

1,295,591.

F. POCKOCK.
BEET HARVESTER.
APPLICATION FILED MAR. 25, 1918.

Patented Feb. 25, 1919.
2 SHEETS—SHEET 1.

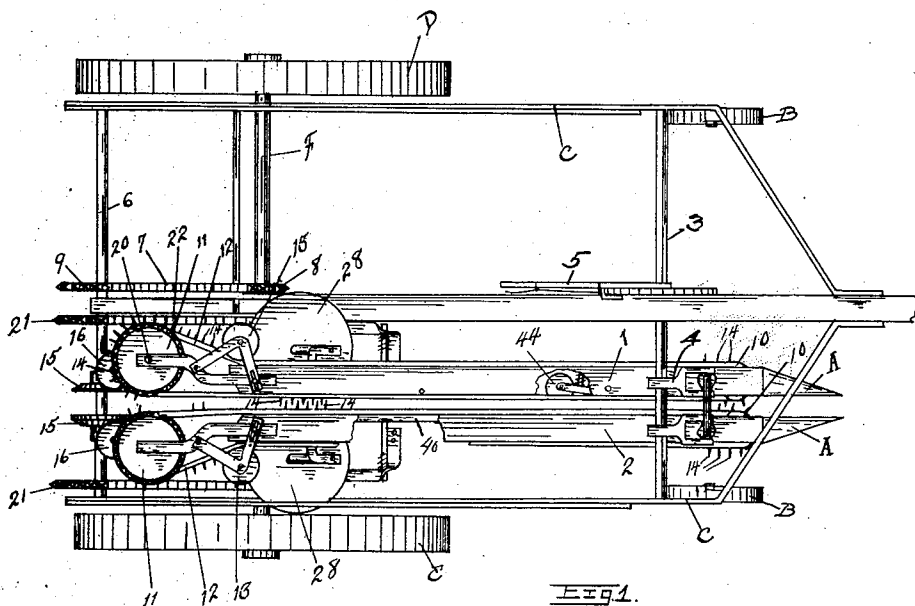


Fig. 1.

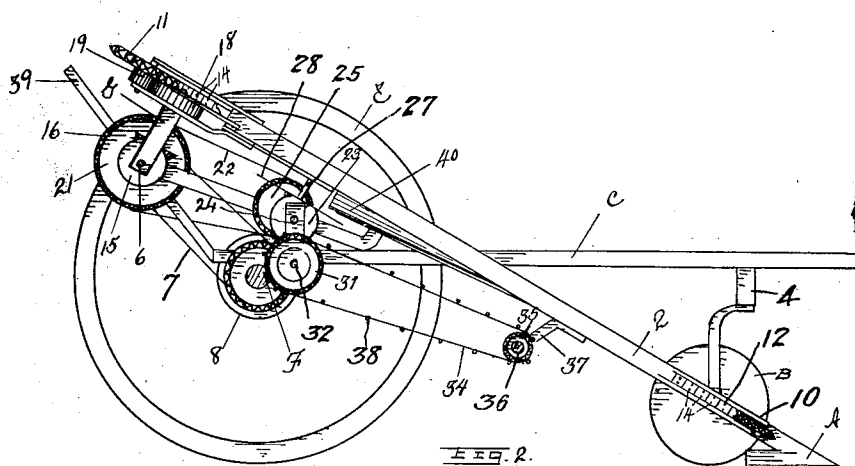


Fig. 2.

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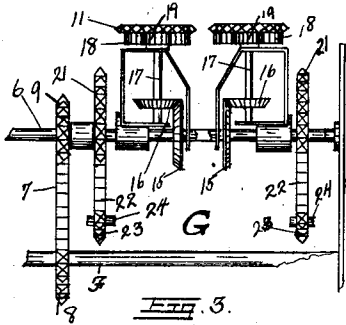


Fig. 3.

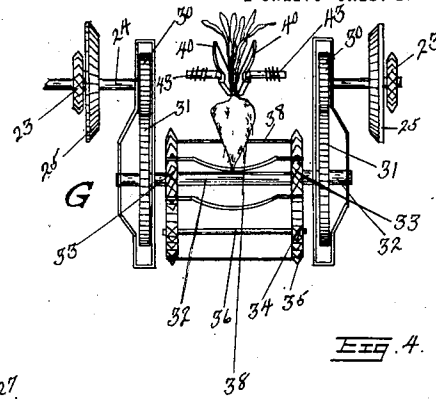


Fig. 4.

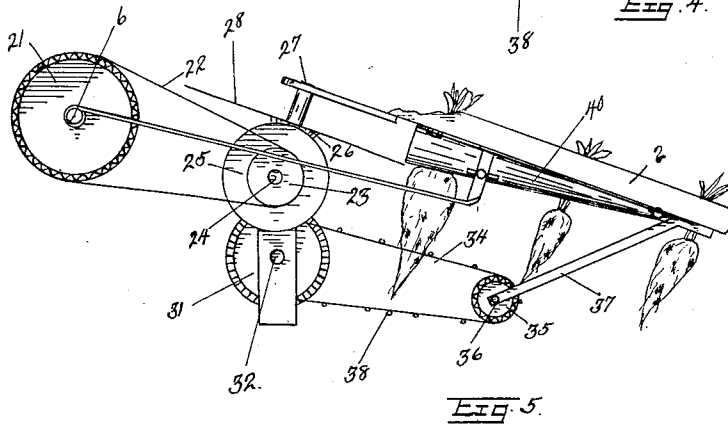


Fig. 5.

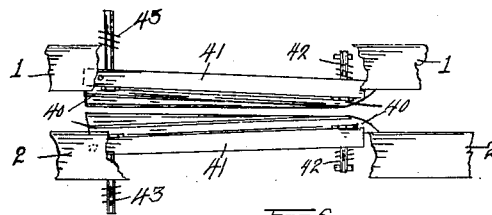


Fig. 6.

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UNITED STATES PATENT OFFICE.

FRANK POCOCK, OF SALT LAKE CITY, UTAH, ASSIGNOR OF ONE-FOURTH TO WALTER STEADMAN, OF SANDY, UTAH, AND ONE-FOURTH TO GEORGE E. SCHAUS AND SUSIE A. SCHAUS, BOTH OF TOOELE, UTAH.

BEET-HARVESTER.

1,295,591.

Specification of Letters Patent.

Patented Feb. 25, 1919.

Application filed March 25, 1918. Serial No. 224,418.

To all whom it may concern:

Be it known that I, FRANK POCOCK, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Beet-Harvesters, of which the following is a specification.

My invention relates to beet harvesting machines, and has for its object to provide a beet topping machine which will dig and top the beets and pile the beets in small piles and the tops and foliage in other small piles.

These and other objects which will become apparent I accomplish with the machine illustrated in the accompanying drawings in which similar letters and numerals of reference indicate like parts throughout the several figures.

In the drawings in which I have shown a substantial embodiment of my invention, Figure 1 is a plan view of the machine showing one side complete for digging and topping a row of beets while a portion of the elevating mechanism is cut away on the other side to show the driving mechanism more clearly. Fig. 2 is a side elevation of one portion of the machine. Fig. 3 is a view from the rear, of the gears and connections looking at an incline parallel with the elevator race shown in Fig. 2, parts omitted and parts cut away. Fig. 4 is a rear elevation of the beet steadying elements. Fig. 5 is a side elevation of the same. Fig. 6 is a plan view of the adjusting means, parts cut away.

The present invention is intended to dig the beets loose in the ground, and by means of traveling chains to catch the foliage of the beets and carry them up an incline and adjust them in their vertical position so that each beet will be topped at the right place by rotary disk knives and dumped in piles behind the machine. The machine has two spaced apart plows A fastened on the front ends of two parallel spaced apart channel iron racks 1 and 2. A rectangular frame C is mounted on two traction wheels D and E which are fastened on a rotatable axle F, and on two swivel wheels B secured under the front corners of the machine. A rocking shaft 3 is journaled on the front portion of

said frame C having depending arms 4 and a manually movable lever arm 5 by which said rocking shaft is partially rotated. The front end portion of said iron racks 1 and 2 is supported and its vertical position regulated by a U-shaped bar which is engaged by said depending arms 4, and as said arms 4 are raised or lowered the front ends of said racks and said plows A may be adjusted up and down as desired. A shaft 6 is journaled in the rear end of said frame C and connected with said axle F and rotated by a sprocket chain 7 and sprocket wheels 8 and 9. Two other frames G are journaled on and supported at their rear ends by the said shaft 6, and the rear end portions of said racks 1 and 2 are secured on and carried by said frames G. A sprocket wheel 10 is provided at the front and another one shown as 11 at the rear end of each of said racks 1 and 2, and a special foliage engaging chain 12 is operated over each set of wheels 10 and 11. As the sides of the machine are duplicated I will hereinafter describe only one side. A tightener 13 is provided to regulate the tension of each of said chains 12 and each link of said chain 12 has laterally extending lugs or pins 14 thereon to engage the foliage or tops of the beets, and the said chains are made to touch each other and hold the foliage of the beets by the spring pressed wheels 44. Two opposed bevel gears 15 are secured on said shaft 6, and each engages its respective bevel pinion 16 which is secured on a vertical shaft 17 mounted in said frame G.

On the upper end of said vertical shaft 17 is secured a pinion gear 18 and it in turn meshes with another pinion gear 19 on a short shaft 20 which carries one of the said sprocket wheels 11. A sprocket wheel 21 is also carried on said shaft 6 and is connected by the chain 22 with another sprocket wheel 23 which is fastened on another shaft 24 that is parallel with shaft 6, but mounted more toward the central portion of the machine in said frame G. A bevel gear 25 is also secured on said shaft 24, and said bevel gear 25 meshes with a bevel pinion 26 which is secured on the disk shaft 27, and on which is secured one of the topping disks 28. On

the said shaft 24 are secured pinion gears 30, the teeth of which mesh with the gear wheels 31 that in turn are mounted on another shaft 32 through which power is developed to run the beet steadying elements. On the said shaft 32 are secured spaced apart sprocket wheels 33 which drive the beet steadying rack. The said rack consists of sprocket chains 34 on the sides and which operate over smaller sprocket wheels 35 on the shaft 36 that is journaled in the braces 37. The said chains 34 are held in spaced relation to each other by the curved transverse bars 38. The beet adjusters are two opposed conically curved metal sheets 40, each hinged to its respective plate 41. The said plates 41 are pivoted at their rear ends to the underside of said iron racks 1 and 2 and with the front end portion of said plates yieldingly held by a spring 42 in such position that the free edges of said curved sheets 40 will be parallel and about one-half inch apart. The apices of said curved sheets 40 are toward the front and hingedly connected with said plates adjacent, one on each side of the track of the beets. The rear end portions of said sheets 40 are swung on their hinges toward each other by the opposed springs 43.

The operation of my machine is as follows:

The beet harvester is drawn along and over two rows of beets, the foliage of each row passing between two of said iron racks and the beets of each row are loosened in the ground by the plows A. The traveling chains 12 are made to travel much faster than the movement of the complete machine over the ground by means of the rotation of the axle F, sprocket wheel 8, chain 7, sprocket wheel 9, shaft 6, bevel gears 15, bevel pinions 16, shafts 17, pinion gears 18, gears 19, shafts 20, and sprocket wheels 11. When the foliage of the beet is caught between the two chains 12 it is drawn rapidly up the inclined track of said chains and between said racks 1 and 2, and when the body of the beet comes in contact with the free edges of said metal sheets 40 the beet will be forced downwardly until each beet is brought to the same plane and the plane of the topping disks 28. The said disks 28 revolve toward each other through the motion imparted to them through the said shaft 6, sprocket wheels 21, chains 22, sprocket wheels 23, shafts 24, bevel gears 25, bevel pinions 26 and shafts 27.

The beet steadying elements will be carried on an inclined plane parallel with the said racks 1 and 2 and at the same rate of travel as the beet and receive motion through the said shafts 24, pinion gears 30, intermeshing gears 31 and shaft 32. The said curved bars 38 will engage the rear side of the beet as

shown in Fig. 4 and the body of the beet will be held against said topping disks 28 at the instant of severing the tops. The apices of the adjusting sheets 40 will be yieldingly held by said springs 42 in close proximity to each other and the hinges with which they are fastened to their respective plates 41 at the front end are spring hinges with the object of allowing the foliage of the beet to pass between said sheets 40 while the curved form given the said sheets will hold their free edges against the foliage just above the top of the beet body similar to passing the foliage of a beet between the human hands while the little fingers are pressing the top portion of the body of the beet downward and the fore fingers held parallel to each other and farther apart. The beet tops and foliage are to be caught in a receptacle which is not shown but is to be suspended between the braces 39 and dumped as desired while the topped beets are caught in another receptacle, not shown, held between the same braces 39. I thus provide an efficient beet digger or loosener, an elevator to catch the foliage of the beets and rapidly carry them up an incline which adjusts their vertical position by new and novel means to the plane of the topping disks; and a new steadying means coacting with the elevating means to move and retain the beet against the topping disks.

Having thus described my invention I desire to secure by Letters Patent and claim:—

1. In a beet harvester two opposed conically shaped shells yieldingly mounted to adjust the vertical position of beets carried between said shells, and coacting endless chains to engage the foliage of beets and carry them between said shells.

2. In a beet harvester the combination of wheel supported frames; means to carry beets by the foliage over said frames; topping knives operatively mounted on one of said frames; means to adjust the vertical position of said beets as they near said knives, said means consisting of two opposed conically shaped shells yieldingly mounted on one of said frames.

3. In a beet harvester the combination of a frame supported at its rear by the axle of traction wheels; means to engage the foliage of loosened beets and carry them up through said frame; topping knives mounted in said frame; two opposed conically shaped sheets yieldingly mounted and spaced apart to engage the top portion of a beet as it passes therebetween and adjust its position vertically to said knives.

4. In a beet harvester the combination of means to engage the foliage of loosened beets and carry them up an incline; opposed knives to top said beets; two opposed pointed transversely curved sheets to adjust said

beets to the plane of said knives; and means to steady the body of said beets when in contact with said knives. adapted to be yieldingly held against the foliage of beets where it leaves the body of the beet to adjust the beet to the plane of said knives; and means to steady the body of the beet when passing said knives. 10

5 In a beet harvester the combination of chains to engage the foliage of loosened beets and carry them between topping knives; two opposed rotatable topping knives; opposed pointed transversely curved sheets

In testimony whereof I have affixed my signature.

FRANK POCOCK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."