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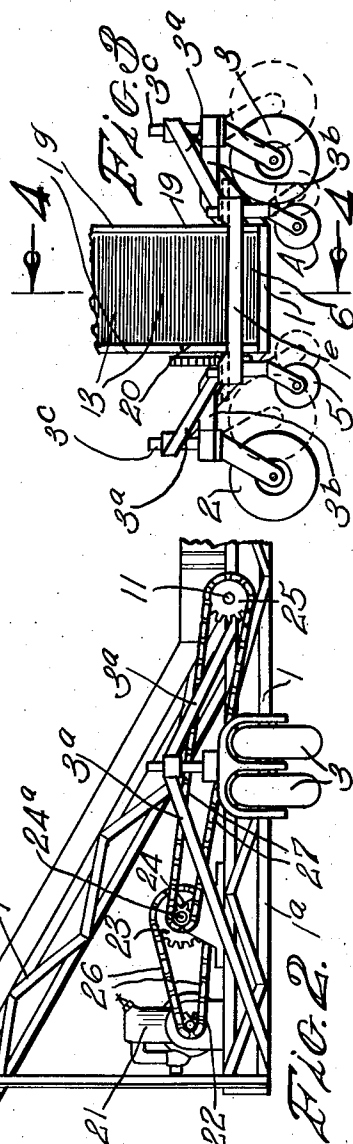
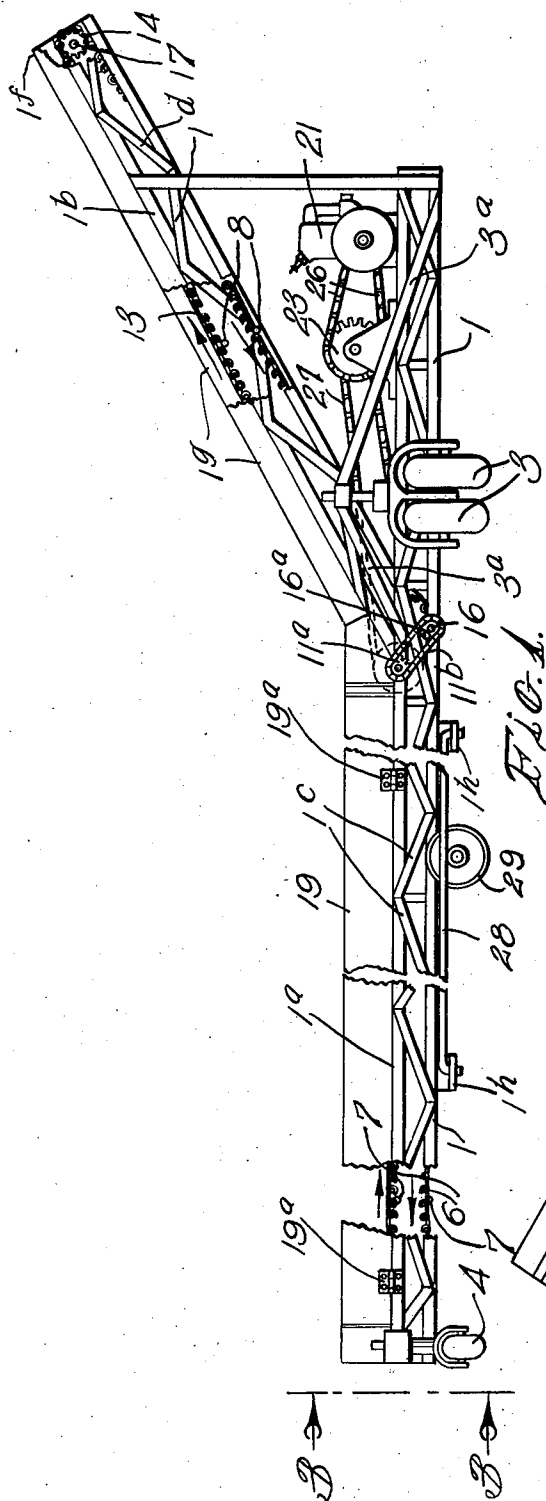
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2,357,549

BEET LOADING APPARATUS

Filed May 31, 1941

2 Sheets-Sheet 1



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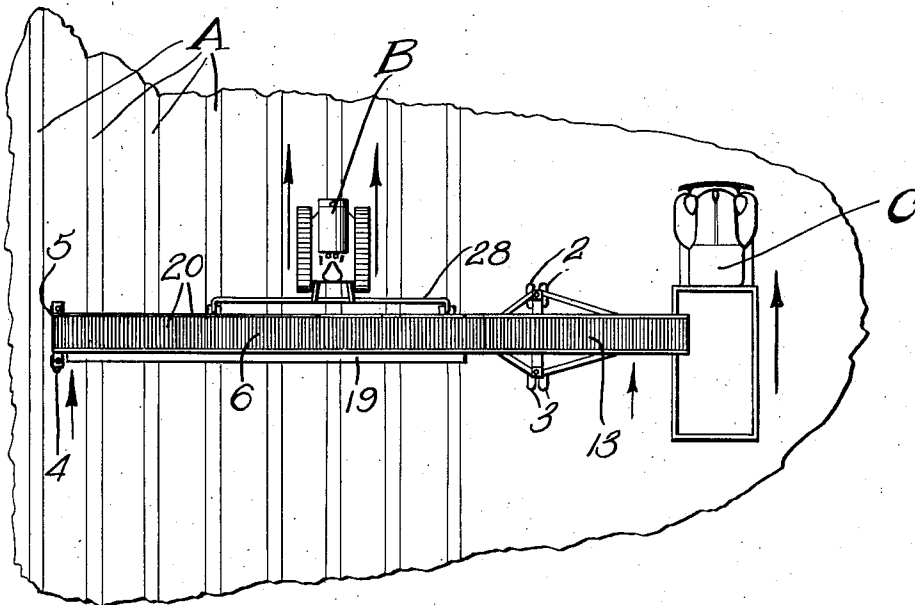
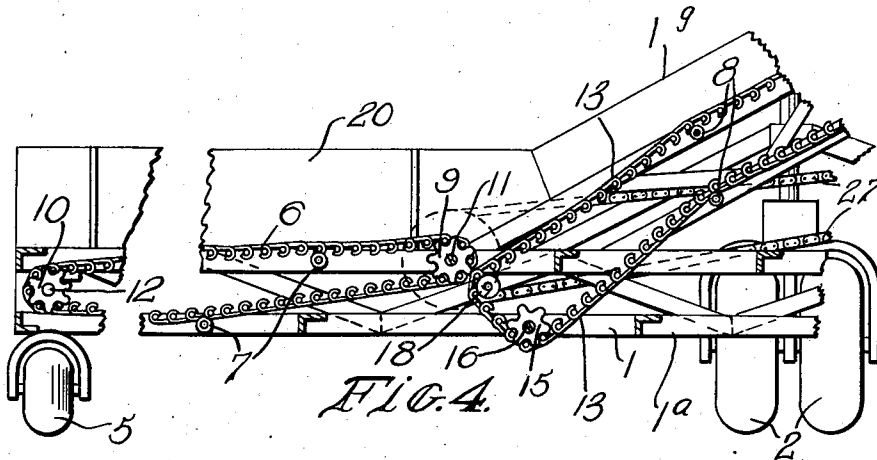
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2 Sheets-Sheet 2



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2,357,549

BEET LOADING APPARATUS

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Application May 31, 1941, Serial No. 396,051

1 Claim. (Cl. 198—233)

My invention relates to a beet loading apparatus, more particularly to an apparatus in which an elongated conveyor mechanism is supported on wheels and arranged to travel sideways in straddling relation with and longitudinally of rows of beets for conveying the beets from several rows at a time to a truck or the like and the objects of my invention are:

First, to provide a beet loading apparatus of this class in which a pair of caster wheels are positioned near each end thereof for common use in transporting my beet loading apparatus in either sideways or longitudinal directional movement;

Second, to provide a beet loading apparatus of this class in which beets being conveyed thereon are dropped from a horizontal conveyor to an elevating conveyor whereby soil is shaken from said beets when they are so dropped;

Third, to provide a beet loading apparatus of this class which is provided with pivotally mounted side boards each arranged to form a foldable backstop for beets being deposited on the horizontal conveyor of my beet loading apparatus;

Fourth, to provide a beet loading apparatus of this class which is so arranged and operated that several beet toppers may follow said apparatus over the field and deposit beets thereon and work side by side in spaced relation to each other longitudinally of the horizontal conveyor of my beet loading apparatus; and

Fifth, to provide a beet loading apparatus of this class which is very simple and economical of construction in proportion to its utility, efficient in its action and which will not readily deteriorate or get out of order.

With these and other objects in view as will appear hereinafter, my invention consists of certain novel features of construction, combination and arrangement of parts and portions as will be hereinafter described in detail and particularly set forth in the appended claim, reference being had to the accompanying drawings and to the characters of reference thereon which form a part of this application in which:

Figure 1 is a fragmentary side elevational view of my beet loading apparatus showing portions broken away and in section to facilitate the illustration; Fig. 2 is a fragmentary side elevational view of my beet loading apparatus showing the opposite side thereof from that as shown in Fig. 1; Fig. 3 is a fragmentary end view of my beet loading apparatus taken from the line 3—3 of Fig. 1 showing by dash lines varying positions of parts and portions; Fig. 4 is an enlarged fragmentary

sectional view taken from the line 4—4 of Fig. 3 and Fig. 5 is a reduced top or plan view of my beet loading apparatus shown positioned on a beet field in relation with the rows of beets thereon and showing by arrows a direction in which my beet loading apparatus travels over the beet field and also showing a tractor and truck in operative relation with my beet loading apparatus.

Similar characters of reference refer to similar parts and portions throughout the several views of the drawings.

The frame 1, frame supporting caster wheels 2, 3, 4 and 5, horizontal conveyor chain 6, chain supporting rollers 7 and 8, horizontal conveyor chain sprockets 9 and 10, conveyor chain sprocket shafts 11 and 12, elevator conveyor chain 13, elevator chain sprockets 14 and 15, elevator sprocket shafts 16 and 17, elevator conveyor chain roller 18, horizontal conveyor side boards 19 and 20, operating motor 21, operating sprockets 22, 23, 24 and 25, sprocket operating chains 26 and 27, hitch member 28 and the transport wheels 29 constitute the principal parts and portions of my beet loading apparatus.

The frame 1 is constructed of conventional angle iron, or other suitable material and is provided with a horizontal portion 1a and an inclined portion 1b. These frame portions 1a and 1b are made of parallel members interconnected by truss members 1c and 1d which are positioned in angular relation with the parallel portions of the frame portions 1a and 1b, as shown best in Figs. 1 and 2 of the drawings. The substantially horizontal frame portion 1a is supported at its one end by the caster wheels 4 and 5, as shown best in Figs. 1 and 3 of the drawings.

The caster wheels 4 and 5, as shown in Fig. 3 of the drawings, are substantially conventional revolvably mounted wheels arranged to shift on a vertical axis for reversible movement of the horizontal frame portions 1a, as shown by dash lines in Fig. 3 of the drawings. The caster wheels 2 and 3 are preferably double wheels and are positioned near the opposite end of the frame portion 1a from the caster wheels 4 and 5 and are arranged to support the opposite end of my beet loading apparatus. The caster wheels 2 and 3 are preferably larger than the caster wheels 4 and 5, as shown in Fig. 3 of the drawings and these caster wheels 2 and 3 operate in substantially the same manner as the caster wheels 4 and 5, all as indicated by dash lines in Fig. 3 of the drawings.

The horizontal frame portion 1a is supported

in connection with the caster wheels 4 and 5 by means of the cross member 1e. The horizontal frame portion 1a is also supported in connection with the caster wheels 2 and 3 by means of the angular brace members 3a and the brace members 3b which extend outwardly from the frame portion 1a to the vertical axles 3c of the caster wheels 2 and 3 in substantially horizontal relation, as shown best in Fig. 3 of the drawings.

Arranged in substantially parallel relation with the frame portion 1a and extending from the caster wheels 4 and 5 toward the caster wheels 2 and 3 is the horizontal conveyor chain 6 which is an endless chain similar to the conventional chains used on potato diggers, or the like. This horizontal conveyor chain 6 is positioned over the sprockets 10 near the caster wheels 4 and 5 and is positioned over the sprockets 9 near the connection of the inclined frame portion 1b with the frame portion 1a, as shown best in Fig. 4 of the drawings.

The sprockets 10 are secured on the shaft 12 and the sprockets 9 are secured on the shafts 11, all as shown best in Fig. 4 of the drawings.

Positioned on the outer end of the shaft 11 is the operating sprocket 25 on which is positioned the sprocket operating chain 27. This sprocket operating chain 27 engages a sprocket 24 mounted on a shaft 24a in connection with the sprocket 23 driven by the chain 26 over the sprocket 22 which is operated by the operating motor 21, all as shown best in Fig. 2 of the drawings. Secured on the opposite end of the shaft 11 from the sprocket 25 is a sprocket 11a. This sprocket 11a is engaged by a chain 11b, which chain 11b is arranged to drive a sprocket 16a on the shaft 16, all as shown best in Fig. 1 of the drawings.

As shown in Fig. 4 of the drawings, the elevator conveyor chain roller 18 is positioned slightly below the axis of the shaft 11 intermediate the shaft 11 and the shaft 16. This roller 18 is arranged to support the elevator conveyor chain 13 in certain relation with the sprockets 15 mounted on the shaft 16. The sprockets 15 are arranged to drive the elevator conveyor chain 13 which is mounted in substantially parallel relation with the inclined frame portion 1b, as shown best in Figs. 1 and 4 of the drawings.

It will be here noted that the chain supporting rollers 8 are arranged to support the elevator conveyor chain 13 intermediate the roller 18 and the sprocket 14, as shown best in Figs. 1 and 4 of the drawings. The horizontal conveyor chain 6 is supported on rollers 7 which are arranged in connected relation with the horizontal frame portion 1a, as shown best in Fig. 4 of the drawings. The elevator conveyor chain 13 is positioned over the sprockets 14 on the shaft 17 at the upwardly extending end portion 1f of the inclined frame 1b. In connection with this inclined frame portion 1b are side boards 1g which are positioned at opposite sides of the elevator conveyor chain 13, as shown best in Fig. 3 of the drawings.

Connected with the horizontal frame portion 1a at opposite sides of the horizontal conveyor chain 6 are the side boards 19 and 20. These side boards 19 and 20 are pivotally mounted on hinges 19a and are arranged to be pivotally shifted as indicated by dash lines in Fig. 3 of the drawings, and shown by solid lines in Fig. 5 of the drawings.

The hitch member 28 is arranged to be connected with brackets 1h secured to opposite sides

of the frame portion 1a, as shown best in Fig. 1 of the drawings. This hitch member 28 is connected with a tractor for use in pulling my beet loading apparatus sideways, as shown in Fig. 5 of the drawings. The transport wheels 29 are removably connected to the horizontal frame portion 1a and are for use only in the transportation of my beet loading apparatus from one field to another or from one place to another. These transport wheels 29 are arranged to support the middle of my beet loading apparatus when moving the same longitudinally along uneven roads or over small bridges or the like.

When using my beet loading apparatus and operating the same for loading beets, as indicated in Fig. 5 of the drawings, the transport wheels 29 are disconnected and removed from the frame portions 1a.

The operation of my beet loading apparatus is substantially as follows:

As shown in Fig. 5 of the drawings, the rows of beets A are in transverse relation with my beet loading apparatus which is being pulled sideways by a tractor B. The truck C travels beneath the upper end of the inclined frame portion 1b for receiving beets from the conveyor chain 13. It will be noted that the caster wheels 4 and 5 are positioned intermediate the rows A of the beets and that the truck C passes over harvested ground while receiving beets from the elevator conveyor chain 13. The side board 19 is shown folded downwardly as indicated by dash lines in Fig. 3 of the drawings and the side board 20 remains in upright position forming a back stop for the beets as they are deposited on the horizontal conveyor chain 6, whereupon they are carried toward the elevator conveyor chain 13 and are deposited thereon.

When my beet loading apparatus has passed to the end of the field in the direction as indicated by arrows in Fig. 5 of the drawings, the hitch member 28 is released from my beet loading apparatus and my beet loading apparatus is shifted longitudinally until the desired numbers of rows A are straddled by the horizontal frame portion 1a, then the tractor B is hitched to the opposite side of my beet loading apparatus from that as shown in Fig. 5 of the drawings. The side board 20 is then folded downwardly and the side board 19 is positioned in upright relation so that the beet toppers are permitted to follow the horizontal frame portion 1a of my beet loading apparatus and deposit beets on the horizontal conveyor chain 6 while the side board 19 forms a back stop therefor. The truck C moves along with my beet loading apparatus underneath the upwardly extending end 1f of the inclined frame portion 1b.

It will be here noted that the caster wheels 2, 3, 4 and 5 are so arranged that my beet loading apparatus may be moved in any direction thereon whereby said caster wheels shift in conforming relation with the direction of movement taken by my beet loading apparatus.

Though I have shown and described a particular construction, combination and arrangement of parts and portions, I do not wish to be limited to this particular construction, combination and arrangement, but desire to include in the scope of my invention the construction, combination and arrangement substantially as set forth in the appended claim.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

In a beet loading apparatus of the class described, the combination with a frame, a substantially horizontal conveyor and an inclined conveyor in cooperative relation with said horizontal conveyor, of caster wheels in connection with said frame near opposite ends thereof and arranged to form the sole support for said beet loading apparatus, side boards pivotally mounted

on said frame, on opposite sides of said horizontal conveyor and hitch means extending longitudinally some distance on opposite sides of said frame for use in towing said beet loading apparatus from either side whereby said beet loading apparatus may be drawn sideways in opposed directions or endwise in opposed directions.

JOHN I. ROBERSON.