

**No. 13,556. Improvements on Force Pumps.***(Perfectionnements aux moulins à vent.)*

Samuel Paradis, Ottumwa, Iowa, U.S., 19th October, 1881: for 5 years.

*Claim.*—1st. In a double-acting force pump, the reciprocating double plunger valve G attached directly to the operating rod, in combination with plunger piston F and imparting motion to said plunger. 2nd. The cylinder A having slot E, and plunger piston F provided with two valve seats and having slots E, in combination with the reciprocating double plunger valve G attached directly to the operating rod by arms H and imparting motion to plunger F.

**No. 13,557. Improvements in Horse Shoes.***(Perfectionnements aux fers à cheval.)*

John P. Rothwell, Lytham, Eng., 19th October, 1881: for 5 years.

*Claim.*—1st. In forming perforations in the wall of the hoof A to receive straps or clips C, which consolidate the shoe to the hoof. 2nd. The combination of the shoe C with the wearing shoe G and hoof A. 3rd. The combination, with the shoe C, of calks or elevations I.

**No. 13,558. Improvements on Hoop Machines.***(Perfectionnements aux machines à cerceaux.)*

Crowell M. Clancy, Wallaceburg, Ont., 19th October, 1881: for 5 years.

*Claim.*—In combination with a rotating centre head, two sliding wedge blocks, acting independently of each other.

**No. 13,559. Improvements on Windmills.***(Perfectionnements des moulins à vent.)*

Henry N. Baker, Binghamton, N.Y., 19th October, 1881: for 5 years.

*Claim.*—1st. In combination with the wings D, the oscillating frame A, driving shaft C working on and in a line with the axis of the frame A, and arms F F. 2nd. In combination with frame A, the swinging governor E, adjusting lever B attached to the journal of frame A, for controlling the side movements of the wings D and starting and stopping the device, shaft C and stops G I K.

**No. 13,560. Improvements on Brick Kilns***(Perfectionnements aux fours à brique.)*

Stephen J. Plant, York, Ont., 19th October, 1881: for 5 years.

*Claim.*—The combination of two or more down draught brick kilns provided with bottom flues C leading into the main flue D, each kiln having a hole in its crown connecting with a top flue J common to all the kilns, both the bottom and top flues being provided with regulating dampers or valves.

**No. 13,561. Improvements on Shovel Ploughs.***(Perfectionnements aux charrius-hébraies.)*

George S. Agoe, Mint Hill, Mo., U.S., 19th October, 1881: for 5 years.

*Claim.*—1st. The curved iron beam, the bar or foot attached to the end of the beam, the shovel welded to the end of the foot, the shovel supporting arm, the adjustable handles and the handle braces. 2nd. The combination, with the iron beam A having slotted rear end, of the foot B bolted to the beam A, the shovel D welded along the central line of its lower part to the bevelled forward end of the foot B, and the arm E attached to the plow beam A to receive the upper end of the shovel, whereby the shovel is made to work at a uniform depth in the ground, and can be readily guided and controlled. 3rd. The shovel D, welded along the central line of its lower part to the bevelled forward end of the bar or foot B.

**No. 13,562. Improvements on Pipe Wrenches.***(Perfectionnements aux clés à tuyaux.)*

John F. Phillips, Georgetown, Col., U.S., 19th October, 1881: for 5 years.

*Claim.*—The combination of the clamping plate C made unjointed, or in one piece, with both ends D D, shouldered and hooped with the lever A having a recess B at its head, open at the top, in which recess the clamping plate is pivoted.

**No. 13,563. Improvements on Telescopic Ladders.***(Perfectionnements aux échelles à rallonge.)*

Ferdinand W. Hofele, Brooklyn, N. Y., U. S., 19th October, 1881: for 5 years.

*Claim.*—1st. The combination, in a fire escape, of a truck and two or more continuous four way ladders, each consisting of four posts A A A, all connected together by rungs B having shoulders C on the inner sides of the posts, and nuts D on the outer ends, whereby the four posts are strongly braced together. 2nd. The four way ladder consisting of four posts A, oblong in cross section and having in angle iron F on each post, said angle irons being arranged in pairs, and facing each other on or near the middle of one of the broad sides of the posts, and being adapted to guide an interior ladder section, diagonal braces secured to said angle irons and uniting rungs connecting the posts at such distance from the angle irons as to leave a space between the braces and rungs for the housing of the hose. 3rd. The combination, with the ladder, of the angle irons F and diagonal braces E. 4th. The combination, with the truck and ladder of a fire escape, of the uprights V, swinging posts X, hook C, pin E, rope and pulleys Z. 5th. The combination, with the truck and fire escape, of the ladder A pivoted thereto, the uprights V, swinging posts X, ropes or chains Z Z, and drums Y Y. 7th. The combination with the posts of a ladder, of a series of rungs and a series of diagonal braces, whereby the ladder is stiffened, and a space formed to hold and protect the hose pipes. 8th. The combination, with a truck and ladder of a fire escape, of the swivelled bear-

ings R<sup>1</sup>, and levelling screws S. 9th. The combination, with a truck and ladder of the bosses T, screws S, swivelled bearings R<sup>1</sup>, shaft Q and bearing plates R. 10th. The combination of the brace O, clamp U, screw I having a pulley head, with the rope W. 11th. The combination, with the brace O, of the fixed clamp U, sliding clamp W, eye Z and rope W. 12th. The combination, with the ladder A, of the strap P, ball P, block Q and hemisphere S<sup>1</sup>, having a pin screwed into the ball P and a lug pivoted to the head of the brace O. 13th. The combination, with a vertical ladder, of the horizontal extension ladder C, check post F, extension rail H and chain G. 14th. The combination, with a vertical ladder, of the horizontal extension ladder C, having stop G, pivoted and notched check post F, extension rail H having slides I and shoulders F<sup>1</sup>, chains G, eye I, ball K and hook J. 15th. A ladder provided with a folding platform, and extension rail having slides L, both being hinged on rungs of the ladder. 16th. The combination, with a ladder, of the folding platform, formed of two ladder sections C and adapted to fold up against the sides of the main ladder, and arranged on opposite sides of the ladder to counterbalance each other. 17th. The combination, with the ladder C, of the pivoted hook U, spring N and cords O O. 18th. The combination, with a ladder having two or more sets of rungs, of a ladder provided with a single set of rungs, and having hinged thereto a folding platform E, which closes up automatically, parallel with the single ladder, as said single ladder descends within the outer ladder. 19th. The combination, with a truck and swinging ladder, of a series of adjusting screws L, attached directly to the foot of the ladder, and adapted to bear on the ground, whereby the pressure on the bearings R<sup>1</sup> is relieved, and the weight of the ladder and its load is removed from the truck. 20th. In combination with an extension ladder, a series of pipes united together by T-couplings C<sub>3</sub> and supports for said couplings, each of said supports consists of a ring D<sub>1</sub> supported by pivots in another ring P<sub>1</sub> having bearings at right angles to the pivots of the ring D<sub>1</sub>, and mounted in the ladder posts. 21st. The combination, with a ladder, of a pipe supporter hung on pivots on the ladder. 22nd. The combination, with an extension ladder, of the plates supported on three rungs of said ladder, and a pulley mounted on one of said rungs. 23rd. The combination of the diagonal braces with the angular posts of a double or four fold ladder.

**No. 13,564. Improvements on Screw Threading Machines.***(Perfectionnements aux fileuses à vis.)*

Samuel L. Worsley, Buffalo, N. Y., U. S., 19th October, 1881: for 5 years.

*Claim.*—The combination of the change gearing shaft and its cams, the ratchet wheel, variable vibrating pawl, and adjustable crank pin. The combination of the clutch shifting pins, shifting cam, pin cams, cam shaft, of the change gearing ratchet wheel, vibrating pawl and adjustable crank pin. The combination of the jaws, for holding the bolt blank stationary, the revolving sliding mandrel, the bolt holder, the bolt mover, the transfer fingers and the variable pawl change gearing. The combination of the transfer fingers, finger cam, finger cam shaft, driving hub and clutch, with the variable pawl change gearing. The combination of the bolt mover, bolt mover cam, cam shaft driving hub and clutch, with the variable pawl change gearing. The combination of the bolt holder, the bolt mover, the stops for checking the descent of the bolts in the bolt holder, and the transfer fingers which take the bolt from the bolt mover. The combination of the gripping jaws for holding the blank stationary, the bolt holder, the bolt mover, the transfer fingers arranged to move both endwise and sidewise toward and from the gripping jaws, and the variable pawl change gearing. The combination of the bolt holder, the bolt mover and the shoulder guard whose lower edge operates on the shoulder of the bolt while in the bolt mover. The combination of the bolt holder, the shoulder guard and the transfer fingers. The combination of the bolt holder and bolt mover, with a shoulder guard whose edge operates on the shoulder of the blank while in the bolt mover, and whose side is arranged in the proper position to operate, on the inner side of the head of the bolt, and prevent excessive longitudinal movement of the bolt. The combination of the bolt mover, the shoulder guard the transfer fingers and the gripping jaws to which the bolt is presented by the transfer fingers. The combination of the die-holder, the revolving sliding mandrel, the leading cam, the slotted rocking cam, which enables the speed with which the die is advanced to be varied, and the variable pawl change gearing. The combination of the conoidal screw die, with a die chuck, consisting of the screwed sleeve, and screwed gland operating in connection with the mandrel head.

**No. 13,565. Improvements on Machines for Feeding Screw Blanks.***(Perfectionnements aux machines à alimenter les fileuses à vis.)*

Samuel L. Worsley, Buffalo, N. Y., U. S., 19th October, 1881: for 5 years.

*Claim.*—The combination of the blank holder, the travelling clamps, which both move and support the blanks and the movable cut off for the blank-holder. The combination of the blank-holder, the travelling clamps, which both move and support the blanks, the movable cut off, and the gripping jaws to which the blank is presented by the travelling clamps. The combination of the travelling clamps which both move and support the blanks, the movable cut off and the blank pusher. The combination of the blank-holder, the travelling clamps, which both move and support the blanks, the cut off, the blank pusher and the gripping jaws. The combination of the travelling clamps which both move and support the blanks, the cut off and the blank pusher, with a single revolving cam. The combination of the travelling clamps which both move and support the blanks, the cut off and a fixed cam which effects the opening of the movable clamp during its travel. The combination of the blank pusher, the guide thereof, the springs and the impellers. The combination of the blank magazine with the projection, whereby the blank head is operated upon, and the blank caused to turn axially while in passage through such blank magazine. The combination of the blank magazine with the projection, whereby the blank shoulder is operated upon, and the blank caused to turn axially while in passage through such blank magazine.