

No. 715,320.

Patented Dec. 9, 1902.

I. L. UMSTEAD.
BEET HARVESTING PLOW.

(Application filed May 22, 1902.)

(No Model.)

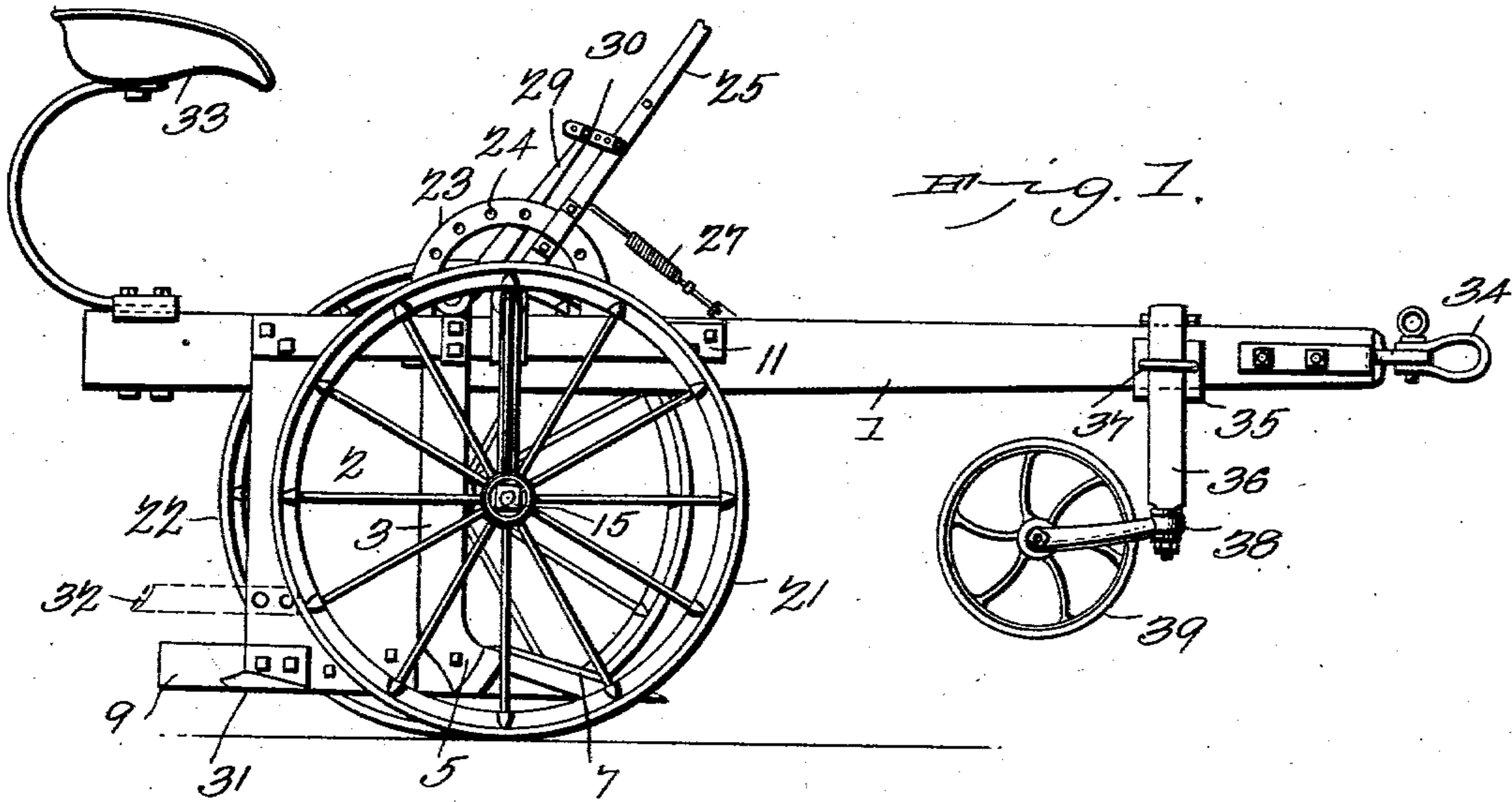


Fig. 1.

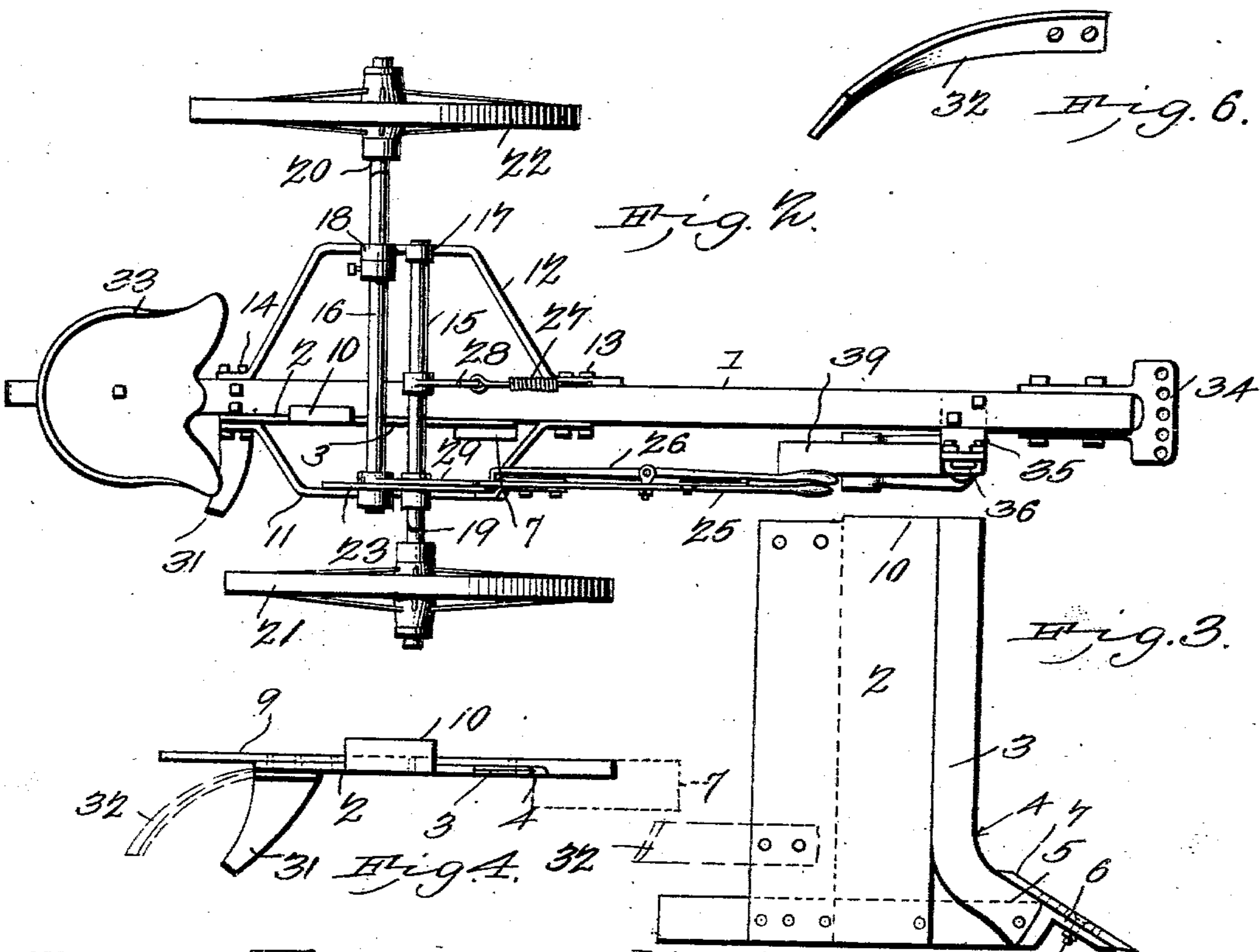


Fig. 2.

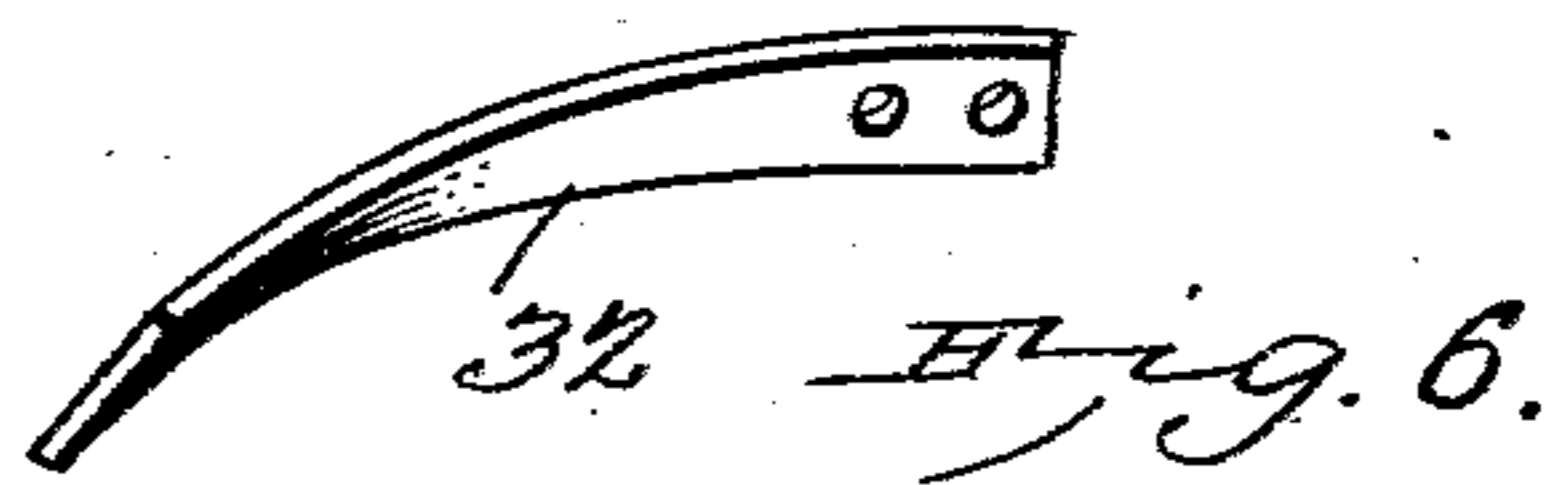


Fig. 6.

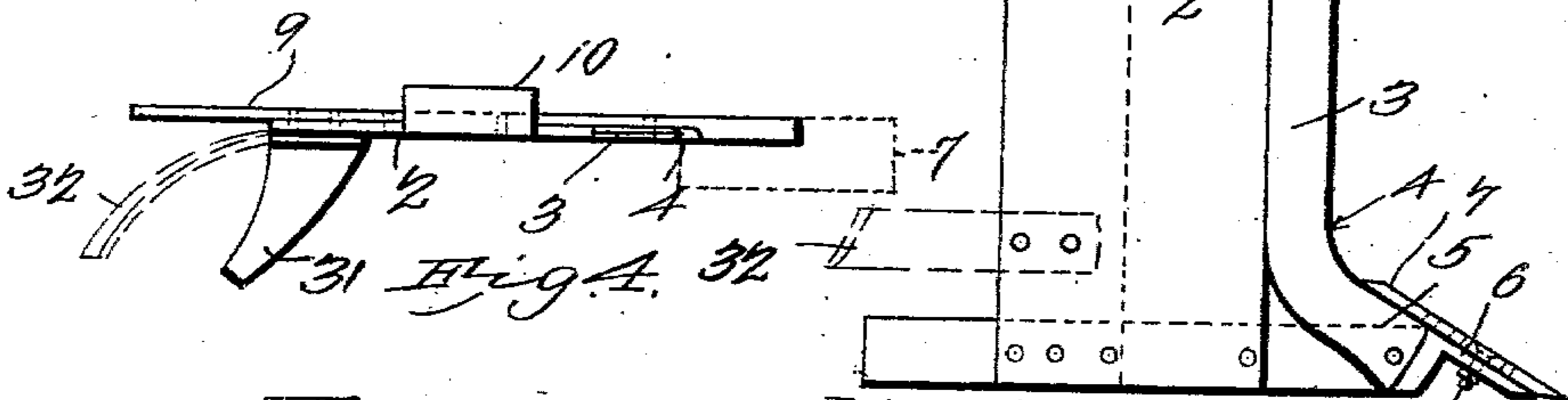


Fig. 3.

Fig. 4.



Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

ISAAC L. UMSTEAD, OF CAMARILLO, CALIFORNIA.

BEET-HARVESTING PLOW.

SPECIFICATION forming part of Letters Patent No. 715,320, dated December 9, 1902.

Application filed May 22, 1902. Serial No. 108,570. (No model.)

To all whom it may concern:

Be it known that I, ISAAC L. UMSTEAD, a citizen of the United States, residing at Camarillo, in the county of Ventura and State of California, have invented a new and useful Beet-Harvesting Plow, of which the following is a specification.

My invention is an improved sulky-plow adapted for use in harvesting sugar-beets; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation of a beet-harvesting plow constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a detail side elevation showing the standard which carries the point or share, the standard-plate which carries the laterally-extending shearing-blade that runs in rear of the point or share, and the landside-plate that connects the lower ends of the standard and the standard-plate together. Fig. 4 is a detail top plan view of the same. Fig. 5 is a detail perspective view of the shearing-blade. Fig. 6 is a detail perspective view of the spreading-arm.

To one side of the beam 1 is secured the upper end of a standard-plate 2. In practice this standard-plate is relatively broad and thin, being preferably about twelve inches wide and about one-half an inch thick. At the front edge of the standard-plate is the standard 3, the upper end of which is also secured to one side of the beam 1, and the said standard corresponds with the standard-plate in thickness and has its front edge sharpened, as at 4, to enable the standard to readily cut through the soil and to run at a considerable depth therein. At the lower end of the standard 2 is formed a foot 5, the upper side of which inclines downwardly and forwardly, as at 6, and the said standard-foot is adapted to carry a reversible share or point 7 on its said inclined side, the said share or point being secured on the foot by means of bolts 8, one or more. The said point is preferably of the form shown, with parallel sides and with its opposite ends alike in shape, so that either end of the share or point may be disposed foremost. The said share or point is longitudinally adjustable on the foot, so

that it may be extended downwardly and forwardly as the same becomes worn, and the said point or share may be reversed end for end, so that its life may be greatly prolonged. The said point or share projects laterally from the side opposite the landside and is of appropriate width. A landside-plate 9 is here shown as bolted to the lower ends of the standard and standard-plate and extending rearwardly from the standard-plate. In practice the landside may be formed integrally with the standard-plate, and I do not desire to limit myself in this particular. Preferably the upper end of the standard-plate is bent laterally, as at 10, to bear on the upper side of the beam 1.

On opposite sides of the beam at a suitable distance from the rear end thereof are laterally-bowed side bars 11 12, which have their ends secured to the beam by bolts 13 14, the latter bolts also passing through the upper portion of the standard-plate to secure the latter to the beam. A pair of axles 15 16, which are disposed one in advance of the other, are journaled in bearings 17 18, respectively, on the said side bars, the said axles extending across and above the beam. The axles are provided, respectively, at their opposite ends with downturned drop or crank arms 19 20, having at their lower ends outwardly-extending spindles on which the supporting-wheels 21 22 are mounted, one of said wheels being carried by each of said cranked axles. On the side bar 11 is a segment-plate 23, which is concentric with the axle 15 and is provided with a series of adjusting-openings 24. Said axle 15 has a hand-lever 25 secured thereto, which engages the segment-plate, as shown in Fig. 1, and said hand-lever is provided with a locking device 26 of suitable form, which is adapted to engage any of the adjusting-openings 24, and hence lock the said hand-lever at any desired position. It will be understood that by means of the hand-lever the axle 15 may be partly turned to cause the crank or drop arm thereof to raise or lower the wheel 21 carried by said axle. A spring 27, which is here shown as a coiled retractile spring, is connected at one end to the beam and has its opposite end connected to an arm 28, that is secured to and projects from the axle 15. The rear axle 16

has an arm 29, the upper end of which is pivoted to and adjustable on a link 30, that connects the same to the hand-lever 25, so that by operating the latter the axles 15 16 may be turned simultaneously to simultaneously raise or lower the plow. The length of the drop or crank arms of the axles is such as to enable the plow to be lowered to cause the point or share to operate at the required depth in the soil, the wheels 21 22 bearing on the surface and astride of a row of beets, and the plow being so directed as to cause the standard and standard-plate to run close to one side of the row of beets, so that the point or share 7 will loosen the soil thoroughly on one side of the beets.

A laterally-extended shearing-blade 31 is secured to the lower portion of the standard-plate at the rear side thereof and projects rearwardly at its outer end, and the said shearing plate or blade has its upper side inclined somewhat upwardly and rearwardly. The said shearing-blade is disposed considerably in rear of the standard which carries the point or share, and its lateral extent is such that it cuts the tap-roots of the beets as it runs under them in rear and somewhat to one side of the point or loosening-share, and owing to the inclined disposition of the upper side of said shearing-blade the same as it cuts the tap-roots of the beets also forces them upwardly, so as to thoroughly loosen them and enable them to be readily withdrawn from the soil. Owing to the disposition of the shearing-blade in rear of the standard which carries the loosening point or share, the draft of the shearing-blade is inconsiderable and the tap-roots of the beets are not cut thereby until after the standard has passed the beets, and hence the standard cannot become clogged. When the beets are not to be topped on the same day that they are thus plowed, they remain thus loosened and with their tap-roots cut in the ground. If the beets are to have their tops cut off on the same day that the plow is used, I employ in connection with the plow a spreading-arm 32. The same is preferably of the form shown in the drawings, being curved laterally to extend from the same side of the standard-plate with the shearing-blade. The said spreading-arm is detachably bolted to the standard-plate at a suitable height above the shearing-blade, and the said spreading-arm is preferably made of spring-steel. It extends rearwardly beyond and laterally to the same extent as the shearing-blade, so that it lies across and obliquely at an angle to the row of beets and serves to uproot the beets immediately after their tap-roots have been cut by the shearing-blade and to dispose them all in the same direction on the surface of the soil to one side of the row in which they grew, so that they may be readily topped and picked up by the harvesters who follow the plow. Since this spreading-arm is detachable from the standard-plate,

it may be used or its use dispensed with, as may be desired.

A suitable seat 33 for the plowman is here shown as supported on the rear end of the beam. The latter is provided at its front end with a suitable clevis 34.

A bracket 35 is bolted to the beam at a suitable distance from the front end thereof and projects laterally from the furrow side of the beam. A vertically-adjustable arm 36 is secured to the vertical outer side of the said bracket by a clip-bolt 37 or other suitable device, and to the lower end of the said vertically-adjustable arm is pivotally connected a fork 38, in which is mounted a wheel 39. The latter, as will be understood, travels on the ground at one side of the row of beets when the plow is in operation, coacts with the wheels 21 22 to maintain the beam in a horizontal position, and also coacts with the wheels 21 22 and the cranked axles which carry them to regulate the depth at which the plow operates, thus enabling the plow to be appropriately adjusted when in use.

Having thus described my invention, I claim—

1. A beet-harvesting plow having a standard with its opposite sides flat, and a front cutting edge, and provided at its lower end with a forwardly-extending downwardly-inclined foot, and a laterally-extending upwardly and rearwardly inclined shearing-blade disposed in rear of the standard, substantially as described.

2. A beet-harvesting plow having a standard with its opposite sides flat and a front cutting edge, an inclined loosening share-point in front and projecting laterally from one side of the standard, and a laterally-extending upwardly and rearwardly inclined cutter disposed in rear of the standard and projecting from the same side thereof with the loosening share-point, substantially as described.

3. A beet-harvesting plow having a standard with its opposite sides flat, and a front cutting edge, an inclined loosening share-point in front and projecting laterally from one side of the standard, a laterally-projecting upwardly and rearwardly inclined cutter disposed in rear of the standard and a laterally-projecting spreader-arm above and in rear of the cutter, substantially as described.

4. A beet-harvesting plow having a relatively thin standard with its opposite sides flat, and a front cutting edge, a loosening-share in advance and extending to one side thereof, and a tap-root-cutting and beet-lifting device in rear of the standard, substantially as described.

5. A beet-harvesting plow having a standard plate of slight thickness, with its opposite sides plane and presenting broad lateral surfaces, a downwardly and forwardly inclined share in advance and projecting on one side thereof, a laterally-extending upwardly

and rearwardly inclined cutter attached to one side of and extending rearwardly from said standard plate, and a laterally and rearwardly extending flexible arm disposed above and extending in rear of the cutter, substantially as described.

6. A beet-harvesting plow having a standard plate of slight thickness, with the opposite sides plane and presenting broad lateral surfaces, a standard of corresponding thickness in front of said standard-plate, a share in advance and projecting to one side of the standard, a laterally-extending cutter at-

tached to one side of the standard-plate, and a landside-plate connecting the lower ends of the standard and standard-plate and extending rearwardly from the latter, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ISAAC L. UMSTEAD.

Witnesses:

E. O. VALLIKETT,
J. RAY GABBERT.