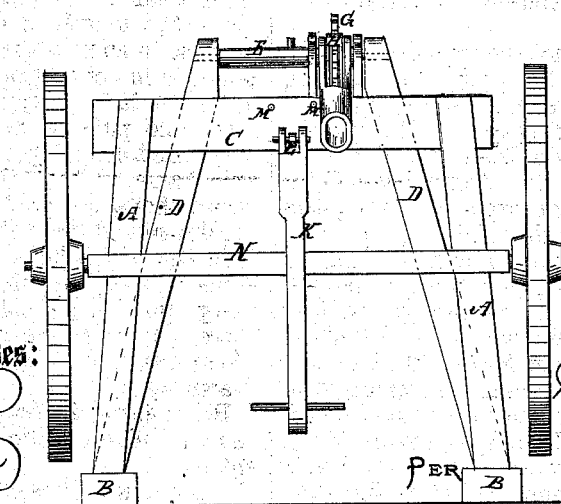
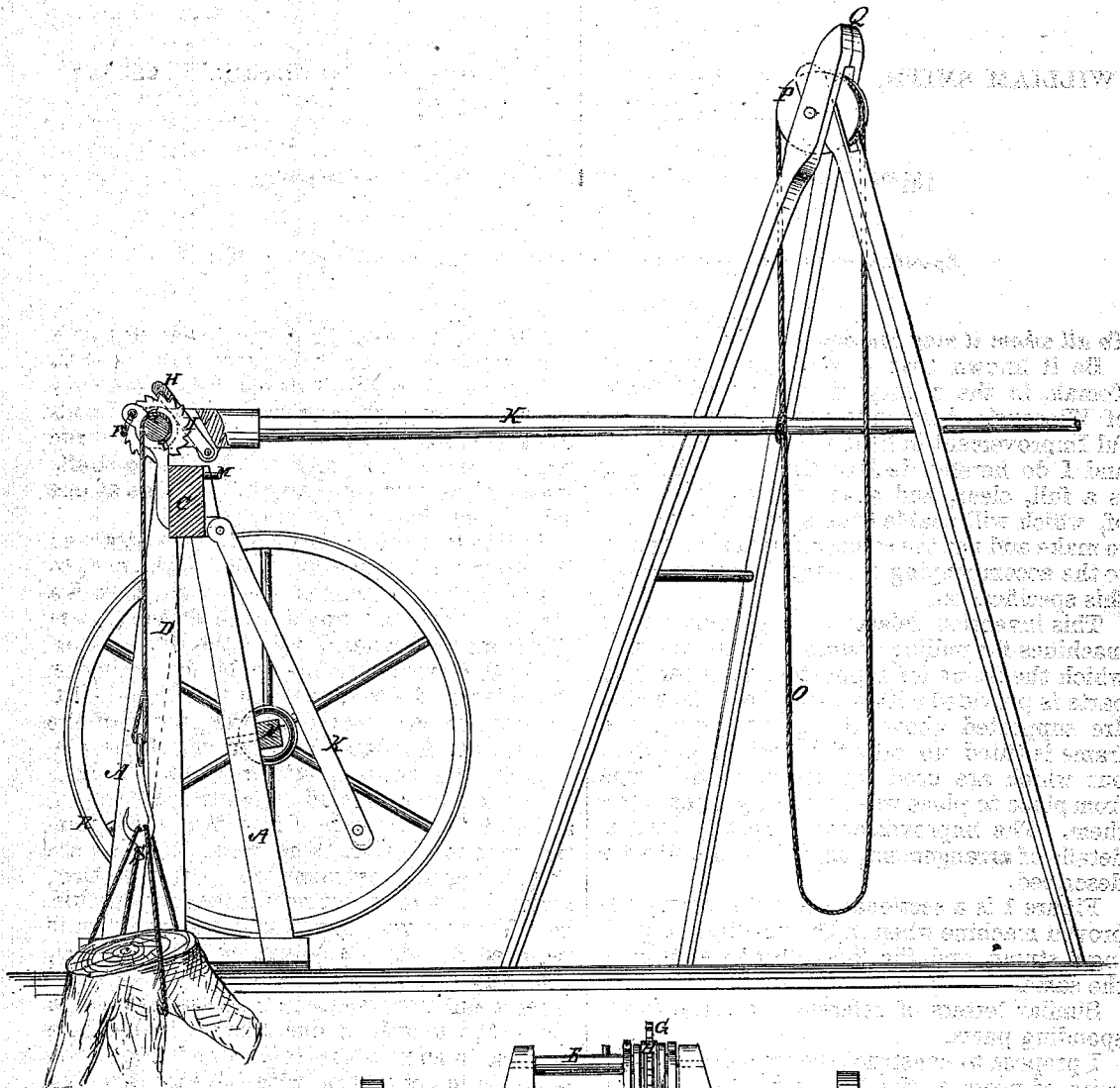


WILLIAM SMITH.

Improvement in Stump-Pulling Machines.

No. 115,125.

Patented May 23, 1871.



Witnesses:

Chas. Nida  
G. J. Hooper

Inventor:

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# UNITED STATES PATENT OFFICE.

WILLIAM SMITH, OF TOMAH, WISCONSIN, ASSIGNOR TO HIMSELF AND H. GREVE, OF SAME PLACE.

## IMPROVEMENT IN STUMP-PULLING MACHINES.

Specification forming part of Letters Patent No. 115,125, dated May 23, 1871.

*To all whom it may concern:*

Be it known that I, WILLIAM SMITH, of Tomah, in the county of Monroe and State of Wisconsin, have invented a new and useful Improvement in Stump-Pulling Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in machines for pulling stumps, of that class in which the frame for supporting the operating parts is provided with a pair of wheels, which are supported above the ground when the frame is tilted up into the working position, but which are used for carrying the frame from place to place when properly adjusted on them. The improvements consist in various details of arrangement, as will be hereinafter described.

Figure 1 is a sectional elevation of my improved machine when in the position for pulling a stump, and Fig. 2 is a front elevation of the same.

Similar letters of reference indicate corresponding parts.

I propose to construct the frame of the two pairs of posts A, the bed-pieces B, beam C, and the two high posts D, arranging them all as shown, the pairs of posts A being mainly to brace the frame in the front and rear directions, and to support the strong beam C for the front and rearward support of the posts D, which brace each other in the opposite directions mainly, but are braced that way to some extent also by the said beam. The upper ends of the posts D are brought as near together as will be admitted when sufficient space is left between them for the lifting-chains and the ratchet mechanism for turning the winding-up shaft E, which is mounted in the upper ends of the said posts, as shown, which shaft is made as short as possible, so that it will not spring too much between the bearings. In this example I have provided the yoke F for the holder of the ratchet-wheel G in place of the pawls commonly used, and I make use of a link-shaped pawl, H, loosely

pivoted to the lever K at the lower side of a wide slot, I, through it for turning the ratchet.

These devices are made use of because they are sure to engage the ratchet-wheel, no matter how much it may be moved out of its true plane by the springing of the lifting-shaft; whereas the common pawls will escape at one side or the other of the said wheel.

In this improved machine I have attached the tongue K', which has a slot in the end, to the beam C by means of an eyebolt, L, and a pin, and near the upper edge of said beam (the front edge when down on the wheels) I arrange the projecting pieces M for acting on the sides of the tongue when the frame is tilted down to be drawn along the ground on the wheels, so that lateral vibration will be prevented. I propose to attach the axle N rigidly to the frame instead of jointing it thereto, as heretofore, whereby I find that the operation is much better, there being in this case no shaking or movement of one on the other, which I find it is not necessary there should be. When a very great amount of power is required, for which a long lever must be used, it is very difficult for one person to move the lever a sufficient distance to cause the pawl to move the length of one tooth. I therefore propose to employ the rope O and suspended pulley P in connection with the said lever for operating it, the rope being attached to the lever and passing over the pulley, which is suspended on a tripod, Q, or other light suitable frame, so that the lever may be readily raised above the reach of the operator by pulling downward on the rope. I propose to provide the lifting-hook R with the broad dart-shaped point S, so that it may be driven into the ground by the side of the stump or roots thereof, to carry the point of the hook under the said stumps or roots to engage them when drawn up.

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

1. The two pairs of posts A, bed-pieces B, and beam C, combined, as described, with high inclined posts D, for the purpose of making the latter brace the frame and counter-brace each other.

2. The ratchet-wheel G, slotted lever I K, and link-shaped pawl H, combined, as described, with the ratchet, for the purpose of insuring the operation of the latter no matter in what plane it may be thrown by the springing of the lifting-shaft.

3. The combination, with the lifting mechanism of a stump-extractor, of a hook, R, having the dart-shaped point S, for the purpose described.

4. In a stump-extractor, the pivoted tongue K' combined with the main beam C M M, as and for the purpose described.

WILLIAM SMITH.

Witnesses:

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