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 PLOWS—James Nevison and Edward Nevison, 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, bit, or other boring tool in use, and adjustable in the manner and in connection with said auger, or other boring tool, substantially as and for the purpose specified.

SECURING 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 flanch cap, with a projection extending below it in connection with making the base plate of the chair, 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 isformed 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 the hook, e, 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. Pettee, of Mansfield, Mass. : I am aware that rolls placed in open bottoms of vessels have been used, said 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 ENGINES—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 equivalents, serving to close the valves, t 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 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 in firmly 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, l, 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 hight 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 LorenzoStevens, of Stoughton, Mass. : We claim the said article or boot sole crimper 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 Vanderwerf,), 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 markers, 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-scattering device placed within the seed conveying tubes, the seed may be scattered in 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.]

PROPELLER—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 slides at its lower end for taking out 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 pincers, 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. 27, 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, 26, 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.]

MANUFACTUREOF 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 modifying 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 1 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 speed, 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 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 or 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 VULCANIZED 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 weel, 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, 14, 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 S. 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 DOVETAIL MOLDINGS—Solander Withington, of St. Louis, Me. : I claim the combination of the saws, I' I and J' 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.

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

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

RE-ISSUES.

SAW MILLS—Hazard Knowles, of New York City. Patented Sept. 23, 1852 : 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, 1858 : I claim expressing the butter from the globules or sacks of milk or cream by friction, such as rubbing, washing or grinding, when accomplished in any manner equivalent to that specified.

FELTING FOR COATS, HATS, &c.—M. Osborne, of New York City : I claim the method of manufacturing acticles 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 bush 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.]

DESIGN.

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 tuns, 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 tuns' capacity, on the Morris Canal at Washington, N. J., has weighed 248,000 tuns 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 seing 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.