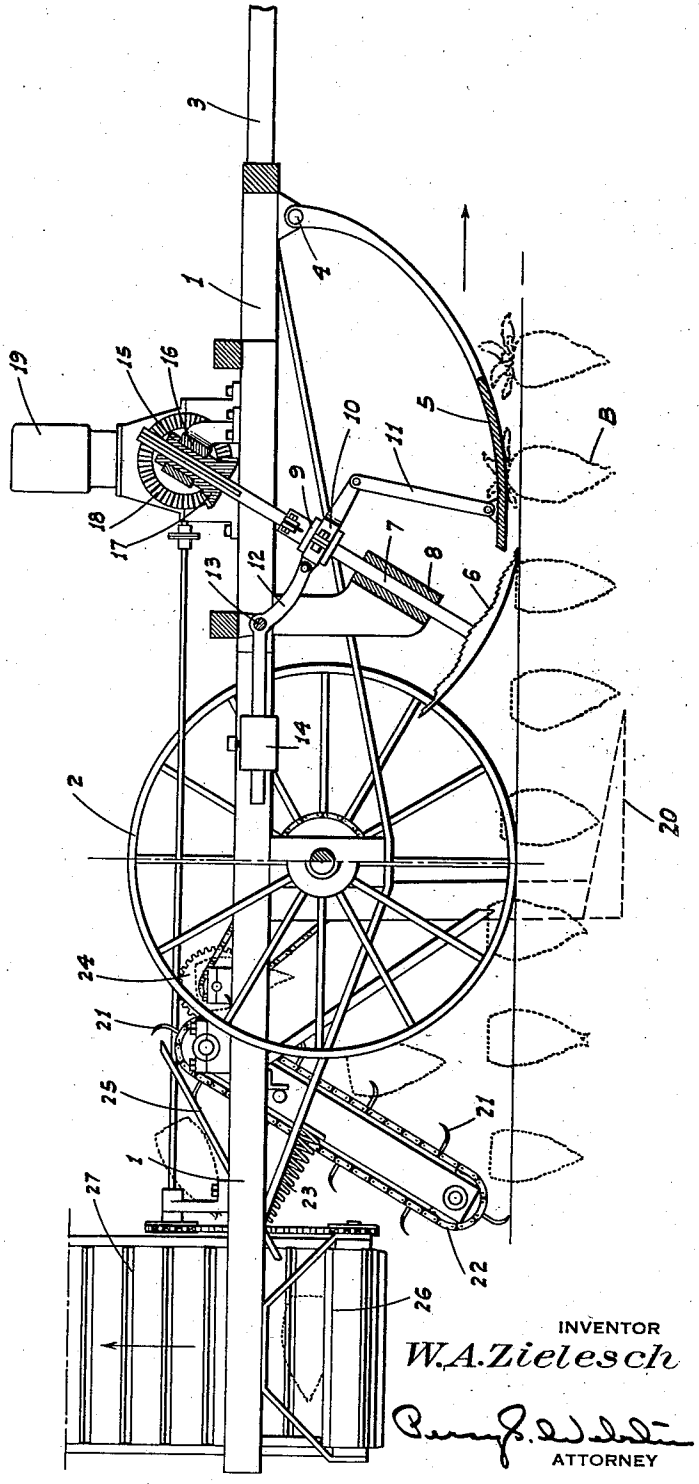
Dec. 27, 1938. W. A. ZIELESCH 2,141,806

BEET TOPPER

Filed July 19, 1937



INVENTOR

W.A.Zielesch

ATTORNEY

Patented Dec. 27, 1938 2,141,806

UNITED STATES PATENT OFFICE

2,141,806

BEET TOPPER

William A. Zielesch, Sacramento, Calif.

Application July 19, 1937, Serial No. 154,373

6 Claims. (Cl. 55—107)

This invention relates to sugar-beet topping machines my principal object being to provide an apparatus for the purpose having a cutter to remove the tops from the beets while they are still in the ground, and arranged so that it will be automatically disposed at a level such as to cut only the proper amount of the top from each top successively with the movement of the machine along the ground, irrespective of any difference in height of the different beet tops relative to the ground level. Excessive removal of the crown portion of the beets with the accompanying waste is thus avoided, as well as the objections incident to insufficient topping of the beets.

I have also provided a simple means for elevating the beets clear of the ground after they have been topped and for delivering the same to a truck or other vehicle moving along with the machine to one side thereof.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

The figure on the drawing is a side view partly in section of my improved beet topper as in operation.

Referring now more particularly to the characters of reference on the drawing, the machine comprises a horizontal frame which includes side beams 1, the frame being supported intermediate its ends by wheels 2 and having a tongue 3 rigid with its front end and adapted for supporting connection with the draw bar of a tractor.

Pivoted on the frame adjacent its forward end as at 4 is a downwardly and rearwardly curving shoe 5, adapted at its rear end to ride successively on the crowns of a row of beets B as the machine moves along the ground. Disposed in line with the shoe rearwardly of the same is a rotary disc cutter 6. In order to function to the best advantage, the peripheral edge of this disc is of wavy or scalloped contour, and is preferably saw-toothed as shown. This is positioned with its front edge adjacent the rear end of the shoe and a short distance below the same and is set so that its axial shaft 7 extends with an upward and rearward slant, so that the underside of the forward portion of the dished disc is substantially horizontal.

The shaft 7 is slidable and turnable in a suitable bearing 8 suspended from the frame, and intermediate its ends and above the bearing a grooved collar 9 is adjustably clamped thereon. A yoke 10 is mounted on the collar in relatively turnable relation, and on its forward side is connected to the shoe by a substantially vertical link 11. On its opposite rear side the yoke is pivotally connected to one end of a lever 12. This lever is pivoted intermediate its ends on the frame as at 13 and beyond the pivot carries an adjustable counterweight 14.

By means of this construction it will be seen that as the shoe engages and rides on each beet in turn, it raises or lowers the cutter accordingly. Said cutter following immediately behind the shoe engages and begins to top a beet before the shoe passes beyond said beet. All the beets are thus topped to the same depth, irrespective of the level of the crowns of different beets relative to the ground surface. The depth of topping of all the beets may be altered by adjusting the position of the collar 9 on the shaft 7, which enables the vertical distance of spacing of the front edge of the cutter relative to the beet engaging surface of the shoe to be altered to suit different types or sizes of beet.

The counterweight takes most of the downward pressure of the shoe and cutter, enabling the shoe to ride lightly on the beets yet with sufficient firmness to assure proper positioning of the cutter.

Above the collar the shaft 7 is slidably splined in a sleeve 15 journaled against axial movement in a bearing bracket 16 supported on the frame. This sleeve carries a bevel pinion 17 engaged by a bevel gear 18 driven from a suitable power unit on the machine such as a gas engine, indicated at 19. The cutter is thus constantly driven at any desired speed without interfering with the axial movement of the cutter shaft.

After the beets are topped they are preferably loosened and raised somewhat from the ground by a digger or plough of conventional form, indicated at 20, and which is mounted between the wheels. The loosened and raised beets are then successively engaged and elevated clear of the ground by hook-like prongs 21 of suitable form mounted on and projecting from an endless chain conveyor 22. This conveyor projects upwardly from adjacent the ground a suitable distance behind the digger and is pivoted at its upper end on the frame. The lower end of the conveyor is yieldably pressed forward by a spring 23. The conveyor may be driven at a speed proportionate to the speed of travel in a machine, or relative to the spacing of the beets and the conveyor prongs,

from the engine 19 or by driving connections with one of the wheels 2 as indicated at 24.

One run of the conveyor of course travels up and the prongs face upwardly on said run. The beets are thus dragged from the ground and elevated and as they pass over the top of the conveyor they leave the prongs and are received on a downwardly sloping grate-apron 25. This delivers the beets onto a driven cross conveyor 26 having an upwardly and angularly projecting extension 27 at one end adapted to overhang and deliver into the body of a truck or the like moving alongside the topping machine. The extension of the cross conveyor may project either from the right or left hand side of the machine, as may be desired.

Beet topping operations are thus carried out in a continuous and effective manner and the harvesting of the beets and their delivery onto a vehicle for transportation is also effected automatically with the one movement of the machine along the ground.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

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

1. A beet topper comprising a frame mounted for movement along the ground, a shoe engageable at one point with the tops of the beets, means mounting the shoe on the frame for vertical movement at said point, a rotary beet topping cutter immediately behind the shoe, an axial drive shaft upstanding from the cutter, a collar fixed on the shaft, a yoke relatively turnable on the collar, and a substantially vertical link connecting the yoke and shoe; the collar being adjustable on the shaft axially thereof whereby the vertical spacing of the leading edge of the cutter relative to the beet engaging surface of the shoe may be altered.

2. A beet topper comprising a frame mounted for movement along the ground, a shoe engageable at one point with the tops of the beets, means mounting the shoe on the frame for vertical movement at said point, a rotary beet topping cutter immediately behind the shoe, an axial drive shaft upstanding from the cutter, a collar fixed on the shaft, a yoke relatively turnable on the collar, and a substantially vertical link connecting the yoke and shoe, and a counter-weight applied to the yoke and tending to offset the weight of the cutter and shoe.

3. In combination with a beet topper including a frame mounted for movement along the ground; a beet topping cutter mounted on the frame for movement in a vertical plane, a shoe mounted on the frame for yieldable movement in a vertical plane, said shoe being disposed to engage with the tops of beets ahead of the cutter, and means between the shoe and cutter to raise and lower the latter with movement of said shoe in such plane; a counter-weight unit operatively connected with said means and tending to offset the weight of said cutter and shoe.

4. A device as in claim 3 in which the counter-weight unit includes a lever pivoted intermediate its ends on the frame, one end of the lever being operatively connected with said means, and a counter-weight element adjustably secured on the lever beyond the pivot and on the free portion of said lever.

5. A beet topper comprising a frame mounted for movement along the ground, a shoe engageable at one point with the tops of the beets, means mounting the shoe on the frame for vertical movement at said point, a rotary beet topping cutter immediately behind the shoe, an axial drive shaft upstanding from the cutter, a collar fixed on the shaft above the shoe, a yoke surrounding the collar and relatively turnable thereon, an upstanding link connected between the shoe and the yoke, a bell-crank lever pivoted on the frame, the outer end of one arm of said lever being pivotally connected on the yoke, and a counter-weight element secured on the other arm of said lever.

6. A device as in claim 5 in which said link and said one arm of the bell-crank lever are pivoted on the yoke on opposite sides thereof whereby to prevent binding between said yoke and collar.

WILLIAM A. ZIELESCH.