

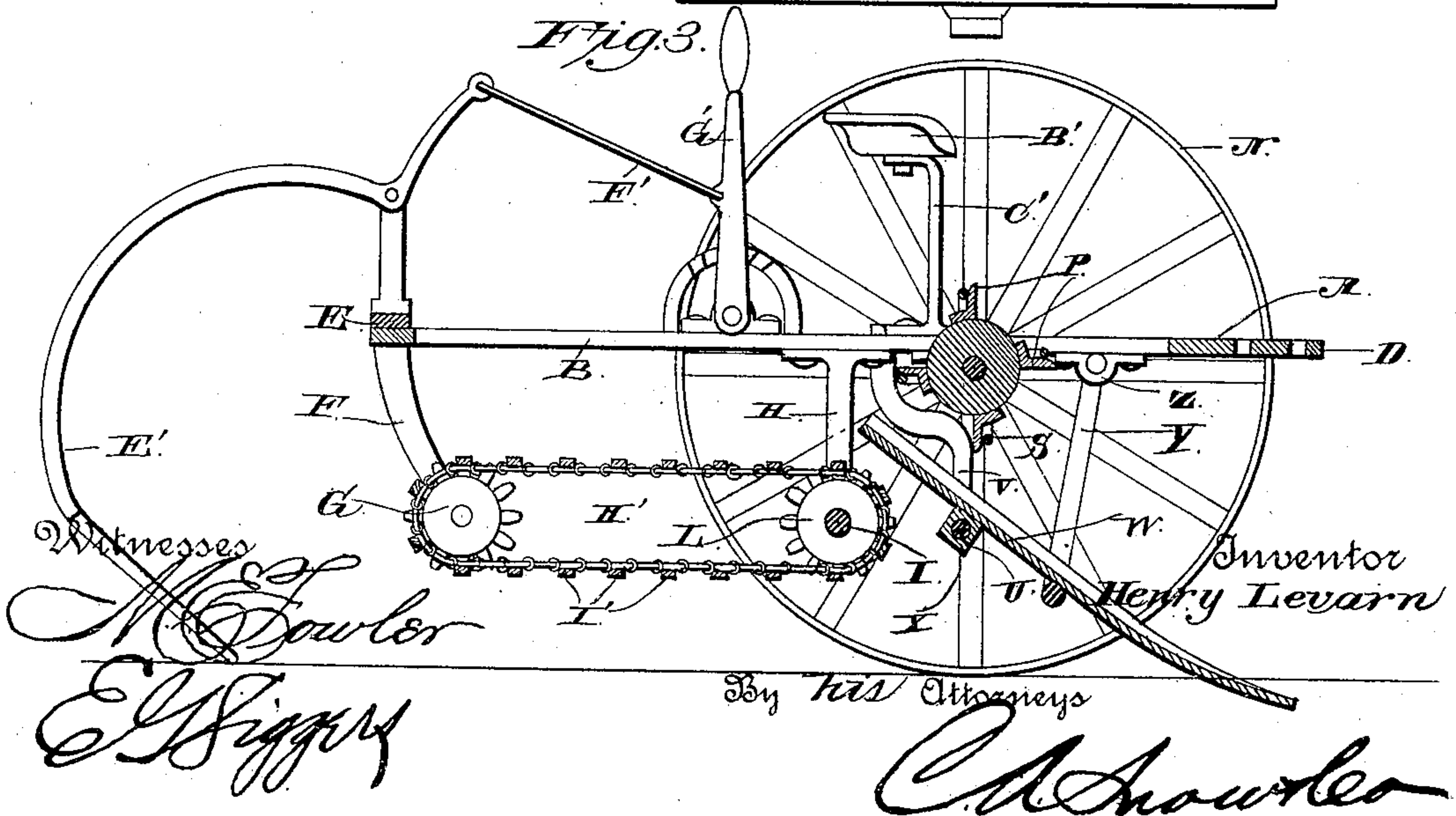
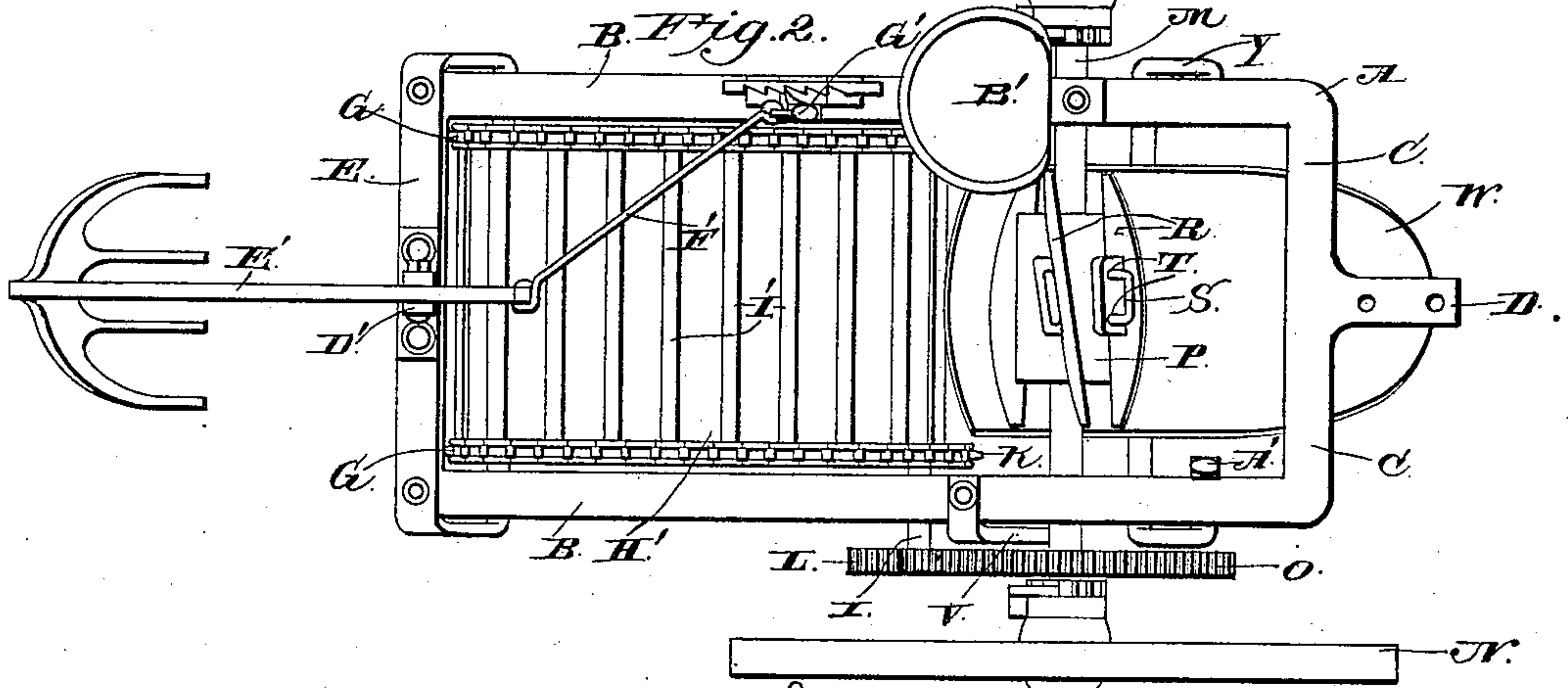
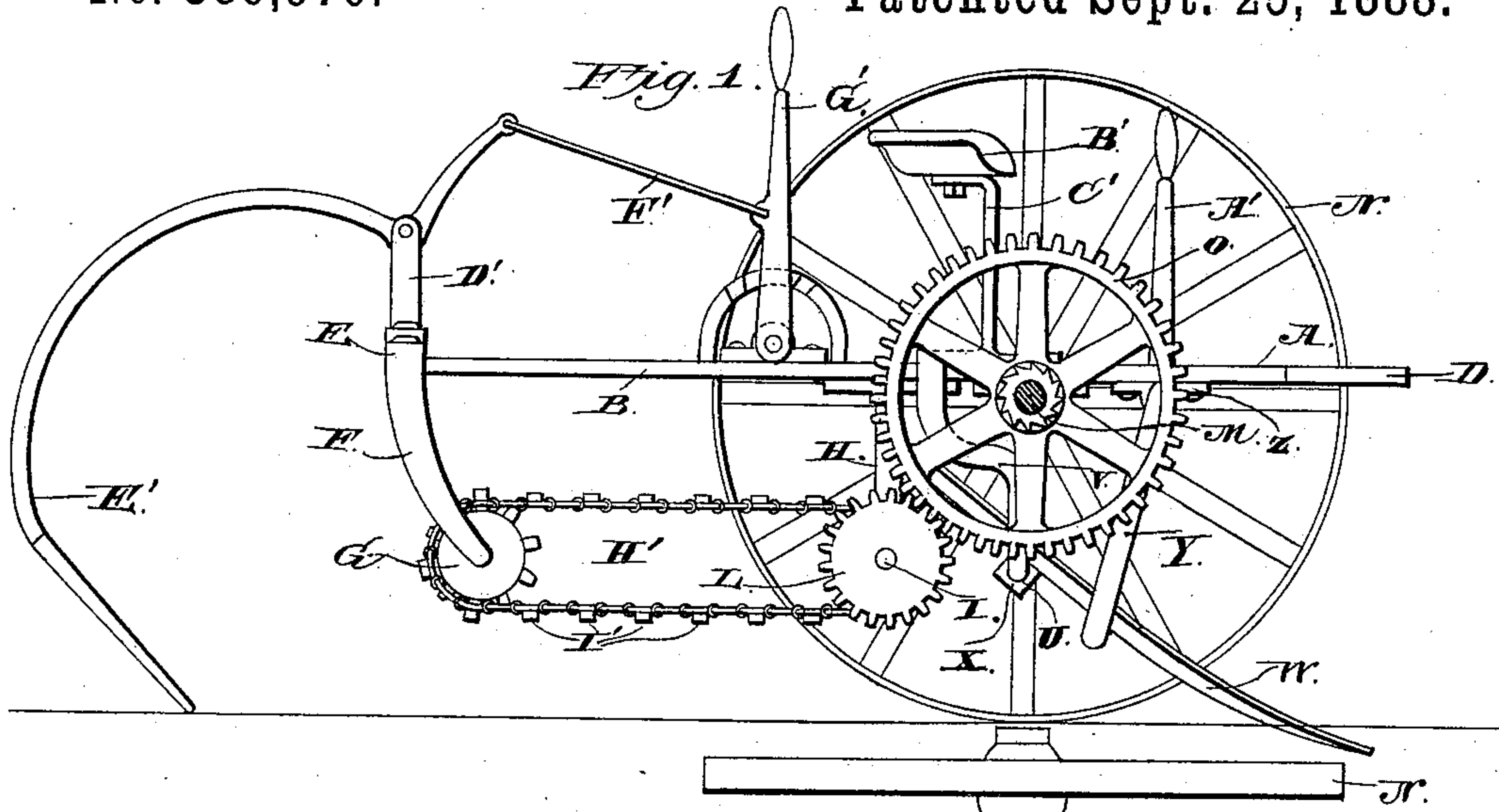
(No Model.)

H. LEVARN.

POTATO DIGGER.

No. 389,970.

Patented Sept. 25, 1888.



Witnesses
M. Dowler
E. Sigg

Inventor
Henry Levarn
By his Attorneys
C. A. Shouder

UNITED STATES PATENT OFFICE.

HENRY LEVARN, OF VERGENNES, VERMONT.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 389,970, dated September 25, 1888.

Application filed May 4, 1888. Serial No. 272,784. (No model.)

To all whom it may concern:

Be it known that I, HENRY LEVARN, a citizen of the United States, residing at Vergennes, in the county of Addison and State of Vermont, have invented a new and useful Improvement in Potato-Diggers, of which the following is a specification.

My invention relates to an improvement in potato-diggers; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a potato-digger embodying my improvement. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical longitudinal sectional view of the same.

A represents a rectangular frame, which comprises a pair of side bars, B, and a front bar, C, connecting the front ends thereof. The said front bar is provided with a clevis or other attachment, D, for the tongue or pole.

E represents a cross bar, which connects the rear ends of side bars, B, and has its ends turned downward to form standards F. The lower ends of said standards are provided with inwardly-projecting spindles, on which are journaled sprocket-wheels G.

H represents a pair of standards, which depend from the sides of the frame, at a suitable distance from the front end thereof, and in the said standards are bearings, in which is journaled a transverse shaft, I. The said shaft is provided with sprocket-wheels K, which are keyed thereto, and are arranged on the inner sides of the standard and in line with the wheels G, and to one of the projecting ends of the shaft is keyed a spur-pinion, L.

M represents a driving-shaft, which is journaled transversely in suitable bearing-blocks on the under side of the frame, and at a suitable distance in advance of the standards H. To the extremities of the said shaft are secured driving and supporting wheels N, which are connected to the shaft by pawl-and-ratchet movements, so that the said wheels are adapted to turn the shaft when the machine is progressing forward, and are adapted to rotate idly on the shaft in a retrograde direction when the machine is being turned or backed. Rigidly secured to the said shaft M, near one

end thereof, is a spur-wheel, O, which meshes with the pinion L.

Secured to the center of the shaft M is a hub or enlargement, P.

R represents a series of sweep-arms, which are arranged diagonally on the periphery of said hub or enlargement, and are secured thereto by means of U shaped keepers S, the arms of which pass through openings T on the rear side of the sweep-arms, and are secured in the hub or enlargement. These keepers are of sufficient length to enable the sweep-arms to be moved in and out upon them toward and from the offset or hub. The outer edges of the said sweep-arms are curved throughout the entire length of said arms.

U represents a transverse shaft, which is suspended at a suitable distance below the shaft M by means of arms V, which are bent upward from the said shaft and bolted to the sides of the frame.

W represents a digger or scoop, which is of the shape here shown, is slightly curved throughout its length, and is concavo-convex in transverse section. On the under side of the said digger or scoop, at a suitable distance from the rear end thereof, is a box or block, X, through which the shaft U extends, and thereby the said digger or scoop is pivoted or hinged on the said shaft in such a manner that said digger or scoop is adapted to incline in any desired angle.

Y represents a yoke, which is suspended from the front end of the frame, and has the inwardly-projecting spindles at the upper ends of its arm journaled in bearings Z. The said yoke is arranged transversely under the digger or scoop and at a suitable distance below the same, and is provided with a lever, A', by means of which it may be rocked or turned in its bearings and caused to engage the under side of the digger or scoop, so as to raise or lower the same to any desired inclination.

B' represents a driver's seat, which is mounted on a standard, C', that rises from one side of the frame at a suitable distance from the front end thereof.

D' represents a vertical standard, that projects from the upper side of the rear bar, E, at the center of the same.

E' represents a gathering-rake, which has

its arm or lever pivoted at a suitable distance from its front end in the upper end of the standard. The rake is thereby adapted to be trailed in rear of the machine. To the front
 5 end of the arm or lever of the rake is attached a cord, wire, or chain, F', which extends forward, and is connected to a hand-lever, G', that is fulcrumed on the frame A, and is within easy reach of the driver. By means of this
 10 hand-lever the rake may be raised or lowered, as will be readily understood.

H' represents a carrier and separator, comprising a pair of endless chains, which connect and engage with the sprocket-wheels G and K,
 15 and strips or bars I', that connect the said endless chains, and are arranged transversely between them.

The operation of my invention is as follows: When the machine is in operation, the point
 20 of the scoop or digger is lowered to a suitable depth in the ground, and as the machine advances the earth and potatoes in the row are forced upward on the inclined side of the scoop, and are acted upon by the rotating arms R in
 25 succession, the said arms serving to throw the earth and potatoes from the rear upper end of the scoop onto the end of the conveyer and separator. The said arms R, as before stated, are vertically movable on the keeper, and as
 30 each arm is brought by the rotation of the hub to the under side thereof it slides downward on the arms of the keeper by its own gravity. In the event that the arms should strike on the upper side of the potatoes while in opera-
 35 tion, they will rise in their keepers, and thereby avoid cutting and bruising the potatoes. The potatoes, which are delivered on the endless conveyer and separator, are carried rearward by the same and separated from the adhering
 40 earth and roots, the said separator and conveyer serving as a screen or sieve.

From the rear end of the separator and conveyer the potatoes are dropped upon the ground, and the rake is supported in rear of
 45 the machine at such an elevation that it gathers the vines as they are discharged from the conveyer and forms them into piles as the machine advances. From time to time the operator, by means of the hand-lever before de-
 50 scribed, tilts the rake lever or arm, so as to raise the rake, and thereby disengage it from the vines, thus leaving the latter at intervals on the surface of the ground. The tines of the rake are sufficiently far apart to enable
 55 the potatoes to pass between them as the rake moves forward, and thereby the potatoes are left on the surface of the ground, where they may be readily picked up.

A potato-digger thus constructed is cheap and simple, is strong and durable, and will be
 60 found of great utility to persons engaged in raising potatoes.

When the scoop has accumulated a sufficient quantity of potatoes, it may be raised by the described means and its rear end brought
 65 down on the separator, depositing the potatoes thereon. The said rear end is sufficiently higher than the separator to serve this purpose.

Having thus described my invention, I
 70 claim—

1. In a potato digger, the combination of the frame, the scoop pivoted at a suitable distance from its rear end on a shaft secured to arms depending from the sides of the frame,
 75 the diverging yoke Y, passing under the scoop in front of its pivotal point, and the upstanding lever within reach of the driver's seat, by means of which the yoke may be raised or lowered, substantially as specified. 80

2. In a potato-digger, the combination, with the separator, of the swinging scoop pivoted to a shaft secured to arms depending from the main frame, the swinging yoke Y, and the lever A',
 85 standing upward within easy reach of the driver's seat, substantially as specified.

3. In a potato-digger, the combination, with the main frame, of the scoop, the swinging yoke to raise and lower the scoop, the lever-arm A', to operate the yoke, the driving-shaft
 90 and conveyer-wheels, the hub P on said shaft, the U-shaped keepers on said shaft, and the sweep-arms R, attached to the hub by said keepers and arranged to fall inward on the
 95 latter when upstanding and to fall outward thereon when depending, substantially as and for the purpose specified.

4. In a potato-digger, the combination, with the main frame, of the inclined scoop, the separator in rear of said scoop, the main shaft hav-
 100 ing the conveyer-wheels attached above the scoop, the sweep-arms R, attached to the hub on said shaft and adapted to fall inward on the keepers that hold them to the hub of the
 105 shaft when raised and to fall outward thereon when depending, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY LEVARN.

Witnesses:

JOSEPH L. MAIER,
 GEO. E. STONE.