(No Model.)

A. C. HALL.

STUMP EXTRACTOR.

No. 385,457. Patented July 3, 1888.

Fig. 1.

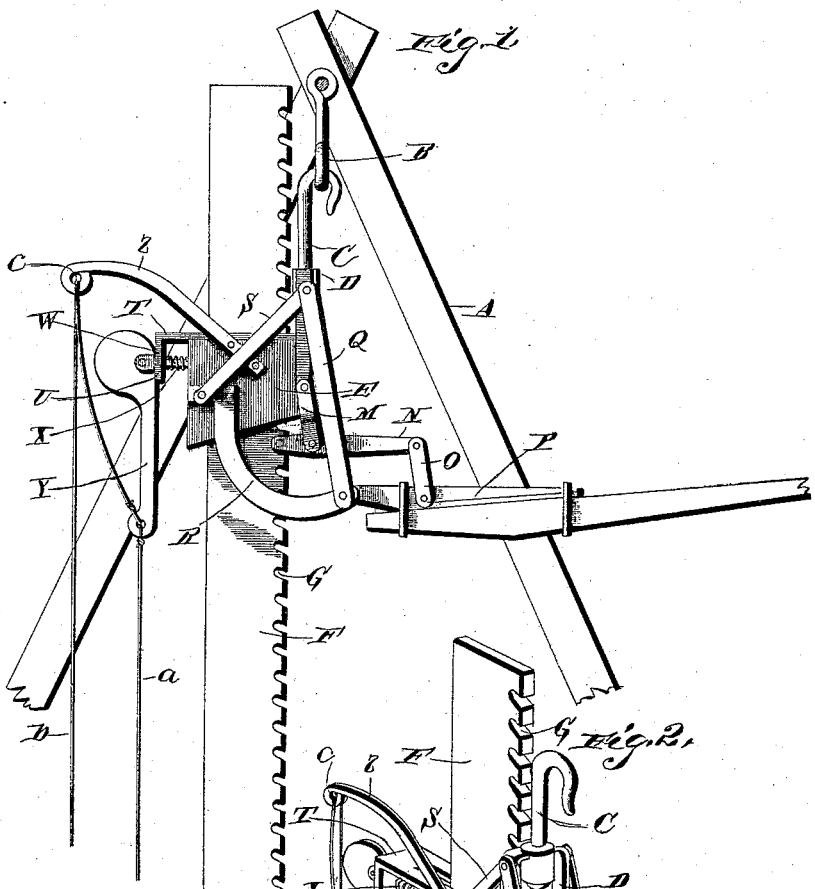


Fig. 2.

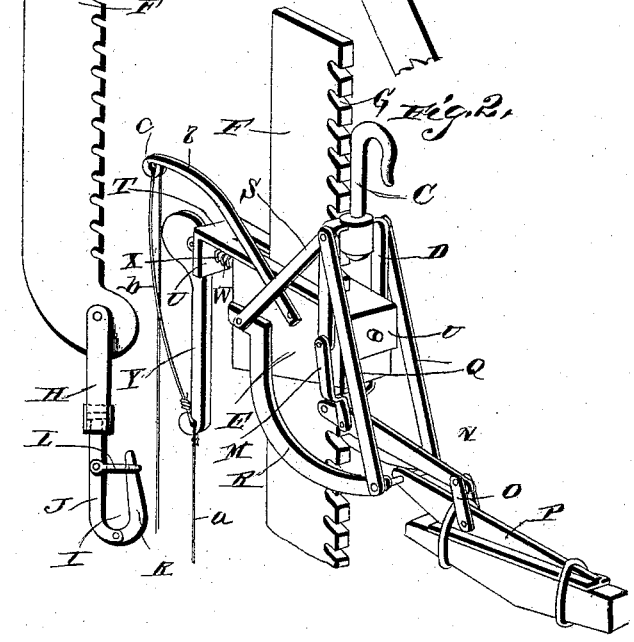
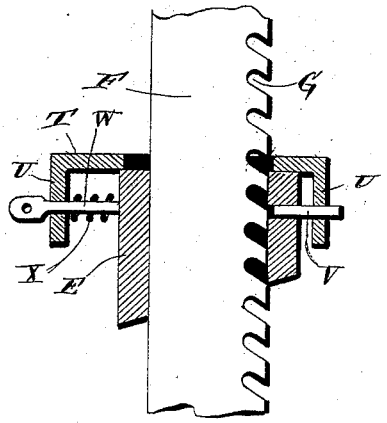


Fig. 3.



Witnesses,
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By his Attorneys,
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UNITED STATES PATENT OFFICE.

ALFORD CARROLL HALL, OF CEDAR MILL, OREGON.

STUMP-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 385,457, dated July 3, 1888.

Application filed January 19, 1888. Serial No. 261,223. (No model.)

To all whom it may concern:

Be it known that I, ALFORD CARROLL HALL, a citizen of the United States, residing at Cedar Mill, in the county of Washington and State of Oregon, have invented new and useful Improvements in Stump-Extractors, of which the following is a specification.

My invention relates to improvements in stump-extractors; and it consists in certain novel features hereinafter described and claimed.

In the accompanying drawings, which fully illustrate my invention, Figure 1 is a side elevation of my improved machine. Fig. 2 is a detail perspective view of the lever, the suspending-hook, and their connections; and Fig. 3 is a detail sectional view of the devices for operating the locking-plate.

Referring to the drawings by letter, A designates a tripod, of the usual or any preferred construction, provided at its upper end with an ordinary clevis or suspension-ring, B, as shown.

C designates the suspension-hook of my device, to the lower end of which is swiveled a bifurcated hanger, D, the lower ends of which are secured to the opposite sides of a block, E, near one edge thereof. This block E is hollow, and the lifting-bar F is inserted vertically therethrough. The said lifting-bar is provided along one edge with a series of notches, G, which are engaged by the operating-lever and the locking-plate, as will be presently described. The lower end of the lifting-bar is bent toward its notched edge, as clearly shown, so that the weight may be applied in a direct line with the point of application of the power. To this lower end of the lifting-bar I pivotally attach a link, H, to which the securing-hook I is swiveled. This securing-hook I consists of the main portion or body J, the arm K, pivoted thereto, and the clamping-ring L, pivoted to the body J and adapted to engage over the end of the arm K. This securing-hook I is connected to the stump to be extracted, or to the stone or other weight to be lifted, by passing the arm K through one of the links of a chain passed around the weight or stump, and then swinging the clamping-ring into position over the arm K, as will be readily understood.

M M designate two links, which have their upper ends secured to the hanger D at the point where the same is secured to the block E, and extend outward and downward therefrom. Between the lower ends of these links a lever, N, is fulcrumed, the inner end of which engages the notches G in the edge of the lifting-bar. The outer end of this lever is connected by the links O to a larger lever, P, to which the power is applied, and which is fulcrumed at its inner end to the lower ends of the braces Q R, which extend upward, respectively, to the hanger D and the block E.

S designates braces which extend from the hanger D to the block E. It will thus be seen that I have provided a very simple mechanism for operating the lifting-bar and in which great power is obtained, as I employ a compound lever combining simple levers of the first and second classes.

Upon the top sides or edges of the block E I mount a plate, T, which is provided with a central longitudinal slot to enable it to slide transversely to the lifting-bar, and has the depending lugs or ears U at its opposite ends. In one of these lugs or ears I rigidly secure a stop pin or plate, V, which is adapted to engage the notches in the edge of the lifting-bar, and thereby prevent movement of the same. The opposite lug or ear U is perforated, and a pin, W, secured rigidly to the block E, projects through the perforation. A coiled spring, X, is arranged around the pin W, between the block E and the perforated lug or ear of the locking-plate T, and tends to normally hold said plate in position to cause the stop V to engage the notches of the lifting-bar. A cam-lever, Y, is pivoted to the outer end of the pin W and bears against the perforated lug of the locking-plate. To the outer end of the cam-lever I secure two cords, *a b*, one of which, *a*, hangs freely from the said lever, and the other one of which passes upward through an eye, *c*, formed at the end of a rod, Z, projecting upward from the block E, and depends from said eye. It is evident from this arrangement that a downward pull on the cord *a* will cause the lever Y to swing downward, thereby relieving the pressure exerted by the cam against the locking-plate, and the spring X conse-

quently forces said plate into engagement with the notches of the lifting-bar. A downward pull on the cord *b*, however, will force the cam against the locking-plate and release it from engagement with the lifting-bar.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the operation of my device will be readily understood. The object to be operated upon is connected to the securing-hook at the lower end of the lifting-bar, as described, and the free outer end of the operating-lever is then swung downward, as will be readily understood. The inner end of the operating-lever being in engagement with the lifting-bar, the motion given to said lever will raise said bar. When the lever has been lowered to the end of a complete stroke, the cam-lever is operated, as hereinbefore described, to allow the locking-plate to engage the lifting-bar, thus preventing the dropping of the bar while the lever is being returned to its former position. This operation is repeated until the weight has been raised to the desired height, or the stump has been extracted.

It is apparent that my device is very simple and efficient, and its advantages, it is thought, will be readily understood without a detailed reference thereto.

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

1. The combination of the lifting-bar, the hollow block through which the lifting-bar works, the suspension-hook secured to the said block, the lever suspended from said hook and engaging the lifting-bar, and the locking-plate supported by the hollow block, substantially as set forth.

2. The combination of the lifting-bar, the hollow block on said bar, the suspension-hook, the bifurcated hanger depending from said hook and secured to the hollow block, the links depending from said block, and the lever fulcrumed in the said links and engaging the lifting-bar, as set forth.

3. The combination of the lifting bar, the hollow block, the suspension-hook secured to said block, the links depending from said block, the braces depending from the hook and the hollow block, the lever fulcrumed between the links and engaging the lifting-bar, and the lever fulcrumed to said braces and connected to said first-mentioned lever, substantially as specified.

4. The combination of the lifting-bar, the hollow block, the suspension-hook secured to said block, the lever suspended from said hook and engaging the lifting-bar, the locking-plate mounted on the hollow block, and the cam-lever for throwing said locking-plate into and out of engagement with the lifting-bar, substantially as specified.

5. The combination of the hollow block, the lifting-bar, the suspension-hook secured to said block, the lever suspended from said hook and engaging the lifting-bar, the locking-plate mounted on the hollow block, the pin projecting from the hollow block and through the locking-plate, the spring coiled around said pin and acting on the locking-plate, and the cam-lever mounted at the outer end of said pin and bearing on the locking-plate in opposition to the spring, substantially as specified.

6. The combination of the hollow block, the lifting-bar, the suspension-hook secured to said block, the lever suspended from said hook and engaging the lifting-bar, the locking-plate mounted on the hollow block, the cam-lever for operating said locking-plate, the rod projecting from the hollow block and having an eye at its end, and the cords secured to said cam-lever, one depending from said lever and the other passing up to and through the eye in said projecting rod, substantially as specified.

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

ALFORD CARROLL HALL.

Witnesses:

ALFRED DAVIES,

W. L. PIKE.