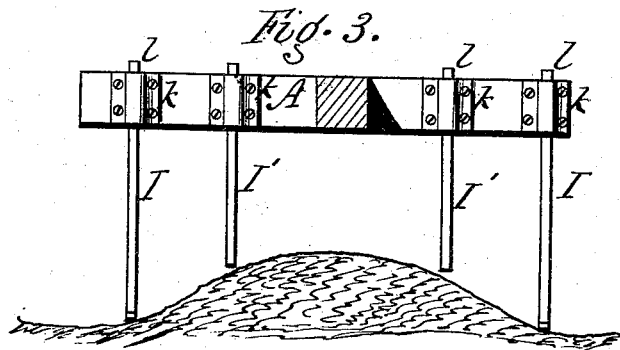
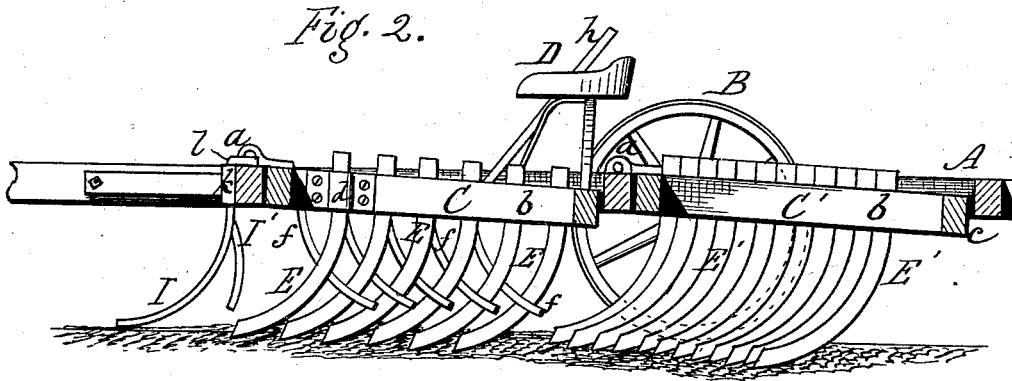
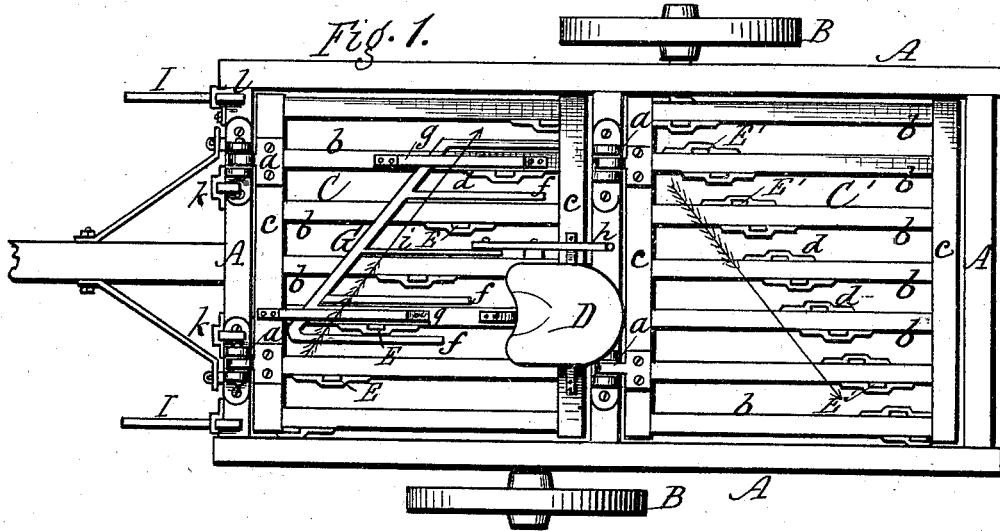


O. F. WARREN.
POTATO-DIGGER.

No. 169,870.

Patented Nov. 9, 1875.



Witnesses.
Edwin P. Scott.
John C. Jones.

Inventor.
Oscar F. Warren,
per R. F. Osgood,
Atty.

UNITED STATES PATENT OFFICE.

OSCAR F. WARREN, OF KNOWLESVILLE, NEW YORK.

IMPROVEMENT IN POTATO-DIGGERS.

Specification forming part of Letters Patent No. 169,870, dated November 9, 1875; application filed May 24, 1875.

To all whom it may concern:

Be it known that I, OSCAR F. WARREN, of Knowlesville, in the county of Orleans and State of New York, have invented a certain new and useful Improvement in Potato-Diggers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a plan. Fig. 2 is a longitudinal vertical section. Fig. 3 is a cross-section at *ll*.

My invention consists essentially of the combination, in a potato-digger, of two hinged frames or sections, having two series of teeth set at opposite angles or inclines, and so arranged, as hereinafter described, as to throw the vines on one side of the machine and the potatoes on the other side. It furthermore consists in the arrangement of the supporting-wheels and clearer, as hereinafter more fully set forth.

A is a rectangular frame, secured upon supporting-wheels B B. C C' are two square sections or frames, set within the main frame, and hinged thereto at their front ends, as shown at *a a*. This allows a free vertical motion of the rear ends of said sections, so that they can adapt themselves to the work to be done. Each section is composed of a series of longitudinal bars, *b b*, framed into the front and rear cross-pieces *c c*. D is the driver's seat, attached on the rear of the front section C. E E E are a series of curved teeth, attached to the bars of the front section C; and E' E' E' are a series of corresponding teeth, attached to the rear section C'. These two series of teeth are set at opposite inclines or angles, as shown, those of the front frame inclining backward toward the right, and those of the rear frame inclining backward toward the left, thus forming a V. The number of teeth in the rear frame is double those in the front frame, being attached on both sides of the bars *b b*, while in front they are attached only on one side. The attachment of the teeth to the bars is made by clamping-straps *d d*, or other suitable devices. The wheels B B are also set on an inclined line, which approximates, more or less, with the line of the front set of teeth, and the right-hand wheel comes

just in the rear of that set of teeth, for the purpose of treading and drawing upon the vines, as will presently be described. The left-hand wheel is set farther forward to balance the machine. G is a clearer, which consists of a bar resting on top of the front section C, and having curved arms *f f f*, which extend backward between the teeth E E. The bar is set on an incline corresponding with said teeth, and its ends rest in suitable guide-loops *g g*, Fig. 1. It is thrown forward and backward by a lever, *h*, which is jointed to a connecting-rod, *i*, and rests within reach of the driver. I I are vine-gatherers, consisting of teeth of hook form, which are on the front end of the machine, and near the sides. I' I' are similar gatherers, located between the others, and of less length than the outer ones. The gatherers rest loosely in sockets *k k* bolted fast to the main frame, so as to adjust higher or lower, and they have shoulders or heads *l l*, which prevent them from falling through the sockets. As these gatherers pass over the surface they rise and fall automatically in the sockets *k k*, thereby adapting themselves to the sides of the row without being guided or operated by hand.

The operation is as follows: The machine is drawn forward with the wheels between the rows and the machine astride one row. The gatherers I I divide the vines between the rows, and turn them inward toward the center, where they are caught by the intermediate gatherers I' I', and laid lengthwise in line upon the rows, with the tops pointing forward. This is accomplished by the forward motion of the machine. The front teeth E E of the forward section then follow, cutting into the ground, tearing up the roots, separating the greater portion of the potatoes, and allowing them to pass through the wide spaces between the teeth, while the tops are carried off sideways toward the right by reason of the incline of the teeth. When they reach the outside of the machine the vines are caught by the wheel B, which runs over them, thereby having a tendency to assist in drawing the vines off as fast as they are pulled, owing to the clinging together of the vines. The rear teeth E' E', following directly after the first ones, catch the potatoes already dug and separated from

the vines; also, run through the soil and dig what remain, and discharge the whole off to the left of the machine, in a line, by reason of the opposite incline of the rear teeth.

The motion of discharge of the vines and potatoes is indicated by the reverse arrows in Fig. 1. The closeness of the rear teeth prevent the passage of the potatoes between them.

If, at any time, the front teeth become obstructed or clogged by the vines they are readily relieved by throwing the clearer *G* forward, which is done by operating the lever *h*; and, as the arms *f f* rest on an incline, they free the teeth bodily at one movement of the lever. The arms *f f* are curved reversely to the teeth, which allows easy clearing of the vines.

The fall or sinking of the front section *C* should be gaged by a suitable stop to prevent the teeth running too deep under the weight of the driver; but the rear section may simply drag, as its office is principally to gather and throw off the potatoes, the digging being principally done by the front teeth. By hinging the sections, as described, they operate independently, and can rise and fall with the inequalities of the ground, and can pass all obstructions readily.

In going into the field the rear ends of the two sections may be elevated and rested together in *V* form, which removes the teeth from the ground.

I am aware that drags with teeth have be-

fore been used for digging potatoes. Such I do not broadly claim; but my invention consists in the combination of the two hinged sections, provided with the two reversely-inclined sets of teeth, whereby the vines are thrown off on one side and the potatoes on the other.

What I claim as new is—

1. The combination, in a potato-digger, of the two hinged sections *C C'*, provided with the two sets of inclined teeth *E E* and *E' E'*, arranged in reverse directions, for discharging the vines and potatoes on opposite sides of the machine, as herein shown and described.

2. The combination, with the hinged section *C* and its inclined teeth *E E*, of the wheels *B B*, set on an inclined line approximating that of the front teeth, the off wheel acting as a tread to assist in discharging the vines, as herein shown and described.

3. The combination, with the hinged section *C* and its inclined teeth *E E*, of the clearer *G*, set on an incline corresponding with the teeth, and provided with the curved arms *f f*, resting between the teeth, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

OSCAR F. WARREN.

Witnesses:

C. H. THORP,
D. McCLELLAN.