(No Model.)

J. WHITFIELD.

Stump Extractor.

No. 232,866. Patented Oct. 5, 1880.

Fig. 1.

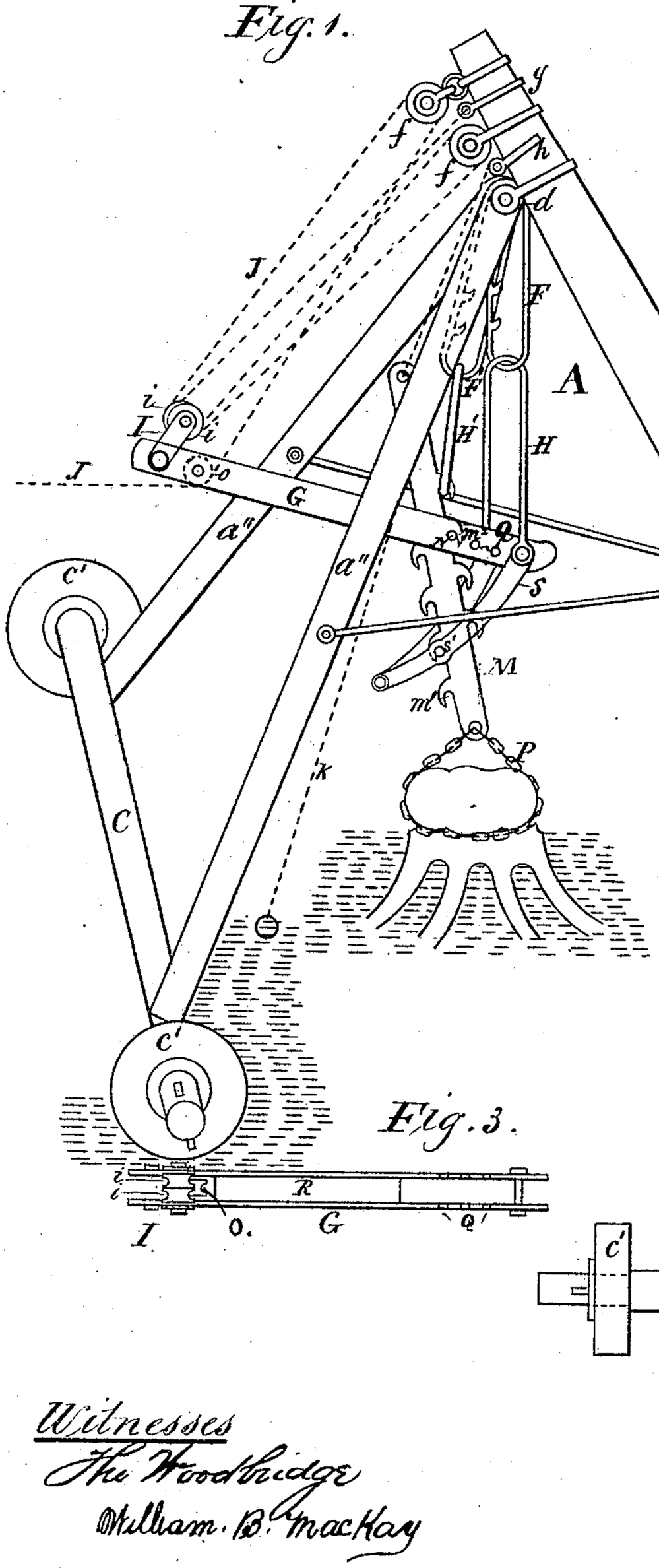

Fig. 2.

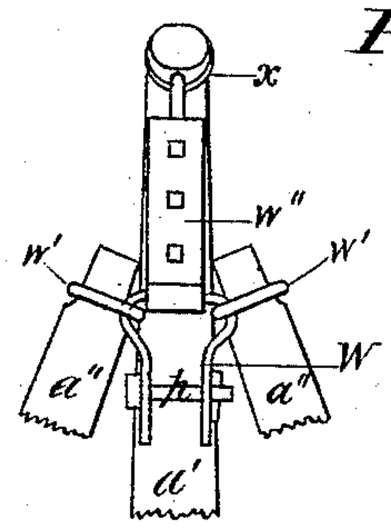

Fig. 5.

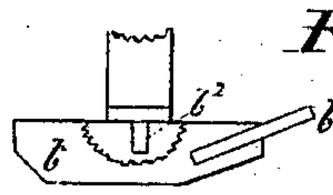

Fig. 3.

Fig. 4.

Witnesses
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STUMP-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 232,866, dated October 5, 1880.

Application filed June 18, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN WHITFIELD, of the city of Toronto, in the county of York, in the Province of Ontario, Canada, chainmaker, have invented certain new and useful Improvements on Stump-Extracting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention has for its object the further improvement of stump-extracting machines, and has special reference to the machines which are constructed with a substantial tripod-frame in connection with certain other machinery suitable for the purpose of raising stumps.

My improvements are as follows: First, an adjustable lever, suspended at its inner end by means of a clevis and link which act as its fulcrum, and at its outer end by means of pulleys and chain, partaking in some degree of the character of the well-known mechanic power—viz., the block and tackle. The stationary pulleys being attached to the apex of the tripod, and the movable pulleys working in an adjustably-movable block attached to the outer end of the said lever, a stationary pulley is also placed in said lever immediately behind the movable block referred to. This lever is constructed of two strong bars of flat iron filled partially in the middle with wood and partly unfilled or hollow. Within this hollow space and near to the inner end a take-up bar is operated. This bar is slightly sloping from the perpendicular, leaning outward at the top. It is notched in each of its two edges, and a pin in the lever aforesaid catches in the notches in the inner edge of the bar, while a pin in a clevis suspended from the lever catches in the notches in the outer edge of the bar, so that when the outer end of the lever is raised by means of the block and tackle it will raise the take-up bar, and with a chain attached to the under end of the take-up bar and to a stump in the ground the stump will be raised along with the take-up bar, and this, by successive adjustments and lifts, until the stump is clear of the ground. The aforesaid lever with the adjustably-movable block and pulleys and the notched take-up bar, form two of my improvements hereinbefore referred to.

Another of my improvements consists in the manner of connecting the standards of the tripod at the top by means of a shackle turning in a socketed plate attached to the inside of the main standard, the shackle holding a circular ring on each side for the tops of the two minor standards of the tripod. The shackle aforesaid is furnished with a strong transverse bolt and cottrel, on which two hooked links are suspended, one of which supports the lever and the other supports the take-up bar aforesaid. The shackle and rings provide a thoroughly substantial fixture for the apex of the tripod.

Another of my improvements is the placing of running wheels on the lower cross-bar of the machine, which connects the two minor standards thereof, and an improved shoe below the main standard, which is pivoted with the standard and relieved below, so as to ride easily over inequalities in the ground, having a yoke for attaching the horses thereto when moving the machine.

In the accompanying drawings the same letters of reference indicate the same parts as in this specification.

Figure 1 is a perspective view of a stump-extracting machine having my improvements attached and shown thereon. The tripod-stand is marked A, of which the main standard is marked a', the minor standards a'' a'', the lower cross-bar C, with wheels c' c', the pivoted shoe b, and yoke b', for attaching the horses thereto in moving the machine. In this figure are also shown the snatch-blocks f f, fixed eye-stud g, small pulley h, hooked links F F′, clevis H, and plain link H′. This link is shown hooked onto a notch of the take-up bar, which is done for the purpose of holding onto what has been obtained by the lift until the lever is again lowered for another lift. There is also shown lever G, with a movable block, I, pulleys i i, stationary pulley o, perforations Q, pin N, take-up bar M, hooked at both edges, with hand-chain k, for lifting and lowering the bar M in adjusting for a lift, stump-chain P, and power-chain J.

Fig. 2 is a front view of my improved method of forming the apex of tripod A by means of shackle w and rings w' w', showing the top of main standard a' and of the minor standards a'' a'', the eye-plate w'', and center-pin p.

It will be observed that the top of the minor standards are reduced and form a shoulder for the rings to rest upon, showing also the ring-shackle *x* for upper snatch-block.

Fig. 3 is a plan of lever, G, showing my improved adjustable block I, pulleys *i i*, and stationary pulley *o*, wood filling R, and perforations Q.

Fig. 4 is a plan of cross-bar C and wheels *c' c'*.

Fig. 5 is a side sectional view of shoe *b*, showing the form in which it is cut away below, and of the yoke *b'*, a portion of the wood being removed to show the gudgeon-pivot b^2.

In operating the machine it will be seen that the pin *s'* in clevis *s*, which is connected with clevis H and notched or hooked link F, will catch in one or other of the back hooks, *m'*, in take-up bar M, and that the pin N in lever G will catch in one or other of the front hooks, m^2, in bar M, and that when power is applied to the chain J the outer end of the lever G will be raised thereby, and the take-up bar M, to which the stump is attached by means of the chain P, will be raised proportionately thereto; and in readjusting the machine for another lift the link F' is hooked into the nearest notch in bar M, which will suspend the bar M while the lever G is being lowered and adjustments are completed for another lift, and this continuously until the stump is clear from the ground.

I am aware that stump-extracting machines have been constructed with the old and well-known tripod A; but I am not aware of such machines having been mounted on wheels on a cross-bar, C, nor with a pivoted shoe below the main standard of the tripod *a'*, nor with a shackle, *w*, with rings *w' w'*, socket-plate *w''*, and center-pin *p*, nor with an adjustably-movable block, I, with pulleys *i i*, in lever G, with clevis *s*, nor with a take-up bar, M, hooked on each edge, and links H' and F', for holding onto the stump when a fresh lift is about to be taken.

I claim—

1. In combination, the bar M, having hooks at both its opposite sides or edges, the device *s s'*, lever G, with its perforations Q, pin N, movable blocks I, and pulleys *i i*, link F, and its clevis H, substantially as and for the purposes described.

2. In combination with the tripod constructed with wheels on two of its legs and an adjustable shoe on the other leg, the shackle *w*, rings *w' w'*, socket-plate *w''*, and pin *p*, as and for the purposes described.

3. In combination, the take-up bar M, hooked on each edge with links H' F', for holding onto the partially-extracted stump by the bar, the lever G, adjustably-movable block I, chain J, stump-chain P, pulleys *i i*, perforations Q, and pin N, tripod A, shackle *w*, rings *w' w'*, socket-plate *w''*, pin *p*, wheels *c' c'*, and shoe *b*, the whole operating as and for the purposes set forth.

JOHN WHITFIELD.

Witnesses:
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