

No. 713,212.

Patented Nov. 11, 1902

L. P. GRAHAM.
CORN PLANTER.

(Application filed July 29, 1902.)

(No Model.)

Fig. 3.

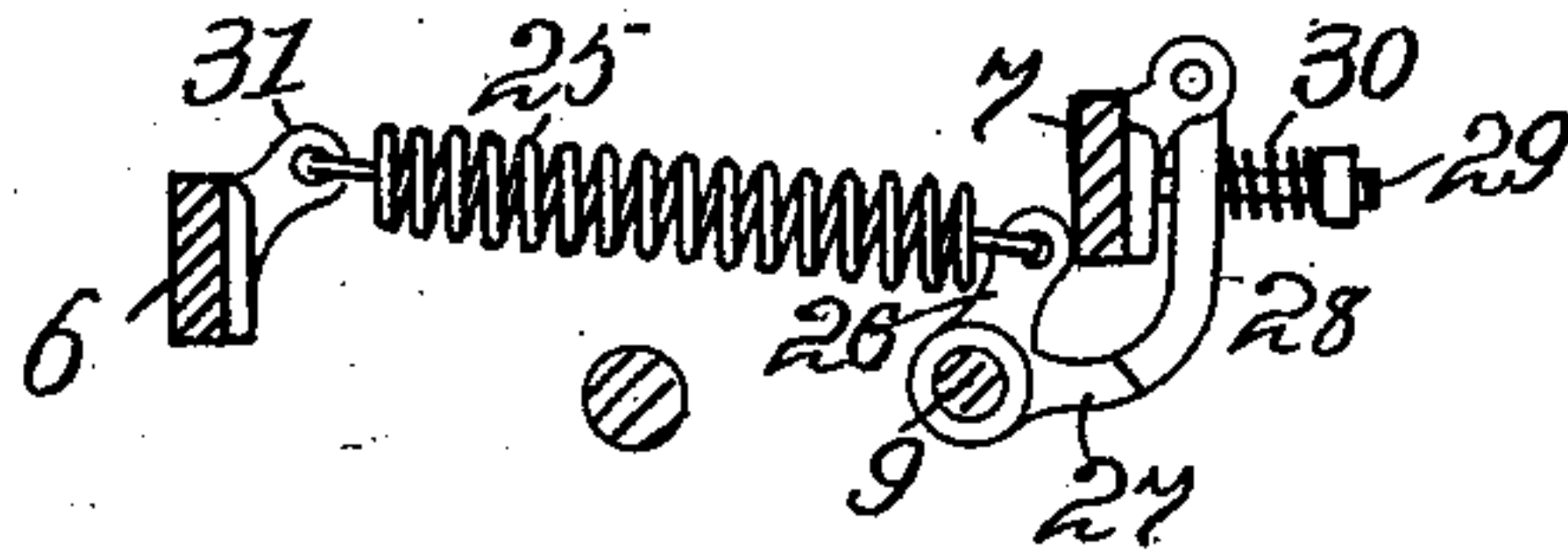


Fig. 4.

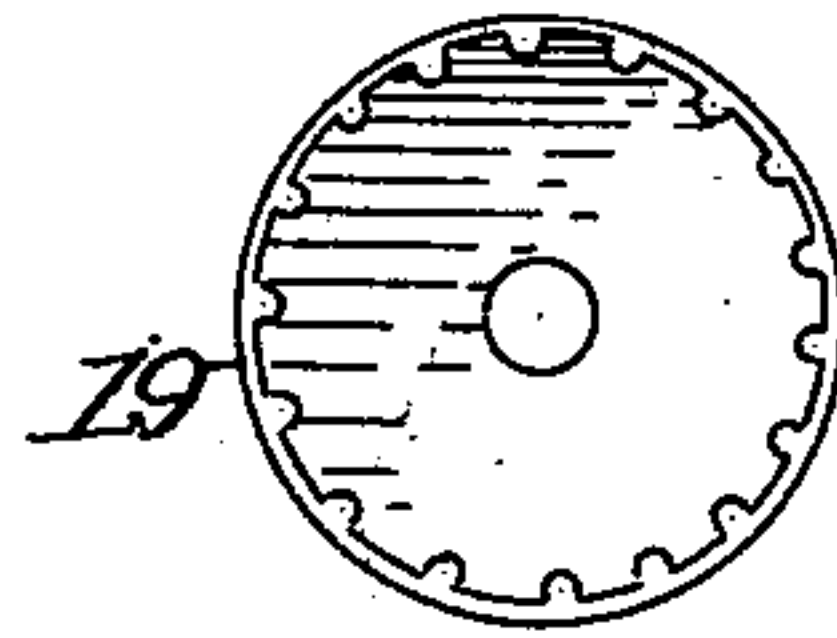


Fig. 2.

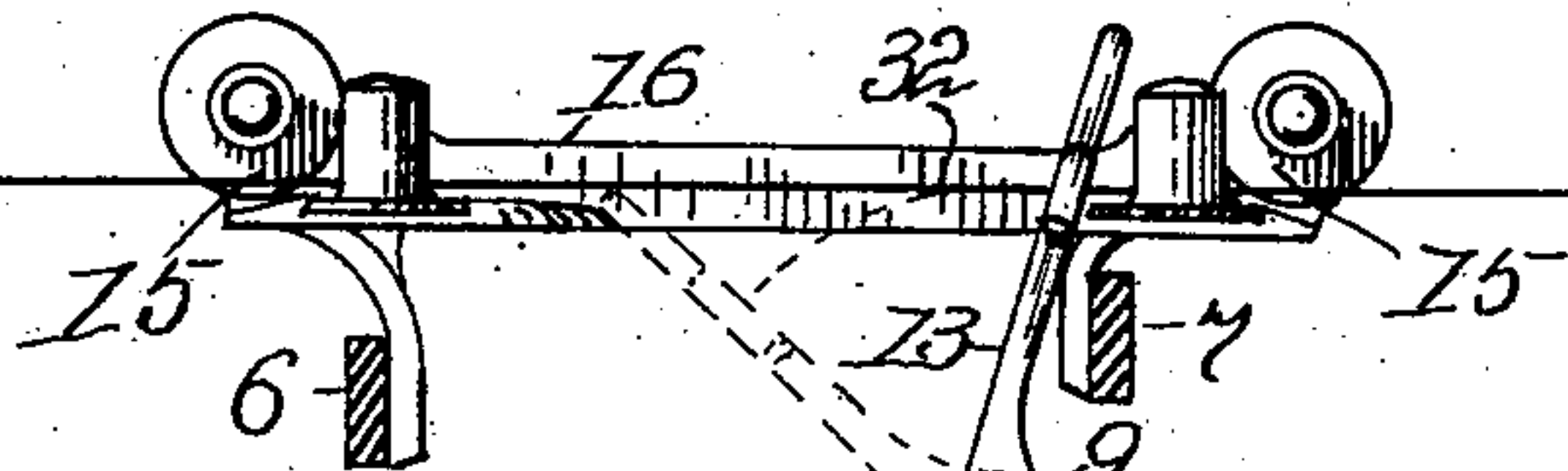
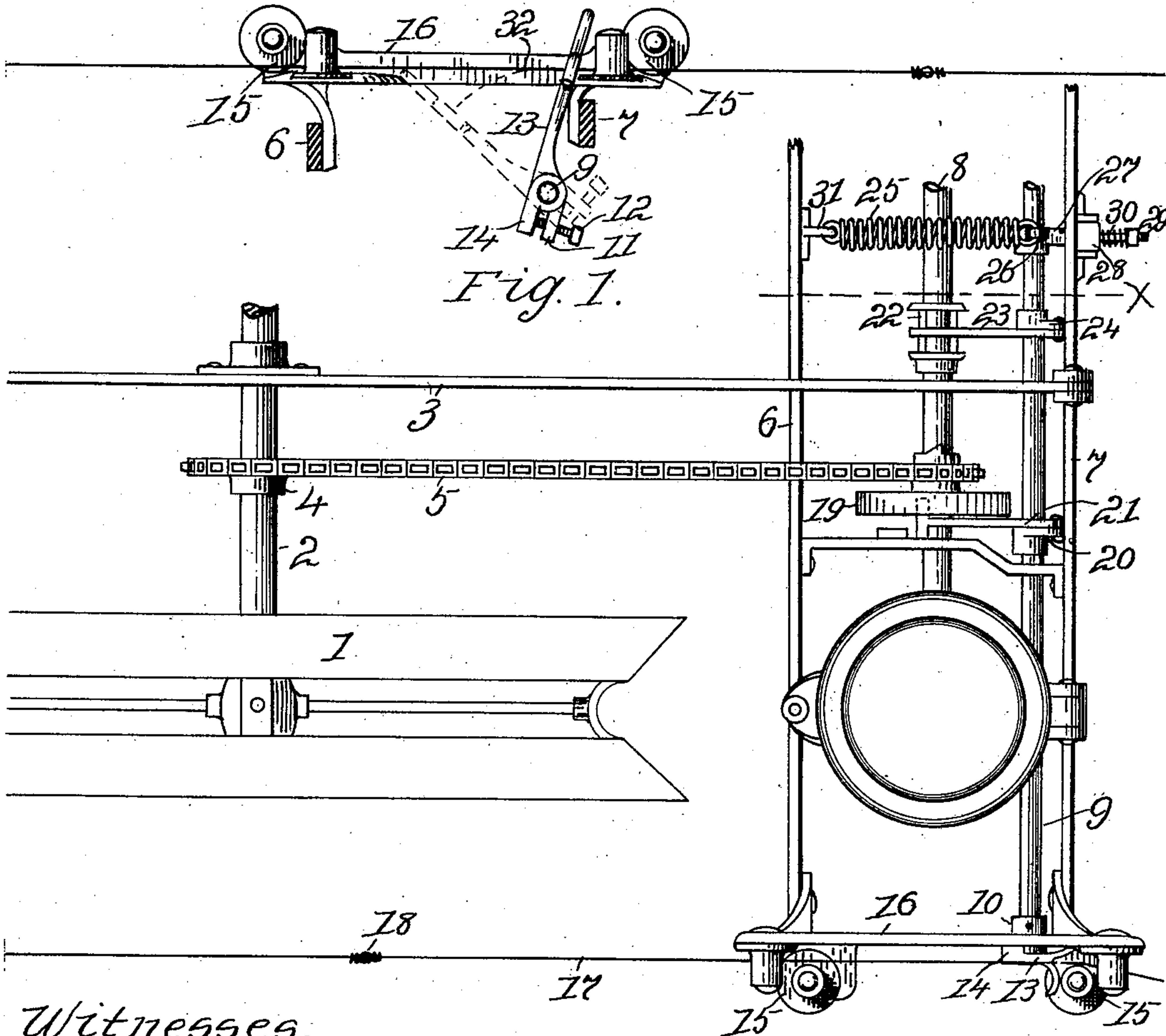


Fig. 1.



Witnesses:

Iona Graham
Nora Graham

Inventor.

Louis P. Graham

UNITED STATES PATENT OFFICE.

LEVI P. GRAHAM, OF DECATUR, ILLINOIS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 713,212, dated November 11, 1902.

Application filed July 28, 1902. Serial No. 117,377. (No model.)

To all whom it may concern:

Be it known that I, LEVI P. GRAHAM, of the city of Decatur, county of Macon, and State of Illinois, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification.

One object of this invention is to save the knots of the check-row wire and the forked levers of the check-row mechanism from the wear heretofore resulting from the knots slipping off the inclined forks of the levers.

Another object is to provide for adjusting the check-row mechanism with unusual accuracy, and still another object is to provide specific means for holding the check-row shaft rocked forward and to release the catch by the check-row wire.

The invention is exemplified in the structure hereinafter described, and it is defined in the appended claims.

The mode of actuating check-row shafts in common use for many years has been to rock the shaft backward by a knot on a check-row wire, to put a spring under tension by the backward rock of the shaft, and to give forward rock to the shaft by means of the stretched spring. This mode of operation demands that the forked lever shall extend across the path of the wire throughout the entire backward rock of the shaft, and the angle formed between the lever and the wire must be abrupt or obtuse enough to prevent the knots from slipping off the lever before the operative motion of the shaft is completed. As soon as the operative rock of the shaft is completed the knot must be forced to disengage the lever. The angle of the fork with the wire is hardly sufficient to permit the knot to slide. A jerk is required to compel the disengagement and the constant tendency is for the knots to wedge in the crotch of the fork and wear the forks detrimentally. If it is attempted to facilitate the disengagement of the knots from the forks, there is danger that the knots may slip clear of the lever before the operation of the rock-shaft is completed, and this danger must be avoided.

I overcome the difficulty above mentioned by forcing the check-row shaft forward by motion derived from the travel of the planter, by storing force to carry the shaft backward,

by catching the shaft at the termination of its forward rock, by releasing the catch by motion derived from the check-row wire, and by permitting the forked lever to swing clear of the path of the wire as soon as the catch is released. I use the beginning of the backward rock of the forked lever to disengage the catch that holds the rock-shaft. The force required to release the catch is very slight. The lever is approximately at right angles with the wire during the shaft-releasing action of the knot, so that the impact is applied as directly as possible to the work of disengaging the shaft, and as soon as the shaft is released the work of the knot is done and the lever swings out of the path of the knot.

In the drawings forming part of this specification, Figure 1 is a plan of so much of a planter as is needed to explain my invention. Fig. 2 is an end elevation of a check-row head. Fig. 3 is a section on line X in Fig. 1. Fig. 4 is a face elevation of the ratchet-wheel used in this instance to rock the check-row shaft forward.

A covering-wheel for a planter is shown at 1, an axle-shaft at 2, and a side bar of the rear frame of the planter is shown at 3. At 4 is shown a sprocket-wheel on the axle-shaft. A chain 5 imparts motion from the axle-shaft to a wheel 19 on the drill-shaft 8. The cross-bars of the front frame of the planter are shown at 6 and 7. The check-row shaft is shown at 9. A collar 10 on the check-row shaft has an extension 11, (seen only in Fig. 2,) and a set-screw 12 is screwed through extension 11. A forked lever 13 is mounted on the end of the rock-shaft so as to swing loosely thereon, and it has an extension 14, which bears against the end of set-screw 12 and imparts motion from the lever to the rock-shaft 9. A check-row head has guide-pulleys 15, by means of which the check-row wire 17 is carried in position for the knots 18 thereon to engage the forked lever. The check-row head is designated by reference-numeral 16.

The ratchet-wheel 19 is mounted loosely on the drill-shaft and driven by chain 5, and a pawl 21 takes motion from the ratchet-wheel and imparts it to the check-row shaft through arm 20. An arm 24 on the check-row shaft

has a pawl 23, which engages a ratchet-wheel 22 on the drill-shaft and transmits motion from the check-row shaft to the drill-shaft. The ratchet-wheel 22 is shown in this instance
 5 as a lantern-wheel or trundle; but its function is that of a ratchet-wheel, and any form of ratchet may be substituted for that shown.

A spring 25 is connected at one end with an arm 26 on the check-row shaft and at the
 10 other end with a bracket 31 on cross-bar 6 or with some other available hitch. A stop-arm 27 is fastened to the rock-shaft 9, and a catch-finger 28 extends into the path of the stop-arm, as shown in Fig. 3, and holds the check-
 15 row shaft rocked forward. The end of the stop-arm is beveled or inclined with relation to a tangential line, and a spring 30 on bolt 29 presses the finger yieldingly against the stop-arm. The incline of the stop-arm and
 20 the tension of spring 30 are sufficient to overpower the pull of the spring 25 and to thereby hold the check-row shaft rocked forward. A slight pressure is all that is needed to break the lock, however, and as soon as a knot re-
 25 leases the catch the spring 25 will carry the check-row shaft backward with force enough to perform the work required of the shaft. As a knot on the check-row wire carries the lever 13 to about the position indicated by
 30 32 in Fig. 2 the catch-finger is forced from contact with the stop-arm, and the forked lever is then swung rapidly away from the knot and out of the path thereof. (See the position indicated by dotted lines in Fig. 2.)
 35 When the check-row shaft completes its backward rock, the pawl 21 comes in contact with a tooth of wheel 19, the check-row shaft is rocked to its forward position before the pawl falls from contact with the tooth of the wheel,
 40 and the motion of the check-row shaft is carried to the drill-shaft and thence to the dropping mechanism of the seedbox by the pawl 23 and the ratchet-wheel 22. The particular mechanism shown herein for transmitting mo-
 45 tion from the covering-wheel to the planter-shafts forms the subject-matter of an appli-

cation for Letters Patent filed by me July 8, 1902, Serial No. 114,813.

The operative action of the forked lever in breaking the lock for the rock-shaft 9 is quite 50 short—only an inch or so—and it may occur at different parts of the complete swing of the lever. Consequently the lever may be swung forward or back by means of the set-screw and accurate check-rowing may be easily ef- 55 fected.

I claim—

1. In a corn-planter, the combination of a knotted check-row wire, a guide-head for the wire, and a check-row lever pivoted in the 60 guide-head to engage the knots of the wire when swung forward and to move out of the path of the wire when swung backward.

2. In a corn-planter, the combination of a knotted check-row wire, a guide-head for the 65 wire, a check-row lever pivoted in the guide-head to engage the knots of the wire when swung forward and to move out of the path of the wire when swung backward, means actuated by the travel of the planter for swing- 70 ing the check-row lever forward, a potential-energy appliance for carrying the check-row lever backward, such appliance receiving energy from the travel of the planter, a catch 75 to hold the lever rocked forward, and means actuated by the check-row wire for releasing the catch.

3. In a corn-planter, the combination of a check-row shaft, means actuated by the travel of the planter for swinging the shaft forward, 80 a potential-energy appliance for rocking the shaft backward, such appliance receiving energy from the travel of the planter, a catch to hold the shaft rocked forward, and means actuated by the check-row wire for releasing 85 the catch.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

LEVI P. GRAHAM.

Witnesses:

NORA GRAHAM,
 INA GRAHAM.