

H. Farmer, Potato Digger

No. 92,712.

Patented July 20, 1869.

Fig: 1.

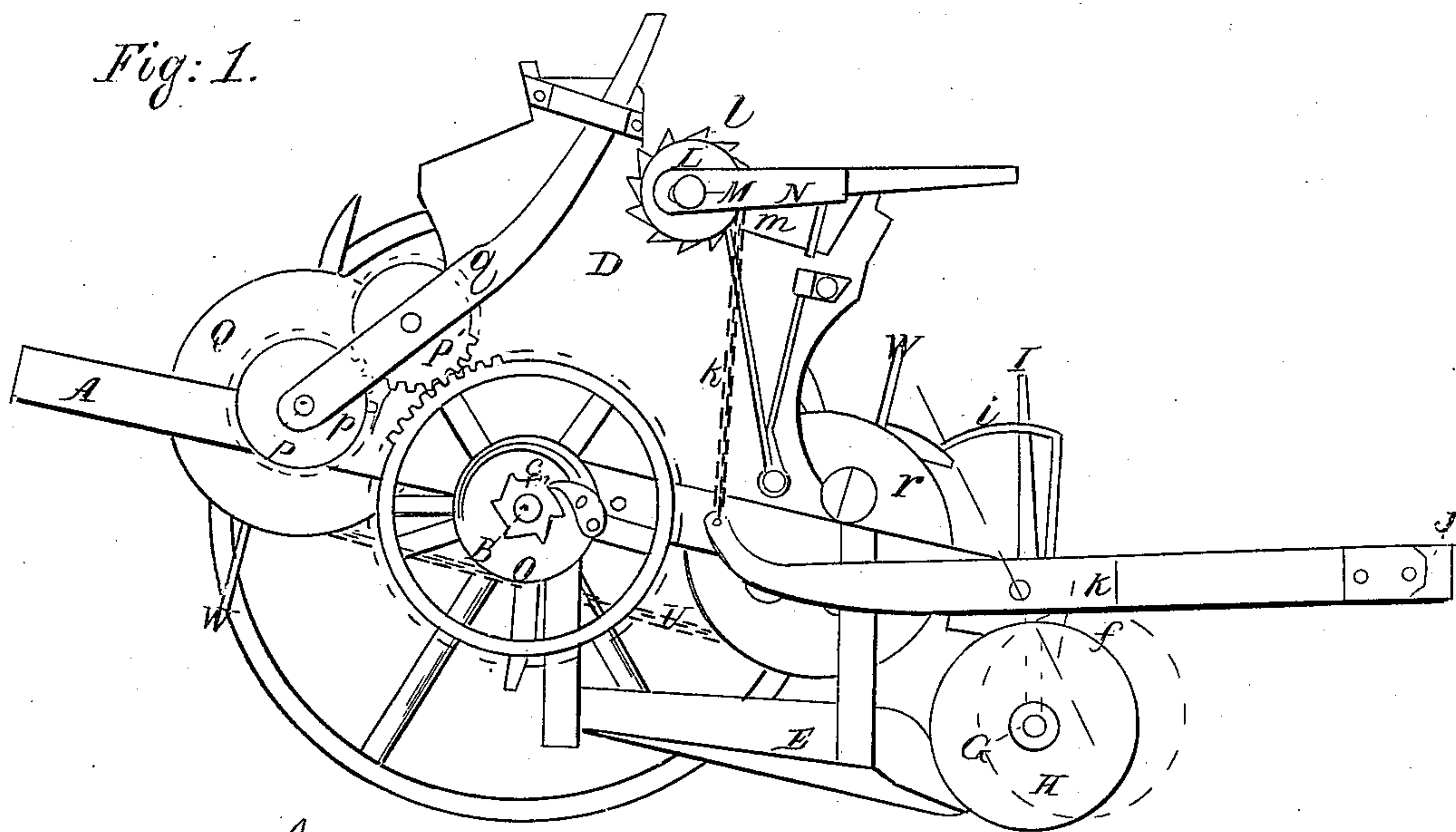


Fig: 2.

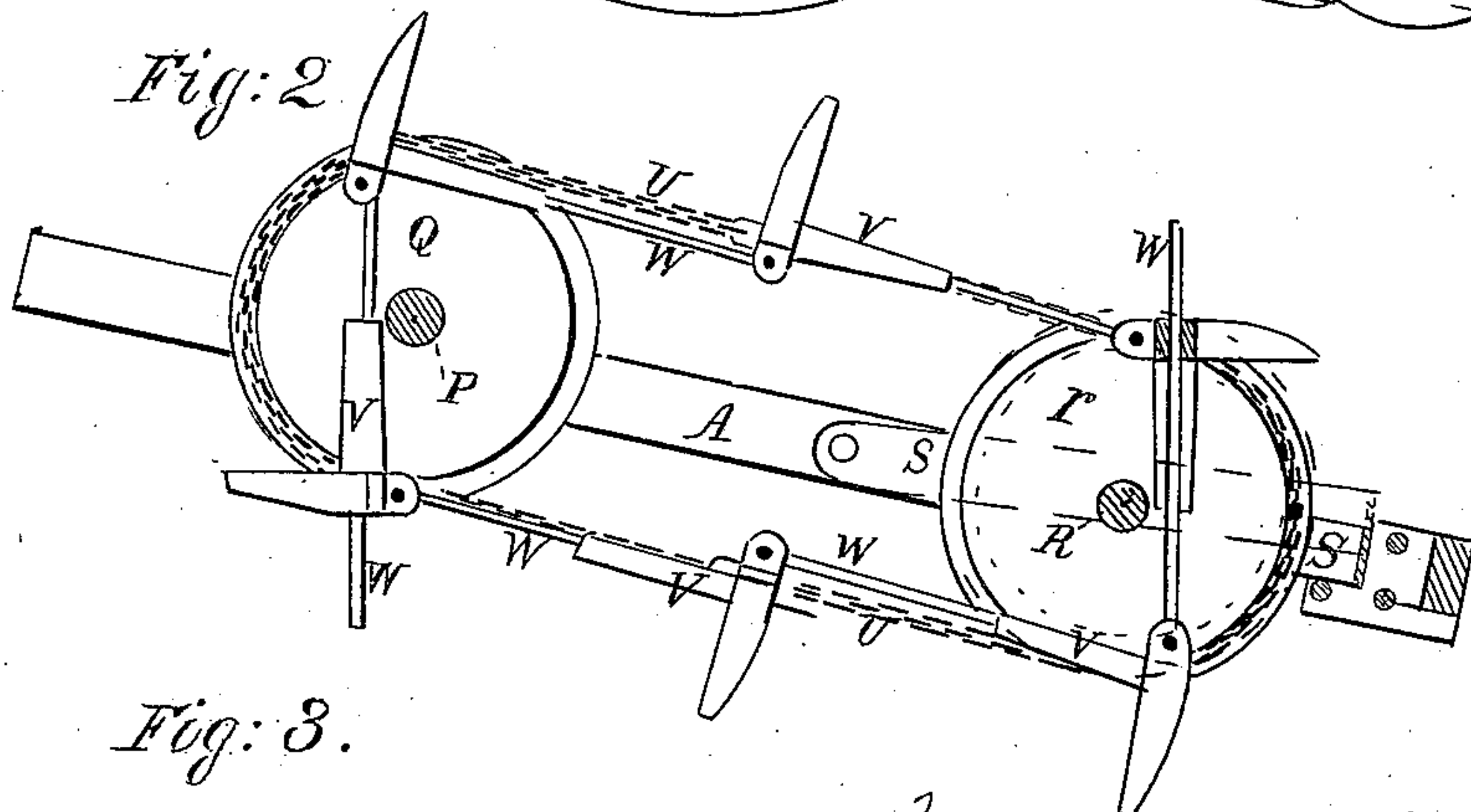
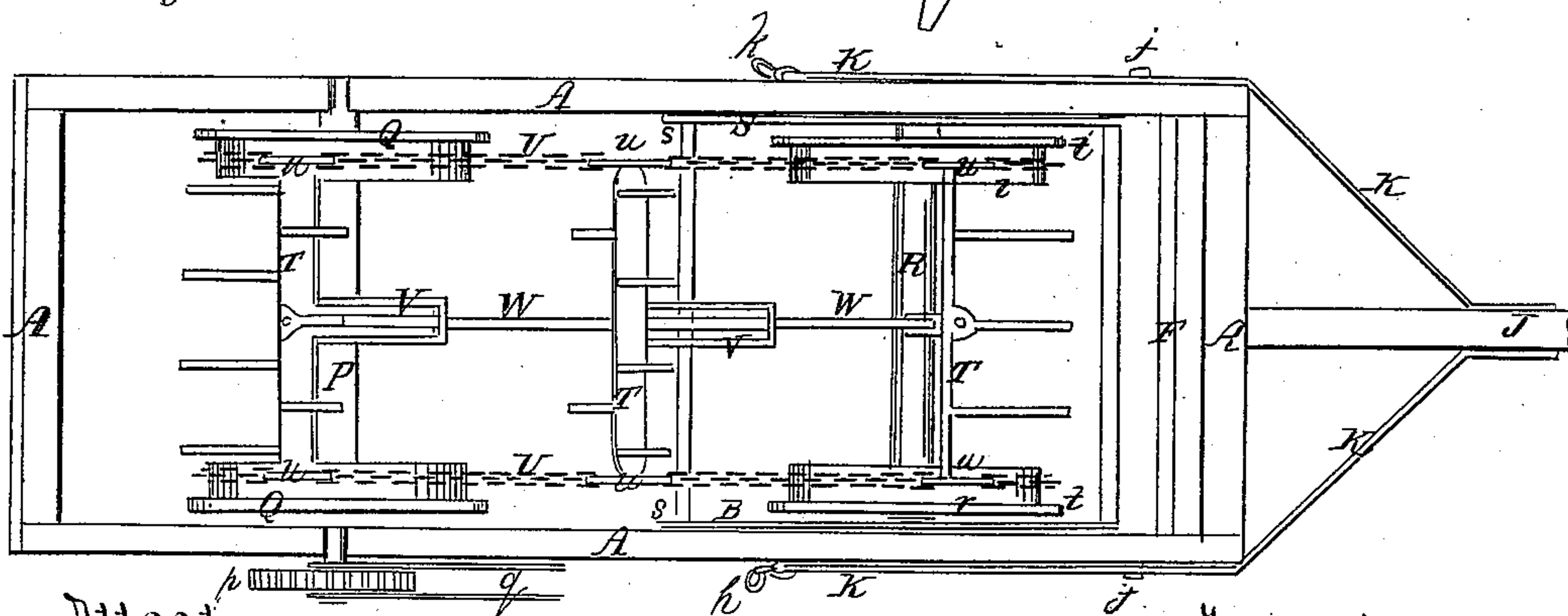


Fig: 3.



Attest.

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HENRY FARMER, OF PONTIAC, MICHIGAN.

Letters Patent No. 92,712, dated July 20, 1869.

IMPROVEMENT IN POTATO-DIGGER.

The Schedule referred to in these Letters Patent and making part of the same.

To whom it may concern :

Be it known that I, HENRY FARMER, of Pontiac, in the county of Oakland, and State of Michigan, have invented a new and useful Improvement in Potato-Diggers and Root-Excavators; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a side elevation of my apparatus, with the front traction-wheel removed;

Figure 2 is a detached elevation of the rake and its connections; and

Figure 3 is a plan view of the same.

Like letters refer to like parts in each figure.

The nature of this invention relates to an improvement in the construction of machines for digging potatoes and other esculent roots, and consists in the peculiar construction and arrangement of a series of rake-heads, attached to an endless chain, operating to clear the excavator, in a device for throwing the rake in and out of gear with the traction-wheels, and in the arrangement of its gauge-wheels, for determining the depth of cut of the excavating-shovel; also in a pole or tongue, so arranged that the driver may adjust the same to the proper angle in the varying inclination of the frame of the implement.

In the drawings—

A represents a proper frame, surmounting a transverse shaft or axle, B, revolving in bearings on its under side.

C are traction-wheels, revolving loosely on the ends of the shaft, and support the whole.

D is a seat-frame, secured to the main frame over the axle.

E is a grated shovel or excavator, secured to and below the main frame, for under-running and taking up the hill or row and its contents.

To regulate the depth of the cut of the excavator, at the front end of the main frame, I journal a rock-shaft, F, fig. 3, from whose arms, *f*, fig. 1, project the axles G, upon which rotate gauge-wheels H.

A lever, I, secured to the rock-shaft, and working in a quadrant, *i*, raises or lowers the gauge-wheels sufficiently to accomplish the desired result.

As the inclination of the frame varies when the apparatus is or is not at work, the tongue or pole must be adjusted to a proper relative angle to it. The tongue J is provided with metallic hounds, K, pivoted to the sides of the frame at *j*. To the rear end of each hound a chain, *k*, is attached, thence led over and secured to a drum, L, keyed to a shaft, M, journalled to the top of the seat-frame.

One of these drums, at the end of the shaft M, has secured to it a ratchet, *l*, with which engages a spring-pawl, *m*, securing it in position, as shown in fig. 1.

A slotted pawl-lever, N, embracing the shaft M,

and the drum, is employed to raise the rear ends of the hounds, and depress the front end of the tongue to a proper level, when the machine is not at work.

To reverse this movement of the tongue, the driver, with his foot, withdraws the spring-pawl *m* from the ratchet *l*, when the tongue will accommodate itself to the strain from the breast-straps.

The operation of the rakes may be explained as follows:

A spur-wheel, O, is sleeved on the shaft B, between the frame and the right traction-wheel. This spur-wheel is provided with a spring-pawl, *o*, which engages with a ratchet, *c*, on the hub of the traction-wheel, so that the wheel will, in its forward movement, carry the spur-wheel with it, but will not move it if the machine be backed. A similar ratchet is attached to the other traction-wheel, but the spur-gear is replaced by a face-plate secured to the shaft, carrying the spring-pawl, for communicating the full power of both traction-wheels to the spur-wheel O, in moving in a direct line, and to prevent torsion in the shaft B in turning around.

P is a transverse shaft, rotating in suitable bearings on the main frame, behind the seat-frame, carrying the grooved drums Q, and provided with a pinion, *p*, rotated by the spur-wheel O, through the intermediate gear *p'*, hung in the forked lever *q*, pivoted to the shaft P, and so arranged as to enable the driver to throw it in or out of gear with the spur-wheel O, as may be necessary.

R is a shaft, carrying the drums *r* over the excavator, and rotating in a vibrating frame, S, pivoted to the main frame at *s*, and supported by the stops *t*.

T are the heads of the rakes, whose ends are journalled in the solid links *u*, of the endless chains U, travelling in the grooves of the drums Q and *r*.

Secured to each rake-head, at right angles with its teeth, is a guide, V, in which freely slides a rod, W, one end of which is hinged to the next preceding rake-head, so that when the drums are revolved, the rake-teeth on the under side of the endless chains will move to the rear in a vertical position, separating the earth on the excavator, and, catching the vines, drags the potatoes out of the adherent earth, leaving them on the surface of the ground.

Should a stone, or a large stiff sod be taken up by the excavator, no damage can be done to the rakes, as the vibrating frame will lift up and allow the rakes to slide over the obstruction.

By placing the transverse shaft P well to the rear, and consequently elongating the endless chains, the rake-teeth will pass along over the shovel in a vertical position, carrying the vines well past it, letting them go before they turn to pass up over the rear drums.

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

1. The combination of the rake-head T, pivoted in

the endless chains U, with the guides V, and hinged guide-rods W, working on suitable drums; as and for the purpose set forth.

2. In combination with the above, the shaft P, rotated by the traction-wheel, through its ratchet *c*, engaging with the pawl *o*, of the spur-wheel O, rotating the pinion *p* of said shaft, through the intermediate gear *p'*, hung in the forked lever *q*, the shaft R rotating in the vibrating frame S, and carrying the drums *r*, rotated by the endless chains U, from the drums Q, on the shaft P, when constructed, arranged, and operating substantially as and for the purposes specified.

3. The arrangement of the rock-shaft F, the arms *f*, the axles G, the gauge-wheels H, the lever I, and the quadrant *i*, as and for the purpose above described.

4. The combination and arrangement of the tongue J, the chain *k*, the hounds K, the drum L, the shaft M, the pawl-lever N, the ratchet *l*, and the spring-pawl *m*, as and for the purpose above mentioned.

5. In combination with the foregoing parts, the frame A, axle B, traction-wheels C, seat-frame D, and grated shovel E, when constructed, arranged, and operating substantially as herein described, and for the purposes specified.

HENRY FARMER.

Witnesses:

H. F. EBERTS,

JAS. I. DAY.