

and the punches, of the reciprocating bar having obliquely hung pivoted fingers and the mechanism for operating the bar, whereby the bar from which the nails are formed is fed forward step by step to be subjected to the action of the punches, substantially as specified. 8th. The combination, in a nail machine, with the conduits and the shaping and finishing rollers, of the levers operated by a projection in one of the rollers, and a suitable spring to hold the blanks to the projection of the rollers as they enter between them, substantially as specified. 9th. The combination, in a nail machine, of the lower conduit having a sliding section and a spring for holding and returning it to a normal position, and suitable mechanism, whereby an alarm may be given on the machine stopped in case the blanks wedge in the conduit, substantially as specified. 10th. The combination, in a nail machine, of the conduits and rollers, and the springs, whereby the blanks are momentarily arrested, substantially as and for the purposes specified. 11th. The combination, in a nail machine, of the lower conduits, the side levers and their operating levers and trigger and the finishing punch and tappers, whereby the side levers are operated to hold the blanks to be operated upon by the finishing punches, substantially as specified. 12th. In a nail machine, the shaping and finishing rollers having faces for confining the dies, one of said faces having saw cuts as described, and provided with a screw-threaded extension having a collar and screw nut, whereby the dies may be clamped, substantially as specified. 13th. In a nail machine, the shaping and finishing rollers provided with clamping faces, and a screw-threaded extension and nut, whereby the dies are clamped together, substantially as specified. 14th. In a nail machine, the shaping and finishing rollers having faces for confining the dies, one of said faces having saw cuts, as described, and a screw extension provided with a collar having an elongated section and the connecting strap and screw nut, whereby the parts are secured together, substantially as and for the purposes set forth.

### No. 20,461. Line Throwing Gun.

(Fusil pour Lancer le Grélin.)

Jeremiah Williams, Hartford, Ohio, U. S., 3rd November, 1884; 5 years.

*Claim.*—1st. The combination, with a gun, of a cone held to the same in such a manner that it can be revolved on its longitudinal axis, substantially as herein shown and described. 2nd. The combination, in a gun for throwing lines, of the barrel B provided with transverse slots near its centre, with a detached wad constructed to be placed in rear of the line dart, whereby, on the explosion of the charge, the wad first impels forward the dart, and, when beyond the slot, stops and cuts off access of the flame to the line, substantially as set forth. 3rd. The combination, with a gun, of the arm G, the crank shaft H, of the cone J secured on one end of the said crank shaft, substantially as herein shown and described. 4th. The combination, with a gun, of the dart A, the conical cap E, the cord or wire F having its ends secured to the front end of the dart and to the base end of the cap F, and of the cone J held to turn on the gun, substantially as herein shown and described.

### No. 20,462. Fire Shovel. (Pelle à Feu.)

Charles Desjardins, Montreal, Que., 3rd November, 1884; 5 years.

*Reclame.*—La combinaison des barres c et des interstices d, pratiqués ou établis, dans le fond de pelles à feu de toutes dimensions, tel que ci-dessus décrit et pour les fins indiquées.

### No. 20,463. Curd Mill. (Moulin de Fromagerie.)

David M. Macpherson, Lancaster, Ont., 3rd November, 1884; 5 years.

*Claim.*—As an improved article of manufacture, an implement for stirring milk and agitating curd consisting of the teeth C, each broad and thin on the cutting edge, and set in alignment, and diminishing in width, and increasing in thickness, and fitting into a head B, provided with a handle A, as set forth.

### No. 20,464. Comb. (Peigne.)

William Crabb, Newark, N.J., U.S., 3rd November, 1884; 5 years.

*Claim.*—1st. The process of uniting separate comb teeth, by molding a back of plastic material between and around the roots of the same, as and for the purposes set forth. 2nd. As a new article of manufacture, a comb having a series of separate teeth united by a back of plastic material. 3rd. The method, herein described, of forming oval tapering teeth, by first tapering a metallic blank, and then flattening the same, as and for the purposes set forth. 4th. The combination, with a series of separate teeth molded in a back of plastic material, of a strengthening wire c extending lengthwise inside the back. 5th. The combination, with a back formed of plastic material, of teeth provided with roughened or crimped ends, as and for the purpose set forth.

### No. 20,465. Vehicle Hub. (Moyeu de Roue.)

King H. Elliott and William F. Moulton, Burlington, Vt., U.S., 3rd November, 1884; 5 years.

*Claim.*—1st. A vehicle hub having projecting metallic bands F, in combination with the sand-collar G and nut-collar I, substantially as described and for the purpose set forth. 2nd. The nut-collar I adapted to receive the end screw of the arm B, and made to surround the outer end of the vehicle-hub, and to extend its flanged and rimmed edges beneath the projecting edge of an outer shoulder or band F, substantially as described. 3rd. The combination, with the axle C and arm B, of the vehicle hub A having the periphery groove D, shoulders F, sand-collar G and nut-collar I, substantially as shown and described. 4th. In combination with the metallic vehicle hub A, having a circumferential groove D for the insertion of the spokes E, the elastic cushion c and spokes E, substantially as and for the purpose set forth.

### No. 20,466. Curry Comb. (Etrille.)

Albert W. Cox, Hastings, Neb., U.S., 3rd November, 1884; 5 years.

*Claim.*—1st. In a curry comb, the combination, with the teeth-bar, the pivoted cleaning-shield B, provided with the flanged plates B<sub>2</sub>, secured to a wire B<sub>1</sub>, which passes around and near the outside rows of teeth of the comb, substantially as set forth. 2nd. In a curry comb, the combination, with the teeth-bar, of the hinged cleaning-shield B, the cleaning plates B<sub>2</sub>, of which are provided with flanged edges b, substantially as and for the purpose set forth.

### No. 20,467. Apparatus for Unloading Hay.

(Appareil pour Décharger le Foin.)

John L. Howe, Greene, Me., U.S., 3rd November, 1884; 5 years.

*Claim.*—1st. The improved hay carrier, substantially as described, having each of its two sections composed of a series of parallel bars arranged at suitable distances apart, and ropes connecting them at their ends, and the said sections provided with catches to one, and bolts, springs bell-crank levers, and their actuating rope to the other, arrange to operate, substantially as set forth. 2nd. The combination of the grapple and its swivel, with the chain and its supporting carriage, all being constructed and to operate substantially as represented. 3rd. The grapple, substantially as described, consisting of the swivel and the pawl case, and the two pawls, the springs, arms and actuating bow and lever, arranged and adapted essentially as specified.

### No. 20,468. Dust Collector.

(Aspirateur de Poussière.)

The Milwaukee Dust Collector Manufacturing Company, (assignor of William Richardson.) Milwaukee, Wis., U.S., 3rd November, 1884; 5 years.

*Claim.*—1st. In a dust-collector, the combination, with the revolving balloon B and the casing A, of the rings C, D, E and F, the coil-spring f, threaded bolt g, bracket h and adjusting-nut i, substantially as shown and described and for the purpose set forth. 2nd. In a dust collector, in combination with the balloon B, casing A and inverted trough H having longitudinal bar h<sub>1</sub>, h<sub>2</sub>, the flue J having pin j, the coil-spring k, threaded bolt l, bracket m and nut n, substantially as shown and described and for the purpose set forth. 3rd. In a dust-collector, the combination, with the balloon B, trough H, the flue J, fastening pin j, spring k, bolt l, bracket m and nut n, of the guide pins et, et held in the casing A, substantially as shown and described and for the purpose set forth. 4th. In a dust collector, the combination, with a revolving balloon, a case inclosing the same and metallic rings fastened to each of said parts and interposed between their respective bearing edges, of an annular band of felt or of any other flexible material interposed between said metallic rings and having one of its rims fastened to the case while its other rim is suitably held against a projection of the ring of the balloon, so as to form an air-tight joint between the bearing parts, substantially as set forth. 5th. In a dust-collector, the combination, with a revolving balloon, a case inclosing the same and metallic rings fastened to each balloon, a case inclosing the same and metallic rings fastened to each of said parts and interposed between their respective bearing-edges, of an annular band of felt or of any other flexible material interposed between said metallic rings and having one of its rims fastened to the case, and an elastic binder adapted to keep the other rim of the annular band in constant contact with the projecting periphery of the revolving balloon ring, substantially as set forth. 6th. In a dust-collector, the combination, with a revolving balloon, a case inclosing the same, and an inverted trough held in the open centre of said balloon, of a flue hung over each end of said trough and connected to the sides of the case by an elastic binder, by means of which an air-tight joint is secured between the edges of the trough and the balloon bars, substantially as set forth.

### No. 20,469. Convertible Injector.

(Injecteur Convertible.)

Franklin W. Kremer, Wadsworth, Ohio, U.S., 3rd November, 1884; 5 years.

*Claim.*—1st. The section parts of an ejector or equivalent feeder fitted together with ground, or ground and packed joints, and bolts engaging perforated cars on the uppermost and lowermost section or parts, for clamping together as a whole all such sections or parts, the substantially as and for the several purposes specified. 2nd. The combination, with the steam inlet or forcing tube and the water-way of an annulus k, and a perforated diaphragm n adapted to operate as a check-valve to prevent the back flow of steam, substantially as shown and described. 3rd. In an ejector, the combination of the lifting-jet, the forcing-tube, counterbored ground joint therefor and clamping-bolts, the said lifting jet being arranged directly over the forcing tube and clamped by said bolts in direct line with the same, substantially as and for the purpose described. 4th. In a non-lifting injector, the sections thereof fitted together with ground, or ground and packed joints and clamp bolts, combined with pipes p, e and t having a slip-joint u and constituting an automatic regulating device, substantially as shown and described. 5th. In an ejector, a device, substantially as shown and described, and a check forcing section provided with a perforated diaphragm and a check valve seated thereon by backflow removable at pleasure, and combinable with other suitable sections by means of counterbored joints and clamp bolts to form an ejector, substantially as shown and described. 6th. The several sections of an ejector, or equivalent water feeding device, fitted together with counterbored joints made without screw-threads, combined with the external bolts and nuts common to all, engaging the end sections only and clamping them, and the intermediate sections together, substantially as and for the purpose described. 7th. The combination, with the steam inlet, and a valve, of an operating lever provided with a spring push-piece, and a toothed or notched segmental rack with which said lever engaged to govern the position of the valve, substantially as described. 8th. The combination, with the steam inlet, the valve therefor, an operating lever provided with a spring catch and a cam and a toothed segment