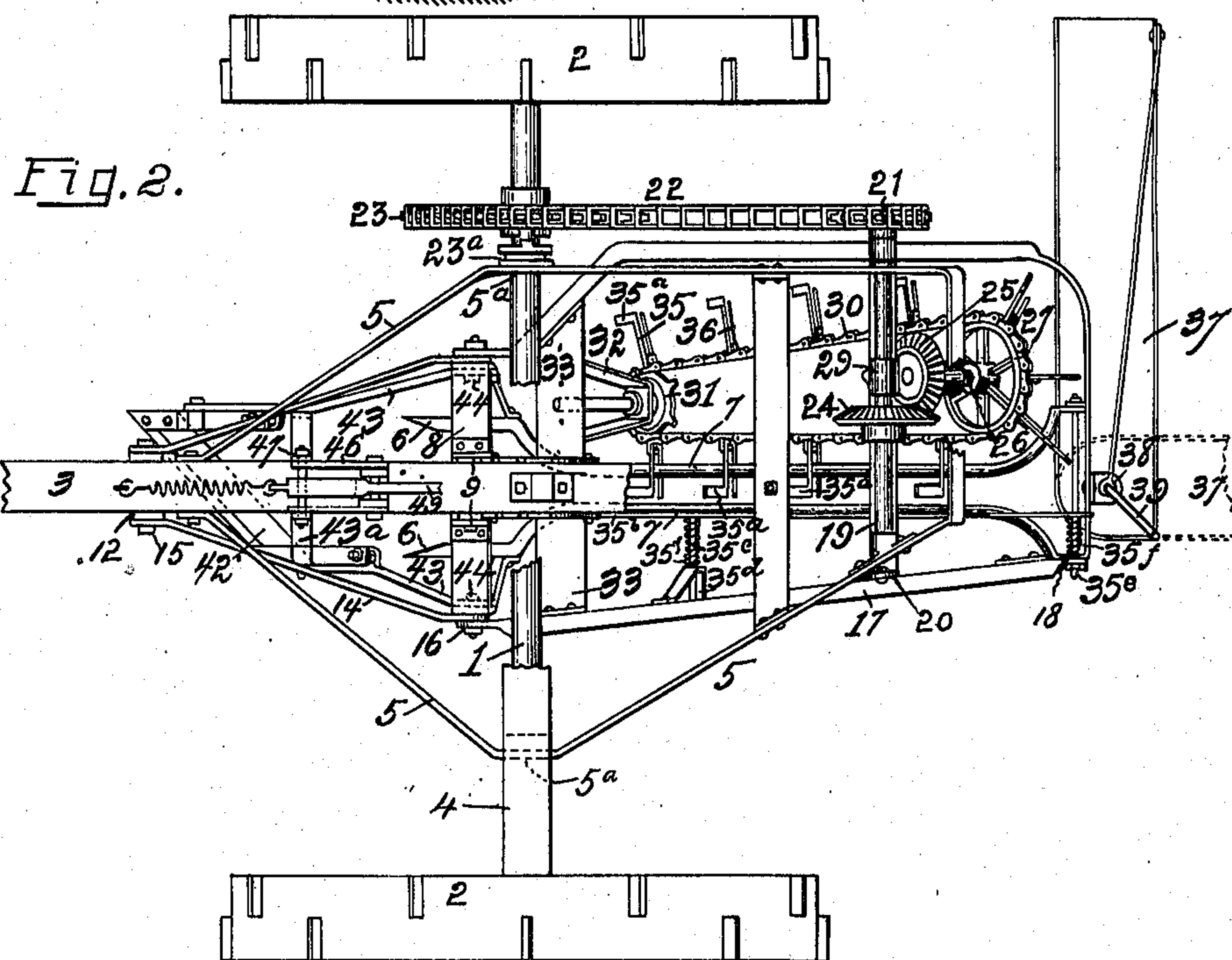
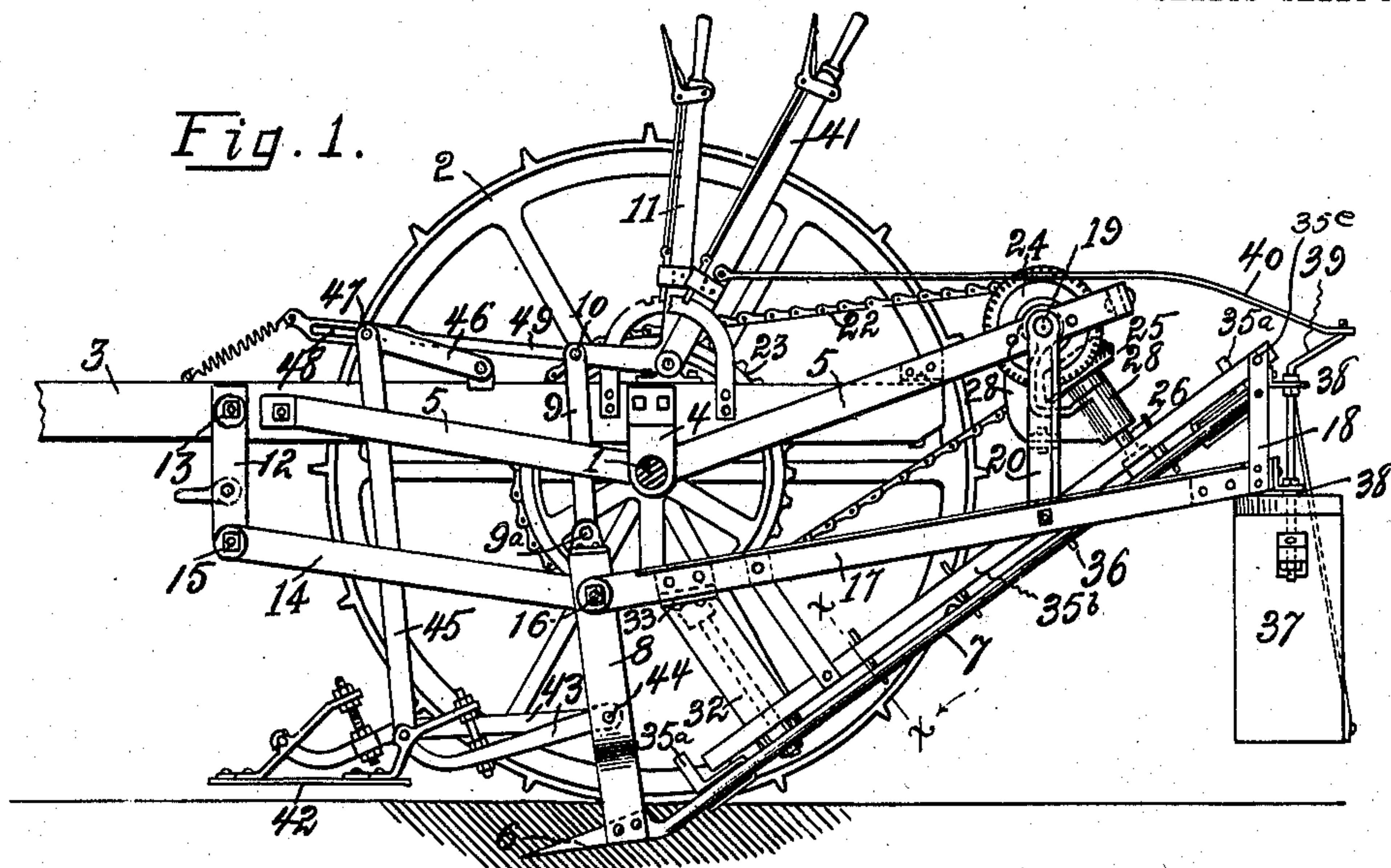


No. 840,482.

PATENTED JAN. 8, 1907.

C. DUSSEAU.  
BEET HARVESTER.  
APPLICATION FILED APR. 2, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

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INVENTOR:

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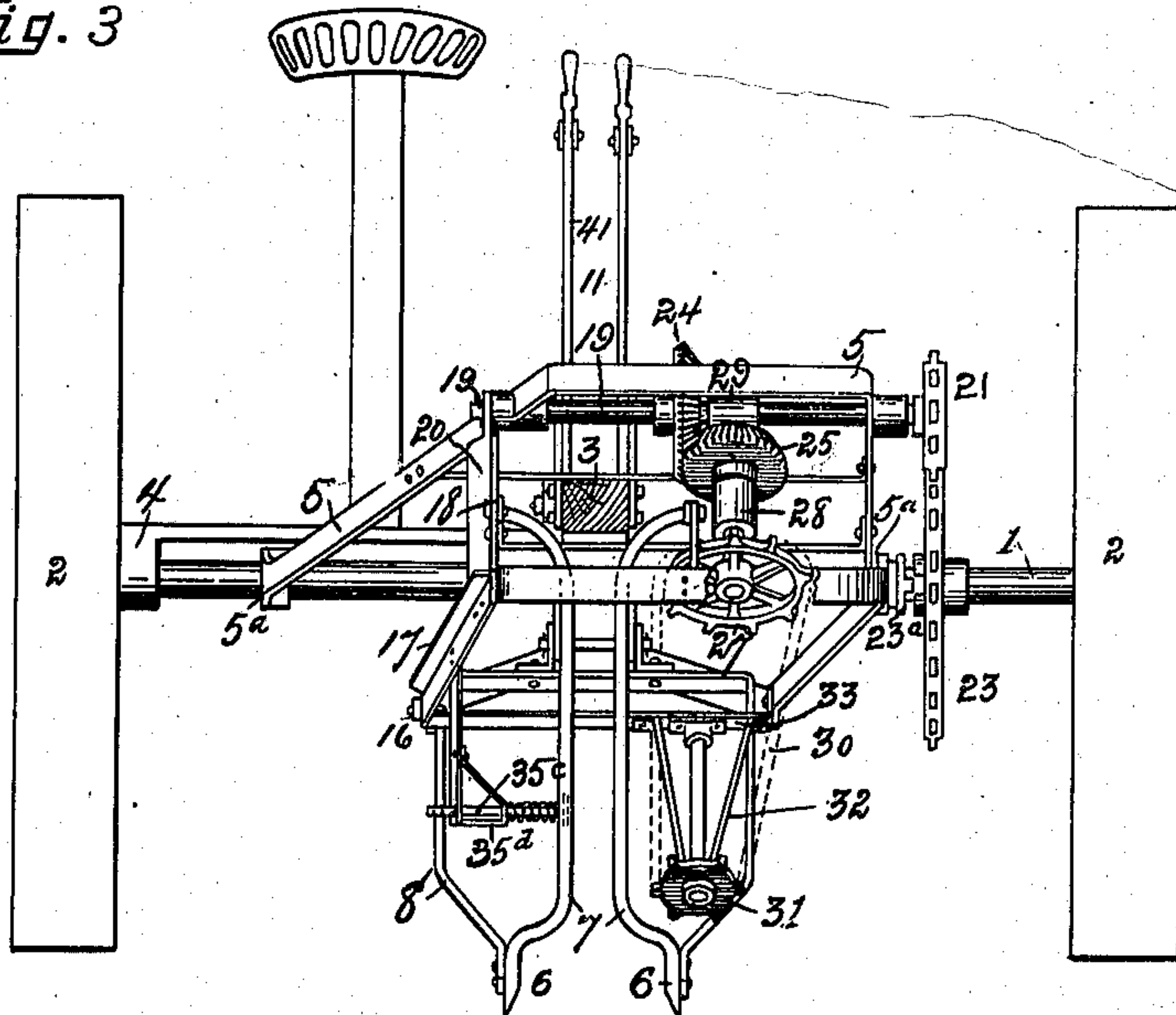
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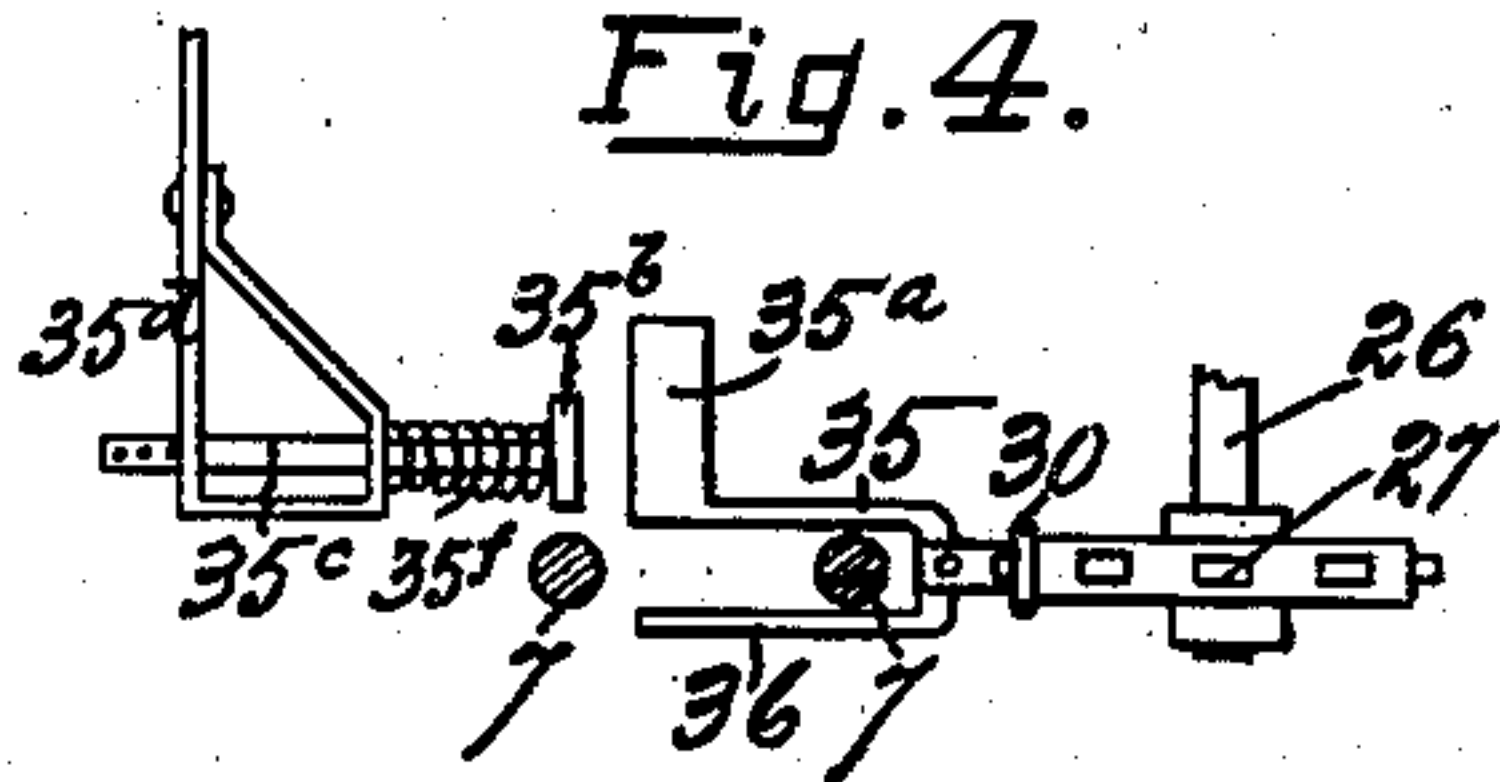
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2 SHEETS—SHEET 2

*Fig. 3*



*Fig. 4.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CORNELIUS DUSSEAU, OF TOLEDO, OHIO.

## BEET-HARVESTER.

No. 840,482.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed April 2, 1906. Serial No. 308,686.

*To all whom it may concern:*

Be it known that I, CORNELIUS DUSSEAU, a citizen of the United States, residing at Toledo, in the county of Lucas and State of Ohio, have invented certain new and useful Improvements in Beet-Harvesters; and I do declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to a beet-harvester, and has for its object a construction by which the beets as they are dug from several successive rows may be deposited in a single row, thus facilitating the gathering of the beets in wagons when they are to be conveyed from the field.

A further object of my invention is to so arrange the mechanism which conveys and deposits the beets in a single row, as above stated, that the beets shall be separated from adhering earth and clods.

My invention also relates to certain details of construction hereinafter described, and pointed out in the claims.

I attain these objects by means of the devices and arrangement of parts hereinafter described, and shown and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my machine with one of the supporting-wheels removed; Fig. 2, a top plan view of the same with a portion of the main shaft broken away; Fig. 3, a rear elevation of the same with the downspout hereinafter referred to removed; and Fig. 4 a plan view in section taken on line  $x x$ , Fig. 1.

Like numerals of reference indicate like parts throughout the drawings.

In the drawings, 1 is the main shaft of my machine, supported fixedly upon the driving-wheels 2. The tongue 3 is provided at opposite sides with brackets 4, the downwardly-projecting ends of which are journaled upon the shaft 1. A pair of braces 5 5, composed of stout bars of iron, are fixed at their forward end to the tongue, are journaled, as at 5<sup>a</sup>, upon the axle 1 and at their rear ends

converge, and are connected together. (See Fig. 3.)

6 6 are a pair of shares or points arranged centrally of the machine and designed to dig or scrape a furrow at opposite sides of and close to the beet row. The shanks of the diggers 6 converge at their rear ends and are secured to and form part of the ends of parallel rods 7, which extend upwardly and backwardly to the rear end of the machine. The diggers 6 are secured, respectively, to the lower end of a bar or hanger 8, the upper end of which is pivotally connected with and is supported by a link 9, as at 9<sup>a</sup>. The upper end of the link is pivoted, as at 10, to the extremity of the arm of a bell-crank lever 11, the handle of which is within convenient reach of the driver and operator. This lever has a pawl and segmental rack, the pawl having a handle by means of which it is engaged with any tooth of its rack, so that the link 9 and its burden may be raised or lowered to and retained at any desired height. The parts 7, 8, and 9 are braced and given direction by means of hanger 12, pivoted, as at 13, upon the tongue, rod 14, pivoted at its forward end, as at 15, to the lower end of the hanger 12 and at its rear end pivoted, as at 16, to the part 8. An angle-bar 17 is pivoted at its forward end, as at 16, to the part 8 and at its rear end carries an upwardly-projecting bracket 18, to which are secured the upper rear ends of the rods 7. It should be understood that the parts 12, 14, 17, and 18 are in pairs disposed at opposite sides of the machine and are pivoted and supported alike. Upon the rearwardly-projecting sides of the frame 5 is journaled a shaft 19, the projecting end of which forms a pivotal support for the upper end of hanger 20, the lower end of which is rigidly secured to the angle-bar 17.

On the shaft 19 is a sprocket-wheel 21, driven by endless chain 22, passing over a sprocket-wheel 23, loose on the shaft 1. The sprocket-wheel 23 is thrown into and out of engagement with its shaft by means of a clutch 23<sup>a</sup>. (See Fig. 2.) Upon the shaft 19 is a beveled gear-wheel 24, which engages and drives another beveled gear-wheel 25 on the upper end of shaft 26, the lower end of which carries a sprocket-wheel 27. The shaft 26 is journaled and supported in the



lower end of a bracket 28, the upper end of which forms a sleeve 29, which embraces and is supported by the shaft 19. The sprocket-wheel 27 carries an endless chain 30, which passes over another sprocket-wheel 31, jour-  
 5 naled and mounted upon a bracket 32, secured to and projecting downwardly from a cross-brace 33, secured at opposite ends to the parts 17, as shown. Chain 30 has se-  
 10 cured to its outer side at equidistant intervals pairs of horizontally-projecting fingers 35 36. The upper fingers 35 have, respectively, an upwardly-turned portion 35<sup>a</sup> and in their course move directly above the pair  
 15 of rods 7 toward the rear of the machine, while the lower fingers 36 move in the same direction directly beneath the pair of rods 7, as clearly illustrated in Fig. 4. The digging-  
 20 points 6 and the parallel-rods 7 are disposed in such relation to the fingers 35 36 that the fingers as the vehicle moves forward catch the beets the instant they are lifted from the  
 25 ground and before they have time to fall over, and the beets, riding upon the two adjacent rods, are forced by the fingers backwardly to the rear end of the machine.

35<sup>b</sup> is a presser-bar arranged above and close to the side of the ways 7 7 and supported near its lower end by a rod 35<sup>c</sup>, sliding in  
 30 bracket 35<sup>d</sup> and at its upper end supported by and sliding upon rod 35<sup>e</sup>. The bar 35<sup>b</sup> is held normally toward the traveling chain 35 by means of springs 35<sup>f</sup>. This bar prevents the beets as they travel upwardly along the  
 35 ways 7 from toppling over.

37 is a trough swiveled at one end upon the bracket 18, as at 38, and leading downwardly from near the discharge end of the rods 7 to  
 40 near the ground. A crank 39, secured to the upper end of the trough, is provided with a rod 40, leading to a lever 41 within convenient reach of the driver. The throw of the lever actuates the rod 40 and the crank 39 and swings the trough, as may be desired.  
 45 The lever 41 is provided with a pawl and segmental rack to hold the lever in any desired position. The trough is of sufficient length to describe in its swing a semicircle of such  
 50 diameter as to include, preferably, five rows of beets—that is, a middle row and two rows on each side of the middle row.

42 is a horizontally-disposed sharp shearing-blade designed to cut the tops from the beets in advance of the approaching digging-  
 55 points 6. The knife 42 at its opposite ends is mounted upon the forward extremities of arms 43, the rear extremities of which are pivoted, as at 44, upon the parts 8. The arms 43 are connected by a cross-piece 43<sup>a</sup>,  
 60 and the arms, with their cross-piece, are suspended by bar 45 from a toggle 46, pivoted at one end, as at 47, to the upper end of the piece 45 and at its other end to the tongue 3.

The pivot-pin 47 engages a slot 48 in the forward end of a connecting-rod 49, the rear end  
 65 of which is pivotally connected with the pivot-pin 10 on the lever 11. The throw of the lever 11 actuates the rod 49, the slot of which at the proper moment catches and  
 70 swings the toggle-bar 46 in the arc of a circle, raising and lowering the bar 45, with its suspended burden, in harmony with the raising and lowering of the digging-point 6, as above described.

Assuming that the machine is in motion, 75 that the lever 11 is in position indicated in Fig. 1, that the diggers and topper are in operative position, as indicated in Fig. 1, that the clutch 23<sup>a</sup> is in engagement with sprocket-wheel 28, and that the trough 37 is in the po-  
 80 sition indicated by the dotted lines in Fig. 2, now the operation of my machine is as follows: The beets are lifted by the digging-points 6 and are immediately caught by one pair of the fingers 35 36, which bestride the  
 85 rods 7, and the beet is caused to slide upon the inclined way 7 7 upwardly over and into the upper end of the trough 37. Clods and adhering earth by the vibration of the chain 30 and their fingers 35 36 and the movement  
 90 of the machine are loosened and fall to the ground. The ascending procession of beets passes into the top of the trough and slides by its own gravity onto the ground in a row directly behind the machine. As the ma-  
 95 chine returns upon the adjoining row of beets the lower end of the trough is swung to a point immediately above the row first dug. Passing back on the other row adjoining the first row the trough is still in position to dis-  
 100 charge upon the middle row without further adjustment. Returning now by the second row from the middle row the trough is swung at a right angle, as illustrated in Fig. 2, so that the beets will be discharged upon the first row,  
 105 this adjustment of the trough serving for the return trip on the fifth row. It will be seen that the lower end of the trough is thus constantly over the middle row of the five rows which have now been dug.

When the machine is not in operation, the topper and diggers by the backward throw of the lever 11 will be lifted from the ground and above obstructions, and the ways 7, the chain  
 115 30, and its fingers 35 36 will accommodate themselves to the different positions of the digging and topping devices. This change of position of these parts is permitted and facilitated by pivoting the swinging frame upon  
 120 shaft 1 and by the chains and sprockets and which shaft 1 is the center.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a beet-harvester, a digging mechan-



ism, an open inclined way leading upwardly and rearwardly from directly behind the digging mechanism, an endless chain, connections between the supporting-wheels of the machine and the chain for driving the chain, 5 fingers upon the chain which traverse lengthwise the inclined way, an inclined trough swiveled at its upper end at the discharge end of the inclined way, and means for the horizontal adjustment of the lower end of the 10 trough.

2. In a beet-harvester, a digging mechanism, a pair of inclined rods leading upwardly and rearwardly from the digging mechanism, 15 an endless chain one stretch of which moves parallel with said rods, and pairs of fingers secured to and projecting horizontally from said chain and arranged to bestride one of said rods, substantially as described.

3. In a beet-harvester, a pair of supporting driving-wheels, a shaft for said wheels, a sprocket-wheel on said shaft, another sprocket-wheel, a chain upon said two sprocket-wheels, a shaft for the latter 25 sprocket-wheel, a support for said latter shaft pivoted upon the shaft first mentioned, another pair of sprocket-wheels, an endless chain thereon, driving-gears intermediate said two pairs of sprocket-wheels, fingers on said latter chain, an inclined way traversed 30 by said fingers, and a digging mechanism in advance of the lower end of said inclined way.

4. In a beet-harvester, a pair of supporting driving-wheels, a shaft for said wheels, 35 a sprocket-wheel on said shaft, another sprocket-wheel, a chain upon said two sprocket-wheels, a shaft for the latter sprocket-wheel, a support for said latter shaft pivoted upon the shaft first mentioned, 40 another pair of sprocket-wheels, an endless chain thereon, driving-gears intermediate said two pairs of sprocket-wheels, fingers on

said latter chain, an inclined way traversed by said fingers, a digging mechanism in advance of the lower end of said inclined way, 45 and a swiveled trough leading downwardly from the upper end of said inclined way.

5. In a beet-harvester, a topping mechanism, a digging mechanism, an inclined way leading upwardly and backwardly from the 50 digging mechanism, a swiveled trough leading downwardly from the upper end of the inclined way, an endless chain, fingers on the chain arranged to traverse the inclined way, a lever, and pivotal connections between the 55 lever, the topper, and the digger, for throwing said parts into and out of operative position.

6. In a beet-harvester, a pair of supporting driving-wheels, a shaft therefor, a 60 sprocket-wheel on the shaft, a second shaft, a sprocket-wheel thereon, a chain for said two sprocket-wheels, a beveled gear-wheel on said second shaft, another beveled gear-wheel engaged therewith, a bracket 28 mounted upon 65 said second shaft and supporting said last-mentioned gear-wheel, a shaft for said last-mentioned gear-wheel, a sprocket-wheel upon said last-mentioned shaft, a chain for said 70 last-mentioned sprocket-wheel, fingers on said chain, an inclined way traversed by said fingers, a digging mechanism at the lower end of said inclined way, a support for said beveled gear-wheels inclined ways fingered chains and digging mechanism, pivoted upon the 75 shaft first mentioned, and a lever for controlling said pivotal supports.

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

CORNELIUS DUSSEAU.

Witnesses:

CLEM V. WAGNER,  
ADA LAW.