J. Higgins,

Stump Elevator.

No. 107,906. Patented Oct. 4. 1870.

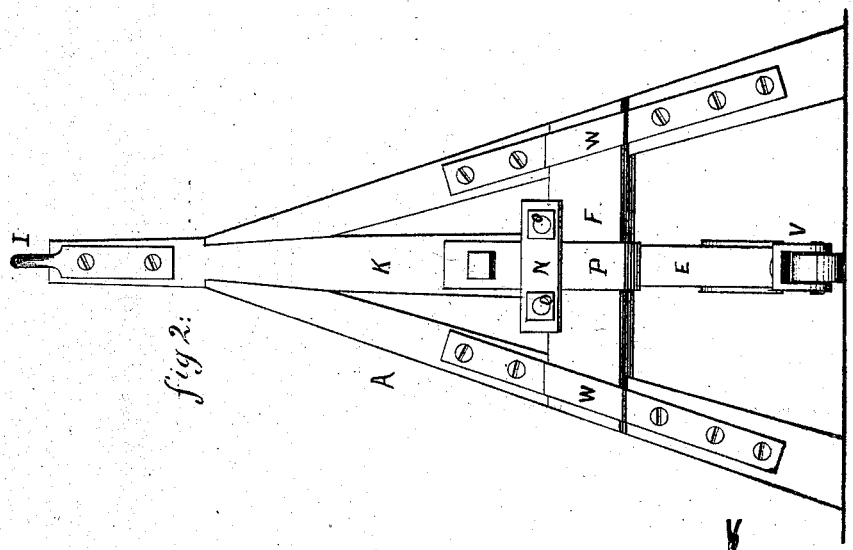

fig 2.

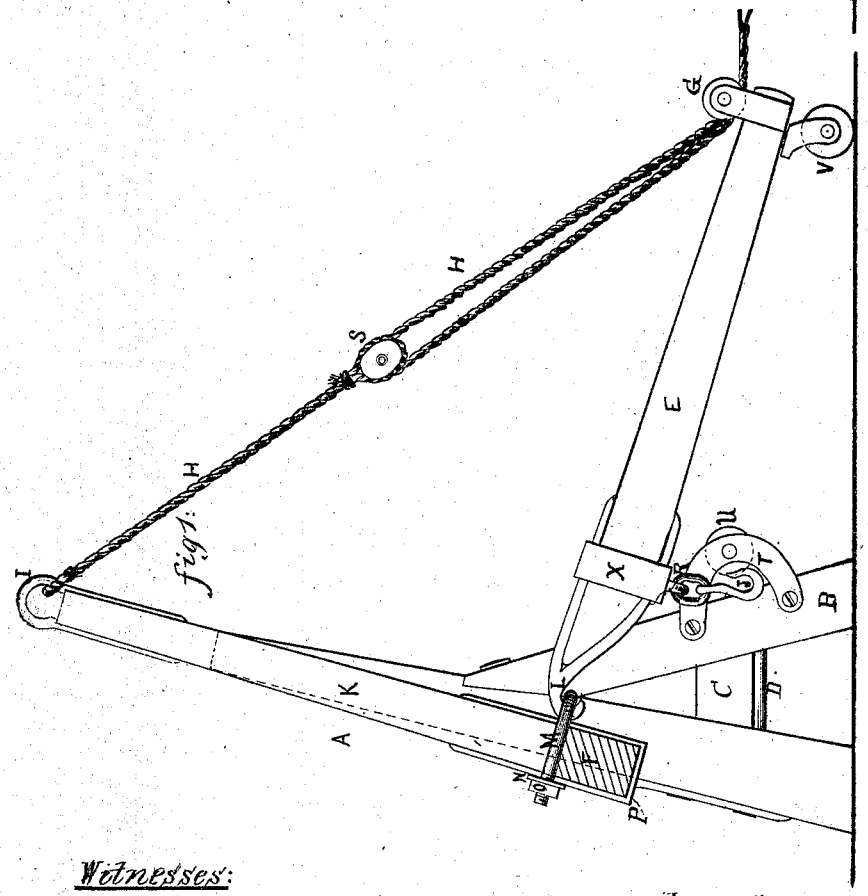

fig 1.

Witnesses:

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JOHNSON HIGGINS, OF FRIENDSHIP, NEW YORK.

Letters Patent No. 107,906, dated October 4, 1870.

IMPROVEMENT IN STUMP-EXTRACTORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHNSON HIGGINS, of Friendship, in the county of Allegany and State of New York, have made certain new and useful Improvements in Stump-Extractors; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a vertical section of the stump-extractor in the line *x x*, fig. 2, and

Figure 2 is a rear elevation of the same.

Similar letters of reference in the drawing indicate corresponding parts.

My invention has for its object to improve the construction of the stump-extractor for which Letters Patent of the United States were granted to me on the 8th day of March, A. D. 1870, whereby the same is made more durable and efficient in operation.

In the accompanying drawing—

A is a triangular frame, supported in an upright position by means of the inclined braces B, whose connection with the frame is strengthened by the blocks or bars C, and tie-bolts D.

E is the operating or draft-lever, attached at its inner end, by a flexible connection, to a cross-bar, F, of the frame, and provided at its outer end with a pulley, G, around which the draft-rope or chain H passes, to a clevis, I, secured to the apex of the triangular frame.

The weight to be lifted is attached by a hook, J, to the under side of the operating lever, near its fulcrum, and, when power is applied to the rope or chain, the lever E is not raised materially at its outer end, but the upper end of the triangular frame is drawn forward until it assumes a horizontal position, or nearly so, turning upon the inclined braces C.

The resistance offered by the stump or weight to be lifted holds the outer end of the lever E down, but the power applied pulls the upper end of the triangular frame forward, thereby moving forward the lever E and its fulcrum, and increasing the distance between the point of attachment of the weight to the lever, and the point of rest for the weight upon the ground. It is therefore apparent that this increase of distance raises the weight or stump, as required.

In order to obtain a longer pull, the frame A may be leaned to the rear, resting upon the ends of the inclined bars. By this arrangement, the chain attached to the stump is tightened, and the latter loosened somewhat, before the frame begins to turn upon the braces C.

This construction and operation are fully shown in my patent referred to, and the present invention consists in improving the construction, in order to render the device more effective.

In order to accomplish this result, I arrange the cross-bar E in rear of the uprights of the frame, and extend a bar, K, vertically above the center of the same, between the upper ends of the uprights.

To the upper end of this bar the clevis I is secured, as shown.

By this arrangement the frame is strengthened, inasmuch as the strain upon the cross-bar draws it against the rear side of the frame, instead of drawing it from the front side, as in my former case. It cannot, therefore, yield, nor be torn from its fastenings under the powerful leverage incident to the machine.

Instead of employing an eye-bolt, passing through the bar F to receive the hook L upon the end of the operating-lever, I place a staple, M, around the vertical bar K, to receive the hook, and connect its ends in rear of the bar by means of a strong metal plate, N, and the nuts O.

Owing to this construction, the bar F is not weakened by the passage of an eye-bolt through it, and the connection of the lever with the frame is strengthened naturally from the fact that the strain upon the lever, when the machine is in operation, is applied from the rear of the bar K, and distributed through this bar and the cross-bar F.

To still further strengthen the bar F, its ends are secured in place by the metal strips W affixed to the rear side of the frame, as shown.

P is a heavy strap of metal, passing under the bar F, and extending upward upon the front and rear of the bar K, to which it is secured, for the purpose of strengthening the connection of these two bars.

The hook J, to which the lifting-rope or chain is attached, is connected to the band X upon the lever E by means of a link, R, to prevent the hook from being broken when in operation.

The band X is adapted to be moved upon the lever to change the position of the hook with relation to the fulcrum of the lever, for the purpose of adjusting the leverage to different weights.

It will be observed that the frame A and lever E form a compound lever, and, in order to increase its power, I employ a pulley, S, in connection with the draft-rope or chain H, in the position shown.

T are brackets attached to the braces B, carrying small wheels, U; and

V is a caster-wheel affixed to the outer end of the operating lever.

These wheels permit the transportation of the machine from place to place when the frame is turned down upon the lever, as will be readily understood.

The caster-wheel V is employed, instead of a wheel having a fixed axle, as shown in my patent referred

to, for the purpose of allowing the machine to turn readily, during its removal, from one point to another.

Having thus described my invention,

What I claim as new therein, and desire to secure by Letters Patent, is—

1. The frame A, constructed with the bars F and K, as herein described, for the purpose specified.

2. The staple M and metal plate N, arranged with relation to the bars F and K, to receive the hook of the lever E, as herein described, for the purpose specified.

3. The pulley or block S, in connection with the draft-rope or chain H, arranged to operate the lever E and frame A, as herein described, for the purpose specified.

4. The caster-wheel V and adjustable hooks J, in combination with the lever E, substantially as described, for the purpose specified.

JOHNSON HIGGINS.

Witnesses:

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