J. D. SMITH.
Stump-Puller.

No. 201,297. Patented March 12, 1878.

Fig. 1.

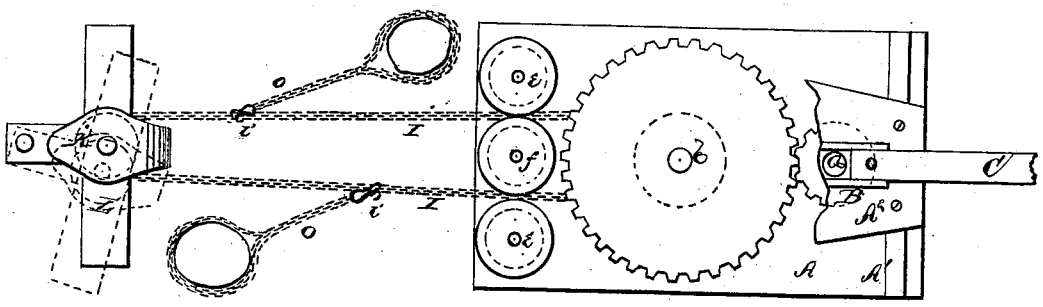


Fig. 3.

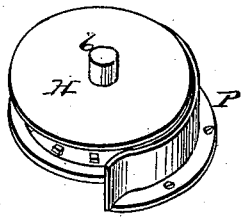


Fig. 2.

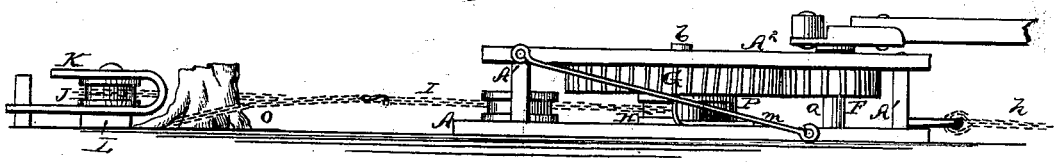


Fig. 4.

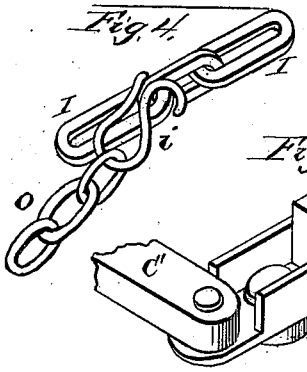
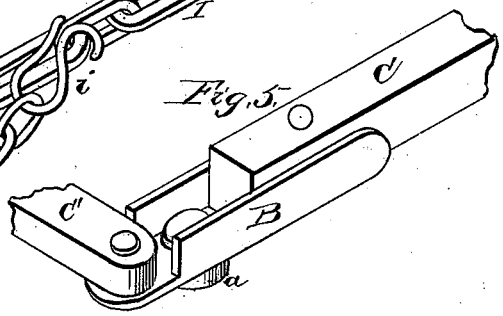


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH D. SMITH, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN STUMP-PULLERS.

Specification forming part of Letters Patent No. **201,297**, dated March 12, 1878; application filed February 14, 1878.

To all whom it may concern:

Be it known that I, JOSEPH D. SMITH, of Rockford, State of Illinois, have invented certain new and useful Improvements in Stump-Pullers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

The nature of my invention consists in the construction and arrangement of a stump-puller, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view with the plate A^2 removed. Fig. 2 is a side elevation, and Figs. 3, 4, and 5 are detail views of parts thereof.

The frame of my machine is constructed of a bed-piece or platform, A, with two top cross-bars, A^1 A^1, upon which is secured a cap or top plate, A^2. In this frame are two upright shafts, *a b*, suitably journaled in the bed and cap. The shaft *a* extends a suitable distance above the cap A^2, and to this projecting end is secured a flanged casting, B. Between the flanges to this casting is secured the sweep C, having at its outer end a pivoted clevis, to which the single-tree is connected. To the other end of the casting B is pivoted a bar, C′, the outer end of which is to be connected to the collar of the horse. On the shaft *a*, within the frame, is secured a cog-wheel, F, which meshes with a larger cog-wheel, G, secured on the shaft *b*. To this latter shaft, below the cog-wheel G, is also secured a sprocket-wheel, H, around which is passed an endless chain, I, of suitable length and strength. This chain passes, at the front end of the frame, on opposite sides of a large guide-pulley, *f*, and between it and a smaller guide-pulley, *e*, on each side. The endless chain I passes around a pulley, J, mounted in a frame, K, which is secured to a bar, L, as shown.

In operation the frame is to be anchored firmly by a chain, *h*, or other suitable means, from its rear end to the ground in any convenient manner. In like manner the pulley-frame K is to be anchored to the ground, as shown.

O O represent smaller chains, which are placed around the stumps to be pulled, and said chains are provided with hooks *i i*, to be connected to the endless chain *i* in any of the links thereof.

Now, by starting the horse, the stumps (one or more) are easily pulled out.

It will be readily seen that I may attach as many of the chains O to the endless chain I as occasion may require, and all will be operated at one time. I can make the horse go in either direction by throwing the bar C′ to either side. In pulling the bar L with the pulley and pulley-frame it swings to either side, according to the strain. When all the stumps adjacent to the chain I have been pulled the machine can be turned in any direction to the right or left by means of its chain, by simply removing the pulley-block from its position, and by reanchoring said block in another place the work can go on, and continue so in a complete circle.

The main frame is strengthened by diagonal side braces *m*, as shown.

I am fully aware that a stump-puller was patented September 25, 1877, No. 195,438, in which the main frame is anchored to the ground so as to be swung around in a circle; but in such case as known to me no endless chain is used, and no anchored pulley frame and block. In the Patent No. 195,438 referred to the pulleys are used to pay out the slack end of the chain.

By my invention the machine is ready at all times for work, without necessity of turning the windlass so as to bring one or the other end of the chain to a certain point. If occasion should require, stumps can be pulled at the same time from opposite directions.

Around the back of the sprocket-wheel H is placed a shield or guard, P, secured to the bed A, which shield protects the chain in such a manner that, if it should break, it will not fly away from the wheel, but remain in contact therewith.

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

1. In a stump-puller, the combination of a

frame carrying the windlass or gears, a sprocket-wheel, an endless chain, and a separate pulley with pulley-frame, said main frame and pulley-frame being anchored to the ground, substantially as herein set forth.

2. The combination of the main frame, the shafts *a b*, casting B, with sweep C and pivoted bar C′, gear-wheels F G, sprocket-wheel H, pulleys *e f*, endless chain I, the short chains O, with hooks *i*, and the pulley J, with frame K and bar L, all constructed substantially as and for the purposes herein set forth.

3. The shield or guard P, in combination with the endless chain I and the sprocket-wheel H, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JOSEPH D. SMITH.

Witnesses:
FRANK GALT,
W. C. MCARTHUR.