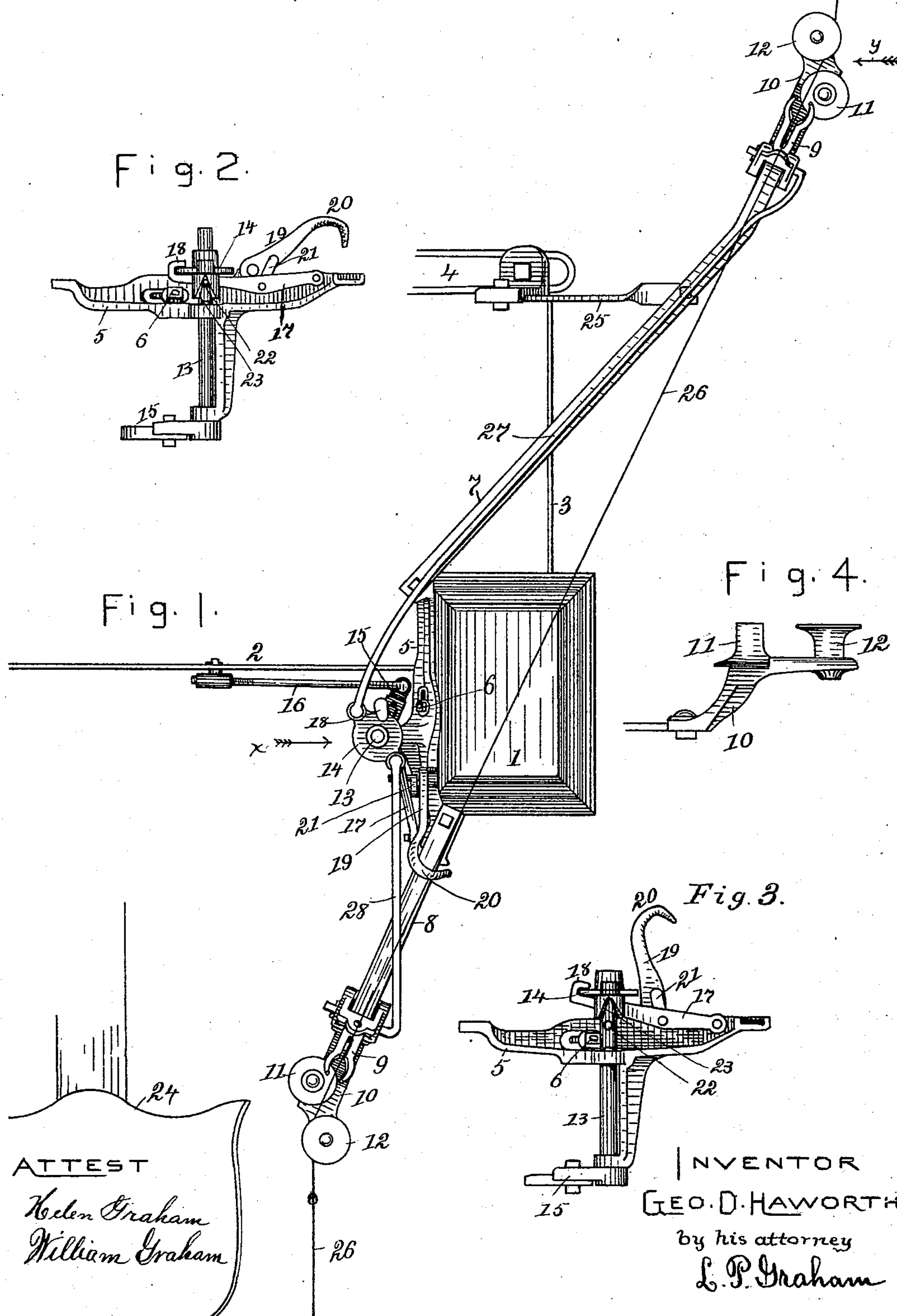


(No Model.)

G. D. HAWORTH.
CHECK ROWER.

No. 539,915.

Patented May 28, 1895.



UNITED STATES PATENT OFFICE.

GEORGE D. HAWORTH, OF DECATUR, ILLINOIS.

CHECK-ROWER.

SPECIFICATION forming part of Letters Patent No. 539,915, dated May 28, 1895.

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To all whom it may concern:

Be it known that I, GEORGE D. HAWORTH, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Check-Rowers, of which the following is a specification.

This invention relates to check rowers for corn planters. It is exemplified in the structure hereinafter described and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a plan of check-row mechanism constructed in accordance with my invention. Fig. 2 is an elevation of the center movement of the check-rower from the position indicated by arrow X, Fig. 1. Fig. 3 is a similar representation showing the connection between the check-rower and the shake-bar disconnected. Fig. 4 is an elevation of the front guide for the wire from the position indicated by arrow Y, Fig. 1.

A seed box of a planter is shown at 1, a shake bar at 2, a runner at 3 and an end of a front cross bar of a planter at 4. The check row bracket 5 is shaped to fit the planter box, and it is secured thereto by bolt 6. Bar 7 is secured to the front end of the bracket and extended obliquely forward and outward. Bar 8 is fastened to the rear end of the bracket and extended rearward and inward. On the extended end of each bar is a forked lever 9 and a bracket 10 carrying guide pulleys 11 and 12, which will be described in detail hereinafter. The vertical shaft 13 has bearings in bracket 5. It is supplied at its lower end with a horizontally extended rock arm, 15, which may be connected with the shake bar 2 by means of rod 16, or in any other suitable manner. The pin 22 extends transversely through the shaft and projects therefrom; and the shaft is held against longitudinal motion in its bearings. The rock plate 14 is mounted loosely on the shaft above the cross pin, and a downward extending sleeve of the plate has A-shaped recesses adapted to receive the pin. The arm 17 is pivoted on the bracket at one end. It extends under the rock plate, and it has a hook, 18, that extends over the flange of the plate. Lever 19 is also pivoted on the bracket at one end and its opposite end is hooked downward in a manner and for a purpose to be hereinafter explained. Link 21

connects the lever 19 with the arm 17 and provides means for using the lever to throw the rock plate in and out of clutch with the pin of the shaft. Rod 27 connects one end of the rock plate with the forward forked lever, and rod 28 connects the opposite end of the plate with the rear forked lever. The forward end of bar 7 is supported by brace 25, which is fastened to the bar and to the front cross bar of the planter. The location of the planter seat, with relation to the check rower, is shown at 24. The check row line 26 runs through the guide pulleys and the forked levers, as shown, and it is provided with knots by means of which the levers are thrown and motion imparted to the planting mechanism.

The opposite side of the planter is supplied with check row mechanism the same as that shown and described, except that the arrangement is reversed in order to carry the wire obliquely across the planter from the opposite direction. In other words, to use a common expression, the check row bars are rights and lefts.

As the planter moves forward a knot on the check row line encounters the forward forked lever and throws it backward, thereby imparting motion to the shake bar through rod 27, rock plate 14, shaft 13 and rock arm 15; and at the same time throwing the rear forked lever forward by means of the shown connections. A reverse motion is given to the different parts when the same knot encounters the rear forked lever and throws it backward to its shown position, and each operation imparts a dropping action to the planting mechanism.

While the check row line is used on one side of the planter the hooked end 20 of lever 19, on that particular side, extends over the line in a manner to hold it in the row, and the clutch recess of the rock plate receives the cross pin of the shaft and completes the connection between the forked levers and the shake bar.

When an end of the field is reached the hooked lever, 19, is raised to the position shown in Fig. 3, thereby swinging it clear of the check row line and raising the rock plate from contact with the cross pin of the shaft; and subsequently the line is thrown off by detaching it from the rear guides by direct ma-

nipulation, and then raising it clear of the front forked lever and rear guide of the front pair of guides. This is done by the driver as he sits in his seat, that part of the line adjacent to him being raised high enough to effect the desired result, and when the wire is clear of the rear guide of the front pair it will at once detach itself from the check row. The planter may then be turned around, the line be placed in the check row on the opposite side of the planter, and the hooked lever on that side be swung downward over the wire, in the manner shown, and with the result that the rock plate on that side will be forced in clutch with the shaft that actuates the shake bar. This will leave one side of the check row in engagement with the shake bar and the other disconnected therefrom, and the disengaged side will, of course, remain quiet while the other side is in operation. This is true whichever side may be in operation, and the result is that the operating side is relieved of the useless work of moving the mechanism of the opposite, inoperative side.

As the front forked lever throws the rock plate in one direction and the throw of the rear forked lever reverses that direction, it will be seen that the plate may occupy either of two positions when the wire is thrown off, and that it is an even chance whether or not the shake bar and the clutch member of the shaft will correspond to the position of the rock shaft when the time for operating the particular rock plate recurs.

If the parts should not properly coincide the inclined sides of the clutch recess of the rock plate will act on the pin to turn the shaft as the plate is forced down by the motion of the hooked lever and will move the shake bar to the position corresponding with the forked levers of that particular side of the check row; thereby making operative connection between the parts.

The manner of disconnecting the line from the check row, hereinbefore described, is made possible partly by the oblique arrangement of the check row and the provision of two levers adapted to be successively actuated by the same knot, and partly by the construction and arrangement of the guides for the wire, particularly the front ones. The first named peculiarity brings the line and the rear guides in easy reach of the driver as he sits on his seat, and the last named peculiarity enables a simple raising of the wire, by the hand of the driver, to disconnect the wire from the front guards.

The guides 11 and 12 are both shown and described herein as pulleys, and such is in fact the preferred construction; but it is not essential to a satisfactory operation of the device that guide 11 should rotate. The essential features of this part of the device are that the front guide shall rotate on an approximately vertical pivot and have an upper flange, and that the other guide, of the front pair of guides, shall be flangeless at its upper

end, shall be vertical, or substantially so, and shall maintain a position in the rear of the flanged pulley and outside the normal position of the check row wire. It is desirable, moreover, that the rear pair of guides be constructed as described and placed in reversed positions, as shown.

The forward pulley of the forward pair of guides rotates to carry the wire, its flange holds the wire against upward displacement, and the rear guide of the pair holds the wire against outward displacement. On the other hand, the rear guide of the front pair offers no resistance to the raising of the wire, in the manner specified, and when the wire is once clear of such guide it swings free of all restraint and is discharged from the check row.

The hooked lever 19 aids in retaining the wire in the check row while the planter is in operation, and it necessitates the disengagement of the clutch mechanism prior to throwing off the wire, thus making it certain that it will not be attempted to run the planter with both check rows in connection with the shake bar.

By making the check row bar as specified the check row line may pass over the seed box, as shown in the drawings, and the opening of the box be unobstructed when the line is thrown off. This is because the bracket fits the side of the box and the bars extend in proper directions to line up the guides for the wire. Another advantage in this construction is that the bar may be folded to bring the device in compact shape for shipping by simply loosening the bolts that connect the bars with the bracket.

A peculiar feature of the oblique check-row bar is that it is entirely on one side of the seat support, and such peculiarity is essential to throwing off the wire in the manner heretofore described.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a corn planter, a diagonal check-row having the rear wire guides located between the driver's seat and the supporting wheel, on the same side of the planter with the forward wire guide, substantially as described.

2. The combination, in a check-row, of the diagonally arranged wire guides, the forward guides being placed one in rear of the other and having their support fixed to the front part of the runner frame, the rear guide being held in position between the driver's seat and the supporting wheel on the same side of the seat with the forward guides, whereby the driver in his seat is enabled to conveniently release the wire from the rear guide and by elevating the wire line cause it to pass out from the front guides and drop over the wheel clear of the planter, substantially as set forth.

3. The combination, with a corn planter, of a check-row comprising two independent movements on opposite sides of the planter,

each of said movements being detachably connectable with the dropping mechanism by means of a clutch having sloping clutch recesses, substantially as set forth.

5 4. The combination, with a corn planter, of a check-rower comprising two independent movements on opposite sides of the planter, said movements being adapted to act positively on the dropping mechanism with both
10 the forward motion and the backward motion of the forked levers, and each being detachably connectible with the dropping mechanism by means of a clutch having sloping clutch recesses, substantially as set forth.

15 5. In a check rower the combination of a clutch and a wire retaining, clutch shifting lever, substantially as set forth, whereby the clutch must be disconnected before the wire can be released from the check rower.

20 6. In a check rower the combination of a drop-actuating rock shaft having a clutch member, a rock plate having a clutch member adapted to engage the clutch member of the shaft, forked levers adapted to be actuated by knots on a check row line, and rods
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connecting the forked levers one with each end of the rock plate, substantially as set forth.

7. In a check rower the combination of a rock shaft adapted to impart motion to the dropping mechanism of planters, such shaft
30 having a clutch pin, a rock plate on the shaft having a clutch recess adapted to engage the pin, an arm engaging the rock plate and a lever connected with the arm, substantially as set forth.

8. A check row bar comprising a bracket adapted to be secured to a side of a seed box of a planter, and obliquely extended bars fastened one to the front end and the other to the rear end of the bracket, whereby the check
35 row line may pass over the box, and the interior of the box be accessible when the line is thrown off.

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

GEO. D. HAWORTH.

Witnesses:

D. A. STRADER,
W. L. DAVIS.