

composed of sections of different degrees of fineness arranged side by side, each section having its mesh increasing in coarseness from its upper to its lower end, and an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, substantially as set forth. 3rd. The combination, with an inclined screen, of a series of belt elevators arranged side by side, and a belt supporting drum having annular enlargements or projecting rings arranged in the centre line of each belt, whereby such elevator is centred and retained in its proper position, substantially as set forth. 4th. The combination, with an endless elevator belt or apron, and the drum or pulleys around which it runs, of inclined scrapers adapted to move the material toward the side or end of the drum or pulley, substantially as set forth. 5th. The combination, with an endless elevator belt or apron, and the drum or pulley around which it runs, of scrapers bearing against said drum or pulley and inclined from the middle toward both ends thereof, substantially as set forth. 6th. The combination, with a separating screen, of a cleaner composed of a movable carrier, brushes or wipers loosely attached to said carrier, and a spring, whereby each brush or wiper is held in contact with the screen, substantially as set forth. 7th. The combination, with a separating screen, of a cleaner composed of a movable frame P, brushes or wipers p, provided with pins p^t and springs q secured to the frame P, and bearing against the pins p^t, substantially as set forth. 8th. The combination, with an inclined screen and an elevator, whereby the material escaping from the lower end of the screen is returned to its upper end, of deflecting boards arranged more closely together toward the tail end of the machine, whereby the movement of the material toward the tail of the machine becomes more retarded in the same measure as the material becomes less in quantity, substantially as set forth. 9th. The combination, with the stationary frame A and inclined screen B, of a knocker N, a spring n secured at its ends to the stationary frame, and a set screen nⁱ adjustably secured in said spring, and bearing against the frame of the screen, substantially as set forth.

No. 20,103. Machine for the Manufacture of Nuts and Washers. (*Machine pour la Fabrication des Ecrous et Rondelles.*)

John Ashton, Philadelphia, Penn., U. S., 2nd September, 1884; 5 years.

Claim.—1st. The die A comprising the outer fixed die block w, central fixed punch v, intermediate ejector and base block a, the whole confined to the movable frame by a chuck H, as described. 2nd. The die A comprising the chuck H, outer fixed block w, block a, intermediate ejector and centre punch v having a shoulder bearing against the block a, as set forth. 3rd. The counter die B comprising the fixed central tube x and outer sliding block z, both confined to the frame by a chuck J, as set forth. 4th. The combination of the counter die having a sliding block n, the ejector pins f, the lever M, the yoke N and the adjustable rods g, whereby the movement of the yoke is transmitted to the levers, as set forth. 5th. The combination, in a counter die, of the central fixed portion x and the outer sliding block z, and acting upon by a spring r, as set forth. 6th. The combination of the central fixed portion x of the counter die, the outer sliding block z and the gauge pin t, free to slide in an opening in said block z, and acted upon by a spring r, as set forth. 7th. The combination of the die and counter die with the pivoted arm n, carrying a wiper p, and with means for vibrating the arm as the die is reciprocated, as set forth. 8th. The combination of the die and counter die, the pivoted arm n carrying a wiper p, and the reciprocating frame F having a cam P acting on said arm n, as set forth. 9th. The frame D having on each side one or more tubular projections u, for the reception of bracing and retaining bolts, all substantially as set forth.

No. 20,104. Machine for Removing Snow off Railway Tracks and Roads. (*Machine pour Enlever la Neige des Voies de Chemins de Fer et des Routes.*)

William Pearson, Rapid, Man., 2nd September, 1884; 5 years.

Claim.—1st. The combination of dredging wheel A, with clearer K and revolving shovels N, as substantially as for the purpose hereinbefore set forth. 2nd. The combination of dredging wheel A, with cutting sheath o, substantially as and for the purpose hereinbefore set forth. 3rd. The combination of sled (Figs. 4 and 5) with machine, substantially as and for the purpose hereinbefore set forth. 4th. The combination of spring and joint to clearer K, substantially as and for the purpose hereinbefore set forth. 4th. The combination of spring and joint to clearer K, substantially as and for the purpose hereinbefore set forth.

No. 20,105. Levelling Rod and Out Tape.

(*Mire Graduée et Ruban-Mesure.*)

Henry F. Bean, Jackson, Mich., U. S., 2nd September, 1884; 5 years.

Claim.—1st. The rod A in combination with the endless tape B, and target H adjustably secured to said tape and rod, substantially as and for the purpose specified. 2nd. The combination, with the rod A and a hook secured to said rod, of the graduated out-tape J having two rings M, M, substantially as and for the purpose specified. 3rd. The combination, with the rod A and travelling endless tape B, of the clamp F, substantially as and for the purpose specified. 4th. In a levelling-rod, the combination, with the rod A and the endless tape B, of the pulley C and the adjustable pulley D, substantially as and for the purpose specified. 5th. The combination, with the rod A and endless tape B, of the target H, the loop b secured to the target frame I and the clamping screws d, h, substantially as and for the purpose specified. 6th. The combination, with the rod A and the endless tape B, of the adjustable target H having loop b and clamping screws d, h, rings M, M, substantially as and for the purpose specified. 7th. The rod A in combination with the adjustable rod B, provided with a sliding rod C, substantially as and for the purposes set forth. 8th. The combination, with the rod B and sliding rod C, of the right-angle

bars P, substantially as and for the purposes described. 9th. The combination of the rod B, sliding rod C and right-angle bars P, when constructed, arranged and operating substantially in the manner and for the purposes specified.

No. 20,106. Apparatus for Removing Incrustations, Sediment or Deposits of any Kind from Water Pipes.

(*Appareil pour Enlever les Incrustations, le Sédiment ou les Dépôts de tout genre dans les Tuyaux d'Eau.*)

Edward H. Keating, Halifax, N. S., 2nd September, 1884; 5 years.

Claim.—1st. The contrivance q r p q r consisting of the part p, which is a portion of a pipe or main cut out therefrom or not, as circumstances may require, and secured in its position by the attachments q, u, r, v, p, y, t, substantially as and for the purpose hereinbefore set forth. 2nd. The combination pipe scraping machinery or apparatus capable of being propelled, operated or utilized by means of the gravity force, power or pressure of the water obtainable within a pipe or main, consisting of a centre rod c e s d or m n, the spring arms a and the plows b, any of which may be readily coupled on or uncoupled, the piston or pistons f, g, h, and the auxiliary springs j and i, either of which may be attached or detached at pleasure, constructed substantially as shown and described and for the purposes hereinbefore set forth.

No. 20,107. Cigar Bunching Machine.

(*Machine à Liez les Cigares.*)

Thomas E. Roberts, Detroit, Mich., U. S., 2nd September, 1884; 5 years.

Claim.—In a cigar bunching machine, a bunching table concave upon its upper face in vertical cross-section, in combination with a straight horizontal travelling bunching roller, substantially as described. 2nd. In a cigar bunching machine a bunching table concave upon its upper face in vertical cross-section, and means, substantially as described, for vertically adjusting said table, in combination with a horizontally travelling bunching roller, substantially as herein set forth. 3rd. The combination, in a cigar bunching machine, of a frame provided with horizontal ways for receiving a horizontally travelling bunching roller, with a bunching table and an adjustable bunching cloth, substantially as and for the purposes specified. 4th. In a cigar bunching machine, a horizontal stationary bunching table in combination with a bunching roller and cloth, such bunching roller being provided with means for horizontally reciprocating it, substantially as specified. 5th. In combination with the downwardly inclined end of the bunching table, the guard plates or cheeks forming a pocket or recess in which the bunching cloth is depressed for receiving the filter, substantially as and for the purposes described.

No. 20,108. Grain Granulator.

(*Concasneur à Grain.*)

George Malcolm, Tavistock, Ont., 2nd September, 1884; 5 years.

Claim.—The conical case D provided with teeth p^t and openings o¹, o², in combination with the conical cylinder C provided with teeth a¹, and shaft A operated by suitable operating mechanism, substantially as shown and described and for the purpose specified.

No. 20,109. Balanced Slide Valve.

(*Tiroir de Vapeur Equilibré.*)

James Bewcher, Kansas, Mo., U. S., 3rd September 1884; 5 years.

Claim.—The combination, with a steam engine slide-valve and its inclosing steam chest, provided with a vertical packing chamber and plunger near one end, an equalizing bar pivoted mid-way of its length to the back of the valve, and having a vertically vibrating link journalled, as shown, to one extremity, for connection with the balancing plunger, the opposite end being journalled to, and connected by a similar link to the bottom of the chest, the described vibrating links, each constructed of substantially identical dimensions and attached to the parts described, as shown, so that the central pivot of the equalizing bar may reciprocate in a line parallel to the valve-face, and the plunger be devoid of motion, substantially as described and shown.

No. 20,110. Featherbone. (*Tige de Plume.*)

Edward K. Warren, Three Oaks, Mich., U. S., 3rd September, 1884; 15 years.

Claim.—1st. As a new article of manufacture, the featherbone a composed of the enamel or quill, and enamel parts of feather stems bound together, substantially as specified. 2nd. A stiffener or rib formed of quills or quill splints, stripped of the feathers and bound together, as shown and described. 3rd. The elastic filling composed of quills or quill splints, or both, arranged to overlap and break joint with one another, and bound together to form an elastic rod, essentially as and for the purpose described.

No. 20,111. Low Water Alarm Gauge.

(*Indicateur à Sonnerie du Niveau d'Eau.*)

Alfred Weldon, Hamilton, Ont., 3rd September, 1884; 5 years.

Claim.—1st. The combination of the float G, the valve e, fulcrum B, lever c, the two saddles D and rod F, substantially as and for the purpose hereinbefore set forth. 2nd. The combination of the two component parts of the said float, the recess on the top of the float, with the metal piece L held in its place by the strap K and fastened to the lower half of the said float, below the water line, so that the steam does not come in contact with any joints of the float, they being all below the water line, substantially as and for the purpose hereinbefore set forth.