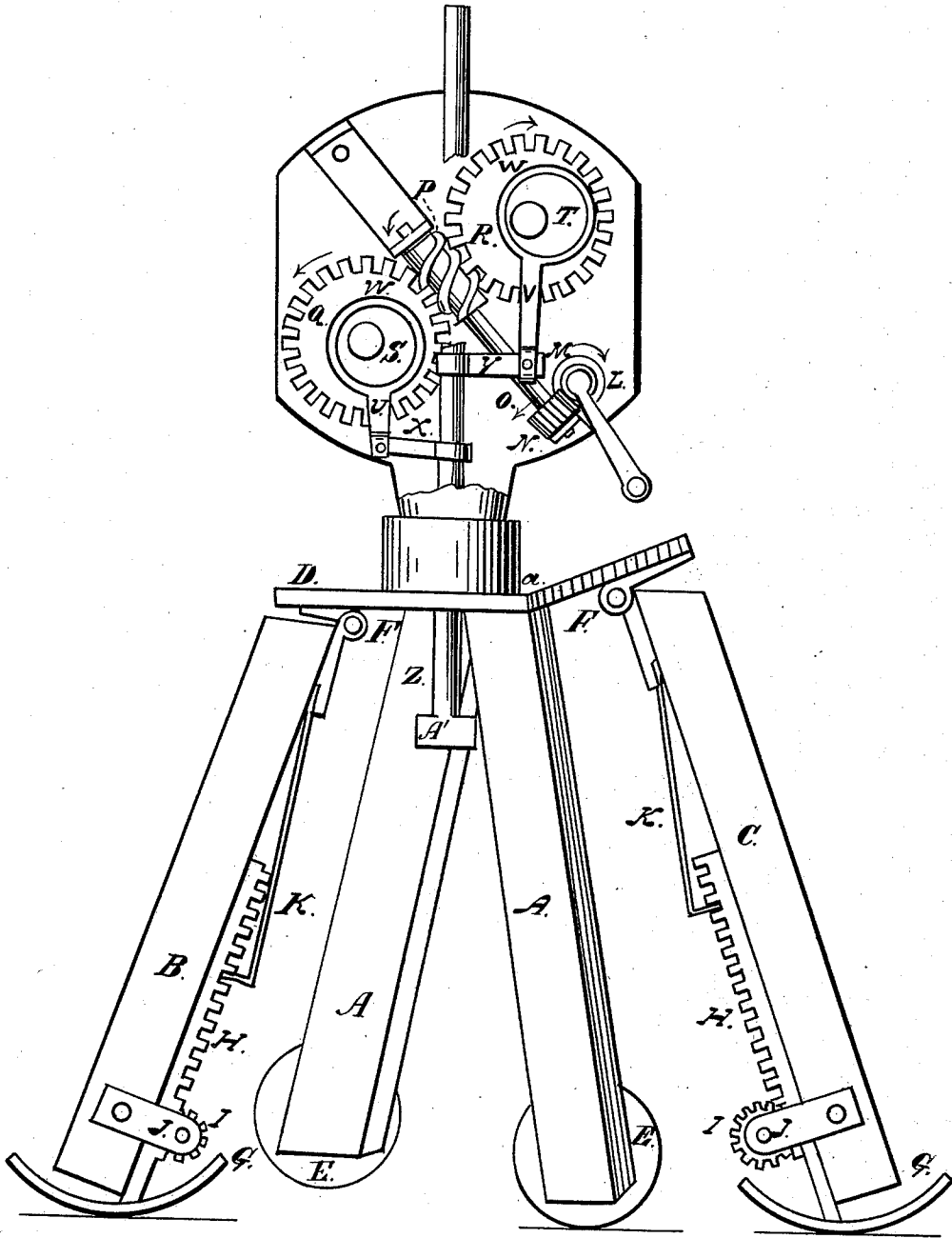


R. MORTENSEN.
Stump-Extractor.

No. 216,099.

Patented June 3, 1879.



Witnesses:
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UNITED STATES PATENT OFFICE.

RASMUS MORTENSEN, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **216,099**, dated June 3, 1879; application filed March 31, 1879.

To all whom it may concern:

Be it known that I, RASMUS MORTENSEN, of the city of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Stump-Pullers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to letters of reference marked thereon, which form a part of this specification.

The accompanying drawing represents a side elevation of my invention.

My invention relates to improvements in machines for pulling stumps, and is further explained by reference to the accompanying drawing, in which similar-reference letters indicate like parts.

A A and B and C are the legs or supports of the machine, which are constructed in a substantial manner. The legs A A are rigidly attached to the platform D, and are provided with wheels E, upon which the machine is rolled from one stump to another. The legs B and C are attached to the platform D with hinges F, in such a manner that their lower ends may be raised over a stump when approaching or leaving it.

The machine is so constructed that when in position to be operated it stands upon legs A A and B, and that portion of the platform at the left of *a* is in a horizontal position above them, while that part of the platform at the right of *a* is inclined upward at an obtuse angle.

The object of this peculiar arrangement is to allow the machine, when operating, to stand upon three legs, as they more readily accommodate themselves to the uneven surface of the ground than four.

When raising the leg B over a stump or other object, the machine is inclined forward upon legs A A C, when that part of the platform at the right of *a* is brought into a horizontal position.

G G are shoes or runners for the legs B and C, upon which they slide when the machine

is moved. The runners or shoes G are each provided with a toothed bar, H, which is extended and contracted by turning the pinions I, which pinions are attached to the shafts J and operated by a crank. K is a spring-pawl, which retains the bars H wherever adjusted. Thus the machine may be made to stand in a vertical position upon an uneven surface.

In operating the machine, a crank is applied to the shaft L, which shaft is provided with an endless screw, M, which screw drives the toothed pinion N. The shaft O is attached to the pinion N and revolves with it. The shaft O is also provided with an endless screw, P, which screw engages with the teeth upon both of the pinions Q and R, and causes them to revolve. The pinions Q and R are each secured to eccentrics S and T.

U and V are lifting-arms. They are each provided with collars W, which surround the eccentrics S and T, and are each caused to alternately rise and fall with every revolution of the shaft, and are so arranged that as arm U is moving upward arm V is moving downward, and, inversely, as arm U is moving downward arm V is moving upward.

The arms U and V are each provided with oscillating clutches X and Y, which surround and clutch upon the rod Z. Thus, when the clutches are moved downward by the respective arms U and V, they slip loosely upon the rod Z; but when drawn upward they respectively clutch the rod Z and draw it upward, each clutch alternately lifting the rod and moving downward loosely upon it.

The rod Z is provided with shoulders A', to which cables are attached by which the stump is raised.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In machines for pulling stumps, the combination of the angular platform D with legs A A, provided with wheels E E, and legs B and C, as secured to the platform by hinges F, provided with toothed bar H, pinion I, shoe G, and pawl K, all substantially as and for the purpose specified.

2. In machines for pulling stumps, the combination of the shaft L, provided with screw M, shaft O, provided with pinion N and screw P, pinions Q and R, provided with eccentrics S and T, arms U and V, clutches X and Y, and lifting-bar Z, all substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

RASMUS MORTENSEN.

Witnesses:

K. SHAWYAN,
JAS. B. ERWIN.