S. H. SNUFFER AND J. A. SHANKS.

STUMP PULLER AND GRUBBING APPARATUS.

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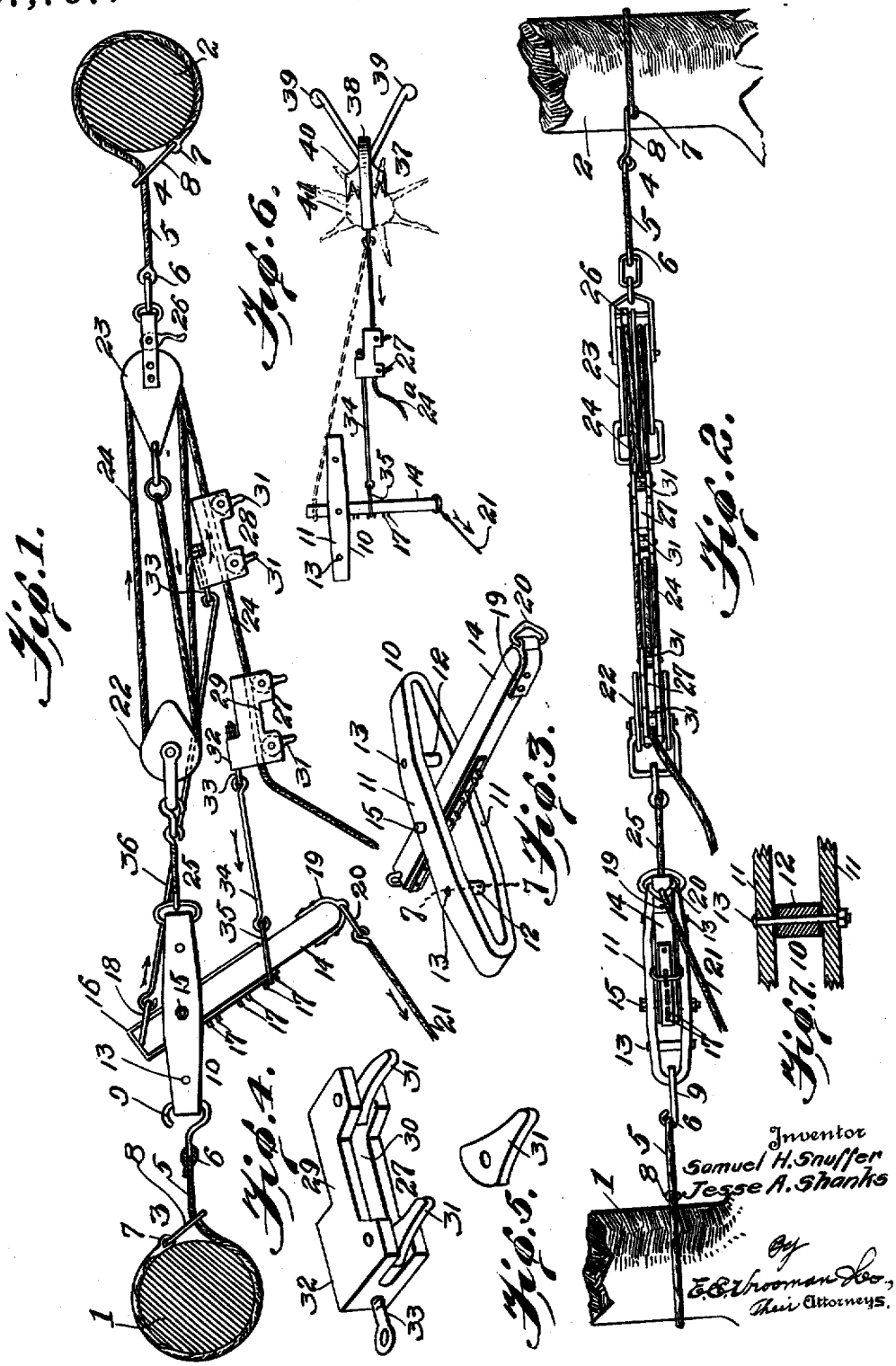


Fig. 1.

Fig. 6.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 7.

Inventor
Samuel H. Snuffer
Jesse A. Shanks

By
E. G. Siggers & Co.,
Their Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL H. SNUFFER AND JESSE A. SHANKS, OF DANIELS, WEST VIRGINIA.

STUMP-PULLER AND GRUBBING APPARATUS.

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To all whom it may concern:

Be it known that we, SAMUEL H. SNUFFER and JESSE A. SHANKS, citizens of the United States, residing at Daniels, in the county of Raleigh and State of West Virginia, have invented certain new and useful Improvements in Stump-Puller and Grubbing Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a stump puller and grubbing apparatus, and the object of the invention is the construction of a simple and efficient apparatus for the extraction of tree-trunks from the ground, and also for the removing of large stones or boulders from a field.

With this and other objects in view, our invention comprises certain novel combinations, constructions and arrangements of parts as will be hereinafter described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the drawings:

Figure 1 is a top plan view of an apparatus constructed in accordance with our invention, while

Figure 2 is a view in side elevation of the same.

Figure 3 is a perspective view of the lever and the yoke-frame of the apparatus.

Figure 4 is a perspective view of one of the gripping devices, while

Figure 5 is a perspective view of one of the cams of the gripping devices.

Figure 6 is a top plan view of another embodiment of our invention.

Figure 7 is a sectional view, taken on line 7—7, Fig. 3.

Referring to the drawings by numerals, 1 and 2 designate tree-trunks; the trunk 2 is the trunk to be extracted, or pulled, whereas trunk 1 is the anchor post, to which the apparatus is attached. A fastening device 3 is around trunk 1, and a fastening device 4 is around trunk 2; each of the fastening devices are similarly-constructed and comprise cables 5 having loops 6 at their outer ends and loops 7 at their inner ends. In loops 7 are placed links 8, through which links 8 the outer ends of the cables are threaded after the cables have been placed around the stumps. In the loops 6 of the fastening device 3 around stump 1 is placed a hook 9, and hook 9 hooks around the outer end of yoke-frame 10. The yoke-frame is formed in one piece and its sides 11 are spread further apart at their center than near their ends. Two sleeves 12 are placed between the sides 11 to brace and strengthen the yoke-frame, and extending through the sides 11 and the sleeves 12 are bolts or rivets 13, for securing the sleeves 12 in position.

The yoke-frame 10 is placed over the inner end of lever 14, and by means of a bolt 15, the lever is pivotally mounted within the frame between the sleeves 12. A U-shaped strap-iron 16 is placed over the inner end of the lever and this U-iron is provided with sets of anchor studs 17, upon the outer face of the iron. A link 18 is positioned upon the inner end of the lever 14, under the outer end of iron 16. On the outer end of the lever is an auxiliary strap-iron 19, to which is secured link 20. To link 20 is attached hauling cable 21.

Pulley blocks 22 and 23 are employed, and threaded through the pulley blocks is a cable 24. Pulley block 22 is attached to the outer end of the yoke-frame 10 by suitable connecting means 25, and pulley block 23 is connected to the loop 6 of the fastening device around stump 2, by suitable connecting means 26.

On the outer end of primary cable 24 are placed similarly-constructed gripping devices 27 and 28. Each gripping device comprises an elongated body 29 having a slot 30 therein in which the cable 24 is placed, under the pair of pivotally mounted cams 31. An extension 32 is formed upon each body 29, and extending longitudinally of this extension is eye-bolt 33. A short connecting rod 34 is fastened at one end of the eye-bolt 33 of the gripping device 27 and at its other end it is fastened to link 35, which link is adapted to be seated in the studs 17 of one pair on the strap-iron 16; by moving the link 35 to a seated position in the different pairs of studs, a greater or less leverage can be secured when drawing the cable through the pulley blocks.

A long connecting rod 36 is connected at its outer end to link 18, and at its inner end is connected to the eye-bolt 33 of the gripping device 28. The purpose of the gripping device 27 is to grip and hold the cable while the lever is swung at its outer end toward the stump 1, for drawing the cable

through the pulley blocks and pulling or uprooting stump 2, and while the gripping device 27 is gripping the cable, the other gripping device 28, through the rod 36 shoving outwardly thereon, will slide forward upon the cable 24, toward stump 2, so that as soon as strain is taken off of gripping device 27, or possibly put the gripping device along the cable 24, prior to pulling again on the cable, the gripping device 28 will take hold and fasten, preventing lost motion or backward slipping of the cables, through the pulley blocks 22 and 23.

We have found by experience that we can efficiently pull or uproot stumps by using our apparatus, and can also remove large stones or boulders from a field, as well as haul scoops of dirt out of an excavation; then, also, we can quickly remove motor vehicles from a mired condition in a roadway, or other places.

In the embodiment shown in Fig. 6, the yoke-frame 10 is used, together with lever 14, as well as rod 34 and gripping device 27. The cable 24ª is threaded through the gripping device 27 and is attached at its inner end to the plow-like device 37 which includes a beam 38, handles 39 and a toothed blade 40; the toothed blade 40 is adapted to be placed under an object to be moved, or removed, as at 41 (dotted lines), and upon drawing on cable 21 the lever will be swung outwardly, causing the device 37 to quickly uproot, or move along over the field an object against which the blade 40 is pressing.

While we have described the preferred embodiments of our invention, and have illustrated the same in the accompanying drawings, certain minor changes or alterations may appear to one skilled in the art to which this invention relates, during the extensive manufacture of the same and we, therefore, reserve the right to make such alterations or changes as shall fairly fall within the scope of the appended claims.

What we claim is:

1. In an apparatus of the class described, the combination of a pair of fastening devices, a yoke-frame attached to one of said fastening devices, a lever pivotally mounted within said frame, pulley blocks provided with a cable connected to the other fastening device, gripping devices on said cable, means fixedly connecting one of the gripping devices to one end of said lever, and means adjustably connecting the other gripping device to the lever intermediate its ends.

2. In an apparatus of the class described, the combination of fastening devices, a yoke-frame connected to one of the fastening devices, said yoke-frame comprising integral sides spaced a greater distance apart at their center than near their ends, sleeves between the sides of the yoke-frame near their ends, fastening means extending through the sides and through the sleeves, a lever pivotally mounted within the yoke-frame between the sleeves, a cable provided with a pair of pulley blocks thereon attached to the other fastening device, gripping devices on said cable, and means separately connecting the gripping devices to said lever.

3. In an apparatus of the class described, the combination of a yoke-frame, a lever pivotally mounted between the sides of the yoke-frame, a substantially U-shaped strap-iron on the inner end of said lever, said strap-iron provided with pairs of anchoring studs on one side, a cable provided with pulley blocks thereon, gripping devices on said cable, means permanently connecting one of the gripping devices to the lever under the strap-iron, means adjustably connecting the other gripping device to the lever between the studs of either set, means connecting the yoke-frame to an object, and means for connecting one of the pulley blocks to an object.

4. In an apparatus of the class described, the combination with a pair of fastening devices, of a frame connected to one of said fastening devices, a lever pivotally connected to said frame, a cable provided with pulley blocks, gripping devices on said cable, each gripping device comprising a body having a cable-receiving slot therein, cable-engaging cams on said body, an extension on said body, an eye-bolt in said extension, means connecting the eye-bolts of the gripping devices to said lever, means connecting one of the pulley blocks to said frame, and means connecting the other pulley block to the other fastening device.

5. In an apparatus of the class described, the combination with a pair of fastening devices, of a frame connected to one of the fastening devices, a cable provided with pulley blocks thereon, means attaching one of the pulley blocks to the frame, means attaching the other pulley block to the other fastening device, a lever pivotally mounted on said frame, gripping devices on said cable, each gripping device comprising a body with a longitudinally-extending cable slot therein, a pair of pivoted cams on said body, said body provided with an extension, an eye-bolt in said extension and parallel with the longitudinal axis of the body, connecting rods attached to said eye-bolts, and links on the connecting rods and attaching said rods to said lever.

6. In an apparatus of the class described, the combination with a pair of fastening devices, of a frame secured to one of the fastening devices, a lever pivotally connected to the frame, a cable provided with pulley blocks, means connecting one of the pulley blocks to the other fastening device, gripping devices on said cable, means permanently connecting one of the gripping devices to said lever, and means connecting the

other gripping device independently to said lever, whereby when the lever is moved in one direction one of the gripping devices will draw on the cable and the other gripping device will move freely along the cable to a new gripping position whereby when pulling strain upon one gripping device is removed the other gripping device will lock the cable preventing back sliding of the cable through the pulley blocks.

In testimony whereof we hereunto affix our signatures.

SAMUEL H. SNUFFER.
JESSE A. SHANKS.