O. HERMANN.

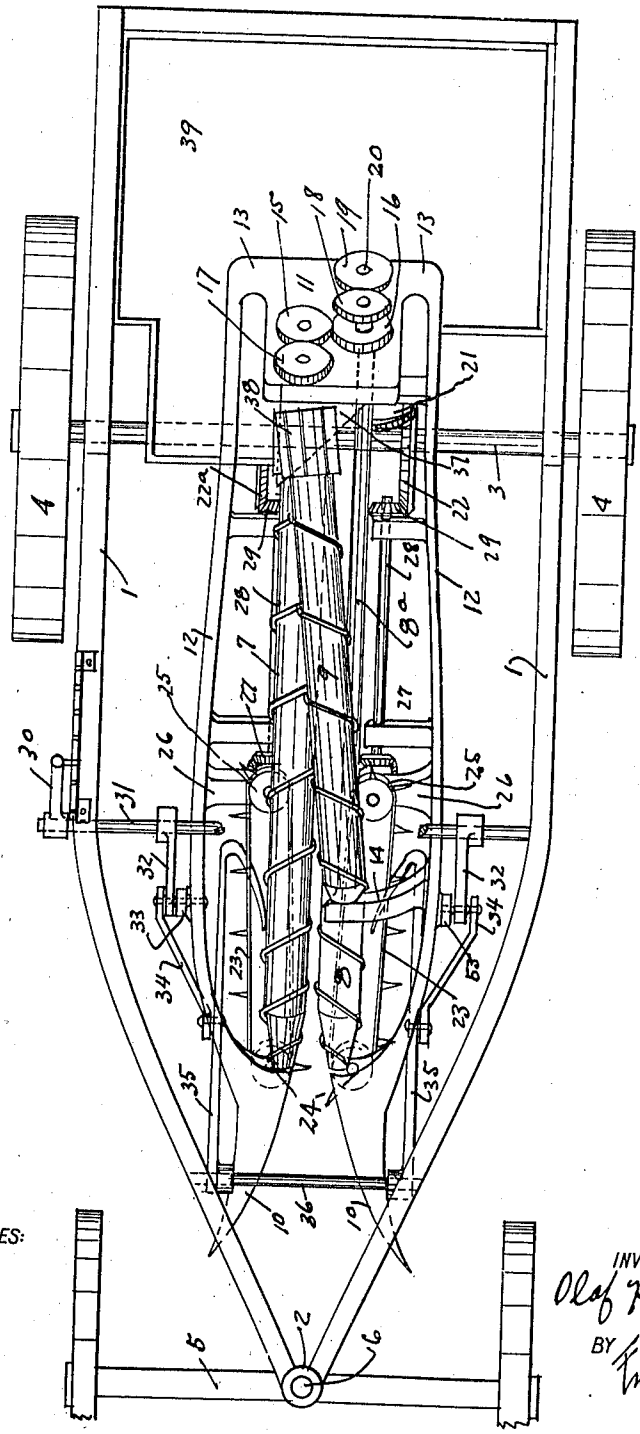
BEET PULLER.

APPLICATION FILED JUNE 20, 1917. RENEWED JAN. 16, 1919.

1,298,708.

Patented Apr. 1, 1919.

2 SHEETS—SHEET 1.



WITNESSES:

INVENTOR

Olof Hermann

BY Fred P. Goins

ATTORNEY

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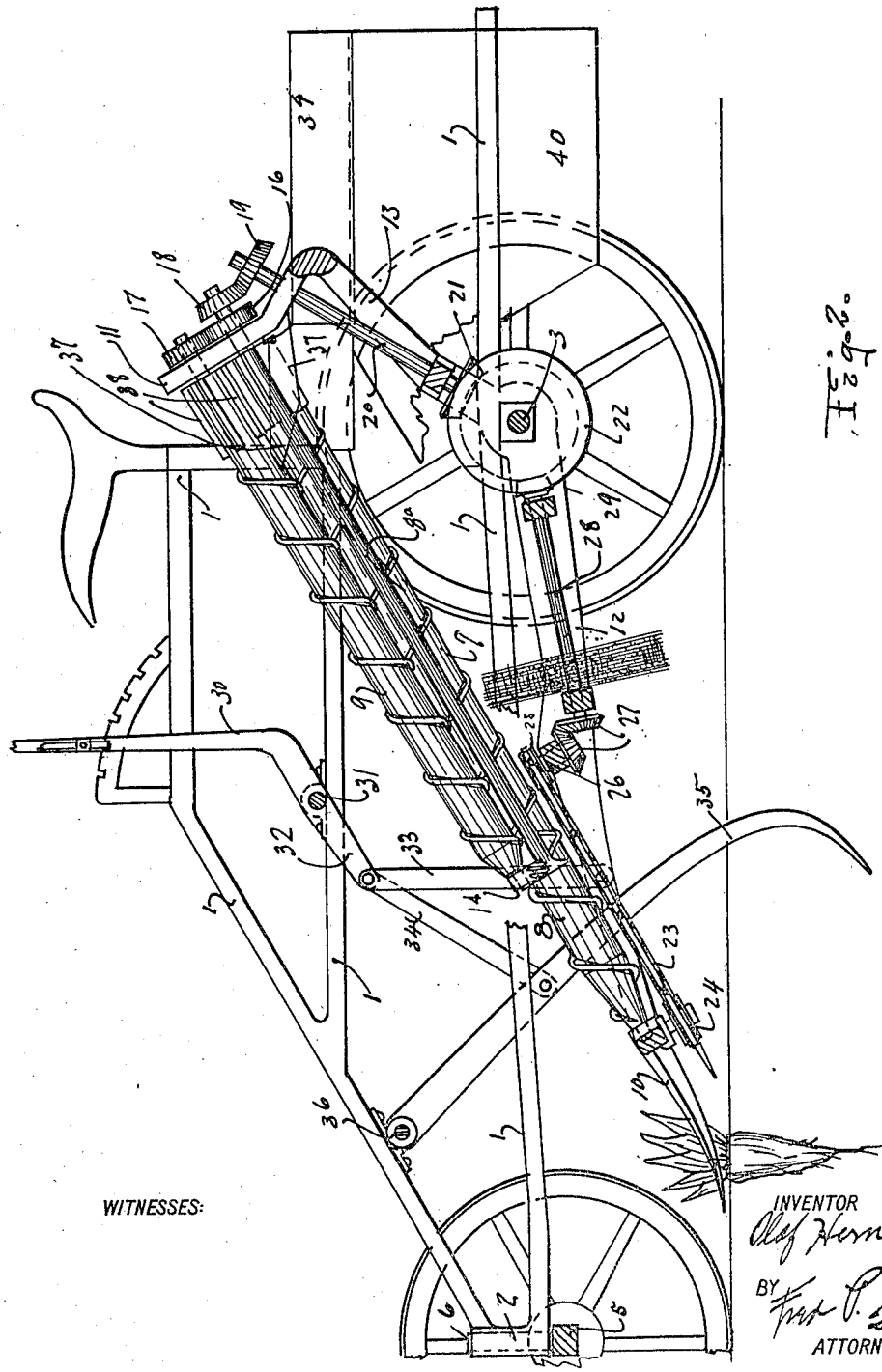


Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

OLOF HERMANN, OF BURLINGTON, WASHINGTON.

BEET-PULLER.

1,298,708. Specification of Letters Patent. Patented Apr. 1, 1919.

Application filed June 20, 1917, Serial No. 175,743. Renewed January 16, 1919. Serial No. 271,503.

To all whom it may concern:

Be it known that I, OLOF HERMANN, a citizen of Sweden, residing at Burlington, in the county of Skagit and State of Washington, have invented certain new and useful Improvements in Beet-Pullers, of which the following is a specification.

This invention relates to improvements in beet pullers and has for its principal object to provide an improved and novel mobile device for pulling and topping sugar beets and the like; to provide a device of the class recently described which embodies automatic adjustment means for holding and conveying the beets. Another object of my device is to provide means for varying the elevation of the pulling portion of the device with respect to the ground surface. In the beet farming sections, the pulling, topping and collecting of beets presents a difficult labor problem. My device is designed to automatically and successively pull the beets along the row to convey them to a topping knife, and to deposit the tops of the beets in separate receptacle.

Other objects will appear as my invention is more fully explained in the following specification, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings, Figure 1 is a plan view of my device with parts removed. Fig. 2 is a side elevation of same with parts of the truck removed.

Referring more particularly to the drawings, numeral 1 indicates side frames which are brought together at the forward end in a king pin bearing 2. Side frames 1 are supported upon a revoluble rear axle 3 to the outer ends of which traction wheels 4 are secured. The forward end of side frames 1 is supported upon a pony truck 5 which is provided with a king pin 6 engaging the king pin bearing 2. The majority of the weight of the device is supported by the traction wheels 4, the rotation of which is utilized to provide the operating power of the device as will be explained later. The beet pulling mechanism is rotatively pivoted to the rear axle 3 and is independent of the side frames except as to means for adjustably raising and lowering the said beet pulling device. Beet pulling mechanism includes a spiral main roller 7, a parallel and spiral pulling roller 8 and a skewed and spiraled conveying roller 9. The rollers 7 and 8 are parallel and stand normally at an inclination with respect to the ground surface as indicated in Fig. 2. The forward or lower ends of rollers 7 and 8 are revolubly mounted in spring guides 10 and their rear ends are similarly mounted in a bearing block 11. Spring guides 10 and bearing block 11 are integral in that the spring guides extend continuously backward to their pivot point on shaft 3 in the form of side springs 12, while the bearing block 11 are connected to the side springs 12 at the pivot point by means of brackets 13, one on each end of the bearing block. The inherent spring of the spring guides 10 and side springs 12 tends to maintain the forward or lower end of the spiral rollers 7 and 8 in contact or mesh. It will be noted that the spiral portion of roller 8 continues but a short distance from the lower end after which it is tapered down to shaft section 8^a. Skewed roller 9 takes bearing at its upper end directly above the shouldered portion of roller 8. A bracket 14 supports the lower end of the skewed roller and is integral with one of the side springs 12. Rollers 7, 8 and 9 are provided at their upper ends beyond bearings 11 with pinnions 15, 16, 17, so that all of the rollers turn in unison with the rollers 8 and 9, turning toward roller 7. The rollers are kept in continuous rotary motion by means of beveled pinions 18 and 19, the former of which is secured to the upper end of shaft 8^a of roller 8 and the latter of which is secured to the upper end of a jack shaft 20 which takes bearing in brackets 13 and is provided with a beveled pinion 21 at its lower end. Beveled pinion 21 meshes with a beveled wheel 22 which is secured to shaft 3. Feed chains 23 are provided on each side of and below the rollers 7 and 8 for the purpose of drawing the tops of the beets into the rollers. Chains 23 are mounted upon sprockets 24 and 25, the former of which are pivoted to the under side of springs 10 and the latter of which are pivoted to brackets 26 which are integral with side springs 12. The sprockets 25 are geared to the shaft 3 by means of pairs of beveled gears 27, jack shafts 28, pinions 29 and the beveled gear 22 on one side of the machine and a similar beveled gear 22^a on the other side of the machine. A bell crank hand lever 30 is mounted upon a shaft 31 to which are secured levers 32 to the outer end of each of which are pivoted links 33 and 34, the

former of which are attached to the side springs 12 and the latter of which are attached to cultivators 35. Cultivators 35 are pivoted on a shaft 36 which takes bearing in side frames 1. By means of the lever 30, the cultivators and the beet pulling mechanism will be raised and lowered with respect to the surface of the ground. It will be understool that as my device moves over the ground astride a row of beets the tops of the beets are gathered in between the spring guides 10 and are assisted into contact between rollers 7 and 8 by means of feed chains 23. When the tops of the beets are caught between the rollers 7 and 8 the spirals or side rollers move the tops upwardly and backwardly as the machine moves forward with a result that the beet is pulled from the ground and is conveyed by the spiral rollers until it is transferred from rollers 7 and 8 to rollers 7 and 9. The cultivators 35 assist in loosening up the beets at the pulling stage. When a beet reaches the upper portion of the rollers, the top is sheared from the body of the beet by means of a stationary inclined knife 37 which is fastened to bearing block 11. The upper portions of the rollers 7 and 9 are provided with longitudinal corrugations 38 which discharge the tops of the beets into a top bin 39. After the top has been cut from the beet the body of the beet drops into a bin 40. It will be noted that the lower end of the rollers as well as the springs 10, adjust themselves to the size of the beet tops which they grip at all times due to the inherent spring of the side frames 12.

While I have shown a particular form of embodiment of my invention, I am aware that many minor changes therein will readily suggest themselves to others skilled in the art without departing from the spirit and scope of the invention, and I therefore desire to avoid being limited to the exact form shown and described.

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

1. In a device of the class described, the combination of a wheeled vehicle, side spring members pivotally mounted upon said vehicle frame, a bearing block integral with said side springs, spring guides integral with the free ends of the said side springs, spiraled rollers revolubly mounted intermediate the said bearing block and spring guides and transmission means connecting the said rollers rotatively with the axle of the said vehicle, whereby the rollers are caused to revolve when the vehicle is drawn over the surface of the ground.

2. In a device of the class described, the combination of a wheeled vehicle, a pair of side springs pivotally mounted upon the rear axle of said vehicle, spring guides integral with the forward end of said side springs, a pair of parallel spiraled rollers rotatively mounted immediately behind the said spring guides, a skewed roller mounted above and angularly with respect to the said parallel rollers and means for adjustably tilting the side springs and rollers with respect to the said vehicle.

3. In a beet pulling device, the combination of a wheeled vehicle, spring controlled adjustable means for guiding the tops of the beets, spiraled pulling and conveying rollers rotatively mounted upon the said guiding means and normally maintained in close contact between said spring means, whereby the tops of the beets are engaged between the rollers and the beet withdrawn from the ground, topping means adjacent the upper ends of the said rollers, whereby the beet is severed from its top.

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

OLOF HERMANN.

Witnesses:
Geo. Knutzm,
Chris. Knutzm.