E. FARNSWORTH.

Stump-Elevators.

No. 155,718. Patented Oct. 6, 1874.

Fig. 2.

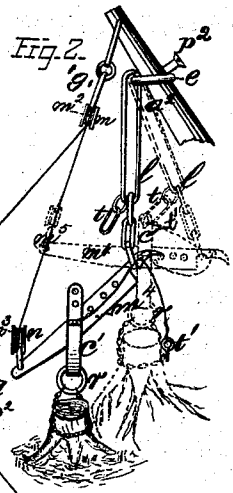


Fig. 1.

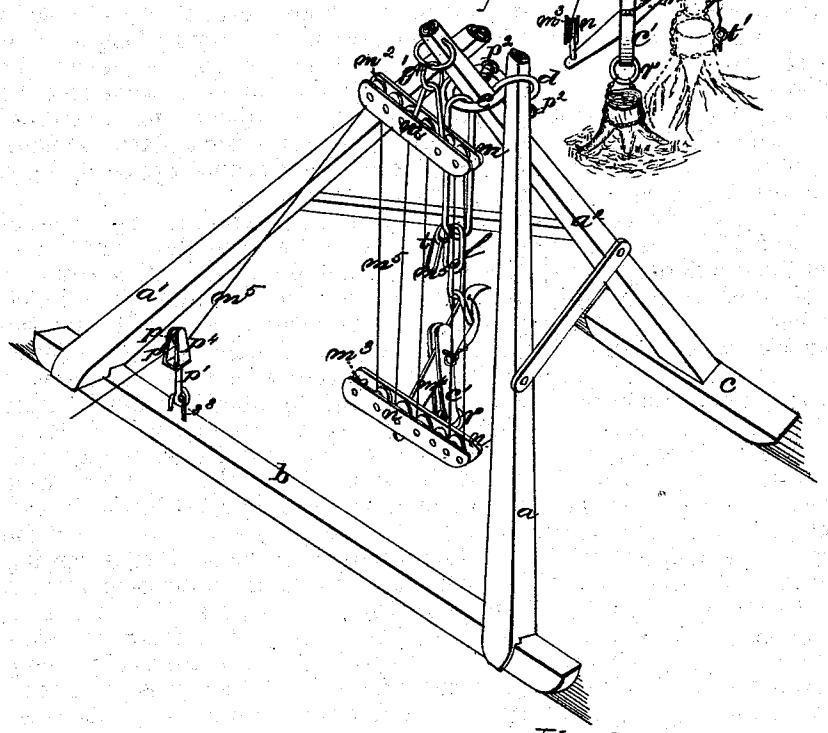
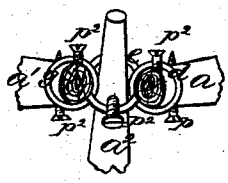


Fig. 3.



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UNITED STATES PATENT OFFICE.

ENOCH FARNSWORTH, OF TIPTON, PENNSYLVANIA.

IMPROVEMENT IN STUMP-ELEVATORS.

Specification forming part of Letters Patent No. **155,718**, dated October 6, 1874; application filed May 13, 1874.

To all whom it may concern:

Be it known that I, ENOCH FARNSWORTH, of Tipton, in the county of Blair and State of Pennsylvania, have invented a certain new and useful Improvement in Stump-Extractors, of which the following is a full, clear, and exact description, reference being had to the annexed drawing, in which—

Figure 1 is a perspective view of my improved stump-extractor arranged for operation. Fig. 2 is a detached view of the upper end of one of the standards, to which is attached the operating-lever and adjustable link to regulate the power; and Fig. 3 is a top view of the upper ends of the standards, showing the rings by means of which they are adjustably connected together.

Similar letters indicate like parts in all the figures.

My invention relates to a certain improvement in stump-extractors; and it consists, first, in connecting the upper ends of the tripod or supporting-standards by rings, each of which encircles the upper end of one of the said standards, on which they have a limited play, and the central ring also passing through the two others, by means of which the standards can be adjusted readily to stumps of different heights, and at the same time the machine is rendered portable. My invention further consists in the employment of a lever fulcrumed at its outer end to one of the links of a chain attached to one of the supporting-standards, in connection with a link or clevis adjustably attached to said lever, by means of which the fulcrum of the lever can be raised or lowered, or the link adjusted vertically for stumps of different heights, or the link be moved horizontally farther from or nearer to the fulcrum, to increase or decrease the power.

In the accompanying drawings, a a^1 are two inclined supporting-standards, connected together at their lower ends by the horizontal cross-bar b. a^2 is a third inclined supporting-standard, provided at its base with a foot, c, and encircled at its upper end by a ring, e, which is prevented from slipping off the standard by the stop or projecting pin p^2. The ring e passes through two other rings, d g, surrounding the inclined standards a a^1, the rings d g having a play upon the upper ends of the standards they encircle, limited by the stops p^2 p^2 above and below said rings.

By this construction it will be seen that the supporting-standards form a tripod readily adjusted for stumps of varying heights, and forming a secure support for the devices for removing the stump, and at the same time the parts can readily be adjusted for operation, and folded for removal from place to place, thus rendering the machine extremely light and portable.

To the ring e, encircling the upper end of the standard a^2, is attached the chain l, composed of several links. g' is a ring attached to the upper end of the standard a^2, to which are attached the plates m m, which form the bearings of a series of pulleys, m^2 m^2, connected by a suitable cord with a second series of pulleys, m^3 m^3, having their bearings in plates n n, to which is articulated one end of a lever, m^4, the other end being hooked to engage with one of the links of the chain l, which thus forms a fulcrum for lever m^4. The hooked lever m^4 can thus be placed in either one of the links that compose the chain l, thus varying the height of the fulcrum to accommodate it to stumps of varying heights. c' is a link or clevis, provided with perforations, by means of which it can be adjusted vertically, being connected to the lever by a bolt passing through one of its perforations, and a similar one made in the lever m^4. r is a ring passing through the lower end of the link c', to which ring a chain is attached which is also fastened to the stump to be extracted. The cord m^5, to which the power is applied, passes under the roller p, which has its bearings in ears p^4 p^4, attached by an eye-bolt, p^1, to a staple, s^3, driven in the cross-bar b, and thence successively around the series of pulleys m^2 m^3, thus raising the plates n n and their pulleys when the power is applied, and with them the end of the lever m^4 attached to the said plates, thus extracting the stump. t refers to a link united to the chain l by a ring, and which affords a means of transferring the weight of the stump from the lever m^4 to the chain l, to permit of the horizontal or vertical adjustment of the said lever, the link c', after which adjustment, be-

ing detached from the link *t*, to which it was connected previous to such adjustment. The pin *t'* unites the link *c'* to the link *t*.

When the stump has been partially extracted, the link, having been adjusted nearest to the fulcrum to increase the leverage, may be adjusted vertically to accommodate it to the raised position of the stump by passing the bolt through one of the other perforations in its face, and the link may be moved along the lever m^4 to decrease the leverage; or the fulcrum of the lever m^4 may be changed by engaging its hook with another link of the chain *l*.

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

1. The inclined supporting-standards *a* a^1 a^2, provided with the base-plates *b c*, in combination with the rings *d e g*, substantially as described, and for the purposes set forth.

2. The hooked lever m^4 and link *c'*, each having a series of perforations, and chain *l*, in combination with one or more pulleys, and hoisting-cord m^5, substantially as and for the purpose set forth.

3. The link *c'*, lever m^4, link *t*, chain *l*, and pin *t*, in combination, for affording a means for suspending the stump during the horizontal or vertical adjustment of the lever, substantially as specified.

In testimony whereof I have hereunto signed my name this 26th day of December, 1873, in presence of two subscribing witnesses.

ENOCH FARNSWORTH.

Witnesses:

J. W. MISTER,

F. L. PERLEY.