

No. 646,004.

Patented Mar. 27, 1900.

A. J. MALSARY.

SEEDING ATTACHMENT FOR GANG PLOWS.

(Application filed Feb. 9, 1898.)

(No Model.)

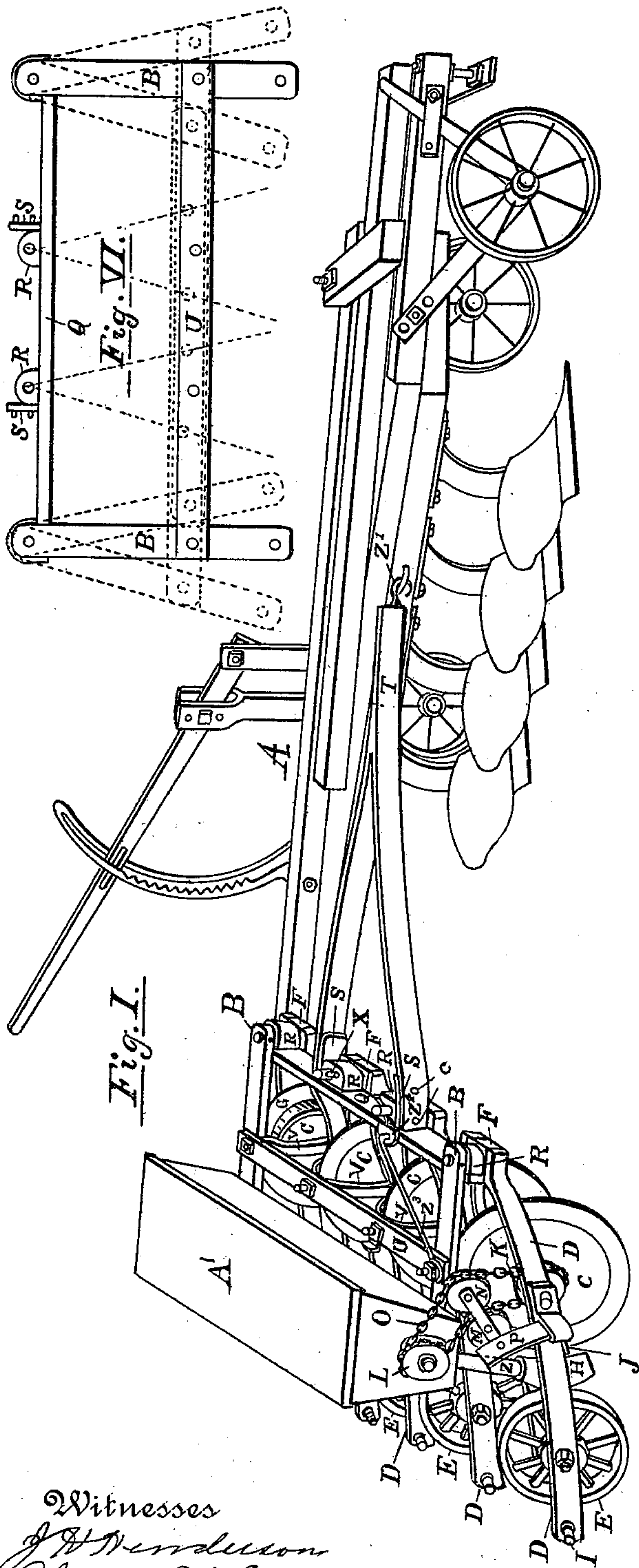


Fig. I.

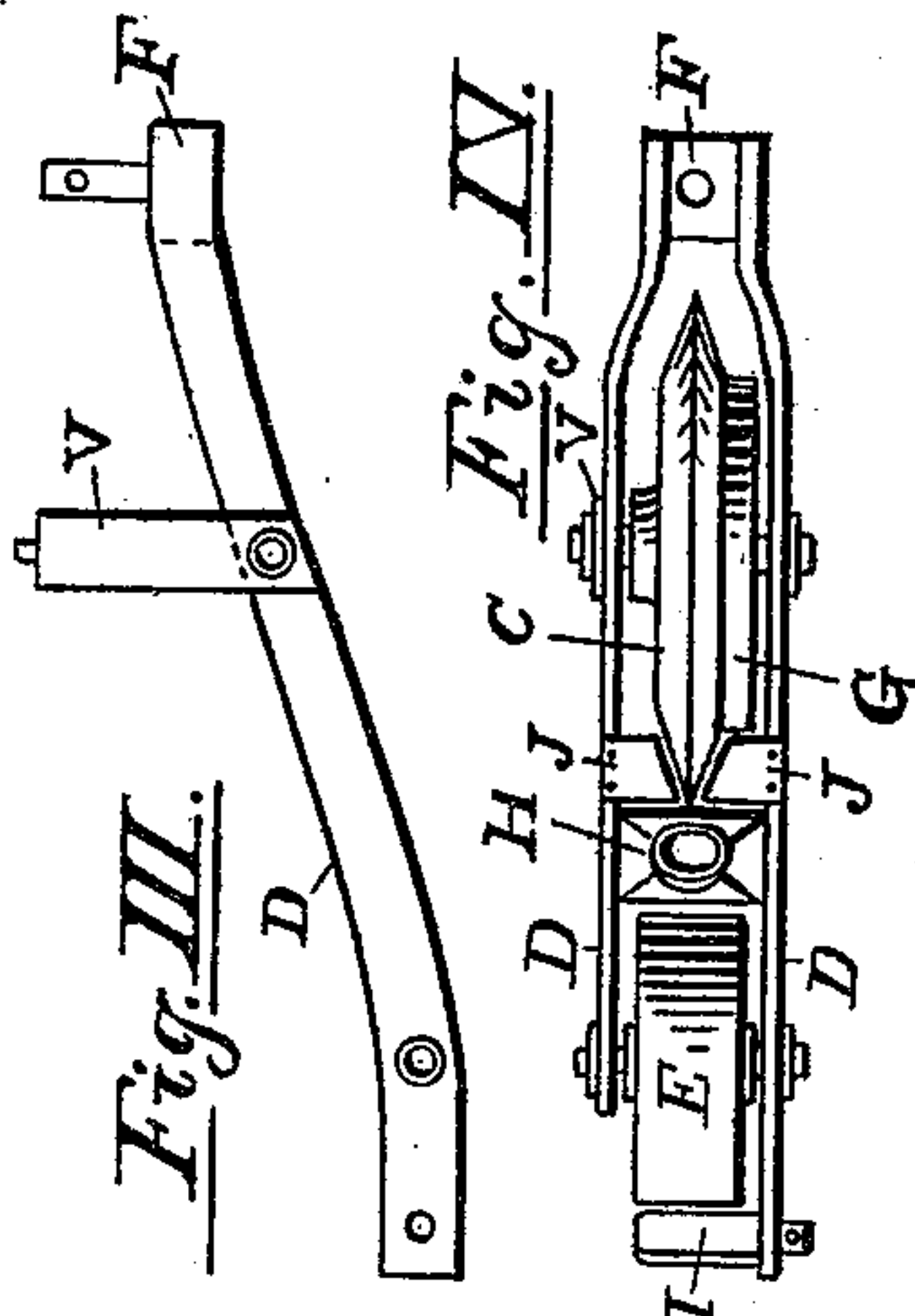


Fig. III.

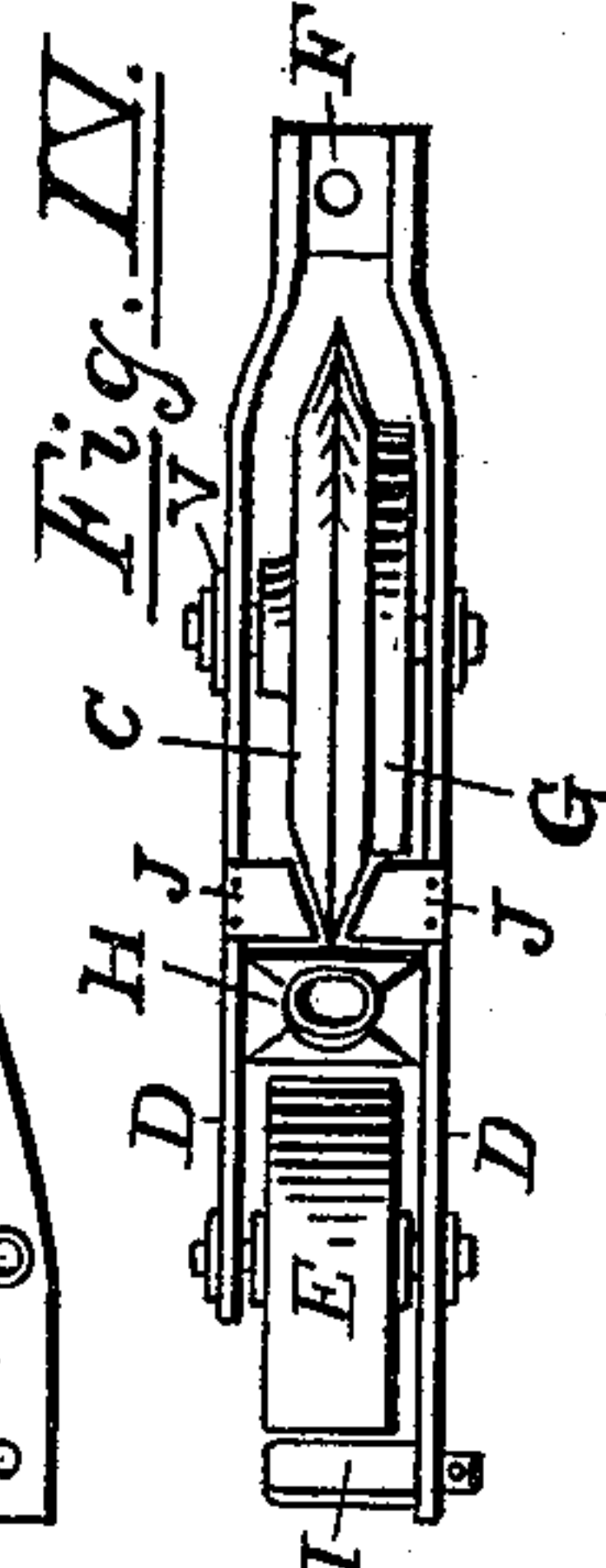


Fig. IV.

Fig. II.

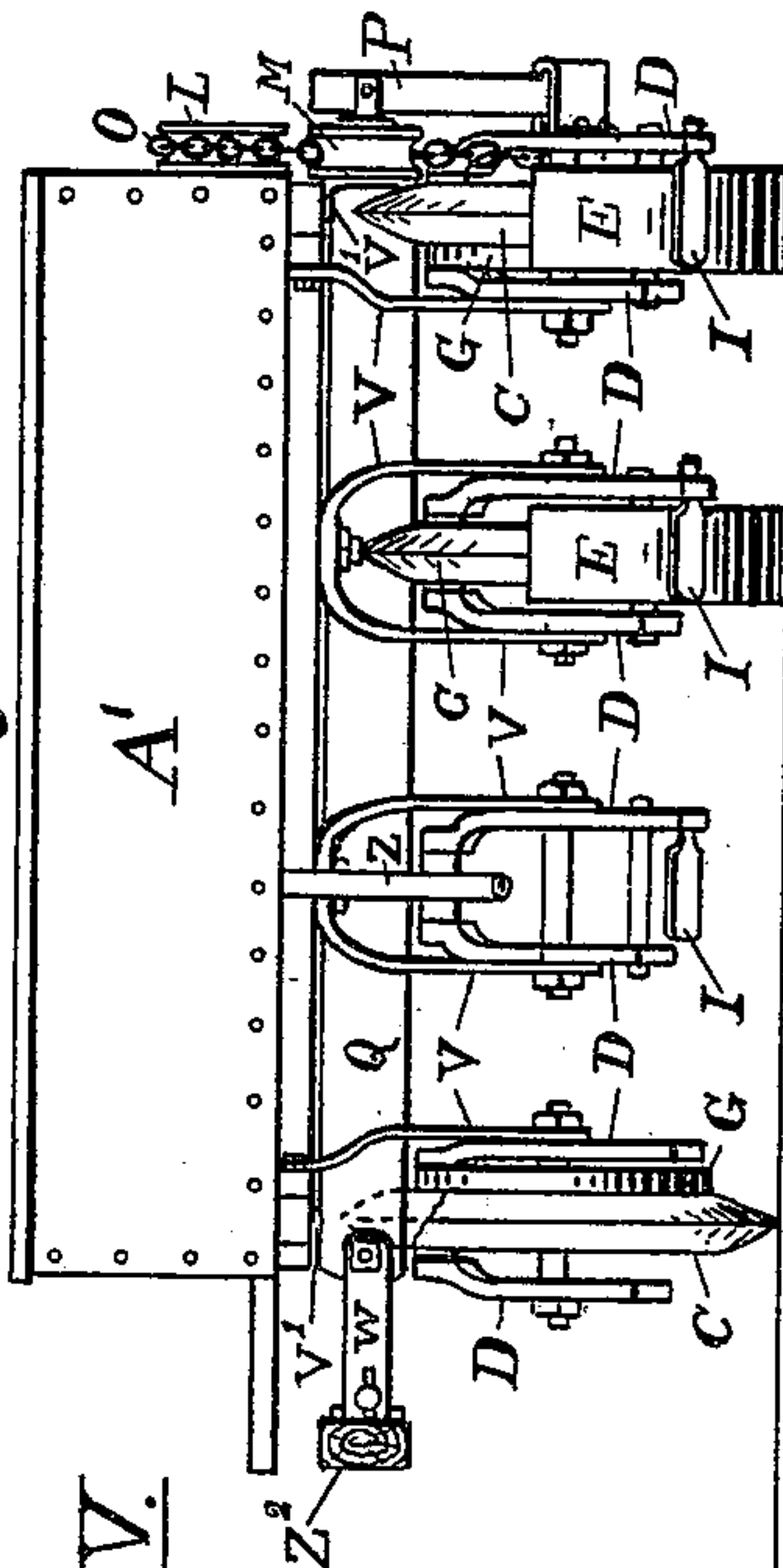
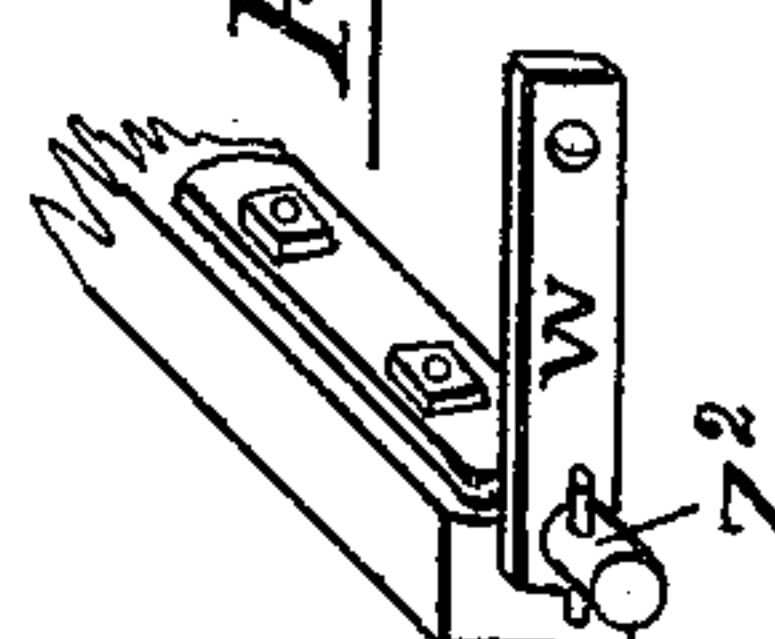


Fig. V.



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SEEDING ATTACHMENT FOR GANG-PLOWS.

SPECIFICATION forming part of Letters Patent No. 646,004, dated March 27, 1900.

Application filed February 9, 1898. Serial No. 669,707. (No model.)

To all whom it may concern:

Be it known that I, ALBERT J. MALSBARY, a citizen of the United States, residing at Stockton, county of San Joaquin, and State of California, have invented certain new and useful Improvements in Seeding Attachments for Gang-Plows; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

One of the objects of my invention is to provide a seeding attachment for gang-plows or the like in which the seed-furrows shall be opened with as little friction and expenditure of power as possible, one in which the furrow-closing devices may be maintained always in exact alinement in rear of the furrow-opening devices and seed-conductors, and one in which the seedbox may be supported altogether on the furrow openers and closers, thereby saving the weight and extra draft of the usual independent bearing-wheels.

A further object of my invention is to provide an attachment for gang-plows so constructed that the furrow-opening disks shall revolve always in the same general direction or plane, as in the direction of the draft of the device as a whole, thus reducing friction in turning corners, and one so constructed as to permit a limited lateral freedom of movement of the seed-planting devices, so as to allow the machine to pass readily among the loose rocks upon the land.

My invention furthermore resides in the novel construction, combination, and arrangement of parts hereinafter fully specified, and particularly pointed out in the claims.

Figure I is a perspective view of a gang-plow and seeding attachments embodying my invention. Fig. II is a rear view with some of the parts omitted for the sake of clearness in illustrating parts which could not otherwise be shown. Fig. III is a side view of one of the caster-arms D, showing brace V and the pivot in the head F upon which the parts swivel or revolve. Fig. IV is a bottom view of a pair of the caster-arms, showing the position of the wheels E and C, the boot H, the headpiece F, also the scrapers I and J, one of the outer pair of the caster-arms being shown with the wheel C flanged, as at G, and the

brace V on only one side instead of both sides, as shown in the interior casters in Figs. I and II. Fig. V is a perspective view of the end of the plow-beam, showing the manner of securing the flexible support W of the drill to the plow-beam. Fig. VI is a diagram of the swiveling frame to which are flexibly attached the caster-arms, the seedbox-braces, &c., the dotted lines showing how it may swing or swivel in turning either to the right or left.

Referring to the drawings, A represents a gang-plow having a triangular frame with plows attached thereto, the style being locally known as the "Stockton" gang-plow. The seedbox A' is mounted pivotally on two arms B B near their rear ends, as shown in Figs. I and II.

C C C C are a series of disks or wheels serving the double purpose of supporting the weight of the machine and of forming the drills into which the seed is to be dropped.

D D D D are pairs of caster-arms forming the frames in which each of the several wheels C C C C and E E E E are journaled and rotate independently and having at the front end of said caster-arms headpieces F F F F or other devices, to which the said caster-arms are rigidly secured. The drill-forming wheels should be made with a V-shaped periphery, or for some conditions of soil preferably concave disks should be used. The hubs should be large enough to admit of wooden bearings or antifriction-roller bearings suitably protected from dust and grit by sand-caps. The projecting rim G is to be cast with the drill-forming wheels C C C C, or it may be separate and secured with bolts.

The object of the projecting rim G is to form a stop for preventing the wheels from sinking too deeply into the ground, thus forming drills of a uniform depth.

As the caster-frame arms D D D D extend rearwardly they continue in a slightly-downward slant and serve as a support for the boot H and the wheels C C C C and E E E E. One arm of each set of beams D D extends back far enough to admit of a securing place for a scraper I, which may be used in sticky soils for the wheels E E E E. Provision is also made for a scraper on each side of the drill-forming wheels C C C C, as shown on one of the sets on the under side, (marked J,)

as in Fig. IV. To the right-hand outside wheel of the series is secured a flanged or sprocket wheel K, suitable for carrying a small cable chain, over which and a like wheel L a matched endless chain O rotates and drives the seed mechanism in the seedbox.

P is a spring for maintaining a uniform tension of the said chain, the said chain passing over the two flanged wheels M and N, which are journaled upon two shafts secured to the spring P, as will be explained farther on.

To the horizontal cross-bar Q boxes R R R R are secured at a uniform distance apart, corresponding in number to the drill-forming wheels, which may be any number desired. In these boxings the stems or spindles of the headpieces F F F F of each independent caster-frame are journaled, being held in position by means of an ordinary cotter-pin X. Two of the boxes R R R R have extra lugs S S, cast to admit of a hitching-place for the tongue T, in such a manner that the tongue can be altered quickly from a loose to a stiff tongue, and vice versa, by using one or two points of support, as shown in Fig. I. The stems of the headpieces F F of the two outside casters should be longer than the other stems, so that the arms B B may be keyed rigidly thereto.

Referring to the arms B B, they form the main support of the seedbox A' at points v' v', where the box is pivotally attached to said arms at each of its ends. These arms should extend over the center of each of the outside wheels C C and be connected by the bar U, which holds in place the braces V V V V, which bar also pivots correspondingly with the seedbox and aids in supporting it.

The object of the swiveling construction is to avoid undue strain in turning corners. The pivotal devices of the seedbox, in connection with the arms B B, are rigidly secured to the two outside spindles of the headpieces F F and are pivotally attached to the bar U and braces V V V V, so that the casters D D D D work in unison with the rest of the machine without undue strain upon the parts. It will be observed that in turning corners the swiveling construction will force the said flanged chain-wheels K L M N out of line; but it will also be observed that the spring P, to which the wheels M N are attached, will maintain the tension of the chain and keep it in place on the wheels L K.

The seeding mechanism in the seedbox is of the usual construction—that is, by means of the operative connection with the wheels K L it discharges the seed intermittently at regular intervals through holes in the bottom of the box. The seed passing out of the seedbox drops through the tubes Z Z Z Z in the ordinary way, said tubes being guided or held in place by the boots H, which lead the grain into the grooves or drills made by the wheels or disks C C C C. The wheels E E E E follow and cover the seed.

Z' is a staple where the tongue T is to be hooked or otherwise fastened to a plow or

cultivator cross-bar to draw the drill, and Z² the point where the adjustable arm W is to be flexibly attached to the plow, the other end of the arm W being also flexibly attached to the left-hand end of the bar Q. By this arm W, which is adjustable, the drill is kept at the proper place in rear of the plow, and by means of the two loose joints, one being at each end of the arm, the drill is allowed to rise or fall according to the shape of the ground, regardless of the plow's or cultivator's position. To prevent the swiveling action of the machine, (if desirable at any time,) the brace Z³ should be hooked into the eye Z⁴.

I am aware that prior to my invention grain-drill seeding attachments for gang-plows or grain-drills have been used with seedboxes and with rotating wheels having upon their periphery arrow-head-shaped ribs and alternating arrow-head-shaped depressions as feeders, also sliding adjustable valves to regulate the feed and tubes and boots to conduct the seed to the ground or drills. I therefore do not claim such a combination broadly, and do not claim the rotating wheels or other mechanism in the seedbox at all.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In a seeding attachment for gang plows or cultivators the pivoted bars B B and cross-bar U carrying the seedbox A' in combination with the pivoted head-pieces F, carrying the furrow-openers, seed-conductors and furrow-closing devices, all substantially as described.

2. In a seeding attachment for gang plows or cultivators, the combination of a frame having longitudinal parallel pivoted bars, B, B, connected pivotally by a cross-bar U, a seedbox A' mounted on the longitudinal bars B, B, a series of furrow-openers pivotally connected to the cross-bar U, and seed-conductors loosely interposed between the seedbox and the furrow-openers substantially as described.

3. In a seeding attachment for gang plows, or cultivators, the combination of a frame, a seedbox mounted upon pivots upon said frame for permitting the entire seeding device to swing around in turning corners, a series of seed-planting devices mounted at their front ends to the frame, and pivoted to swing laterally at the rear therefrom, and a brace for connecting said planting devices rigidly with the frame when desired substantially as described.

4. In a seeding attachment for gang plows or cultivators, the bar, or arm W, for keeping the seeding attachment at a proper distance laterally from the plow, said bar having at one end a flexible connection with the left-hand timber of the plow, near its rear end, and the other end of said bar has a flexible connection with the seeding device, near the left-hand end of the bar Q, substantially as described.

5. In a draft mechanism for a seeding device,

the combination of lugs S, a double tongue T, pivoted to swing vertically on said lugs, and means for securing said tongue rigidly in said lugs when desired, substantially as described.

6. In a seeding device the combination of a frame pivoted to swing laterally, having a series of laterally-swinging caster-arms D, pivoted at their front ends to bar Q of said frame, a furrow-opener and a seed-conductor mounted on each pivotally-swung pair of caster-arms, supports extending upwardly from each pair of arms, on which supports the bar U of the frame is pivotally mounted, and a seedbox carried on the frame substantially as described.

7. In a seeding device a series of laterally-swinging caster-arms pivoted at their forward ends to the bar Q of the frame, said caster-arms carrying furrow-openers, seed-conductors and furrow-closers, laterally-turning piv-

ots connecting the frame with its braces and supports, and pivots connecting the seedbox with the frame, the brace for connecting the pivoting-arms and frame rigidly when desired, the sheave or wheel upon the furrow-opener, over which runs the chain for driving the sheave or wheel located upon the outer end of the shaft extending through the seedbox, for driving any suitable seed-discharging mechanism within the seedbox, substantially as described.

8. In a draft mechanism for a seeding device, the combination of lugs S, a double tongue T pivoted to swing vertically on said lugs, and means for securing said tongue rigidly to said lugs when desired, substantially as described.

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