A. BOURDEAU.

BEET LIFTER.

APPLICATION FILED AUG. 10, 1909.

954,610.

Patented Apr. 12, 1910.

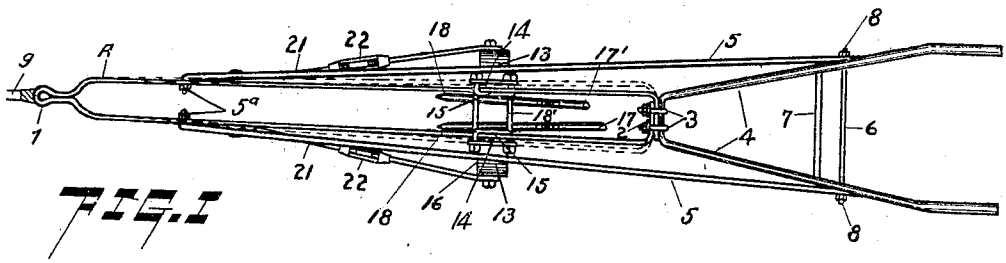


FIG. 1

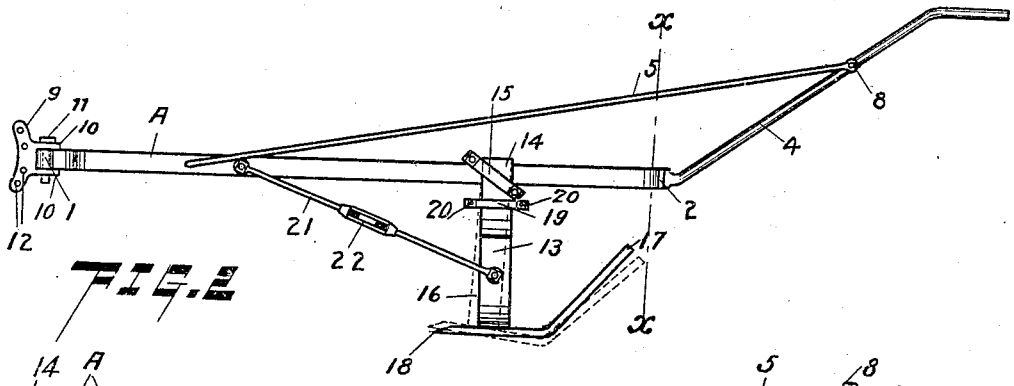


FIG. 2

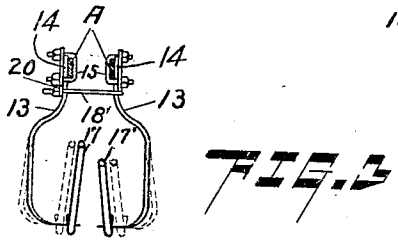


FIG. 3

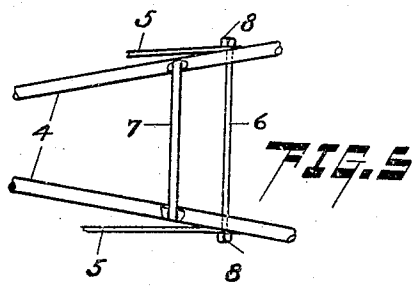


FIG. 5

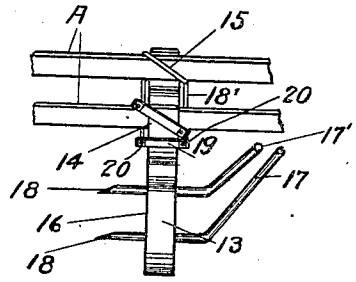


FIG. 4

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# UNITED STATES PATENT OFFICE.

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## BEET-LIFTER.

954,610. Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed August 10, 1909. Serial No. 512,271.

*To all whom it may concern:*

Be it known that I, ALBERT BOURDEAU, a subject of the King of Great Britain, residing at Linwood, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Beet-Lifters; and I do hereby 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.

My invention relates to root lifters for beets, chicory, turnips, and the like.

One object of my invention is the provision of a light, strong, inexpensive and highly efficient device of this character, which will raise sugar beets from the ground with ease and despatch.

Another object of my invention is the provision of a lifter which is adjustable laterally for different sizes of beets. It frequently happens that by reason of better attention, soil, or more favorable conditions, beets in one field will grow to be larger than those in another field. It is also desirable not to injure the beets when raising them, and for this reason I have provided a lateral adjustment which will permit the lifting fingers to be spread apart or brought together when desired.

Another object of my invention is the provision of a light, yet strong and thoroughly braced beam, to which the lifting members are adjustably secured.

A still further object of my invention is the provision of means for preventing the beet when lifted, from falling into the furrow when it leaves the lifting fingers.

To these and other ends, therefore, my invention consists in certain novel features and combinations, such as will be more fully described hereinafter and particularly pointed out in the claims.

In the drawings, Figure 1 is a top plan view of my invention, Fig. 2 is a side view, Fig. 3 is a view showing the lifting members taken on the line *x*—*x* of Fig. 2, Fig. 4 is a detail perspective view of the lifting members, and Fig. 5 is a detail view showing the means for bracing the handles.

A indicates a bifurcated horizontal beam, the forward end of which is provided with an eye 1, from which the bifurcations constituting the beam extend. The free ends of the bifurcations are bent inwardly toward each other, as shown at 2, and overlap. The beam may be resilient, whereby the normal tendency of the bifurcations is to spread apart as shown in dotted lines in Fig. 1, the bifurcations having secured thereto the lifting members hereinafter described.

The inwardly extending overlapping rear ends 2 of the bifurcations are held in adjusted position by means of the clamping members 3, 3, similar to the clamping means shown in Fig. 3, such clamping members 3, 3, also embracing the bend of a substantially V-shaped member 4, constituting the handles. The arms 4, 4, of the V-shaped member extend upward at an angle from the beam A in the usual manner and are connected to the beam in front of the lifting members by means of braces 5, 5, the upper ends of which are secured to the handles by means of a through-bolt 6, extending between and connecting the handles at points intermediate the ends thereof. The opposite ends of the braces 5 are bent laterally and received in apertures in the bifurcations, the ends of the braces being held in place by nuts $5^a$. By securing the forward ends of the braces to the beam in front of the lifting members, the latter may easily be caused to rise out of the ground when desired.

In order to further brace the handles, I provide the cross-round 7, the opposite ends of which are received in recesses formed in the inner faces of the handles 4. Preferably I construct such handles of pipe, in which event, the ends of the cross-round 7 are received in apertures formed on the inner faces of the handles so that the ends of such round bear against the interior peripheries of the respective handles and the round is held in such position by means of the nuts 8, 8, on the throughbolt 6, which operate to pull the handles together.

A clevis 9 is secured to the eye 1 of the beam, such clevis being provided with a pair of apertured arms 10, 10, adapted to embrace the eye and receive a bolt or pin 11 passing through the eye and the arms. The forward ends of the lifting fingers may be caused to "pick" into the soil by hitching the draft

animal to the upper one of the series of perforations 12 formed in the clevis, or if it is desired to impart a tendency to the fingers to lift out of the ground, the draft should be connected to the lower apertures 12.

The lifting members are arranged as follows: A pair of substantially U-shaped standards 13, 13 are provided, the upper ends or tangs 14 of which extend vertically and are parallel with each other. These tangs overlap the sides of the beam A and preferably extend at right angles thereto, the tangs being releasably and adjustably secured to the beam intermediate its ends by means of the clamps 15, 15. These clamps are arranged obliquely across the sides of the frame and the tangs respectively, as shown most clearly in Figs. 2 and 4. By loosening the clamps, the lifting fingers may be given more or less inclination forward or rearward, one forward adjustment being shown in dotted lines in Fig. 2. The forward edges 16 of the convex portions of the standards are preferably sharpened in order to cut through the soil. The lower free ends of the standards are bent inwardly toward each other in order to cut horizontally through the soil and the out-lying roots of the beets or other vegetables being lifted, the extreme points of the inner ends of the standards being spaced apart in order not to injure the main or tap root.

The lifting fingers 17, 17′ are secured to the lower inwardly projecting ends of the standards. These fingers are angular in general conformation, and are preferably formed of cylindrical rods, the forward ends of which may be pointed as at 18. The forward portions of the fingers lie substantially horizontally, the rear portions of the fingers being bent upwardly at an angle to the forward portions. The fingers converge toward each other from front to back, as shown in Fig. 1. In operation, the substantially horizontal forward portions of the lifting fingers ride in the ground and are adapted to pass on each side of and engage the root to be lifted, and, as the implement continues to travel, the root engages the rearward upwardly inclined portions of the lifting fingers and is thereby raised out of the ground.

It will be observed that the root is held between the lifting fingers and if the rearward portions of the lifting fingers were of the same length, the root would ride over such rear ends and drop back into the furrow caused by the passage of the machine through the field. This might result in a considerable loss, either because the lifted roots would become covered with loose earth or from stepping on them. In order to obviate this liability, I preferably make the rearward portion of the lifting finger 17 of greater length than the rearward portion of the finger 17′ so as to project higher out of the ground than finger 17, whereby, as the beet rides up the incline between the fingers, it is caused to fall laterally toward and past the shorter finger 17′ and escapes the furrow.

The standards 13 are preferably resilient and the tangs are connected below the point of connection with the beam, by means of a U-shaped strap 18′ passing around one tang and the free ends of which strap embrace the other tang and are connected by a bar 19 held in place by means of the nuts 20. The normal tendency of the standards is to spring apart from each other, the strap 18′ holding them together, and by loosening or tightening the nuts 20, the fingers 17, 17′ are caused to approach or recede from each other, as shown in dotted lines in Fig. 3.

In order to thoroughly brace the standards and prevent them from swinging backward as they cut through the soil, I provide the braces 21 extending from the sides A to the convex portions of the standards, such braces being adjustable by means of the turn buckles 22 to permit the forward or backward adjustment of the standards, as indicated in Fig. 2. In Figs. 3 and 4, the braces 21 have been omitted for the sake of clearness.

From the foregoing it will be observed that I have provided a very simple, neat, and inexpensive lifter, yet one which is very strong, durable and efficient. The machine can be drawn by one horse, and the lifting fingers extend to about four or five inches beneath the surface of the ground.

The sides of the beam may be spread apart to effect an additional adjustment of the standards toward and from each other, by releasing the clamping members 3, 3, and spreading the sides apart or drawing them together.

The beets may be topped before or after they are lifted, though I prefer to top them with a hoe before they are lifted.

Having thus fully disclosed my invention, what I claim as new, is:—

1. A root lifter comprising a beam, resilient standards depending therefrom, lifting members carried by the standards, the forward portions of such members lying substantially horizontally, the rearward portions extending at an incline upwardly, the rearward upwardly inclined portion of one member projecting higher than the upwardly inclined portion of the remaining member, a U-shaped strap embracing the standards, and a bar connecting the ends of the strap and adjustable thereon to permit the standards to be adjusted toward and from each other, and means for adjusting said standards forward and backward.

2. In a root lifter having a beam and standards depending therefrom, angular lifting members carried by the standards, the forward portions of such members lying substantially horizontally, the rearward portions extending at an incline upwardly, the rearward upwardly inclined portions of one of the lifting members being longer than and projecting higher than the upwardly inclined portion of the remaining member.

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

ALBERT BOURDEAU.

Witnesses:
PITE LATOURNEAU,
FRED LATOURNEAU.