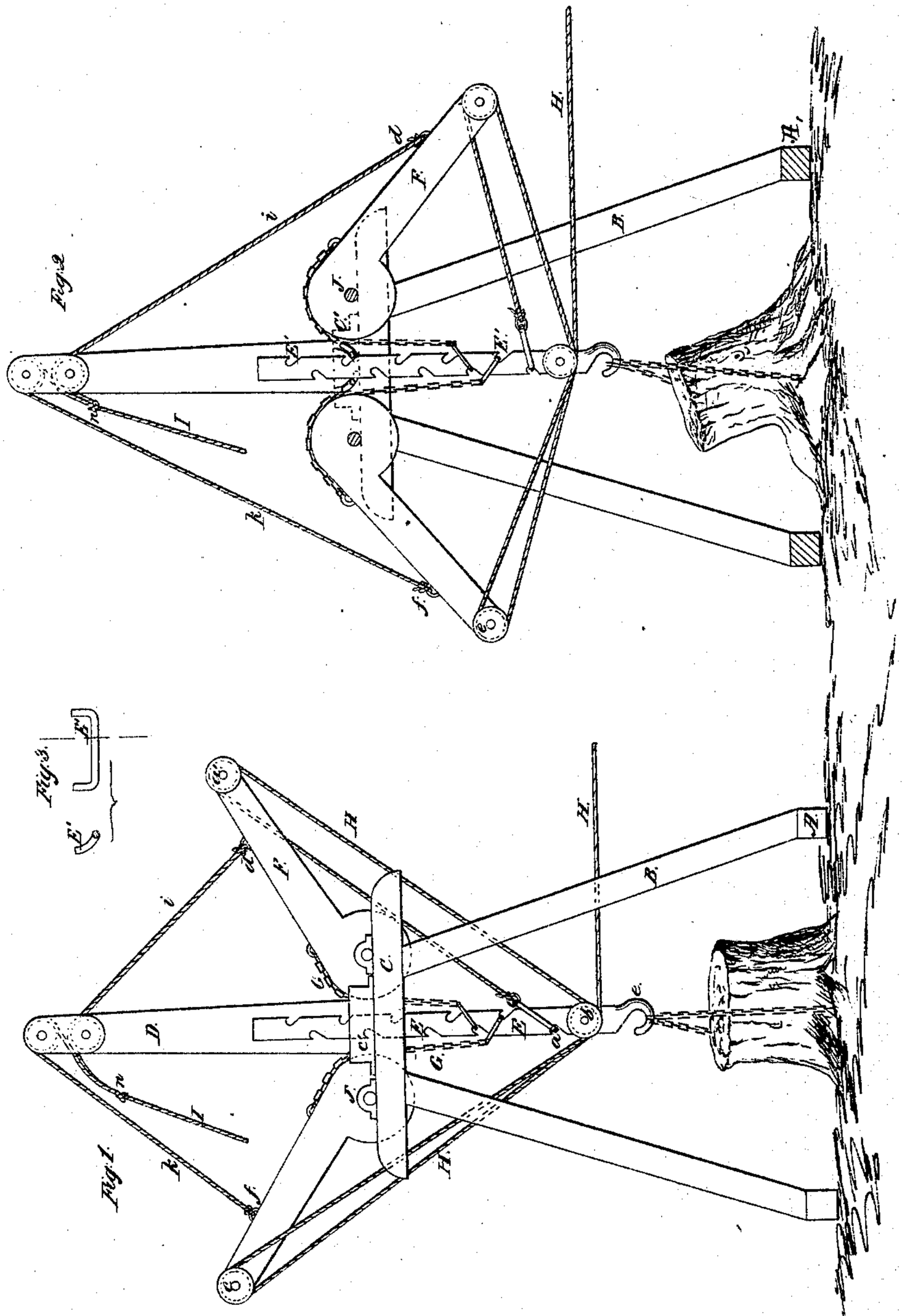
2 Sheets, Sheet 1.

M. M. Healy.

Stump Elevator.

No. 60,372. Patented Dec. 11, 1866.



Witnesses:
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Alex. F. Roberts.

Inventor:
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attorneys

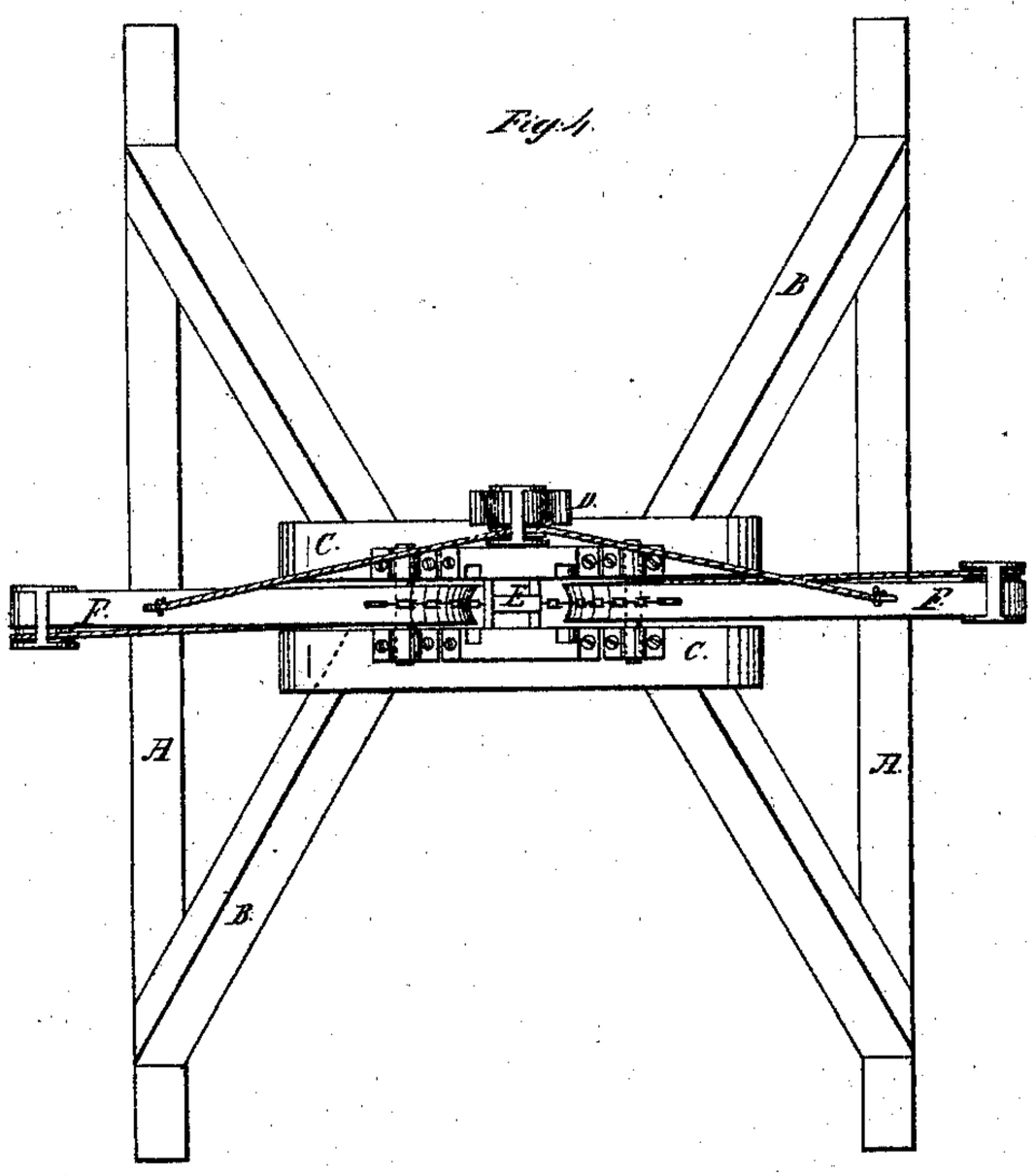
N. M. Healy,

2 Sheets, Sheet 2.

Stump Elevator.

No. 60,372. Patented Dec. 11, 1866.

Fig. 1.



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IMPROVEMENT IN STUMP EXTRACTORS.

NATHAN M. HEALY, OF FLUSHING, MICHIGAN.

Letters Patent No. 60,372, *dated December* 11, 1866.

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, NATHAN M. HEALY, of Flushing, in the county of Genesee, and State of Michigan, have invented a new and improved Stump Extractor; and I do hereby declare that the following is a full, clear, and exact description thereof.

The nature of this invention consists in so arranging an upright hoisting-bar and levers on an upright frame, and operating them by chains and ropes, that a very great lifting power shall be imparted to the bar, thereby enabling me to extract stumps from the ground in a cheap and simple manner.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same, reference being had to the accompanying drawings which form a part of this specification, and to the letters of reference marked thereon.

Figure 1 represents a front elevation of the machine.

Figure 2 is a vertical sectional elevation through the line *x x* of fig. 1.

Figure 3 is a view of the hold-fast bar; and

Figure 4 is a top or plan view of the machine.

The same letters of reference refer to like parts.

A represents runners, or foundation-timbers of the machine; B, the posts or supports, standing in a bracing or inclined position from the corners towards the centre. C represents the cap-pieces, resting horizontally on the top of B. D is an upright piece attached to one of the cap-pieces C. E is the hoisting-bar, to which the power exerted on the lever is applied. F represents the levers. G, the chains which communicate the power from the levers to the hoisting-bar. H is the rope (or chain) to which the power is applied which operates the machine. I is a rope by which the outer ends of the levers are elevated. The hoisting-bar E, being of proper length and size, has a strong hook upon the lower end, (the bar standing in an upright position, but hanging loosely,) to which the chain is attached that is fastened to the stump when the machine is in use. The edges of this hoisting-bar are notched, ratchet-like, as at *c'*, the notches being at suitable distances apart, and alternating from one side to the other, so that the bar may be sustained from either edge, and the shoulder, or the deepest part of the notches, shall not be directly opposite. There are two pulleys or sheaves near the lower end of this bar, one on each side, opposite each other, and working on the ends of the same pin. The hold-fast bars, (which act like pawls in a ratchet,) are simply pieces of round iron, with the ends turned up, and rest in recesses formed in blocks, which are fixed upon the cap-piece C. These hold-fast bars E' are represented by the fig. 3, with a section. The blocks having the recesses in which these bars rest, are represented by the letter C'. The recesses incline inwardly as they descend, so that the hold-fast bars constantly rest against the hoisting-bar, and drop into the notches on the bar by their own gravity, the bar playing up and down between them. There are four posts or braces to the frame, two in front and two in rear, each pair supporting one of the caps C. These caps C support the blocks C', and also the boxes for the lever fulcra J. The levers F work upon fulcra J. The inner ends of these levers form circles, the fulcrum being placed below the centre, so that the end forms an eccentric. The periphery of this circle or eccentric is grooved or hollowed out. The outer ends have pulleys or sheaves attached to them. The chains G have long links at their lower ends, which surround the hoisting-bar, and which lift against the shoulders or notches in the bar, upon opposite sides, as seen in the drawing. The other ends of these chains are firmly attached to the top of the levers F, resting in the grooves before mentioned. The power of the levers is transmitted to the hoisting-bar by these chains. The upright piece D, which is attached to the rear cap-piece C, has also two pulleys, one on the upper end, and the other pulley just below it. The rope H (it may be a chain) is first attached to the lower end of the hoisting-bar, drawing against the lowest notch in the bar. It then passes upward and around the pulley on the end of one of the levers, at *a*, then down under one of the pulleys, near the lower end of the hoisting-bar, at *b*; then upwards and around the pulley on the other lever at *c*; and then down and around the other pulley on the hoisting-bar, extending thence in a horizontal direction, when in use, and to which the power is attached which operates the machine. The ropes *i* and *k* are attached to each of the levers, at *d* and *f*. The rope *i* passes from *d* over one of the pulleys on the upright pieces D, and the rope *k* passes from the other lever, at *f*, over the other pulley on D. These ropes join at *n*, and are operated by I. It will be seen that, by pulling upon

the rope I, the ends of the levers will be elevated. This is done whenever it is necessary to lower the hoisting-bar to take a new hold. The operation or effect of drawing upon the rope H will be, to depress the ends of the levers and draw them together. This, of course, draws upon the chain G, and the effect is to raise the hoisting-bar E. The hold-fast bars, lying loosely against the edges of the bar, drop into the ratchets or notches, and when the power ceases to be applied, they (either one or the other,) catch the bar and hold it. It will be noticed that these levers act with the greatest power as they descend, it being an increasing force, and this being the case at a time when the greatest force or power is necessary, (that is, after all the slack has been taken up.) The advantages of my arrangement will be understood at once.

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

The hold-fast bars E′, slotted blocks C′, levers F, and chains G, in combination with the notched bar E, cap-piece C, upright D, inclined supports B, and runners A, arranged and operating substantially as herein shown and described.

NATHAN M. HEALY.

Witnesses:

JOHN HUNTER,

E. GRAY.