *U*, for taking on the nails one by one, as its equivalent may be found in several machines for other purposes.

But I claim, first, Combining the stop pawl, *f'*, of the intermittently rotating die table, *J*, with the dog, *c*, which give motion to the said table, by means of a link, *f3*, applied to produce the operation of the dog in combination with the pawl and the two series of ratchet teeth on the said table to lock the table, substantially as described.

Second, The pair of receiving jaws, *N N*, with their cavity, *I*, to receive and retain the nail while they are closed, applied, and operating in combination with the nail feeder and the intermittently rotating die table, substantially as described.

Third, The combination of a shaking apparatus for bringing the shells rim-upward and a curved conductor *U*, for overturning them in their passage through it, applied substantially as described, to permit and ensure the deposit of the shells crown-upward in the dies.

Fourth, The combination of the pinners, *r r*, and the plunger, *u*, operating as described, in relation with the conductor, *U*, to take the shells therefrom, and deposit them in the dies.

Fifth, The combination of the discharging plunger, *x*, and the stationary hood, *y*, having a descending spout, *Y*, with the intermittently rotating die table, *J*, substantially as and for the purposes set forth.

Sixth, The stop motion, consisting of a feeding rod, *Z*, suspended from a spring-catch *24*, attached to the bar, which throws the machine in and out of gear and operated substantially as described, by means of a cam, *H*, on the main shaft, acting on a spring, *33*, connected with the said rod in combination with a stationary stop, *34*, or its equivalent, substantially as described.

Seventh, The arrangement of the nail-feeding apparatus, the shell-feeding apparatus, the shell-closing punch, the discharging apparatus, and the stop motion relatively to the intermittently rotating table, substantially as described.

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

**MANUFACTURE OF HARD RUBBER**—T. J. Mayall, of Roxbury, Mass., assignor to himself and G. N. Davis, of Boston, Mass. : I am aware that the molds in which articles of hard rubber have been vulcanized have been rubbed with olive oil to prevent the adhesion of the material, but this will not accomplish the end which I have in view, and I do not lay claim to such use of the oil.

But I claim the use of olive oil when incorporated with other materials in the manufacture of hard vulcanized rubber as described for the purpose specified.

**AIR ENGINES**—H. M. Paine, of Worcester, Mass. : I claim the simultaneous moistening and refrigerating of the air previous to its entrance into the pump in combination with the mixing valve, *P*, substantially in the manner and for the purposes described.

**HINGE FOR WINDOW BLINDS**—Thos. E. Williams, of Washington, D. C. : I claim the catch bar, *i*, and catch, *m*, in combination with the cavities, *c, d, and f*, and hinge, substantially in the manner and for the purpose as set forth and described.

**CULTIVATORS**—Wm. Willmot, of Wilmington, Del. : I claim the arrangement and combination of the bars, *G G I G 2*, bars, *H*, adjustable weights, *I*, chains, *J*, bars, *L*, and handles, *B*, as for the purposes shown and described.

[A series of teeth or shares are attached to stocks which are pivoted to the frame of the machine, and used in connection with adjustable weights and chains, whereby the depth of the furrows may be regulated as desired, and the teeth or shares, when necessary, retained above the surface of the ground. The invention also consists in the employment of a reversible bar, with markers attached, to ensure the furrows on drills being made at equal distances apart.]

**MACHINES FOR DISTRIBUTING GUANO AND OTHER FERTILIZERS**—Elijah Wagner, of Westminster, Md. : I claim the combination of the stirrer, *d*, and the feeder, *e*, operated in different directions and at different speeds, the two being arranged in the manner and for the purpose specified.

**RAILROAD CAR BRAKES**—Asa D. Whipple, of Elmira, N. Y. : I do not claim the manner of securing the armature, *G*, to the shaft, *c*, by means of a loose collar and bar; but I do claim them in combination with the spring for a new purpose, viz., a mode of varying the intensity of the connection of the armature with shaft, *c*, and allowing that connection so give way when the resisting force is sufficient to prevent the car wheels revolving and causing them to slide.

I also claim the improved method of communicating the motion of the car wheels to their brakes through the medium of electro-magnetism, consisting substantially of the spring jaws, *P* and *W W*, and of the insulated rings on the axis of the magnet, arranged and operating in combination with the said magnet and adjustable armature, in the manner and for the purposes specified.

**HAY AND COTTON PRESS**—Henry Barnes, of Blairsville, Pa., assignor to himself and N. G. Macrum, of Pittsburgh, Pa. : I am aware that eccentric pulleys attached to a movable axis have been used for obtaining a progressive power, but I am not aware that a geared cam or eccentric placed on a stationary axis and used in connection with a rack attached to the follower rod has been employed for such purpose. I do not claim, therefore, broadly, the employment or use of an eccentric cam for the purpose set forth.

But I claim the arrangement and combination of the geared eccentric, *F*, inclined rack, *E*, and follower rod, *D*, substantially as and for the purpose shown and described.

[This invention relates to that class of presses which operate with a progressive power, that is to say, the speed of the follower decreasing and the power correspondingly increasing, as the article is gradually compressed. The invention consists in having a rack attached to the follower rod, and a geared cam or eccentric working therein, so that the desired result is obtained by very simple means.]

**RESTORING WASTE VULCANIZING RUBBER**—H. L. Hall, of Beverly, Mass., assignor to the Beverly Rubber Company : I claim the method of restoring waste vulcanized rubber, by grinding it to a fine or powdered state or otherwise, then submitting the same in a close or proper vessel to the action of steam, direct upon the rubber or in connection with water for the space of forty-eight hours, more or less.

**SEWING MACHINES**—Charles Raymond, of Brattleborough, Vt., assignor to Willford H. Nettleton, of Bristol, Ct. : I claim the arrangement of the adjustable rack, *N*, having a reciprocating and vibrating motion and operating in combination with the pinion, *o*, and feeding wheel, *q*, to regulate the feed in the manner described.

I also claim the slide, *u*, carrying the looper, *13*, and provided with the slot, *16*, receiving the pin, *15*, on the bar, *x*, that is formed with the carrier, *M*, for the second thread, whereby the thread carrier, *14*, is actuated by the reciprocations of the looper, *13*, substantially in the manner and for the purposes specified.

**WEAVERS' SHUTTLES**—N. J. Willis, of Lawrence, Mass., assignor to Chase, of Brooklyn, N. Y., and G. A. Fuller, of said Lawrence : I claim the improved manufacture of weavers' shuttles, made substantially as described, viz., of separate nose blocks, and a hard rubber or undurated vulcanized caoutchouc shell or body, or equivalent, cast or molded on the nose blocks, arranged substantially in the manner as described.

**MACHINE FOR CUTTING DOVETAILED MOLDS**—Solander Withington, of St. Louis, Mo. : I claim the combination of the saws, *I* and *J*, with each other, and with the two saws, *K' K*, in the manner described, the two saws, *J J*, being set in a diagonal plane, in the manner and for the purpose set forth.

I also claim adapting and arranging the carriage, *C*, with the described combination of saws, for the purpose specified.

And I further claim the arrangement of three saws, *K', I'* and *J'*, in the carriage, *B*, by which the machine is adapted to cut the different lengths of stile.

**SAW MILLS**—Hazard Knowles, of New York City. Patented Sept. 23, 1853 : I claim so guiding the movements of the saw as to cause it to advance in the line of its plane as it descends, for the purpose of properly distributing amongst the teeth of said saw the cutting action which may be exerted thereby upon the material operated upon, substantially as set forth.

I also claim arranging the ways of the saw gate in such a manner with relation to the feeding apparatus that the amount of feeding movement imparted to the carriage will always be in perfect harmony with the amount of cutting action exerted by the saw, substantially as set forth.

I also claim arranging the compound parts of my improved saw mill in such a manner that the amount of cutting action exerted by the saw can be speedily varied, whilst it is in motion, from its maximum performance down to nothing, and vice versa, substantially as set forth.

**CHURN**—James Macnish, of Berlin, Wis. Patented April 20, 1853 : I claim expressing the butter from the needed with the said rod in combination with a stationary stop, *34*, or its equivalent, substantially as described.

**FELTING FOR COATS, HATS, &c.**—M. Osborne, of New York City : I claim the method of manufacturing articles of wearing apparel of which wool or other similar animal fiber constitutes a larger part, as set forth.

**ADDITIONAL IMPROVEMENT.**  
**COTTON GIN FEEDERS**—Jedediah Prescott, of Memphis, Tenn., late of Rockford, Ill. Patented Oct. 13, 1857 : I claim the endless apron, *B*, revolving adjustable toothed bar, *C*, rotary brush and toothed cylinder, *D*, and grating, *E*, combined and arranged substantially as and for the purpose set forth.

[A cotton-gin feeder was patented by this inventor Oct. 13, 1857, and the present invention is an improvement on it. The object of the improvement is to accomplish in a more thorough manner the work performed by the patented feeder above mentioned—to wit, the feeding of the cotton in a very even manner to the gin, and at the same time separating dust and other foreign substances therefrom.]

**IRON FENCES**—Edwin Gomez, of New York City.

**Improved Weighing Scales.**

American weighing scales have obtained a world-wide reputation, and their manufacture has become a most extensive and important branch of business. A set of weighing scales in the Conservatory of Art in Paris, and held to be standard authority in that city, so celebrated for art and science, were made by an American mechanic. Such triumphs in the mechanical arts gratify an honest national pride, and stimulate us to notice and acknowledge every improvement relating to this and all kindred arts. We experienced much pleasure, during the present week, in visiting the warehouse of F. E. Howe, recently opened at No. 438 Broome st., near Broadway, this city, for the exhibition and sale of the patent scales of Strong & Ross, which were illustrated and their principles fully described on page 369, vol. XI., SCIENTIFIC AMERICAN. Since the publication referred to, they have secured a deserved popularity, and within the past three months, no less than seven first class premiums have been awarded to them, at as many State Fairs. During repeated trials they have never failed of success, and in testing one designed for weighing 20 tons, we found that we could vibrate the balance lever at any point of the platform by the weight of a single ounce. One of 200 tons' capacity, on the Morris Canal at Washington, N. J., has weighed 248,000 tons of boats this season, and has given great satisfaction. They are made of all sizes, of various forms, and adapted for every purpose in weighing. The large platform scales possess the important advantage of not requiring a deep pit, by dispensing with the underbracing levers, while they are very simple and durable in construction and arrangement. They are all manufactured at Brandon, Vt., in the large factory of J. Howe; and from an inspection of the workmanship, we infer that they are made of the best materials and by skillful mechanics.

**Seeing at Certain Distances.**

The earth being globular, at a certain distance, even though our vision can reach much further, its form will prevent us from seeing objects. It has been calculated that at six hundred yards an object one inch high cannot be seen in a straight line; at nine hundred yards, two inches; at fourteen hundred yards, five inches; at one mile, eight inches; three miles, six feet. In leveling, it is usual to allow the tenth of an inch in every two hundred yards—eight inches in a mile for convexity.

**Preservation of Stone.**

A writer in the London Builder, while noticing the extraordinary preservation in which St. Paul's Cathedral in that city is, informs the readers that the architect, Sir Christopher Wren, exposed all the blocks to the action of the weather for some time previous to their being used. By this means only good stones were employed, and the edifice is sound and strong. We wonder how this plan would suit modern contractors and builders.

**Coal Mines in Greece.**

The French geologists, who wander over the whole earth, picking up fossils and specimens, on which to found new theories and fresh hypotheses, wherewith to astonish the world, have discovered coal in Greece, and a company is now working them. They are situated about a mile from Comus, and are expected to be very profitable.

**WHAT NEXT?**—In France they have commenced making chimneys for boiler-furnaces, houses, and steamboats, of papier-mache saturated with bituminous matter, because, says the *Journal de l'Eclairage au Gaz*, they are superior to iron for strength, hardness, and difficulty of oxydation. This, it strikes us, is one of those steps forward which are made up of two backward.

**MONUMENT TO A GEOLOGIST.**—A Grecian Doric column and statue is about to be erected at Cromarty, Scotland, to the memory of that true geologist and brilliant writer, Hugh Miller.