

No. 868,593.

PATENTED OCT. 15, 1907.

D. T. BLEVINS & S. R. GIDDINGS.

BEET TOPPER.

APPLICATION FILED AUG. 27, 1906.

3 SHEETS—SHEET 1.

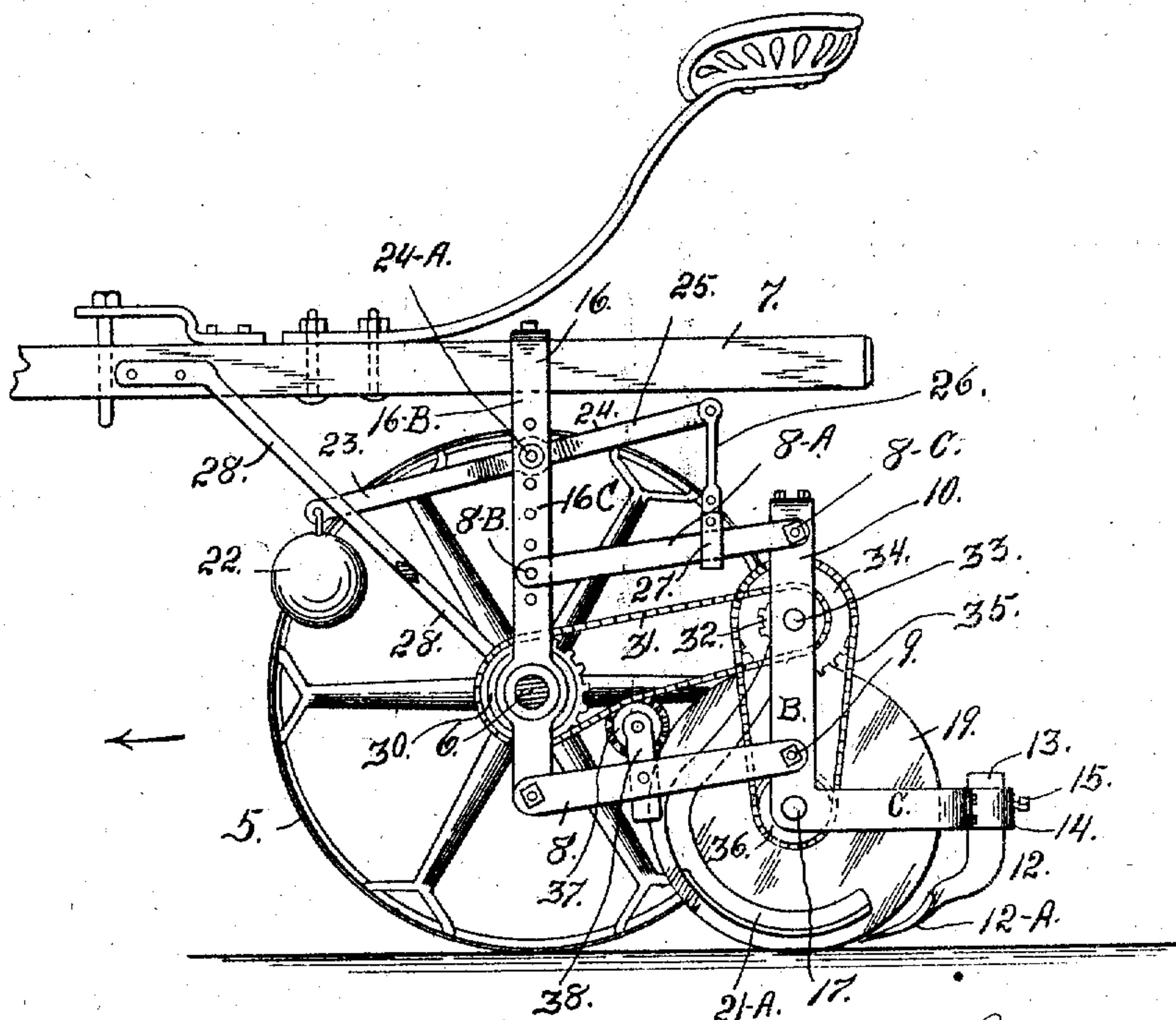
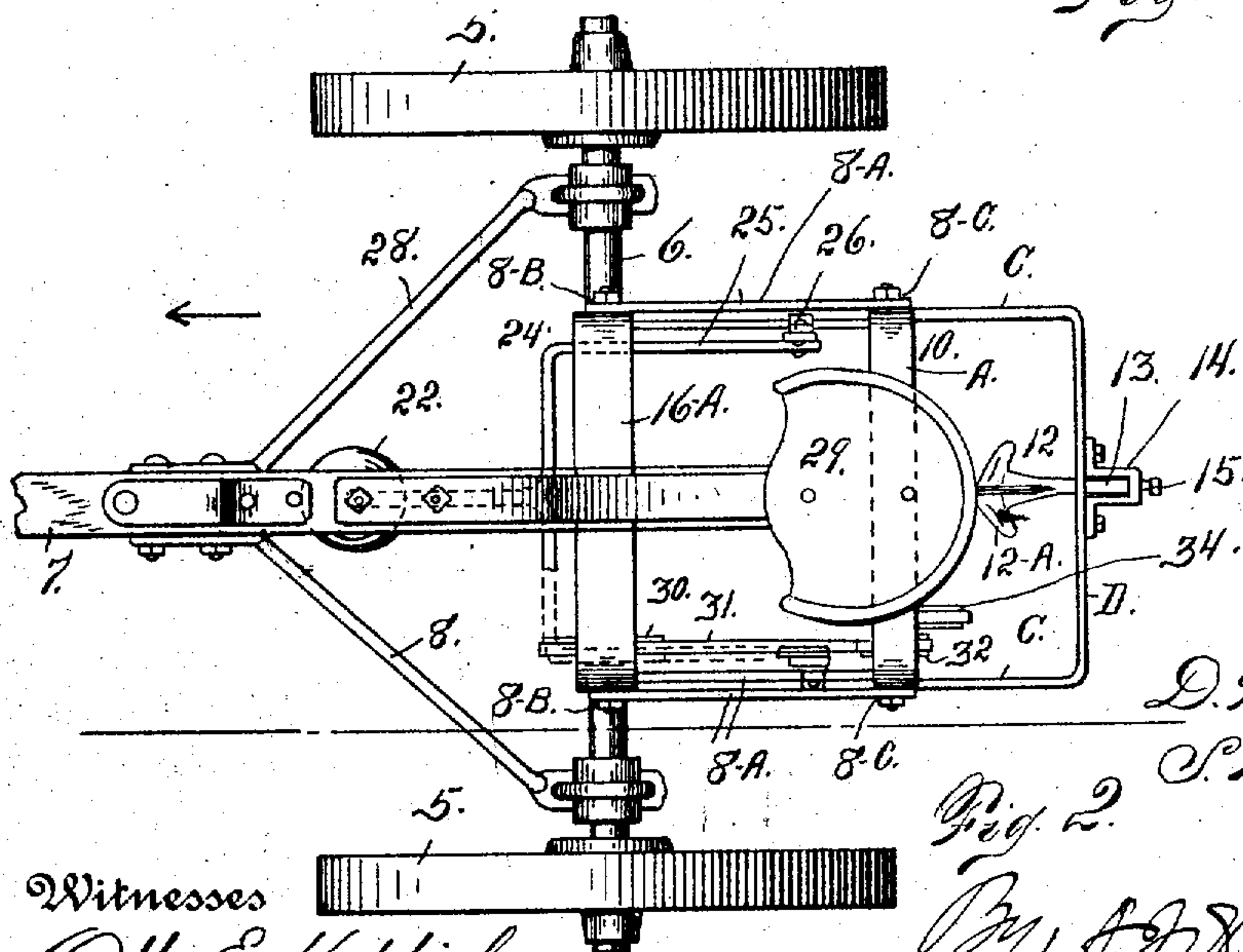


Fig. 1.



D. T. Blevins.

S. R. Giddings.

Inventors

Witnesses

Otto C. Hoddick.

Dena Nelson.

Fig. 2.

By *[Signature]*

Attorney

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3 SHEETS—SHEET 2.

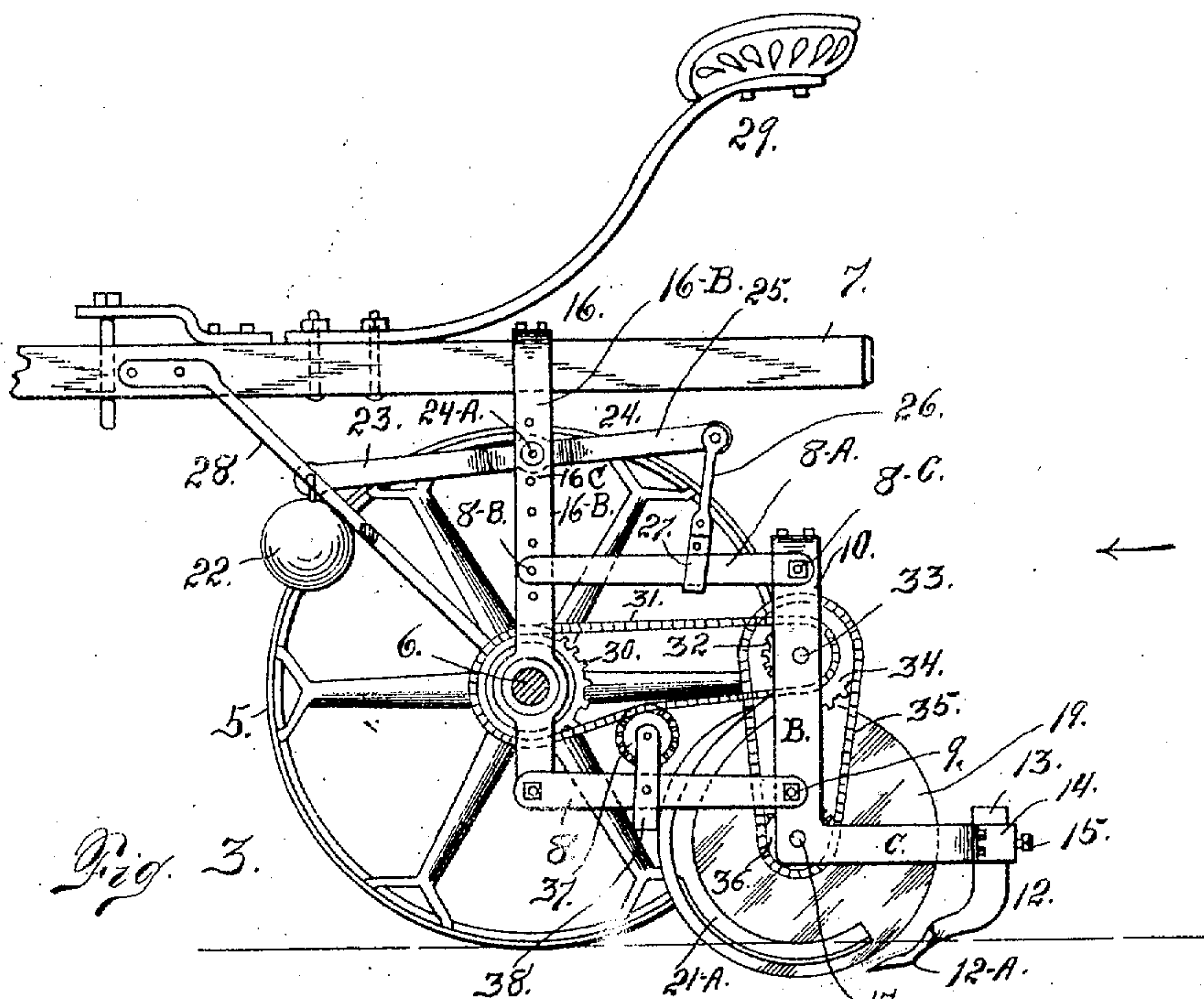


Fig. 3.

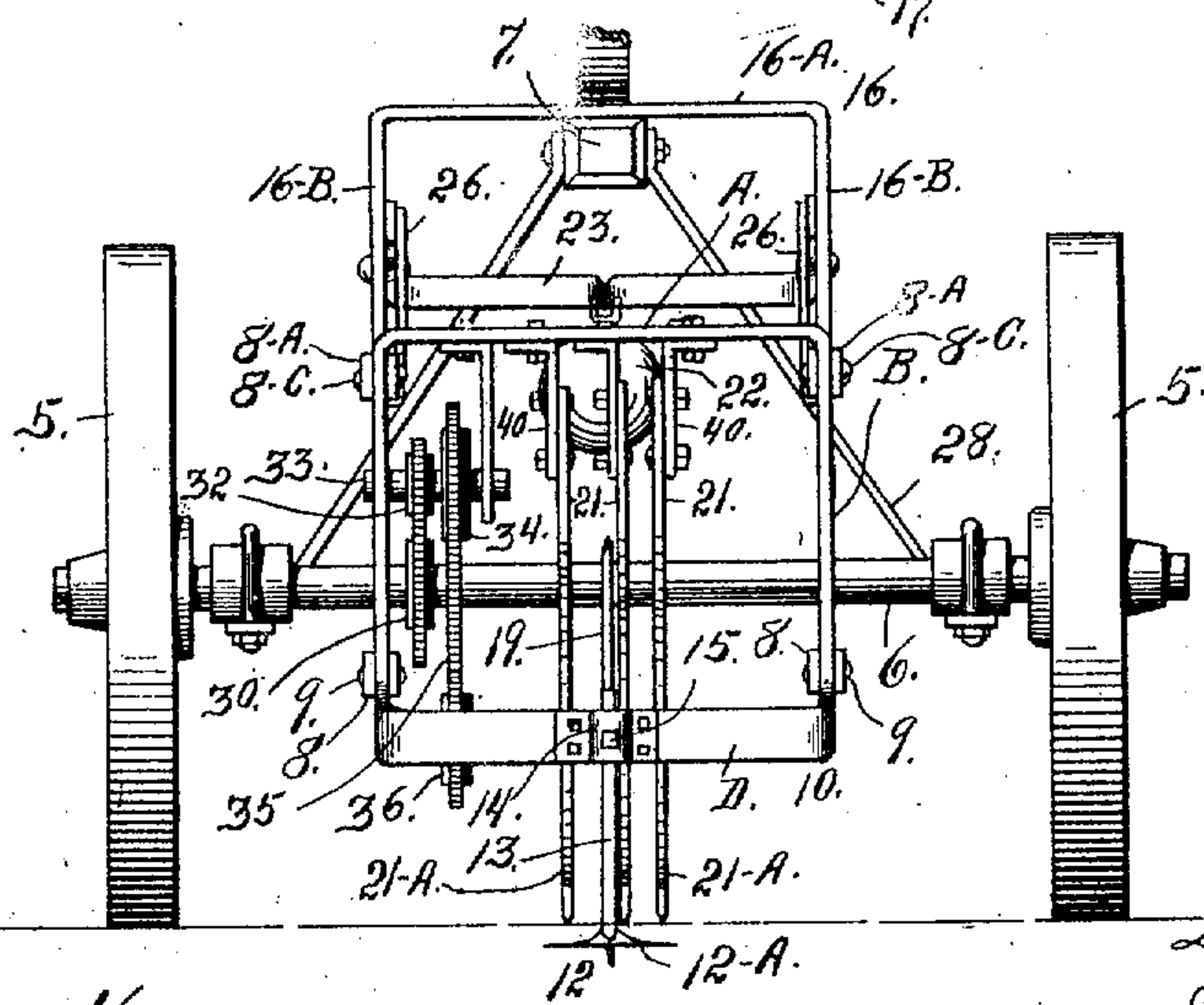


Fig. 4.

Witnesses

Otto E. Haddock.

Dena Nelson.

D. T. Blevins.
S. R. Giddings.
Inventor

By A. R. Blevins

Attorney

No. 868,593.

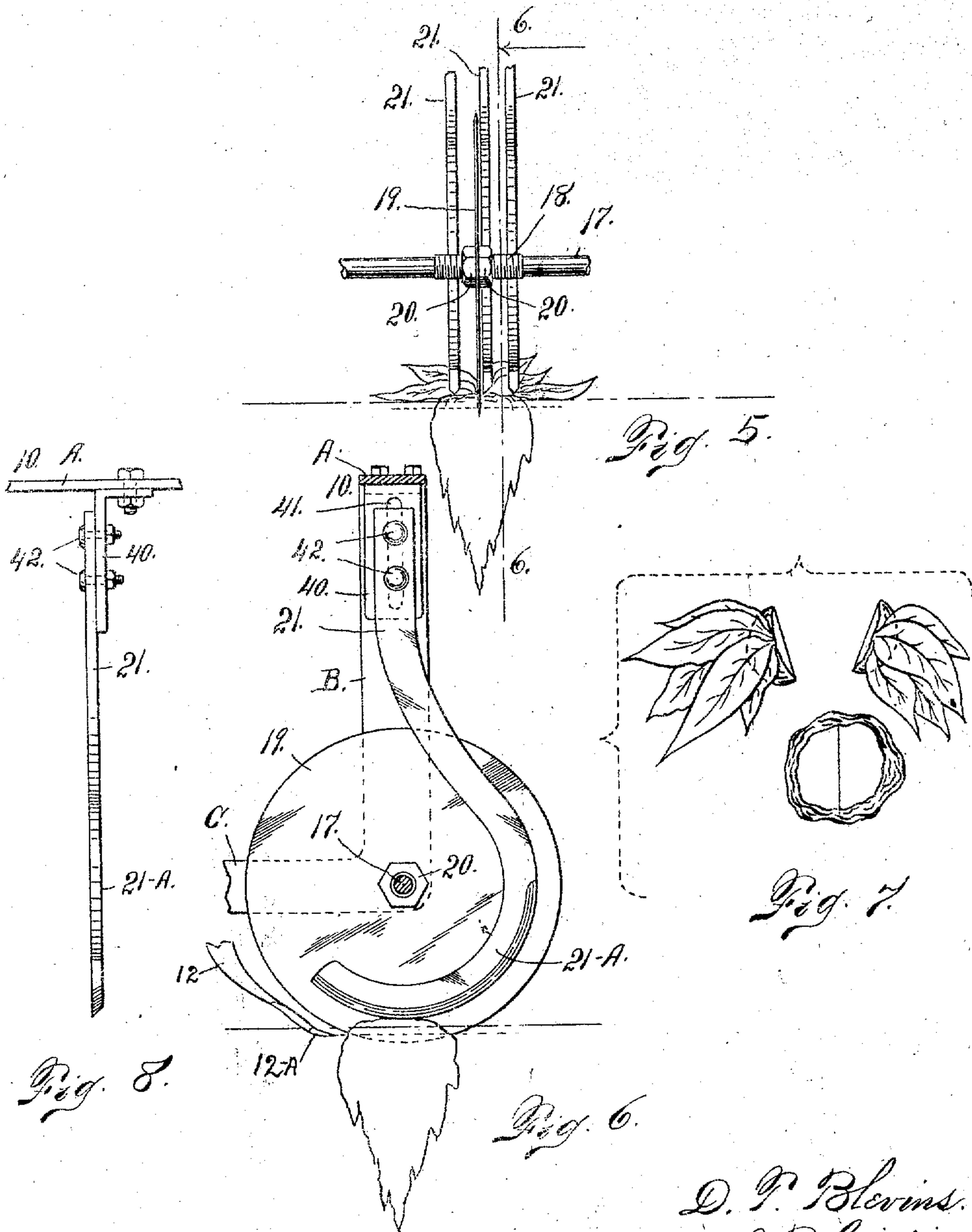
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3 SHEETS—SHEET 3.



Witnesses
Otto E. Hoddick
Dena Nelson.

D. T. Blevins.
S. R. Giddings.
Inventors
By *A. W. Green*
Attorney

UNITED STATES PATENT OFFICE.

DAVID T. BLEVINS, OF WINDSOR, AND SQUIRE RALPH GIDDINGS, OF TIMNATH, COLORADO,
ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO THE YANKEE BEET TOPPER
COMPANY, OF TIMNATH, COLORADO.

BEET-TOPPER.

No. 868,593.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed August 27, 1906. Serial No. 332,139.

To all whom it may concern:

Be it known that we, DAVID T. BLEVINS and SQUIRE RALPH GIDDINGS, both citizens of the United States, the said DAVID T. BLEVINS residing at Windsor, county of Weld, State of Colorado, and the said SQUIRE RALPH GIDDINGS residing at Timnath, in the county of Larimer and State of Colorado, have invented certain new and useful Improvements in Beet-Toppers; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in beet top-
pers, our object being to provide an apparatus adapt-
ed to top all the beets at the proper place regardless of
the location of the top of the beet with reference to
the surface of the ground. The bodies of vegetables
of this character are some times entirely concealed by
the earth, while in other cases they project above the
surface. If a construction were employed which con-
tinually occupied a uniform plane with reference to
the surface of the earth, some beets would be topped
too high while others would be topped too low.

Our construction automatically adjusts itself to the position of the top of the beet with reference to the surface of the ground and to this end it consists of the features, arrangements and combinations hereinafter described and claimed, all of which will be fully understood by reference to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a side elevation of our improved construction with one of the ground wheels removed, the axle being shown in section. Fig. 2 is a top plan view of the complete machine. Fig. 3 is a view similar to Fig. 1 but with the beet topping devices in a different position. Fig. 4 is a rear view of the apparatus, or a view looking in the direction of the arrow in Fig. 3. Fig. 5 is a detail view showing the knife and gage bars, the structure being shown in operative relation with a beet to be topped. Fig. 6 is a side elevation of the same. Fig. 7 is a detail view showing a beet and the top thereof removed by our improved machine. Fig. 8 is a detail view illustrating one of the adjustable gage bars.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate two ground wheels; and 6 an axle upon which is mounted a yoke 16 composed of a top transverse part 16^A passing above the

tongue 7, and depending side parts 16^B, apertured to receive the axle 6. These side parts extend below the axle and to their lower extremities are pivotally connected the forward extremities of links 8 which extend rearwardly, their rear extremities being pivotally connected as shown at 9 with a frame member 10 composed of a top transverse part A, vertical side parts B, parts C extending rearwardly at right angles to the parts B, and a rear transverse part D connecting the parts C.

Centrally mounted on the transverse part D of the frame 10, is a vertically adjustable knife 12 having a shank 13 vertically movable in a keeper 14, by means of a set bolt 15. The blade 12^A of this knife is forwardly inclined and is so located as to perform the beet topping function as the machine is drawn across the field with its ground wheels on each side of the row. The frame 10 is further connected with the yoke by means of links 8^A whose forward extremities are pivotally connected with the yoke as shown at 8^B and whose rear extremities are pivotally connected with the frame 10 as shown at 8^C.

Journaled in the lower part of the frame 10 and at the angles thereof is a shaft 17 whose central portion is threaded as shown at 18 and passes through a rotary disk 19 which is held in place on the shaft by nuts 20 threaded on the shaft and secured tightly against the disk on opposite sides. This disk is supposed to occupy a central position with reference to the beets to be topped and is adapted to enter the beet to a depth intersecting the plane in which the topping knife 12^A travels. The depth of the cut of the rotary disk is regulated by a number of gage bars 21 whose lower extremities are curved as shown at 21^A. These gage bars while their lower portions are shown to be beveled, are intended to be sufficiently dull to prevent their entering the upper part of the beet which should be removed by the topping knife. This upper part of the beet to be removed, is of a tough woody nature and the gage bars will rest upon the top thereof without cutting the same. Therefore by the vertical adjustment of these gage bars the depth of the cut of the rotary disk may be determined and this depth of cut of the disk determines the depth of cut of the topping knife which is located close to the lowermost segment of the disk and immediately in the rear thereof. As the topping knife and the rotary disk are both mounted on the frame 10, the vertical position of the disk also determines the corresponding position of the knife or the plane of the cut of the latter. We prefer to employ a plurality of gage bars (three being shown in the drawing), so that at

least one of these bars will always be in position to regulate the depth to which the disk enters the top of the beet.

The frame 10 and its connections together with the devices supported thereby, are somewhat heavier than is desirable, assuming that their vertical position is to be determined alone by gravity. In order to overcome this difficulty we employ a counter-balance weight 22 connected with the forward arm 23 of a lever-like device 24 whose rear extremity is bifurcated being composed of two separated arms 25, to the rear extremity of each of which is attached a hanger 26 whose lower extremity is provided with a loop 27 through which passes a link 8^A. This loop is sufficiently large to permit it to slide somewhat freely upon the link, so that a limited degree of adjustment is thereby permitted. The lever-like device 24 is fulcrumed on the yoke 16 as shown at 24^A, each arm 25 being pivotally connected with the yoke at the point stated. The axle in addition to the support of the yoke, is further supported by braces 28 which lead forwardly from the axle to the tongue or pole 7. The rear part of the tongue is provided with a seat 29 for the driver.

The rotary movement is imparted to the disk 19 from the axle 6 which is provided with a sprocket wheel 30 from which leads a chain 31 to a pinion 32 fast on a shaft 33 journaled in the frame member 10. Upon this same shaft is mounted a sprocket 34 which is connected by a chain 35, with a sprocket 36 fast on the shaft 17. Sprocket 34 is of a larger diameter than sprocket 30, and the sprocket 30 of a larger diameter than the sprocket 36. By this arrangement the sprocket 36 is caused to rotate at a greater speed than the ground wheels thereby imparting to the disk 19 a greater speed. This enables the disk 19 to enter the beet more freely and produce better result than a disk with less speed or a disk with the same speed as the ground wheels. From this it will be understood that as the machine is drawn across the field in the direction indicated by the arrows in Figs. 1, 2 and 3, motion will be imparted to the disk 19 in the forward direction or in the direction of the travel of the ground wheels. As before stated the machine straddles the row of beets or other vegetables to be topped and the disk 19 will always enter the ground until it finds the beet or will engage the top of the beet above the ground where it protrudes above. This disk together with the bars 21, serves as a sort of gage to regulate the depth or topping plane of the knife 12. It will be understood that the disk will bifurcate the top or woody portion of the beet to be removed, after which the topping knife 12^A will remove the bifurcated part as illustrated in Fig. 7 of the drawing.

The tension of the driving chain 31 is regulated by a small idler sprocket 37 mounted on a holder 38 secured to one of the links 8. The side bars 16^B of the yoke are provided with a number of openings 16^C whereby the links 8^A as well as the lever-like device 24, may be connected with the yoke at any desired distance above the axle. The gage bars 21 may be adjusted vertically on the auxiliary frame 10, by means of bolts 42 passed through openings formed in the upper extremity of each bar, the said bolts passing through a slot 41 formed in the auxiliary frame member. By loosening the nuts of these bolts the bar may be raised and lowered at

pleasure and when properly adjusted may be locked in place.

Having thus described our invention, what we claim is:

1. The combination with a main frame and ground wheels, of an auxiliary frame connected with the main frame to permit vertical movement, a lever-like device fulcrumed on the main frame and provided with counter-balance weight, the lever-like device being connected with the auxiliary frame on the opposite side of the fulcrum from the said weight, a topping knife mounted on the auxiliary frame, and a gage also mounted on the auxiliary frame for regulating the plane of cut of the topping knife.

2. The combination with a main frame and ground wheels, of an auxiliary frame, a link connection between the main frame and the auxiliary frame, a lever-like device fulcrumed on the main frame and connected to regulate the vertical movement of the auxiliary frame, the said device being provided with a counter-balance weight, a topping knife mounted on the auxiliary frame, and means also mounted on the auxiliary frame for regulating the plane of cut of the topping knife.

3. The combination with a main frame and ground wheels, of an auxiliary frame connected with the ground wheels to permit independent vertical movement, a cutting disk revolubly mounted on the auxiliary frame, and gage bars also mounted on the auxiliary frame on opposite sides of the cutting disk for regulating the depth to which the cutting disk enters the beets to be topped, and a topping knife mounted on the auxiliary frame in the rear of the cutting disk.

4. The combination with an axle, ground wheels with which the axle rotates, and a main frame, of an auxiliary frame connected with the main frame to permit independent vertical movement, a shaft journaled in the auxiliary frame, a cutting disk fast on the said shaft and adapted to rotate therewith, a counter-shaft also journaled in the auxiliary frame, means for imparting rotary movement from the axle to the counter-shaft, and means for operating the disk shaft from the counter-shaft.

5. The combination of a main frame and ground wheels, of an auxiliary frame, two pairs of links connecting the auxiliary frame with the main frame, there being one pair of links on each side, the individual links of each pair being arranged one above another, a lever-like device fulcrumed on the main frame and connected with the upper pair of links for regulating the vertical movement of the auxiliary frame, the said device being provided with a counter-balance weight, a topping knife carried by the auxiliary frame, and means also carried by the auxiliary frame for regulating the plane of cut of the topping knife.

6. The combination with a main frame and ground wheels, of an auxiliary frame connected with the ground wheels to permit independent vertical movement, a cutting disk revolubly mounted on the auxiliary frame, and a gearing connection between the ground wheels and the said disk for imparting rotary movement to the latter, gage bars also mounted on the auxiliary frame on opposite sides of the cutting disk for regulating the depth to which the cutting disk enters the beets to be topped, and a topping knife mounted on the auxiliary frame in the rear of the cutting disk.

7. The combination with ground wheels and an axle rotating therewith, of a yoke mounted thereon, a frame member connected with the yoke to permit a vertical movement, a lever like device fulcrumed on the yoke and provided with a counter-balance weight, the lever-like device being connected with the frame on the opposite side of the fulcrum from the said weight, a cutting disk revolubly mounted on the frame member and centrally located between the ground wheels, a topping knife also mounted on the frame member in the rear of the rotary disk, and means for imparting rotary movement to the disk from the axle, substantially as described.

8. The combination with ground wheels and an axle rotating therewith, of a yoke mounted thereon, a frame member connected with the yoke to permit a vertical

5 movement, a lever-like device fulcrumed on the yoke and provided with a counterbalance weight, the lever-like device being connected with the frame on the opposite side of the fulcrum from the said weight, a cutting disk revolubly mounted on the frame member and centrally located between the ground wheels, a topping knife also mounted on the frame member in the rear of the rotary disk, and means for imparting rotary movement to the disk from the axle, and adapted to impart movement to

the disk at a greater speed than the travel of the ground 10 wheels.

In testimony whereof we affix our signatures in presence of two witnesses.

DAVID T. BLEVINS.
SQUIRE RALPH GIDDINGS.

Witnesses:
JOHN A. CROSS,
ISAAC J. MEADE.