a wheel contained within the casing A, provided with a series of buckets G, in combination with the chutes a, designed to direct the water against the upper portion of the buckets G, from which it sweeps down and is carried through the wheel, substantially as and for the purpose specified. 4th. A turbine, having a wheel contained within the casing A, provided with a series of buckets G, in combination with the chutes a and ring-gate D, provided with two-winged gates C, the outer wing e^1 of which, when being opened or closed, follows the curve of the face d^1, of the guide B, while the inner end of the inner wing follows the concentric curved face f^{11}, of the innermost side of the guide B, the gates being operated substantially as and for the purpose specified. 5th. A turbine, having chutes a, and provided with a ring-gate D, having two-winged gates C operating in conjunction with the guides B, forming part of the casing A, substantially as and for the purpose specified. 6th. In a turbine, a spider e, having a quadrant F, located between the arms f, and a pinion E, to mesh with the said quadrant, the arms of the quadrant being held solid with the ring d, of the ring-gate D, by the lugs g^1, substantially as and for the purpose specified. 7th. In a turbine, a dome or covering J, held on the shoulder g, and standards K, by the bolts k, and a top L, held on the top ring d, of the casing A by the bolts l, substantially as specified.

No. 36,028. Lighter for Pockets.

(*Allumoir de poche.*)

Andrew John Fredrikson, Grand Rapids, Michigan, U.S.A., 21st February, 1891; 5 years.

Claim.—1st. A strip of combustible material having at intervals along its length and lying within its body tongues having at their free ends particles of material adapted to take fire by friction, and openings beneath said tongues, substantially as described. 2nd. A cylindrical case having an opening in its periphery, a spring covering said opening and having an igniting-point and pressure-fingers, a stop or projection on the periphery of said case, and a strip of combustible material projecting through said opening having at intervals particles of material ignited by frictional contact with said igniting-point and openings engaged by said stop or projection, all substantially as shown and described. 3rd. A cylindrical case having an opening in its periphery, a spring covering said opening, having a point and fingers at its free end, hooks H, engaging holes in said case and secured by a hook near its middle, substantially as described. 4th. A case having openings as C, and C^1, igniting and pressure devices on said case, and a spring located within said case and having its free end projecting through said opening C^1, therein, in combination with a strip of combustible material having at intervals particles of material adapted to ignite by friction and openings at corresponding intervals adapted to be engaged by said free end of the spring. 5th. A case having openings as C, and C^1, a spring covering opening C, and having igniting and pressure fingers at its free end and a spring I, located within said case and having its free end projecting through opening C^1, therein, in combination with a combustible strip located within said case and having one end projecting through opening C, said strip having at intervals particles of material adapted to ignite by friction, and openings engaged by the projecting ends of spring I, all substantially as shown and described. 6th. A cylindrical case having openings C, and C^1, a spring D, covering opening C, and having a friction or igniting device at its free end, and a strip of combustible material having at intervals particles of material adapted to ignite by friction, and openings at corresponding intervals, in combination with a spring located within said case having one end projecting through the opening therein and engaging said spring D, and its other end projecting through opening C^1, and engaging the openings in said combustible strip, all substantially as shown and described. 7th. A case having an opening as C, therein, and a strip of combustible material located within said case having one end projecting through said opening therein formed at intervals with openings and provided at corresponding intervals with particles of material adapted to ignite by friction in combination with a spring covering said opening in the case and having at its free end an igniting-finger, and pressure-fingers on opposite sides of said igniting finger, and a stop projecting from said case and adapted to engage said openings in combustible strip, substantially as shown and described. 8th. A cylindrical case having a slit in its periphery, a spring covering said slit and provided with pressure-fingers and friction point, a spring-stop projecting from the periphery of said case, a continuous strip of combustible material having at intervals tongues with openings underneath the same, and particles of material adapted to take fire by friction attached to said tongues, substantially as described.

No. 36,029. Machine for Bolting Flour.

(*Blutoir.*)

Henry John Fox Rose, Winnipeg, Manitoba, Canada, 21st February, 1891; 5 years.

Claim.—1st. In a bolting reel the combination of the rapid forced feed of stock in a distinct stream or streams and the constant unbroken contact of the same with an unobstructed continuous silk surface the full length of the reel as described and specified. 2nd. The combination of a hollow body formed of ribs in the ordinary way with the head and tail pieces of considerably larger diameter than the said body and the spiral segments intermediate between the head and tail pieces secured continuously together and to the ribs forming the body as hereinbefore set forth. 3rd. The combination of a hollow body with head and tail pieces of larger diameter than the body, the spiral segments secured to each other and to the ribs by angle irons or other convenient methods, with the edges rounded to form a close and continuous support for the silk covering and the lifting spouts or lifters connected with the spiral chamber at the tail end to discharge the stock, all as described and set forth. 4th. The combination of the rounded ends of the ribs C, passing into or through the holes in the head piece D, the nuts a, the screws b, and the plates d, all as described and for the purpose specified.

No. 36,030. Fire Escape. (*Sauveteur d'incendie.*)

Hamberry Wilson, Zanesville, Ohio, U.S.A., 21st February, 1891; 5 years.

Claim.—1st. In a fire escape, the divided case, the shaft having the star wheel and pulley rigidly connected thereto and the bearing for the shaft formed in the case to support the shaft at each end, and also having a central support and the friction blocks carried by the star wheel, substantially as set forth. 2nd. In a fire escape, the divided case having the bearing therein for the rotatable shaft with the central division plate provided with a bearing in line with those in the case, substantially as set forth. 3rd. In a fire escape, the case having the star wheel, and brake blocks mounted in one part thereof, and the guide pulley and guide block in the opposite part with an eye formed with the case and located substantially centrally with the shaft of the star wheel and pulleys, substantially as set forth. 4th. In a fire escape, the divided case and the central division plate each having a portion of the suspension bearing formed therewith, and having the eye extending through them, substantially as set forth.

No. 36,031. Sharpener for Skates.

(*Appareil pour affiler les patins.*)

Ira Jay Merrill, Winthrop, Iowa, U.S.A., 21st February, 1891; 5 years.

Claim.—The combination, with the file, having beveled ends, with a round hole or aperture at each end of a case formed of a single piece of spring metal bent to form a body portion, of a cross-section corresponding with that of the file with the edges of the material extended substantially parallel with each other at right angles to the body of the case and adapted to clamp the skate blade and the retaining hooks D, and E, on the ends of the body of the case and adapted to loosely engage the apertures in the ends of the file, whereby the file may be revolved on the hooks, one of said hooks being adjustable, substantially as and for the purpose specified.

No. 36,032. Press for Hay. (*Presse à foin.*)

Uldarique Gibeault, St. Isidore Junction, Quebec, Canada, 23rd February, 1891; 5 years.

Claim.—1st. In a hay press, the lever g, chain h, lever m, angle lever g, and weight a^1, substantially as described and for the purposes set forth. 2nd. In a hay press, the gear wheels B^1, and p, the latter having projections p^1, shaft L, loose drum o, provided with groove x, and radial arms A^1, substantially as described and for the purposes set forth. 3rd. In a hay press, the lever F^1, chains D^1, and E^1, counter weight J^1, pieces R^1, and O^1, and piston N^1, substantially as described and for the purposes set forth. 4th. In a hay press, the ketch f^1, bracket u^1, lever h^1, provided with attaching pieces i^1, and j^1, piece p^{111}, weight n^1, bracket r^1, chain g^{11}, and lever g, substantially as described and for the purposes set forth. 5th. In a hay press, the wheel W, or its equivalent, the screw V, levers Z, Z, fulcrumed at a, a, and bar d, substantially as described and for the purposes set forth. 6th. In a hay press, the piece a^{111}, spring c^{111}, frame d^{111}, and whiffletree e^{111}, substantially as described and for the purposes set forth. 7th. In a hay press, the method of using the horse power in its horizontal position, substantially as described and for the purposes set forth. 8th. In a hay press, the combination of the horse power B, with its levers g, and n^{11}, chain t, pulleys V^1, and W^1, pieces x^1, and p^{1111}, friction brake h^{111}, and connecting sleeve P, with the hay press O, having its chains h, D^1, and g^{11}, and E^1, levers m, F^1, h^1, Z, Z, and q, weights a^1, J^1, and n^1, gear wheels B^1, and p^1, shaft L, loose drum o, piston N^1, ketch f^1, brackets u^1, and r^1, wheel W, screw V, piece a^{111}, spring c^{111}, frame d^{111}, and whiffletree e^{111}, substantially as described and for the purposes set forth.

No. 36,033. Carbureter. (*Carburateur.*)

George Hargreaves, James Pardee Scranton, and Edward Williams Porter, all of Detroit, Michigan, U.S.A., 23rd February, 1891; 5 years.

Claim.—1st. In an apparatus for manufacturing carbureted air, the combination with an air pump and motor automatically controlled in their operation by the pressure of the air, of a feed device driven by a suitable connection with the air pump, and of valves for said feed device, all so controlled by positive mechanical connection with the air pump, substantially as described. 2nd. In an apparatus for carbureting air, the combination with the air pump and motor automatically controlled by the pressure of the air, of the carburetor into which the air is delivered from the air pump, a feed pipe connected to said carburetor to feed oil into it, and a valve in said feed pipe adapted to control the delivery of oil into said carburetor, said feed valve being controlled by positive mechanical connection, substantially as described. 3rd. In an apparatus for carbureting air, the combination with the air pump and motor automatically controlled by the pressure of the air in the carburetor, of a carburetor into which the air is delivered by said air pump, a feed pump for feeding oil into said carburetor, and of pump valves controlled by positive mechanical connection with the air compressor, substantially as described. 4th. In an apparatus for carbureting air, the combination with the air pump and motor automatically controlled in their action by the pressure of air in the carburetor into which the air is delivered from said air pump, two single acting pump cylinders arranged to feed oil alternately into said inlet and outlet valve of said pump cylinders being controlled by positive mechanical connection with the air pump, substantially as described. 5th. In an apparatus for carbureting air, the combination with the air pump and motor automatically controlled by the pressure of air in the carburetor, a carburetor into which air is delivered from said air pump, two single acting feed pumps for feeding oil alternately into said carburetor and provided with valves controlled by positive