

of these levers connected with the expanders outward, and means for forcing the levers normally inward, substantially as set forth. 2nd. The combination, with a stationary rod and frame loosely mounted thereon, of expanders arranged to slide outwardly on a frame, and a loosely mounted sleeve having cams thereon adapted to operate in connection with the expanders for forcing them outward, substantially as and for the purpose specified. 3rd. The combination, with a stationary rod and a frame connected therewith, of expanders, levers connected with the latter, cams for operating to force the expanders outward, and a spring for returning them to their normal positions, substantially as and for the purpose specified. 4th. The combination, with a suitable frame and expanders, of a cone-shaped hood located over the expanders in position to guide the article being operated upon over the expanders, substantially as and for the purpose specified. 5th. The combination, with a stationary rod, a frame loosely mounted thereon, a sleeve loosely mounted on the rod, and means for sliding said sleeve, of a set of expanders, levers connected with the expanders, a spring interposed between one arm of each lever and the sleeve, and a cam for operating against the levers, whereby the expanders are forced outward, substantially as and for the purpose specified.

**No. 40,857. Horse Hay Rake. (*Râteau à cheval.*)**

William J. Risedorf, Albany, New York, U.S.A., and Walter Coulthard, Oshawa, Ontario, Canada, 2nd November, 1892; 6 years.

*Claim.*—1st. In a horse hay rake, the combination, with a revolving axle, a draft frame, and a rake head of a bracket connecting said rake head loosely with said revolving axle, and having a friction wheel connected with it, a friction strap having one end secured to the draft frame with its body around the friction wheel, and its opposite end secured to a lever pivoted to said draft frame, substantially as and for the purposes hereinbefore set forth. 2nd. In a horse hay rake, the combination, with the friction wheel and bracket mounted loosely on a revolving axle, and coupling the rake head with said friction wheel, of a friction strap coacting with said friction wheel, and having one end fixed permanently to the draft frame, and its opposite end with a lever pivoted to said frame, substantially as and for the purposes hereinbefore set forth. 3rd. In a horse hay rake, the combination, with a revolving axle, having a ratchet wheel secured therewith, a bell crank lever pivoted to the rake head, and carrying a pivoted pawl which coacts with said bell crank lever, of a friction wheel loosely mounted on the revolving axle and connected with the rake head, a friction strap connected with the draft frame at one of its ends, and a lever pivoted to said frame and to the opposite end of said friction strap, substantially as and for the purposes hereinbefore set forth.

**No. 40,858. Apparatus for Raising and Lowering Boats. (*Appareil pour lever et baisser les bateaux.*)**

Joseph Stevens and Douglas Wright Dana, both of Trenton, Michigan, U.S.A., 2nd November, 1892; 6 years.

*Claim.*—1st. In a device of the kind described, the combination, with the boat of the double windlass secured therein, of the detachable winding mechanism for raising the boat, and the brake mechanism for lowering the same, substantially as described. 2nd. In a device of the kind described, the combination, with the boat of the shaft *a* journaled in the bottom thereof, and provided at each end with the winding drums, of the rope detachably secured thereto at its end, the detachable winding mechanism and the brake mechanism, substantially as described. 3rd. In a device of the kind described, the combination, of the shaft *a*, the drum *b*, *b*<sup>1</sup>, the rope *C*, having the loop *D*, the pin *E* upon the drum, the gears *d*, *e*, the sliding shaft *f* for locking the devices, the friction wheel *l*, the brake strap *F*, the eccentric *p*, and the hand lever *r*, substantially as described. 4th. In a device of the kind described, the combination, of the shaft *a*, the drums *b*, *b*<sup>1</sup>, the rope *C* detachably secured thereto, the gears *d*, *e*, the sliding shaft *f*, having notches *h*, *h*<sup>1</sup>, the hand lever *i*, the spring *j*, the crank *o*, the friction wheel *l*, the brake strap *F*, the eccentric *p*, shaft *g*, hand lever *r*, ratchet wheel *m* and pawl *n*, the parts being arranged to operate, substantially as and for the purpose described. 5th. In a device of the kind described, a double windlass consisting of a shaft journaled in the bottom of the boat and provided with winding drums, said drums located beneath the seats, and hoisting ropes passing through the seats, substantially as described.

**No. 40,859. Lawn Mower. (*Faucheuse de pelouse.*)**

Alexander Hanton, William J. Whiteside and James Lewis, all of Hamilton, Ohio, U.S.A., 2nd November, 1892; 6 years.

*Claim.*—1st. The metallic frame *A*, having hub *A*<sup>1</sup>, and lugs *i*<sup>1</sup> for handle, the under axle support *B*, secured thereto, to support shaft *C*, having end collars *D*, clutches *E*, springs *F*, drive wheels *H*, having central clutches *F*, in combination with the wheels *T* and *W*, and shaft *S*<sup>1</sup>, provided with knives *m*, substantially as described and set forth. 2nd. The combination of the frame *A*, having extension hub *J*, as a part thereof, with the shafts, wheels and clutches as described, the rotary arms *L* and *L*<sup>1</sup>, the curved knives *m* secured thereto, the rigid knife *o*, secured to brace *n*, and the arms *P*, attached to said support to carry the roller *K*, substantially as and for

the purpose hereinbefore set forth. 3rd. The combination of the frame *A*, as described, having side extension hub *J*, to support side extension shaft *S*, provided with rotary arms *L* and *L*<sup>1</sup>, having knives *m*, and the brace *n*, having rigid knife *o*, substantially as and for the purpose hereinbefore set forth.

**No. 40,860. Roofing Cement. (*Ciment pour toitures.*)**

George W. Reed, assignee of Charles Torrey Williams, Montreal, Quebec, Canada, 2nd November, 1892; 6 years.

*Claim.*—A roofing cement, the component parts of which are Trinidad asphalt, resin or pine pitch, and coal tar or petroleum residuum combined in about the proportions specified.

**No. 40,861. Spring Motor for Sewing Machines. etc. (*Moteur à ressort pour machines à coudre, etc.*)**

Brunno Reichett, Franz A. Rattiet Fred Specht and Nathan Marsh, all of South Bend, Indiana, U.S.A., 2nd November, 1892; 6 years.

*Claim.*—1st. The combination, with a spring motor and its transmitting train of gear wheels, of a starting and stopping device, composed of a segmental plate having notches or recesses, a transmitting lever rod engaging one of said recesses, a fulcrumed and weighted elbow lever connected to the lower end of the lever rod, and provided at its upper end with a lateral rod, an elastic buffer on a transmitting pulley of the motor, said lug being placed by the lever rod in the path of the buffer or out of the same, so as to produce the stopping or starting of the same, substantially as set forth. 2nd. The combination, with a spring motor and its transmitting train of gear wheels, brake discs applied to the shaft of one of the brake shoes, and adapted to be placed in or out of contact with said discs, and a treadle supported on the pendent rods which are connected to the brake shoes, so as to apply or remove the same from the disc by the forward or backward action of the treadle, substantially as set forth. 3rd. The combination, with a spring motor and its transmitting gear wheels, brake discs applied to the shafts of one of the transmitting gear wheels, brake shoes applied to an oscillating shaft supported in the frame or housing of the spring motor, pendent rods to the lower end of which the treadle is applied, one of said rods being connected at its upper end to the oscillating brake shaft, substantially as set forth.

**No. 40,862. Level Tube for Surveying Instruments. (*Tube de niveau pour instruments d'arpentage.*)**

James A. Brown and Fedor Gustave Weltz, both of Wilmington, Ohio, U.S.A., 2nd November, 1892; 6 years.

*Claim.*—1st. In an instrument for surveying, the combination, with a telescope, of a level tube secured thereto parallel to the line of sight, said level tube having upper and lower slots, with a scale on each slot for the bubble, substantially as described. 2nd. In an instrument for surveying, the combination, with a telescope, of a level tube connected to the said telescope by screws rigidly attached to the telescope, said tubes having arms held between nuts moving on the said screws, and having upper and lower slots for the bubble, with adjustable scales fitted to each slot, substantially as described. 3rd. In a theodolite, the combination, with the telescope *A*, having screws *C* rigidly secured thereto, of the tube *B*, inclosing a glass bubble tube *B*<sup>1</sup>, said tube *B* having opposite apertures, *B*<sup>2</sup> and *B*<sup>3</sup>, for the bubble, and arms *b*<sup>1</sup> and *b*<sup>1</sup>, slipping over the screws *C*, scales *F*, having elongated apertures *f*, for the screws *f*<sup>1</sup>, secured over said apertures, and nuts *D* holding said arm *b*<sup>1</sup>, substantially as described.

**No. 40,863. Compressor. (*Compresseur.*)**

Hervey Clark Sergeant, New York, State of New York, U.S.A., 3rd November, 1892; 6 years.

*Claim.*—1st. The combination, in a compressor with a hollow piston having ports in its opposite faces communicating with the cylinder, and a hollow piston rod or inlet pipe in free communication with the interior of said piston at its inner end and with the atmosphere or source of supply at the outer end, of valves fitted to said ports in the piston and opening outwardly therefrom to the cylinder, substantially as and for the purpose herein set forth. 2nd. The combination, with the cylinder of a compressor and outlet valves in the opposite heads thereof, of a hollow piston, a hollow rod attached to said piston passing through one of the cylinder heads and open at the outer end and to constitute an inlet pipe, and inlet valves provided in the piston on opposite sides thereof and opening outwards therefrom, substantially as and for the purpose herein set forth. 3rd. The combination, with the piston of a compressor constructed with an annular passage and with two valve seats one within the inner circumference and the other outside of the outer circumference of said annular passage, of a ring valve having internal and external flanges which form valve faces corresponding with said seats, substantially as and for the purpose herein described. 4th. The combination, with the piston of a compressor constructed with an annular passage, a cylindrical valve guide within said passage, and a valve seat on one face of the piston at one edge of said passage, of a ring valve fitted to said guide and having a flange which constitutes a valve face fitted to said seat, substantially as and for the purpose herein set forth. 5th. The combination,