C. S. SWAIM & C. CORUM.

BEET TOPPER.

APPLICATION FILED MAY 1, 1918.

1,282,313.

Patented Oct. 22, 1918.

3 SHEETS—SHEET 1.

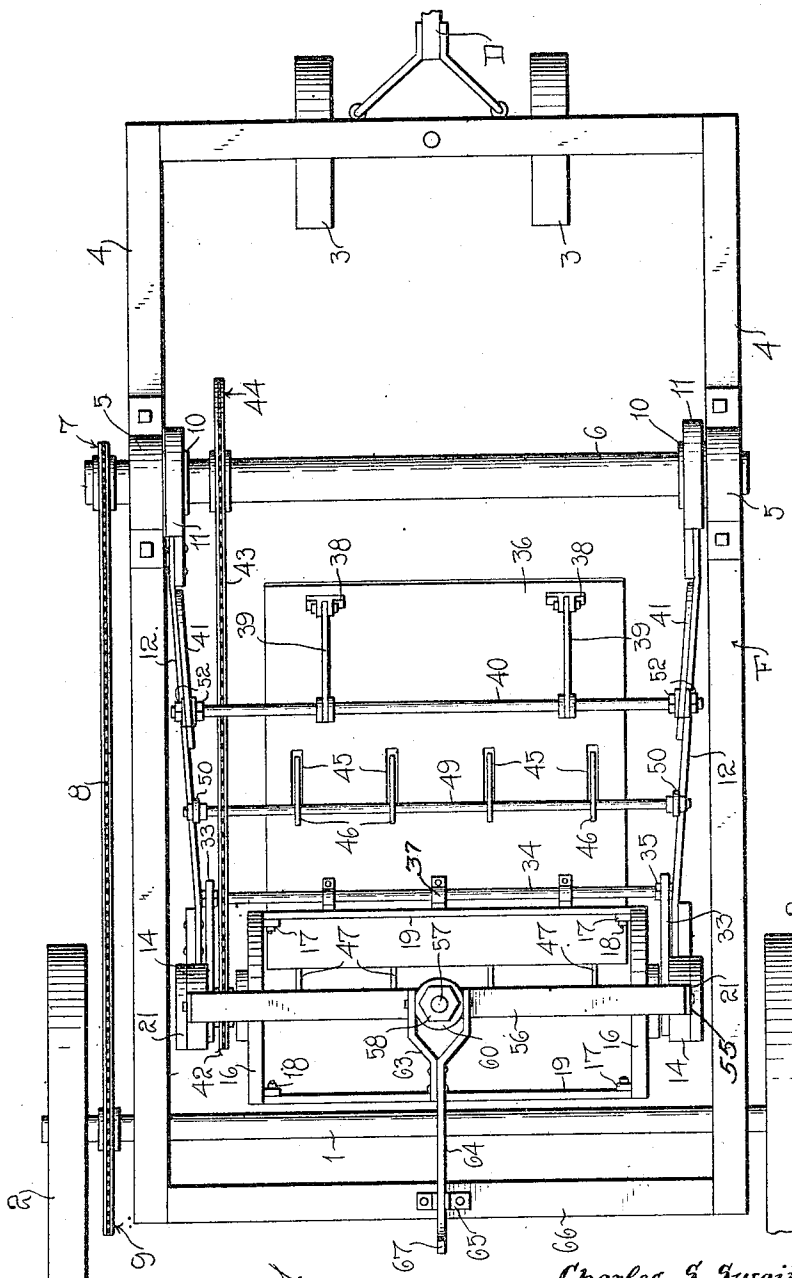


Fig. 1

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3 SHEETS—SHEET 2.

Fig. 4

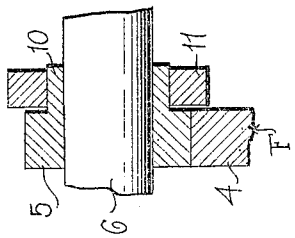


Fig. 3.

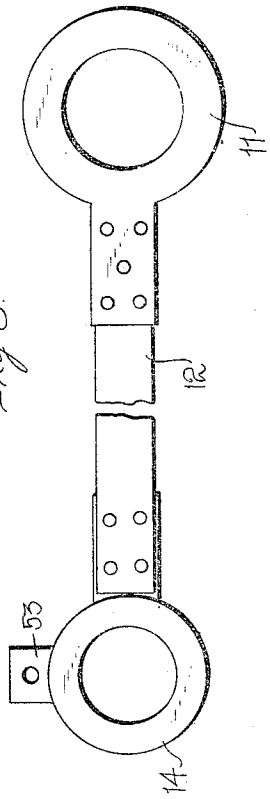
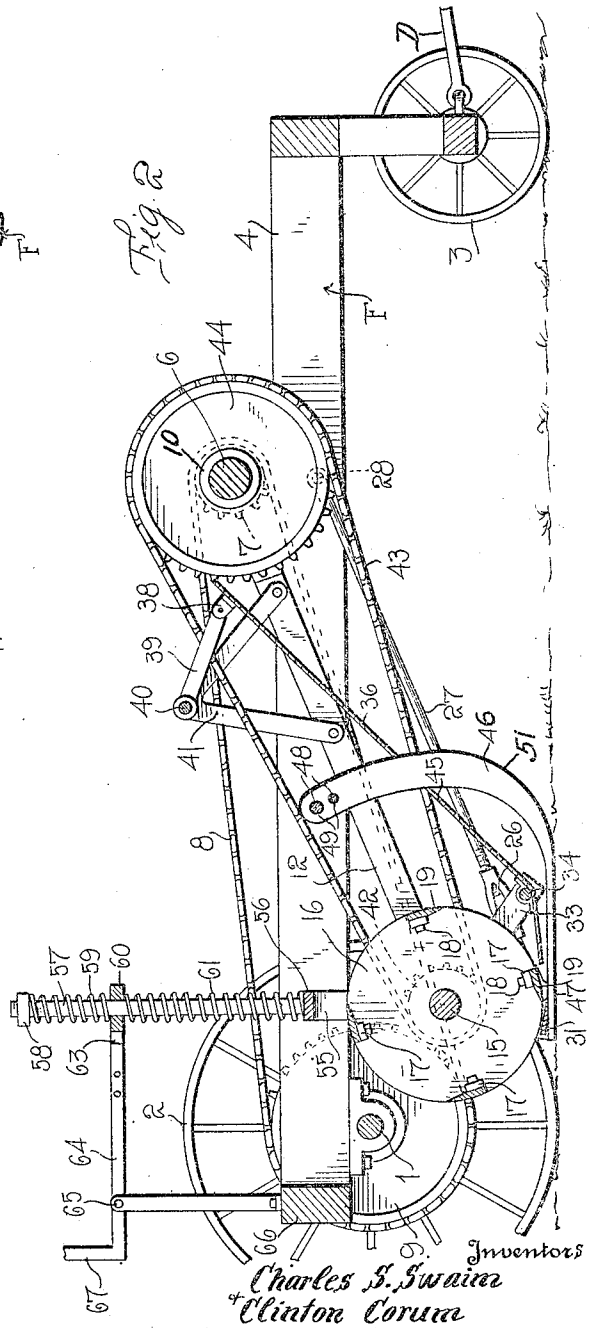


Fig. 2



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3 SHEETS—SHEET 3.

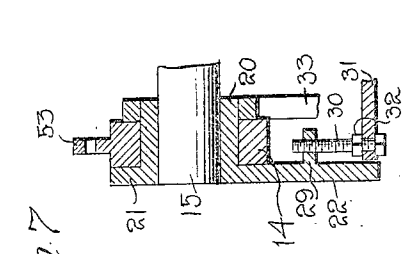


Fig. 7

Fig. 5

Fig. 9

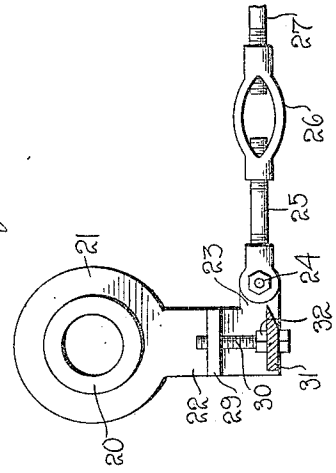


Fig. 6

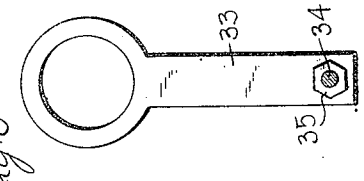


Fig. 8

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UNITED STATES PATENT OFFICE.

CHARLES S. SWAIM AND CLINTON CORUM, OF LONG BEACH, CALIFORNIA.

BEET-TOPPER.

1,282,313. Specification of Letters Patent. Patented Oct. 22, 1918.

Application filed May 1, 1918. Serial No. 231,887.

To all whom it may concern:

Be it known that we, CHARLES S. SWAIM and CLINTON CORUM, citizens of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Beet-Toppers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in beet toppers and it is an object of the invention to provide a novel and improved device of this general character of a portable type wherein the cutting mechanism is movable in a vertical plane relative to the surface over which the device traverses.

It is also an object of the invention to provide a novel and improved device of this general character employing two cutting members and wherein one of said cutting members is mounted for rotation relative to the other together with means for adjusting the second cutting member relative to the rotating cutting member.

Another object of the invention is to provide a novel and improved device of this general character including two coacting cutting members one of which is stationary together with supplemental cutting members which coact with the stationary cutting member for protecting the same against injury by contact with an obstruction, such as rocks or the like which may be positioned within the path of the machine.

An additional object of the invention is to provide a novel and improved device of this general character wherein a controlling member or apron is positioned in advance of the cutting mechanism and which is adapted to ride over and upon the tops of the beets so that the cutting mechanism is automatically adjusted vertically relative to the crown of the beets from which the tops are to be severed so that the desired cutting operation will be effected even though the beets be of all sizes.

The invention consists in the details of construction and in the combination and arrangement of the several parts of our improved beet cutter whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of our invention will hereinafter be definitely claimed.

In order that our invention may be the better understood, we will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in top plan of a beet topper constructed in accordance with an embodiment of our invention;

Fig. 2 is a longitudinal vertical sectional view taken through our improved topper as herein disclosed:

Fig. 3 is a view in elevation of one of the elongated members or beams as herein included;

Fig. 4 is a fragmentary view partly in section and partly in elevation illustrating in detail one of the bearings carried by the frame and with which an elongated member or beam is pivotally connected;

Fig. 5 is a view partly in section and partly in rear elevation of our improved topper as herein set forth;

Fig. 6 is a fragmentary view partly in elevation and partly in section illustrating the means for imparting swinging movement to one of the arms for supporting the stationary cutting element;

Fig. 7 is a fragmentary view partly in section and partly in elevation illustrating the connection between the stationary cutting element and one of the supporting arms therefor, and also illustrating the particular mounting of said supporting arm;

Fig. 8 is a view partly in section and partly in elevation illustrating one of the supporting arms for the lower portion of an apron or shoe as herein included; and

Fig. 9 is a fragmentary view illustrating in bottom plan the forward portion of one of the guard members as herein included.

As disclosed in the accompanying drawings F denotes a frame preferably rectangular in form and which has its rear portion operatively supported by the axle 1. Suitably mounted upon the opposite end portions of the axle 1 are the traction wheels 2. The forward portion of the frame F is supported by the truck 3 of any desired type so that the device may be readily guided. Also coacting with the forward portion of the frame F is the draft mechanism D of any desired type.

The forward portion of the side members 4 of the frame F are provided with the upstanding bearings 5 which rotatably sup-

port the shaft 6 and one end portion of said shaft 6 is provided with a sprocket wheel 7 around which passes the chain 8 which is also directed around a sprocket wheel 9 fixed to an end portion of the axle 1 so that upon travel of the device the desired rotation of the shaft 6 will be obtained. The inner faces of the bearings 5 are provided with the cylindrical extensions 10 through which the shaft 6 is also directed. Loosely mounted upon the extensions 10 are the heads 11 and affixed to each of said heads 11 is an end portion of a rearwardly disposed beam or elongated member 12.

The rear portions of the beams or members 12 are provided with the bearings 14 which rotatably support the shaft 15. Affixed to the shaft 15 and in desired spaced relation longitudinally thereof are the heads 16 provided adjacent their peripheries with the inwardly directed lugs 17, with the lugs 17 of one head in alinement longitudinally of the shaft 15 with the lugs 17 of the second head. Secured to each pair of longitudinally alined lugs 17 through the medium of the bolts 18 or the like are the cutter blades 19.

Loosely mounted upon the shaft 15 and outwardly of each of the heads 16 are the hubs or sleeves 20. The outer end of each of the heads or sleeves 20 through which the end portions of the shaft 15 are disposed and directly supported, is defined by an annular flange 21 having depending therefrom an arm 22. The lower portion of the arm 22 is provided with a forward extension 23 with which is pivotally engaged as at 24 an end portion of a rod 25 extending forwardly of the machine. The forward end portion of the rod 25 has in threaded engagement therewith a turn-buckle 26 which is also in threaded engagement with a second rod 27 having its forward end portion pivotally engaged as at 28 with the adjacent side member 4 of the frame F and at a point substantially in vertical alinement with the shaft 6. By proper rotation of the turn-buckle 26 the arm 22 may be swung backward or forward as the occasions of practice may require and for a purpose which will be hereinafter more particularly referred to.

The inner faces of the arms 22 at substantially midway of said arms are provided with the inwardly directed flanges 29 through which are threaded the free end portions of the bolts 30 with the heads of said bolts downwardly directed. The bolts 30 are also disposed through the end portions of the elongated knife or cutting blade 31 and said blade is maintained in applied position upon the bolts 30 through the medium of the clamping nuts 32 threaded upon the bolts and engaging the upper face of the knife or cutting blade. By proper loosening of the nuts 32 and upon desired rotation of the bolts 30 the knife or cutting blade 31 may be adjusted longitudinally of the arms 22.

The arms 22 are normally disposed on a rearward incline in order to position the knife or cutting blade 31 rearwardly of the lowermost portion of the heads 16. It will be understood that by adjusting the arms 22 about the shaft 15 through the medium of the turn-buckle 26, the knife or cutting blade 31 will be held in a position to facilitate the cutting operation in accordance with the size of the beets, or more particularly the tops thereof upon which the device is operated.

Also loosely mounted upon the hubs or sleeves 20 adjacent the inner ends thereof are the depending arms 33 disposed on a forward incline and which have their lower end portions connected by the bar 34 which bar 34 is clamped to the arms 33 through the medium of the nuts 35. The bar 34 overlies the lower end portion of an apron or shoe 36 of a width substantially equal to the length of the cutter blades 19 and said apron or shoe 36 is operatively engaged with the bar 34 by the straps 37 secured to the upper face of the apron or shoe 36 and embracing the bar.

The apron or shoe 36 extends forwardly and upwardly on an angle of about 45° and the upper portion of said apron or shoe adjacent the opposite sides thereof is provided with the upstanding brackets 38 with which are pivotally engaged the depending rock arms 39 carried by the rod or shaft 40. The opposite end portions of the rod 40 are secured to the upper portions of the brackets 41 carried by the elongated members 12 substantially midway thereof. Each of the brackets 41 is substantially in the form of an inverted V with the rod 40 secured to the apex portion thereof.

The shoe or apron 36 rides over the tops of the beets to be severed and therefore provides for the raising and lowering of the cutting mechanism in accordance with the occasions of practice so that a substantially uniform topping will be had upon the beets irrespective of their various sizes.

Fixed to the shaft 15 between a head 16 and the inner end of the adjacent hub or sleeve 20 is a sprocket wheel 42 around which is directed a chain 43 which is also disposed around the sprocket 44 fixed to the shaft 6 hereinbefore referred to whereby it will be perceived that upon the travel of the machine the desired rotation will be imparted to the rotary cutter member as afforded by the heads 16 and the coacting cutter blades 19. The rear or lower portion of the apron or shoe 36 is provided with a series of slots 45 disposed longitudinally of the machine and in transverse alinment and

through which are disposed the upstanding forward end portions 46 of the guard members 47. The forward end portion 46 of each of the guard members 47 is provided with a pair of substantially vertically alined openings 48 through which are directed the rods 49. The rods 49 have the opposite end portions engaged with the upstanding arms 50 carried by the members or beams 12 in close proximity to the heads 16. The guard members 47 are substantially flat and ride upon the ground and said members are also of such a length as to have their rear portions underlie the cutting blade 31. The guard members 47 serve to protect the cutting blade 31 from coming into contact with rocks or other obstructions. The forward end portions 46 of the guard members 47 are arranged on a predetermined upward curvature and the forward edges 51 of said members 46 are formed into knife edges so that the same may readily penetrate the surface of the ground so that said members 47 will also serve as guides to facilitate the travel of the machine.

Each of the end portions of the rod or shaft 40 hereinbefore referred to has threaded thereupon a pair of nuts 52 arranged at opposite sides of a bracket 41 and adapted to have clamping engagement therewith so that the arms 39 may be held at various inclinations in order to raise or lower the lower or rear portion of the apron or shoe 36 as the requirements of practice may dictate.

The bearings 14 are provided with the upstanding extensions 53 with which are operatively engaged as indicated at 54 the side arm 55 of the yoke 56. Extending upwardly from the central portion of the yoke 56 is a stem 57. In threaded engagement with the upper end portion of the stem 57 is the nut 58 affording an abutment for the spring 59 encircling the stem and interposed between said nut and abutment 58 the member 60 is slidably mounted upon the stem 57. Interposed between the members 60 and the yoke 56 is a second spring 61 which spring also encircles the stem 57. The member 60 is also provided with the diametrically opposed trunnions 62 with which are pivotally connected with diverging arm 63 carried by the lever 64. The lever 64 is pivotally supported as at 65 for swinging movement in a vertical plane by the rear member 66 of the frame F. The portion of the lever 64 rearwardly of its pivotal mounting 65 is continued by an upstanding handle 67 adapted to be grasped by the operator for imparting requisite downward force upon the members or beams 12 to obtain the desired penetration of the cutting edges 51 of the guard members 47.

It is to be understood that the springs 59 and 61 will permit the requisite swinging movement of the members or arms 12 and the parts supported thereby incident to the requirements of practice.

From the foregoing description it is thought to be obvious that a beet topper constructed in accordance with our invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated and it will also be obvious that our invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason we do not wish to be understood as limiting ourselves to the precise arrangement and formation of the several parts herein shown in carrying out our invention in practice except as hereinafter claimed.

We claim:

1. A beet topper comprising a portable frame, a pair of elongated members having their forward end portions pivotally supported by the frame, a shaft rotatably supported by the rear portions of the members, a cutting element carried by the shaft and rotating therewith, arms depending from the shaft at opposite sides of the cutting element and loosely engaged with the shaft, means for imparting swinging movement to the arms and holding said arms against swinging movement, and a cutting element supported by the arms and coacting with the cutting element carried by the shaft.

2. A beet topper comprising a portable frame, a pair of elongated members having their forward end portions pivotally supported by the frame, a shaft rotatably supported by the rear portions of the members, a cutting element carried by the shaft and rotating therewith, arms depending from the shaft at opposite sides of the cutting element and loosely engaged with the shaft, means for imparting swinging movement to the arms and holding said arms against swinging movement, a cutting element supported by the arms and coacting with the cutting element carried by the shaft, an upwardly inclined shoe positioned in front of the cutting elements and supported by the frame and shaft, and guard members supported by the elongated members and arranged for contact with the surface over which the device traverses, said guard members underlying the second cutting element.

3. A beet topper comprising a portable frame, a pair of elongated members having their forward end portions pivotally supported by the frame, a shaft rotatably supported by the rear portions of the members, a cutting element carried by the shaft and rotating therewith, arms depending from the shaft at opposite sides of the cutting element and loosely engaged with the shaft, means for imparting swinging movement to

the arms and holding said arms against swinging movement, a cutting element supported by the arms and coacting with the cutting element carried by the shaft, a shaft supported by the elongated members in advance of the cutting elements and provided with downwardly directed rock arms, a second set of arms supported by the shaft for swinging movement, and an upwardly inclined shoe engaged with the outer end portions of the rock arms and the second set of arms.

4. In a structure as specified in claim 1, means for adjusting the last named cutting element in a direction longitudinally of the arms.

5. In a structure as defined in claim 2 wherein the forward portions of the guard elements extend upwardly, the forward marginal portion of said upwardly extending portions of the guard elements being formed into cutting edges.

6. In a structure as specified in claim 2 wherein said shoe is provided with slots through which the guard members are directed.

7. A structure as specified in claims 2 and 6 wherein the connection between the shoe and shaft is loose.

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

CHARLES S. SWAIM.
CLINTON CORUM.

Witnesses:
JAMES PARR,
THOMAS WARRICK.

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