

No. 617,513.

Patented Jan. 10, 1899.

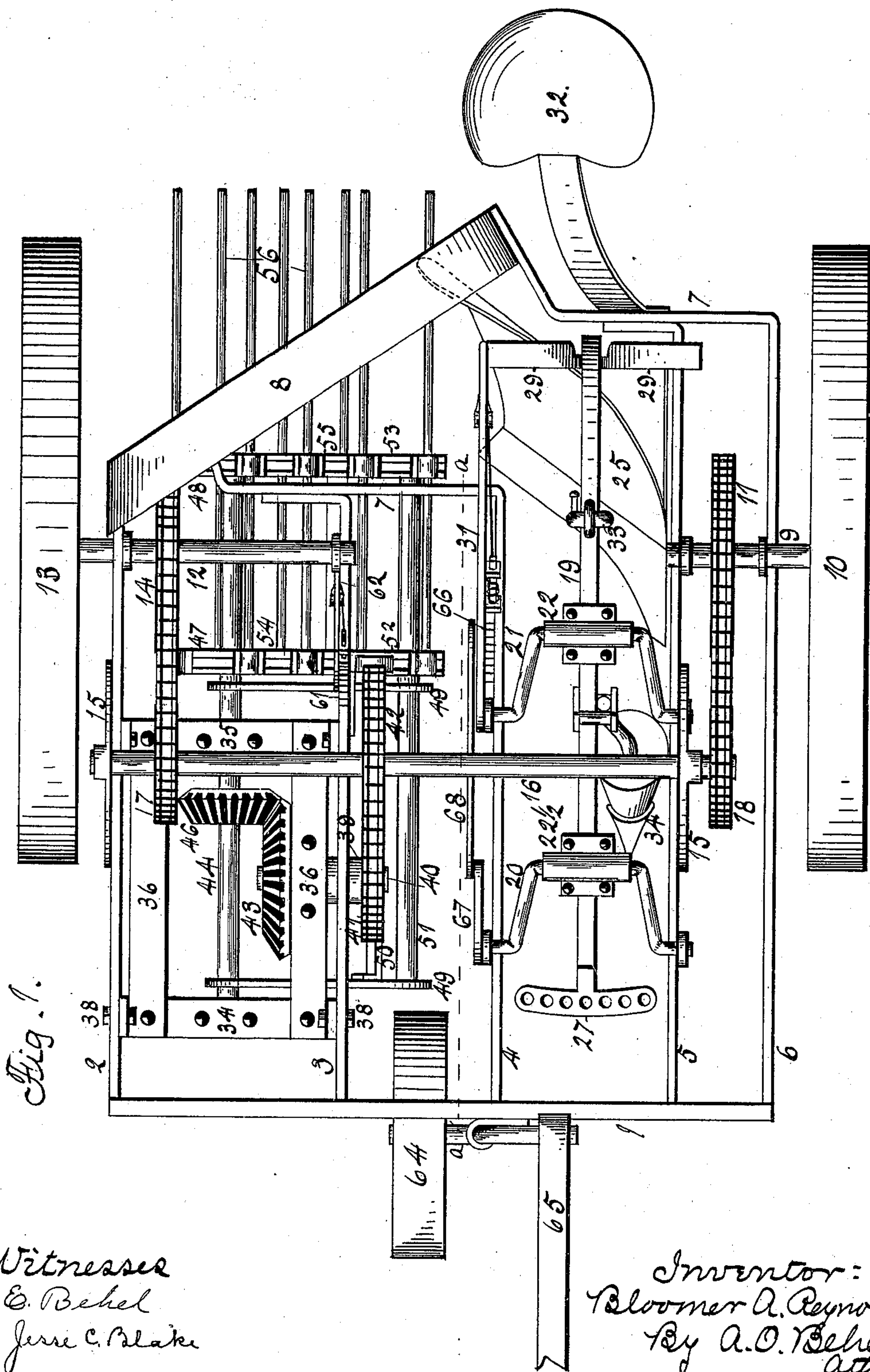
B. A. REYNOLDS.

POTATO DIGGER.

(Application filed May 22, 1897.)

(No Model.)

4 Sheets—Sheet 1.



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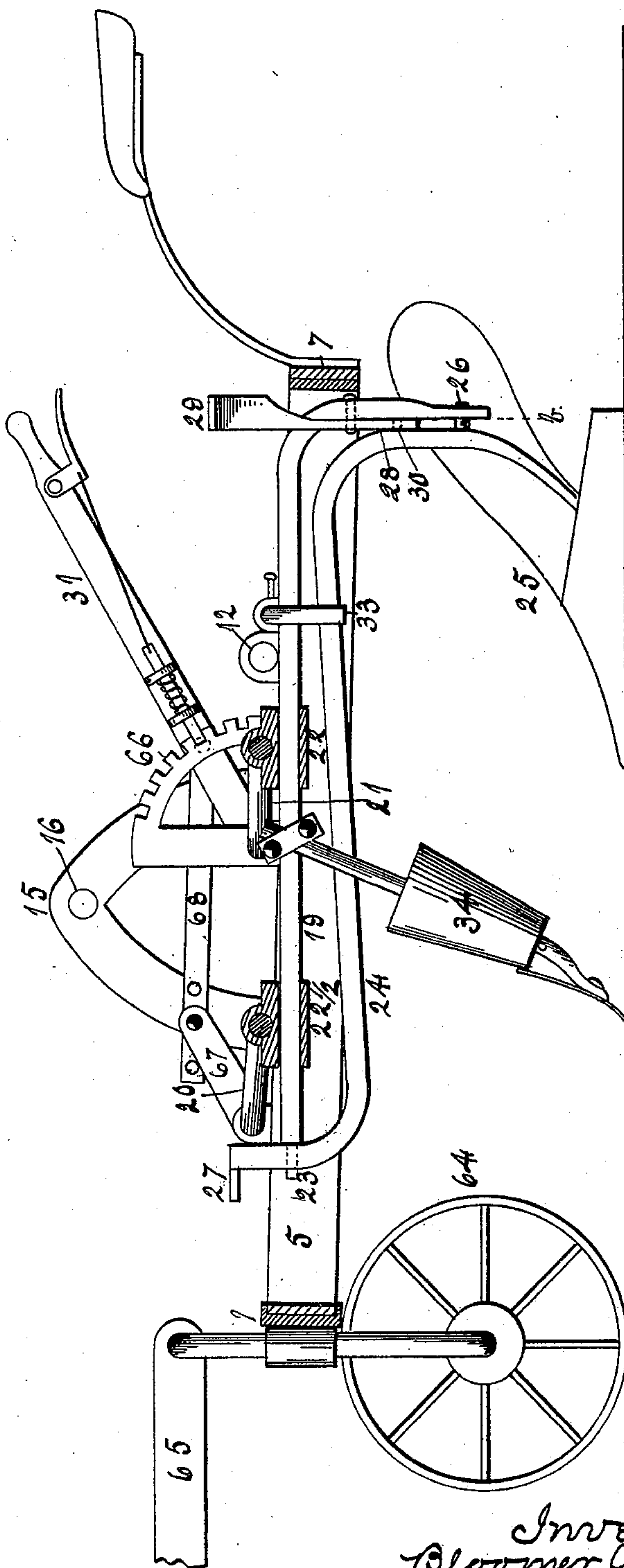
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Fig. 2.



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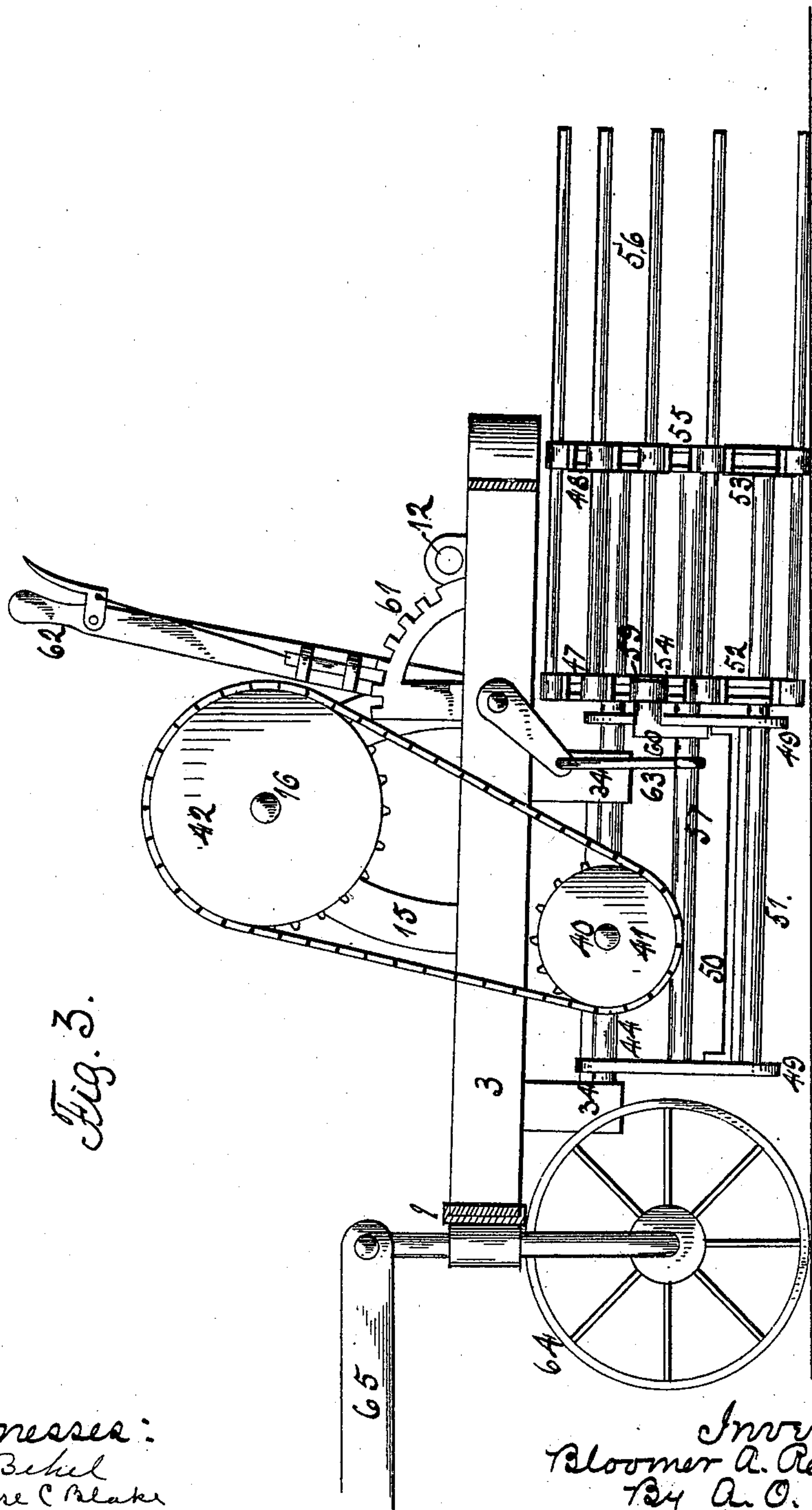


Fig. 3.

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Fig. A.

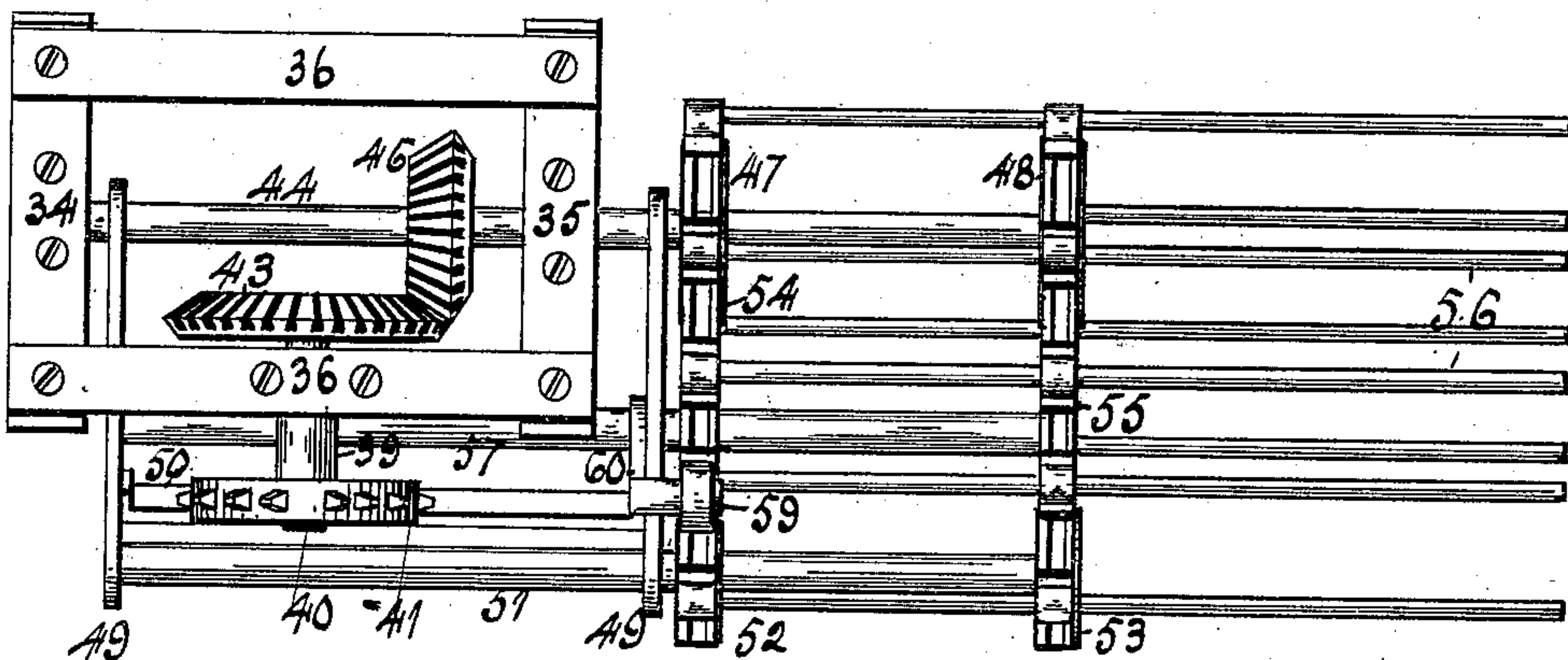


Fig. 7.

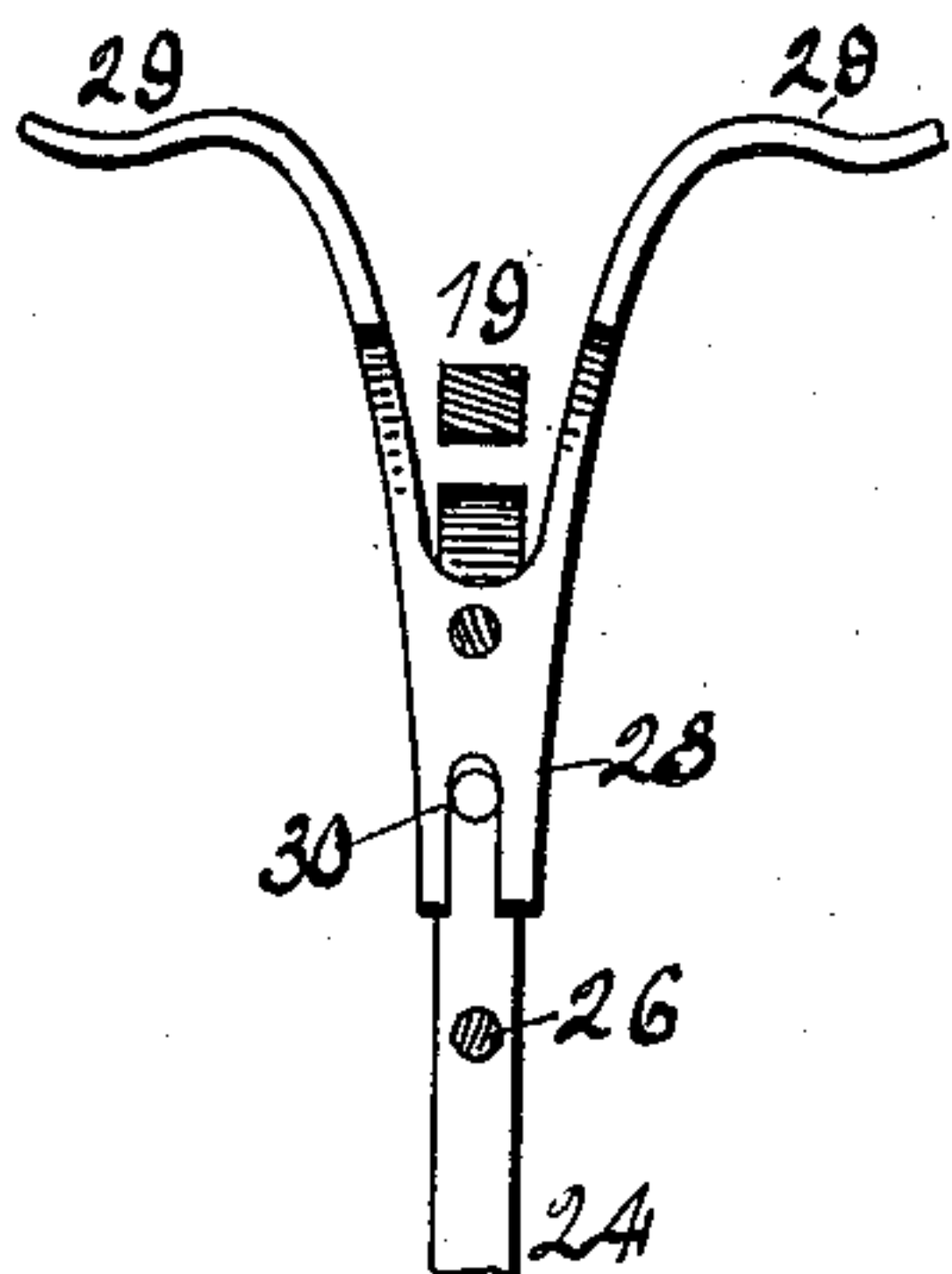


Fig. 5.

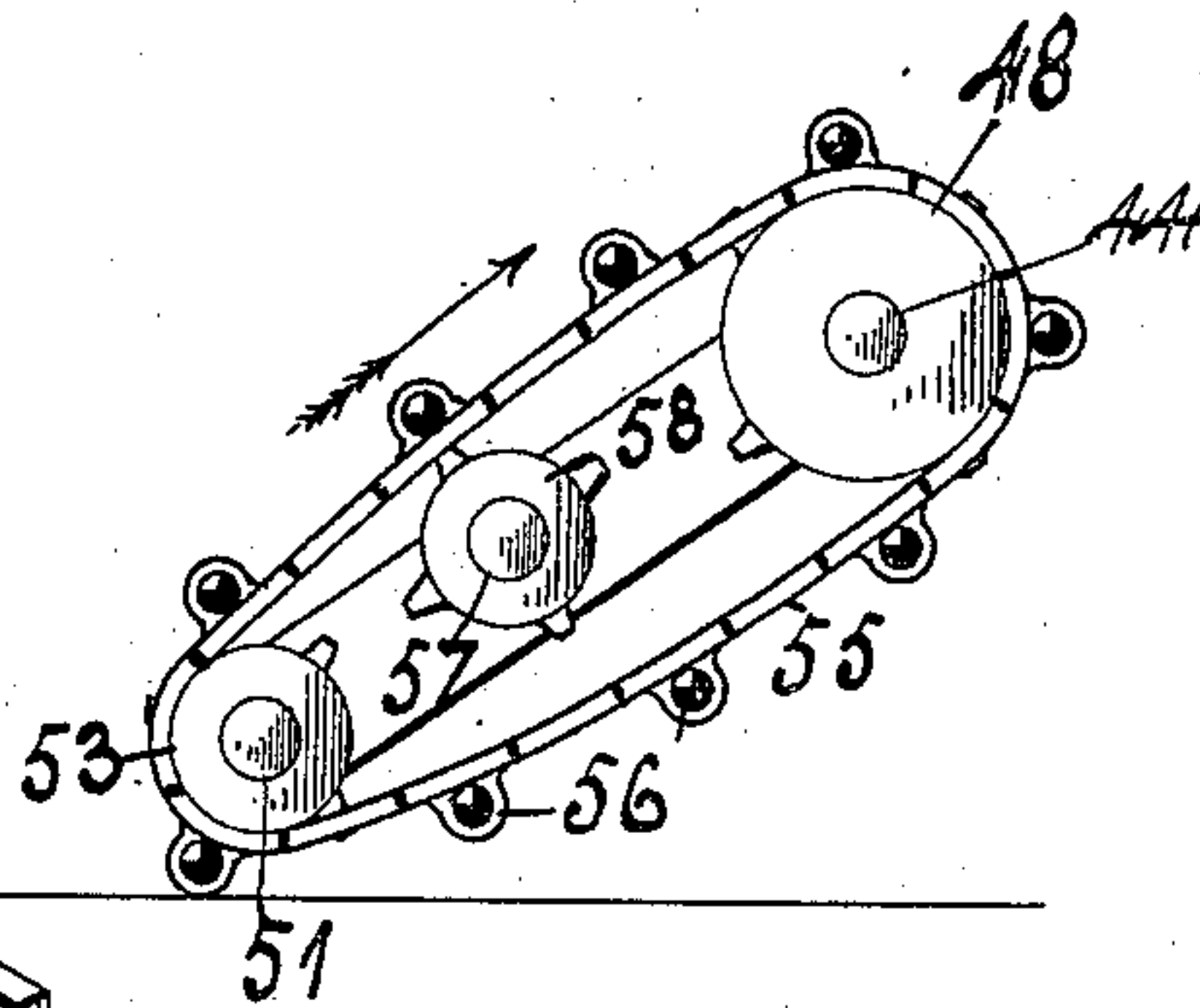
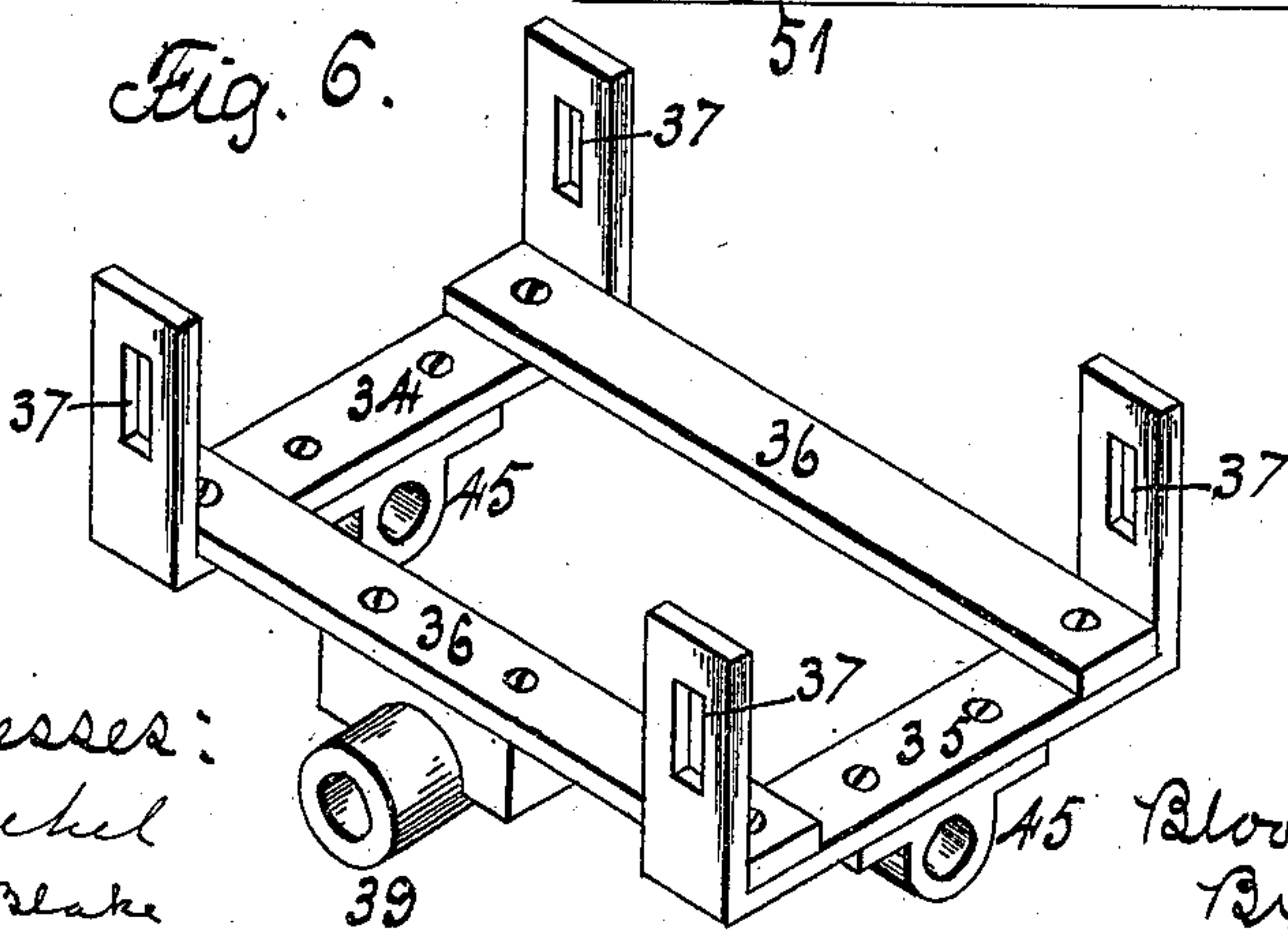


Fig. 6.



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UNITED STATES PATENT OFFICE.

BLOOMER A. REYNOLDS, OF ROCHELLE, ILLINOIS.

POTATO-DIGGER.

SPECIFICATION forming part of Letters Patent No. 617,513, dated January 10, 1899.

Application filed May 22, 1897. Serial No. 637,732. (No model.)

To all whom it may concern:

Be it known that I, BLOOMER A. REYNOLDS, a citizen of the United States, residing at Rochelle, in the county of Ogle and State of Illinois, have invented certain new and useful Improvements in Potato-Diggers, of which the following is a specification.

The object of this invention is to construct a potato-digger in which a plow and separator are employed and located by the side of each other, so that the earth will be thrown by the plow upon the separator transverse to the line of draft, the separator sifting the dirt from the potatoes, leaving the potatoes on top of the ground and carrying the vines to one side of the digger.

In the accompanying drawings, Figure 1 is a plan view of my improved potato-digger. Fig. 2 is a lengthwise section showing the plow and devices for supporting and adjusting it. Fig. 3 is a lengthwise section on dotted line *a*, Fig. 1, showing the construction of the separator. Fig. 4 is a plan view of the separator. Fig. 5 is a rear end elevation of the separator. Fig. 6 is an isometrical representation of the separator-supporting frame. Fig. 7 is a vertical transverse section of the plow-tilting device on dotted line *b*, Fig. 2.

The main supporting-frame consists of the front transverse bar 1, lengthwise bars 2, 3, 4, 5, and 6, rear end bars 7, and a brace-bar 8, suitably joined together.

To the lengthwise bars 5 and 6 is secured a stub-axle 9, supporting a carrying-wheel 10, also a sprocket-wheel 11. A stub-axle 12 is supported by the lengthwise bars 2 and 3, which support a carrying-wheel 13 and a sprocket-wheel 14.

To the lengthwise bars 2 and 5 are secured brackets 15, which support a transverse shaft 16 in a manner to revolve. The shaft supports sprocket-wheels 17 and 18, the former having a linked-belt connection with the sprocket-wheel 14 and the latter a linked-belt connection with the sprocket-wheel 11. The carrying-wheels may be provided with the usual clutch arrangement forming a connection with their stub-axes, which I have not deemed necessary to show.

Between the lengthwise bars 5 and 6 is located a plow, supported in place by a sup-

plemental beam 19, extending in the lengthwise direction of the bars. To the lengthwise bars 4 and 5 are connected bails 20 and 21 in a pivotal manner, their center portions connected to the supplemental beam by clamp 22 and guide 22½, the guide being free to slide upon the beam and the clamp being bolted rigidly to the beam. This beam has its rear end curved downward. Beneath this supplemental beam is located a plow-beam 24. To its rear end is secured a plow 25. This plow-beam has a pivotal connection with the supplemental beam at the points 23 and 26, the front end of the plow being upturned to admit of such pivotal connection and extending above that point to receive draft-bar 27, to which a clevis may be attached. To the downturned end of the supplemental beam is pivoted a foot-lever 28, having its upper end termination in two branches 29, one for each foot. The inner end of this foot-lever is slotted and receives a stud 30, extending from the rear face of the downturned portion of the plow-beam.

A driver's seat 32 is supported by the main frame, and a driver located therein can, with his feet resting upon the foot-lever, tilt the plow upon its pivotal connection with the supplemental beam. Pressure with the right foot has the effect of slightly elevating the right-hand side of the plowshare and depressing the plow-point and of moving the plow 25 and that part of the plow-beam 24 below a line drawn from pivotal connection 23 to pivotal connection 26 slightly to the right of the line of progress, while that part of the plow-beam 24 above a line drawn from pivotal connection 23 to pivotal connection 26 is correspondingly moved to the left of the line of progress, or vice versa, as the case may be, such position of the parts specified being best calculated to cause the plow and separator to move to the right or left, as the case may be, enabling the driver to follow crooks in the row largely independent of the movements of the team or to keep the plow in proper position upon hillsides, so that in all cases the soil containing potatoes is thrown upon the spreader in a manner best calculated to separate the one from the other, since the line of draft is shifted so that the force of the team

is exerted in the direction of the desired movement, the caster-wheel in front facilitating such movement.

A lock 33 is pivoted to the supplemental beam and may be thrown down, engaging the supplemental beam and plow-beam, locking them together, if it should seem desirable, or to facilitate turning at the end of a row.

One end of bails 20 and 21 extends inward beyond their support. To this end of bail 21 is connected a hand-lever 31, having a dog connection with the toothed segment 66. To the inner end of bail 20 is connected an arm 67. A suitable link 68 connects hand-lever 31 and arm 67, giving a reciprocal motion to bails 20 and 21. A series of holes in link connection 68 admits of a longer or shorter connection between hand-lever 31 and arm 67, such adjustment serving to permanently elevate or depress the point of plow 25, the sliding of guide 22½ upon the supplemental beam admitting of such adjustment.

By means of hand-lever 31 the operator can raise or lower the plow 25 and beam 24, supplemental beam 19, the reciprocal motion of bails 20 and 21 maintaining the plow in the same relative position with reference to the surface moved over.

A colter 34 is supported by the supplemental beam to assist in turning aside trash and facilitate the passage of the plow.

At the moldboard side of the plow is located the separator, which is supported in an independent frame consisting of the two end frames 34 and 35, held separated by lengthwise brace-bars 36. The vertical end frames are provided with lengthwise slots 37 and bolts 38, connecting them with the lengthwise bars 2 and 3 of the main supporting-frame in a vertically-adjustable manner, admitting of adjustment at varying angles to the surface passed over.

To the under face of one of the brace-bars 36 is secured a bearing 39, supporting a shaft 40, upon one end of which is secured a sprocket-wheel 41, having a linked-chain connection with the sprocket-wheel 42, secured to the transverse shaft 16, and its other end supporting a beveled gear-wheel 43. At right angles to the shaft 40 and extending in the lengthwise direction of the digger is located a shaft 44, supported in bearings 45, depending from the under face of the end bars of the supplemental frame, and projecting slightly to afford support for bars 49. This shaft supports a beveled gear-wheel 46, which meshes with the beveled gear-wheel 43, from which it receives its rotary motion. Two sprocket-wheels 47 and 48 are secured to the shaft 44 near its rear end. Two bars 49, having a swinging connection with the bearings 45, extend transversely of the digger, and a brace-bar 50 holds their ends separated, their free ends supporting a shaft 51, upon which are located two sprocket-wheels 52 and 53. A linked belt 54 connects the sprocket-wheels 47 and 52, and a linked belt 55 connects the sprocket-wheels 48 and

53. Every other link of the belts 54 and 55 is solid. Rods 56 extend in the lengthwise direction of the digger and are secured to the solid links of the link belts 54 and 55 and extend rearwardly from link belt 55. A shaft 57 is located between the shafts 44 and 51, upon which is located a sprocket-wheel 58, each alternate sprocket being longer, which enter the open links of the belt by which the wheel is rotated. The closed links of the belt will engage the shorter sprockets, thereby imparting a jolting movement to the rods 56 as they pass over this wheel.

A roller 59 is supported by a bracket 60 and runs in contact with the upper face of the linked belt 54, thereby holding the forward ends of the rods depressed at the time they are passing over the short sprockets of the wheel 58, which holds their rear ends elevated, facilitating the jolting motion of the rods. To the lengthwise bar 3 of the main frame is secured a toothed segment 61, and a hand-lever 62 is supported by this bar, having a connection with the rod 57 by a link 63 and a dog engagement with the toothed segment. By means of this hand-lever the inner side of the separator can be raised and lowered, the bars 45 forming its pivotal support.

The forward movement of the digger over the ground will impart a rotary movement to the separator in the direction indicated by the arrows, Fig. 5. The plow being lowered, the ground containing potatoes will be turned onto the separator, which will pulverize the ground and expose the potatoes without bruising them, and by means of the hand-levers the working depth of the plow and separator can be regulated independently of each other and raised in transportation.

A caster-wheel 64 is supported by the forward transverse bar 1, and a tongue 65 connects the wheel and serves to guide the digger.

I claim as my invention—

1. In a potato-digger, the combination of a frame supported upon carrying-wheels, a plow, a separator consisting of two endless chains moving transversely of the digger and supporting-rods extending rearward of the chains and located with relation to the plow to receive the furrow turned by the plow on the rear extension of the rods.

2. In a potato-digger, the combination of a frame supported upon carrying-wheels, a plow and a separator, the separator having a hinge connection with the main frame and means for raising and lowering its side next to the plow.

3. In a potato-digger, the combination of a main frame supported on carrying-wheels, a plow and a separator, the separator extending in the lengthwise direction of the digger, consisting of a supplemental frame, a driving-shaft, two sprocket-wheels secured to the shaft, a support extending parallel with the shaft and located between it and the plow and supporting two sprocket-wheels, chain belts connecting the wheels, rods secured to

the chains extending rearward of their supports, a transverse shaft, a gear connection between the transverse shaft and driving-shaft and means for rotating the transverse shaft.

4. In a potato-digger, the combination of a main frame, supported upon carrying-wheels, a plow and a separator the separator extending in the lengthwise direction of the digger, consisting of a supplemental frame supporting a driving-shaft, two sprocket-wheels secured to the shaft, and located between it and the plow and a support extending parallel with the shaft supporting two sprocket-wheels, chain belts connecting the wheels rods secured to the chains extending rearward of their support and means for rotating the shaft.

5. In a potato-digger, the combination of a main frame, supported upon carrying-wheels, a plow and a separator, a plow-beam and a supplemental beam, the supplemental beam

having a connection with the main frame, the plow-beam having a pivotal connection at both ends with the supplemental beam and a foot-lever supported by the supplemental beam having a connection with the plow-beam.

6. In a potato-digger, the combination of a main frame supported upon carrying-wheels, a plow and a separator, a plow-beam and a supplemental beam, the supplemental beam having a connection with the main frame, the plow-beam having a pivotal connection at both ends with the supplemental beam and a foot-lever supported by the supplemental beam having a connection with the plow-beam and means for locking the beams together.

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