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Improvement in Cranes.

The invention illustrated in the accompanying engraving relates to certain improvements which simplify and cheapen the cost of that class of cranes which are used for lifting, lowering, or moving about with facility and dispatch the heaviest bodies of all kinds, such as bed plates of large marine engines, steam boilers, &c. This work is generally performed by shears, or by a derrick. The former are, for many reasons, inconvenient; the latter is of complicated construction, costly, and liable to accident or breakage, owing to its large number of parts, and the difficulty of arranging them so that the strain shall be distributed properly throughout.

In cranes constructed according to the improvement now under discussion, the jib, A, with its main braces, A', stays, A", and other immediate accompaniments, and the load, are sustained vertically on the top of a stationary post or tower, B, all the vertical pressure being transferred to the top of the tower, B, by means of the backstay timber, A", leaving only a lateral horizontal pressure against the side of the tower at the circular way.

The improvements consist, firstly, in the employment of the backstay, A", for the purpose just indicated, being connected to the jib at the top and mainbrace at the bottom, it also supports a pendant segmental traveler or foot piece, C, so applied as to work round the lower part of the pillar or tower when the jib is turned, and also to support the outer end of the jib with whatever weight may be there attached. The jib is fully braced against lateral displacement.

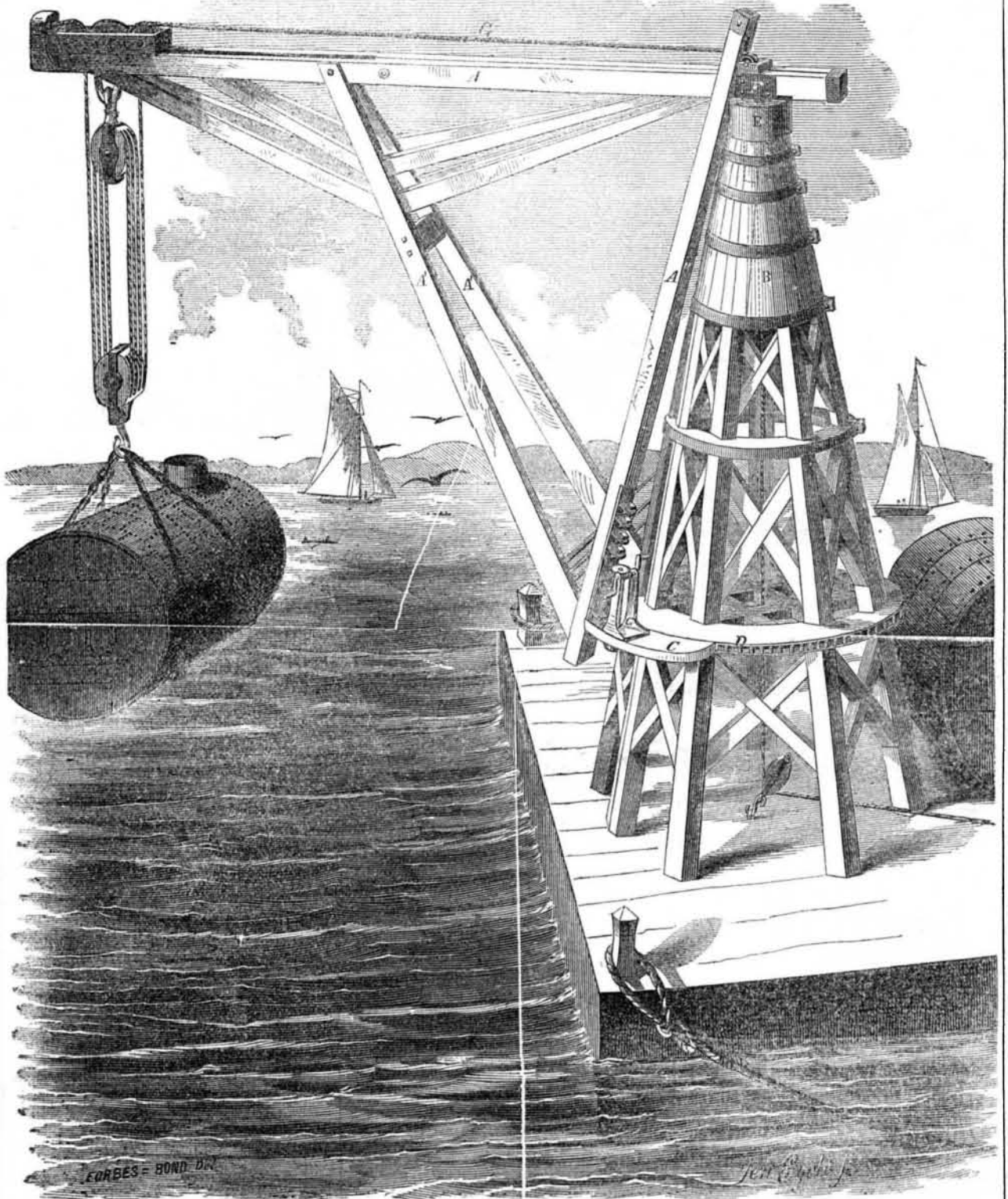
A second improvement consists in an arrangement of an anti-friction roller frame, D, in combination with the foot piece, C, so as to reduce friction, and prevent the binding of the foot piece against the tower.

In the annexed figure, the crane is shown as standing upon a float, so that it may be conveniently moved from one locality to another, placed alongside of steamers, &c. The pyramidal tower frame or frame work, B, is used in place of the ordinary vertical post. The tower terminates in a spindle or point, E. The jib, A, with its several braces and parts, is supported vertically on the top of the tower by means of a cast-iron or other metal cap or socket, G, which fits upon the spindle, E. The spindle, E, is made hollow, for the crane-rope, G, or chain to pass through it to the barrel, which, with its gearing for winding the rope, may be arranged within the tower or at one side, and may be operated by hand, horse, or steam power. The barrel and gearing are not represented, as they need not differ from those of other cranes. The traveler, C, is suspended from jib, A, by means of back-stays, A".

These braces are spread apart considerably at their bases, thus balancing the traveler, C, equally, obviating its tendency to trip out sidewise, giving it free suspension from the apex of the tower, exempting it from vertical or lateral binding, &c.

To prevent the bearings of the small friction rollers against which the traveler, C, presses, from being crushed, they are arranged on a circular frame, D, which is composed of

IMPROVED INDEPENDENT CRANE.



two open rings encircling the tower. The rings are backed by an iron band on the tower, and the friction rollers are hung in the frame, D, in such a manner that the faces of the rollers will rest and travel on the back band. The traveler, C, also presses against the face of the rollers, so that their journals are wholly relieved, and cannot be crushed. This arrangement permits the easy swinging around of the jib and its load; for this purpose a stationary winch and gearing, G, is employed, working in a rack on the tower. Two men, only, are required to move the jib with its weight around.

This crane is simple in its construction, being a combination of a few members which act together, and capable of being strengthened in every part to almost any extent by mere enlargement of parts. Much care appears to have been exercised to use the strength of timber to the best possible advantage in the

way of tension and compression. All vertical pressure is received on the top of the tower, and all the lateral or horizontal stress against its side, while the structure of the crane is such as to meet these strains most perfectly.

This plan for a crane may be adopted in iron foundries, forges, &c., by making the tower from 20 to 30 feet high, and about 6 feet diameter at the base, of boiler-iron, from 1-4 to 3-8 in. thick, secured to masonry at the base, independent of the roof, or any other support; or a tower may be formed of 5-inch plank staved up and hooped; or with barrels, arranged so as to take up the shrinkage of timber.

Similar sizes may also be used with great advantage on docks, for lifting cargoes of all kinds, machinery, &c.

The invention combines strength, safety, and durability, with economy of use and construction. It is capable of employment on a large

or small scale. Our engraving shows the design for one of these cranes, which is to be capable of lifting 150 tons.

Mr. B. J. Burnett, of the Novelty Iron Works, New York City, is the inventor, and will give any further information. Patented December 25th, 1855. English and French patents have also been secured.

Two locomotives have been built at Mason & Co's. Works, Taunton, Mass., for the railroad on the Isthmus of Suez, Egypt. They are stated to be built in the most superb manner; they weigh 25 tons each, and have furnaces for burning coke.

Electro Chemical Baths.

We have received several communications on this subject, in answer to Dr. Smith's communication which appeared a few weeks ago in our columns; to these we will give attention in our next number.



[Reported Officially for the Scientific American.]

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING JUNE 11, 1856.

HAND PEGGING—Wm. W. Batchelder, of New York City. I claim the attachment of the knife to the plunger and the arrangement of the upper groove in regard to shutting off communication between the trough and the peg receiver, substantially as described. I also claim the combination of the vibrating foot piece with the lower end of the machine operated by means of the wedge, o, and spring, I, substantially as specified.

HYDRO-STEAM ENGINE—Wm. Baxter, of Newark, N. J. I claim the method substantially as described, of imparting rotary motion to a wheel or wheels by the pressure of steam or other equivalent expanded gas, acting alternately on the opposite one of two columns of water or other liquid connected together to cause the said water by such alternate action to pass through and impel the wheel or wheels, as set forth.

HARNES TRACE COUPLERS—Chas. K. Bradford, of Lynn, Mass. I claim the combination of the india rubber plug or spring friction bearer, E, with the tenon button and its locking case, the same being made to operate therewith substantially as specified. I also claim arranging in the locking case and transversely of its entering slot, the safety recesses, o, o, the same being for the purpose as specified.

ROTARY PUMPS—John Broughton, of Chicago, Ill. I claim a rotary pump composed of a rotary eccentric piston, working within an oscillating barrel with any arrangement of inlet and outlet passages, substantially as set forth.

CUTTING FLOUR MILL—Jonathan Burdge, of Cincinnati, Ohio. I do not claim adjustable knives for the purpose of grinding grain, nor turnouts cut in the grinding surfaces of mills, nor do I claim, simply, the arrangement of opposite grinding surfaces, so that their teeth or cutters cannot be brought into contact, as such devices have been used before. I claim forming the surface of the cutter head with central and peripheral ledges, d, e, and a plane or level depression, h, between them, equal in width to the cutters and in depth to the depth of cut required, for the purpose of easily setting the cutters all to an exact and uniform height, and of preventing the possibility of their being brought into contact with the counter plate above, and also for the purpose of preventing the escape of meal or particles of grain at the periphery, substantially as described.

I also claim the notches or nicks, p, p, in the ledge, e, of the cutter head, and the notches, q, q, in the ledge or surface, f, of the counter plate, said notches having the least possible width at their inner ends, and gradually widening or flaring outwards when the two sets are arranged in combination so as to cross each other, and thus mutually scra, e outward by their edges, any dust or glutinous substance which may have a tendency to adhere to the opposite surfaces of the ledges, substantially as set forth.

I also claim the peculiar construction and arrangement of the counter plate with bent, gathering, and retaining ridges, n, running across from the inner to the outer periphery of the counter plate, and under side, the lower edges of said ridges being, in the same plane, and even with the surrounding surface, f, when combined with the cutters, i, i, and operating in connection therewith, substantially in the manner and for the purpose specified.

REED BOARDS FOR MELODEONS—Jeremiah Carhart, of New York City. I claim, first, the means whereby the reciprocating motion with variable stroke is communicated to the frame, D, viz., the segment, E, which gears into the rack, u, on the frame, D, and into the pinion, s, on the shaft, M, the pulleys, N, N, on the shaft, M, and the shaft, Q, in the frame, L, actuated by the bar, S, and the bars, z, z, on the frame, L, by which the pulleys, N, N, are alternately connected and disconnected with the shaft, M, substantially as described. Second, I claim the dogs, F, F, constructed substantially as shown and for the purpose specified.

Third, I claim giving the lateral feed motion to the frame, B, by means of the rack, v, and pawl, 3, when said pawl is actuated by the bar, T, and roller, 4, arranged substantially as shown and described.

HEAD BLOCKS OF SAW MILLS—John M. Carlisle, of Williamston Springs, S. C. I claim attaching or connecting the carriage, C, to an endless chain or belt by means of an arm, a, as described, so that it will actuate at each end of the stroke of the carriage, a slide, I, having a pawl, J, attached, which, by means of suitable gearing, as shown, moves or sets the log to the saw, whereby the feed movement of the carriage, and also the setting movement of the log are rendered automatic or self-acting, as described.

WATER-PERCUSSION CAPS—James Chatterway, of Hamden Co., Mass. I claim the application to percussion caps of a fusible alloy which will melt without exploding the powder, as described, using for that purpose the aforesaid metallic compound, or any other substantially the same, and which will produce the intended effect.

STEAM PRESSURE GAUGES—S. W. Brown, of Lowell, Mass. I claim the combination of the rigid radial arms, P, P, with the flexible and elastic disk or surface, M, for covering the joints of these radial arms steam tight when yielding or moving by the force of steam or water to correctly indicate the pressure thereof, the radial arms, P, P, being tilted so as to operate so close to each other as to prevent the surface, M, from bagging, essentially in the manner and for the purpose set forth.

SHUTTER OPERATOR—Hiram Collins, of Salisbury, Mass. I claim opening and closing the blind or shutter, B, by means of the inclined or oblique rod, C, which passes through the stiles of the casing, and having its lower end of outer end bent and fitted within a socket, b, attached to the lower part of the shutter or blind, the rod and blind being secured by means of the pin, g, in the knob, D, substantially as shown and described.

COATING CLOTH WITH PAINT—Daniel Cushing, of Wheeling, Va. I claim the arrangement of the several rollers and belts, as described, wherein I make use of the friction of the cloth on the roller, A, for the purpose of giving the necessary tension and movement of said cloth, when in combination with the means of spreading the paint or composition, as in the manner described, and in the delivery of the cloth when coated, substantially in the manner and for the purpose set forth.

I also claim the arrangement of the hanging frame G, constructed substantially in the manner described, for the purpose of receiving the cloth, for drying, thereby rendering the painting and hanging it a single mechanical operation.

RUBBING AND POLISHING PAINTED CLOTH—Daniel Cushing, of Wheeling, Va. I claim the mechanism constructed and operating substantially in the manner described, for the purpose of rubbing painted or enameled cloth.

CLEANING INDIA RUBBER—A. G. Day, of Seymour, Conn. I claim the exhaustion of the noxious gases from the crude india rubber, and its subsequent treatment for the purpose of cleansing and purifying it, as set forth.

POCKET-BOOK—J. C. Dickinson and Robt. Bate, of Hudson, Mich. I claim the plate, B, with hooks, d, attached, the plate being secured at one side of the pocket book, and used with or without the sliding plate, C, substantially as and for the purpose specified.

SEALING PRESERVE CANS—C. E. Russell, of St. Louis, Mo. I claim the combination of the spring ring, E, and groove, G, or its equivalent, in the manner described and for the purposes specified.

SCISSORS FOR SHEET METAL—H. C. Dole, of Adrian, Mich. I claim the employment of pitman j, k, levers and eccentric wheels, N, H, constructed as described, for operating the blades, C, D, in connection with the adjustable gauge, Q, in the manner and for the purpose set forth.

DOUBLE ACTING STEAM PUMPS—R. B. Gorsuch, of New York City. I disclaim effecting a connection between the water on both sides of the piston or plunger, or between either end of the pump cylinder, and the forcing main above the force valves, except through said valves in the ordinary action of the machine, at any time or for any purposes whatever.

Neither do I claim operating the steam valve in direct acting steam pumps by a secondary piston, as they have been used in various combinations for that purpose. But I claim the secondary piston, e, in combination with the pump cylinder, depending for its action upon the elastic balance chamber, S, and the reverse motion of the pump plunger combined or either separately for attaining the end in view substantially as described, and for the purpose set forth.

THREE-WHEELED CARRIAGES FOR CHILDREN—J. H. Gould, of New York City. I claim the curved arms, B, B, resting upon the arms or bars, A, A, forming a support for the body of the carriage, and terminating in sockets both in front and back, for the reception of the arms, C, C, D, for the purpose of permitting the carriage to be both drawn and pushed from either the back or front position.

TOOL FOR WATCHMAKERS—Wm. Hart, of Maysville, Wis. I claim having the jaw, C, attached to the upper part of the leg, A, of the calipers and the jaw, D, connected to the upper part of the leg, A, by links, d, d, the jaw, D, having a shank, b, attached to it, the shank passing through a slot in the leg, A, and bearing against a spring, c, and the shank, b, having a rod, f, attached to it, which rod passes through a hollow screw, e, which is attached to the jaw, C, the screw, e, having a nut, E, upon it, substantially as shown and for the purpose specified.

THRASHING MACHINES—Wm. Holmes, of Brooklyn, N. Y. I claim the use of a series of cams, H, constructed and arranged as described, for the purpose of operating the beating levers, D, by revolving in the curves, I, I, or their equivalent, and striking both arms of each of the levers, D, in rapid succession, giving the downward motion of the longer arm or beater, a quick whipping stroke, the whole arranged and operating substantially as specified.

GUTTA PERCHA—James Reynolds, of New York City. I claim the combination of the rotary forcing apparatus, consisting of a cam, E, for forcing out the sliding piston, D, B, arranged entirely within the rotating head, C, C, of the frame, c, c, with a passage or passages within the rotating head which carries the said pistons providing for leakage, substantially as and for the purposes described.

FIRE ENGINES—David Russell, of Lockport, N. Y. I disclaim the several elements composing my engine, separately considered. I claim the arrangement of the series of pumps with the circular train way, and the mechanical devices actuating the pistons, substantially as and for the purposes set forth.

SHIPS' SAFES—Wm. Mount Storm, of New York City. I claim, first, the combination of the receptacle or sheath, B, open at the bottom and at its top open to the upper deck, with the (independently water tight) double shelled buoy, C, having within it again the independently water-tight deposit chamber, for valuables, said chamber being accessible from the exterior by a water-tight door, closing and clamping, for that purpose, on an elastic seating, &c., substantially as described.

Second, I claim the buoy, the tube, flag, and float, Z, Z', for the purpose explained.

STICKING PINS—J. B. Terry, of Hartford, Conn. First, I claim the movable conductor or conductors with notches for the head to hold the pins and push them into the crimp portion of the paper. Second, I claim the movable notched cross bar to correspond with the notches in the conductors, and the movable plate or its equivalent, to hold the pins in their proper place, while the pins are thrust to their place by the conductor.

Third, I claim the combination of the movable conductor or conductors, the apparatus for changing the position of the points of the pins, and holding the same with the clamp or jaws which hold the paper while the pins are thrust through.

R. R. CAR WHEELS—Wm. R. Thomson, of Cleveland, Ohio. I do not claim forming the hubs of car wheels in sections, and welding said sections together irrespective of the peculiar form of the sides of said sections or butts, as described. I claim having the butts made the entire length of the hub, and the sides of the butts inclined, curved, or made in zig-zag form, so that they form, when placed together, dovetail joints, for the purpose of preventing any lateral movement of the butts, and to insure the perfect welding of the same at all points of contact, whereby a solid and perfect hub is obtained.

REGISTERS AND VENTILATORS—E. A. Tuttle, of Williamsburgh, N. Y. I claim the combination of the leaves or valves, B, B, and the center piece, F, F, connected together in working order at the points, S, S, substantially as described.

BOLT FOR SHUTTERS—Philip Warner, of Lancaster, Pa. I do not claim a bolt as attached to a plate by clips with a flanged plate catch. But I claim two corresponding silver-plated metal flanged plates, in combination with a silver-plated knob attached to an inside bolt, having on the reverse or inside of the plates, corresponding clips in which the knob operates, said bolt and clips to be fitted to a mortise in a window shutter, for the purpose of presenting a neat silver plate on each shutter to hide the bolt, and completely protect it from the weather, substantially as described.

GOVERNOR FOR STEAM ENGINES—Marshall Wheeler, of Honesdale, Pa. I claim the pressure piston working in an offset chamber, placed between the throttle and the engine cylinder, and combined with the throttle valve, said pressure piston being made to act against a spring which simultaneously closes it, and the throttle valve, and which yields in proportion to the resistance upon the engine piston, and opens the throttle valve in a corresponding degree, substantially as set forth.

REAPING AND MOWING MACHINES—G. W. N. Yost, of Pittsburg, Pa. I do not claim giving an abrupt and intermittent reciprocating motion to the cutter bar of grain and grass mowers. But I claim the described operating mechanism, or its equivalent, to produce an abrupt and intermittent reciprocating motion, in combination with the inclined edged cutters, D, and the straight edged cutters, E, whereby I obtain the shear and chop blow, substantially as and for the purpose set forth.

ROTARY EXCAVATOR—Daniel Judd, of Hinsdale, N. Y. I claim the cylindrical form of the excavator, so formed in combination with the wheels, windlass and frame, that the load bears on its center, and rotates when being raised, and also when being discharged, substantially as described.

ATTACHING HORSES TO VEHICLES—Geo. B. Kaigh, of Lumberton, N. J. I claim supporting and controlling the ends of vehicle shafts, A, A', by means of the loops or tugs, b, b', secured to the hames, B, B, making the breeching consisting of the band, E, and the adjusting holders, e, e, or their equivalents, a permanent, and adjustable part of the said shafts; and attaching the back ends of the traces, D, D', together at the back end of the said shafts, so as to bear against and move on the pulleys, a, a, in accordance with the forward motions of the horse, the whole being arranged and operating together substantially as described, and set forth, and for the purpose of dispensing with the usual saddle, belly bands, crupper, breech supporting straps and whiffletree, and thus facilitating in connecting and disconnecting horses from vehicles, as described.

SEEDING MACHINES—C. O. Luce, of Freeport, Ill. I do not claim separately the distributing wheels, I, I, for they have been previously used. But I claim the distributing wheels, I, I, in combination with the slides or valves, N, N, O, O, arranged and operating as shown for the purpose specified.

CORN SHELLERS—Ebenezer Morrison, of Franklin, N. H. I claim the arrangement of the two toothed truncated feed cones, R, R, for both revolving and feeding down the ears of corn in such manner that the toothed shelling wheel, Y, will remove all the corn from the cob during such revolving, essentially in the manner and for the purpose set forth.

CARRIAGES—R. W. Benedict, of Brant, N. Y. I claim the combination of the springs, E, with the springs, F, and concomitant parts, in such a manner that the torsional motion of the body shall affect the springs, F, as described.

CUTTING STRINGS—George Blanchard, of New York City. I claim the internal and slanting arrangement of one or more knives inside the cup, the knife or knives being so arranged in the cup, that when the cup is put over the cork and turned, that the strings are immediately cut and the cork safely received in the top of the cup.

PLATFORM SUPPORTERS—C. E. Flagg, of Shelburne, Mass. I claim the improved platform supporter or combination of the fastening bar, A, the slide bar, C, the bearer, E, and the strut, F, as applied together, and to be used substantially in manner and for the purpose specified.

POTATO DIGGERS—A. L. Grinnel & J. Z. Williams, of Willet, Wis. We claim the two rakes, G, G, attached to the frames, F, F, the frames being hung on the shaft, E, which is connected to the frame, A, and the handle, H, of the frames passing through the side pieces of the frame, A, substantially as shown for the purpose specified.

SEED PLANTERS—P. B. Green, of Chicago, Ill., and E. A. Kennedy, of Newark, Ill. We claim the seed slide, b, in combination with the foot, A, side springs, h, and catches, l, arranged and operating in the manner and for the purpose set forth.

SEED PLANTERS—George A. Meacham, of New York City. I claim, first, a machine for planting corn, constructed so as to be applied to and operated by the foot, substantially as set forth. Second, the employment of the self-adjusting step, G, applied in connection with the plunger and slide, E, seed tube or box, A, B, D, and flexible seed conductor, C, substantially as and for the purpose set forth.

STUFFING HORSE COLLARS—H. G. Robertson, of Greenville, Tenn. I claim in combination with and specified relation to the movement of the reciprocating plunger or stuffing rod, C, the intermittently reciprocating mechanical feed formed by the bearded rack or toothed slide, c, and retaining fingers, d, operating together simultaneously in reverse directions within the hopper, essentially as and for the purposes set forth.

STRAW CUTTERS—Thomas Wiles, of Somerset, Ohio. I claim the feed and discharge bottom, B, in combination with the reciprocating knife projection, p, arranged and operating as and for the purpose specified.

BREECH-LOADING FIRE-ARM—Henry Gross, of Tiffin, Ohio. I am aware that breech-loading fire-arms have been constructed in which the chamber is drawn back and elevated, and then thrown down and moved forward by means of the lever and cam attachment and other analogous devices. These constructions I expressly disclaim. I claim the breech piece, I, and eccentric lever, B, working together as described, in combination with the breech seat, F, to which the axis of the breech is normal at the time of discharge, whereby the pin around which the breech turns is relieved, and loosening from recoil prevented.

SABOT FOR ROTATING SHOT AND SHELL—Wm. W. Hubbell, of Philadelphia, Pa. I claim the construction of wooden sabot, substantially as described, adapted for use in the breech of a rifle, and the smooth spherical shot or shell of the common diameter, consequent weight, form, and extent of windage and bearing of its weight on the bore out of its usual size of smooth bored cannon under the conditions, as described.

BREASTPLATE—Wm. Huntress, of South Berwick, Me. I do not claim the cords, slats, windlasses, or any of the parts, when used in the manner in which they have before been used. But I claim the pins, P, P, when placed in the underside near each end of the slats and interlaced with the cords, as described.

ATTACHING PADS TO SADDLE TREES—James Ives, of Mount Carmel, Conn. I do not claim a hinged self-adjusting pad, as such a device was patented Feb. 5th, 1847, by Pope & Frasier. I claim the peculiar construction of hinge joint described and shown, for connecting the pad to the tree, substantially as set forth.

OPERATING HEAD BLOCKS OF SAW MILLS—Joseph Kurtzman, of Lancaster, Ohio. I claim connecting the dogs, C, C, to the shaft, H, by means of the racks, a, a, and gears, E, E, G, in combination with a toothed wheel, o, having the hollow hub or geared rim, b, attached to the wheel being placed loosely on the shaft, L, which is provided with the pawl, N, substantially as described, for the purpose specified.

WHEELWRIGHT'S MACHINERY—A. S. Macomber, of Bennington, Vt. I claim the jaws, E, operated by the screws, H, worm wheels, F, and connecting rods, G, one pair of jaws being attached to an adjustable bar, B', the above parts being arranged as shown, for the purpose specified.

DIE STOCK FOR CUTTING SCREWS—Patrick McGlew, of Waterford, N. Y. I claim the arrangement of one or more dies within a circular two-way ratchet, which is moved by adjustable screws, as described, to secure the advantages specified.

ROTARY SHINGLE MACHINE—Jason Palmier, of Jamestown, N. Y. I claim placing a series of carriages, J, on the sides or faces of a polygonal wheel, G, and giving said carriages the proper feed motion by means of the racks, K, pinions, M, ratchets, N, and sliding bar, O, with pawls, b, attached, the above parts being arranged as shown, and in connection with the circular saw, C, substantially as described, for the purpose specified.

REPAIRING CIRCULAR SAW TEETH—M. L. Parry, of Galveston, Texas. I claim the top or mandrel, E, fitted within an adjustable socket, e, which is attached to an arm, D, the arm being secured to the frame, A, the above parts being arranged as shown for the purpose specified.

JAPANING PINS—John I. Howe and Truman Piper, (assignors to the Howe Manufacturing Company,) of Derby, Conn. I claim dipping a portion of the length of the pin in the compound, whilst inserted in a sheet of paper and with one end downward, and then subjecting them to the baking operation, substantially as described, in combination with the second dipping and baking in the reversed direction, to Japan the remaining portion, substantially as described.

And we also claim controlling the pin during the process, substantially as described, by sticking the pins into the sheet of paper through holes in a plate of metal, or equivalent substance, the said holes being of sufficient size for the free passage of the shanks or barrels of the pins, but not for the heads, so that after the first dipping and baking, by reversing the plate and pulling off the sheet of paper, the pins will stand by their heads for the second dipping and baking, as set forth.

CASTING CAR WHEELS—Lucien H. Allen, (assignor to himself and E. M. Ivens,) of Tamagua, Pa. I claim passing a volume of steam through the eye of a cast metal wheel, whilst the periphery is in the chill, whereby the contraction of the wheel as it cools is realized, in the manner substantially as and for the purposes set forth.

REPEATING FIRE-ARMS—Alexander Hall, (assignor to himself and James G. Caldwell,) of New York City. I claim the ring of chambers having a single spoke extending from its inner periphery to its hub, so that said ring may act as a carrier support, make almost an entire revolution, and pass freely and truly through the mortise in the breech, where its chambers are in succession brought opposite, or in line with the bore of the gun, substantially as described.

I also claim so combining the bolt, e, with the ring of chambers as that it may be detached from its catch, and the ring turned to bring the next chamber in line by the hand which supports the gun, and without changing the hand from its supporting position, substantially as set forth.

STICKING PINS—John I. Howe and Truman Piper, (assignors to the Howe Manufacturing Company,) of Derby, Conn. We claim in combination with a guide, groove or grooves, and a follower, substantially as specified, the employment of a sliding frame for holding and shifting the sheet of paper, substantially as described, that the pins may be properly spaced and inserted in the sheet of paper, at right angles or nearly so with its surface, as set forth.

And we also claim, in combination with the guide groove or grooves, follower, and holding and shifting frame, substantially as and for the purpose specified, the employment of a perforated plate, substantially as such as described, and interposed between the guide groove or grooves and the sheet of paper held in the frame, that the pins may be inserted simultaneously in the plate and in the sheet of paper, as set forth.

ATTACHING TEETH TO SICKLE BARS OF HARVESTERS—J. C. and L. C. Pluche, of Cape Vincent, N. Y. We claim attaching the teeth, D, of the sickle to the teeth, C, by the cleats, c, secured to the back ends of the teeth, C, the cleats being fitted in a groove, b, in the bar, C, substantially as shown and described.

SOUNDING WHISTLES FOR FOG SIGNALS—Rufus Porter, of Washington, D. C. I claim the combination of vertical cylinders, or their equivalents, and whistles attached thereto, for the purpose of having loud sounds produced by the undulation of waves or swells, substantially as described.

METAL BEAMS—Joshua K. Ingalls, of Brooklyn, N. Y. (assignor to M. H. Howell, of New York City.) I am aware that a wrought iron beam has been made with wrought iron corrugated web, said corrugations resisting compression in the direction of their length. I do not therefore claim that.

But I claim, first, the corrugated web when cast with or upon the top flanch and arranged with the bottom flanch or tie, in such manner as to afford flexibility to the cast portion of the beam, to accommodate its action to the tension of the wrought portion, in the manner set forth. Second, I claim the tapering form of the corrugations in their height, which gives a right line where the web attaches to the top flanch, with which it acts in resisting compression, and which increases the breadth of said corrugations, and consequently the flexibility of the web where it touches the bottom flanch or tie with which it acts in resisting extension.

SELF-SEALING PRESERVE CANS—Robert Arthur, of Philadelphia, Pa. Patent dated Jan. 2d, 1856. I claim the employment of elastic packing, arranged in and retained by a groove of an acute form, or whose sides are in close proximity, in the manner and for the purpose described.

Railway Law.

A recent law passed by the Legislature of Iowa, provides "That trains shall come to a full stop on approaching crossings, under a penalty of \$500 for non-observance, half of which sum goes to the informer. And in case that life or property should be destroyed by violation of the act, the penalty is double the value of the property so destroyed, and for every life lost, from \$10,000 to \$50,000, to be recovered by the representatives of the deceased, and to go to the widow and children; if there be any, or if there be not, then to the heirs of the deceased."

This law appears to be unnecessarily stringent. We do not exactly see the justice of paying a man double the valuation of his property. If his actual loss is made good, that is enough.

Neither do we perceive the wisdom of enriching the heirs of persons who are accidentally killed on railroads. Where a man who has a family dependent upon him, is killed, through negligence of the railroad corporation, it is well, perhaps, to require that the family shall be supported at the expense of the company.

One of the greatest blessings of our country is its railroads. It is unwise to hamper their operations by unreasonable and foolish laws.

A Steamboat Burned.

On the 10th inst., the steamboat *City of Newark* was burned down while on her passage from Newark to this city. The fire was first noticed in the boiler room, and the flames spread so rapidly that before the steamers *Achilles* and *Thomas Hunt*, which were in its vicinity, could reach the burning vessel, several passengers were scorched, and three ladies were drowned in an attempt to escape. There was the greatest consternation among the passengers, most of them being ladies, and by the rush to get into the life-boats, two were capsized, in one of which were the three ladies said to be drowned. Another account states that none were drowned—that all were saved. We hope no lives were lost, but were it not for the near proximity of the tug steamer *Achilles*, which left a ship it had in tow and immediately flew to relieve the panic-stricken passengers, there can be no doubt but a great number of lives would have been lost. This accident was undoubtedly caused by carelessness on the part of the firemen, or a defective construction of the boiler room. We hope the case will receive a full investigation.

Great Strike of Miners.

By recent accounts from Europe, we learn that forty thousand miners were said to be on a strike in the West of Scotland. Strikes for wages are the most absurd means that can be employed by operatives to attain their objects. They always end in disaster to the working men.