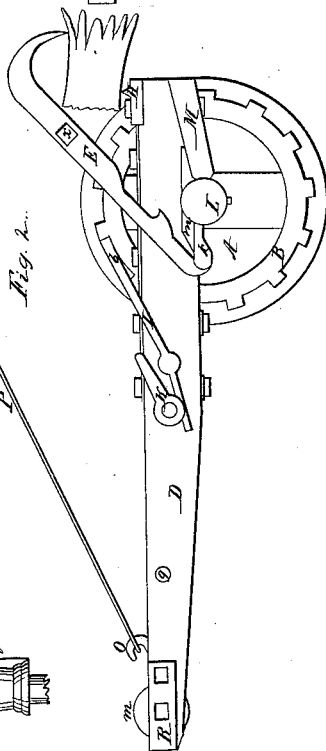
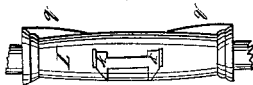
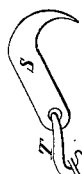
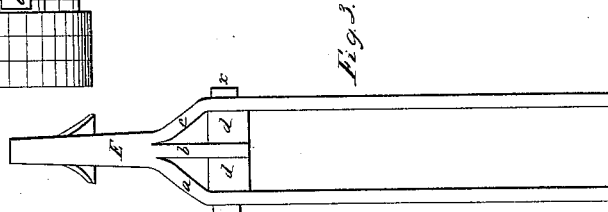
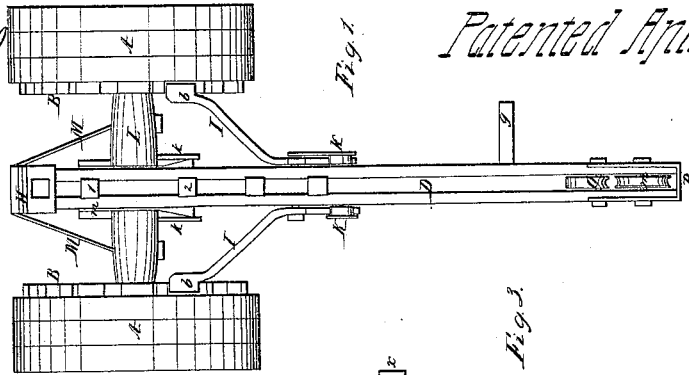


A. McKenney,

Stump Puller.

N^o 54,000.

Patented Apr. 17, 1866.



Witnesses:

*J. C. M. Alexander
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Inventor:

A. McKenney

UNITED STATES PATENT OFFICE.

ALMERON McKENNEY, OF MAUMEE, OHIO.

IMPROVEMENT IN GRUB AND STUMP MACHINES.

Specification forming part of Letters Patent No. 54,000, dated April 17, 1866.

To all whom it may concern:

Be it known that I, ALMERON McKENNEY, of Maumee city, of Lucas county, of the State of Ohio, have invented certain new and useful Improvements in Grub and Stump Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and the letters of reference marked thereon.

Figure 1 represents a plan view of the entire machine. Fig. 2 represents a side elevation with one wheel taken off. Fig. 3 represents a plan view of the grub-hook. Fig. 4 represents a plan view of a slotted bar used in connection with the machine. Fig. 5 represents an end view of the axle with the flanges.

The nature of my invention consists in constructing a substantial and practical machine embracing the main features of my grub-machine patented February 18, 1862, and with such variations, improvements, and additions as to adapt it to extracting the stumps of small trees or grubs and stool-grubs, and also of dry stumps of larger size.

In the drawings herewith presented, and forming a part of this specification, A A represent the wheels of the machine, which are made of well-seasoned lumber or boards and firmly secured together with rivets or bolts. These wheels are provided with suitable iron boxes set within them to revolve true and to secure durability in the bearings.

In lieu of the ratchets that my former machines are provided with, I substitute here cogs B B, which are attached to the inner sides of the wheels A A. These cogs are of metal and are square, being placed a suitable distance apart for the purposes hereinafter to be described.

D represents the lever, which is made of three or more boards or substantial pieces of lumber firmly secured together and forming, as it were, one piece. From experience I find this mode of constructing the lever as the best to be pursued, as the lever is more substantial and not so heavy as that of making it of one piece. This lever is made of even width from the lower end upward one-half its entire length, and from thence tapering upward, so that the top end is just one-half of the width of the

lower end. This shape is adopted to give the requisite strength where it is most needed, and that it may be perfectly straight when great strain is applied to it.

L represents the axle which connects the wheels A A, and upon which the lever D rests. This axle is made of metal, and is hollow for the purpose of diminishing the weight of the machine and giving the same suitable strength. In the making of this axle I dispense with the lugs upon it and the clevis, as shown in my former patent heretofore referred to. This axle has upon its upper side two flanges, k k, which extend above and below the axle a short distance, as is shown in Fig. 1, and ears n n, which project slightly from the axle. This axle L, the flanges k k, and the ears n n are cast of one piece, and not only serve to strengthen the axle itself, but form a receptacle for the lever D. This lever D is set upon the axle L and between the ears n n, being bolted through the flanges k k, as seen at 1 2 in Fig. 1, and held perfectly secure in its place.

M represents a stirrup, which is made of metal, (wrought-iron,) and passes around the bottom end of the lever D, being secured at each side of the lever D to the axle L. This stirrup passes through the axle and is secured to same by bolts or rivets. This stirrup is to strengthen the axle when the lever is in an upright position and power being applied endwise to the same, serving also to keep the lever from swaying sidewise.

Secured upon the lower end of the lever is a metallic bite, H, having a V-shaped edge, which is set above the end of the casting upon which it is formed, about half-way between the slot where the bolt attaches the same to lever and the end of the lever, and about one and one-half inches from the end of said lever. The object of this bite is to avoid mashing down or bruising the end of the lever D, which is the case where the bite is set on the end of the casting and at the end of the lever. In former practice this has proved to be a difficulty, and by this simple arrangement the difficulty is surmounted and the lever at that point is kept sound and durable.

I I represent two brace-hooks, which are attached to the lever D a short distance above the wheels by means of a bolt, which passes

through an eye which is formed in each hook at about four inches from the ends, and through the lever. Upon this bolt these brace-hooks readily turn as upon a pivot.

Where the hooks are secured to the lever there are two eccentrics, K, which are formed upon each end of the bolt that secures them, and by means of a small crank upon one of the eccentrics the brace-hooks are adjusted. These brace-hooks are bent in the shape shown in Fig. 1, and are provided with a square piece at the lower end, as seen at *f f*, for the purpose of catching in between the cogs at the side of the wheels A A and perfectly locking the wheels. They are held in their places, when it is desired to lock the wheels, by eccentrics K K, and can be thrown from between the cogs by said eccentrics when the machine is moved by the revolving of the wheels. In cleared fields, where there is no underbrush to come in contact with, these brace-hooks are reversed, being applied to the cog-wheels B B on under side instead of the upper. I prefer this mode, but the former is applied where the machine is to be used for green grubs where there is brush in the way.

With the lever, wheels, and axle thus arranged, I construct an extended hook, E, similar in construction to a cant-hook, which is formed of three flat bars of iron, welded together in the bend of the hook to give strength, the two outside bars, *a* and *c*, crotching just at the bend, so as to straddle the lever D, and the center piece, *b*, extending slightly above the point where the two outside pieces, *a* and *c*, become parallel. Just at that point a bolt passes through the three bars and through two blocks of iron, *d d*, which are set between the outside and inside bars to keep them parallel. The object of these blocks *d d* is to keep the outside bars from pressing inward when power is applied. The long bars of this hook have notches formed on their under edges, to attach the hook to the flanges *k k* on the axle. Said flanges are heavier at that point and rounded for that purpose. This hook E can be adjusted to grasp a large or a small stump or grub by means of the notches on the same, heretofore described, and has a broad point, which is notched and sharpened to more readily grasp the stump or grub and prevent it from cutting in too deep.

It may readily be seen how this device is applied, it being hooked on to the upper flanges, *k k*, of the axle L, when the lever D is set upright and the bite H set against the small stump or grub. The hook E is then attached to the stump or grub on the opposite side. The top of the lever D is then drawn forward or toward the ground, and the edge of the hook E will cut into the wood and hold it fast, so that it may be raised from the ground.

Having thus shown how the machine is operated for small stumps or grubs, I will now proceed to show a further arrangement and application to stumps of a larger size, and

which are too high out of the ground to be reached by the aforesaid mode of operation.

At the upper end of the lever D is a slot, Fig. 1. Around this end of the lever is a metallic stirrup, R, which is securely bolted to said lever. Within the slot in the lever is a hook, O, which hangs downward and is designated the "lever-hook," and is made strongest in the downward direction. A slotted bar, P, is then provided, which bar has one slot at the forward end and two or more slots at the lower end, as seen in Fig. 4. This bar P is hooked to the lever-hook O by the slot in the forward end of said bar. This bar may rest upon the lever D when the machine is in motion and said bar is not in use. A substantial hook, S, is attached to the other end of the bar P by means of a smaller hook, T, which is permanently secured to the grappling-hook S. This hook S is made of one piece of iron, and very broad and heavy in the bend of the same, being sharpened and notched in the end as the others heretofore described. The grappling-hook S is attached to the stump and power is applied at the end of the lever D.

In applying the machine the lever is usually placed in an upright position and the bite H against the stump near the ground. The hooks heretofore described are placed over the stump and power is applied at the end of the lever, where there is a pulley, *m*, for that purpose. The lever is leaned over so that the top rests directly over the opposite or back side of the stump. When power is applied and the lever moved forward to a perpendicular position the stump is raised the distance which is gained by the straightening of the lever. The team is then backed and the hook is hooked to another slot in the bar. Thus by repeating the operation the stump is loosened and the machine moved forward, carrying the lever to a horizontal position and raising the stump upon the machine, which can be carried to the required distance.

The main object of my invention is to make an economical and simple device which can be used practically by all farmers, and one that is easily transported and stand the strain of any ordinary stump that should be extracted from the ground. This machine is for use on old fields, where stumps are in the ground, as well as for new fields, where small green stumps and grubs are desired to be extracted, and can also be used in working the roads. With the simple and substantial arrangements of this machine the farmer is enabled to clear his fields of old stumps, and also his new grounds of low green stumps and grubs.

In the manufacture of this machine the axle is made somewhat longer than in the one previously referred to, and I provide said axle with two wings, *q q*, (see Fig. 5), to give additional strength.

I do not claim the entire machine as new; but

What I do claim, and desire to secure by Letters Patent, is—

1. The shape and construction of the lever D, when provided with the bite H, used as and for the purposes herein set forth.

2. The axle L, with flanges *k k*, ears *n n*, and wings *q q*, arranged with the stirrup M, to give additional strength and effectually support the lever, substantially as and for the purposes herein specified.

3. The brace-hooks I I and cog-wheels B B, attached to the inner side of the wheels A A, when used as and for the purposes set forth.

4. The extended hook E, constructed and plied as and for the purposes herein shown.

5. The slotted bar P, lever-hook O, and grappling-hook S, arranged and used as and for the purposes herein described.

A. McKENNEY.

Witnesses:

C. M. ALEXANDER,
J. M. MASON.