S. SWANSON.

POTATO DIGGING MACHINE.

APPLICATION FILED APR. 9, 1910.

988,835.

Patented Apr. 4, 1911.

3 SHEETS—SHEET 1.

Fig. 1

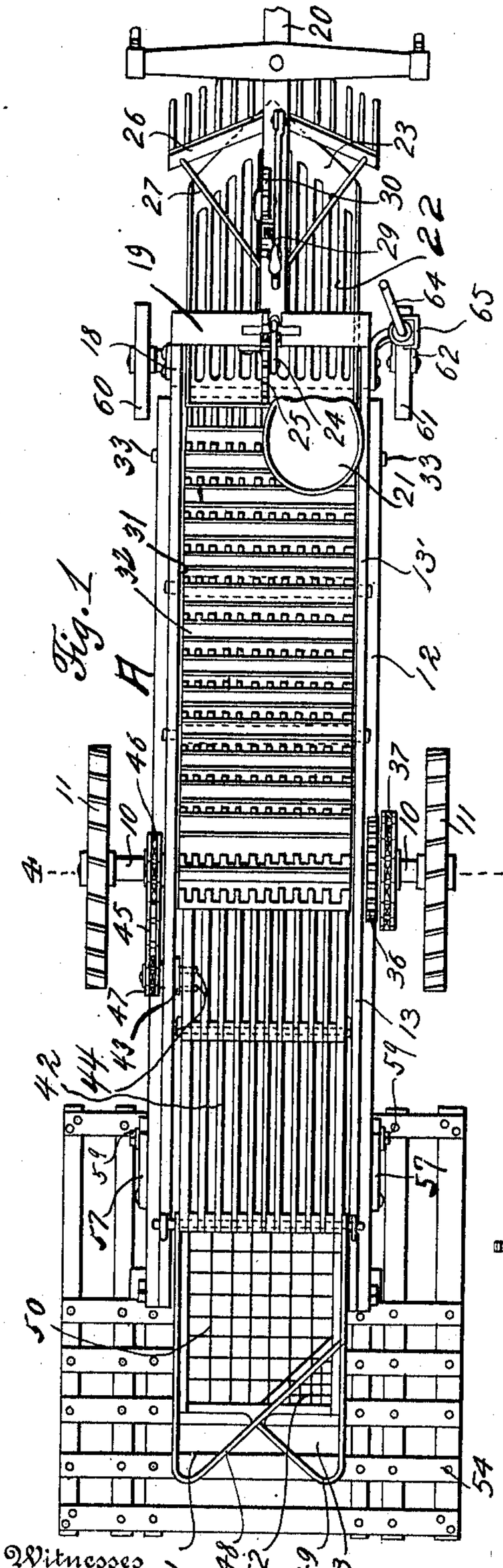


Fig. 5

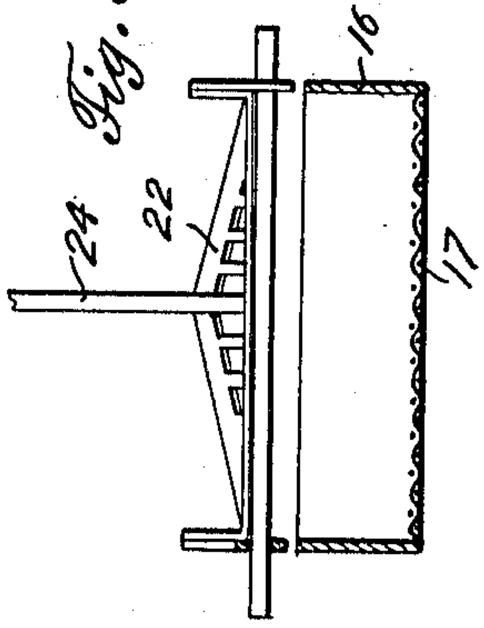
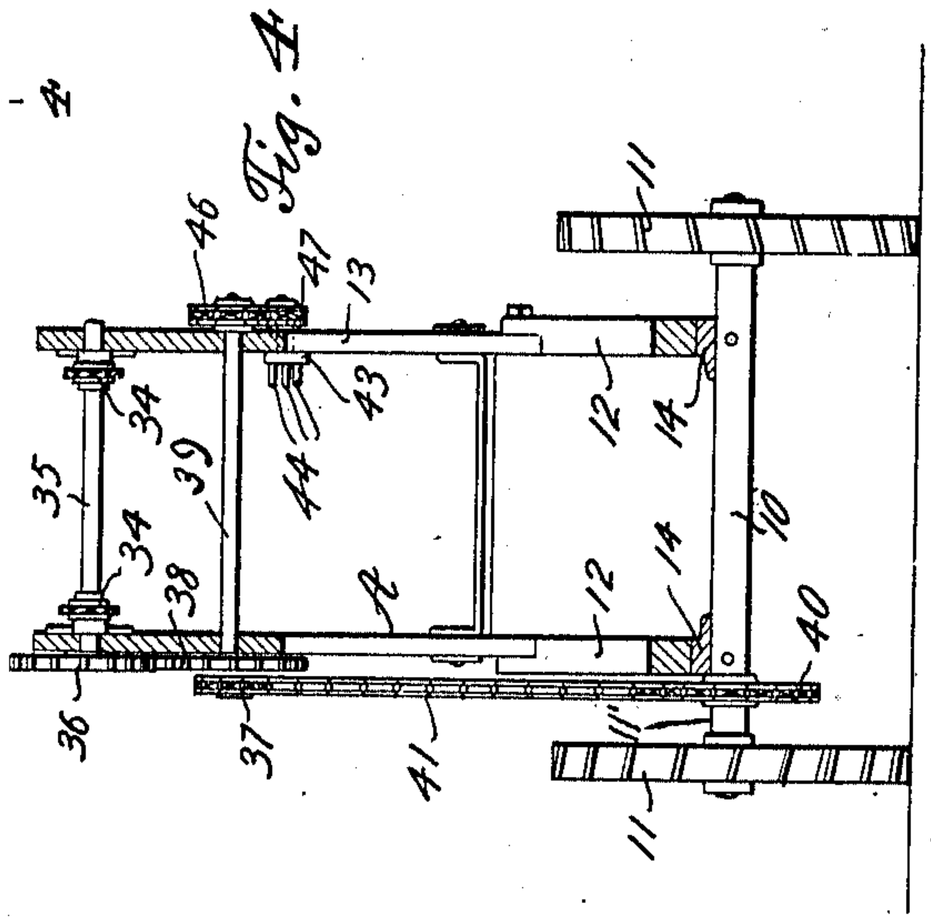


Fig. 4



Witnesses

E. Larson

Charles S. Wilson

Inventor

S. Swanson

By Deeley & Robb

Attorneys

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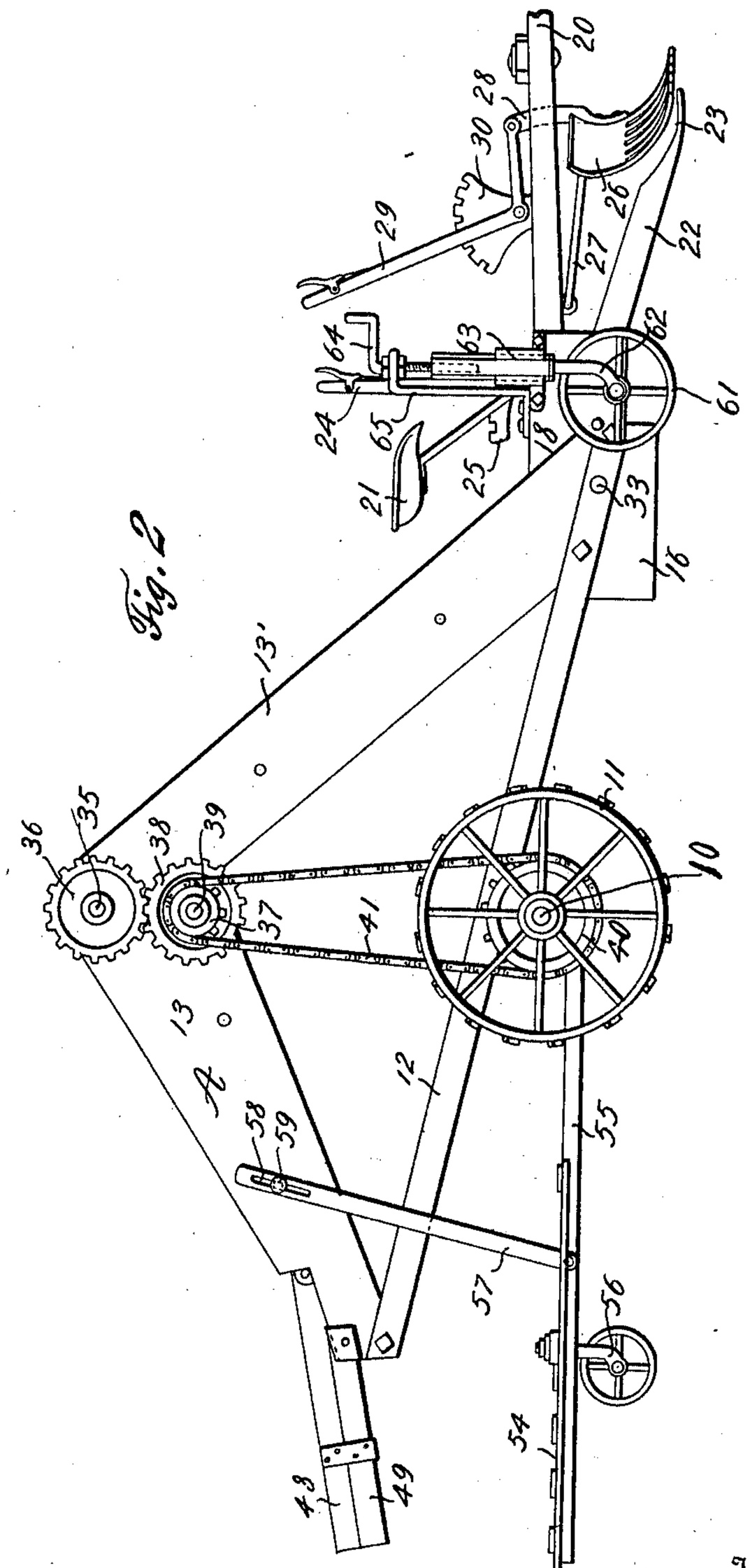
3 SHEETS—SHEET 2.

Fig. 2



Witnesses

E. Larson

Charles A. Wilson

Inventor

S. Swanson

By Dewey & Co

Attorneys

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3 SHEETS—SHEET 3.

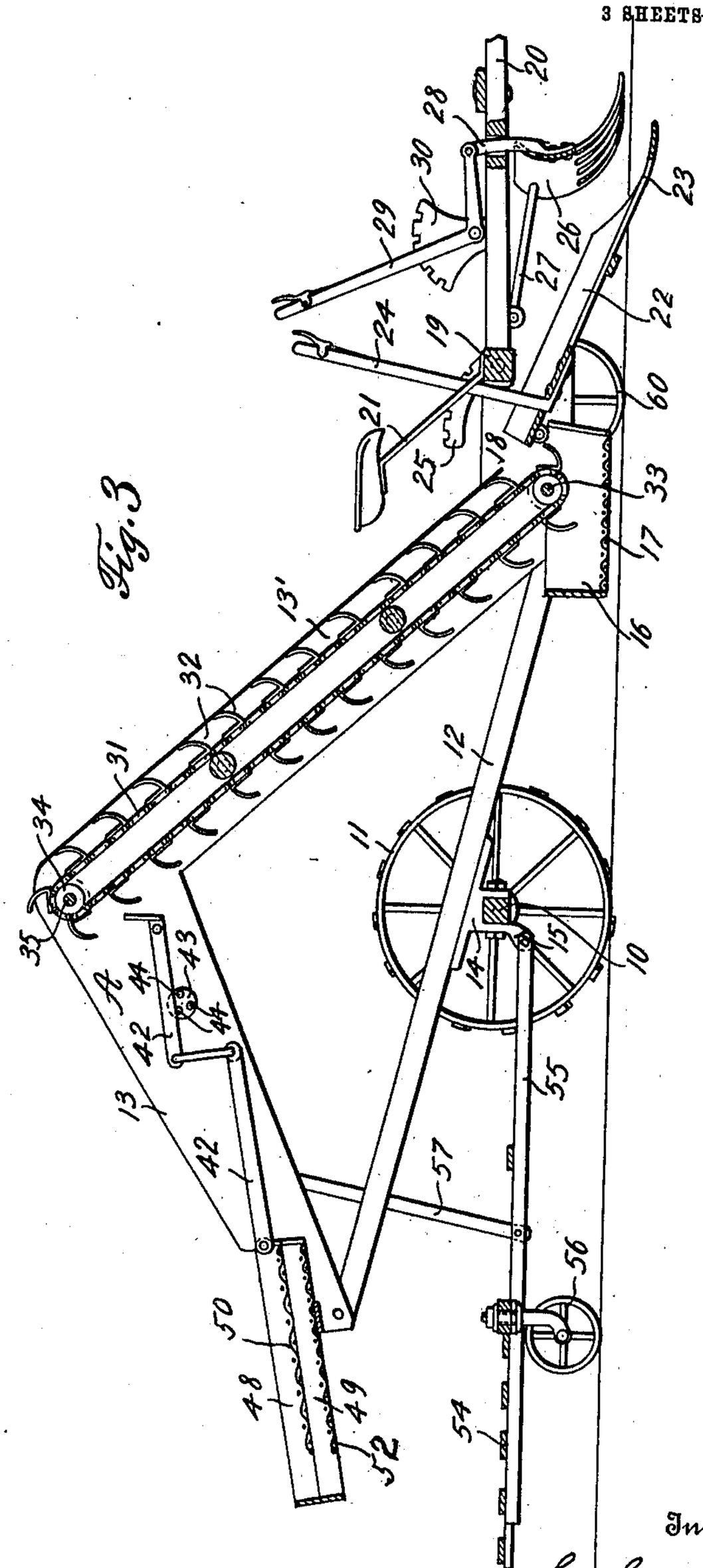

Fig. 3

Witnesses

E. Larson

Charles A. Wilson

Inventor

S. Swanson

By Deeley & Cobb

Attorneys

UNITED STATES PATENT OFFICE.

SVEN SWANSON, OF BAILEY, MICHIGAN.

POTATO-DIGGING MACHINE.

988,835. Specification of Letters Patent. Patented Apr. 4, 1911.

Application filed April 9, 1910. Serial No. 554,462.

To all whom it may concern:

Be it known that I, SVEN SWANSON, a citizen of Sweden, residing at Bailey, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Potato-Digging Machines, of which the following is a specification.

This invention relates to potato diggers and is designed particularly to construct a device of this nature wherein the potatoes are readily separated from the earth, are thoroughly cleansed of the dirt which adheres thereto, and are sorted with respect to the size thereof, each size being delivered to a receptacle.

A pivotal platform is carried at the rear of the machine and is so mounted in order that the same may readily pass over all irregularities of the earth.

With the above and other objects in view, this invention consists of the construction, combination and arrangement of parts all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of a potato digger constructed in accordance with the present invention; Fig. 2 is a side elevation thereof; Fig. 3 is a central longitudinal section; Fig. 4 is a transverse section taken along line 4—4 of Fig. 1; Fig. 5 is a transverse section taken through the forward screen.

The present invention resides in the provision of a frame, the sides of which converge vertically, and which is rigidly mounted on a centrally disposed axle. The forward side of said frame or casing is provided with a carrier into which the potatoes are delivered from the rakes or shovels, separating the same from the earth, said carrier emptying the potatoes on a toggle grating, after which the same are delivered to sorting compartments.

Referring more particularly to the drawings, 10 indicates the axle carrying the wheels 11 centrally disposed with respect to the longitudinal dimension of the machine, said axle being provided adjacent each wheel with the bar or beam 12 which slopes toward the front of the machine. A frame or casing indicated in general as A is mounted on the bars or beams 12. This casing comprises side members 13, 13′, which converge vertically, which are secured to the forward and rear terminals of the beams 12, the forward side of said casing sloping toward the draft gear of the machine. The bars or beams 12 are secured to the axle by the U-shaped clamp 14 rigidly engaging said axle, said clamps having on the rear arm thereof the ear or lug 15 to which is pivotally connected the platform as hereinafter more fully described.

A frame or casing 16 is rigidly secured to the forward side 13′ of the frame A and is provided in the base thereof with the sieve 17, over which the carrier moves between the sides 13′ operates, consequently any potatoes which should happen to drop from said carrier will be caught on the screen, the dirt sifting through.

A frame 18 is mounted on the lower terminal of the sides 13′ and is provided with a transverse bar 19, to which the tongue or draft gear 20 is secured. The seat 21 is also carried by the transverse bar 19, said seat being so located that the various mechanisms of the machine may be readily operated therefrom.

A rake or shovel 22 is pivotally mounted to the frame 18 and is superposed above the casing 16 and is adapted to deliver potatoes to the carrier as hereinafter more fully described. The forward edge 23 of the shovel is constructed solid, thereby forming a cutting edge, and is curved upwardly operating below the surface of the ground. In order that the shovel may be raised from the ground when it is desired to transport the machine, a pawl lever 24 is rigidly secured thereto and operates against a quadrant 25, said quadrant being carried by the transverse bar 19.

A rake 26 is pivotally carried by the draft bar 20 through the instrumentality of the rods 27, and is provided with the curved bar 28 which projects through said draft bar and is pivotally engaged by the L-lever 29, said L-lever coöperating with a quadrant 30. From this it will readily be seen that when the machine is operating, this rake 26 may be lowered and will separate the potatoes from the weed, while, when it is desired to transport the same, it may be readily raised by the lever 29.

The carrier comprises a chain 31 having secured thereto at spaced intervals the rake formed members 32 which receive the potatoes from the shovel 22. This carrier operates around a shaft 33 interposed between the lower terminals of the sides 13′ and is

driven by a sprocket gear 34 carried by the shaft 35, said shaft projecting through one of the sides 13′ and provided at its outer terminal with the gear 36. This gear meshes with a gear 38 carried by the countershaft 39 which also is provided with a sprocket 37. A sprocket 40 is mounted on the extension 11′ of the hub of the adjacent wheel 11 directly below the sprocket 37 and drives the latter through the instrumentality of the sprocket chain 41, thus operating the carrier.

Interposed between the rear sides 13 of the casing A are the toggle grates 42 which receive the potatoes from the carrier and which are adapted to sift the dirt therefrom. These toggle grates are operated by a disk 43 which is provided with a plurality of rollers 44, said rollers being adapted to bear against one of said toggle grates and impart a vertical motion thereto. This disk is driven by a sprocket chain 45 operating over the gear 46 carried by the countershaft 39 and engaging the gear 47 carried by the shaft of said disk. A pair of sorting screens 48 and 49 are superposed one above the other and are rigidly secured together, said sorting screens being pivotally mounted to the lower pivot or shaft of the toggle grates. The upper sorting compartment 48 is provided with the coarse screen bottom 50 which ends in an opening 51 in one corner of said compartment, through which potatoes of a large size may drop. A lower compartment 49 is provided with a fine screen 52 through which the small potatoes drop into receptacles below said openings, the latter being on opposite sides of the compartments. A lattice platform 54 is carried by the bars 55 pivoted to the ears 15 of the clamps 14, said platform being provided with a centrally disposed swiveled wheel 56. A pair of rods 57 are disposed on each side of the platform and are provided with the slots 58 in which reciprocates the pin 59, substantially centrally disposed on the exterior surface of the sides 13. This construction permits the vertical movement of the platform in order that the same may take up all irregularities of the ground.

On one side of the frame 18 is rigidly carried a small wheel 60 which is adapted to rest normally against the ground. Oppositely disposed to said small wheel is a similar wheel 61 rotatably mounted on the shank 62 which extends vertically through a bracket 63. A crank 64 is threaded in the bracket 65 and is swiveled to the upper extremity of the shank 62, thus permitting the raising and lowering of the wheel 61 so that the machine may readily be operated.

Having thus described my invention, what is claimed as new is:

1. In a potato digging machine, the combination of a shovel for removing the potatoes from the ground, means for screening the potatoes, means for elevating the potatoes to the screening means, a casing for the screening and elevating means, a supporting axle, a frame mounted thereon and carrying the aforesaid means, a bag supporting platform arranged beneath the screening means and pivotally connected with the axle for movement independent of the frame of the machine, and means connecting the platform with the casing, permitting movement of said platform.

2. In a potato digging machine, the combination of an axle, ground wheels therefor, beams carried by said axle and mounted thereon intermediate their ends, an angular casing extending upwardly from the opposite ends of the beams and supported thereon, means for removing the potatoes from the ground, elevating and screening means mounted on said casing, a bag supporting platform at the rear end of the casing and arranged beneath the same, the front end of said platform being pivoted to the axle permitting movement of the platform independently of the casing, and rods connected to opposite side portions of the platform, and having sliding connection at their upper ends with the casing, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

SVEN SWANSON.

Witnesses:
D. H. Power,
Harriet Davis.