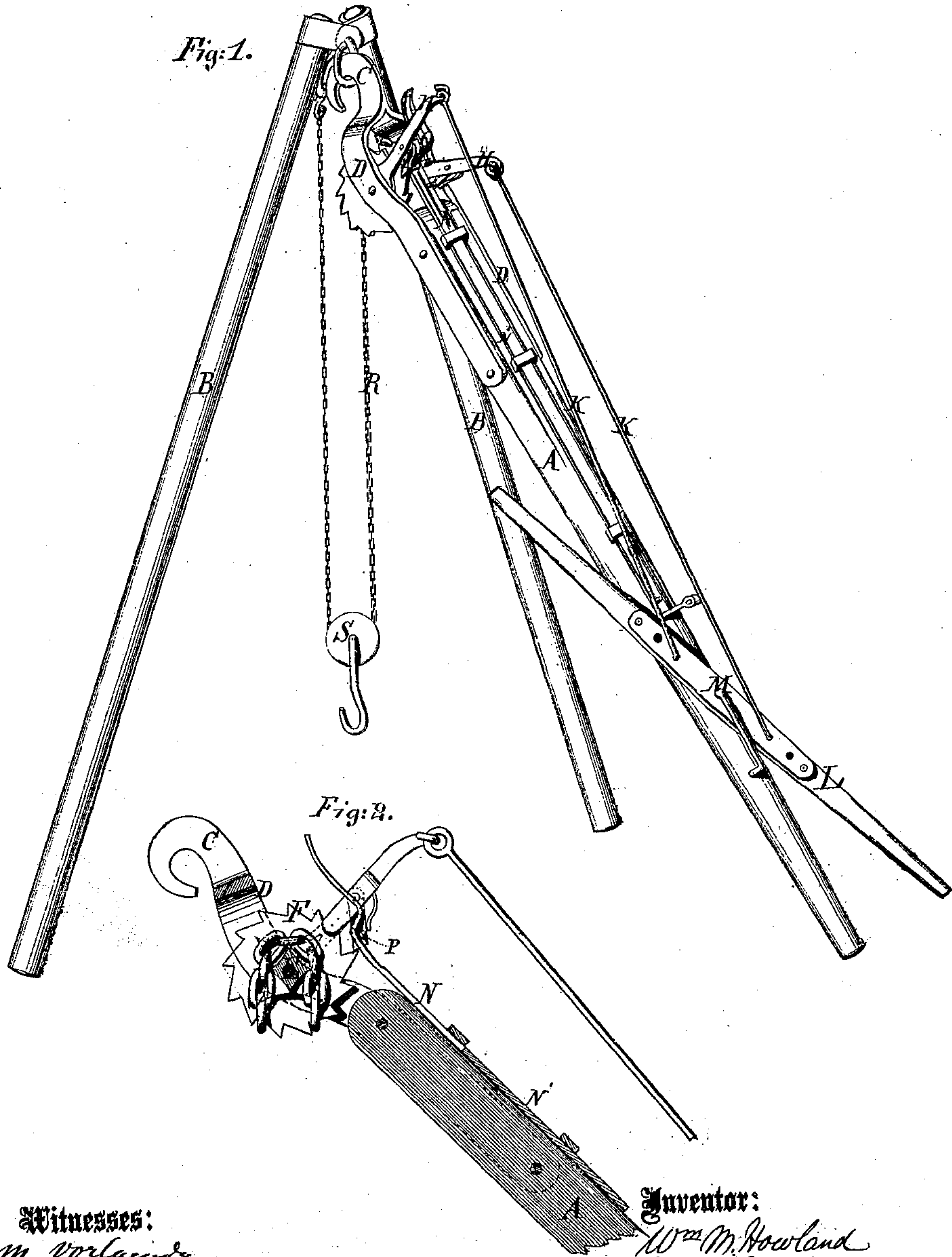


W. M. & G. L. Howland;

Stump Extractor.

No. 95,691.

Patented Oct. 12, 1869.



Witnesses:
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WILLIAM M. HOWLAND AND GEORGE L. HOWLAND, OF TOPSHAM,
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Letters Patent No. 95,691, dated October 12, 1869.

IMPROVEMENT IN HOISTING-APPARATUS.

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

To all whom it may concern:

Be it known that we, WILLIAM M. HOWLAND and GEORGE L. HOWLAND, of Topsham, in the county of Sagadahoc, and State of Maine, have invented a new and improved Hoisting-Apparatus; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

This invention relates to improvements in apparatus for hoisting heavy weights, pulling stumps, and the like, by hand-power, and consists in the application to one of the legs of a tripod, (which is detachably connected to the other two by a hook, having a double shank, which is separated for attachment to the said leg, so as to provide a space between the end of the leg and the hook for the same,) of a pair of ratchet-wheels on a chain-winding shaft, a pair of pawls, connecting-rods, operating-lever, and a device for throwing the pawls out of action with the ratchet-wheels, under an arrangement whereby the stones or other weights may be raised or lowered the distance of one or more notches of the ratchet-wheels at each movement of the lever, all as hereinafter more fully specified.

Figure 1 represents a perspective view of our improved apparatus, and

Figure 2 represents a sectional elevation of a part of the leg to which the operating-parts are connected.

The leg A is detachably connected to the other two, B, which are permanently connected together, by a hook, C, taking into a ring or eye attached to them.

This hook has a divided or double shank, the two parts D of which swell outward above the end of the leg A, and are fitted to the leg below the said swelled part, and permanently connected to it, one on each side.

Between these parts D of the shank, at the place where they are so swelled outward, a chain-winding shaft, E, is mounted on journals, having bearings in the said parts D, and having two ratchet-wheels, F, connected to it.

H represents pawl-arms, working on the axis of the shaft E, one for each wheel.

They have pawls, I, for working the ratchets, and are connected by rods K to a vibrating hand-lever, L, pivoted to the post A, at M.

N represents a pair of gearing, or tripping spring-slides, for throwing the pawls wholly out of action with the ratchets, or so as to act on them only during a part of their throw.

These tripping-springs are connected to a slide, N', working up and down on the leg A.

They are bent at the ends O, and so arranged that pins P, projecting from the pawls into the path of the bent ends of the slide, will, on the going back of the pawl-lever, strike against the parts O, and be raised by them and thrown out of action with the ratchets.

The rods K are connected to the hand-lever M on opposite sides of the fulcrum M, so that in working the same by the said lever, one goes back while the other goes forward.

R is the chain for hoisting. One end is permanently connected to the top of the legs B, and the other works over the shaft E.

S is a sheave-block and hook, suspended on the chain, for attaching the weight, which is hoisted by working the ratchets through the medium of the pawls, pawl-levers, rod K, and hand-lever L, one pawl going back for a new hold while the other is moving forward, carrying the ratchet-wheels.

For lowering the weight, the slides N are arranged to trip the pawls when moving backward, and to allow them to engage with the ratchet-wheels at the end of the movement forward, the one engaging just previous to the tripping of the other wheel.

The ends of the tripping spring-slides spring downward under the force of the pawls, held by the pressure of the teeth of the ratchet-wheel, so that the pawls are not thrown out until their pins P are carried sufficiently up the inclined parts of the tripping-springs beyond the abrupt bends at O. When they are thrown out, the springs rise high enough to keep the pawls above the ratchet-teeth until they are brought forward of the abrupt bends, when they fall down and engage with the notches.

For increasing the speed in lowering, the spring-slides are drawn downward, so as to hold the disengaged pawl out of contact with its wheel longer, allowing the other to move further back, and for slowing the lowering-speed, the slide is moved upward. When raising the weight, the slide is moved up high enough to prevent any action by it on the pawls.

The hand-lever L is arranged for connecting the rods K at different distances from the fulcrum, for varying the leverage for different weights.

The leg A is made detachable from the others, for convenience in moving and storing the apparatus, but may be permanently connected, if preferred.

The operating-devices may be applied to frames of other construction and arrangement.

Having thus described our invention,

We claim as new, and desire to secure by Letters Patent—

1. The combination, with the leg A, either permanently or detachably connected to the legs B, and arranged for supporting the chain-shaft E in the parts D of the divided shank of the connecting-hook, as described, of the chain-shaft, ratchet-wheels, pawls, pawl-arms, pawl-lever, and connecting-rods, substantially as specified.

2. The combination, with the pawl L, of the tripping sliding-spring N O, substantially as specified.

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Witnesses:

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