E. A. HOLLENBECK & E. W. REED.

BEET HARVESTER.

APPLICATION FILED JAN. 24, 1908.

924,905. Patented June 15, 1909.

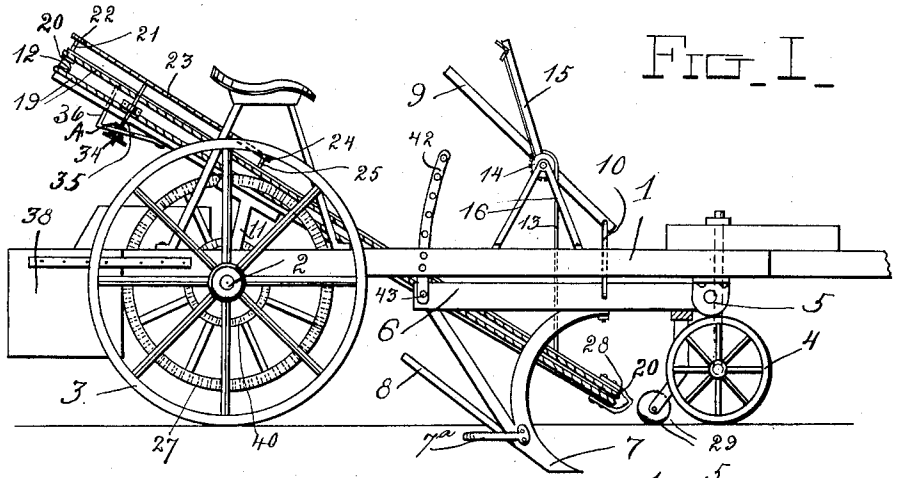


FIG. 1.

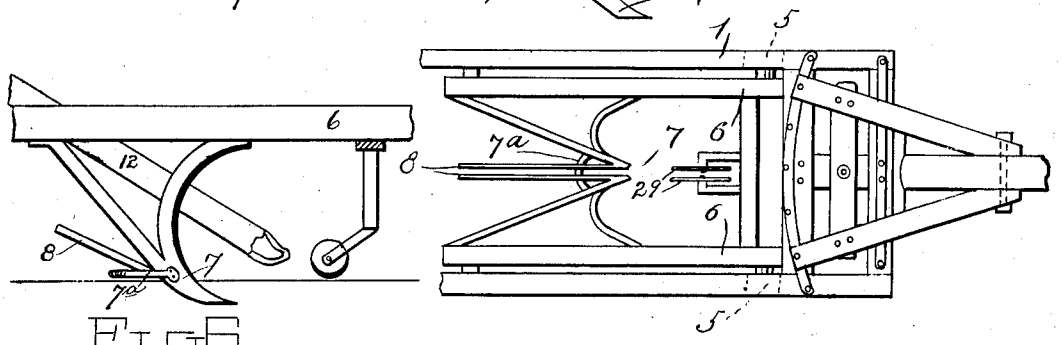


FIG. 6.

FIG. 2.

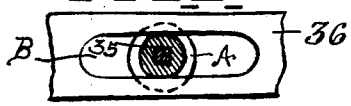


FIG. 9.

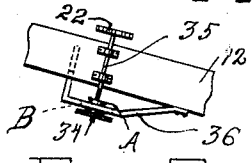


FIG. 5.

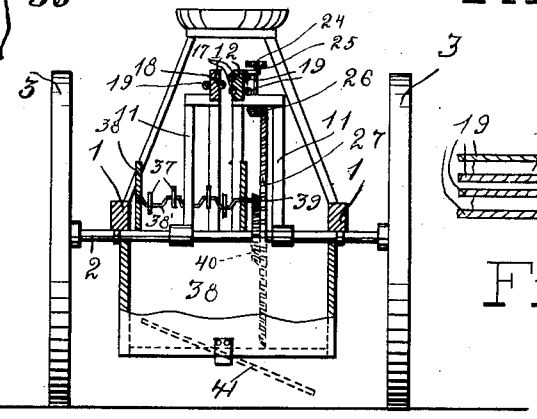


FIG. 3.

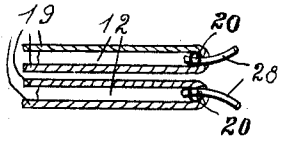


FIG. 4.

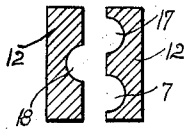


FIG. 8.

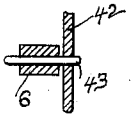


FIG. 7.

Witnesses:
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UNITED STATES PATENT OFFICE.

ELIJAH A. HOLLENBECK, OF FUNK, AND EUGENE W. REED, OF HOLDREGE, NEBRASKA.

BEET-HARVESTER.

No. 924,905. Specification of Letters Patent. Patented June 15, 1909.

Application filed January 24, 1908. Serial No. 412,508.

To all whom it may concern:

Be it known that we, ELIJAH A. HOLLENBECK and EUGENE W. REED, citizens of the United States of America, and residents of Funk and Holdrege, respectively, in the county of Phelps and State of Nebraska, have invented certain new and useful Improvements in Beet-Harvesters, of which the following is a specification.

This invention relates to new and useful improvements in beet harvesters and has relation more particularly to that class wherein the beets are topped.

It is an object of the invention to provide in a device of this character novel means for elevating the beets after they have been loosened within the soil.

It is also an object of the invention to provide in combination with the elevator or conveyer, a novel cutting or topping mechanism, said mechanism being movable with relation to the elevator.

It is also an object of the invention to provide in combination with a device of this character, means for cutting a portion of the tops before the beets are contacted with by the plows and the invention also has for an object to provide novel means acting in conjunction with the plow for guiding the beets after being loosened toward the elevator or conveyer.

It is also an object of the invention to provide in a novel device of this character, a plurality of plows for loosening the beets within the soil, it being also an object of the invention to provide means whereby the plows are held against undue movement one with relation to the other.

Finally, it is an object of the invention to produce a novel device of the character noted, which will be simple in construction, efficient in practice, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters denote corresponding parts in the several views, in which—

Figure 1, is a view in side elevation of the device; Fig. 2, is a fragmentary view in top plan with parts omitted; Fig. 3, is a view partly in rear elevation and partly in section of the invention; and Figs. 4, 5, 6, and 7, are views illustrating various details of the invention. Fig. 8 is a transverse sectional view of the bars for the conveyer. Fig. 9 is an enlarged detailed view of the slotted and slidable thimble connection between the cutter shaft and the spring plate.

In the drawings 1, denotes the frame of suitable configuration supported adjacent its rear by the axle 2, supported by the wheels 3. The front of the frame is supported by the small side wheels 4, which are so positioned as to be free of the mechanism to be hereinafter referred to. The front portion of the machine is also provided with a draft mechanism, the details of which form no part of the present invention. It may be also well to observe that for the proper operation of the device it is necessary that the wheels 3, rotate the axle 2, only when moved in one direction. This is effected by the well known ratchet construction. It may be further stated that this ratchet arrangement also facilitates the turning of the machine.

Depending from the sides of the frame, adjacent the forward end thereof are brackets 5, to which are pivoted the beams 6, said beams being positioned within the frame. To each of the beams 6, is secured the plow 7, which plows extend one toward the other and terminate in close proximity. The space between the plows is to prevent the plows from cutting the root or beet when it is being loosened within the soil. To keep the plows from spreading one with relation to the other, they are connected by the yoke 7^a.

Carried by the plows adjacent the points and projecting upwardly therefrom on an incline are the spaced rods 8. These rods 8, are intended to guide the beets after being loosened by the plows to the conveyer to be hereinafter referred to.

The plows 7, are raised and lowered through the medium of the lever 9, and the connections 10, carried thereby, and engaging the beam 6.

Pivotally mounted on the axle 2, are the supports 11, which support the bars 12, of the conveyer. These bars 12, are suitably spaced and are supported at their forward ends by the flexible connections 13, engaging a shaft 14. This shaft 14, is rotated by the lever 15. By means of this rotating shaft and flexible connections, the bars may

be readily adjusted as is thought to be apparent. It may be stated that the shaft 14, is mounted in brackets 16, carried by the frame 1. It is also to this shaft that the lever 9, is mounted.

The face of one of the bars 12, is provided with two longitudinal grooves 17, while the opposed face of the second bar is provided with a single groove 18, arranged on a plane between the planes of the grooves 17. Movable in these grooves 17 and 18 are the endless cables 19, passing around the pulleys 20, mounted in the ends of the bars. These cables are intended to grasp or bind the tops of the beets and to carry them upwardly after they have been loosened by the plows. This gripping of the tops of the beets is greatly facilitated by the relation of the cables to each other, said gripping of the plants being obtained by what may be termed "crimping". These cables may be caused to travel in any desired manner, but in the drawings the upper pulleys 20, of the double cables are mounted on the shaft 21, which is provided with the sprocket wheel 22. Around this sprocket wheel 22, passes the chain 23. This chain in turn engages a second sprocket wheel 24, mounted on a shaft 25. The shaft 25, is provided with a beveled gear 26, meshing with a large beveled gear 27, fixed to the axle 2, more particularly shown in Fig. 3.

The members 12, terminate at their lower ends in front of the plows and the cables carried thereby will grip the beet tops before the plow has loosened the beets within the soil. In order to insure the proper gripping of the tops, the lower ends of the members are provided with flared wings 28, of any suitable construction but preferably of wire as shown in the drawings.

As it is not necessary that the entire tops of the beet plants be elevated, the rotary cutters 29, are positioned one at each side of the bars 12, slightly in advance thereof and are intended to cut away the sides of the beet tops. These cutters 29, are disk cutters and contact with the ground and it is this contact which causes their rotation.

Adjacent the rear of the conveyer and positioned therebeneath is a rotary cutter 34, which severs the beet tops. This cutter is mounted on the shaft 35, carried by the outer face of one of the bars 12. The shaft 35, extends through the spring plate 36, and the lower end of said shaft 35, is preferably angular in cross section. The cutter 34, is integral with or attached to the thimble A, and the thimble is rotatabie in a slot B, formed in the spring plate 36. The thimble may be splined on the shaft 35, so that it will rotate with the said shaft, but it has been found in practice that a shaft which is angular in cross section adapted to enter a correspondingly formed aperture in the thimble will produce the desired result, that is, it will permit the thimble to move longitudinally of the shaft 35, as the spring 36, is acted on by the beets. The spring plate 3, has its forward portion inclined. Should a beet plant be grasped by the conveyer too close to the beet, the beet will contact with the inclined portion of the spring plate and compress the same which compression will carry the cutter 34, away from the beet and cause it to cut the tops thereof. After the beet has been cut from its top, it falls upon the agitating slats 37, positioned above the receptacle 38. These slats may be moved in any desired manner but are illustrated as being carried by the crank shaft 38′, terminating in a gear 39, meshing with the gear 40, fixed to the axle 2. These agitating slats are for the purpose of freeing the beets from dirt. From the slats the beets are then fed within the receptacle 38 and this receptacle 38, has a hinged bottom 41, for the purpose of emptying the receptacle after it has become filled with beets.

The beams 6, may be held in their adjusted positions in any desired manner, but it has been found best to secure to the frame 1, the segmental uprights 42, which engage the beams 6 and hold the same in their various adjustments. This engagement may be of any desired character, but it has been found best to perforate these segmental uprights 42, and pass the pins 43, through the same engaging the perforations within the beams 6.

We claim—

1. In a beet harvester, a conveyer comprising two parallel bars having grooves in their opposed faces out of alinement, beet engaging traveling members in the grooves, and means for delivering the beets to the traveling members.

2. In a beet harvester, a conveyer comprising two parallel bars having grooves in their inner faces, the groove of one bar being out of alinement with the grooves of the other bar, beet engaging members traveling in the grooves, means for delivering beets to the engaging members, and means for causing the beet engaging members to travel in operative relation.

3. In a beet harvester, a conveyer having two parallel bars, one of said bars having two grooves in its inner face, the other bar having a single groove in its face in a plane between the two grooves heretofore referred to, carrying members traveling in the groove of the bars, and means for delivering beets to the traveling members.

4. In a beet harvester, a conveyer having two parallel bars, one of said bars having two grooves in its inner face, the other bar having a single groove in its face in a plane between the two grooves heretofore referred to, carrying members traveling in the

grooves of the bars, means for delivering beets to the traveling members, and means for cutting the tops of the beets.

5. In a beet harvester, a conveyer having two parallel bars, one of said bars having two grooves in its inner face, the other bar having a single groove in its face in a plane between the two grooves heretofore referred to, carrying members traveling in the grooves of the bars, means for delivering beets to the traveling members, and adjustable means for cutting the tops of the beets.

6. In a beet harvester, a conveyer having two parallel bars, one of said bars having two grooves in its inner face, the other bar having a single groove in its face in a plane between the two grooves heretofore referred to, carrying members traveling in the grooves of the bars, means for delivering beets to the traveling members, a cutter and adjustable means operated by a contact of the beets for regulating the position of the cutter.

In testimony whereof we affix our signatures in the presence of two witnesses this 26 day of December, 1907.

ELIJAH A. HOLLENBECK.
EUGENE W. REED.

Witnesses:
W. H. COWGILL,
CARL STRICKLER.