Wm. P. Powers.

IMPROVED PUMP AUGUR

117567

PATENTED AUG 1 1871

Fig 1

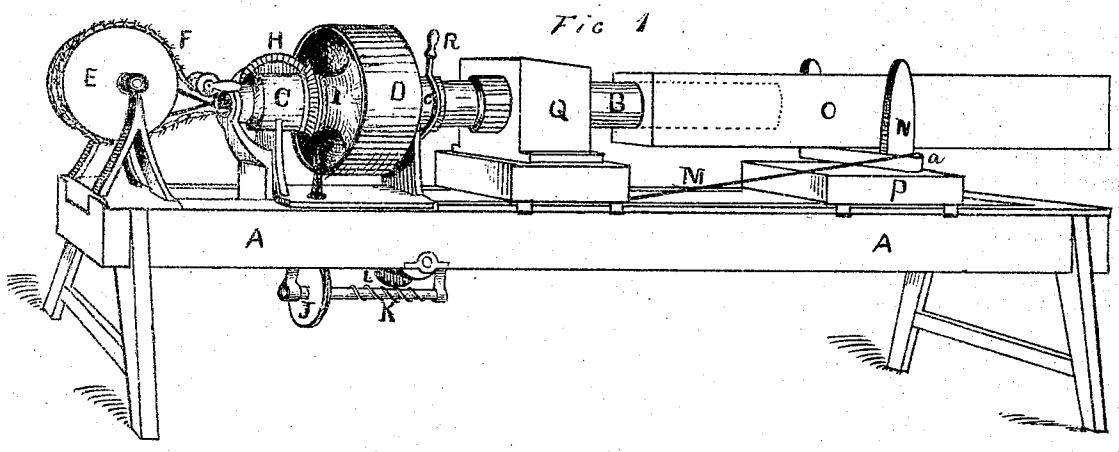


Fig 2

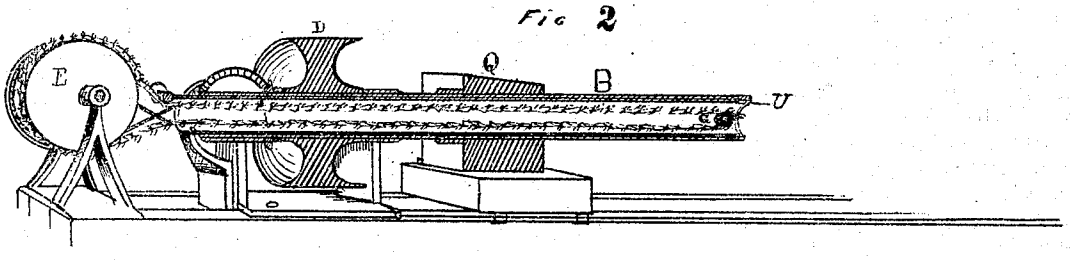
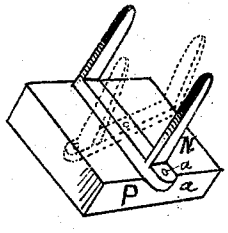


Fig 3



WITNESSES.

Henry C. Gelb

J. B. Richards.

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WILLIAM PENN POWERS, OF NORTH LA CROSSE, WISCONSIN.

IMPROVEMENT IN BORING-MACHINES.

Specification forming part of Letters Patent No. 117,567, dated August 1, 1871; antedated July 27, 1871.

To all whom it may concern:

Be it known that I, WILLAM PENN POWERS, of North La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain Improvements in Boring-Machines, of which the following is a specification:

The first part of my invention relates to the clearing device of a tubular auger capable of removing the chips out at the rear end of the stick as they are cut, and preventing their clogging during the process of boring the entire stick. The second part of my invention relates to a device for holding the stick to be bored, and is capable of automatically seizing it when fed forward and letting go of it when drawn backward, and also of allowing the stick to be turned end for end on a balance and reclamping itself when the feed is put on again.

Figure 1 is a quartering side perspective of a machine embodying my invention. Fig. 2 is a sectional view of the auger, showing its internal structure and operating parts. Fig. 3 shows the holding-clamp in two positions.

A A is the frame of the machine, which should be substantially constructed to sustain the action of the machinery when in rapid motion. B is the auger-tube, revolving in bearings C C, and D is the driving-pulley of the same. E is the chain-wheel, and F the chain passing around said wheel and through the entire length of the angular tube, around the small pulley G, and back again to driving chain-pulley E, making a complete circuit or belt of the chain which traverses the tube, the top strand going forward and the bottom strand backward. H is a pair of bevel-gears, one upon the auger-tube and the other upon a wrist or pin attached to stand C, and carrying a pulley and belt that drive the chain-wheel E. I is a pulley upon the auger, carrying a belt to pulley J, underneath the frame A, on the axis of which is a screw, K, meshing into a screw-gear, L, carrying a spool upon its axis, on which winds a rope or chain, M, connected with the clamp N, which holds the middle of the stick O to be bored, and is carried upon the sliding stand P. Q is another sliding stand, with a socket fitting the auger-tube upon its back side, and having a square eye in front to receive and hold the stick O centrally and properly to the auger. R is a shipper, to throw the screw-gear out and into mesh to feed the stick to the auger. A cutting device of any proper kind is attached to the front end of the auger-tube, which, when revolved against the stick pressed against it by the feed, cuts its way into the same. The chips thus cut would immediately clog up the auger but for the clearing device, which is more clearly shown in Fig. 2 of the drawing. Inside of the revolving auger-tube B is a stationary tube, U, which supports the pulley G and protects the chain from the revolving auger-tube. The chain is fitted with small protruding spurs at each joint, which, passing around the pulley G immediately in the rear of the cutting device, seize upon the chips and carry them backward underneath to the rear end of the auger, where they are discharged, thus keeping all clear from clogging, and saving all necessity of drawing the stick or auger back at intervals to discharge the chips, as with the old-fashioned non-clearing augers.

I am aware that self-clearing augers have been invented and used before, but different in their devices and operations from my invention, as above described.

The clamping device N is shown in its reverse positions in Fig. 3. It is a forked iron stand, N, pivoted to the sliding stand P, with an ear at *a* to which to attach the feeding-cord or chain M. The feeding-cord, being attached to one side of the forked stand, when strained, pulls it around in a circular direction, causing the forks to tighten upon the stick. When the stick is bored halfway it is drawn back free from the auger and then swung around in the forks until the other end is presented to the auger, bringing the feeding-cord up to the other side of the machine, but still in a position to hold the stick, as before, when tightened by the cord.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. The traversing chain or belt F, for the clearing of a hollow auger.

2. The stationary tube U, in combination with the chain F and cutting device B, substantially as and for the purposes described.

3. The forked clamping and turning stand, operated as and for the purpose, substantially as described, in combination with a boring-auger.

WILLIAM PENN POWERS.

Witnesses:

HENRY E. GETTS,

JOHN B. RICHARDS.