S. Derr,

Stump Elevator.

No. 46,086. Patented Jan. 31, 1865.

Fig. 2

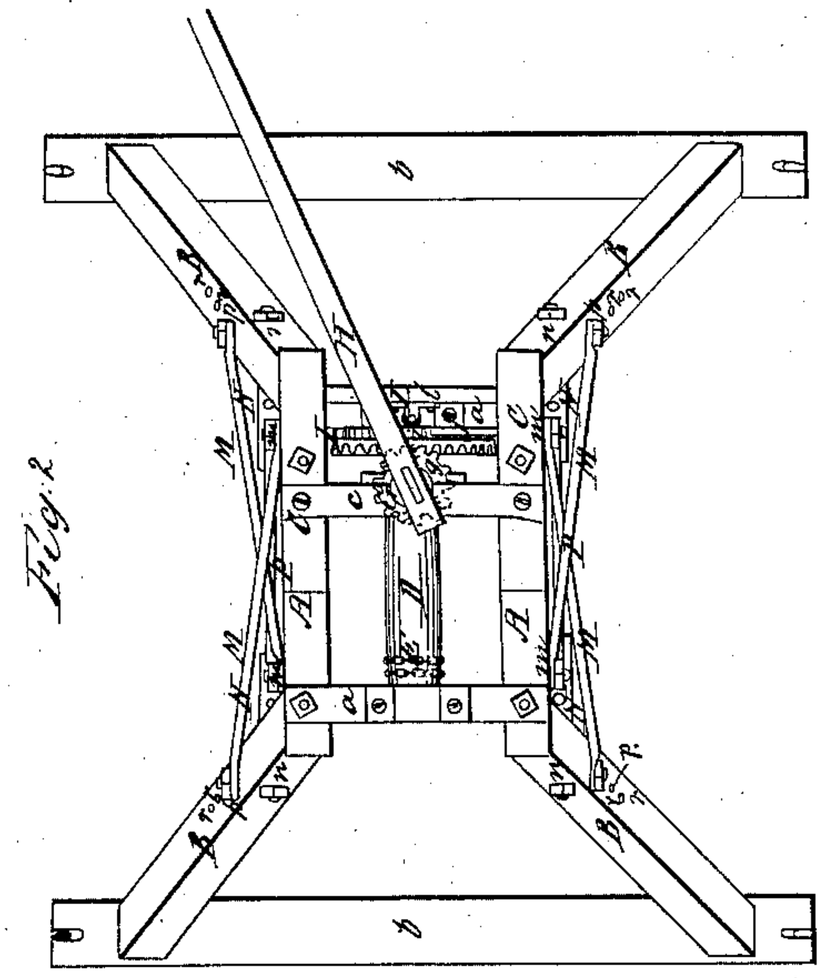
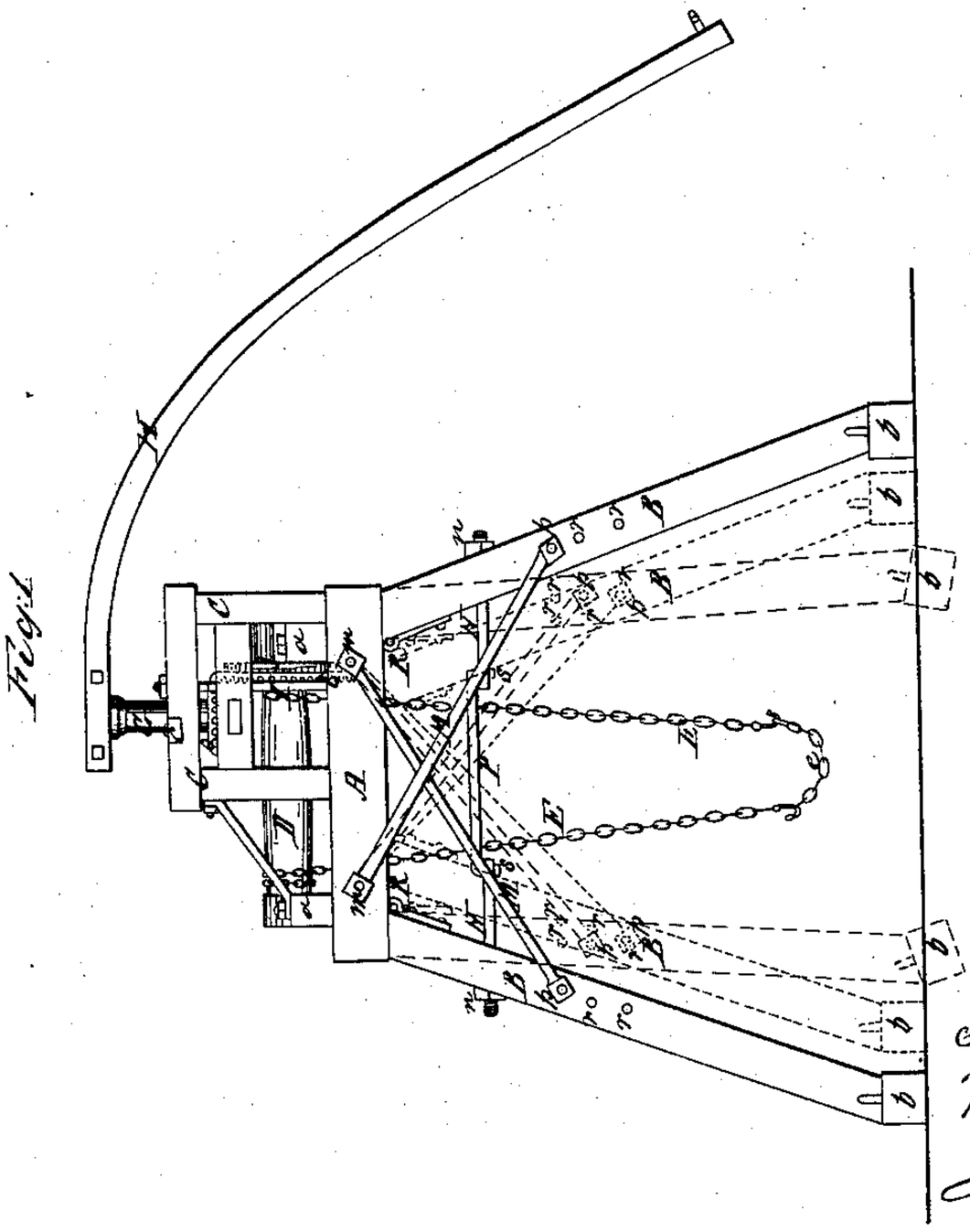


Fig. 1



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL DERR, OF LOCKHAVEN, PENNSYLVANIA.

IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **46,086,** dated January 31, 1865.

To all whom it may concern:

Be it known that I, SAMUEL DERR, of Lockhaven, in the county of Clinton and State of Pennsylvania, have invented a new and Improved Stump-Extractor; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification—

Figure 1 being a side elevation of the machine; Fig. 2, a plan of the same.

Like letters designate corresponding parts in both figures.

The frame A, on which the windlass D is mounted, is supported by four legs or posts, B B B B, diverging from its four corners down to the ground, where they rest on two shoes, *b b*, two of the posts on each shoe. The shoes are intended to give a firm base support and to serve to draw the whole machine on from one stump to another, and sometimes to greater distances. As the machine is necessarily large—some twelve or fifteen feet high, and ordinarily having its shoes *b b* at about fourteen feet apart, in order to be able to stride the largest sizes of stumps—much inconvenience is often experienced in drawing it about among stumps standing thickly and through ordinary gateways and lanes, so that frequently the fence or wall is required to be removed to get into and out of fields with the machine. There is also much inconvenience in using so large a machine for extracting small stumps, on account of the trouble in passing round them and the distance the driving power has to move to do the work. This inconvenience is ordinarily obviated by having two sizes of machines—a large and a small one—to work on one lot, where large and small stumps are situated together.

The object of my invention is to obviate these difficulties and inconveniences in a single machine.

In order to allow the machine to pass through narrow gateways and spaces, I hinge the legs B B B B to the frame A at R R, Fig. 1, so that they may be brought within a narrow compass, as indicated by red lines. The legs have tenons, which enter mortises in the frame A, so that the strain does not come on these hinges. Cross-braces M M connect the legs and frame A, as shown, being attached by bolts and nuts *m m* and *p p*. The bolts *m m* in the frame A remain always in one position, but there is a set of holes, *r r*, in the legs B B, by which the bolts *p p* may be shifted when the legs are drawn in or spread out, as indicated in Fig. 1. The legs are thus contracted in their distance at the bottom only for the purpose of passing through narrow places.

When the machine is to be contracted in width, for the purpose of greater convenience in unrooting small stumps, the legs B B B B are shifted in position from the usual outer mortises to other mortises, nearer the center of the frame A, thus bringing every part of the legs nearer together and retaining them at the usual angle, so as to give the necessary breadth of support, as represented by dotted lines in Fig. 1. The bolts *p p* of the braces M M are shifted to the proper holes *r r* in the legs. In addition to the braces M M, tension-rods P P connect the opposite legs, as shown. These rods have their ends *s s* inserted into holes in eye-plates N N, passing through the legs and adjustable by nuts and screws *n n*, to suit the different positions of the legs, as described above. There are different holes, at proper distances apart, in the eyeplates for the insertion of the ends of the rods P P. The rods are readily taken out and reinserted.

When the machine is to be transported a considerable distance, it is drawn on a wagon or cart, which is driven under the machine, and the legs B B B B are detached from the frame A by drawing out the pivots of the hinges R R, and the frame A, with the parts on it, is let down on the wagon or cart, and afterward the legs and shoes are loaded on.

The windlass D is made larger in the middle than at the ends, and the chains E E are first wound, respectively, on the two ends. Then, as the chains are wound on, they continually approach each other, and are faster wound up on the increased size of the windlass, so as to do the work faster as the stumps offer less resistance.

A frame, C, is mounted on the frame A, for sustaining the upright shaft G of the power-lever H. On this shaft is a single bevel-wheel, *g*, which gears into a vertical bevel-wheel, I, on the windlass. There is also a ratchet-wheel, *i*, on this windlass, and a pawl, *j*, thereby prevents the windlass from running back. There may be two or more sizes of the wheel I for different sizes of stumps. To

change these wheels it is only necessary to shift the position of the bevel-wheel *g* on its shaft G, or to replace the frame C (which is readily detachable from the frame A) by a higher or lower one.

I employ a counter-pressure wheel or roller, L, Fig. 2, having its periphery nearly in contact with the face of the bevel-wheel I, so as to sustain it and guard against its yielding, when subjected to great strain or power.

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

1. The arrangement of the legs B B B B under the frame A so that they may occupy more or less breadth of space, substantially as and for the purposes herein specified.

2. In combination with the above, the arrangement of the cross-braces M M M M and tension-rods P P, so as to adapt them to the variations in the position of the legs B B B B, substantially as herein set forth.

The above specification of my improved stump-extractor signed by me this 22d day day of June, 1864.

SAMUEL DERR.

Witnesses:

J. S. BROWN,

EDM. F. BROWN.