J. & W. H. H. HOLLEN.

STUMP-EXTRACTOR.

No. 187,709. Patented Feb. 27, 1877.

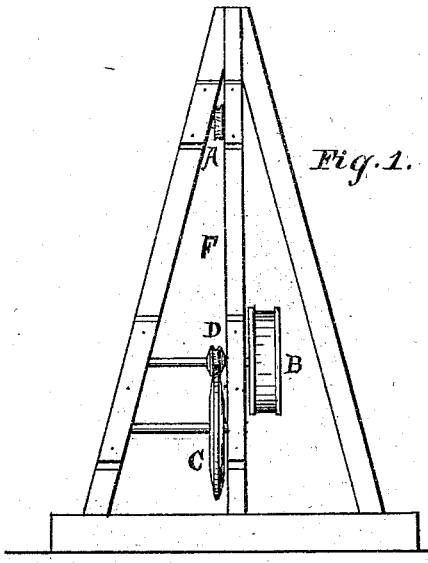

Fig. 1.

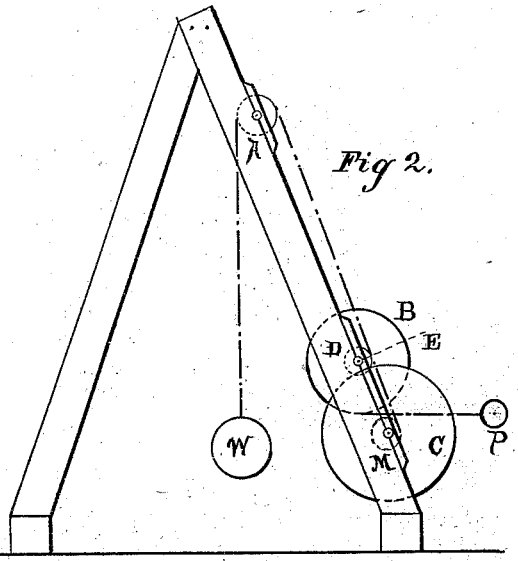

Fig 2.

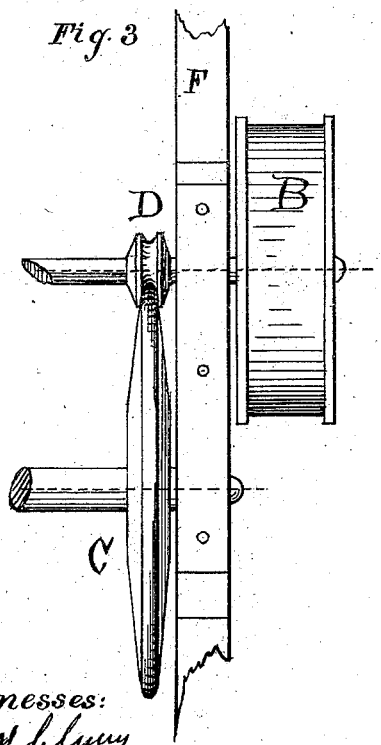

Fig. 3

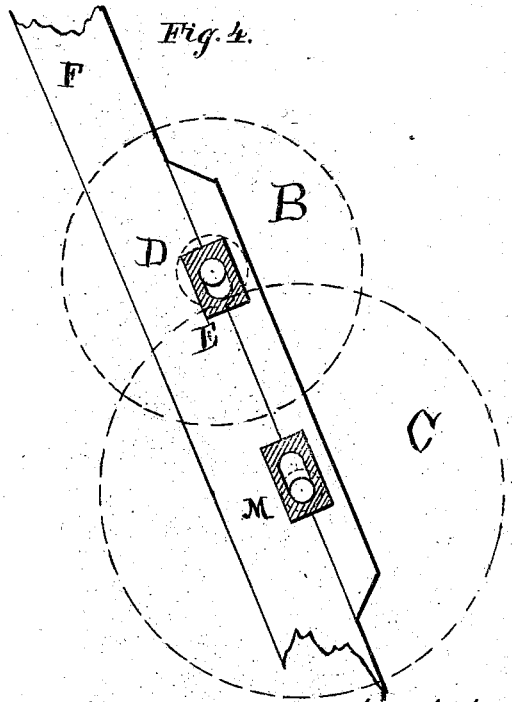

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH HOLLEN AND WILLIAM H. H. HOLLEN, OF FOSTORIA, PA.

IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **187,709**, dated February 27, 1877; application filed December 28, 1876.

To all whom it may concern:

Be it known that we, JOSEPH HOLLEN and WILLIAM H. H. HOLLEN, of Fostoria, in the county of Blair and State of Pennsylvania, have invented a new and useful Improvement in Stump-Extractors, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing.

The object of our invention is to extract stumps or lift weight by the friction created by the weight to be lifted.

We have placed in a suitable frame a friction-wheel, C, the one journal of which rests in a box in the middle upright F, as seen in Fig. 1. The other rests in a box in the left-hand upright. The outer rim of wheel C is somewhat rounded, so as to wedge into the groove in the pulley D, which rests on top of wheel C. The journals on the shaft of pulley D rest in boxing the same as that of wheel C. The shaft of pulley D passes the upright F far enough to admit of drum or flanged wheel B being fastened substantially thereon. The boxing of the journals of the wheel C and pulley D in the middle upright F does not fit tight, but admits of being raised or lowered slightly up and down the upright F. Drum B is intended to have the rope or its equivalent wound on, which is intended to be drawn out with a horse when raising a stump. On the shaft of wheel C there is fastened, by one end, another rope, which passes up over the loose pulley A, at or near the top of the frame, and down to the ground, for the purpose of fastening to the stump, as seen at W in Fig. 2. The direction of the rope on drum B, when unwinding, is shown at P, Fig. 2. The weight of pulley D, resting with its groove on the rim of wheel C, as more plainly shown in the sectional view, Fig. 3, is sufficient to turn it. When the rope, which is fastened to the stump by one end, and on the axle of wheel C, begins to lift on the stump, it lifts wheel C up against pulley D, forcing the journal of pulley D up against the upper part of the boxing, as shown at E in Fig. 4. Now, the harder the stump is to lift the harder wheel C is forced into the groove of pulley D, therefore making the friction to increase in proportion as the weight to be lifted is increased. By the unwinding of the rope from drum B it causes the wheel C to turn and wind the rope W around its own axle, thus drawing the rope W up over the loose pulley A, and bringing the stump or weight with it. When the journal of pulley D is forced up against the top of the box by the rim of wheel C, the journal of wheel C does not come against the box, but is pressed into the groove of pulley D, and holds the weight to be lifted by resting up in the groove of pulley D.

We are aware that the wheel C and pulley D might be reversed by placing wheel C on top of pulley D, but the rope would then be required to be brought down under the axle of pulley D, thence up over loose pulley A and down, causing friction on the shaft of pulley D, which we get clear of by using them, as shown in the drawing.

We claim as our invention—

1. The method of creating friction by the weight of the matter to be lifted in proportion to the weight thereof by means substantially as described and set forth.

2. The middle upright, in combination with loose journal-boxes and journals, substantially as and for the purpose specified.

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Witnesses:
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