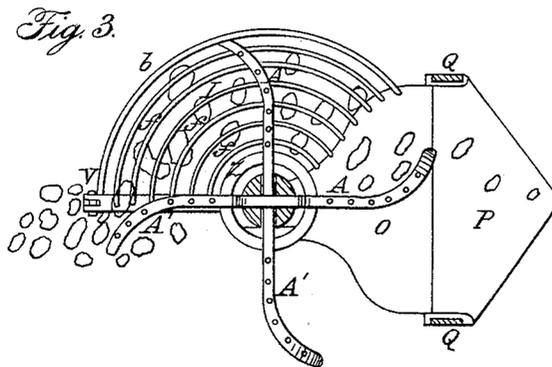
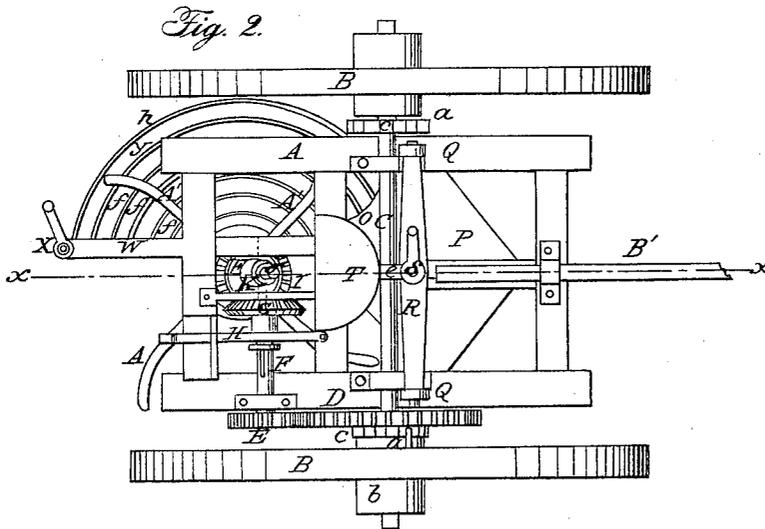
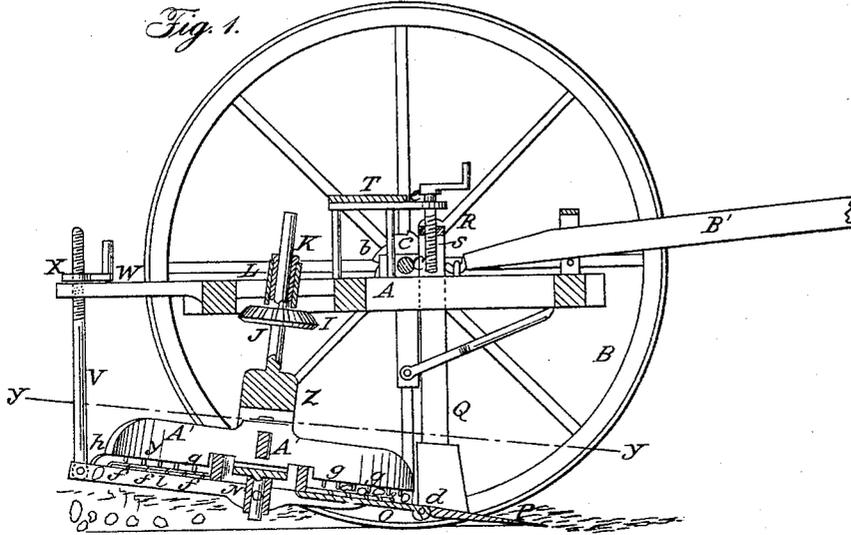


J. E. HARDENBERGH.

Potato-Digger.

No. 18,899.

Patented Dec. 22, 1857.



UNITED STATES PATENT OFFICE.

JACOB E. HARDENBERGH, OF FULTONVILLE, NEW YORK.

IMPROVEMENT IN POTATO-DIGGERS.

Specification forming part of Letters Patent No. 18,899, dated December 22, 1857.

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 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 longitudinal vertical section of my improvement, taken in the line *x x*, Fig. 2. Fig. 2 is 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 combination of an adjustable share and grating and horizontal revolving arms attached to a suitable framing mounted on wheels and arranged relatively with each other, as hereinafter described, whereby the desired work may be accomplished expeditiously and in a perfect manner.

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

A represents a horizontal rectangular framing, which is mounted on two wheels, B B, said wheels being placed loosely on their axle C, which is made to turn with the wheels when the machine is drawn along by means of pawls *a*, attached to the hubs *b* of the wheels, said pawls catching into ratchets *c*, attached to the axle. When, however, the machine is "backed," the axle remains stationary or does not rotate, as the pawls will slip over the teeth of the ratchets. By this means the machine is allowed to turn readily, and the working parts will not be liable to be deranged, as would otherwise be the case were the wheels permanently attached to the axle.

On the axle C a toothed wheel, D, is placed. This wheel gears into a pinion, E, on the outer end of a shaft, F, placed in the rear part of the framing A, said shaft having a sliding bevel-pinion, G, on it, which pinion is adjusted or moved by a lever, H, so that it may be thrown in and out of gear with a bevel-pinion, I, on a shaft, J, the pinion I being attached to a collar, K, which is secured in the frame by a

swinging socket, L. The shaft J passes through the collar K, the collar and shaft being connected by a feather and groove, so that the shaft may be raised and lowered or moved longitudinally in the collar and still be rotated by said collar. The lower end of shaft J is fitted in a swinging step, N, which is attached to the back part of a plate, O, the front part of which is connected by a joint or hinge, *d*, with the back part of a plate, P, which forms the share. The share P is merely a flat metal plate of triangular or approximate form, as shown clearly in Fig. 3. The back part of this plate is attached to uprights Q Q, one at each side, and their uprights pass up through the sides of the framing A and are connected to a cross-tie, R, through the center of which a screw, S, passes, said screw being fitted in a projection, *e*, attached to the front end of the driver's seat T. By turning the screw S the share P may be raised or lowered bodily to the desired height. The share has an inclined position, as shown in Fig. 1.

To the back part of the plate O a bar, U, is attached, and the end of this bar is pivoted to the lower end of a bar, V, the upper end of which passes through the end of a bar, W, attached to the frame A. The upper end of the bar V has a screw-thread cut on it to receive a thumb-nut, X.

Y is a grating, which is formed of a series of curved bars, *f*, one end of which is attached to the bar U and the opposite ends to one side of the plate O. (See Figs. 2 and 3.) The spaces between the bars *f* are sufficiently narrow to prevent potatoes from passing through or between them, and at the same time wide enough to allow the earth to pass freely down between them.

To the shaft J a hub, Z, is attached. This hub has two mortises passing through it at right angles to each other, and arms A' A' are fitted in these mortises, the arms projecting at equal distances from the shaft J, and being of somewhat curved form. These arms are armed with teeth *g* at their lower edges, and the arms are sufficiently long to sweep over the entire breadth of the grating Y as the shaft M is rotated, the teeth *g* fitting in the spaces between the bars *f* of the grating.

The outer edge of the grating has a vertical

plate or ledge, *h*, attached, which serves as a guard and retains the potatoes upon the grating, or, rather, prevents them from passing off the grating at the wrong point or place.

B' is the draft-pole, which is attached to the framing *A*.

The operation is as follows: As the machine is drawn along, the share *P*, being properly adjusted by means of screw *S*, passes below the furrows or hills, and the potatoes and earth are plowed up and pass on the plate *O* and grating *Y*. The shaft *J* is rotated from axle *C* by means of the gearing *D E G I*, and the arms *A'*, as they rotate, sweep the potatoes off the grating, the earth passing through the grating, and the potatoes being thrown in a windrow behind the machine. The plate *O* and grating *Y* are rendered capable of being adjusted at a greater or less inclination in consequence of being connected at one end by the joint *d* to its outer end, the swinging socket *L*

and step *N* allowing the plate *O* and grating *Y* to be adjusted without interfering with the shaft *J*.

I am aware that shares and gratings or riddles have been employed for digging or plowing up potatoes and separating them from the earth, and I do not claim such parts, separately considered and irrespective of the rotating arms; but,

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

The combination of the share *P*, grating *Y*, and rotating arms *A'*, arranged as shown, or in an equivalent way, to operate as and for the purpose set forth.

JACOB E. HARDENBERGH.

Witnesses:

WALTER CROSS,
BARNEY GARDINIER.