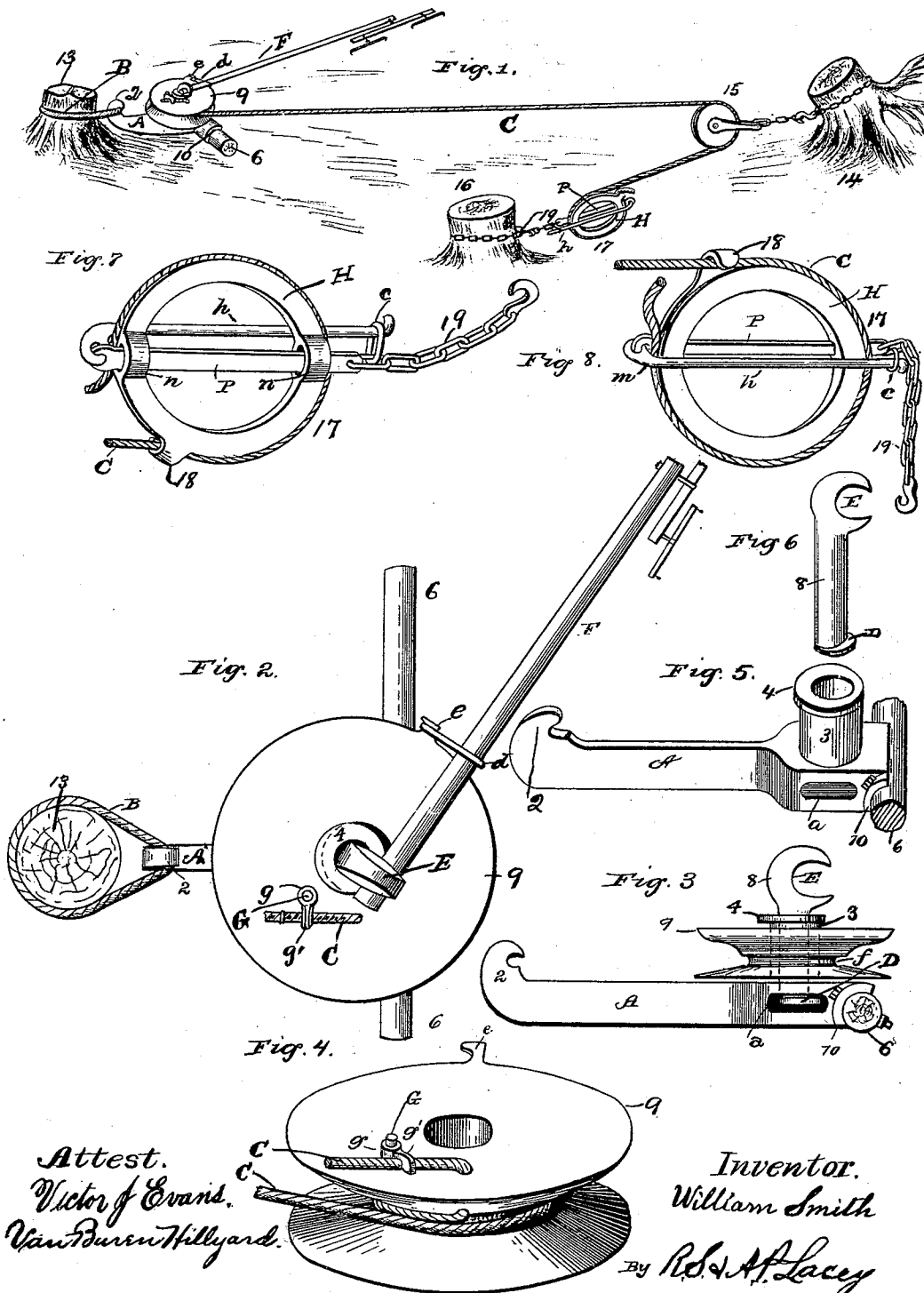


(No Model.)

W. SMITH.  
STUMP PULLER.

No. 449,596.

Patented Mar. 31, 1891.



# UNITED STATES PATENT OFFICE.

WILLIAM SMITH, OF MYSTIC, IOWA.

## STUMP-PULLER.

SPECIFICATION forming part of Letters Patent No. 449,596, dated March 31, 1891.

Application filed April 7, 1890. Serial No. 346,954. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM SMITH, a citizen of the United States, residing at Mystic, in the county of Appanoose and State of Iowa, have invented certain new and useful Improvements in Stump-Pullers; and I do hereby 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.

This invention relates to stump-pullers or grubbing-machines, and is especially designed as an improvement on Patent No. 352,370, and has for its object to improve the general construction of the machine, reduce the number of parts, and increase its efficiency and durability.

The improvement consists of the novel features which hereinafter will be more fully described and claimed, and which are shown in the accompanying drawings, in which—

Figure 1 is a perspective view showing the application of the invention. Fig. 2 is a plan view of the device. Fig. 3 is a side view of the device. Fig. 4 is a perspective view of the windlass. Fig. 5 is a perspective view of the platform. Fig. 6 is a perspective view of the sweep-rest. Figs. 7 and 8 are plan views of the reverse and obverse sides of the rope-grab.

The platform A, of cast metal, has cross-flanges 10 at one end, to which a cross-pole 6 is bolted to hold the machine steady while in operation. This cross-pole 6 is much stronger than a plank, and when broken can be replaced by cutting one from the timber when the machine is at work, and avoid the time and expense of going to a lumber-yard for a plank. The rear end of this platform is provided with a hook 2, to be engaged by the anchoring-rope B, which secures it to a stump 13. On the front end of platform and extending upward is a tubular standard or stub-shaft 3 for the windlass 9 to revolve on. The top of this tubular stub-shaft is formed into an eccentric flange 4, which extends backward toward the anchor. The windlass is mounted on the stub-shaft, and is held thereon while in operation by the flange 4 extending over the said windlass as the latter is pulled forward by the strain on the rope C.

The sweep-rest 8 is provided with eccentric

flange D at its lower end, and with recessed head E at its upper end and is journaled in the stub-shaft 3, being held therein by the flange D projecting beyond the sides of the bore and extending into the recess *a* in the platform A. The inner end of the sweep F rests in the recess of head E, and the link *d*, embracing the sweep some distance from the rest 8, is thrown over lug *e* on the edge of the windlass and holds the said sweep in position.

The windlass 9 has a small groove *f* in its periphery to receive the first coil of rope C, the end of which passes up through the upper flange of the windlass. The slack rope is pulled up through the opening in the upper flange. Then as the windlass revolves and as the first coil of the rope passes over that part of the rope going up through a hole in flange the pressure of the rope crowds the rope under it into the groove *f* and firmly holds the rope on the windlass. Otherwise without this take-up in the flange one would be obliged to first wind all the slack rope onto the windlass before making a pull, and by filling the spool before making a pull the power would be decreased—a serious objection to all machines of this class now in use. In making this hole in the upper flange for the take-up and clutch to hold the rope the hole through the lower part of the flange must fit the rope and the groove *f* around the spool, for the first coil must also fit the rope, and it is also necessary to have the arrangement on the top of the spool to properly hold the end of the rope down in place until the first revolution of the spool is made to bring on the first coil. This arrangement consists of a stud G, which projects vertically, and a ring *g* to slide down on the stud. One side of the ring is formed into a hook *g'*, which is pressed down on and over the rope, and the harder the pressure upon the outward end of the hook the more firmly the ring binds on the stud, and will not rise unless it is lifted by the ring directly upon the stud, its own friction holding it down.

This machine is anchored to a stump or stake 13, as shown, the spool is placed down over the stub-shaft, and the lever-rest 8 is placed down inside the said stub-shaft and the lever is placed in the rest on top of the spool and is held in place by the link *d*. The

rope C extends from the windlass and passes over a pulley 15, attached to a stump 14 to be pulled, and thence to the grab 17, which is fastened with a chain to the other anchor-stump at 16. This rope-grab consists of a circular sheave H, with a groove around its outside rim for the rope to run in and having an open center with a hook 18. The rope is placed under the hook 18 and then around the sheave in the groove, and then clamped down under the hinge of the fly-hook *h* at *m*. This fly-hook *h* is hinged to a bar P, which slides in slots in through the sheave at *n*, and is brought down over the rope fastened with a link *c* to the hitching-chain 19 at the opposite side of the sheave. It will be noticed that the sheave slides on the shank of the hook, and under a heavy pull the sheave presses down sufficiently hard on the rope to hold it firmly.

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

1. The combination, with the platform having tubular stub-shaft 3, of the windlass mounted on said shaft, and the rest 8, inserted within the said shaft, substantially as set forth.
2. The combination, with the platform having the tubular stub-shaft 3, of the windlass mounted on said shaft, the sweep-rest having eccentric flange D inserted in the said shaft, the sweep, and the link connecting the sweep with the windlass, substantially as described.
3. The combination, with the platform having shaft 3, of the windlass having groove *f*

and having an opening through its flange leading from the said groove *f*, substantially as set forth.

4. The combination, with the windlass, of the stud G and the ring *g*, mounted thereon and having hook *g'*, substantially as set forth.

5. The herein-described rope-grab, comprising a grooved sheave having hook 18, the bar P, passing through openings in diametrically-opposite sides of the sheave, and the fly-link *h*, substantially as described.

6. The combination, with the grooved sheave having slots *n n*, of the bar P passed through the said slots, and the fly-link hinged at one end to the bar P and having its other end held to bar P by the link *c*, substantially as set forth.

7. The hereinbefore-described stump-puller, composed of the platform having hook 2, flanges 10, recess *a*, and tubular stub-shaft 3, the cross-pole bolted to flanges 10, the windlass mounted on the stub-shaft and having groove *f* to receive the first coil of the rope and an opening in its flange, and having stud G and hooked rings *g g'*, the sweep-rest 8, having eccentric flange D and recessed head E inserted in the said stub-shaft, and sweep F, having its inner end placed in the recess in the head E and held to the windlass by link *d*, substantially as described.

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

WILLIAM SMITH.

Witnesses:

GEO. F. SEVERS,  
S. S. COLE.