

L. W. FREDERICK.
Stump-Puller.

No. 218,725.

Patented Aug. 19, 1879.

Fig. 1.

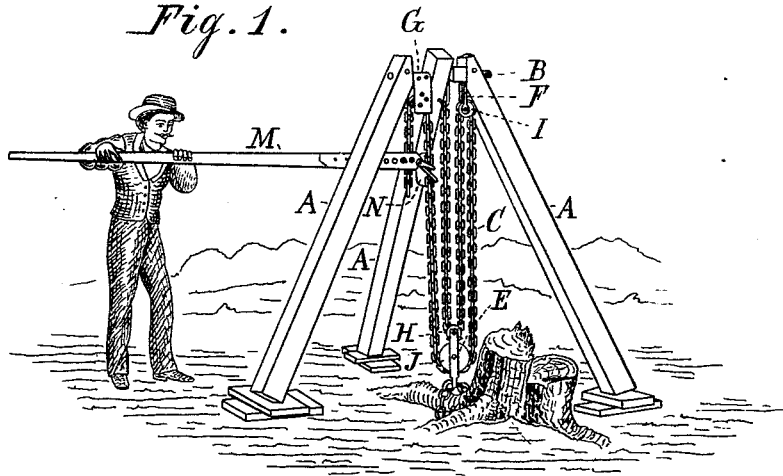
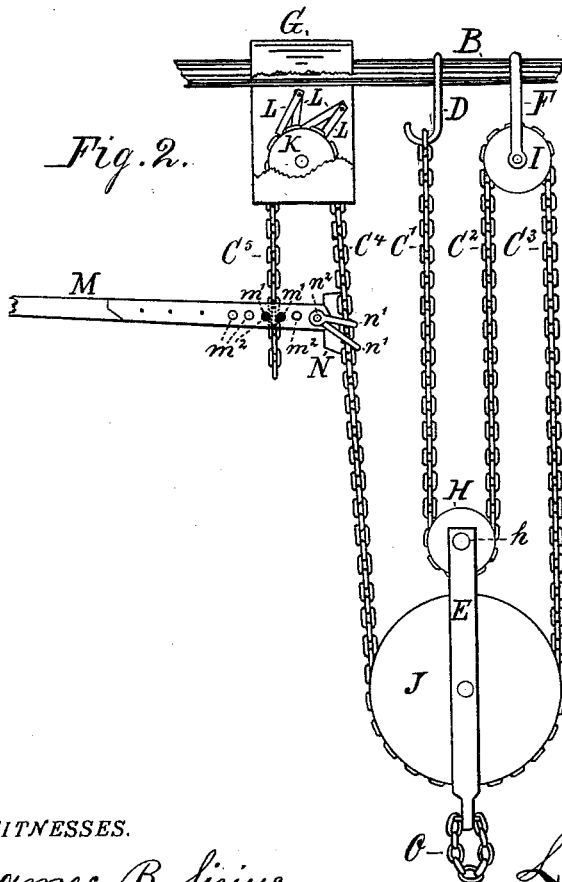


Fig. 2.



WITNESSES.

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LEVI W. FREDERICK, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO ROBERT S. DORSEY AND MICHAEL E. BUNGER, OF SAME PLACE, ONE-FOURTH TO EACH.

IMPROVEMENT IN STUMP-PULLERS.

Specification forming part of Letters Patent No. **218,725**, dated August 19, 1879; application filed January 16, 1879.

To all whom it may concern:

Be it known that I, LEVI W. FREDERICK, of the city of Indianapolis, county of Marion, and State of Indiana, have invented certain new and useful Improvements in Stump-Pullers, of which the following is a specification, reference being had to the accompanying drawings, which are made part hereof, and on which similar letters of reference indicate similar parts.

Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a side elevation of the working parts or mechanism thereof on a larger scale, and which shows, by means of dotted lines and the breaking away of parts, some of the details more plainly.

In said drawings, those portions marked A represent the legs of the machine; that marked B, the bar which connects the legs and supports the mechanism; C, the main chain, for which a rope or wire cable would be obvious equivalents; D, the hook upon which the stationary end of the chain is hung; E, F, and G, stirrups which contain pulleys over which the chain runs; H, I, J, and K, the pulleys aforesaid; L, dogs located in the stirrup G, to prevent the chain from slipping back after having been pulled up by the action of the lever; M, a lever by which the machine is operated; N, an iron block pivoted to the end of the lever, and slotted to fit against the strand of chain C⁴, which it clasps by means of clevises; and O, the chain which is attached to the stump or other thing which is to be pulled or lifted from its place.

In operation, my machine, after having been properly set up over the object to be lifted, is attached thereto by passing the chain O through the stirrup E and properly fastening it to said object. The lever M, which is divided or forked at the end, is then placed in position, with the strand of chain C⁵ between the forks, and secured thereto by the pins $m^1 m^1$, which pass through the holes $m^2 m^2$ in the forked end of the lever. The block N and its clevises $n^1 n^1$ are then placed upon the strand of chain C⁴, and secured to the point of the lever by the pin or bolt n^2 . Everything being in readiness,

the outer end of the lever M is raised, and the block N slipped down the strand of chain C⁴, which the clevises n^1 gripe and hold. The outer end of the lever is then pressed down, which has the double effect of pulling upwardly on the strand C⁴ and downwardly on the strand C⁵, thus giving twice the leverage obtained where a solid fulcrum is used. This operation is repeated until the lever has reached a point too low to be handily worked, when one of the pins m^1 is taken out, the lever raised up, and the pin replaced, when the machine is again ready to proceed. This repetition, however, will usually only be found necessary when it is desired to raise the stump a considerable distance from the ground.

A considerable number of the holes m^2 are usually provided, in order that the leverage may be changed to suit the load to be lifted, which is accomplished by moving the pins m^1 from one to the other of said holes.

I have adopted for the chain C an arrangement which simplifies the working of the machine and lessens the friction which would otherwise attend it. Commencing at the hook D, it passes down and under the pulley H, then up over the pulley I, which is to one side of the hook D, then down again and under the pulley J, which is hung in the same stirrup or casing with and directly under the pulley H, whence it again goes up and over the pulley K, which is on the opposite side of the hook D from that on which the pulley I is located. This arrangement brings all of the strands of the chain into a direct line with each other, and prevents any possibility of their becoming twisted or crossed while being applied or used.

In case of comparatively light work, where the full power of the machine is not needed, the pulley H can be removed, and the end of the chain C can be attached to the axle h instead of to the hook D. I preferably pass the chain O directly over the bottom part of the stirrup E, and thus bring the machine close to its work, as this machine, not being liable to have its chain become twisted, needs no swivel between it and the object to be lifted.

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

1. The combination, with an upwardly and a downwardly moving strand of chain, or their equivalent, of a lever attached to and operating upon both, substantially as shown and specified.

2. The combination of the lever M, having block N, with clevises attached thereto, with the chain C⁴, substantially as shown and specified.

3. The combination of the forked lever M, having holes m², and provided with pins m¹, with the chain C⁵, substantially as shown and specified.

4. The combination of the stirrup G, contain-

ing pulley K and dogs L, with the chain C, substantially as shown and specified.

5. The combination of the lever M with the chain C, said lever being attached to the strand C³ of said chain in any suitable manner, and operating to draw upward upon the strand C⁴ by means of the block N and its clevises, substantially as shown and specified.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 14th day of January, A. D. 1879.

LEVI W. FREDERICK. [L. S.]

In presence of—

C. BRADFORD,

J. C. PEARSON.