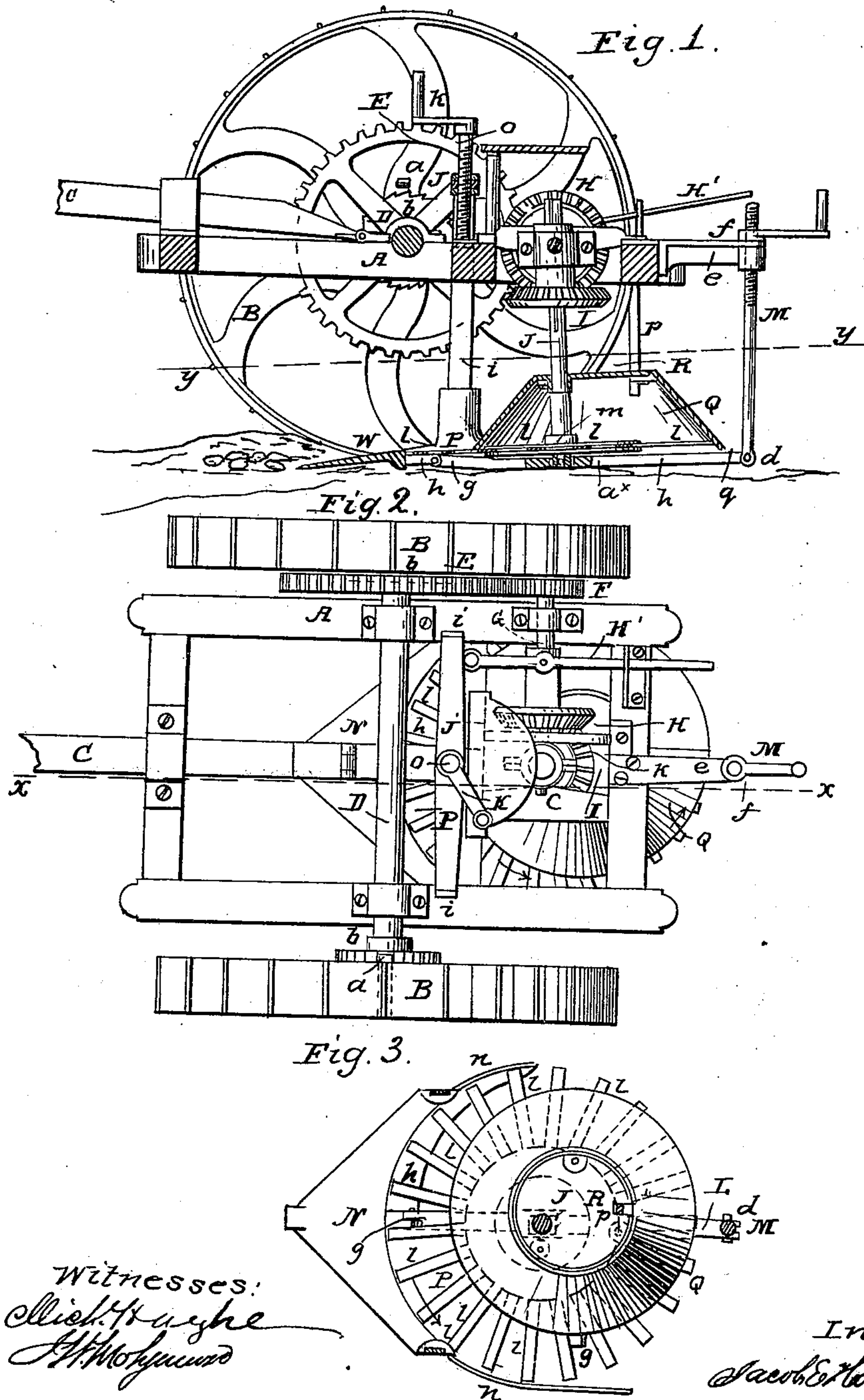


J. E. HARDENBERGH.

Potato Digger.

No. 26,102.

Patented Nov. 15, 1859.



Witnesses:
Chas. Hayne
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UNITED STATES PATENT OFFICE.

JACOB E. HARDENBERGH, OF FULTONVILLE, NEW YORK.

IMPROVEMENT IN POTATO-HARVESTERS.

Specification forming part of Letters Patent No. 26,102, dated November 15, 1859.

To all whom it may concern:

Be it known that I, JACOB E. HARDENBERGH, of Fultonville, in the county of Montgomery and State of New York, have invented a new and Improved Machine for Digging Potatoes and other Roots; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a plan or top view of the same. Fig. 3 is a horizontal section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in the employment or use of an adjustable share, rotary screen, and a rotary discharging device attached to a mounted frame, and arranged substantially as hereinafter described, whereby the desired work—to wit, the digging of potatoes and other roots—may be performed very expeditiously and in a perfect and thorough manner.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a rectangular frame, which is mounted on wheels B B, and has a draft-pole, C, attached to its front end. The wheels B B are placed loosely on their axle D; but the axle is made to rotate as the machine is drawn forward, in consequence of pawls *a* in the wheels engaging with ratchets *b b* on the axle. When the machine, however, is “backed,” the wheels will not rotate the axle, as the pawls *a* slip over the teeth of the ratchets *b b*.

On the axle D, near one end, a toothed wheel, E, is placed. This wheel E gears into a pinion, F, which is placed on the outer end of a shaft, G, on the back part of frame A. This shaft G has a bevel-wheel, H, on its inner end, said wheel H gearing into a corresponding wheel, I, which is placed loosely on a vertical shaft, J, but causes the latter to rotate by means of a feather and groove, the shaft being allowed to slide freely up and down within wheel I. The wheel H on the inner end of shaft G is fitted on a hub or collar, which is placed loosely on the shaft, and is made to turn therewith by means of a groove and feather.

The hub or collar, by means of a lever, H', may be shifted on the shaft, so that the wheel H may be thrown in and out of gear with wheel I.

The upper part of the shaft J is fitted in a bearing, K, which is suspended on trunnions *c c* to admit of its swinging freely in the frame in a plane having a transverse position with the axle D. The lower end of said shaft is stepped in a bar, L, as shown at *a^x*, the back end of which is connected by a joint, *d*, to the lower end of a rod, M, the upper end of which passes through a plate, *e*, has a screw-thread formed on it, and a nut, *f*, fitted thereon, as shown plainly in Fig. 1. The front end of the bar L is connected by a joint, *g*, to a flange, *h*, at the back part of a share, N, which is of V shape, as shown clearly in Fig. 3. The step *a^x* of the shaft J is allowed to turn and adjust itself in the bar L, similar to the bearing K of the upper end of the shaft.

To each side of the share N a vertical bar, *i*, is attached. These bars extend up through the frame A, and are connected at their upper ends by a cross-bar, *j*, through the center of which a screw-shaft, O, passes, said shaft being fitted in a nut in the cross-bar. The lower end of the shaft O bears on the frame A, and its upper end is provided with a crank, *k*.

On the lower part of the shaft J a rotary screen, P, is placed. This screen may be formed of radial bars *l*, of equal length, attached to a hub or plate, *m*, on the shaft, the spaces between the bars *l* being sufficiently narrow to prevent the potatoes or other roots to be dug passing between them. The back edge of the share N is of concave form, concentric with the screen P, which extends quite close to it, as shown clearly in Fig. 3. The back end of the share at each side is provided with a curved guard or fence, *n*, both of which are shown in Fig. 3.

On the rotating screen P a conical discharging device, Q, is placed. This may be formed of a metal plate, and its upper end is fitted around a circular plate, R, which is placed loosely but eccentrically on the shaft J, and is prevented from turning with the shaft by a rod, *p*, which extends down from the frame A and through a slot in the edge of the plate, as shown clearly in Figs. 1 and 3. To the lower edge of the discharging device Q a projecting bar, *q*, is attached, said bar passing down be-

tween two of the bars *l*, as shown clearly in Fig. 3. The discharging device *Q* is placed eccentrically on the rotary screen *P* to such a degree that its back edge will merely or quite coincide with the back edge of the screen *P*, as shown in Fig. 3.

The operation of the machine is as follows: The machine is drawn along by a suitable team, the driver being seated on the frame *A*, and the share *N* passes underneath the hills or drills and throws the earth and potatoes or other roots on the rotary screen *P*, which, by the gearing described, is rotated in the direction indicated by arrow 1. The earth falls between the bars *l* of the screen, while the potatoes or other roots are carried around and discharged from the screen at the back part of the machine by the discharging device, which is rotated in the direction indicated by arrow 2, the same direction as the screen. By having the discharging device rotate, stones or roots that might chance to catch between the bars *l* of the screen will be thrown out therefrom with certainty and without deranging either the screen or discharging device. By turning the shaft *O* the share *N* may be raised or lowered, according to the depth it is required to penetrate the earth, and the screen *P* and discharging device *Q* may be correspondingly raised by turning the nut *f*, the swinging bearing *K* and step *a*^x permitting of the proper movement of the shaft *j* to effect

such result. The flange *h* prevents the casual depression of the screen *P* below the share.

I do not claim separately the share *N*, for that has been previously used for the same purpose, in connection with other devices; but

I do claim as new and desire to secure by Letters Patent—

1. The employment or use of the adjustable share *N*, in connection with the rotary screen *P* and with or without the discharging device *Q*, the parts being applied to a mounted frame, and arranged to operate substantially as and for the purpose set forth.

2. The rotary discharging device *Q*, placed eccentrically on the screen *P*, kept in a proper relative position therewith by the plate *R*, and rotated from the screen *P* by the projection *q*, substantially as described.

3. The combination of the share *N*, rotary screen *P*, and discharging device *Q*, when attached to a mounted frame, *A*, and arranged, substantially as shown, so that the screen and discharging device may be adjusted independently of the share, and the discharging device *Q* rotated by the screen *P* and kept in an eccentric position thereon, for the purpose specified.

JACOB E. HARDENBERGH.

Witnesses:

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