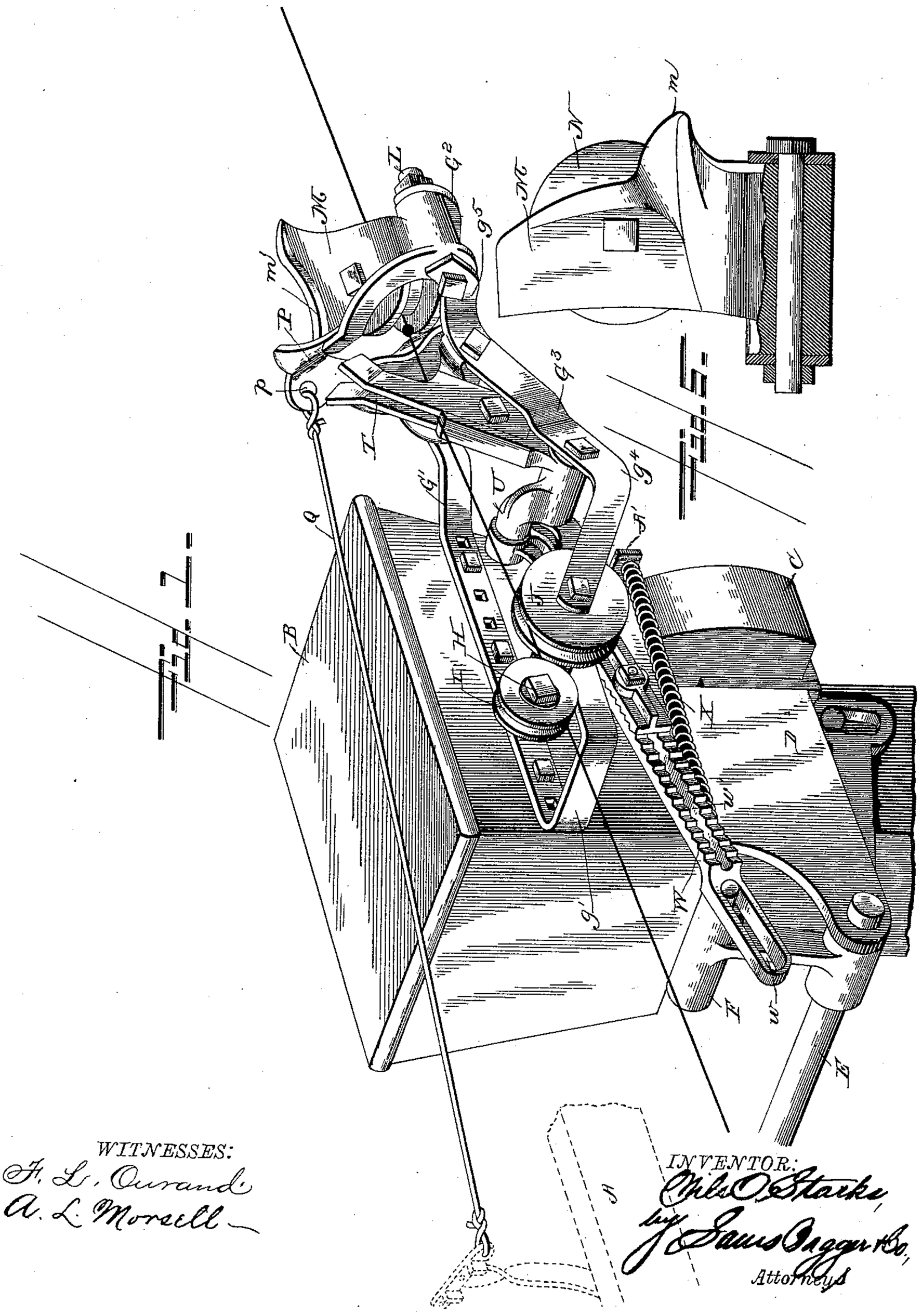
(No Model.)

2 Sheets—Sheet 1.

N. O. STARKS.

CHECK ROW CORN PLANTER.

No. 437,633. Patented Sept. 30, 1890.



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(No Model.)

2 Sheets—Sheet 2.

N. O. STARKS.

CHECK ROW CORN PLANTER.

No. 437,633. Patented Sept. 30, 1890.

Fig. 2.

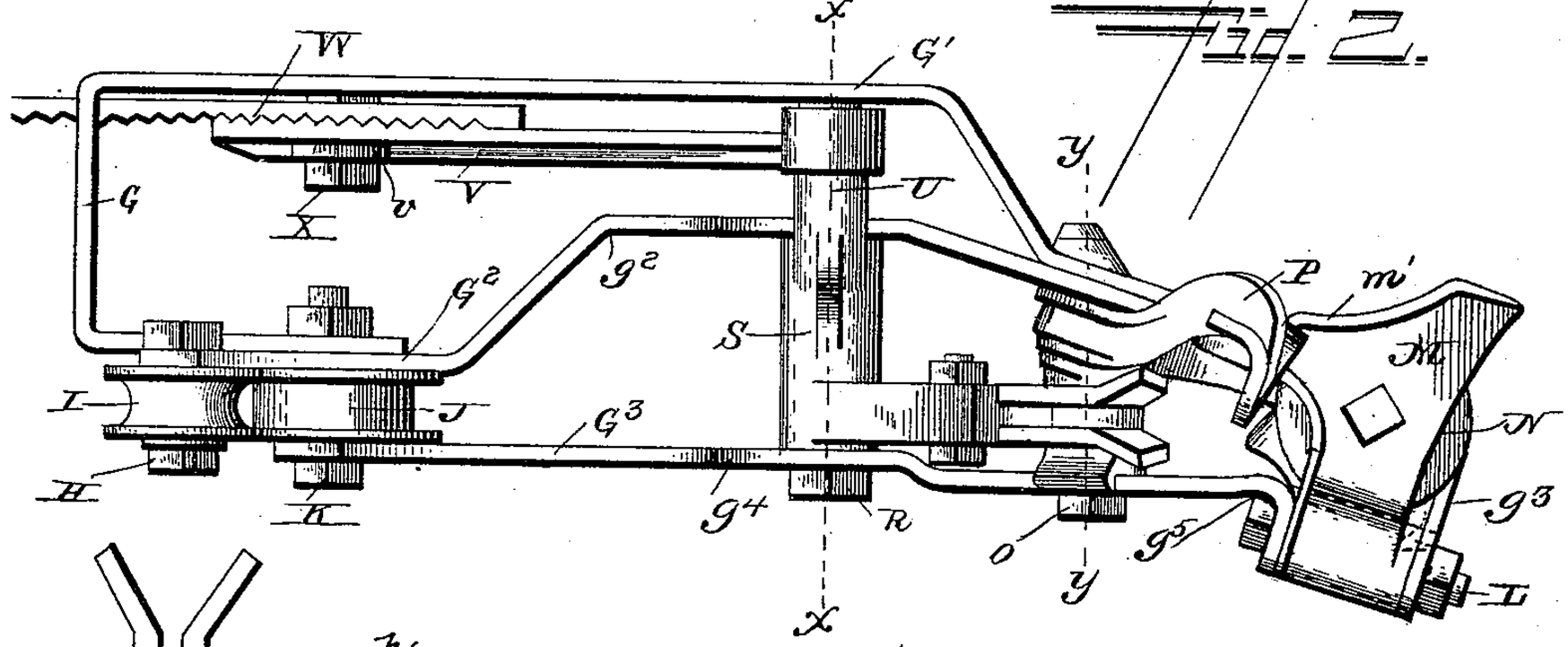

Fig. 3.

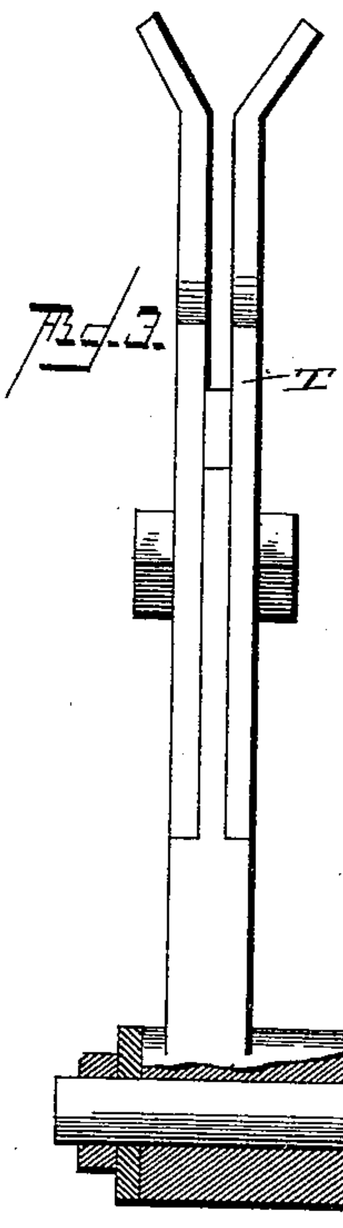

Fig. 5.

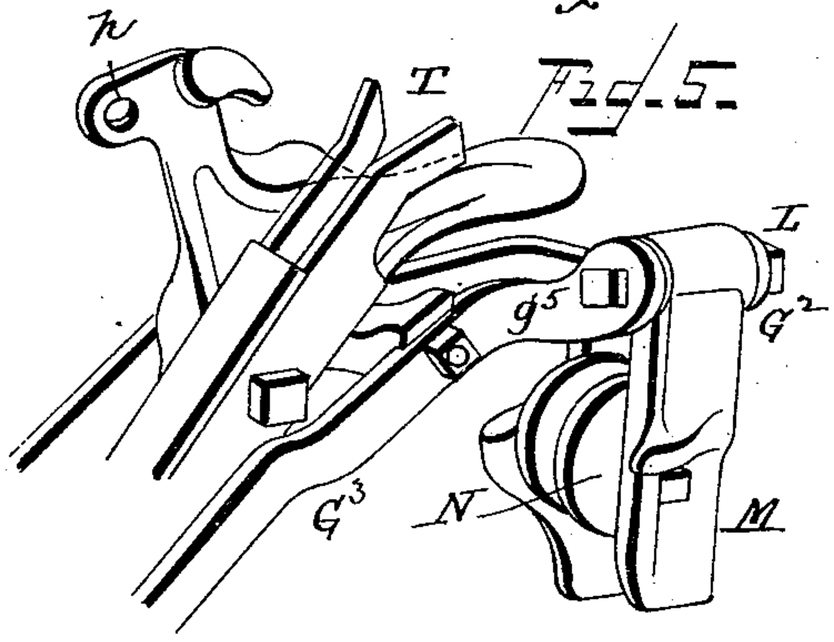

Fig. 4.

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UNITED STATES PATENT OFFICE.

NILS O. STARKS, OF MADISON, WISCONSIN.

CHECK-ROW CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 437,633, dated September 30, 1890.

Application filed May 6, 1890. Serial No. 350,770. (No model.)

To all whom it may concern:

Be it known that I, NILS O. STARKS, a citizen of the United States, and a resident of Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Check-Row Corn-Planters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to improvements in check-row corn-planters, and more particularly in certain improvements upon the check-rower attachment used in connection with the corn-planter described in Letters Patent of the United States issued to me under date of May 28, 1889, and numbered 404,318.

Heretofore in check-row corn-planters it has been found difficult to provide a construction whereby the knotted wire is thrown out of engagement with the slotted lever or fork for the purpose of avoiding the necessity of the driver alighting from the machine at the end of the row until after the said machine is turned.

It is one of the objects of my invention to accomplish the above-mentioned desirable end in a simple and efficient manner; and with this object and others in view the invention consists in the improved construction and combination of parts, as hereinafter more fully pointed out and explained.

Referring to the drawings, Figure 1 is a perspective view of a portion of a planter of the pattern described by me in Letters Patent No. 404,318, showing my attachment applied thereto. Fig. 2 is a plan view of the check-rower detached from the machine, showing in full lines the forward sheave or roller occupying its normal position, and in dotted lines the same part occupying a perpendicular position. Fig. 3 is a cross-sectional view on the line x x, Fig. 2. Fig. 4 is a detail view; and Fig. 5 is a cross-section on the line y y, Fig. 2. Fig. 6 is a detail view of the device for doffing the knotted cord, showing the same open.

Like letters of reference refer to like parts throughout the several views.

In the accompanying drawings, the letter A indicates the frame or body of a corn-planter embodying my improvement, and B the seed receptacle or hopper thereof. The cross-beam C of this frame has projecting rearwardly therefrom a bracket D, which, together with a similar bracket upon the opposite side, (not shown in the drawings,) afford bearings for a transverse shaft E. This transverse shaft is also provided with end bearings F, which form means of connection with the check-rower, as will hereinafter more fully appear.

The letter G indicates the frame of the check-rower attachment, said frame consisting of three pieces or arms G′, G², and G³, formed and connected in the manner clearly indicated in the detail view of the drawings. The arm G′ is provided with a series of bolt-holes, forming means for attachment to the seed-hopper, while its rear end is bent into angular form, as indicated at g'. The arm G² at its upper rear end has extending therefrom a lateral bolt H, upon which is mounted a roller or sheave I. This arm G² from its upper rear end is inclined downwardly to the point g^2, and from thence it is inclined upwardly, the extreme upper end of this latter portion being bent into angular form, as indicated at g^3. The arm G³ has journaled between its upper rear end and the rear portion of the piece G² a roller or sheave J, said roller being mounted upon a transverse shaft K. This arm G³ is then continued downwardly to the point g^4, from where it extends upwardly, the extreme upper end terminating in a bend at right angles, designated by the letter g^5 and corresponding to the bend in the arm G². Between these two corresponding ends of the arms is passed a shaft or bolt L, upon which is loosely mounted a bifurcated bracket M, said bracket carrying a roller N. The lower arm of the bifurcated portion is also provided with a downwardly-projecting lug m.

Slightly to the rear of the bracket just referred to is a transverse shaft O, passing through and between the arms G² and G³ and connecting the end of arm G′ therewith. Upon this shaft is loosely mounted an arm or pawl P, provided upon its upper end with a perforation p, and at its lower side with a forwardly-projecting lug p', which is adapted to bear against the downwardly-projecting lug

m of the bracket and force the latter from its normal horizontal position to a perpendicular position. This is effected through the medium of a cord Q or equivalent secured at one end to the perforation *p* of the arm and extending rearwardly to the main frame of the device.

It will also be seen that the pawl P is provided at its upper end with a shoulder or lug p^3, which is adapted to engage the raised rim *m'* of the bracket, and thus lock said bracket in its horizontal position.

Slightly to the rear of shaft O is still another shaft R, which is free to turn in its bearings in the two arms, and has mounted thereon a sleeve S, which has extending upwardly therefrom a bifurcated or forked lever T, while its inner end is formed into a crank U, said crank having mounted thereon a serrated arm V, provided upon its rear end with a perforation *v*.

The letter W indicates an arm, which is formed at its rear end into a link *w*, adapted to be secured to the end bearing F of the rock-shaft, while its forward end is formed into an elongated slot *w'*, having the face thereof, which is contiguous to the serrated arm V, also provided with serrations, which mesh with those of the adjacent arm. The two arms are secured together by means of a bolt X, which passes through the perforation of arm V and through the elongated slot of arm W. It will thus be seen that the leverage of the latter arm may be readily adjusted simply by loosening the nut which retains the bolt rigid and moving arm W either forward or rearward, as needs be.

The usual knotted wire or rope which is stretched across the field to be planted first engages the forward roller or sheave N, then passes between the forked ends of the lever T, and then finally passes between the rear rollers I and J. When the knot upon the wire or rope engages the forked lever, it will draw it rearward, as will be readily understood. The motion thus imparted to the forked lever by the knotted wire or rope will be transmitted to the rock-shaft through the medium of the mechanism already described, and when my check-rowing device is used in connection with a corn-planter similar to that described by me in Letters Patent No. 404,318, before mentioned, it will operate the seed-slide and other parts, as therein set forth.

A spring X, having one end secured to the end bearing F of the rock-shaft E and the other end secured to a bracket A', projecting from the seed-hopper, serves to return said shaft to its normal position after having been partly rotated by the knotted wire or rope.

While I have described my check-rowing device as particularly applicable to corn-planters of the kind described by me in Letters Patent No. 404,318, still I do not wish to be understood as confining myself to that adaptation, as it is obvious that it can be employed in connection with any corn-planter or like implement using a rock-shaft substantially similar to that shown herein.

The cord secured to the upper perforation of arm P is extended rearwardly, as previously stated, to the foot-lever for pressing the furrow-openers of the planter into the ground. When the end of a row has been reached, the runner-frame of the planters is raised out of the ground by a hand-lever, and the arm P is pulled back (one of said arms, as is of course understood, being on each side of the machine and operated in the same way) until a lateral stop p^2 thereof engages the edge of arm G^2, the arm P, it may be here stated, being provided with two of the lateral lugs, one for limiting its rear movements and the other for limiting its forward movement. After the arm is pulled back, as just described, the strings are secured tightly. This will throw the wire out of the fork as the bracket M, by the backward movement of the arm, is forced from its horizontal position to a perpendicular. In this manner the necessity of the driver alighting from the machine at the ends of the rows is avoided until after he has turned the same around.

From the foregoing description the operation, construction, and advantages of my invention will be readily understood without requiring any further description.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a check-row corn-planter, the combination, with a main frame, of a supplemental frame secured thereto, an end shaft mounted thereon, a bifurcated bracket upon said shaft turning loosely thereon and carrying in its bifurcated portion a roller or sheave, a loosely-mounted shaft to the rear of the forward shaft, said shaft carrying a forked lever or arm, a knotted wire passing over the roller or sheave and through the bifurcated lever, a rigid shaft intermediate the forward and rear shafts, an arm or pawl loosely mounted thereon, said arm or pawl provided with a downwardly and forwardly extending lug adapted to engage a projection upon the bifurcated bracket, and a cord secured to the upper end of the arm or pawl for operating the same, substantially as set forth.

2. In a check-row corn-planter, the combination, with a main frame, of a supplemental frame secured thereto, an end shaft having bearings therein, a bifurcated bracket upon said shaft turning loosely thereon, provided with a downwardly-projecting lug and carrying in its bifurcated portion a roller or sheave, a loosely-mounted shaft to the rear of the forward shaft, said shaft carrying a forked lever or arm, a knotted wire passing over the roller or sheave and through the bifurcated lever, a rigid shaft intermediate the forward and rear shafts, an arm or pawl loosely mounted thereon, said arm or pawl provided with a lug having formed integrally therewith stops to engage one of the arms forming the

supplemental frame so as to limit the forward and rearward movement of the arm or pawl, and a cord secured to the upper end of said arm or pawl, substantially as set forth.

3. In a check-row corn-planter, the combination of a main frame, of an inner arm secured thereto at an incline, the rear end of said arm being bent into rectangular form and the forward end bent at right angles, a central arm having its upper rear end provided with a lateral bolt upon which is mounted a roller or sheave, said arm being inclined from this point downwardly and then upwardly, the forward end being bent at right angles, an outer arm inclined downwardly from its rear end and then upwardly, terminating at its forward end in an angular bend, a transverse bolt passing through the rear end of this arm and through the central and inner arms, a roller or sheave mounted thereon, a longitudinal rigid shaft having bearings in the angular forward ends of the outer and central arms, a loosely-mounted bifurcated bracket upon said shaft, said bracket carrying a roller or sheave, a rear shaft having bearings in the outer and central arms, a sleeve turning loosely upon said shaft and carrying a bifurcated or forked lever, a shaft intermediate the forward and rear shafts and connecting the outer and central arms with the forward angular end of the inner arm, an arm or pawl loosely mounted thereon and adapted to engage the bifurcated bracket, a cord for operating said arm or pawl, and a knotted wire passing over the forward roller and between the rear rollers or sheaves, substantially as set forth.

4. In a check-row corn-planter, the combination of a main frame, a transverse shaft having bearings therein, said shaft being also provided with suitable end bearings, a supplemental frame secured to the main frame, said frame having mounted therein rear rollers or sheaves, a shaft having bearings in the forward portion of the supplemental frame, a bifurcated bracket mounted loosely upon said shaft and carrying a roller or sheave, a rear shaft having bearings in the supplemental frame, a sleeve mounted loosely thereon and provided with a forked or bifurcated lever and with an end crank, an arm secured to said crank provided with an end perforation and with an inner serrated face, an arm having its rear end formed into a link adapted to engage the bearing of the rock-shaft and having its forward end provided with an elongated slot and its inner face serrated, a pin or bolt for securing the two arms adjustably together, a knotted wire passing over the forward roller of the bifurcated bracket, through the bifurcated or forked lever, and between the rear rollers, and means for throwing the forward bracket from its normal horizontal position to a perpendicular position, substantially as set forth.

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

NILS O. STARKS.

Witnesses:
J. H. NICHOLS,
A. E. PROUDFIT.