

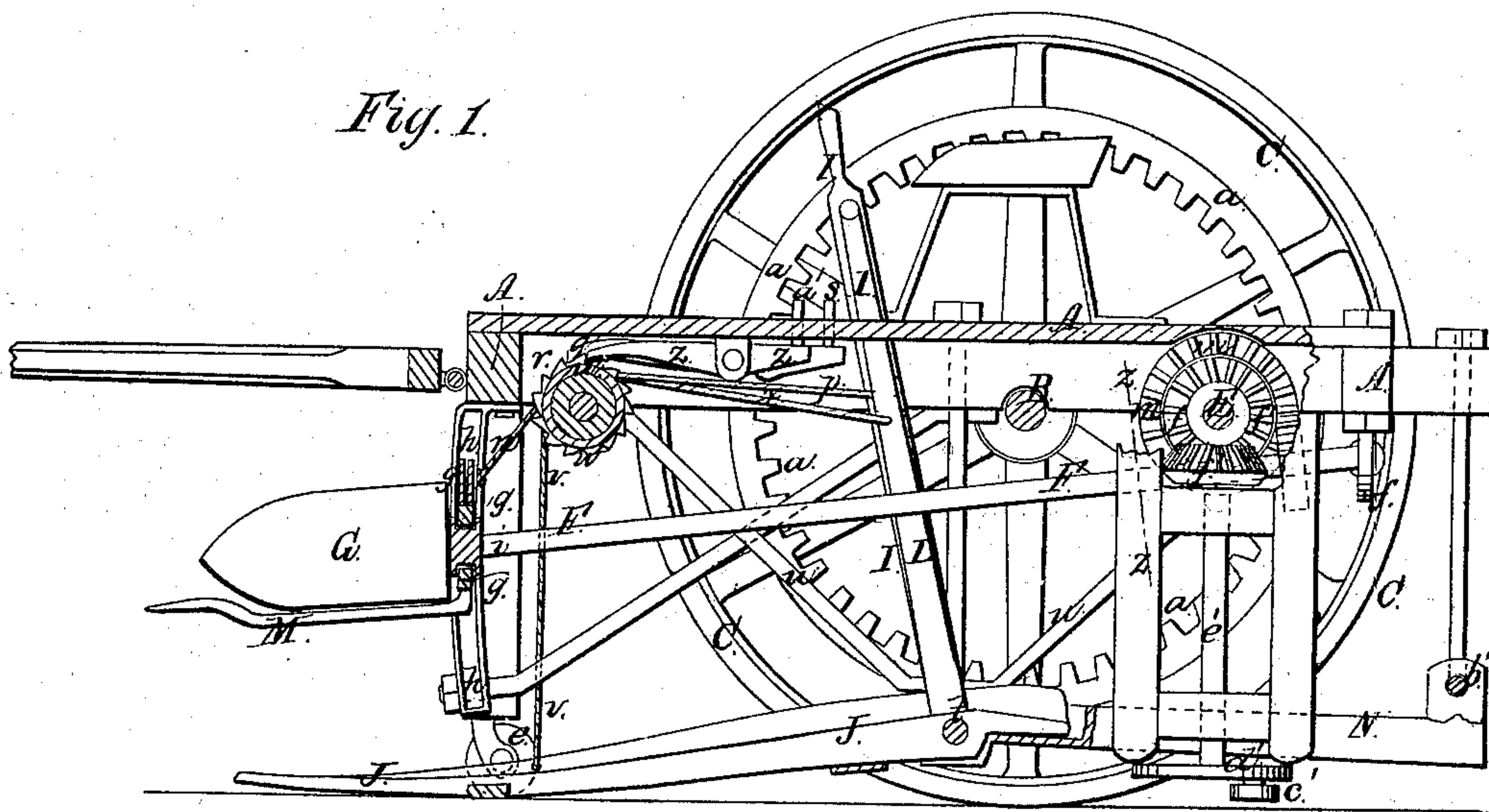
W. F. Andrews, 2. Streets. Street. 1.

*Potato Digger.*

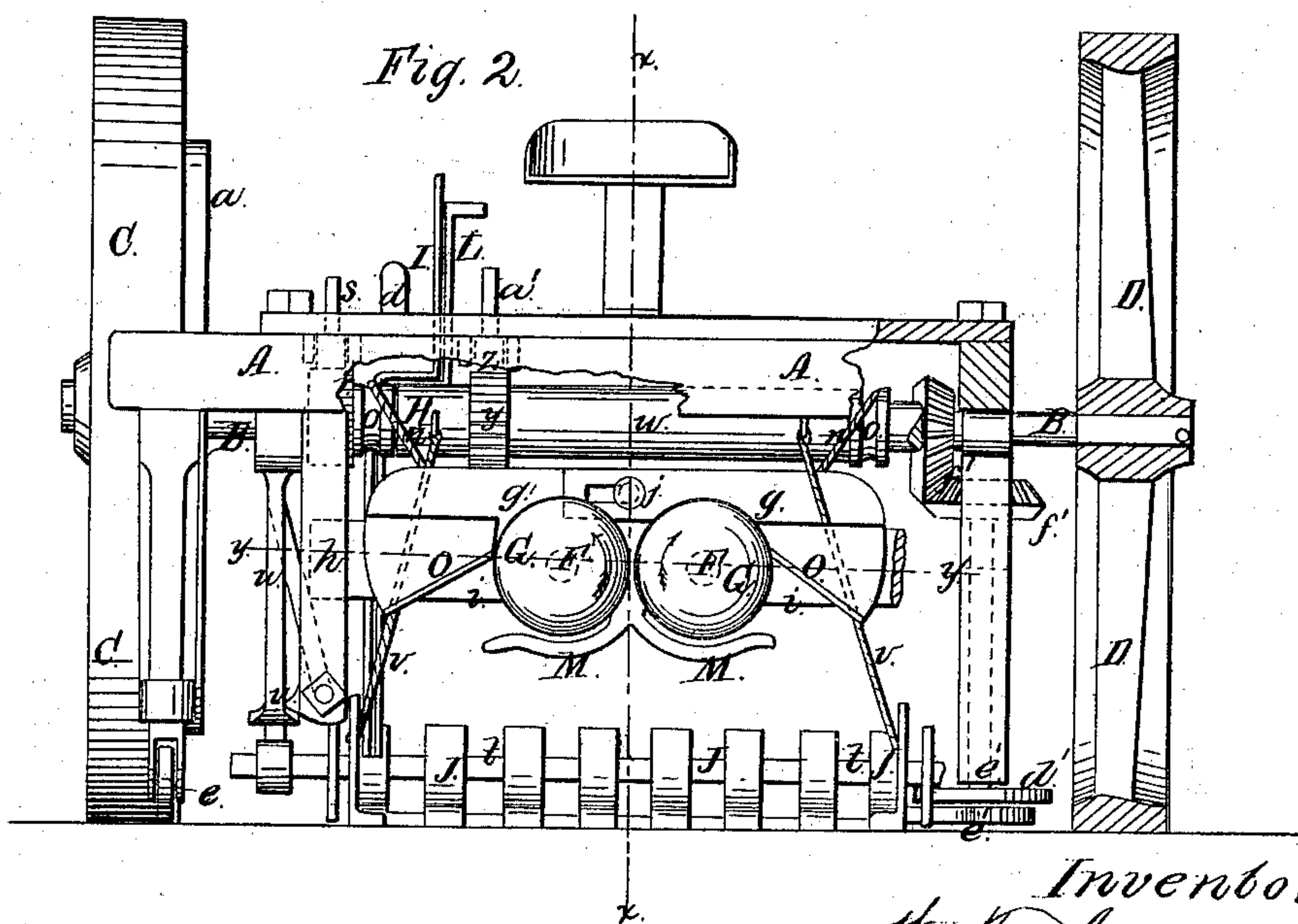
No. 91897

*Patented June 29. 1869.*

*Fig. 1.*



*Fig. 2.*



Witnesses.

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Potato Digger.

No. 91,897.

Patented June 29, 1869.

Fig. 3.

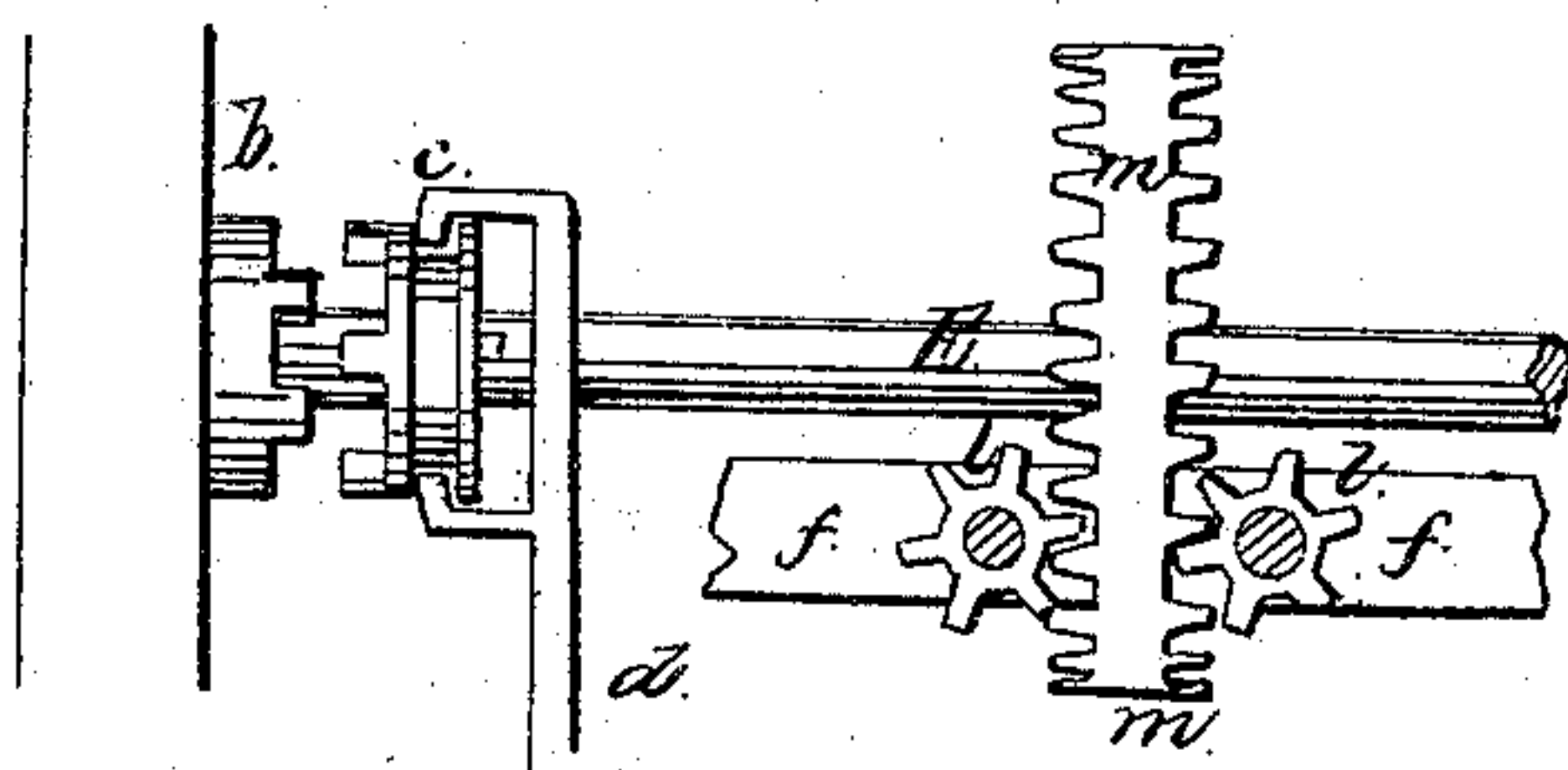
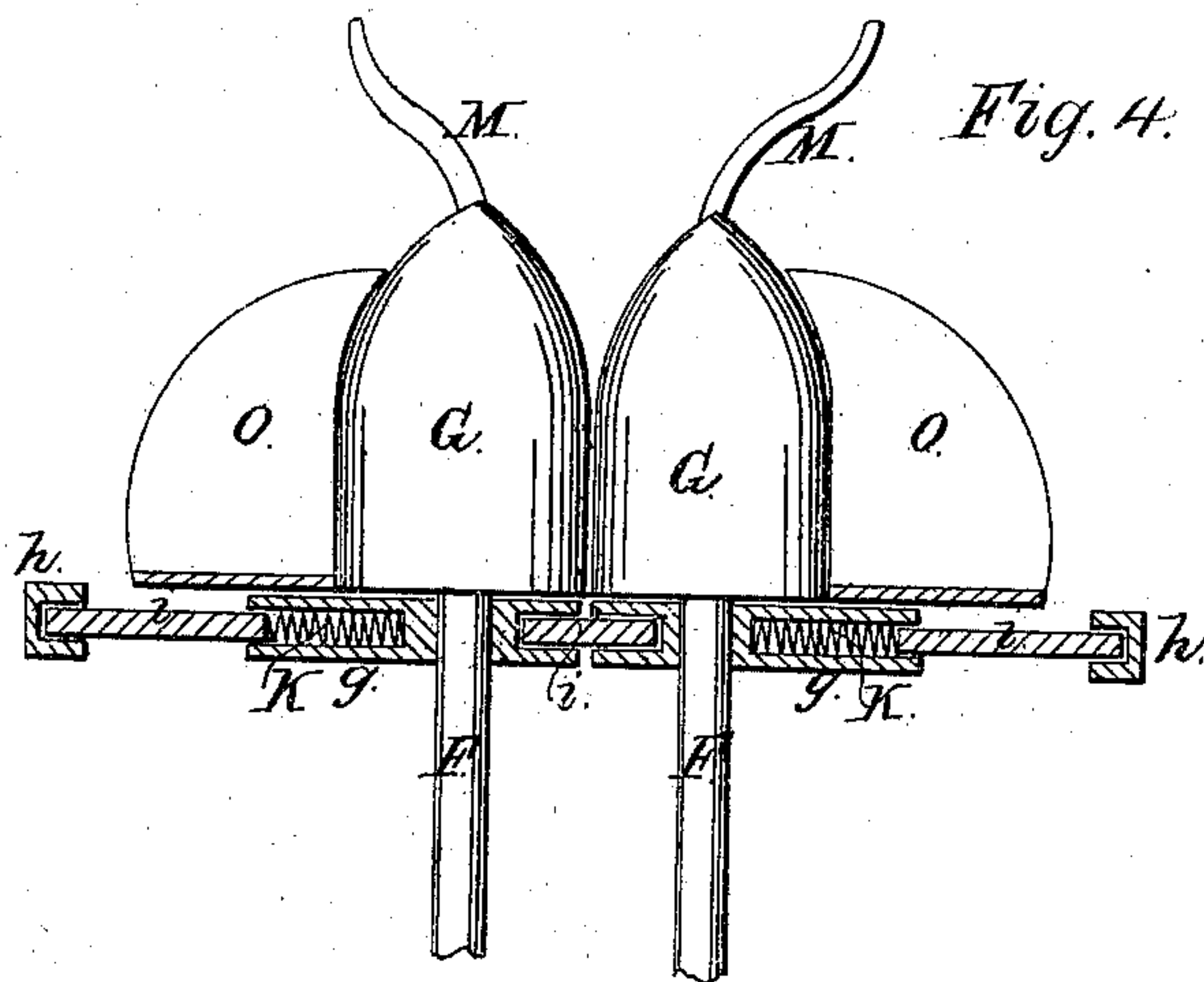


Fig. 4.



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WILLIAM F. ANDREWS, OF WATSON, NEW YORK.

Letters Patent No. 91,897, dated June 29, 1869.

## IMPROVEMENT IN POTATO-DIGGER.

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

To all whom it may concern:

Be it known that I, WILLIAM F. ANDREWS, of Watson, in the county of Lewis, and State of New York, have invented a new and improved Potato-Digger; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1, Sheet I, represents a vertical longitudinal section of my improved potato-digger, taken on the plane of the line  $x-x$ , fig. 2.

Figure 2, Sheet I, is a front elevation, partly in section, of the same.

Figure 3, Sheet II, is a detail vertical section of the same, taken on the plane of the line  $z-z$ , fig. 1.

Figure 4, Sheet II, is a detail horizontal section of the same, taken on the plane of the line  $y-y$ , fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to a new potato-digger, which is made adjustable to work to any desired depth, and which is provided with a self-acting vine-pulling attachment, whereby the operation of gathering the potatoes from the ground is considerably facilitated.

The invention consists in the construction and combination of parts, as will be hereinafter more fully described.

A, in the drawing, represents the frame of my improved potato-digger.

B is the axle, fastened to the frame A, and carrying at its ends the loose wheels C and D.

The wheel C carries an internal gear-wheel,  $a$ , as shown, which meshes into the teeth of a pinion,  $b$ , that is hung loose on a horizontal transverse shaft, E. The shaft E has its bearings in the rear part of the frame A.

A sliding clutch-coupling,  $c$ , is arranged on the shaft E, and connected with a suitable lever,  $d$ , to throw the pinion in or out of gear.

When the clutch is thrown against the pinion, the shaft E will be in gear with the wheel  $a$ .

The frame A is also supported in front on small caster-wheels,  $e e$ , as indicated in figs. 1 and 2.

F F are two longitudinal shafts, having their bearings in rear, in a plate,  $f$ , that is pivoted to the under side of the main platform A, while their front bearings are in plates  $g g$ , that are fastened to a transverse plate,  $i$ , fitted with its ends in segmental grooved pendants,  $h h$ , which are suspended from the front part of the frame A, as shown.

The plates  $g$  are slotted horizontally, and are, by a pin or pins,  $j$ , fitting through said slots, connected with the plate  $i$ , so that they can be adjusted any suitable distance apart.

Springs,  $k k$ , shown in fig. 4, are interposed between the outer edges of the plates  $g$  and slots in the plate  $i$ , to force the said plates together. The shafts F F

are therefore forced toward each other, but may be moved further apart, as the springs  $k$  will yield to such outward pressure.

On the front end of each shaft F is mounted a conical block, G, the two blocks being in line. They are with their sides forced together, but can, as aforementioned, be moved apart with the axles F.

On each shaft F is mounted a pinion,  $l$ , the two pinions meshing into the teeth formed on the two sides of a double gear-wheel,  $m$ , which is mounted on the shaft E, as shown in fig. 3.

When the shaft E is thrown into gear by means of the clutch  $c$ , it will, by the aforesaid gearing, revolve the shafts F F and their cones G in opposite directions, as indicated by arrows in fig. 2.

The plate  $i$  is, by means of strings, cords, or chains,  $n n$ , suspended from pulleys,  $o o$ , that are mounted on a transverse shaft, H, which is hung under the platform of the frame A.

The shaft H is, by means of a strap or cord,  $p$ , connected with a lever, I, which is pivoted to the frame, as shown. By swinging the lever I back, the shaft H will be turned to wind up the cords  $n$ , whereby the plate  $i$  is elevated to any desired height.

The cones G can thus be raised or lowered at will, and can be locked at any height by means of a pawl,  $q$ , which catches into the teeth of a ratchet-wheel,  $r$ , mounted on the shaft H. The pawl will drop by its own weight, or by means of a spring against the edge of the ratchet-wheel, and will thus automatically lock the plate  $i$  at any height to which it may have been raised.

When it is desired to lower the plate  $i$ , the pawl is thrown out by pressing upon a pin,  $s$ , that projects from its rear end through the platform of the frame.

The digging-implement is a frame, J, consisting of a series of longitudinal bars, that are provided with a sharp edge on their front ends, and that are connected by suitable transverse braces.

The frame J is pivoted, at its rear end, to a transverse bar,  $t$ , which is supported by pendants,  $u u$ , that project from the under side of the frame A.

The front part of the frame J is, by a cord, or chain,  $v$ , connected with a loose sleeve,  $w$ , that is on the shaft H.

The sleeve is, by a cord,  $x$ , connected with a lever, L, and has ratchet-teeth,  $y$ , formed on it, so that it may be locked by a pawl,  $z$ . By swinging the lever L backward, the sleeve  $w$  will be turned on the shaft H, to elevate the frame J to any suitable height, the pawl  $z$  locking the frame in the said position.

The pawl can be thrown off the teeth  $y$  by pressing upon a pin,  $a'$ , projecting from it through the platform of frame A.

From the plate  $i$  project forward, below the cones G, arms, or bars, M M, which guide the vines between the cones.



Behind the frame J is suspended, from the bar *t*, in front, and from another bar, *b'*, in rear, a screen, N, which is, by a pitman, *c'*, connected with a crank, or eccentric, *d'*, on a vertical shaft, *e'*, that receives motion by suitable gearing, *f'*, from the shaft E. By this arrangement the screen N receives laterally-oscillating motion.

The operation of the machine is readily understood.

When, by means of the lever *d*, the shaft E is thrown into gear, and when the frame J and cones G have been adjusted to the requisite height, the machine is drawn ahead by horse or other power. The points of the frame J will dig into the ground, to gather the potatoes, while the cones G will take hold of the vines and raise them off the frame J, stripping off any potatoes that may adhere to them.

O O are inclined shields, attached, in front, to the plates *g*, on the outer sides of the cones. On these the vines slide down to the ground, the plates O preventing them from falling back to the gatherer J.

From the frame J the potatoes are conveyed up on the shaking-screen N, on which they are separated from all dirt and impurities, and are thence discharged to the ground, or into any suitable receptacle.

The plate *f*, which supports the rear ends of the shafts F, is pivoted to lugs projecting from the frame A, so that it can follow the up and downward motion of the plate *i*, during which motion the shafts F are swung up and down.

Having thus described my invention,

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

1. The shafts F, for holding the vine-pulling blocks G, when supported in rear by a pivoted-plate, *f*, and in front by laterally-adjustable plates *g g*, substantially as herein shown and described.

2. The plates *g g*, for supporting the front ends of the shafts F, when arranged laterally adjustable on a vertically-adjustable plate, *i*, and held forced together by springs *k*, substantially as herein shown and described.

3. The plate *i*, for supporting the laterally-adjustable rotating cones G, when working in the grooved pendants *h*, and suspended from the shafts H, substantially as herein shown and described.

4. The vine-guides M, when arranged in combination with the rotating adjustable vine-pulling cones G, substantially as herein shown and described.

5. The shaft H, carrying the loose sleeve *w*, when connected with the levers I and L, and with the frame J and shafts F, so that either the frame or shafts, or both, can be elevated to a suitable height, substantially as herein shown and described.

6. The pawls *q* and *z*, when arranged in combination with the shaft H and sleeve *w* respectively, to operate substantially as herein shown and described, so as to automatically lock the vine-pullers or the potato-gatherer at a desired height, as specified.

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Witnesses:

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