D. L. Miller,

Stump Elevator.

No. 34,440. Patented Feb 18, 1862.

Fig: 1.

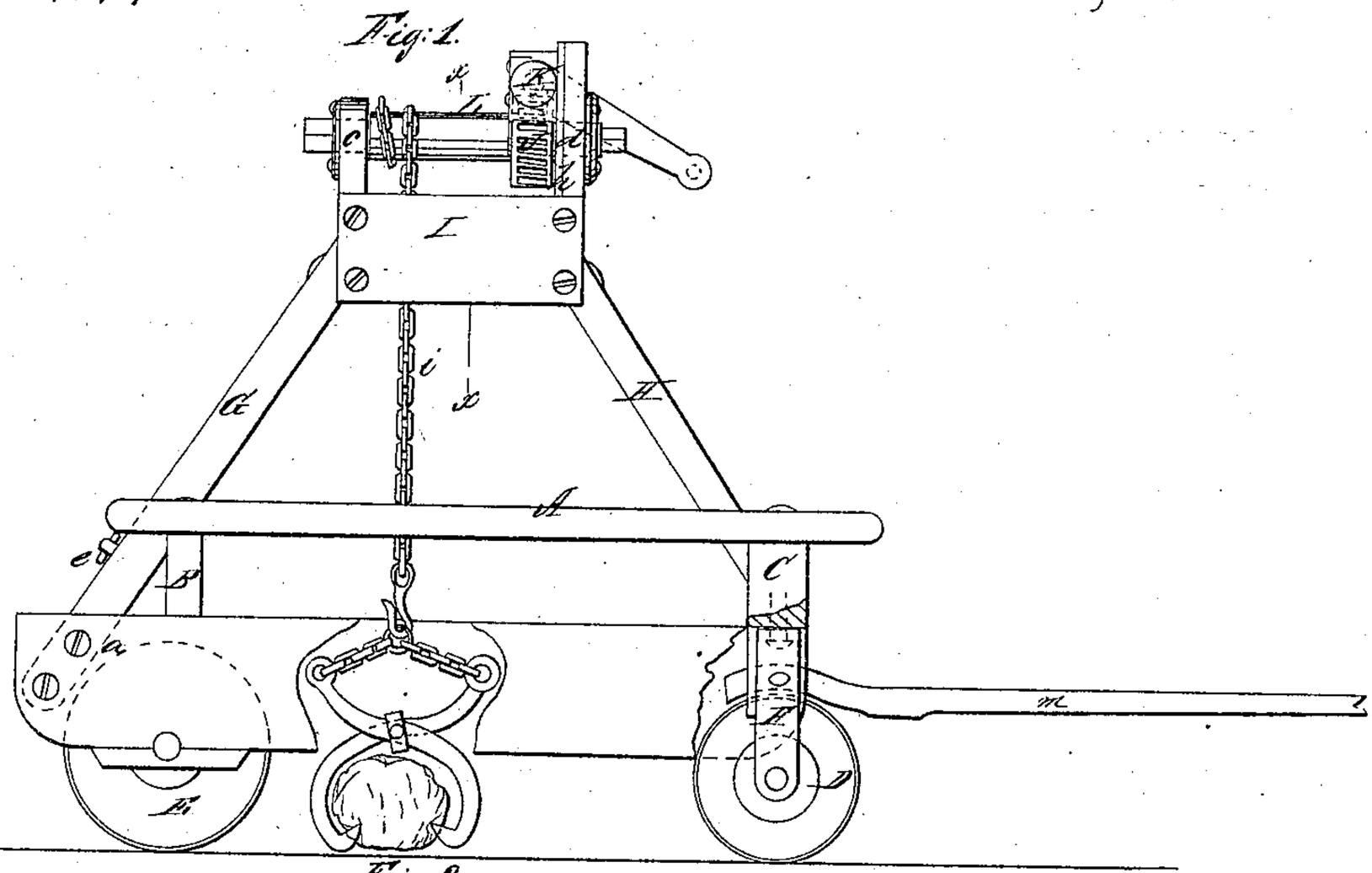


Fig: 2.

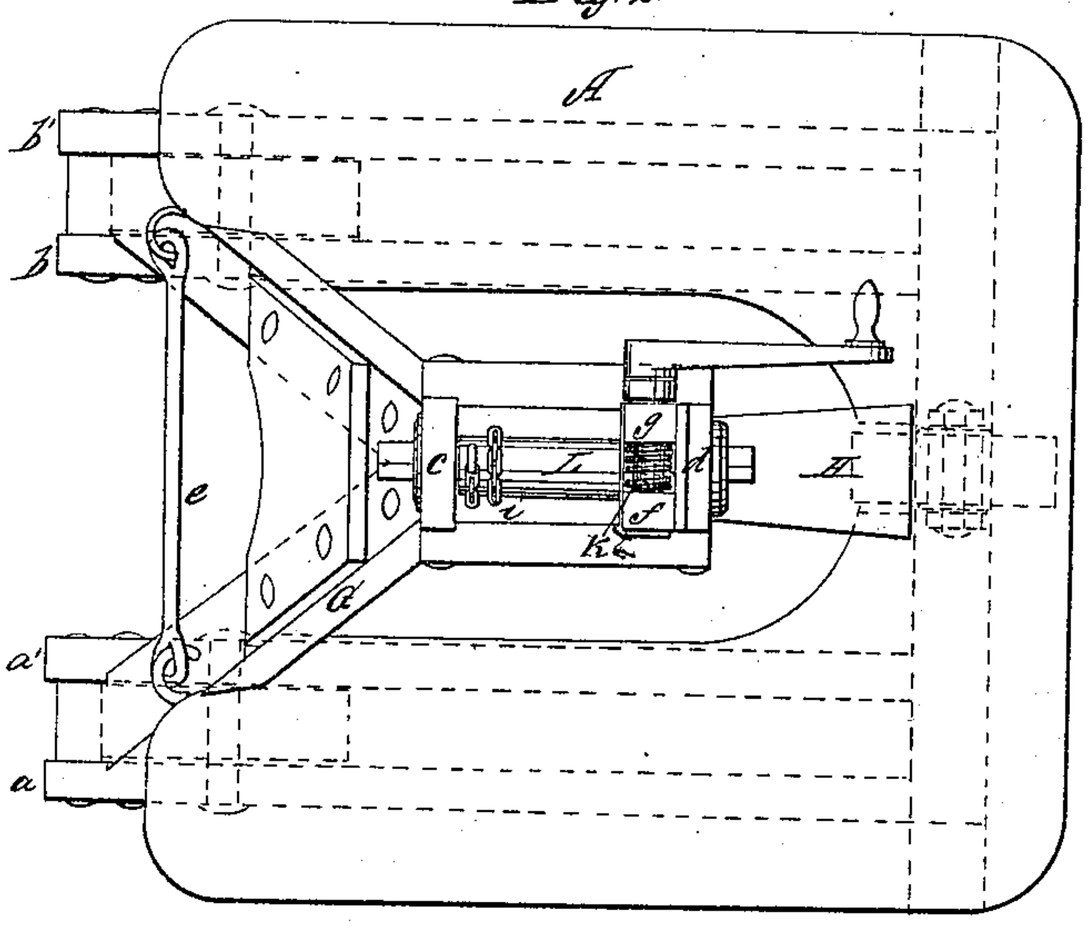
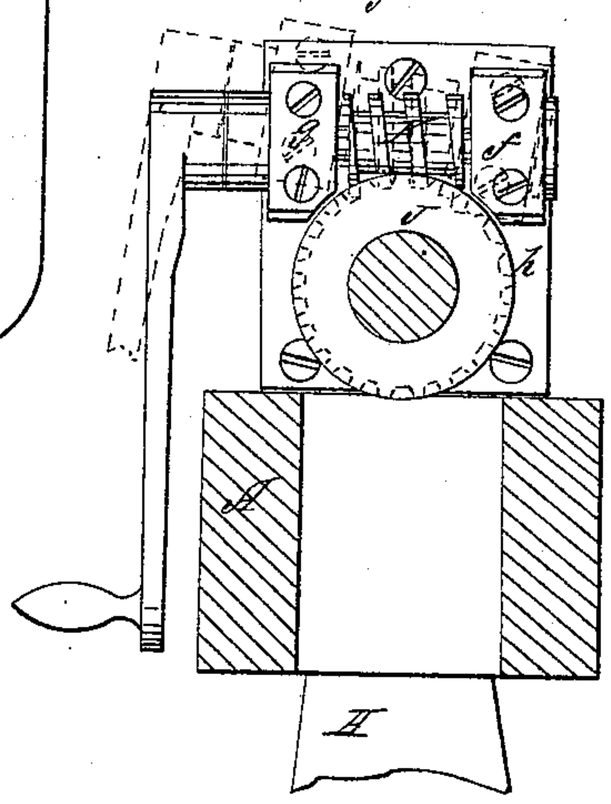


Fig: 3.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

DAVID L. MILLER, OF MADISON, NEW JERSEY.

IMPROVED ELEVATING-MACHINE.

Specification forming part of Letters Patent No. **34,440**, dated February 18, 1862.

To all whom it may concern:

Be it known that I, DAVID L. MILLER, of Madison, in the county of Morris and State of New Jersey, have invented a new and Improved Elevating-Machine; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of my inproved elevating-machine. Fig. 2 is a plan of the same. Fig. 3 is a fragmentary transverse section of the same, taken in the line *x x* of Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to that class of portable elevating-machines which are mounted upon wheels and used in clearing new-made land of stones and stumps; and it consists in the manner of arranging the windlass so as to cause the strain in lifting to be equally divided upon three wheels.

It also consists in the manner of operating the windlass by a worm-screw and worm-wheel, whereby a continuous motion is given to the windlass and great power obtained, the worm-screw being so arranged in relation to the wheel that it can be easily disengaged therefrom to allow the windlass to be operated with greater speed when it is desired to unwind or wind up the chain preparatory to applying the power to elevate the stump or stone from its bed.

To enable others skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a platform upon which the men stand to operate the windlass, which is supported at its front and back ends upon bolsters B C, resting upon and secured to the longitudinal beams *a a' b b'*, which extend the entire length of the machine and are mounted in front upon one wheel D and at the back end upon two wheels E E', all of which have a wide tread. The axles of the hind wheels revolve in suitable boxes attached to the under side of the longitudinal beams. The wheel D, which supports the front end of the machine, runs in a swivel-stirrup F, which is attached in the middle of the bolster by a king-bolt.

I is a box-frame of great strength, in which the windlass L is fitted to revolve in journal-boxes *c d*. This frame is supported over the middle of the machine, which is left open, by a strut G at the back end and inclined brace H at the front, which are secured at their lower ends by bolts, the former to the longitudinal beams and the latter to the middle of the bolster C in front. The timbers forming the strut are connected together at their lower ends by a rod *e* to prevent them from springing apart when under great strain.

The windlass L at each end projects through its journal-boxes and is squared on its extremities to receive winches, by means of which it is revolved to unwind or wind up the draft-chain *i* when not under strain.

Secured to the windlass L on the inside of the box and adjacent thereto is a worm-wheel J, into which a worm-screw K, placed at right angles to it, meshes to impart motion to the windlass. The shaft of the worm-screw is fitted in boxes *f g*, one of which *f* on one side of the windlass is pivoted to the side plate *h* of the box *d*, and the other on the opposite side is provided with a projection on the back side, which is adapted to slide in a slot in the side plate to raise that end of the worm-screw and thus disengage it from the worm-wheel to allow the windlass to be rotated more expeditiously by winches on its ends. The ends of the worm-screw project through their boxes in the same manner as the windlass to receive winches by which the power is applied through the worm-screw and wheel to operate the windlass. In this manner of operating the windlass a very slow motion will be had; but great power can be exerted by one or two men taking hold of the winches of the screw. At the same time all recoil or reaction is prevented without requiring the use of pawl or ratchet for this purpose.

It is important, in view of the slow motion of the windlass when acted upon by the worm-screw, to give a rapid motion to the windlass in unwinding or winding up the draft-chain *i* preparatory to applying the power to lift the stone or stump; hence the object in pivoting one of the boxes in which the worm-screw is journaled, so that the opposite end of the screw can be raised and disengaged from the worm-wheel, and thus allow the windlass to be rotated with greater speed.

The draft-animals to propel the machine over the ground are hitched to the tongue *m*,

which is attached to the stirrup F immediately over the wheel.

When it is desired to extract a stump or stone from its bed in the earth to be transported from one place to another, the machine is placed directly over the stump or stone and the grapple-hooks adjusted so as to get a good lifting hold. The windlass is then turned by the winches on its ends until the draft-chain is taut, when the worm-screw is thrown in gear with the worm-wheel and the power applied to the winches of the screw to raise the stone or stump from its bed to an elevated position, in which position it is held by the worm-screw while being carried to any place it is intended to leave it.

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

The worm-screw K and manner of arranging the boxes *f g* of the same, so that it can be easily disengaged from the worm-wheel J, in combination therewith and with the windlass L, draft-chain *i*, box-frame I, inclined strut G and brace H, platform A, and longitudinal beams *a a' b b'*, the whole mounted upon wheels and arranged in the manner and for the purpose set forth.

DAVID L. MILLER.

Witnesses:

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