T. Crane,

Stump Elevator.

No. 50,690. Patented Oct. 31, 1865.

Fig. 1.

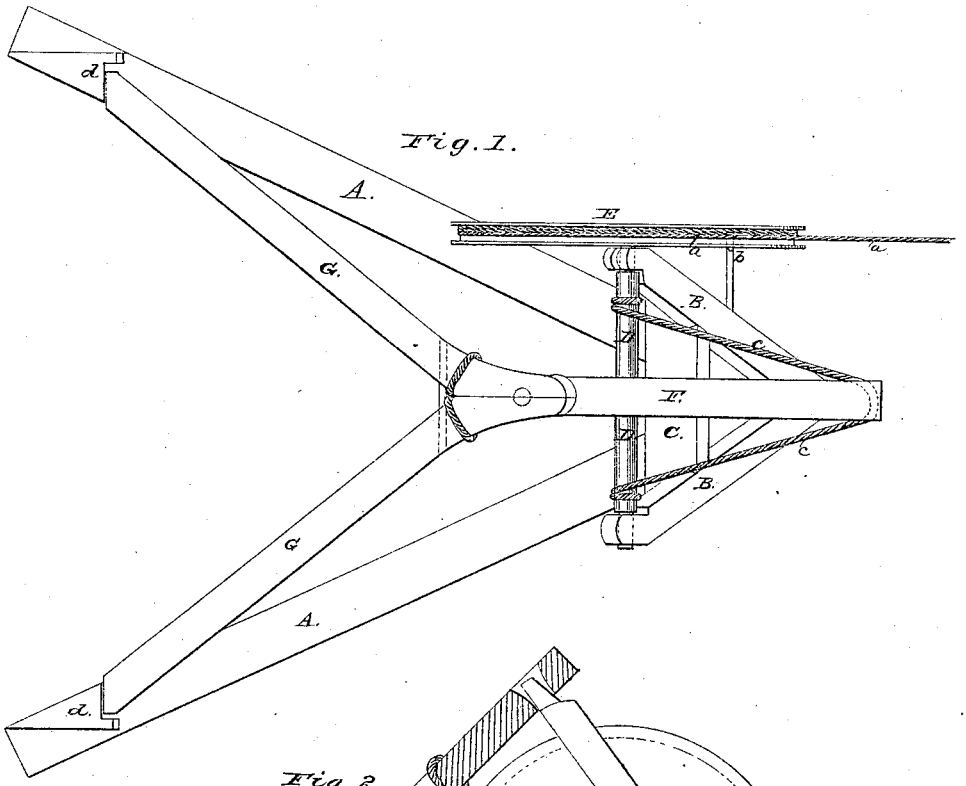
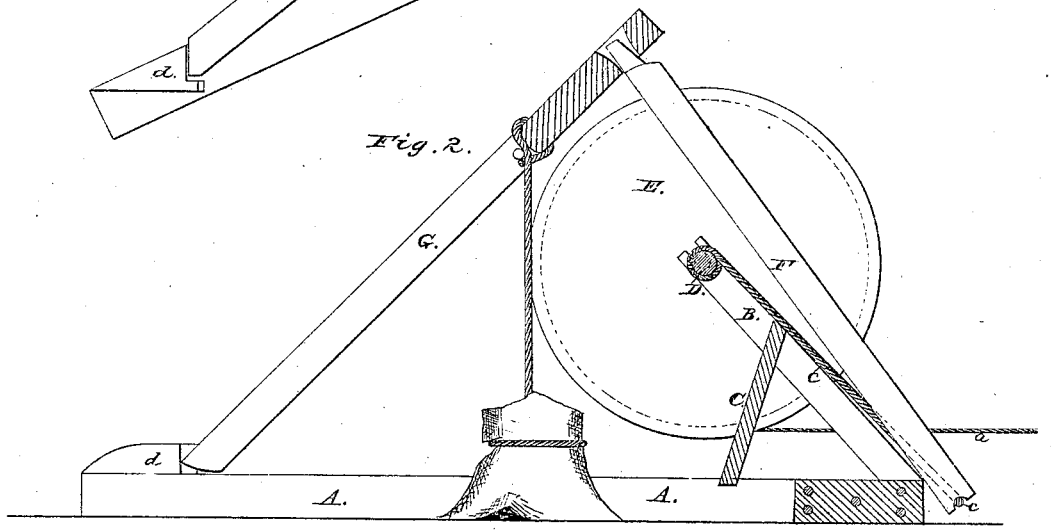


Fig. 2.



Witnesses:
R. H. Campbell.
Edw. Schafer.

Inventor:
Warren Crane
by his Attys
Marcus Reinich & Lawrence

UNITED STATES PATENT OFFICE.

THOMAS CRANE, OF FORT ATKINSON, WISCONSIN.

IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **50,690**, dated October 31, 1865.

To all whom it may concern:

Be it known that I, THOMAS CRANE, of Fort Atkinson, in the county of Jefferson and State of Wisconsin, have invented a new and Improved Stump-Extractor; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan view of my improved machine. Fig. 2 is a vertical longitudinal section taken centrally through the machine.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to a novel machine for extracting stumps of trees and large stones from the ground for the purpose of clearing land which it is desired to put under cultivation.

It consists in a machine which is so constructed that the power of a team, acting through the medium of a large pulley and windlass, is applied to lift one of the legs of a tripod, to the other two of which the weight to be raised is attached, thus combining two of the well-known mechanical powers in a most convenient and advantageous manner, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A A represent two sill-beams, which are firmly united together so as to form two sides of a triangle, and thus give a wide base or support for the parts which are employed to extract the stumps. By thus uniting the sill-beams they will admit of a stump between them, as indicated in Fig. 2. To the forward ends of these two beams two beams, B B, are securely framed, which are also converging, and which are supported in inclined positions by means of an inclined piece of timber, C, as shown in Figs. 1 and 2.

The upper ends of the beams B B are adapted for serving as bearings for a horizontal transverse shaft or windlass, D, which carries on one end a large pulley, E, which has an annular groove in its periphery for receiving a rope or chain, *a*, that is wound upon this pulley and suitably secured to it. The rope or chain *a* is carried off from the lower side of said pulley and passed through an eye, *b*, which keeps the rope in proper position during the operation of the machine.

A rope or chain, *c*, is attached at both ends to the shaft D and receives the lower notched end of an inclined lifting-bar, F, which extends upward over the shaft D to a suitable height, and is attached to the upper united ends of two beams, G G, as shown in Figs. 1 and 2, so as to form a kind of joint. The lower ends of the two beams G G are supported upon the ends of the sill-beams A A, and are kept in place thereon by means of stop-blocks *a a*, which not only prevent the beams G G from slipping backward, but also prevent them from spreading apart.

The three beams G G and F form a tripod when put together and erected in the position shown in Figs. 1 and 2, and to the crotch of the two united beams G G a rope or chain, *g*, is attached, the lower end of which is suitably secured to the stump or stone which it is desired to extract, so that when power is applied to the bar F to lift the upper ends of the beams G G both of these beams will mutually sustain the load to be lifted.

The operation of my machine is as follows: The team is hitched to the pulley-rope *a*, the machine being properly adjusted over a stump, as shown in Fig. 2, and the tripod erected over it. The lower end of the lifting-beam is seated upon the rope or chain *c* and the rope or chain *g* attached to the stump. The team is now moved off so as to turn the pulley E, which rotates the shaft D and winds the rope or chain C upon it slowly, thus lifting the beam F and raising the upper ends of the beams G G.

It will be seen from the above description that the strain upon the three lifting-beams G G and F is nearly in a line with their length; that upon the beam F is exactly so; hence these timbers can be made very light and yet possess a sufficient amount of strength.

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

1. The combination of the tripod lifting-frame G G F, triangular base A, and windlass D, operating substantially as described.

2. Sustaining the lower end of the lifting-beam F upon a rope or chain, *c*, of the windlass D, substantially as described.

3. The combination of the pulley E, draft-rope *a*, windlass D, stirrup-chain C, and the lifting-beam F of the tripod, substantially as described.

THOMAS CRANE.

Witnesses:

EDWARD H. RANKIN,

H. A. PORTER.