(No Model.) 3 Sheets—Sheet 1.

# W. L. BEALL.

## CHECK ROW PLANTER.

No. 588,313. Patented Aug. 17, 1897.

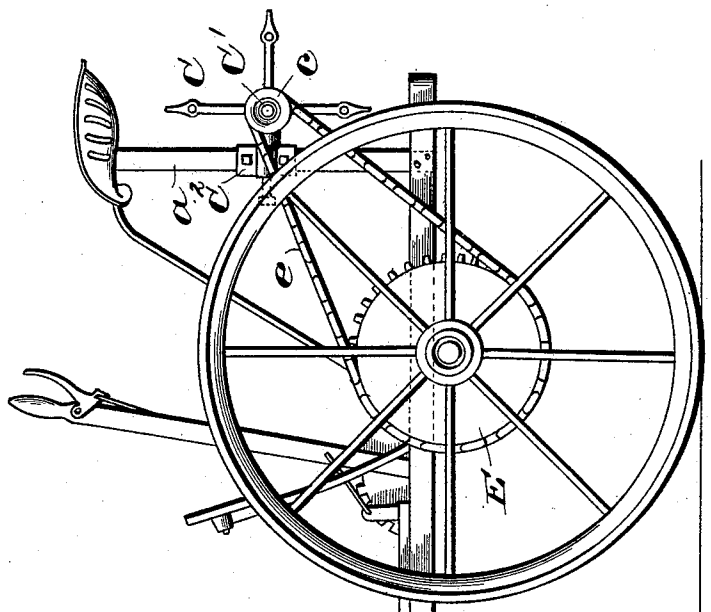



Fig. 1.

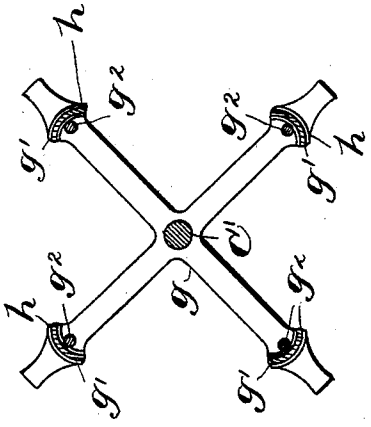



Fig. 7.




Fig. 2.

Witnesses—

G. A. Pauberschmidt.

J. D. Kingsbury

Inventor—

William L. Beall

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Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 2.

# W. L. BEALL.

## CHECK ROW PLANTER.

No. 588,313. Patented Aug. 17, 1897.

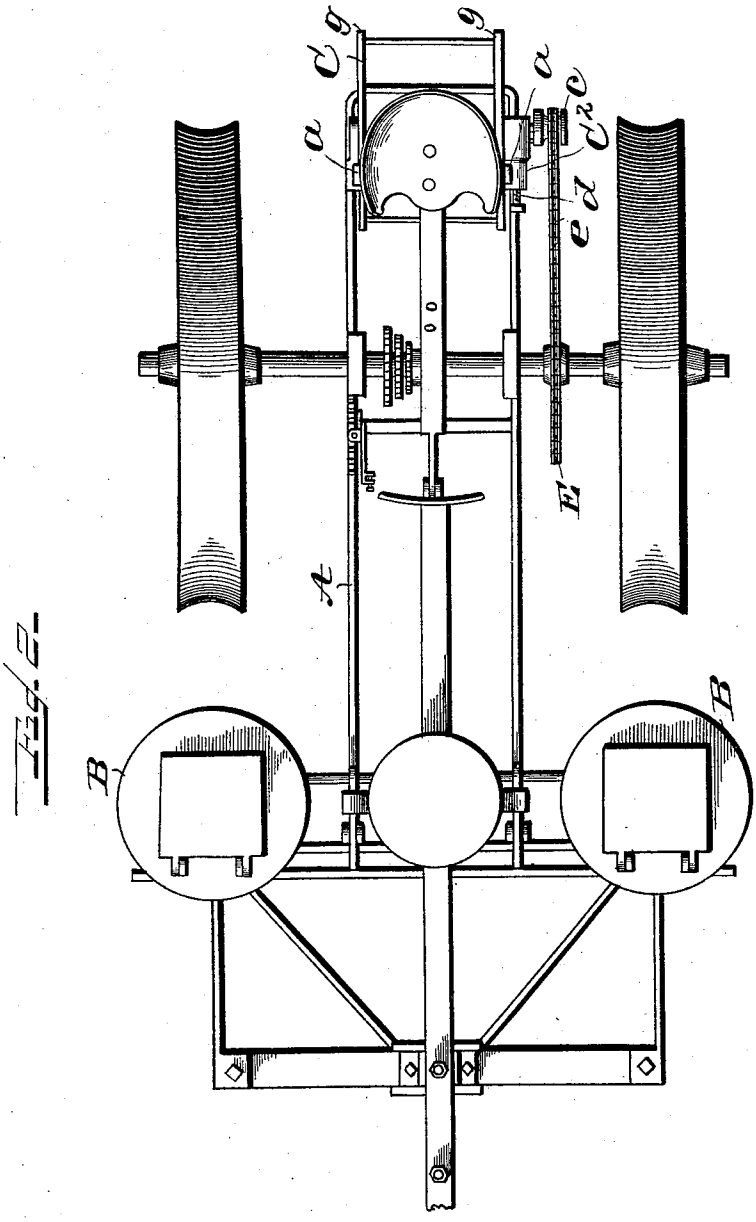



Fig. 2.

Witnesses—

G. A. Vanderschmidt,

J. D. Montgomery

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William L. Beall

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 3 Sheets—Sheet 3

# W. L. BEALL.

## CHECK ROW PLANTER.

No. 588,313. Patented Aug. 17, 1897.

Fig. 3.

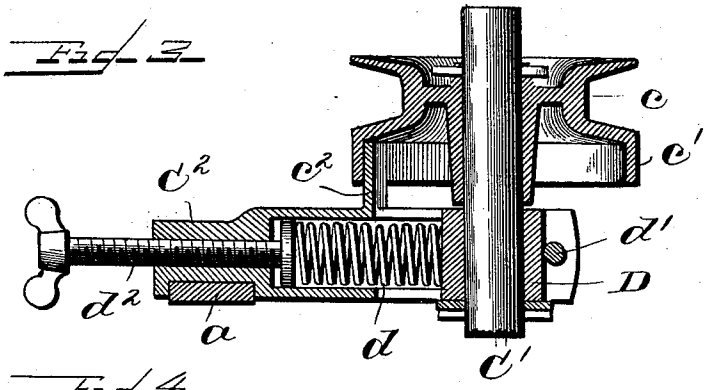



Fig. 4.

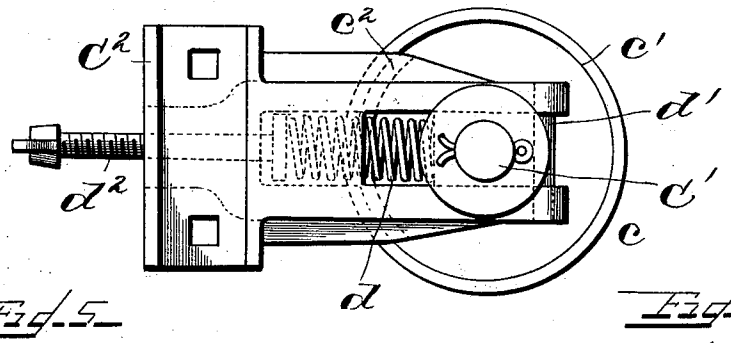



Fig. 5.

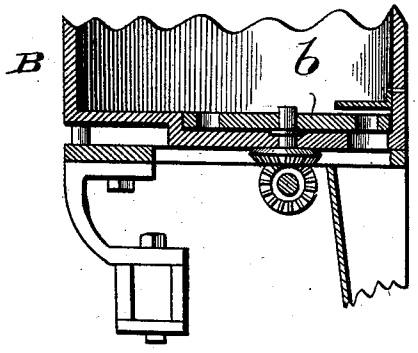
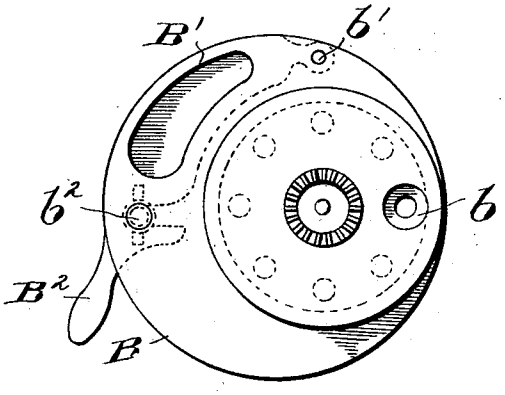



Fig. 6.




Witnesses.

G. A. Rauberschmidt,
J. D. Kingsbury

Inventor.

William L. Beall
By Whittaker & Prost
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

WILLIAM LESLIE BEALL, OF ALBION, MICHIGAN, ASSIGNOR TO THE GALE MANUFACTURING COMPANY, OF SAME PLACE.

## CHECK-ROW PLANTER.

SPECIFICATION forming part of Letters Patent No. 588,313, dated August 17, 1897.

Application filed May 19, 1897. Serial No. 637,269. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LESLIE BEALL, a citizen of the United States, residing at Albion, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Check-Row Planters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention is an improvement in planters; and it consists in certain improved constructions and combinations of parts which render it more desirable for use and effective in operation.

The best form in which I have contemplated embodying my invention is illustrated in the accompanying drawings and is disclosed in the following description and claims.

In the drawings, Figure 1 is a side elevation of the main portions of a planter having my improvements attached thereto. Fig. 2 is a plan view of the same. Fig. 3 is a view of the friction retarding device for the reel. Fig. 4 is an end view of the same. Fig. 5 is a vertical sectional view of the seedbox, and Fig. 6 is a bottom view of the same. Fig. 7 is a sectional view showing my method of constructing the reel itself. Fig. 8 is a longitudinal section of the outer end of one of the arms of the spider *g*.

In the figures, A is the main frame, which is supported on wheels in the usual manner. This frame extends to the rear of the wheels and axle and sustains two standards *a a*, which support reel C for carrying the knotted cord or wire used with check-row planters. The bearing at one end of the reel-shaft C′ is of any ordinary or suitable description, while the bearing at the other end is of a peculiar construction, constituting, with the means for driving the reel, one of the features of my present invention. To the standard *a* at one side of the machine is secured a short bracket $C^2$. The outer end of this bracket is slotted, as most clearly shown in Fig. 4. From said slot the bracket is recessed inwardly, so as to receive the inner end of a spring *d*. The outer end of this spring bears against the bearing-block D, located in the slot of the bracket and held from escaping therefrom by the pin *d′*. In the inner end of the said bracket is mounted the screw $d^2$, having a broad head bearing against the inner end of the spring *d*.

On shaft C′ is mounted the grooved pulley *c*, which is provided with the annular flange *c′*. This flange extends over the projection $c^2$, extending toward the pulley from the bracket $C^2$, as shown in Fig. 3 in full lines and in dotted lines in Fig. 4. A sprocket-chain *e* extends from a sprocket-wheel E on the axle of the machine over the pulley *c* and serves to drive the reel.

When winding up the cord or wire on the reel, it will be seen that as the cord or wire accumulates on the reel it will be taken up faster than when the reel is empty. The driving mechanism is always given sufficient speed to take up the cord or wire as fast as desired when the reel is empty. It is therefore desirable that there shall be provision for a little slip or lost motion in the means for driving the reel.

In my construction, as the size of the mass on the reel is increased, the grooved pulley permits the sprocket-chain to slip, so that the movement of the reel accommodates itself to the condition of the winding, while maintaining a draw or strain on the cord or wire.

When the cord or wire is to be laid across a field from the reel, the sprocket-chain is slipped from the pulley *c*, as the mechanism for driving the reel would, if allowed to operate upon it, turn the same in the wrong direction. If, however, the reel were allowed to run freely under the tension of the cord or wire, the momentum given the reel would occasion great annoyance. This is prevented by the friction between the flange *c′* and the projection $c^2$. The draw of the sprocket-chain when upon the pulley ordinarily keeps these parts separated, but when the chain is removed the spring brings them into contact and the amount of friction required can be regulated by the screw $d^2$.

The yielding bearing D serves to prevent breakage in case the chain should ride up on one or more of the projections of the sprocket-wheel and at all times the spring $d$ serves to keep the sprocket-chain taut.

It is desirable that the reel should be light as well as strong. It is also desirable that the surfaces which are engaged by the wire or cord should be broad and curved somewhat to prevent sharp bends in the cord or wire when wound upon the reel. To accomplish these results, I construct the reel as best shown in Fig. 7 of the drawings. The reel consists of the shaft C′, the end pieces or spiders $g$ $g$, the bars $g'$ $g'$, and the rods $g^2$ $g^2$. The arms of the end pieces $g$ $g$ are each provided with a curved groove or shoulder $h$ $h$, curved as shown in Fig. 7, and the bars $g'$ are made of sheet metal and curved as shown. These bars are inserted in the grooves or upon the shoulders $h$ and the rods $g^2$ inserted and drawn tightly by nuts upon one or both ends, rigidly securing the parts of the reel together. The rods $g^2$ are immediately beneath the bars $g'$ and in case of any yielding of the bars they come in contact with the rods $g^2$ and both bear the strain. This construction secures a cheap and exceedingly light reel.

In rotary-disk planters each planter is provided with several disks, each having apertures differing in size and number to correspond to the grain and work it is desired to do. In changing the disks after removing the one previously used much annoyance is experienced in getting all of the grain out of the hopper in which it revolves in order to place therein the one desired for immediate work. In order to facilitate the changing of these disks, I provide my grain box or hopper with a removable section or door, by means of which the grain can be readily removed therefrom.

In the drawings, B is the hopper or seed-box, and $b$ the disk. The bottom of this hopper is provided at one side with an opening B′.

$B^2$ is a plate pivoted at $b'$. This plate has a notch or open slot to engage a securing-bolt $b^2$, which is provided with a winged nut. When the plate is placed over the opening B′, the nut is turned tightly against it to hold it in position. When it is desired to remove seed or grain, the nut is loosened, and the plate turned outward, permitting the grain to flow downwardly through the opening B′.

What I claim, and desire to secure by Letters Patent, is—

1. In a check-row planter the combination with a reel, of a grooved pulley secured to the shaft of the same, a sprocket-wheel, and a sprocket-chain engaging said sprocket-wheel and grooved pulley, whereby provision is made for slip between the reel and its driving mechanism, substantially as described.

2. In a check-row planter the combination with a reel, of a grooved pulley secured to the shaft of the same, a sprocket-wheel and a sprocket-chain engaging the sprocket-wheel and grooved pulley, a friction device engaging said pulley to retard the movement of the same, substantially as described.

3. In a check-row planter, the combination with a reel having one end of its shaft mounted in a movable bearing, a spring engaging said bearing, and means for increasing or decreasing the pressure of the spring upon said bearing, a pulley on the reel-shaft provided with a flange and a fixed projection extending into close proximity to said flange, substantially as described.

4. In a check-row planter, the combination with a reel having one end of its shaft mounted in a movable bearing, a spring engaging said bearing and means for increasing and decreasing the pressure of the spring on the said bearing, a pulley on the reel-shaft provided with a friction-flange, a support for the movable shaft-bearing having a projection extending into close proximity to said flange, substantially as described.

5. In a planter, a seedbox having a rotary disk for delivering seed therefrom, said box being provided with a movable plate, controlling means for discharging seed from said box, substantially as described.

6. In a planter, a seedbox having a rotary disk for delivering seed therefrom, said seed-box having an aperture leading from said box, and a movable plate for closing said opening, substantially as described.

7. In a planter, the combination with the reel, of a yielding bearing for one end of the reel-shaft, a grooved pulley mounted on said reel-shaft, a sprocket-wheel and a chain engaging the sprocket-wheel and pulley, substantially as described.

8. A reel composed of the two spiders or ends, the curved bars engaging the arms and the securing-rods in close proximity to the concave side of said bars, substantially as described.

9. A reel composed of the two ends or spiders, the arms of which being provided with curved shoulders, curved bars engaging said shoulders and the securing-rods in close proximity to the concave side of said bars, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM LESLIE BEALL.

Witnesses:
M. D. WEEKS,
ROLLAND L. PARMETER.