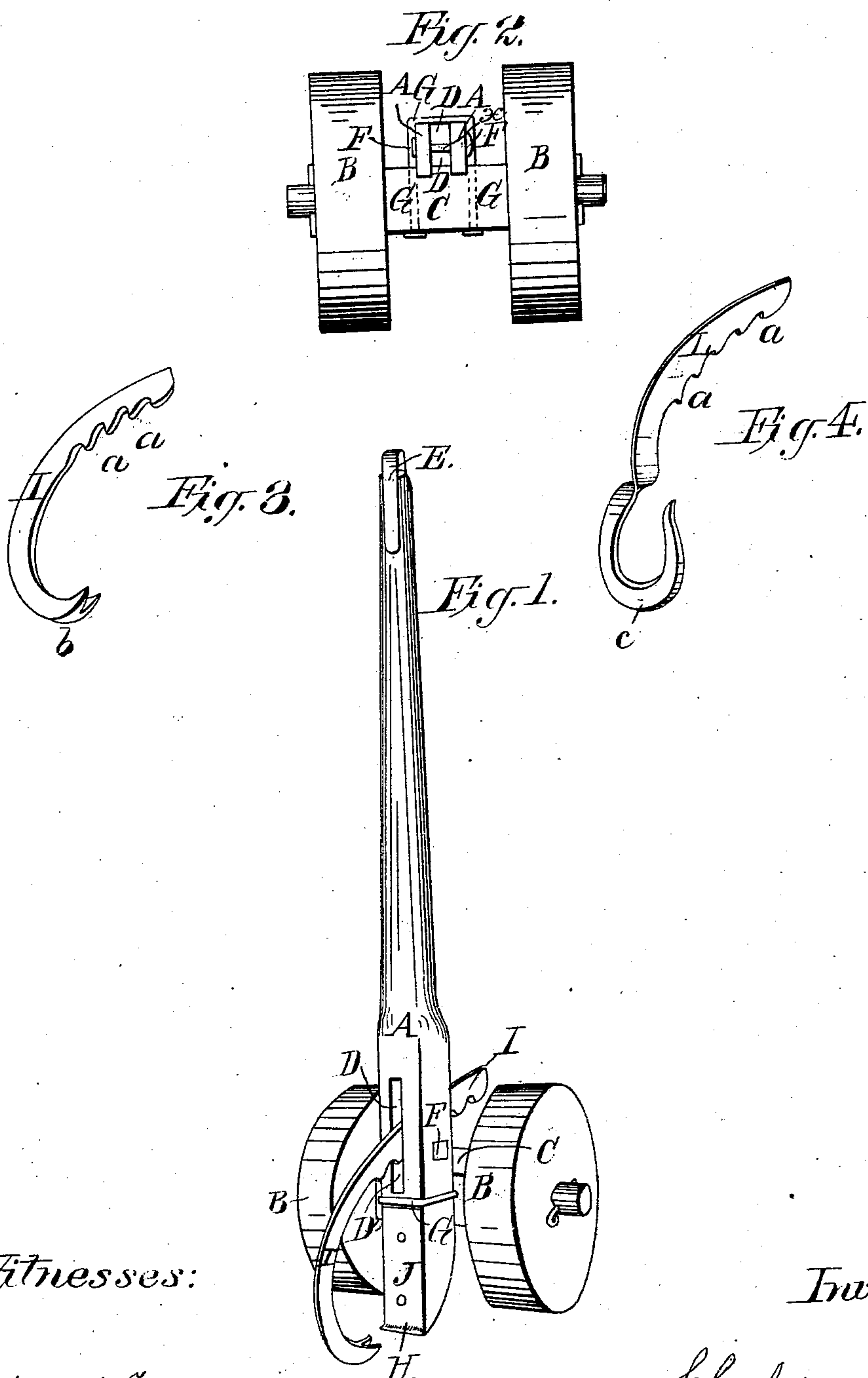


CHASE & DEVENDORFF.

Grubbing Machine.

No. 85,069.

Patented Dec. 22, 1868.



Witnesses:

Edward Jaggart
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Inventors:

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United States Patent Office.

CHARLES E. CHASE AND BENJAMIN F. DEVENDORFF, OF WYOMING TOWNSHIP, MICHIGAN, ASSIGNORS TO THEMSELVES AND JOSEPH S. RANDALL.

Letters Patent No. 85,069, dated December 22, 1868.

IMPROVEMENT IN GRUBBING-MACHINE.

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

To all whom it may concern:

Be it known that we, CHARLES E. CHASE and BENJAMIN F. DEVENDORFF, both residing in the township of Wyoming, county of Kent, and State of Michigan, have invented certain new and useful Improvements in Grubbing-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being therein had to the accompanying drawings, and to the letters of reference marked thereon, in which

Figure 1 is a perspective view of our machine in a working-position;

Figure 2, a cross-section of the main lever A; and

Figures 3 and 4, a view of the hooks used in the machine.

Said drawings are made a part of these specifications.

In our invention, the power for extracting grubs is in the lever A, mounted upon strong trucks; and

The improvement which we claim to be new, and which constitutes our invention, is the hook I, when used in connection with the body of the machine, for pulling grubs or other small trees from the earth, and the manner of attaching it to the main lever A, by means of the small notches *a a*.

For pulling grubs from which the tops have not been removed, a hook, in the form represented by L, may be conveniently used; but upon the hook L we ask no patent, although its use and construction will be described to some extent below.

The hooks are in two forms, but both are attached to the main lever in the same way.

The hook I is an ordinary curved hook, split back a short distance from the end, as shown at *b*, and is to be used in pulling "cap"-grubs, or those from which the tops have been removed, as well as those upon which the tops are still standing.

In the hook L, the part *c* is so formed as to grasp or enclose the body of a standing tree or grub, and is to be used when the tops have not been removed.

The manner of operating our invention is to raise the lever A nearly to a perpendicular position, so that the part H may be pressed against the grub at the place where it leaves the earth. The proper hook is placed in the slot D, and, by means of the notches *a a*, attached to the bolt *x*, fig. 2, which passes through the main lever. The point of the hook *b*, or the part *c*, is pressed firmly against that part of the grub opposite the main lever. The power is applied at E, and the grub is raised by the pressure of the part H, from beneath, against it, as the lever is drawn to a horizontal position.

Horses or oxen may be used with equally good effect with this machine.

To enable others to make our invention, we will proceed to describe it, premising by the way that the sizes

which we give to the several parts are such as we deem best adapted to common use. They may be varied to suit special circumstances.

The general form of the machine is apparent from an inspection of fig. 1.

The wheels are eighteen inches in diameter and eight inches thick, and made from a solid log, of proper size. The wheels are one foot apart, and the axle between them is five inches square, and four inches in diameter where it enters the wheels.

The main lever A should be about nine feet in length and five inches square at the place where it is attached to the axle, and tapering slightly toward the upper end. It is fastened to the axle by means of a band or rod of iron, the ends of which pass through the axle, and are fastened beneath by nuts.

The lower end of the lever is furnished with a plate of iron, J, one-half inch thick, and slightly turned out at H.

The hooks are two and a half feet long, three-fourths of an inch thick, and two and a half inches wide, and are made in the forms represented in figs. 3 and 4.

The part *c* of the hook L is bevelled slightly on the upper side, and is of such form and size as to easily enclose and grasp the grubs to be pulled.

The main lever A should extend ten inches back from the centre of the axle, so that the part H will be a trifle farther from the axle than the circumference of the wheels.

The slot D D should be six inches on the top of the lever, and ten inches on the bottom, in length, and one inch wide.

The hooks I and L are to be made of iron, and the notches *a a* are to be of such form and size as to readily catch upon the bolt *x*, fig. 2.

We disclaim all the parts of the above machine which are used in other analogous machines.

We disclaim all the matter in this specification relating to the hook L, and ask no patent upon the same; but

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

The adjustable hook I, fig. 3, when used in combination with the lever A and wheels B B, fig. 1, substantially in the manner and for the purpose above set forth.

In testimony that we claim the foregoing, we have hereunto set our hands and seals, this 5th day of June, A. D. 1868.

CHARLES E. CHASE. [L. S.]
BENJAMIN F. DEVENDORFF. [L. S.]

Witnesses:

STEPHEN H. BALLARD,
OMAR H. SIMANDS.