

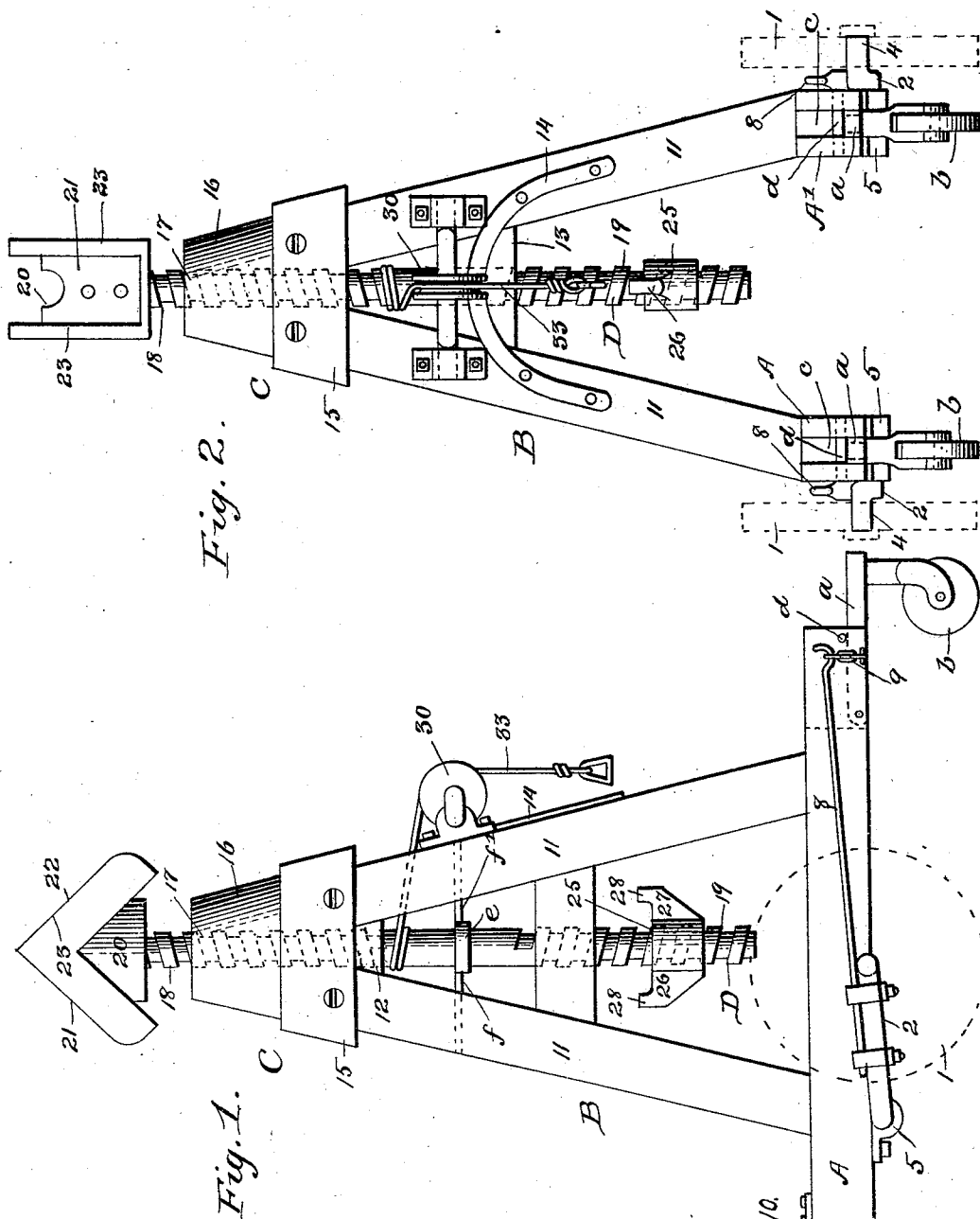
(No Model.)

2 Sheets—Sheet 1.

W. R. WILKINSON.
STUMP EXTRACTOR.

No. 521,352.

Patented June 12, 1894.



Witnesses
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Attorney

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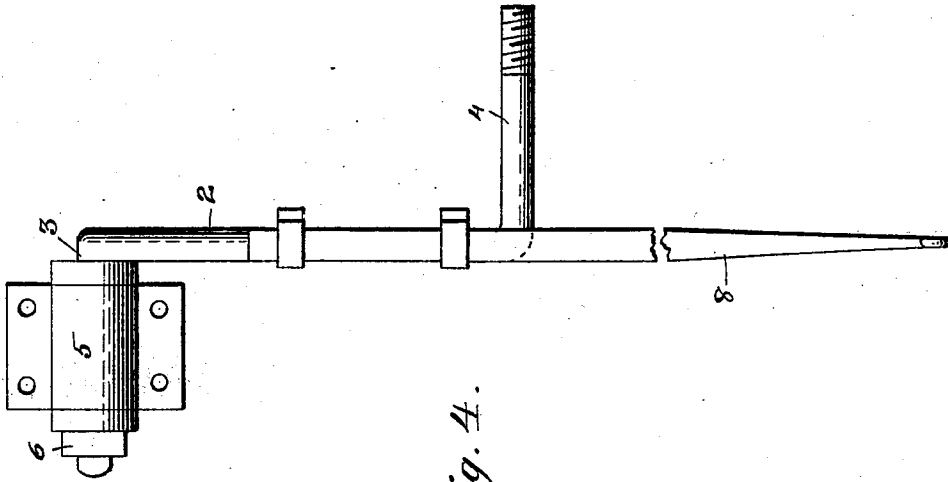


Fig. 4.

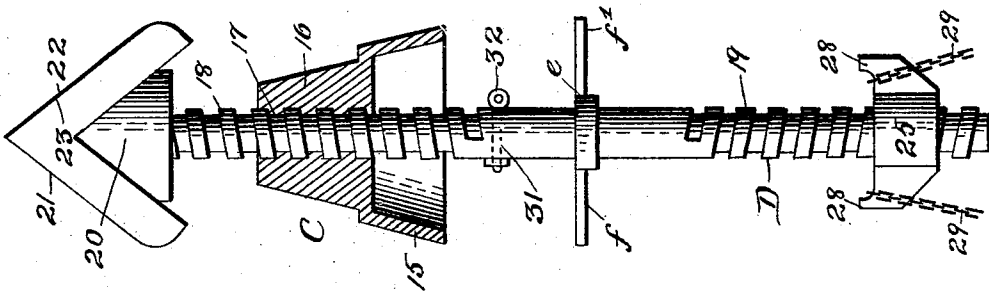


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM R. WILKINSON, OF BULLOCK COUNTY, GEORGIA.

STUMP-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 521,352, dated June 12, 1894.

Application filed November 25, 1893. Serial No. 491,938. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. WILKINSON, a citizen of the United States of America, residing in the county of Bullock, in the State of Georgia, have invented a new and useful Stump-Extractor, of which the following is a specification.

My invention has relation to improvements in stump extractors; and the object is to provide a machine for the purposes indicated, which shall be strong, convenient of operation, and durable in all its constructions and parts.

My invention consists in the novel construction of parts and their combination, as will be hereinafter described and particularly pointed out and distinctly claimed.

I have fully and clearly illustrated my invention in the accompanying drawings, and reference being had thereto—

Figure 1 is a side view of the machine. Fig. 2 is an end view showing the auxiliary hoisting mechanism. Fig. 3 is a view in detail of the screw with the cap in vertical section and the collar for steadying the screw. Fig. 4 is a detail of one of the wheel supports and attached lever removed from the carriage.

A, A', designate strong and substantial side rails or sills constituting the foundation or base on which the supports of the lifting mechanism are sustained and supported. These side rails are arranged parallel to each other, and are of such length as to properly sustain the supports from tilting or toppling when the machine is in operation.

The wheels 1, on which the machine is supported and carried during transportation, are mounted on supports or axles of particular construction, as follows:—A strong bar 2, has its end-portions 3, 4, bent at right angles to the bar in opposite directions, as shown, the part 3, being journaled or hung in a bearing 5, secured to the forward part of the respective side rails and secured against endwise displacement by a nut 6, on the projecting end, as shown. The part 4 constitutes the spindle or bearing which carries the wheel 1. On the bar 2, is fastened by clips or other suitable fastenings, a lever-bar 8, which extends to the rear of the side sill and has the end latched under a fastening 9, or any other suitable catch or chain to hold it down. By

this arrangement and construction, the machine is supported on the wheels substantially at the middle of the sills when the lever-bar is drawn down to horizontal position, as shown in Fig. 1 of the drawings; and so that when the machine is drawn over a stump the lever-bar may be released from its fastenings or hold, and raised up and the sills left free to drop down flat on the ground and the frame stand firm without weight on the wheels. The bar 2 lies along the outside of the sills and parallel therewith, free to move up and down without interfering with the sills. To one end of the sills are attached hooks or eyes 10, to connect with the bars of a tongue (not shown) by which the machine is moved along from place to place. To the rear ends of the sills are jointed bars *a*, carrying caster-wheels *b*, in their free ends. The bar *a* may lie in recesses *c*, in the sills; and to hold the bars down, pins *d*, or other suitable fastenings may be used, the object being to provide means for carrying this end of the machine, and when the machine is in operation to release the bars and let the sills down on the ground. On the side sills is mounted a pyramidal shaped frame B, composed of four strong corner posts 11, a stud-piece 12, being interposed between the upper ends on the sides as shown, and between the posts are secured cross-pieces 13, and braces 14, consisting of curved bars having the arches secured to the cross pieces 13 and the arms fastened to the posts as shown. The frame is thus amply and strongly braced.

On the top of the frame is mounted and secured a strong metal cap-piece C. This cap-piece C consists of a strong casting formed with downward projecting flanges 15, to set over and about the top of the frame, substantially as shown, and from this base or cap rises a conical portion 16, formed hollow and provided with interior screw-threads 17, to take the lifting-screw D. This lifting-screw D is provided with right and left hand screw-threads 18, 19, extending over it from its ends toward the middle a suitable distance to meet the movement required. On the upper end of the lifting-screw is secured a head-piece 20, formed with oppositely directed inclines 21, 22, having side-flanges 23, between which the upper ends of levers may be arranged as usual.

On the lower portion of the lifting-screw D is fitted a strong metal bracket having a screw-threaded hub 25, to take the lifting-screw, and formed with arms 26, 27, extending from the hub and integral therewith; the arms being turned up or hooked at the ends, as seen at 28, to take and hold grappling-chains 29, which are designed to be connected to the stump when pulled.

After the stump has been broken loose and lifted by the mechanism heretofore described, I provide auxiliary lifting-means to expedite the raising of the stump as follows:—On the posts of the machine in suitable bearings, is journaled the shaft of a pulley 30, said pulley being formed with a groove in its edge to carry a rope or chain, and in the lifting-screw is made a transverse hole 31, in which is fitted and secured an eye-bolt 32, in the eye of which is fastened one end of a rope or chain 33, led over the pulley 30 and adapted to have the free end fastened to some part of the stump or to the grappling-chains of the bracket on the lifting-screw. This mechanism operates as follows:—When the machine is arranged over the stump, the chain or rope 33 is wound around the lifting-screw so that when the screw is turned the chain 33 will be unwound and extend down to be connected to the stump or to the chains as stated, and then on reversing the rotation of the screw, the rope or chain 33, is wound up faster than the lifting-screw moves vertically, which draws the stump up faster than by the grappling-chains carried by the lifting-screw; this faster movement of the rope or chain being effected because one wind of the rope about the circumference of the screw takes up the rope a greater distance than the screw is carried vertically. It will thus be perceived, that after the rope or chain 33 has been arranged and first coiled around the lifting-screw as stated, it will always be in proper condition for the operation.

To hold the lifting-screw steady when the auxiliary lifting mechanism is being used, a collar *e*, is fitted on the lifting-screw on the unthreaded portion thereof, so that the lifting-screw may slide freely through it; the collar being provided with arms *f*, *f'*, having the ends fastened to the frame of the machine to hold the collar firmly in place. This collar serves to keep the screw from wobbling or

canting and binding when the auxiliary mechanism is in use, it tending to pull the lifting-screw forward.

By constructing the frame in the manner described and then forming the cap-piece with the depending edge-flanges to take in and set over the top of the frame, and making the conical part to take the lifting-screw, a very strong and substantial structure is provided; and by making the lifting-screw with the screw in right and left hand directions, the operation of extraction is doubly expedited, without loss of power.

The operation is as follows:—The machine being arranged over the stump, the screw is turned to lower the grappling-chains which are secured to the stump, when the opposite movement of the lifting-screw moves the bracket with the chains upward, and the stump is drawn out. After the stump has been thus lifted the chain 33 has been paid out and on connection, as heretofore stated, and the screw reversed, the chain is wound up around the lifting-screw, and the stump rapidly freed from all connection with the ground.

I have shown but one auxiliary lifting mechanism attached to the frame, but it is apparent that a similar device may be mounted on the opposite end of the machine in corresponding relation to the other mechanism.

What I claim is—

The stump extractor comprising the bottom frame, the pyramidal shaped supporting-frame, the cap-piece having the depending edge flanges to take in and set over the top of the support and formed with a conical central portion rising from the base, the right and left hand lifting-screw projected through the cone of the cap-piece, the double inclined head-piece on the lifting-screw, the bracket, chains on the bracket, the grooved-pulley mounted on the frame, and a rope on the grooved-pulley having one end fastened to the lifting-screw, substantially as and for the purpose specified.

In witness whereof I have hereto set my hand in the presence of two attesting witnesses.

WILLIAM R. WILKINSON.

Attest:

A. G. HEYLMUN,
A. L. BAILEY.