

The combination of the main axle carrying a sprocket wheel the secondary shaft mounted on the main frame and extending beyond the vertical plane of the driving wheel, on the side next the cutters, a sprocket wheel and bevel gear supported by such secondary shaft, and a crank shaft mounted on the drag-bar and shoe or their equivalent, substantially as set forth. 3rd. The combination of the secondary shaft mounted on the main frame and projecting laterally so as to cross the path of the main driving wheel, a drag-bar or shoe pivoted to the end of such shaft, and a brace extending from the end of such shaft to the draft frame or pole of the machine. 4th. The combination of the secondary shaft mounted on the main frame and projecting laterally so as to cross the path of the main driving wheel, and a sprocket wheel and bevel gear supported on said shaft and arranged on opposite sides of the path of the driving wheel, substantially as shown and described. 5th. The combination, in a hinged bar harvester, of a shoe and drag-bar, or their equivalent, rigidly attached to the finger beam, a crank shaft mounted in bearings on such shoe and drag-bar, and a tilting hinge independent of the finger beam and arranged in advance thereof. 6th. The combination of a hinged cutting apparatus, a shoe and drag-bar, or their equivalent, rigidly attached to the finger beam, a crank shaft mounted in bearing on such shoe and drag-bar, open slotted guard fingers provided with forked caps, solloped cutters reciprocating from edge to edge of the guards, substantially as and for the purpose set forth, and a tilting hinge independent of the finger beam and arranged in advance thereof. 7th. The combination of the secondary shaft arranged on the main frame and supporting the gearing from which the cutters are operated, and a shoe and drag-bar, or their equivalent, rigidly attached to the finger beam and pivoted at their forward end to such secondary shaft, and at their rear end flexibly connected to the main frame by means of a joint formed at the heel of the cutting apparatus. 8th. The combination of the secondary shaft arranged on the main frame and supporting the gearing which drives the cutters, a drag-bar and shoe, or their equivalent, rigidly attached to the finger beam and pivoted at their forward end to such secondary shaft, and at their rear end flexibly connected to the main frame by means of a joint formed at the heel of the cutting apparatus, and a crank shaft arranged on such shoe or drag-bar in the line of the hinges of the cutting apparatus, whereby the finger beam may be raised, lowered or folded without throwing the gears out of mesh, substantially as shown and described. 9th. The combination of a stop connected with the main frame or axle to limit the vertical movement of the heel of the finger beam, a raising lever mounted on said axle and a raising chain or cord attached to a standard on the finger beam at some point above the plane of such beam, said lever being thereby made capable not only of raising the heel of the finger beam to pass obstructions, but also of lifting the outer end of the beam, when the heel has struck the stop. 10th. The combination of a lifting chain or cord attached at its lower end to the cutting apparatus and a rigid link or brace loosely hinged on the heel of the cutting apparatus and attached at its upper end to such lifting chain, whereby the lifting lever is caused to act more directly on the finger beam without impairing the flexibility of the connection between the cutting apparatus and the main frame. 11th. The combination of the main axle projecting beyond the driving wheel in the direction of the cutters, a rocking sleeve mounted on such extension of the axle and provided with a pendent tubular arm and a connecting rod loosely pivoted to the heel of the cutting apparatus and having free vertical play in such tubular arm, substantially as and for the purpose described. 12th. The combination of a drag-bar, or its equivalent, pivoted at its forward end to a support connected to the main frame, and a rod pivoted upon the heel of the cutting apparatus and supported by an oscillating tubular arm mounted on the main axle, whereby the cutting apparatus is made free to vibrate about the pivot at the forward end of the drag-bar, substantially as described. 13th. The combination of a sleeve mounted on the main axle and provided with a pendent tubular arm, the lower end of which acts as a stop to limit the upward range of movement of the heel of the finger beam. 14th. The combination of a stop connected with the projecting end of the main axle, for limiting the vertical movement of the heel of the finger beam, and a raising chain or cord attached to the finger beam at a point beyond such stop, substantially as and for the purpose described.

No. 17,145. Improvements in Balance Slide Valves. (*Perfectionnements aux tiroirs de vapeur équilibrés.*)

John J. DeLancey, Binghampton, N. Y., U. S., 2nd July, 1883; 5 years.

Claim.—1st. The balance plate D in combination with the slide valve A, face plate C and steam chest, substantially as shown and described. 2nd. The balance plate D formed with flanges and oil grooves, in combination with a slide valve provided with spring actuated packing bars and the face plate C substantially as described, for the purpose set forth. 3rd. In slide valves, the balance plate D fitted for movement with the valve and formed with oil grooves upon its upper side, in combination with the face plate C having a central aperture *a*, substantially as described. 4th. The combination of the slide valve A formed with perpendicular faces, square packing bars *c* fitted in grooves in the upper edges of the valve, the balance plate D provided with grooves upon its upper side, and the face plate C supported by the rests *k*, all substantially as described for operation as set forth.

No. 17,146. Improvements in Railway Frogs. (*Perfectionnements dans les rails de croisement.*)

Joshua Staples, Indianapolis, Ind., U. S., 2nd July, 1883; 5 years.

Claim.—1st. A railroad frog constructed of rolled metal, the several portions thereof being rolled all together and in a single piece, substantially as set forth. 2nd. A railroad frog rolled in a solid piece in the general form in which it is intended to be used, having its ends milled or planed out to correspond with the form of the rails to be used in connection therewith, in combination with the said rails and angle bars or fish plates, which fit into said planed out places and are secured therein, substantially as set forth.

No. 17,147. Improvements in Cots.

(*Perfectionnements dans les lits de camp.*)

Melville B. Church, Grand Rapids, Mich., U. S., 2nd July, 1883; 5 years.

Claim.—1st. In combination with the side piece of a cot-bed, bench or light structure, the folding leg formed with a partly rounded end and the block *c* fitted thereto, adapted to bear against the leg and limit the movement, substantially as described. 2nd. The combination of the side pieces, the partly rounded leg and block fitted thereto, and the cross pieces adapted to brace against the legs, substantially as described. 3rd. The combination of the spring sides, folding transverse cross pieces uniting said cross pieces near the ends thereof, and the transverse cords adjustably attached to the lower corners, substantially as described.

No. 17,148. Process for Rendering Asbestos Impervious to Water. (*Procédé pour rendre l'amiante imperméable à l'eau.*)

Jean B. Amyot, Quebec, Que., 2nd July, 1883; 5 years.

Claim.—1st. The described process of treating or preparing asbestos, or goods or articles made of asbestos, and rendering the same impermeable or impervious to water, by mixing or steeping said material or articles in a heated solution of isinglass, gelatine or glue, glycerine and bichromate of potassium, with or without the addition of silicate of soda, and exposure to the action of sun light or diffused daylight, substantially as specified. 2nd. In the preparation of asbestos, or goods or articles made of asbestos, and rendering the same waterproof, the process described of treating said material or articles by first mixing or steeping the same in a heated solution in water, mainly or wholly composed of isinglass, gelatine or glue, glycerine and bichromate of potassium, in or about the proportions specified, and afterwards expelling the surplus solution from, and drying and exposing to sun light or daylight said material or goods, essentially as set forth.

No. 17,149. Improvements in Window Blinds. (*Perfectionnements aux persiennes.*)

William S. Laycock, Sheffield, Eng., 2nd July, 1883; 15 years.

Claim.—1st. In self-acting blind apparatus, the combination of the roller A, the winding up spring B, or an equivalent weight, the wheel and pinion C and D, and the retaining gear consisting of ratchet wheel and friction plate with spring, substantially as shown and described. 2nd. The combination of the following elements: a hollow roller supported by two axles to one of which is secured a spiral winding-up spring, a stopped tube driven into one end of the roller and holding the axle, a spring on which serves to hold the retaining ratchet wheel against the end of the tube or a plate, all set forth and for the purposes described. 3rd. In self-acting blind rollers, a retaining apparatus consisting of a spiral spring mounted on the axle, carrying the retaining ratchet and pressing a loose friction disk I having a waved or notched surface against a disk of corresponding surface mounted on such axle, all as shown and described and for the purpose set forth.

No. 17,150. Process for Manufacturing Glycerine. (*Procédé pour fabriquer la glycérine.*)

Edmond O. Banjard, Aubervillier, France, 2nd July, 1883; 15 years.

Claim.—1st. The process of extracting glycerine from fatty substances consisting in placing the fatty substances with a suitable quantity of water in a digester, in retaining the mass and in subsequently introducing pure metallic zinc into the mass, substantially as specified. 2nd. The process of agitating glycerine from fatty substances consisting in placing the fatty substances with a suitable quantity of water in a digester, in agitating the mass, in pulverizing or reducing zinc into small particles, in placing the particles of zinc in water, in stirring the zinc and water to keep the particles of zinc separated and in introducing the zinc and water while under the influence of the stirring into the digester, substantially as specified. 3rd. The process of extracting glycerine from fatty substances consisting in placing the fatty substances with a suitable quantity of water in a digester, in agitating the mass by admitting a small stream of steam into the lower portion, in placing zinc reduced to small particles in water, in stirring the zinc and water to keep the particles of zinc separated, in introducing the zinc and water, while under the influence of the stirring into the digester, in subsequently admitting a larger stream of steam into the lower portion of the digester, to raise the pressure therein, and in allowing a slight escape of steam from the digester so that the incoming steam will agitate the contents of the digester, substantially as specified.

No. 17,151. Improvements in Flanging Machines. (*Perfectionnements aux machines à faire les rebords.*)

Alfred Wilbur, Alleghany, Pa., U. S., 2nd July, 1883; 5 years.

Claim.—1st. The combination, with the two flanging-rolls B C, the shaft of the upper roll B being longitudinally movable in its bearings, of the spring *e* or a weight or equivalent mechanism, substantially as and for the purpose set forth. 2nd. In machines for flanging circular metal plates, the combination of the rotary flanging-rolls B C, the upper flanging roll B having its shaft or axis free to move endwise against the resistance of a spring, weight, or other mechanism applied to force it up to its work, and the pivoted shifting table *k*, said table being adapted when raised, to press back the upper-roll and cause it to accommodate itself to the thickness of the plate flanged, substantially as set forth. 3rd. In machines for flanging circular metal plates, the combination of the rotary flanging-rolls B C in which the upper roll B is provided with a series of slight corrugations *f* extending longitudinally across its periphery to catch upon the me-