H. Lemm,

Stump Elevator.

No. 45,725. Patented Jan. 3, 1865.

Fig. 1.

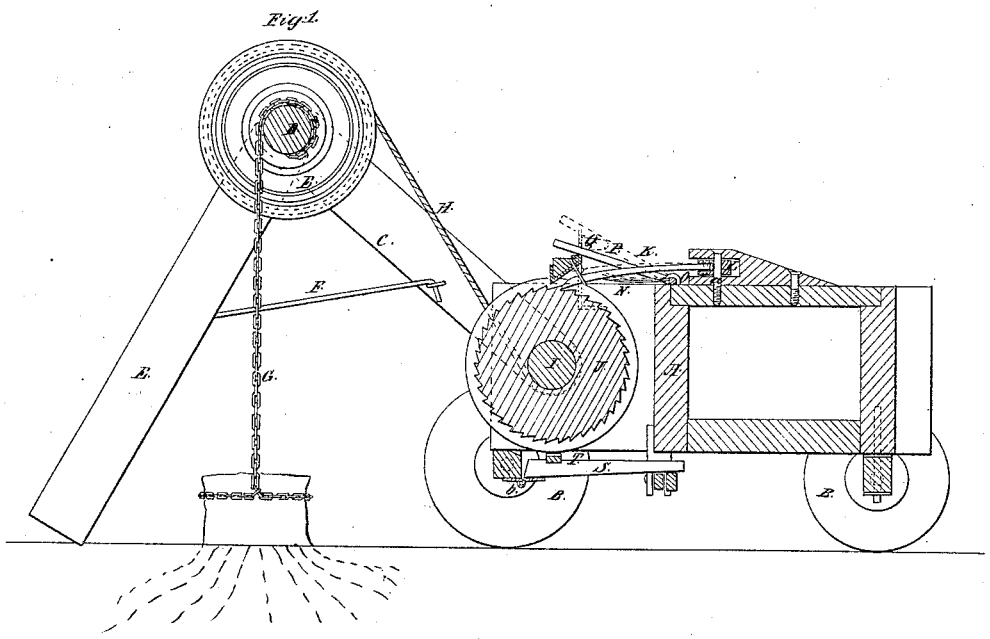
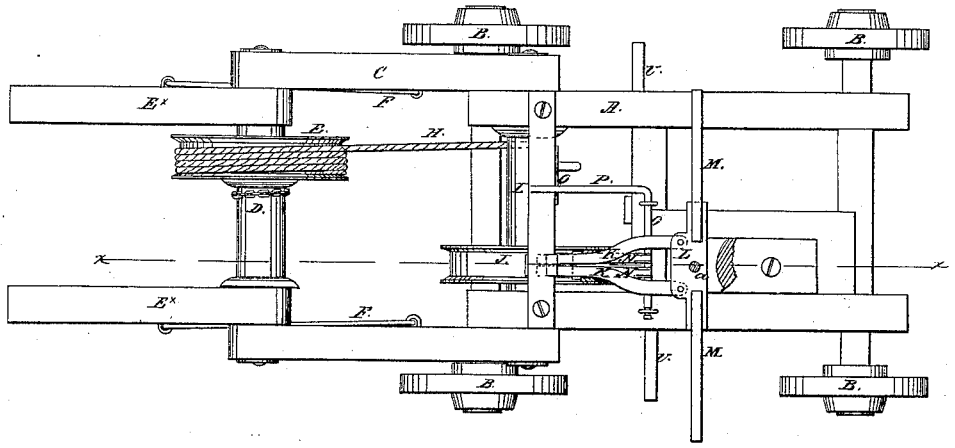


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

HIRAM LEMM, OF LEONIDAS, MICHIGAN.

IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **45,725**, dated January 3, 1865.

To all whom it may concern:

Be it known that I, HIRAM LEMM, of Leonidas, in the county of St. Joseph and State of Michigan, have invented a new and Improved Machine for Extracting Stumps and Elevating Heavy Bodies; 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 sectional view of my invention taken in the line *x x*, Fig. 2; Fig. 2, a plan or top view of the same.

Similar letters of reference represent like parts.

This invention relates to certain and useful improvements on a machine for extracting stumps for which Letters Patent were granted to me bearing date December 15, 1863.

The invention consists in the application to the machine of a lever and springs or elastic bars arranged in such a manner with pawls and with a ratchet that the same means which are employed to extract a stump or raise a body may be also used for gradually lowering it.

The invention also consists in the employment or use of a brake arranged in connection with the ratchet, and in such a manner that an elevated body may, by a simple application of power on the part of the attendant or operator, be held in suspension until it is necessary or convenient to remove it.

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

A represents the framing of the machine, which may be constructed in any proper manner to support the working parts. This framing is mounted on wheels B for the convenience of drawing or transporting it from place to place, and to the back part of the framing A there is attached a swinging or adjustable frame, C, having a shaft, D, in its outer end, on which a pulley, E, is firmly keyed. E^x E^x are two supports, the upper ends of which are fitted loosely on the shaft D, the supports, when the machine is in use, being held in proper position by brace-rods F, connected with the frame C. To the shaft D the elevating-chain G is attached and a rope, H, passes around the pulley E from a shaft, I, in the framing A, said shaft I having a ratchet, J keyed firmly upon it.

K K are the two pawls placed on the upper part of the framing A, and connected to the ends of a plate, L, which works on a pivot, *a*, midway between the connections of the two pawls K K. (See Fig. 2.) The plate has a lever, M, projecting from each end of it, by which said plate L is vibrated or operated.

The pawls K K engage with the ratchet J at its upper part, one pawl, as the plate L is vibrated, actuating the ratchet as the other pawl is drawn back. As the ratchet J is thus rotated in the direction indicated by the arrow 1, the rope H is wound upon the shaft I, and the shaft D turned, which causes the chain G to be wound upon the shaft D, and the stump or other body, to which the chain G is attached, elevated.

N N are two spring or elastic bars, which are placed, one underneath each pawl K, and are attached to a rod or shaft, O, placed on the upper part of the framing A, and having one end bent at right angles to its main portion to form a lever, P, through the medium of which the rod or shaft O may be turned and the springs or bars N raised to elevate the pawls K. The pawls K may be retained at a greater or less height by means of an adustable segment-shaped plate, Q, on which the lever P rests. These springs or yielding bars N N perform an important function. By raising them so that they will touch the pawls K K the latter, when operated as before, through the vibrations of the plate L will release the ratchet J one tooth at a time and admit of the gradual descent of the suspended body attached to chain G.

To the back axle, R, of the framing A there is attached, by a joint or hinge, *b*, a lever, S, which has a shoe, T, attached to it to bear against the under side of the ratchet J, as shown clearly in Fig. 1. The outer end of the lever S rests or bears on two levers, U U, which have a transverse position underneath the framing A, and have their ends projecting beyond the sides of the framing, as shown in Fig. 2. By pressing down the outer end of one or both of these levers the lever S will be actuated, and the shoe T made to press against the lower side of the ratchet, thereby forming a brake, by which the elevated body may be

retained or held up until it is convenient or desired to remove it.

I do not claim the two pawls and the ratchet, for they been previously used; but

I do claim as new and desire to secure by Letters Patent—

The combination of the parts involved in freeing the ratchet-wheel—to wit, the lever-bar P O, bars N, pawls K, and segment-wheel Q, with the lowering brake-levers U S and shoe T, substantially as described and represented.

HIRAM LEMM.

Witnesses:

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