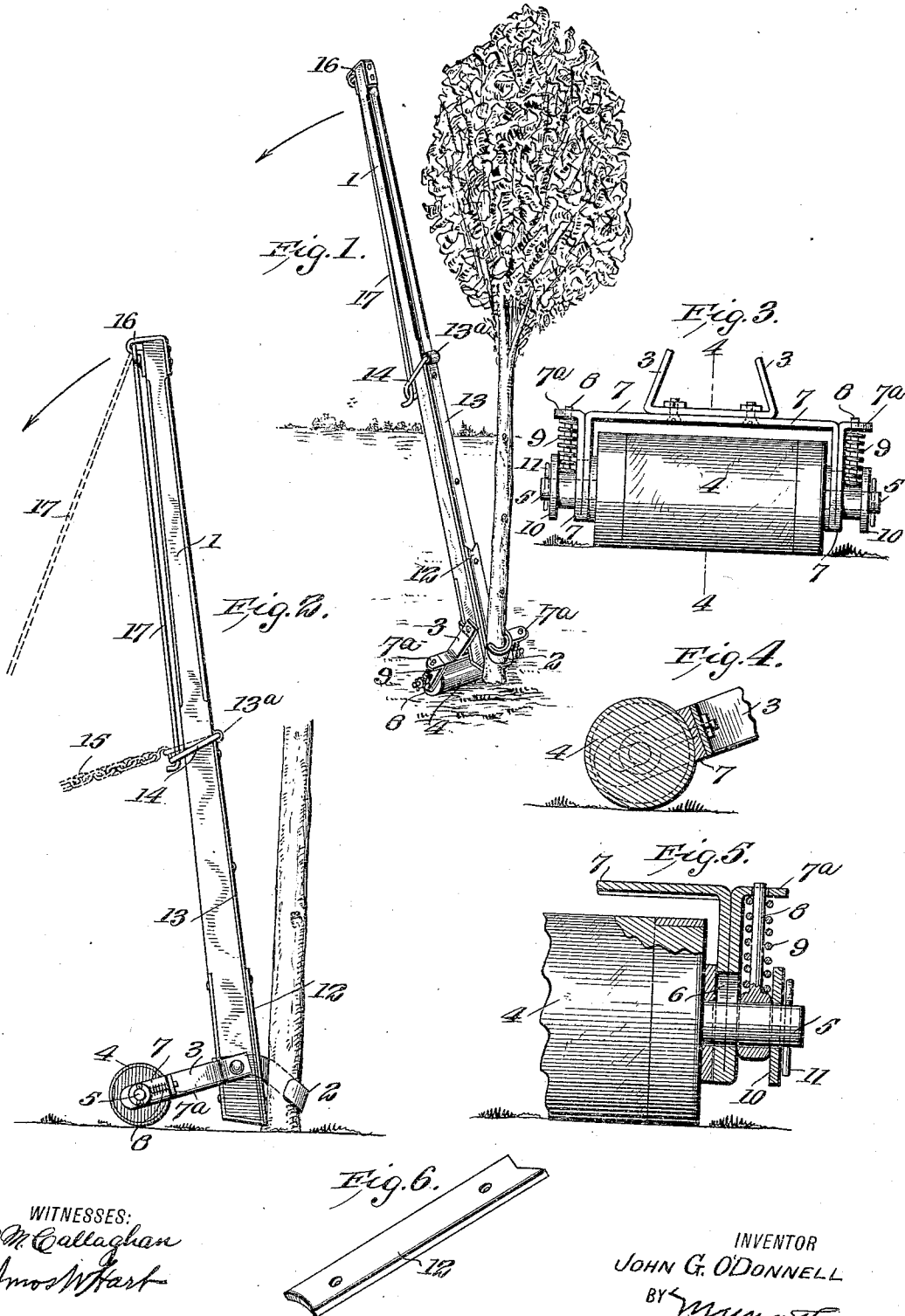


J. G. O'DONNELL.
BUSH PULLER.
APPLICATION FILED FEB. 1, 1910.

959,377.

Patented May 24, 1910.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN G. O'DONNELL, OF WASHINGTON, DISTRICT OF COLUMBIA.

BUSH-PULLER.

959,377.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed February 1, 1910. Serial No. 541,370.

To all whom it may concern:

Be it known that I, JOHN G. O'DONNELL, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented certain Improvements in Bush-Pullers, of which the following is a specification.

My invention is an improvement in the class of machines or implements adapted for grubbing or pulling bushes.

It is more particularly an improvement upon the invention for which Letters Patent, No. 638,169, were granted to James Bloodgood and myself.

The improvement is embodied in the roller and spring attachment and in draft devices applied to the lever, as hereinafter described, and illustrated in the accompanying drawings, in which:—

Figure 1 is a perspective view illustrating the practical use of my invention. Fig. 2 is a side view. Fig. 3 is a front view of the roller fulcrum and connected parts. Fig. 4 is a cross section on the line 4—4 of Fig. 3. Fig. 5 is an enlarged elevation and partial section of one end of the roller fulcrum and the bracket and spring attachments therefor. Fig. 6 is a perspective view of a grip plate applied to the lever.

As in the former invention before referred to, I employ a wooden lever 1, a hook 2 for engaging the body of a bush, and a bracket 3 which is rigidly connected with the hook, the two being pivoted together on the lower end of the lever 1. In place of employing a wooden block as the fulcrum of the lever, as in the previous invention, I provide a roller 4 whose journals 5 pass through slots 6 formed in the parallel arms of a bracket 7 that is rigidly bolted to the hook bracket 3, as shown in Fig. 3. The said bracket 7 is formed of iron or steel and has a straight body portion extending parallel to the body of the roller 4 and made concave on its inner side, as shown in Fig. 4, in order to adapt it to seat close on the roller when pressure is applied, as in the use of the implement, as will be further explained.

The parallel arms of the bracket 7 are bent reversely so as to form parallel portions that lie in contact, as shown in Fig. 5, and the ends 7^a of the same are bent outward and provided with a hole to receive a guide-pin 8 that is provided with an eye for reception of the roller journal and around which a

spiral spring 9 is coiled and compressed to a certain degree between the journal 5 and the perforated ends 7^a of the bracket 7. The expansion of the spring 9 will obviously hold the journals 5 of the roller in the lower end of the slot 6, save when abnormal pressure is applied, as in the use of the implement. In such case, the hook 2 is applied to a bush or sapling, as shown in Figs. 1 and 2, and then the lever being pulled in the direction of the arrow, the lower end of the lever is engaged and the roller 4 constitutes the fulcrum on which the lever turns. The pressure thus applied to the brackets 3 and 7 forces the latter down upon the roller, as shown in Fig. 4, against the resistance offered by the springs 9, and thus a firm, solid bearing is provided for the bracket 7 during the remainder of the pulling operation.

It is obvious that by this construction and combination of parts, I am enabled to make the brackets 7 of much lighter material than would be otherwise required to resist the great strain due to leverage, and thereby I obtain two important advantages, to wit, a reduction in weight and cost of the implement. By constructing the parallel arms of the bracket 7 by doubling them upon each other, I provide due strength at the point required and avoid the necessity of providing a separate attachment for the perforated ears 7^a. Further, by the construction illustrated, the parts may be quickly put together. The eyes of the guide-pins 8 are held on the roller journals 5 by means of washers 10 and cotter pins 11.

In order to reinforce and strengthen the lower end of the lever as well as provide a superior gripping device, I employ an iron or steel plate 12, one end of which is provided with a notch and the other with a concave. The same is bolted to the lever and projects slightly from the end of the same, as will be understood by reference to Figs. 1 and 2. The gripping plate 12 may be easily reversed when worn at the working end.

A metal strap 13 is applied to the butt end of the lever and extended up on the front of the same to a point near the middle of the lever, where it is provided with a hook 13^a, in which a ring or loop 14 is pivoted and embraces the body of the lever. This serves as a point of attachment for a chain 15 which may be employed to use a team in pulling

- heavy bushes or saplings. I further provide the smaller end of the lever with a metal loop 16 in which is pivoted a pull rod 17 having its free end provided with a hook, as shown. This rod may be used for pulling on the upper end of the lever, thus increasing the leverage to a maximum, as will be understood by the position of the rod indicated by dotted lines in Fig. 2. The rod is made of such length that its hooked end may be engaged with the loop or ring 14, before described, whereby it is held parallel to the body of the lever 1 when not required for use.
- By the construction and combination of parts before described, I provide a bush or sapling puller which is distinguished by simplicity, lightness, ease in manipulation, and effectiveness in operation.
- What I claim is:—
1. The improved bush puller comprising a lever, a hook and bracket rigidly connected and pivoted to the lever, a second and adjustable bracket secured to the first-named one and provided with parallel slotted arms, a fulcrum roller whose journals work in the slots of the second bracket, compression springs, and guide pins to which they are

applied, said pins having eyes to receive the roller journals and working in guides forming a portion of the adjustable bracket, substantially as described.

2. In an implement for the purpose specified, the combination with a lever, a hook, a fulcrum roller, an adjustable bracket applied to said roller and rigidly connected with the hook, the same having parallel slotted arms provided with integral apertured ears or flanges, guide pins working in said flanges and having eyes embracing the roller journals, and compression springs applied to said guide pins in the manner shown and described.

3. The improved bush puller comprising a hook and fulcrum, and a lever to which they are pivoted, a pull rod loosely attached to the smaller end of the lever and having its free end provided with a hook, and a retaining ring pivoted centrally on the lever and adapted for engaging and holding the pull rod, substantially as described.

JOHN G. O'DONNELL.

Witnesses:

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