M. JOHNSON.

DIGGER AND WEEDER.

No. 192,697. Patented July 3, 1877.

Fig. 1.

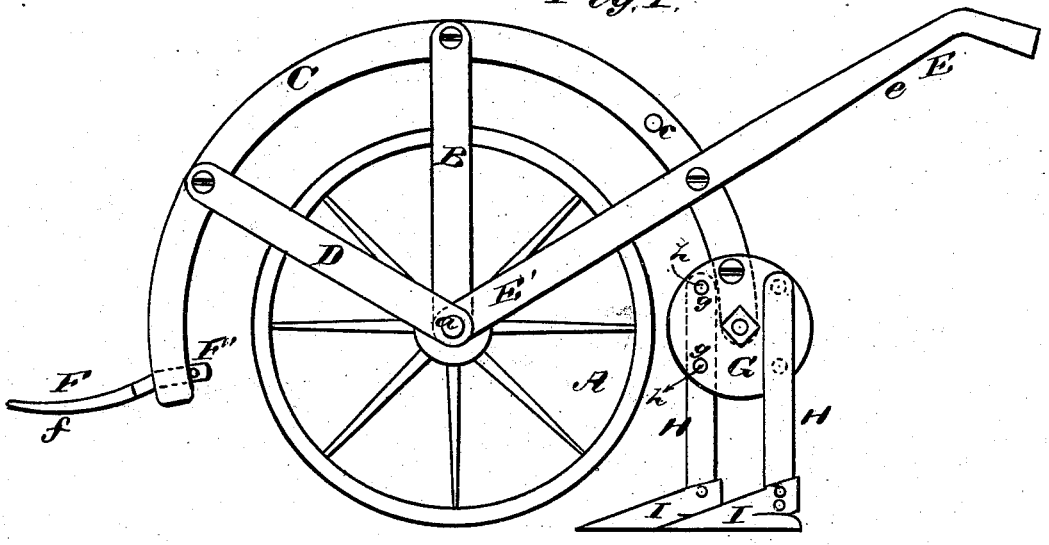


Fig. 2.

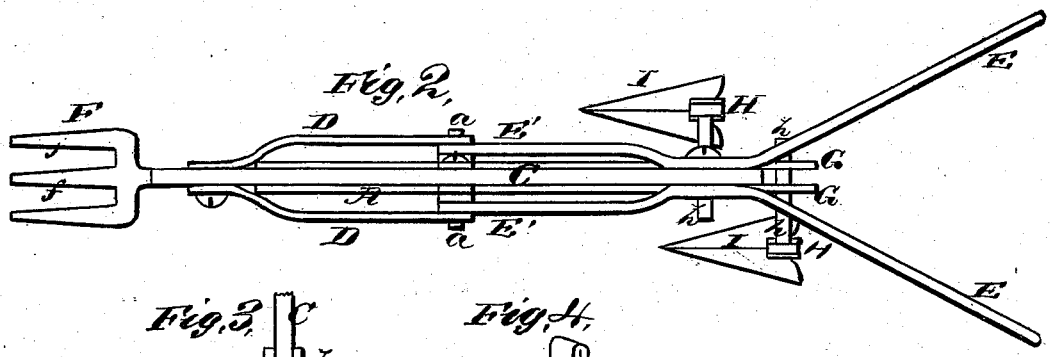


Fig. 3.

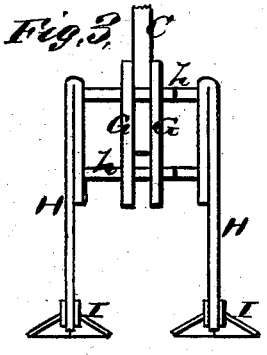
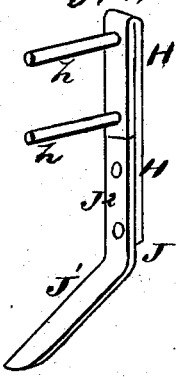


Fig. 4.



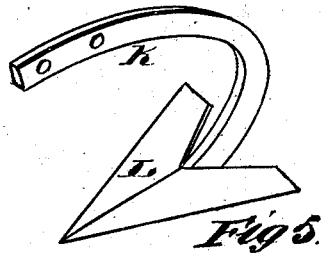


Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

MOSES JOHNSON, OF LOCKPORT, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO M. C. RICHARDSON, OF SAME PLACE.

IMPROVEMENT IN DIGGER AND WEEDER.

Specification forming part of Letters Patent No. **192,697**, dated July 3, 1877; application filed December 23, 1876.

To all whom it may concern:

Be it known that I, MOSES JOHNSON, of Lockport, in the county of Niagara and State of New York, have invented a new and valuable Improvement in Digger and Weeder; 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 annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side elevation of my digger and weeder, and Fig. 2 is a plan view of the same. Figs. 3, 4, and 5 are detail views thereof.

This invention relates to combined weeders and potato-diggers. The nature of said invention consists, first, in the construction of a semicircular beam, supported upon the axle of a transporting-wheel, and pivoted thereto by connecting-braces. It also consists in certain devices, hereinafter described, for attaching the weeder-knives or their equivalents to the rear end of the said beam, and for adjusting them laterally toward or away from each other. It consists, finally, in various auxiliary devices, hereinafter fully described.

In the annexed drawings, A designates a transporting-wheel, on the journals *a a* of which is supported, by bars B B, the middle of a semicircular beam, C. Said beam is braced and supported in front by another pair of bars, D D, which rest, by their lower ends, obliquely upon said journals. The rear of said beam is also braced and supported obliquely by the lower parts E′ E′ of handles E E, which rest upon said journals *a a*. Said handles diverge upward and downward from a neck or contracted part, *e*, where they are secured to said beam C by a bolt passing through one of two holes, *c*, made in said beam. Journals *a a* turn freely in perforations in the supporting-bars B D E′. By this method of attachment the said beam is always properly supported, and the entire device may be transported from place to place without the operator being compelled to carry any of the weight.

F designates a root-digger or fork, having three or more prongs, capable of being attached to said beam either permanently or removably, and forming in itself a complete article of manufacture and sale. The shank F′ of said digger or fork enters a perforation or socket in the front end of semicircular beam C, where it is preferably keyed. In operating said device the said beam C is first tipped downward in front, and the prongs or tines *f* of said fork or digger are then forced, by the operator's foot pressing against the rear end of shank F′, into the base of each hill of potatoes, onions, or similar products of the soil. Pressure is then applied to the outer ends of handles E E, and beam C is caused to turn on journals *a a* as a fulcrum, thereby raising digger or fork F and throwing the potatoes or onions out of the hill.

To the rear end of said beam C are secured two parallel disks, G G, which are arranged vertically, and perforated in four places, *g*. H H designate two standards, each of which is provided with two inwardly-extending horizontal adjusting-rods, *h h*. Said rods pass through perforators *g* in said disks, so as to afford a means for firmly suspending and bracing said standards H H. As the corresponding perforations *g* in said disks G G register, each one of said rods *h* is braced thereby in whatever position it may be placed, and there is no impediment to adjusting said standards laterally toward or away from each other. Said standards H may be provided, at their lower ends, with plow-points I I, for turning under the weeds, (shown in Figs. 1 and 2,) or with weeding-knives J, having inwardly-extending horizontal or nearly horizontal blades J′, one of which is shown in detail in Fig. 4.

When the plow-points I I are used the handles E E are set forward, and secured to the beam C by passing the fastening-bolt through the front perforation *c* of said beam, thereby forcing backward and downward the rear part of the machine, and adapting it to plowing. When the weeding-knives J J are used the attachment of said handles E E to said beam C is made at the rear perforation in said beam.

If desired, one only of said standards H H may be employed, the other being removed

or turned up out of the way. It is also possible to remove disks G and standards H, and attach to the rear end of beam C a standard, K, carrying a plow, L, as shown in Fig. 5. But the arrangements heretofore described are preferable thereto.

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

1. In a hand-digger, the combination of a transporting-wheel with a curved beam concentric with the upper part of said wheel, and pivoted to the axis of the latter by braces, substantially as described.

2. The combination of handles E E with bars B and D, curved beam C, and wheel A, substantially as set forth.

3. The combination of curved beam C with disks G G, perforated at *g g g g*, and with standards H attached thereto.

4. Standards H, provided with adjusting-rods *h*, in combination with disks G, having perforations *g*, and with curved beams C, substantially as set forth.

5. As an article of manufacture, standard H, provided with rods *h* and bracing-plate G, and rigidly secured to upright shank J^2 of weeder-blade J^1, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

Witnesses: MOSES JOHNSON.

JOHN F. ACKER, Jr.

GEORGE E. UPHARD.