

cumferential grooves, substantially as specified. 14th. In a machine for bunching match sticks, the combination of a hopper in which the match sticks are placed, a roller having a notched periphery for carrying the notch sticks from the hopper, and a roller also arranged in the hopper and serving to force the match sticks towards the first said roller substantially as specified. 15th. In a machine for bunching match sticks, the combination with a hopper in which the match sticks are placed, a roller having a notched periphery rotating in the hopper and fingers normally extending into circumferential grooves in the roller and adapted to be raised to preclude the entrance of match sticks into the notches of the roller, substantially as specified.

No. 17,433. Hanging or Sliding Doors.

(*Portes pendues ou à glissoires.*)

William H. Wilder, Caledonia, N. Y., U. S., August 10th, 1883; 5 years.

Claim.—1st. In combination with a hanging door and with a travelling carriage and stationary bed for the same, the cap-piece I I', whereby lateral and vertical displacement of the door is obviated and running off the carriage from its track is prevented, these parts being arranged substantially as and for the purpose set forth. 2nd. In a hanging door, one or more free and unattached carriages F, each made with a series of cylindrical rollers adapted to run upon the surface of a beam or batten, and also made of a length equal to the breadth of the door, and whereby when the door has been shifted to the end of its route of travel and the carriage arrested in its travel, one or more of the rollers shall be left some distance from the door to take up its weight when the door reaches it or them on its return movement.

No. 17,434. Ice Tongs. (*Pinces à glace.*)

Thomas Baxter, Hamilton, Ont., 10th August, 1883; 5 years.

Claim.—A pair of ice tongs made of one piece of wire preferably of steel, round or square, formed with a circular spring *b b*, side pieces *c c* to form handles, the double curved cross legs *h h*, the same terminating in inward points *f f* at right angles thereto, the device so constructed that by inward pressure on the side piece *c c* the points *f f* are opened or separated to grasp a block of ice, etc., and spring towards one another upon pressure being removed from the parts *c c*, the whole being constructed and arranged substantially as and for the purpose specified.

No. 17,435. Fire Escape. (*Sauveteur d'incendie.*)

Charles I. Pittman, Annapolis, N. S., August 10th, 1883; 5 years.

Claim.—1st. In a fire escape, the brake block *d* having the sling *e* suspended from it, in combination with friction block *c* having the rope *a* rove through it, substantially as described. 2nd. In a fire escape consisting of rope *a*, friction block *c*, sling *e* and brake block *d*, the sling rope extending up through block *c* and also up and down through block *d* and attached to block *c*, substantially as described. 3rd. The cushion spring *g*, in combination with friction block *c*, sling rope *e* and brake block *d*, said springs being arranged between blocks *c d* and the sling rope, substantially as described. 4th. The combination of guide *h* and shield *k* with rope *a*, sling rope *e*, friction block *c* and brake block *d*, substantially as described. 5th. The combination of sack *f* attached to sling rope *e*, substantially as described.

No. 17,436. Apparatus and Appliances for Producing Intense White Light.

(*Appareil pour produire une lumière blanche intense.*)

Charles Clamond, Paris, France, August 10th, 1883; 15 years.

Claim.—1st. The construction of lamp, substantially as described with reference to Figs. 1 and 2. 2nd. The modified construction of lamp substantially as described with reference to Figs. 5, 6, 7 and 8. 3rd. The described process for preparing the magnesium network.

No. 17,437. Pumping Engine.

(*Engin hydraulique.*)

Edwin H. Martin, Cleveland, Ohio, U. S., August 10th 1883; 5 years.

Claim.—1st. A double pumping engine consisting essentially of two steam cylinders G, each provided with operating parts connected to shaft A carrying pinion E, in combination with two water cylinders M, each provided with operating parts connected to shaft B carrying spur-wheel F, said water cylinders being located one beneath each steam cylinder, substantially as and for the purpose set forth. 2nd. A double pumping engine constructed with two steam pistons H, each connected by its pitman L to its appropriate crank *a* of driving shaft A carrying pinion E, in combination with two water pistons N, each connected by its pitman P to its appropriate crank *b* of shaft B located below and to the rear of said driving shaft and carrying spur-wheel F, the two water cylinders M being located one beneath each of the two steam cylinders G, substantially as and for the purpose set forth.

No. 17,438. Mowers, (*Moissonneuses.*)

Henry A. Howe, Albion, N. Y., U. S., August 10th, 1883; 15 years.

Claim.—1st. In a mower, a combined main shoe and draw-bar in one piece curving upwardly and inwardly to the pole, in combination with devices for securing it adjustably thereto, substantially as and for the purposes described. 2nd. In a mower and as a means for adjustably attaching the forward end of the combined shoe and draw-bar thereto, a slotted guide bracket secured to the pole, substantially as in the manner described. 3rd. In a mower, the connection between the forward end of the combined draw-bar and shoe with the guide bracket, either by a rolling joint consisting of a rounded neck passing through the slot in the guide bracket and held therein by a screw nut with a spherical washer, or by a ball and socket joint, substantially in the manner described. 4th. In a front cut mower, the method of bracing the finger bar laterally to the frame of the machine to the exclusion of any brace running backward from the shoe

to the axle or frame, substantially as and for the purposes specified. 5th. In a mower, a shove-bar connected at the inner end to the frame of the machine and at the other end by means of a spherical joint to an upright secured on top of the shoe, substantially in the manner and for the purposes set forth. 6th. In a mower, a shove-bar extending in the same general direction with the pitman, and directly in front of the same so as to act as a guard for the same, both when on and out of operation, substantially in the manner described. 7th. In a mower, the tilting lever and its locking device, in combination with the rod bent lever U, link T, collar *m* and shoe J for effecting the tilting of the finger-bar, substantially in the manner described. 8th. In a mower, the lifting lever and its locking device, in combination with the lifting chain pulleys *o* and *r*, overhanging chain guide *t* and curved upright X, all combined and operating substantially in the manner and for the purpose described. 9th. In a mower, the combination of the finger-bar I with the combined shoe and draw-bar J and its connection with the pole and the shove-bar W, forming the combined means for keeping the finger bar in line and conveying the draft thereto, substantially in the manner described.

No. 17,439. Manufacture of Boots and Shoes and Machinery Therefor. (*Manufacture des chaussures et mécanisme pour icelle.*)

Henry E. Randall, Northampton, Eng., August 10th, 1883; 5 years.

Claim.—1st. Forming the india rubber outer soles and heels of lawn tennis, boating, cricketing and other boots and shoes with a flange around the same to allow of the soles and heels being stitched or sewn to the boot or shoe, substantially as and for the purposes described and represented in Figures 1 2 and 3 of the accompanying drawing. 2nd. The manufacture and use of boots and shoes having an india rubber outer sole stitched or sewn thereto, substantially as described. 3rd. The use, in combination with an ordinary boot-stitching machine, of foot presses constructed with either one or two prongs to allow of "fair stitching" an india rubber outer sole, such as that described, to a boot or shoe, substantially as before described and represented in Figures 4 5 6 and 7 of the accompanying drawing.

No. 17,440. Cigarette Machine. (*Machine à cigarette.*)

Henri E. Casgrain, Quebec, Que., August 10th, 1883; 5 years.

Claim.—1st. In a cigarette machine, the combination of two hollow cylinders united by a band which rolls around them, one of the cylinders being provided with a crank handle and the other with a spring for rotating it, substantially as shown and described and for the purpose set forth. 2nd. A cigarette machine formed with two cylinders journaled in frames hinged to each other, to which cylinders a band is attached, substantially as shown and described and for the purpose set forth. 3rd. In a cigarette machine, the combination with two frames hinged to each other, of cylinders journaled in the frames and of a band attached to the two cylinders, one of the said cylinders being provided with a crank for turning it and the other being provided with a spring for rotating it, substantially as shown and described and for the purpose set forth. 4th. In a cigarette machine, the combination with a longitudinally slotted cylinder, of a band K having a transverse loop J at each end and a rod L passed into the said loop J and through the slot *a* of the cylinder, substantially as shown and described and for the purpose set forth. 5th. In a cigarette machine, the combination with the cylinders A B, of the band K attached to the same, the crank handle E on the cylinder B, the crank arm G on the shaft of the cylinder A, devices for locking the arm G in position and of the spring F acting on the cylinder A, substantially as shown and described and for the purpose set forth. 6th. In a cigarette machine, the combination with the cylinders A B, of the band K attached to the same, of the frames D D in which the cylinders are journaled, which frames are hinged to each other at the bottom in such a manner that the cylinders can be swung from each other until the bottoms of the frames are in contact, substantially as shown and described and for the purpose set forth.

No. 17,441. Machinery and Apparatus for Feeding Wool and other Fibrous Substances to Carding Engines.

(*Mécanisme et appareil à fournir la laine et autres substances fibreuses aux engins à carder.*)

Thomas E. Ainley, Golear, Eng., August 10th, 1883; 5 years.

Claim.—1st. The use and employment of the reciprocating bars 17 and 18, for the purpose substantially as shown and described. 2nd. The combination of the reciprocating bars with the vibrating comb 21, for the purposes substantially as shown and described. 3rd. The construction of the parts 38 and 40 and 41 relieved and set in motion by the cam 34 for stopping the supply of fibre to the pan. 4th. The combination of the sliding cross shaft 45, strap shifter 28 operated by cam 34 for restoring the apparatus for supplying fibre to the pan. 5th. The employment of a rack 50 and pinion 48 for ensuring the depression of the scale pan upon the lever 25.

No. 17,442. Elevator Shafts. (*Châssis d'élévateur.*)

Samuel W. Willard, West de Pere, Wis., U. S., August 10th, 1883; 5 years.

Claim.—1st. In an elevator shaft, a trap door for closing its upper end weighted as described, in combination with a catch adapted to secure it when closed and means for tripping said catch from any convenient point in the building as set forth. 2nd. The combination of the trap door and connections with doors L and catches M whereby as the trap door opens it releases the doors S and permits them to open also as set forth. 3rd. The combination of trap-door C having arm *b* with the catch and device for tripping it as set forth. 4th. The trippers P P depending from the trap-door C in combination with the capped rods N, latches *o*, bracket O and catches M, as set forth.