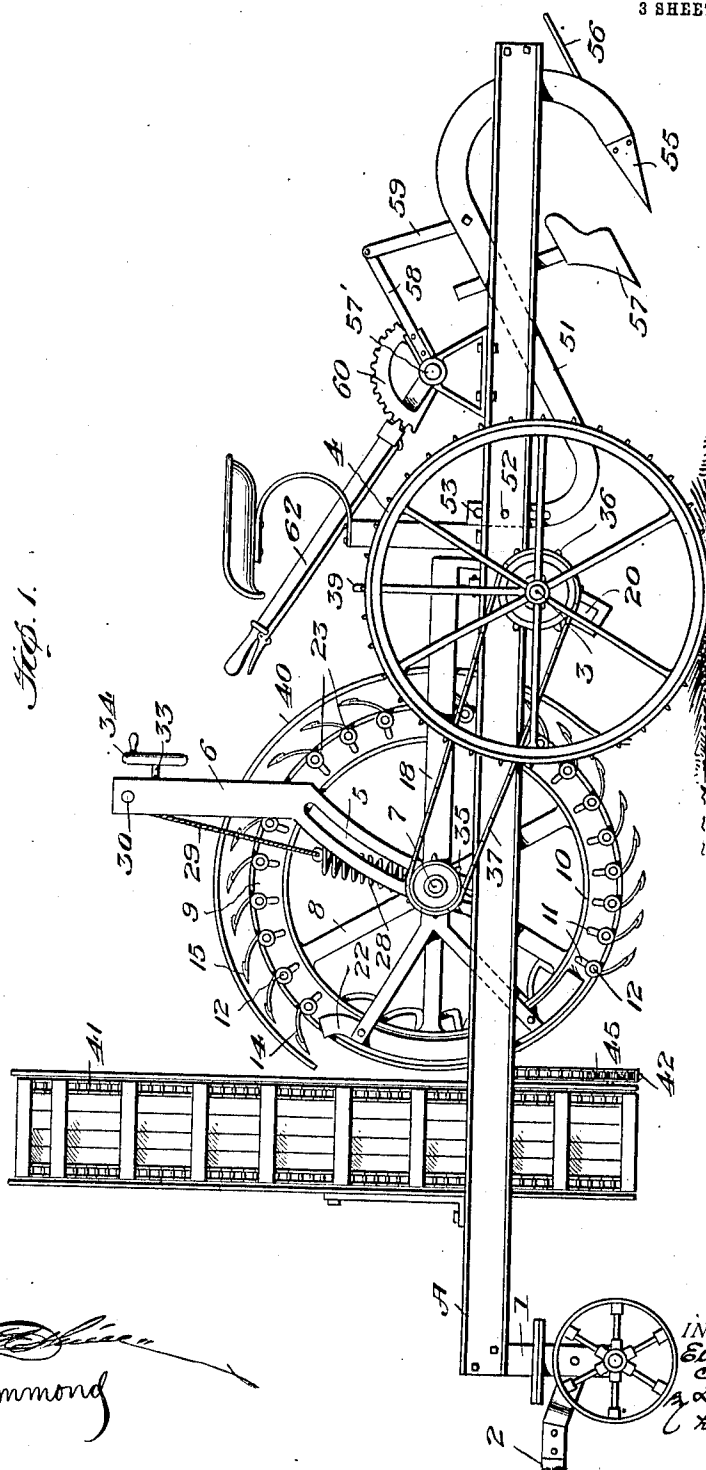


E. A. CADWALLADER.
BEET TOPPER AND PLOW.
APPLICATION FILED FEB. 21, 1912.

1,048,458.

Patented Dec. 24, 1912.

3 SHEETS-SHEET 1.



WITNESSES

A. A. Hammond

INVENTOR

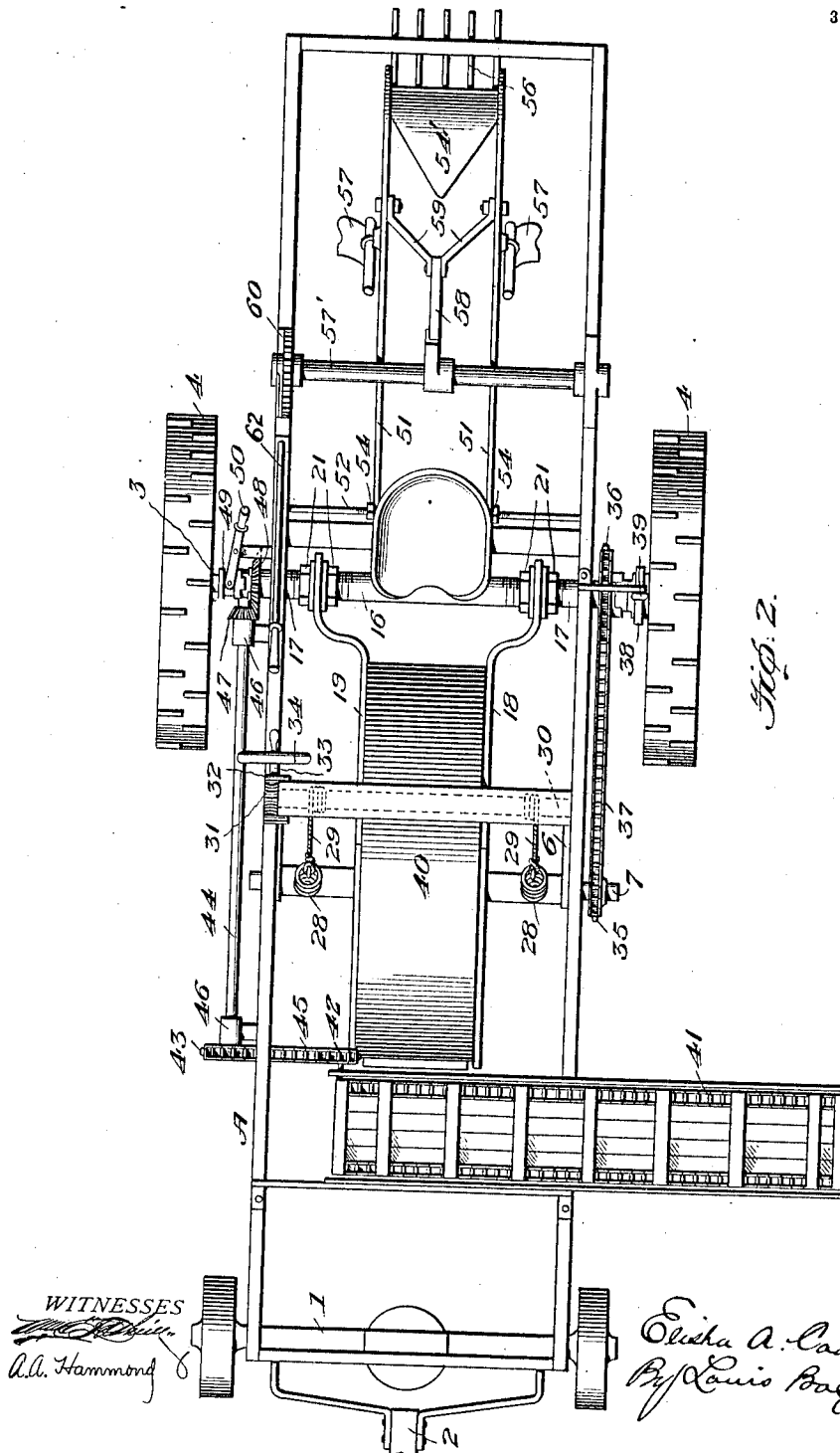
E. A. Cadwallader
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3 SHEETS-SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

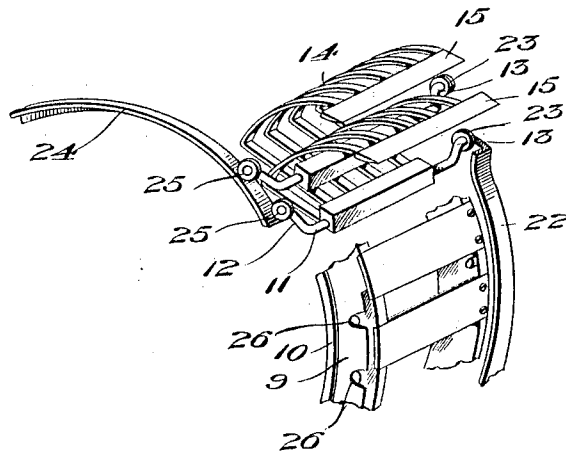


Fig. 4.

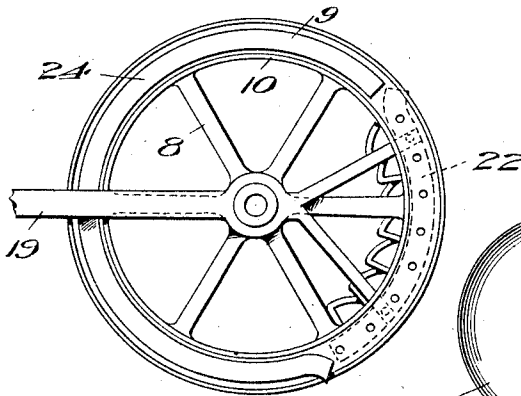
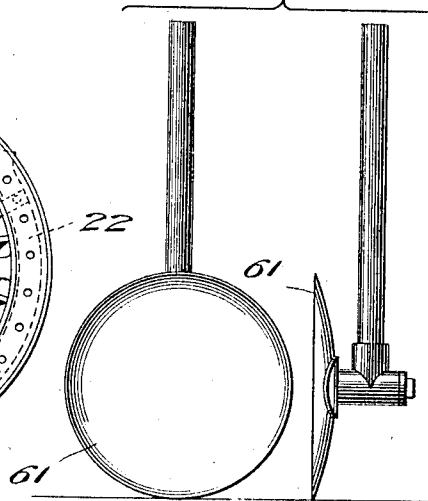


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

ELISHA A. CADWALLADER, OF WICHITA, KANSAS, ASSIGNOR OF ONE-HALF TO
SAMUEL L. CHASTAIN AND ROBERT M. CHASTAIN.

BEET-TOPPER AND PLOW.

1,048,458.

Specification of Letters Patent.

Patented Dec. 24, 1912.

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To all whom it may concern:

Be it known that I, ELISHA A. CADWALLADER, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Beet-Toppers and Plows, of which the following is a specification.

My invention relates to an improvement in machines for removing the tops from beets, and delivering the tops to a vehicle or receptacle, and for plowing the beets from the earth.

The object is to provide a wheel rotatably mounted upon the machine frame which is provided with knives for removing the tops from the beets, and which knives carry the tops to a conveyer whereby the tops will be conveyed from the machine.

Another object is in the provision of plows for plowing the beets from the earth so that they will lie upon the upper surface of the ground and can thereby be readily picked by a picking machine.

The invention consists in certain novel features of construction and combinations of parts which will be hereinafter fully described and pointed out in the claims.

In the accompanying drawings:—Figure 1 is a view in side elevation, Fig. 2, a top plan view, Fig. 3 is a detail view in perspective showing the manner of assembling and arranging the fingers, the manner of mounting the crank-shafts of the fingers on the rims of the wheels, and the relation of the tracks with respect to each other for actuating the fingers, Fig. 4 is a view of the opposite side of the topper wheel and showing the location of the track which coöperates with the track disclosed in Fig. 1 in actuating the fingers, and Fig. 5 is a modification showing a disk-plow which can be substituted for the mold-board plow shown in Fig. 1.

A, represents the frame of the machine, and 1 is the forward truck to which a tongue 2 is connected for drawing the machine across the field. An axle 3 is connected to the frame, and mounted upon the axle are traction wheels 4. The traction wheels are secured to the axle so that the axle will rotate with the wheels. Standards 6 are connected to the frame A, and are provided with curved slots 5 at their lower ends. Journaled in the slots is a shaft 7 upon

which the topper-wheel 8 is mounted. Mounted on the wheel are rims 9 which are provided with annular flanges 10, 10, which extend at right angles to the rims 9 and from the lower edge of the rims. Journaled in the rims 9 are crank-shafts 11, 11. Each crank shaft is provided with crank-arms 12, and 13, the arms 13 extending at right angles to the direction taken by the arms 12. A plurality of fingers 14 are connected to each crank shaft 11, and connected to the outer ends of the fingers are knives or blades 15; that is, the fingers which are connected to each crank-shaft are provided with a blade or knife, the fingers of one blade passing through or between the fingers of the adjacent blade. The several sets of fingers are so arranged with respect to each other that the ends of the alternate blades will be in alinement with other. A tube 16 is mounted upon the axle 3 and is supported by the axle bearings 17. Arms 18 and 19, provided with curved elongated slots 20 at their inner ends, are mounted upon the tube 16, the tube passing through slots 20, and lock-nuts 21, 21, fasten the arms securely to the tube and hold the arms in their adjusted position. The axle 7 of the wheel 8 passes loosely through the arms 18 and 19, and at the outer end of the arm 18 a track 22 is carried which is engaged by the rollers 23 on the arms 13 of the crank-shafts 11 for causing the crank-shafts to be actuated for drawing the fingers inward and causing the blades to come against the outer surface of the rims 9. The arm 19 carries a track 24 upon which the rollers 25 of the crank-arms 12 travel for causing the crank-shafts to be actuated for forcing the blades 15 outward into a position for cutting or removing the tops from the beets.

The ends of the track 24 terminate practically at the ends of the track 22 so that there will be no interference in the actuation of the crank-shafts 11 when the rollers come in contact with the track 22 or when the rollers 25 come in contact with the track 24 for operating the shafts to move the blades inward or outward.

The object of the track 22 is to cause the blades and fingers to be drawn toward the periphery of the wheel so that the blades will pass without interference the conveyer-belt 41.

The bearings or slots 26 formed in the

rims 9 of the wheel rims are of greater size than the diameter of the crank-shafts 11, the object of this being to permit of the knives being regulated as to the throw or protrusion. This is made necessary by the variation of the growth of the beets from year to year; and to cause the shafts to be held at the innermost point or at the bottom of the bearings, the tracks 22 and 24 are adjusted and moved about the wheel through the arms 18 and 19, and this is accomplished by the adjustment of the rear ends of the arms 18 and 19. When the rear ends of the arms are lowered, the forward ends are raised, thereby causing the tracks to be moved about the shaft 7, causing the shafts to be held closer or toward the bottom of the bearings; but when the rear ends of the arms are raised, the forward ends of the arms are lowered, thus moving the tracks around the shaft 7, thereby allowing the shafts to move toward the periphery of the rims. In this way the cut can be regulated. Coil springs 28 are connected to the shaft 7, and connected to the springs are cables 29 which are connected to a shaft 30. A gear-wheel 31 is mounted on the shaft, and meshing with the gear-wheel is a worm 32, which worm is mounted on a shaft 33. A wheel 34 is provided for rotating the worm for causing the shaft 30 to be wound for raising the topper-wheel 8. The wheel can, therefore, be supported at different elevations for operations, and when not in use can be raised to a height sufficient to prevent the blades from coming in contact with any obstructions. The curved slots 5 in the uprights 6 tend to force the shaft 7 forward during the operation of the wheel. The sprocket-wheel 35 is mounted on the shaft 7, and the sprocket wheel 36 is loosely mounted on the axle 3. A chain 37 connects the two sprocket wheels 35 and 36 together. A clutch 38 on the axle is adapted to be thrown into engagement with the sprocket wheel 36 by a lever 39 for locking the sprocket-wheel 36 to the axle, whereby power will be transmitted from the axle to the shaft 7 for causing the topper-wheel to be rotated. A cover 40 is carried by the arms 18 and 19 for covering the upper portion of the topper-wheel and preventing anything from falling onto the knives and interfering with the operation of the wheel. An endless conveyer 41 is supported upon the frame A, and is driven by sprocket-wheel 42 connected to the shaft of the endless conveyer. A sprocket wheel 43 on the shaft 44 is connected to the sprocket-wheel 42 by a sprocket-chain 45. The shaft 44 is supported upon the frame by brackets 46, and is provided with a bevel-pinion 47 which meshes with a bevel-gear 48, loosely mounted on the axle 3. Clutch 49 on the axle is adapted to be thrown into engage-

ment with the bevel-gear 48 by lever 50, whereby power will be transmitted from the axle to the sprocket-wheel 42 for moving the endless conveyer. When the knives 15 remove the tops from the beets, the tops will fall upon the knives and fingers and will be carried around the wheel and discharged onto the endless conveyer, and will thence be discharged from the machine onto a wagon or into some suitable receptacle along the path of travel of the machine.

Plow beams 51 are supported by a rod 52. The forward ends of the beams are provided with elongated slots 53 through which the rod 52 extends, and lock-nuts 54 on the rod 52 are provided for locking the beams in various adjusted positions. Connected to the ends of the beams 51 is a mold-board plow 54' which is provided with triangular side-plates 55. Connected to the rear of the plow 54' are a plurality of rods 56 which are adapted to break up and level off the earth as it falls into the furrows. Side plows 57 are connected to each of the beams 51, which side-plows are adapted to open a furrow on the two sides of the center-plow. The center-plow 54' runs deeper than the side-plows, and as the center plow raises the earth, a portion of the earth will roll into the side furrows, the earth passing over the rods 56, and all loose earth will fall into the center furrow passing through the rods. A shaft 57' is journaled on the frame A, and is provided with a lever 58 which is connected to the beams 51 by arms 59, 59. A toothed segment 60 is mounted on the frame and is adapted to be engaged by a lever 62 for raising and lowering the plows.

In the modification shown in Fig. 5, I have disclosed disk-plows 61 which may be used in lieu of the mold-board plow.

From the foregoing it will be seen that I have provided an apparatus which will remove the tops from the beets and conduct the beets away from the rows, and after the tops have been removed the earth will be loosened around the beets and the beets brought to the surface so that they can be readily gathered.

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

1. The combination with a frame having slotted standards connected thereto, of a shaft extending through the slots of the standards, a wheel mounted on the shaft carrying blades for removing the tops of beets, means for suspending the shaft and wheel and for regulating the elevation of the wheel.

2. The combination with a frame, of a topper-wheel rotatably mounted upon the frame, cutting blades carried by the wheel, arms journaled on the frame, means car-

ried by the arms for causing the blades to be moved to and from a cutting position and means for oscillating the arms for shifting the means which control the movement of the blades for causing said means to regulate the cut of the blades.

3. The combination with a frame, of a wheel rotatably mounted thereon carrying cutting blades for removing the tops of the beets, tracks for causing the blades to be moved from and to a cutting position, one of the tracks causing the blades to be moved to a cutting position and the other track causing the blades to be moved from a cutting position, said tracks arranged with respect to each other so that one track will not act upon the blades which are being acted upon by the other track.

4. The combination with a frame, of a wheel rotatably mounted upon the frame, cutting blades carried by the wheel, arms journaled on the frame, tracks carried by the arms, one of the tracks causing the blades to be moved to a cutting position and the other track causing the blades to be moved from a cutting position and means for moving the arms for changing the position of the tracks for regulating the cut of the blades.

5. The combination with a frame, of a wheel rotatably mounted thereon, crank-shafts mounted upon the wheel having crank-arms thereon, the crank arms of each shaft extending at different angles, blades connected to the crank shafts, and means for engaging one set of crank-arms for causing the blades to be thrown to a cutting position, and means for engaging the other set of crank-arms for causing the blades to be drawn from the cutting position.

6. The combination with a frame, of a wheel rotatably mounted thereon, crank-shafts journaled on the wheel, crank-arms on the shafts, the crank-arms of each shaft extending at different angles, fingers connected to the crank-shafts, and cutting

blades carried by the fingers, the fingers on each shaft passing through the fingers carried by the adjacent shaft, and means for engaging one set of crank-arms for causing the fingers and blades to be thrown to a cutting position, and means for engaging the other set of crank-arms causing the fingers and blades to be withdrawn from the cutting position.

7. The combination with a frame, of a wheel rotatably mounted thereon, crank-shafts journaled on the wheel, crank-arms on the shafts, the crank-arms of each shaft extending at different angles, fingers connected to the crank-shafts, cutting-blades carried by the fingers, the fingers on each shaft passing through the fingers carried by the adjacent shaft, means for engaging one set of crank-arms for causing the fingers and blades to be thrown to a cutting position, means for engaging the other set of crank-arms causing the fingers and blades to be withdrawn from the cutting position, and means for raising and lowering the wheel to the elevation desired.

8. The combination with a frame having an axle and traction wheels on the axle, of a topper-wheel rotatably mounted upon the frame, means for transmitting motion from the axle to the topper wheel for rotating the wheel, cutting blades carried by the topper-wheel, arms journaled on the frame, means carried by the arms for causing the blades to be moved to and from a cutting position, and means whereby the arms can be moved to different positions and held for shifting the means which control the movement of the blades for causing said means to regulate the length of cut made by the blades.

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

ELISHA A. CADWALLADER.

Witnesses:

FRANK MOSBACHER,
MABEL M. YOUNKIN.