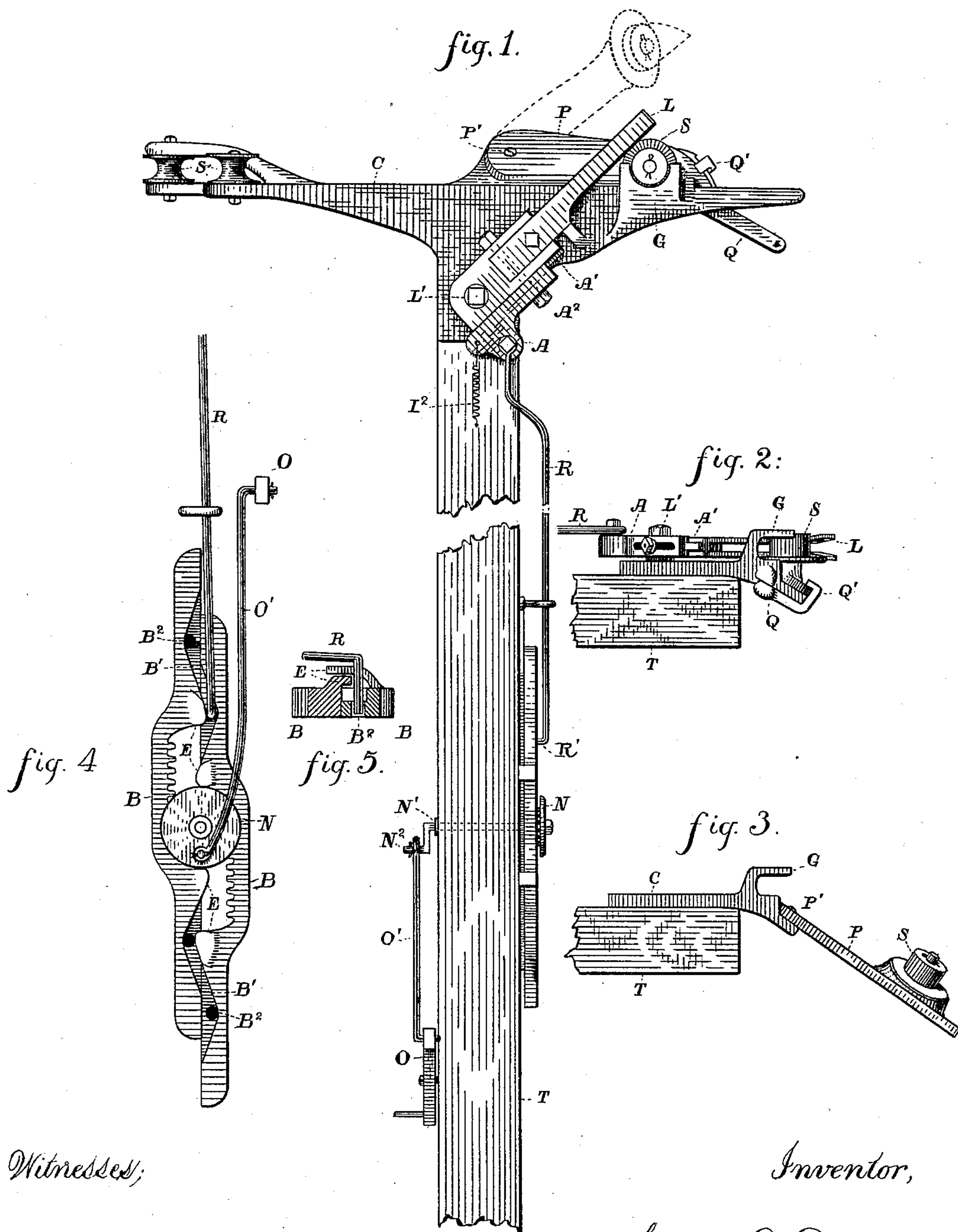


(No Model.)

L. D. BENNER.
CHECK ROWER FOR CORN PLANTERS.

No. 321,943.

Patented July 14, 1885.



Witnesses;

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UNITED STATES PATENT OFFICE

LORENZO D. BENNER, OF PEORIA, ILLINOIS.

CHECK-ROWER FOR CORN-PLANTERS.

SPECIFICATION forming part of Letters Patent No. 321,943, dated July 14, 1885.

Application filed February 10, 1885. (No model.)

To all whom it may concern:

Be it known that I, LORENZO D. BENNER, of Peoria, in the county of Peoria, in the State of Illinois, have invented certain new and useful Improvements in Check-Rowers for Corn-Planters; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawings, making a part of this specification, in which like letters of reference refer to like parts, and in which—

Figure 1 represents a plan view of one end and the center of the check-rower; Fig. 2, a side elevation of the end of the same; Fig. 3, a similar view to that of Fig. 2, but with the swinging arm released; Fig. 4, a view of the central portion of the check-rower; Fig. 5, a cross-section.

The object of this invention is the effecting of improvements in the bifurcated lever, in the throwing-off mechanism, and in the center movement.

My improvement is in the bifurcated lever, which is of the kind adapted to be intermittently oscillated by the action of the knotted wire and to swing horizontally, and is for the purpose of enabling the adjustment in position of the pivotal connection to the said lever of the connecting-rod which communicates the motion of said lever to the center movement. To permit this adjustment the said pivotal connection is made on an arm arranged to be moved longitudinally with respect to the bifurcated lever.

My improvement upon wire-throwing-off mechanisms is of that kind in which the wire-holding sheave is mounted upon an angularly-pivoted plate, and relates to means whereby a single-flanged pulley or sheave can be used.

My last improvement is upon center movements of that kind in which two rack-bars oppositely reciprocative by means of an intermeshing pinion have bent channels at each end, in which a hooked rod travels, and engages alternately with first one and then with the other of said rack-bars.

In the drawings, T represents the transverse beam usually secured just above the seed-boxes of the corn-planter, and C is the cross-head, having sheaves S for guiding the knot-

ted wire. Two of said cross-heads are employed—one at each end of the beam T; but as they are alike, I only show and describe one of them.

L is the bifurcated lever, which is oscillated by the action of the knots of the wire and the retroaction of the spring L^2 , said lever being pivoted to the cross-head C at L' . The center movement consists of the rack-bars B, pinion N intermeshing with said rack-bars. B' are the bent channels in which the bent end of the connecting-rod R travels.

To have the arm A joined adjustably to the lever L, I elongate the former in the direction of the length of said lever forming the elbow A' . The contiguous surfaces of said elbow and lever being tongued and grooved, and a clamping-bolt passed through the lever and the slot A^2 in said elbow, the desired adjustment is readily effected. It will be noticed that when the pivotal point of the arm A is moved nearer the free end of the lever L, said point will be, when the lever is given its quarter-turn by the knotted wire, in line with the pivotal point L' of the lever L and the center line of the transverse beam T. By this particular adjustment the center movement is given a somewhat sudden start, but a more gradual termination. By securing the arm A' at a point of adjustment opposite to that previously described, the lever L is made to give a more gradual start and a more sudden termination to the stroke of the center movement. Not only do I secure this advantage in making the arm A movable, but the stroke of said arm is made longer or shorter, according to the place of its pivotal point. In case, also, that the rod R should happen to be made too long or too short to rightly engage with the center-movement bars B, said adjustment of its stroke enables such defect to be overcome.

In my improved throwing-off mechanism, P is the plate, pivoted at P' to the cross-head C, and provided with the single-flanged pulley or sheave S. The pivotal axis of this plate P is inclined, so that when it swings down away from the cross-head C said plate is in the position indicated in Fig. 3. There being no flange at the upper edge of the sheave S,

a wire placed thereon at once slips off. To retain the wire in place when this plate and sheave are up in position, I provide the centrally-notched lug G, adapted to partially surround the upper or flangeless edge of the sheave S. Said lug G may be formed as an integral part of the cross-head C, or may be a separate piece attached thereto. As shown in Fig. 2, this lug G prevents the knotted wire from escaping from the sheave S so long as said sheave is held in place thereat; but upon the displacement thereof the wire at once slips off.

The plate P is fastened up by means of the lever Q, pivoted to the cross-head, and having the lip Q' arranged to drop the end of said plate when the said lever is swung around in line with the cross-head. On pulling said lever in the opposite direction, by a cord running therefrom to the driver or otherwise, the lip Q' leaves the plate P and permits it to drop outwardly.

In my center movement the rack-bars B and their intermeshing pinion N are secured upon a lateral face of the transverse beam T, instead of upon the upper side thereof. The shaft N' of the pinion N has said shaft rigidly fastened to it at one end, and at the opposite end is formed into a crank-arm, N². From this crank extends the pitman O' to the lever O, which operates the seeding device of the planter. The advantage which I gain from this arrangement of my center movement is, that the paths of both the crank-arm N² and the lever O are in the same plane, and there is therefore not so much destructive wear upon all the moving parts.

The bottoms of the bent channels B' are, as shown in previous patents of mine, made undulating, the crests being at the sides of the holes B² farthest from the pinion N, while at the sides toward said pinion the bottoms are slightly lower than the end of the hook R' of the rod R. When, therefore, the rod R is pushed toward the pinion N, its hook R' slides up the sloping bottom of the channels until it drops into the hole B². Pulled in the opposite direction, the hook R' rests against the elevated side of the hole B², and moves the rack-bar B therewith. Instead of dropping into a hole, B², when the hook R' is pushed thereto, said hook is liable to rest upon the narrow neck at the side thereof. To prevent this I have provided the ears E, projecting from the edges of the rack-bars, as shown in Figs. 4 and 5. By means of these projecting ears the said narrow necks are so covered as to prevent said hooks from resting thereon, and the latter are made to drop directly into the holes B² when brought thereto.

As shown in Fig. 1, the rack-bars and their intermeshing pinion are secured to a lateral face of the transverse beam T, and the pitman-rod O' is joined to a crank-arm formed at the end of an axis extending from said pinion; but the way in which I most commonly

arrange said parts is to place them upon the upper side of said beam and join the pitman O' to a crank-pin on the face of the pinion, as shown in Fig. 4. The other end of said pitman is connected to the feed-slide-operating lever O.

What I claim as my invention, and for which I desire Letters Patent, is as follows, to wit:

1. In combination with the bifurcated lever of a check-rower and the connecting-rod which transmits the strokes of said lever to the center movement, means whereby the pivotal connection of said rod to said lever may be adjusted relative to the lever, for the purposes set forth.

2. In a check-rower, the combination, with the bifurcated lever, of the arm adjustably secured to said lever by means of a clamping-bolt passing through a slot in a projection of said arm, substantially as and for the purpose specified.

3. In a check-rower, the arm A, having the slotted elbow A' and a groove in a lateral face thereof, and the bifurcated lever L, having a tongue adapted to fit in said groove, in combination with the bolt A², for clamping said arm and lever together, as and for the purpose set forth.

4. In a throwing-off mechanism for check-rowers, the cross-head having the notched lug G projecting from the upper edge thereof, in combination with the plate P, pivoted to said cross-head in an oblique plane, the single-flanged sheave S, carried by said plate, and adapted to have its flangeless edge enter the notch of said lug when said plate is locked to the cross-head, and means, substantially as set forth, for locking said plate to the cross-head, as and for the purpose specified.

5. The herein-described means for guiding the hooked ends of the rods R into the holes B² in the bent channels B' of the parallel bars, adapted to be oppositely reciprocated, such means consisting of the ears E, projecting from the contiguous faces of said bars, as set forth.

6. In a check-rower, the parallel rack-bars having the channels B' therein and hooked rods connected to the lever-arms and entering said channels, in combination with the pinion meshing with said rack-bars and provided with a pitman engaging with the seeding device, substantially as and for the purpose described.

7. In a check-rower, the rack-bars B, having the ears E and the channels B', in which are the holes B², in combination with the hooked rods R, connected to the lever-arms, and adapted to have their hooks enter said holes in said channels, and the pinion N, meshing with both of said rack-bars, and having a pitman, O', connecting it to the feed-slide-operating lever O, as set forth.

8. In a check-rower, the rack-bars B, having the bent channels B' therein, the holes B², and ears E, in combination with the hooked

rods R, connected to the lever-arms and adapted to engage with the said channels, the pinion N, meshing with both of said rack-bars, and having a pitman, O', connecting it to the
5 feed-slide-operating lever O, substantially as and for the purpose herein described.

In testimony that I claim the foregoing in-

vention I have hereunto set my hand this 7th day of February, 1885.

LORENZO D. BENNER.

Witnesses:

A. B. UPHAM,
HENRY W. WELLS.