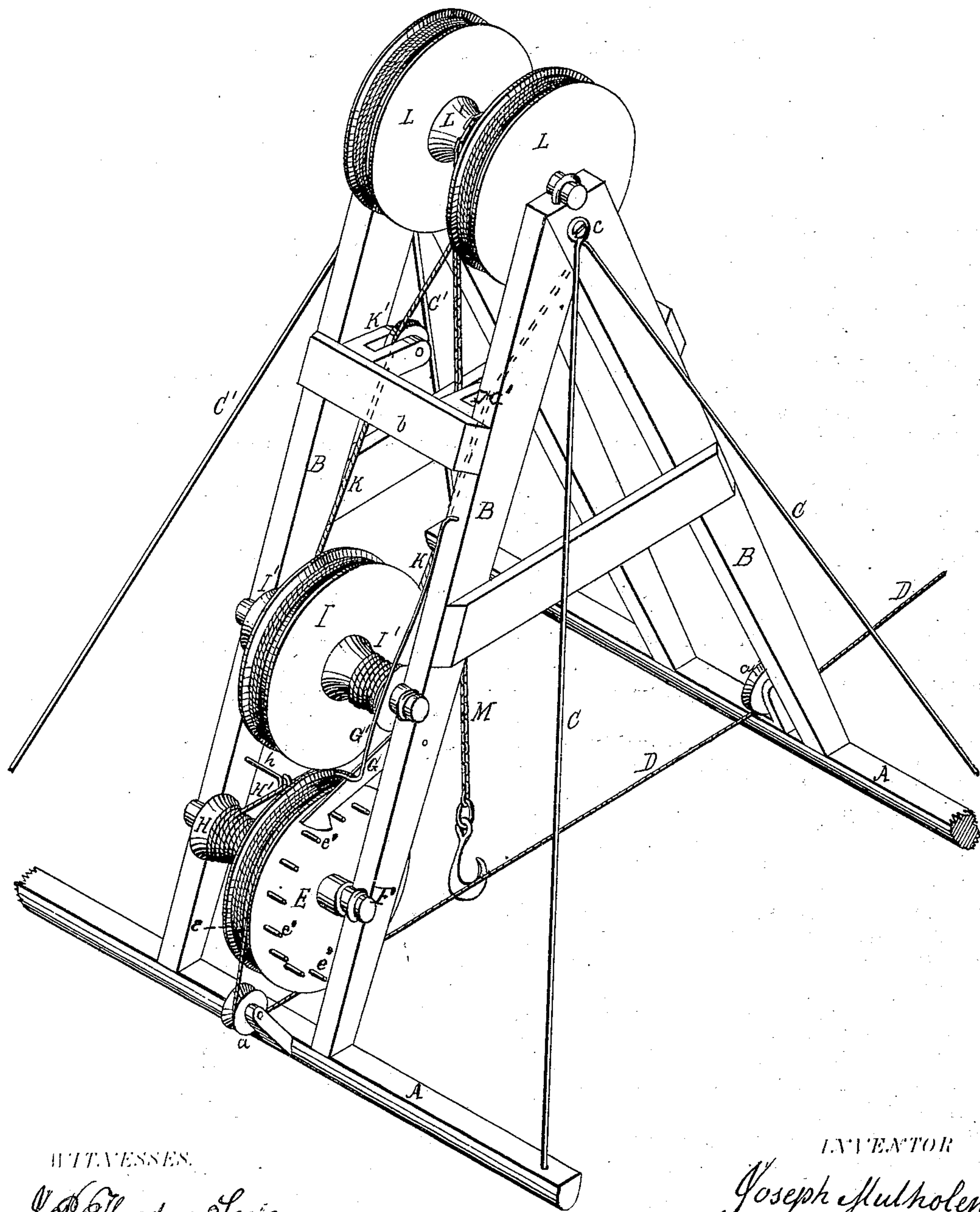


J. S. MULHOLEN.  
Stump-Extractors.

No. 153,719.

Patented Aug. 4, 1874.



WITNESSES.

J. P. Theodore Lang  
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By

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# UNITED STATES PATENT OFFICE.

JOSEPH S. MULHOLEN, OF TIPTON, PENNSYLVANIA.

## IMPROVEMENT IN STUMP-EXTRACTORS.

Specification forming part of Letters Patent No. **153,719**, dated August 4, 1874; application filed April 16, 1874.

*To all whom it may concern:*

Be it known that I, JOSEPH S. MULHOLEN, of Tipton, in the county of Blair and in the State of Pennsylvania, have invented certain new and useful Improvements in Stump-Extractor; and 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, making a part of this specification.

My invention relates to stump-extractors; and it consists of a double triangular frame with diagonal brace-rods and rope pulleys of improved construction and arrangement, whereby the strain upon the frame is equally distributed to both sides, the power of the extracting rope or chain diminished and its speed increased in the same degree as the extracted stump lessens its resistance to the said operation.

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 drawings, in which my improved stump-extractor is represented by a perspective view.

A represents the sills, which support the two triangular frames B. A rod, C, is fastened with its ends to the ends of the sills A, and bent in the middle of its length into a loop, which is the means of fastening it to the frame, by aid of a screw or bolt, c. Another rod, c', of similar construction, is in the same manner fastened to the other side of the sills and frame. The sills are provided with guide-rollers a between the frames B, over which the rope D is passed, to one end of which a team may be attached, while the other end is wound upon a pulley, E, with a shallow, slightly-curved groove, e. The face of the said pulley is provided with a number of parallel pins, e', concentrically arranged around its shaft F, on which a pawl, G, with a spring, G', is made to bear, for the purpose of preventing back mo-

tion. On the other side of the pulley E the shaft F is provided with a windlass, H, by which a rope, H', is unwound from a pulley, I, above. The said pulley is placed in the middle between the frames B, and has a windlass, I', attached to each side. From the windlasses I' ropes K are conducted over the guide-pulleys K' on the cross-bar b to the pulleys L, which are mounted on the tops of the frames B, and are united by a windlass, L', to which the extracting-chain M is fastened. The rope H' is guided to the pulley I by an eyebolt, h. The windlasses H I' L' are of reduced diameter in the middle, and there the respective ropes or chains are fastened, so that in winding upon them they gain in speed, according to the increase of diameter of the wind-up surface. The arrangement of the double windlasses I' I', the double ropes K K, and the double pulleys L L effects an equal or balanced pressure upon their respective journals and bearings, as well as to the frames B. The chain M being operated from the center of the windlass L' makes the greatest strain upon the machine a central strain.

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

The combination, with the frame A B, of the lower windlass H with enlarged grooved pulley E at one side, the intermediate windlasses I' I' with pulley L between, the top windlass L' with enlarged grooved pulleys L L at each side, the guide-pulleys K' K' and a, the chain M, and the ropes D H' and K, all constructed and operated substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 19th day of March, 1874.

JOSEPH S. MULHOLEN.

Witnesses:

C. L. EVERT,  
D. WALKER.