

A. J. McCrea.

Stump Extractor.

N^o 86,990.

Patented Feb. 16, 1869.

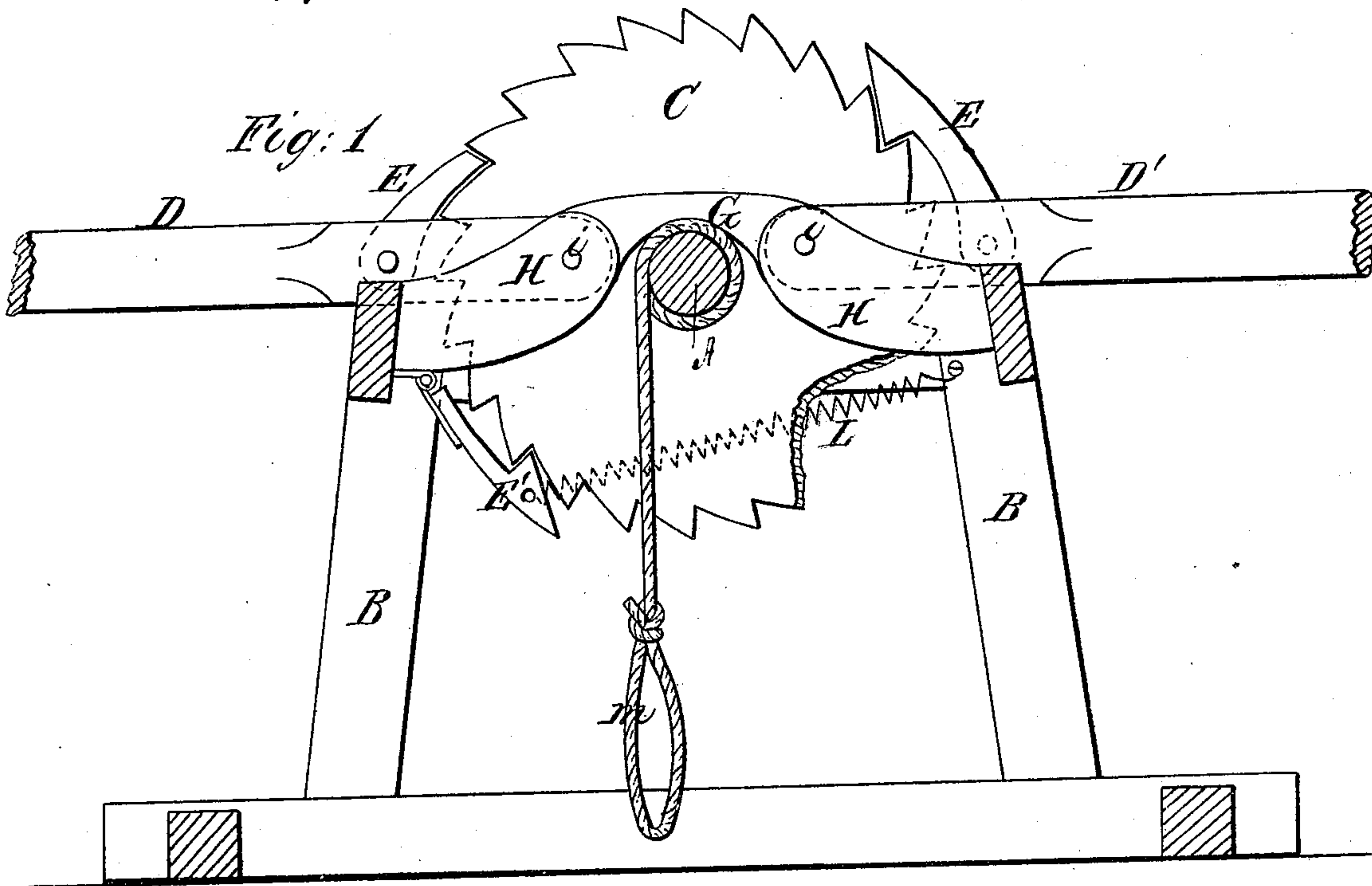
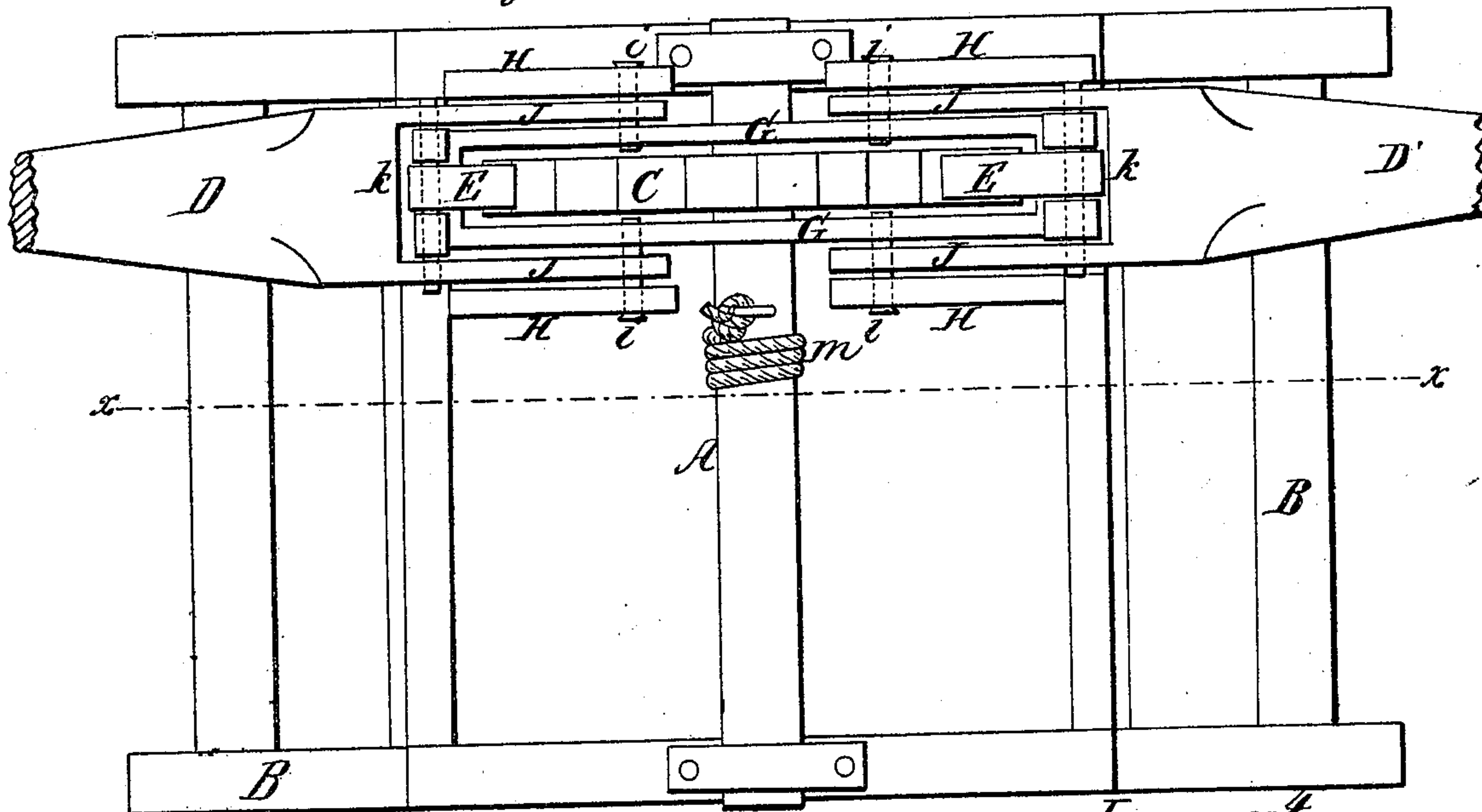


Fig: 2.



Witnesses;
E. J. Spring
G. A. Leetman

Inventor;
A. J. McCrea.
per *Mumford*
Attorneys

United States Patent Office.

A. J. MCCREA OF BETHLEHEM, NEW JERSEY.

Letters Patent No. 86,990, dated February 16, 1869.

IMPROVED STUMP-EXTRACTOR.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, A. J. MCCREA, of Bethlehem, in the county of Hunterdon, and State of New Jersey, have invented a new and improved Stump-Extractor; 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 drawings, forming part of this specification.

This invention relates to machines for extracting stumps from the ground, hoisting stones, or other heavy bodies, moving buildings, and for all similar purposes; and

It consists in the application of the mechanical principle termed "the wheel and axle," the wheel being a ratchet-wheel, revolved by ratchet-pawl and lever, with adjustable fulcrum, arranged as will be hereinafter described.

Figure 1 is a vertical section of the machine, through the line *x x* of fig. 2.

Figure 2 is a plan or top view.

Similar letters of reference indicate like parts.

A is the axle, which is supported on a properly-constructed frame, marked B.

C is the wheel, provided with ratchet-teeth, as seen in the drawing.

D D' represents the lever, upon one or both sides of the machine.

E E' represent ratchet-pawls, which are attached to the levers.

As these machines have hitherto been constructed, the lever has been applied directly to the wheel, or if a purchase has been obtained, and the wheel revolved by the increased power thus obtained, the fulcrum of the lever has been the axle of the machine; consequently the amount of power, or the purchase of the lever, depended upon the diameter of the wheel.

The main feature of my invention is, removing the fulcrum of the lever from the axle to any point between the axle and the resisting weight or periphery of the wheel, so that the power of the lever may be increased in proportion to the amount of such removal.

The wheel is made to revolve within a frame, or

yoke, G, which is connected with and supported by the frame at each end.

The sides of this frame, G, are somewhat arching, so that they pass over the axle, as seen in fig. 1.

H represents brackets or supports, for the fulcrum-pins *i*, of the lever, upon the outside of one branch or leg of the lever on the outside, while the inner end of the pin is supported by the frame or yoke G.

It will be seen that the lever forms a crotch, the branches or legs of which pass inward toward the axle, on each side of the wheel, through which legs the pins *i* pass, as seen in the drawing.

J represents these legs.

The pawls E are attached to the crotches of the levers, by pins or bolts, as seen at *k*.

In this example of my invention, two levers, one on each side of the wheel, are arranged so that the machine may be operated from both sides simultaneously.

The ratchets are so arranged that one lever, D', operates the wheel by bearing down, and the other, by lifting up.

To the lever D, on the under side, there is attached by a hinge, a holding-pawl, E', which engages with the ratchet-teeth of the wheel, and prevents the wheel from turning back in the operation of lifting. This pawl is held to the wheel by a spiral spring, marked L.

m represents a rope or chain, which is attached to the axle and to the object to be raised or moved.

The fulcrum of the lever may be placed at any point desired between the axle and the periphery of the wheel, and of course the power applied will depend upon the purchase thus obtained, and the length of the levers under a given force.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

A stump-extractor, consisting of the parts G and H, levers D D', pawls E and E', spring L, and frame, arranged substantially as described.

The above specification of my invention signed by me, this 13th day of August, 1868.

Witnesses:

A. J. MCCREA.

FRANK BLOCKLEY,

ALEX. F. ROBERTS.