

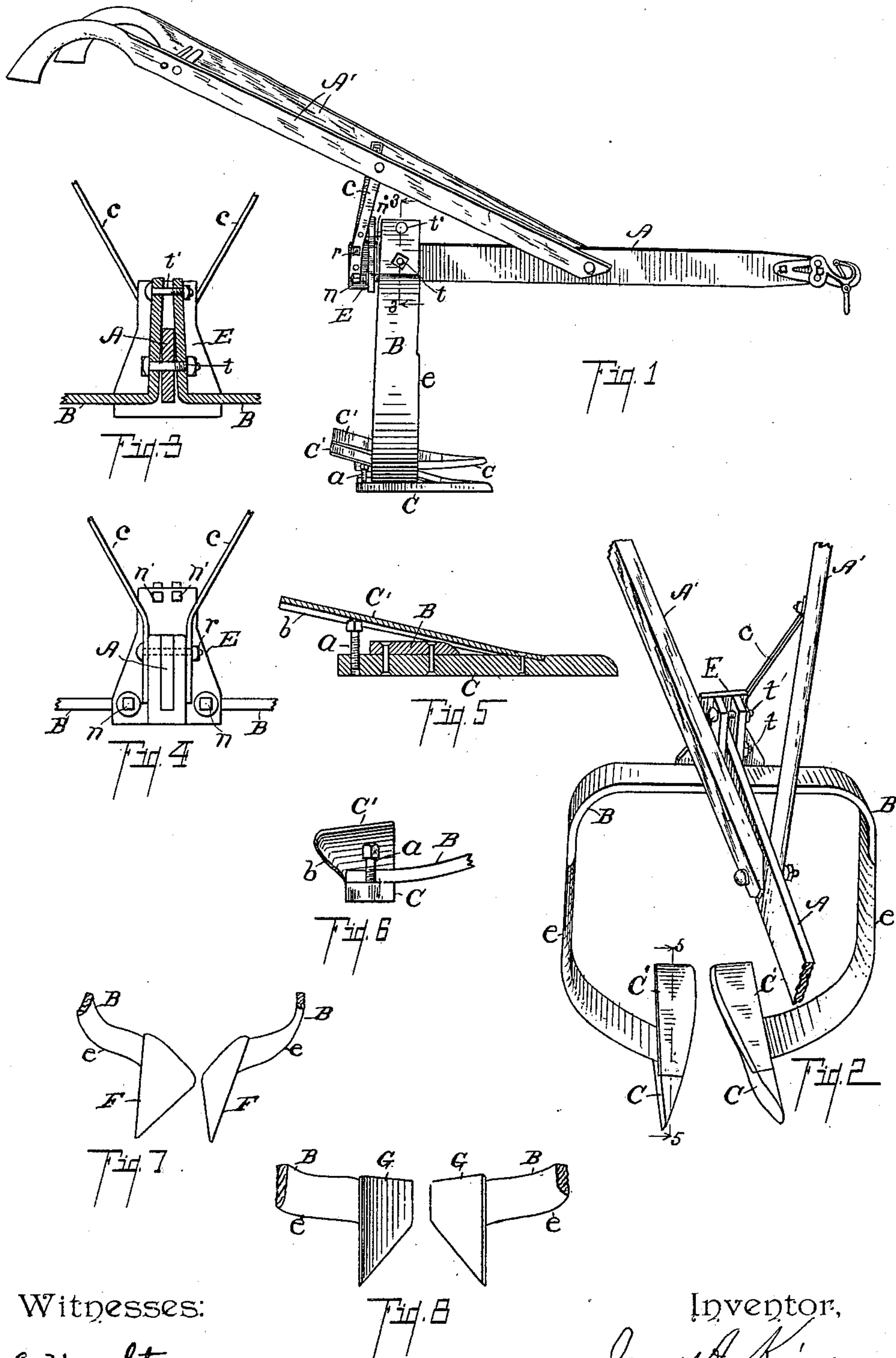
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Patented Oct. 22, 1901.

J. A. KING.
ROOT HARVESTING MACHINE.

(Application filed Feb. 25, 1901.)

(No Model.)



Witnesses:

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UNITED STATES PATENT OFFICE.

JAMES A. KING, OF THREE RIVERS, MICHIGAN, ASSIGNOR OF ONE-HALF TO
EDWARD B. LINSLEY AND WARREN J. WILLITS, OF SAME PLACE.

ROOT-HARVESTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 684,827, dated October 22, 1901.

Application filed February 25, 1901. Serial No. 48,748. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. KING, a citizen of the United States, residing at the city of Three Rivers, in the county of St. Joseph and State of Michigan, have invented certain new and useful Improvements in Root-Harvesting Machines, of which the following is a specification.

This invention relates to improvements in beet pulling or harvesting machines.

The objects of my invention are, first, to provide a simple, inexpensive, strong, and effective beet-pulling machine; second, to provide an improved construction of beet-pulling machine or plow which is easily adjustable to secure the proper workings of the same, and, third, to provide in a beet-pulling machine an improved construction and arrangement of puller blades and points which utilize the principle of the inclined plane for raising the earth and beets in the row and which are so constructed and adjusted that after they are set to the right depth they will continue to work at such depth without any material tendency to strike deeper into the soil.

A further object is to provide such puller-blades with an adjusting means whereby the puller can be satisfactorily adjusted for different conditions and different kinds of soil.

A further object is to provide an adjustment of the entire machine which shall regulate the draft properly in relation to the puller blades or points.

Further objects will definitely appear in the detailed description to follow.

I accomplish the objects of this invention by the devices and means described in this specification.

The invention is clearly defined and pointed out in the claims.

A structure with slight modifications embodying the features of my invention is fully illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side perspective view of my improved beet-puller. Fig. 2 is a detail front perspective view, a part of the beam and handles being broken away. Fig. 3 is an enlarged detail sectional view taken on line 3 3 of Fig. 1. Fig. 4 is an enlarged detail elevation view of the end of the beam and connected parts.

Fig. 5 is an enlarged longitudinal detail sectional view through one of the puller-blades, taken on line 5 5 of Fig. 2. Fig. 6 is a detail rear elevation of the puller-blade as it appears in Fig. 5. Fig. 7 is a detail modification view of the puller-blades made integral with the side pieces B. Fig. 8 is another detail view of the puller-blades made integral with the side pieces B, showing modifications of other parts.

In the drawings all of the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the lettered parts of the drawings, A is the beam, provided with the usual clevis or hook for the attachment of a whiffletree or doubletree.

A' represents the handles, secured to each side of the beam by a bolt and connected by the arms C adjustably to the rear end of the beam by a bolt *r*, a series of holes being provided for the purpose of adjustment. The casting E is provided, which fits onto the rear end of the beam A and has a transverse plate at that point, which contains adjusting-screws *n n* below and *n' n'* above. Arms B, curved downwardly at each side and formed with a cutting edge *e* at the front and curved downwardly and inwardly at the bottom, are secured to the beam A by the pivot-bolt *t*. An additional bolt *t'* is passed through the upper ends of the same to assist in clamping the arms in position and holding them parallel to each other. The bolt *t* is a pivot below, and the arms B are tipped back upon this pivot by means of the adjusting-screws *n' n'* and *n n*, as is obvious from an inspection of the drawings. On the lower ends of the arms B are secured puller-blades. In the preferred construction each blade is made up of a base C, which is riveted to the lower end of the arm B, and a plate C', inclined upwardly and rearwardly, is riveted or otherwise secured to this base-plate C and extends above the lower end of the arm B. The screw *a* extends into the base C, the head of which supports the rear end of the plate C', which is thereby made adjustable up and down. There is a pair of these plates C C', the lower for-

ward points of which are considerably separated and the rear ends of which are comparatively close together. These plates incline forwardly and downwardly and also, 5 downwardly, toward each other, forming an inclined support, over which the beets or roots to be pulled are elevated in the operation of the machine. This is the preferred construction on account of its adjustability. It will 10 be observed that there is a base C, which is comparatively level, like the landside of a plow, for regulating its depth, and an upwardly-inclined portion, somewhat like the moldboard of a plow, on each of the puller-blades. The two blades, acting in opposition 15 to each other, in place of forming a furrow elevate a slice of the earth with the beets contained therein.

Of course it is desirable to provide the 20 structure with adjustments, as I have indicated, so that the machine can be set for any kind or condition of soil. However, I am aware that these adjustments add considerable to the expense, and where the conditions 25 are known in advance the machine might be constructed entirely without adjustments and be very satisfactory in operation. I therefore have shown two forms of blades for such integral construction, which I have found to 30 be practical and satisfactory. The lower sides of these blades are substantially level when the machine is in operation, and by properly proportioning the hitch or point of attachment of the team this will be carried 35 on the level and the row of beets and the earth containing the same will pass up the incline and be thoroughly loosened, so that the beets may be readily removed.

The entire structure could be otherwise 40 modified and still perform its functions in a satisfactory manner, as will appear to a skilled mechanic from inspecting the same.

Having thus described my invention, what I claim as new, and desire to secure by Letters 45 Patent, is—

1. In a beet-puller, the combination of the beam A; suitable handles A' adjustably secured thereto; the transverse plate E at the rear end of said beam; outwardly-curved side 50 arms B, B, the lower ends of which are curved inwardly, secured by a pivot-bolt to the rear end of said beam; adjusting-screws in the transverse plate for varying the angles of said arms to the beam; base-plates secured to the 55 lower ends of said arms; inclined plates C' secured to the base-plates C with screw *a* for adjusting the same, the said plates C', C', being inclined downwardly and forwardly and toward each other, and considerably separated 60 from each other at the front and approaching each other quite closely at the rear, all coacting substantially as described, for the purpose specified.

2. In a beet-puller, the combination of the 65 beam A; suitable handles A' adjustably secured thereto; outwardly-curved side arms

B, B, the lower ends of which are curved inwardly, secured by a pivot-bolt to the rear end of said beam; means of adjusting the angle of said arms to the beam; base-plates 70 C secured to the lower ends of said arms; inclined plates C' secured to the base-plates C with screw *a* for adjusting the same, the said plates C', C', being inclined downwardly and forwardly and toward each other, and considerably separated from each other at the front and approaching each other quite closely at the rear, all coacting substantially as described for the purpose specified. 75

3. In a beet-puller, the combination of the 80 beam A; suitable handles A' adjustably secured thereto; outwardly-curved side arms B, B, the lower ends of which are curved inwardly, secured to the rear end of said beam; base-plates C secured to the lower ends of 85 said arms; inclined plates C' secured to the base-plates C with screw *a* for adjusting the same, the said plates C', C', being inclined downwardly and forwardly and toward each other, and considerably separated from each 90 other at the front and approaching each other quite closely at the rear, all coacting substantially as described, for the purpose specified.

4. In a beet-puller, the combination of the beam A with suitable handles secured there- 95 to; side arms secured to the rear of said beam which are curved outwardly and downwardly and then inwardly at the bottom; puller-blades secured at the bottom of said side arms having a horizontal portion at the un- 100 der side and an upwardly and rearwardly inclined surface on the upper side, being considerably separated at the front and brought close together at the rear, whereby, in operation, beets or other roots would be raised with 105 a slice of earth over the inclined planes as the puller was moved forward.

5. In a beet-puller, the combination of a suitable beam; side arms adjustably secured to the rear thereof curved outwardly and 110 downwardly and then in at the bottom; and adjustable blades secured at the bottom of said arms which are inclined downwardly and forwardly and toward each other, considerably 115 separated at the front and approaching closer together at the rear, for the purpose specified.

6. In a beet-puller, the combination of a suitable beam; side arms secured to the rear thereof, curved outwardly and downwardly and then in at the bottom; and adjustable 120 blades secured at the bottom of said arms which are inclined downwardly and forwardly and toward each other, considerably separated at the front and approaching closer together at the rear, for the purpose specified. 125

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

JAMES A. KING. [L. S.]

Witnesses:

M. J. HUSS,

E. H. HENDERSON.