2 Sheets—Sheet 1.

W. BOYD.

POTATO-DIGGERS.

No. 181,628. Patented Aug. 29, 1876.

Fig. 1.

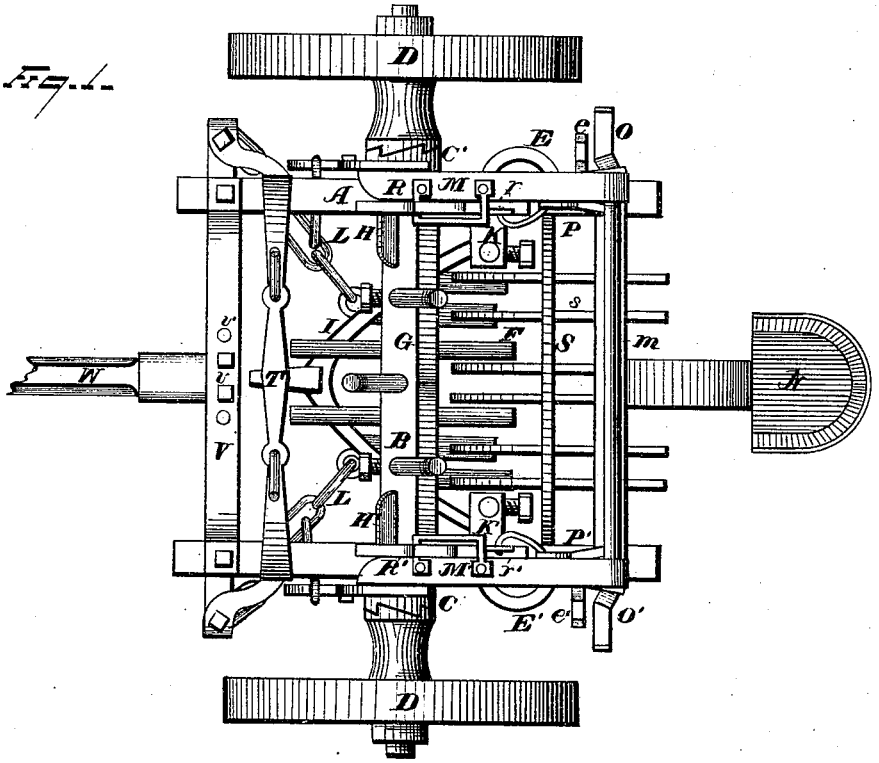
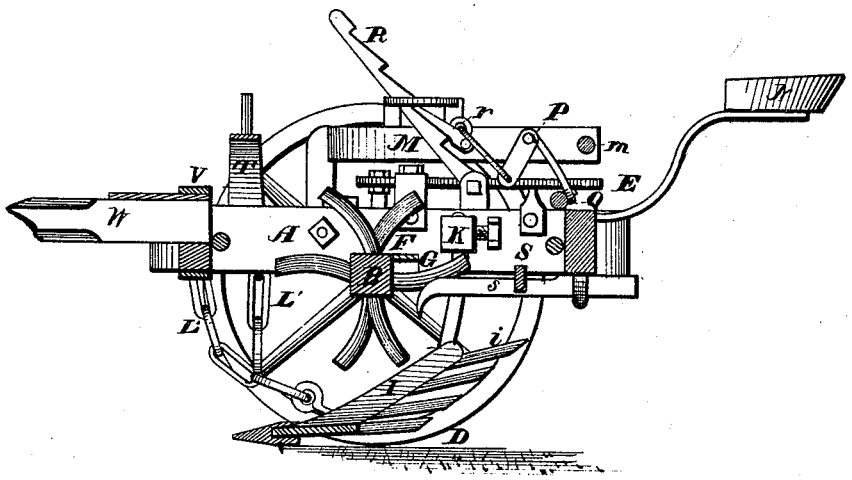


Fig. 2.



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2 Sheets—Sheet 2.

W. BOYD.

POTATO-DIGGERS.

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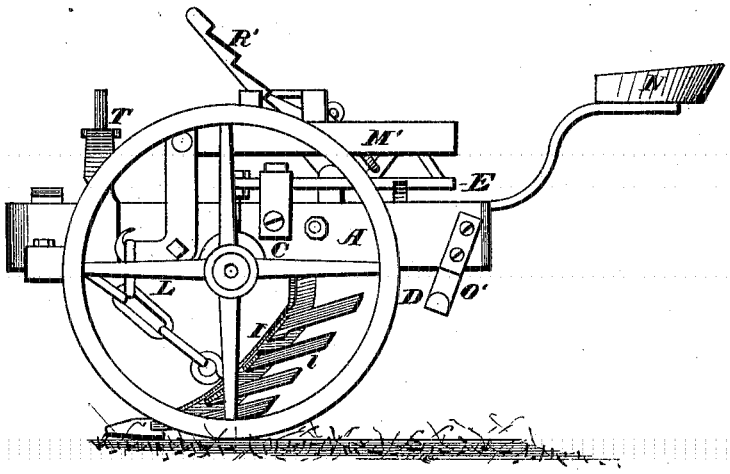
Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM BOYD, OF HARTFORD, NEW YORK.

IMPROVEMENT IN POTATO-DIGGERS.

Specification forming part of Letters Patent No. **181,628**, dated August 29, 1876; application filed June 5, 1876.

To all whom it may concern:

Be it known that I, WM. BOYD, of Hartford, in the county of Washington and State of New York, have invented certain new and useful Improvements in Potato Diggers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

In the drawings, Figure 1 is a plan; Fig. 2, a cross-section through line *x y;* Fig. 3, a side elevation.

My invention relates to that class of plows called "potato-diggers;" and consists in the various combinations of parts as hereafter claimed.

The description of the constructive and operative parts is as follows: A is the main frame or body of the machine, supported by suitable bearings on the axle B, the latter provided with collars or clutch-boxes C, sliding on a key or feather fixed on the axle, one on either end, whereby the axle may be thrown in or out of gear with the wheels D by means of the respective hand-levers E E′, one for either clutch. These levers are suitably pivoted to the frame as their fulcrum, and their extremities opposite the clutches engage with the supporting-irons *e e′*, so as to be securely catched. The axle B is provided with forks F, in any number, which pass through the former, and may project at an angle or may be straight; but I prefer them more or less angular. Running the length of the axle is the long cutting-knife G, of whose form the same may be said as above. This knife operates in conjunction with two shorter ones rigidly affixed, one to each interior side of the frame, and are lettered H H′. The plow proper, I, is of a concave convex cast, with heavy face edges and a prominent point, while in the rear extend a series of bars, *i*, between which pass the revolving forks F. This plow hangs from the bearing-blocks K K′, and its center of action lies approximately in the same vertical plane as that of the axle. To the working edges are connected chain or other attachments L L′, which bind the plow to the fore frame, so as to limit its depth of action and rigidly maintain it at same. The plow swings on its bearings to the full extent of such guard when operating; but while in transit from place to place such action should cease, and this is accomplished by connecting-levers M M′, one respectively on either side of the machine, which levers may be of the first class, and, after suitably pivoting to the frame, pass rearward, so that their connecting-bar M may be in convenient reach for the operator seated upon the spring or other seat N at the rear of the machine, where are also stirrups O O′, appropriate as foot-rests. These levers are provided each with a bell-crank, P P′, pivoted thereto, one arm of which is operated by a hand-rail, Q, connecting the two cranks across the frame, while the other arm is attached by any intermediate mechanism to the pawl *r r′*, engaging in the ratchet-bar R R′. By raising this hand-rail Q the pawl is dismissed from the ratchet, and the levers M M′ allow the plow to drop ready for action. At the rear end of the frame is a series of cutting-knives, *s*, projecting forward approximately parallel thereto, and then curving downward at their extremities, so as to present an angular cutting-edge to the material with which it comes in contact. A binder, S, stretching across the frame, incases in corresponding slots these knives, so as to prevent them from being bent or suffering undue lateral strain. Between said knives revolve the axial forks F, which act in conjunction with former in clearing the machine from any entangling débris. Spanning the front of the frame is a bar or rod, T, serving as a rein-rest to preserve the lines from becoming engaged with the operating mechanism. The fore end of the frame is provided with a bar, V, above, parallel, and affixed to the former, in which are slots *v′*, corresponding to other slots in the front beam, through which passes the king-bolt *v*, which mechanism serves to allow of the lateral adjustment of the pole W, whereby the center of draft is agreeably varied and firmly maintained.

The operation of the foregoing is apparent from the above, but it may be the further clear, as follows: The hand-rail Q being pressed upward, the levers M M′ drop the plow ready for action. The side hand-levers

E E′ are thrown in so as to gear the clutches C C′ with the wheels D D′, so that as the draft is applied the axle B will revolve, carrying the radial forks F and the knife G, which combine, respectively, with the rear stationary knives *s* and the lateral stationary knives H H′, both in cutting the weeds, vines, and other incubus, which may gather about the machine, and also in leaving the potatoes in the rear clear of any accompanying matter.

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

1. The axle B, having the forks F and radial knife G secured thereto, in combination with the driving-wheels D and clutches C, substantially as and for the purpose specified.

2. The combination, with the revolving curved forks F, secured to main axle B, of the rear curved stationary knives, substantially as and for the purpose specified.

3. The combination, with the forks F, secured to main axle B, of the downwardly-turned knives *s*, braced about midway of their length by a slotted binder, S, substantially as and for the purpose set forth.

4. In a potato-digger, the short side knives H H′, in combination with the longitudinal revolving cutter G, substantially as and for the purpose described.

5. The combination, with the forks F, secured to main axle B, and knives *s*, of the swinging plow I, located beneath axle B, and chains L and L′, to secure the plow-point to the beam, substantially as and for the purpose specified.

6. The combination of plow I, hung on bearing-blocks K K′, fasteners L L′, with levers M M′, substantially as and for the purpose described.

7. In combination with levers M M′ and fasteners L L′, the hand-rail Q and ratchet R R′, with intermediate mechanism, substantially as and for the purpose set forth.

8. The combination, with the slotted front frame of a potato-digger, of a laterally-adjustable draft-pole, whose extreme rear is secured to said front frame, substantially as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of February, 1876.

WILLIAM BOYD.

Witnesses:
M. N. McDONALD,
WM. TOLMAN.