

(No Model.)

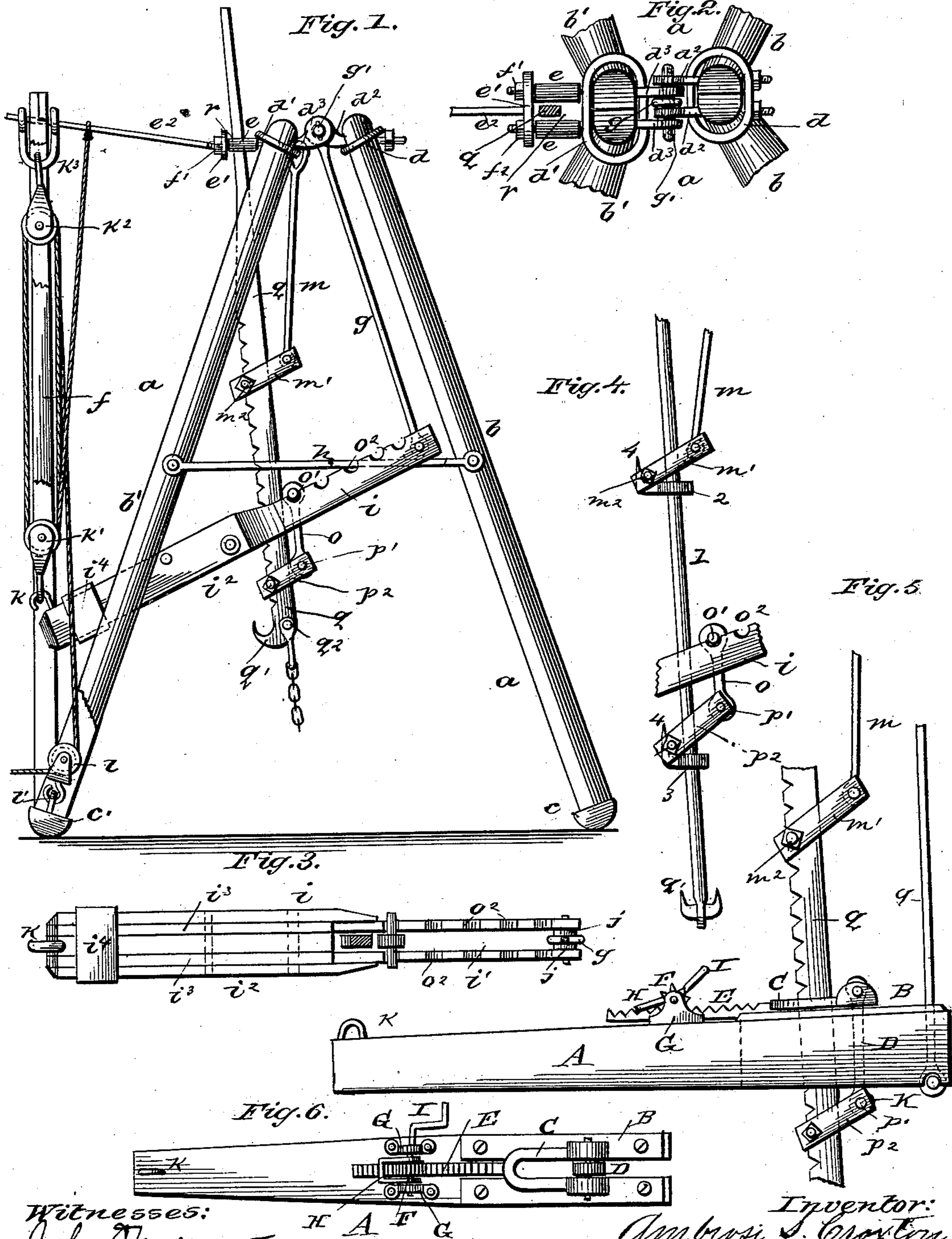
A. S. CROXTON, Dec'd.,

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STUMP EXTRACTOR.

No. 296,929.

Patented Apr. 15, 1884.



Witnesses:  
John Thorne,  
E. H. Bates

Inventor:  
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by Anderson & Smith  
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# UNITED STATES PATENT OFFICE.

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ADMINISTRATRIX OF SAID CROXTON, DECEASED.

## STUMP-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 296,929, dated April 15, 1884.

Application filed July 25, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, AMBROSE S. CROXTON, a citizen of the United States, residing at Cedar Springs, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Stump-Extractors; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a side view. Fig. 2 is a top view. Figs. 3, 4, 5, and 6 are detail views.

This invention has relation to stump-extractors; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims appended.

Referring by letter to the accompanying drawings, *a* designates the frame of the hoisting-machine, which is composed of two shears, *b* and *b'*, mounted on runners *c* *c'*, and bound near their upper ends by wire bands *d* *d'*. Eyebolts *d*<sup>2</sup> have their shanks passed through the upper ends of the arms of the shear *b* from the inside outwardly over the inner side of the band *d* and under the outer side of the same, and secured in place by nuts on the threaded ends of the shanks. The eyebolts *d*<sup>3</sup> have their shanks passed through the arms of the shear *b'* and band *d'*; but their shanks are longer, and are provided with sleeves *e*, against which a plate, *e'*, on the end of the rod *e*<sup>2</sup>, which supports the pulley-shear *f*, secured to the shear *b'*, abuts, and is held in place by nuts *f'*. The eyebolts *d*<sup>2</sup> and *d*<sup>3</sup> and the eye at the upper end of the hanger-rod *g* are hinged on a single pintle, *g'*, held in place by cross-pins passed through it at each end, thereby connecting the shears *b* and *b'* together. When the frame *a* has been hoisted to its proper elevation, brace-rods *h* *h* connect the opposite arms of the shears *b* and *b'* at points about midway of their length.

*i* designates the hoisting-lever, which is made partly of iron and partly of wood. The metal portion of this lever *i* is made from a flat bar of iron, which may be first notched

and perforated and then cut diagonally in two equal parts, as shown in the drawings, thereby forming both sides of the open portion *i'* of the lever. The wooden portion *i*<sup>2</sup> is made of planks or strips, one of which fills the space between the iron sides for a portion of their length, the others being on the outsides of the iron sides. Strips *i*<sup>3</sup>, of the same thickness as the iron bar, are let into the spaces formed by letting the tapering ends of the iron bars extend back the full length of the lever, and the parts are secured together by rivets or bolts and an encircling iron band, *i*<sup>4</sup>, near the power end of the lever. The front end of the lever *i* is pivoted to the lower end of the hanger *g*, inside washer, *j*, being employed on the pivot to prevent wear. The rear end of the lever *i* is provided with a hook, *k*, to engage the eye of the lower pulley-block, *k'*. The upper pulley-block, *k*<sup>2</sup>, is suspended from a hanger, *k*<sup>3</sup>, on the rod *e*<sup>2</sup> at the upper end of the pulley-shear. The guide-pulley *l* is hooked into a staple, *l'*, in one of the runners, as shown. A hanger-rod, *m*, made considerably shorter than the hanger-rod *g*, depends from the inner side of the band *d'*, and is provided at its lower end with a pivoted clutch-block, *m'*, consisting of two side plates and a rectangular cross-pin, *m*<sup>2</sup>, connecting their lower ends, and leaving a sufficient space between the side plates for the lifting-bar *q* to work in. A short movable hanger, *o*, having a cross-pin, *o'*, at its upper end to fit the notches *o*<sup>2</sup> in the upper edges of the side bars of the lever *i*, is provided with an eye, *p'*, in its lower end, is dropped through the space between the iron side bars of the lever *i'* until the pin rests upon the notched edges of said bars, and is provided with a pivoted clutch-block, *p*<sup>2</sup>, similar in construction to the clutch-block *m'*. The lifting-bar *q* is provided with angular notches in one of its edges, which may be cut by machinery very cheaply, and owing to their form may be made very closely together. The lower end of the lifting-bar *q* is provided with a hook, *q'*, to engage the load to be lifted, and in rear of the hook-point a hole, *q*<sup>2</sup>, is punched, to form a fastening for a chain, where one is desired to be used. The lifting-bar *q* is passed up through the lower clutch-block, *p*<sup>2</sup>, then between the iron side bars of the lever, then through the upper clutch-block, *m'*, and finally

through the guide *r*, formed by the extended shanks of the eyebolts *d*<sup>3</sup>, the sleeves *e*, and plate *e'*, this guide being intended to prevent tipping forward or swaying of the upper end of the lifting-bar *q*. When the load to be hoisted has been attached to the hook, the power end of the lever being lowered until the cross-pin *o'* of the short hanger *o* is in the lowest notches of the iron side bars—that is, the notch nearest the wooden portion of the lever—the rope is operated to lift the power end of the lever, and it may be lifted to its fullest extent. This carries the lower clutch-block, *p*<sup>2</sup>, upward, and as its rectangular cross-pin engages the lower notches of the lifting-bar *q*, the latter is moved up through clutch-block *m'* on the hanger *m*. By releasing the draft on the rope, the weight of the lever will cause its power end to descend, and at the moment it commences to descend, the clutch-block *p*<sup>2</sup>, being pivoted to the short hanger *o*, releases its bite upon the notches of the lifting-bar, and the cross-pin of the upper clutch-block, *m'*, engages them and holds the lifting-bar in the position to which it has been raised. If it is necessary to lift the weight higher, the power end of the lever should be again raised, when the pin *o'* of the short hanger *o* will be carried to the next notch in the lever, and the lifting-bar will be again moved up through the clutch-block *m'*, and thus on until the last or uppermost notch in the lever has been reached. In some instances I may use a round rod, 1, having two friction-rings, 2 and 3, each provided with an annular dog, 4. The flat bar should then be removed. The dogs 4 of the rings 2 and 3 are to engage the cross-pins of the clutch-blocks *p*<sup>2</sup> and *m'*, and the rod is to be passed up through the former, thence between the side bars of the lever, and thence through the upper friction-ring, 3, and also through the guide at the top of the frame. This construction works well and is cheaper; but the flat bar is preferable, owing to the fact that in wet weather the friction of the rings on the rod is considerable.

The lever herein described works admirably; but I have found that I can employ a construction which is more economical and works equally as well. The major portion of this lever A is of wood. It is bifurcated at its forward or weight end, and is provided with a bifurcated metal face-plate, B, on this portion, as shown in the drawings. A forked bearing, C, carries a pivoted hanger, D, at its forward end, which depends through the bifurcation in the lever A, and is provided with a rack-stem, E, which passes under a ratchet-wheel, F, working in bearings G on the top of the lever near the bifurcated plate, as shown. This ratchet has a pivoted link-pawl, H, and the shaft of the ratchet-wheel is provided with a crank, I, by which the rack and forked bearing carrying the hanger may be moved back and forth at will. When this lever is in place, its weight end is suspended from the hanger-rod *g* and its power end is connected to the

lower pulley-block, as shown for the other lever.

The lower end of the hanger D is provided with an eye, K, to which the lower clutch-block, *p*<sup>2</sup>, is pivoted, and the lifting-bar *q* is passed through the clutch-blocks, lever, and guide, as in using the other lever. The lifting-bar in this case will be run out or in by lifting the pawl and turning the crank in the desired direction. When the lifting-bar is in the desired place, the pawl may be dropped, and will lock it there. When the frame of the machine is extended before being elevated into position, it is nearly horizontal. The manner in which the shears are connected at their tops enables me to raise it into position very easily by means of the pulley-block and horse-power attached to the rope.

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

1. The combination, with the shears *b*, mounted on the runners *c*, and provided at their upper ends with the eyebolts *d*<sup>2</sup> and band *d*, of the shear *b'*, mounted on the runner *c'*, and provided at its upper end with the eyebolts *d*<sup>3</sup>, band *b'*, having projecting shanks carrying the sleeves *e*, and plate for forming the guide, and the pintle *g'*, for connecting the eyebolts *d*<sup>2</sup> *d*<sup>3</sup> and suspending the hanger-rod *g*, substantially as specified.

2. The combination, with the shears *b'* of the frame *a*, having the rod *e*<sup>2</sup>, connected to the plate *e'* of the lifting-bar guide, of the pulley-shear connected to the rod *e*<sup>2</sup> and to the shears *b'*, substantially as specified.

3. The combination, with the frame *a*, provided with the hanger-rod *g*, pivoted to the fulcrum end of the hoisting-lever, the rope and tackle for operating the power end of said lever, and the pulley-shear, of the hanger-rod *m*, provided with the pivoted clutch-block *m'*, the short hanger *o*, carrying the cross-pin *o'* at its upper end and the pivoted clutch-block *p*<sup>2</sup> at its lower end, and the notched lifting-bar *q*, provided with the hook and the perforation in its lower end, said lifting-bar passing through the clutch-blocks *p*<sup>2</sup> *m'*, the space between side bars of the lever *i*, and through the guide at the top of the frame, substantially as specified.

4. The round rod having the friction-rings and dogs, adapted to engage the clutch-blocks, the rod to pass through rings and between the iron side bars of the lever *i*, substantially as specified.

5. The bifurcated wooden lever A, having the bifurcated face-plate, in combination with the forked bearing carrying the pivoted hanger, the rack-stem, pawl and ratchet, and operating-crank, as specified.

In testimony whereof I affix my signature in presence of two witnesses.

AMBROSE S. CROXTON.

Witnesses:

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F. E. MORLEY.