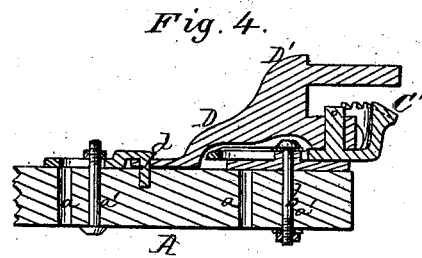
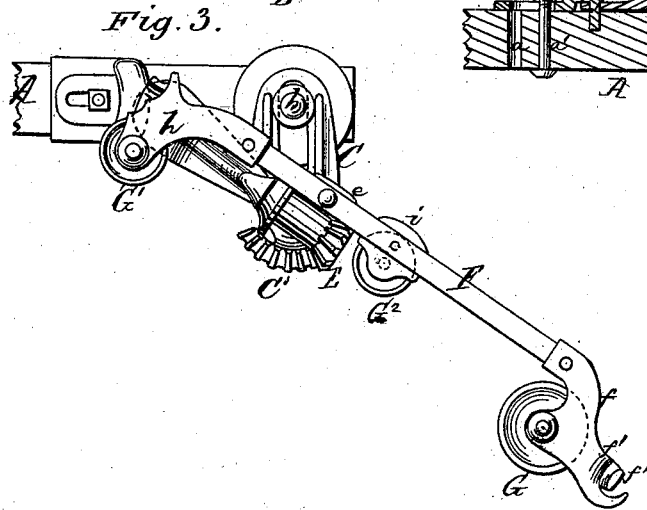
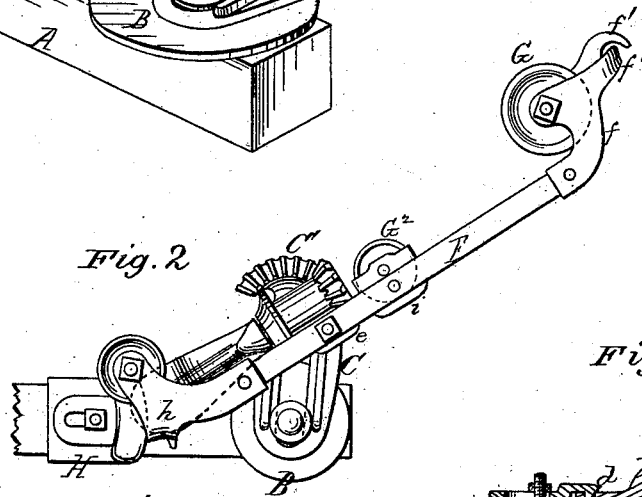
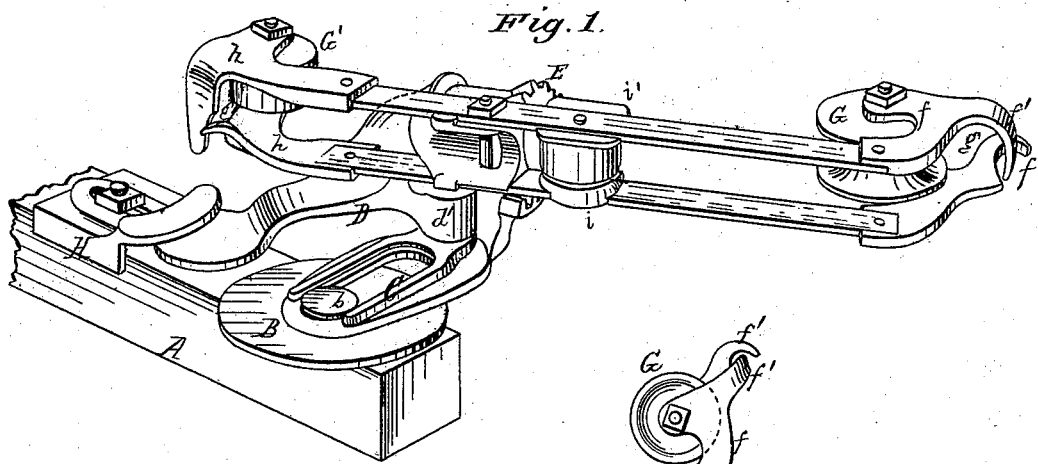


G. D. HAWORTH.  
Guide for Check-Row Wire or Cord.

No. 209,477.

Patented Oct. 29, 1878.



Witnesses:  
Alexander Mahon  
John S. Keuter.

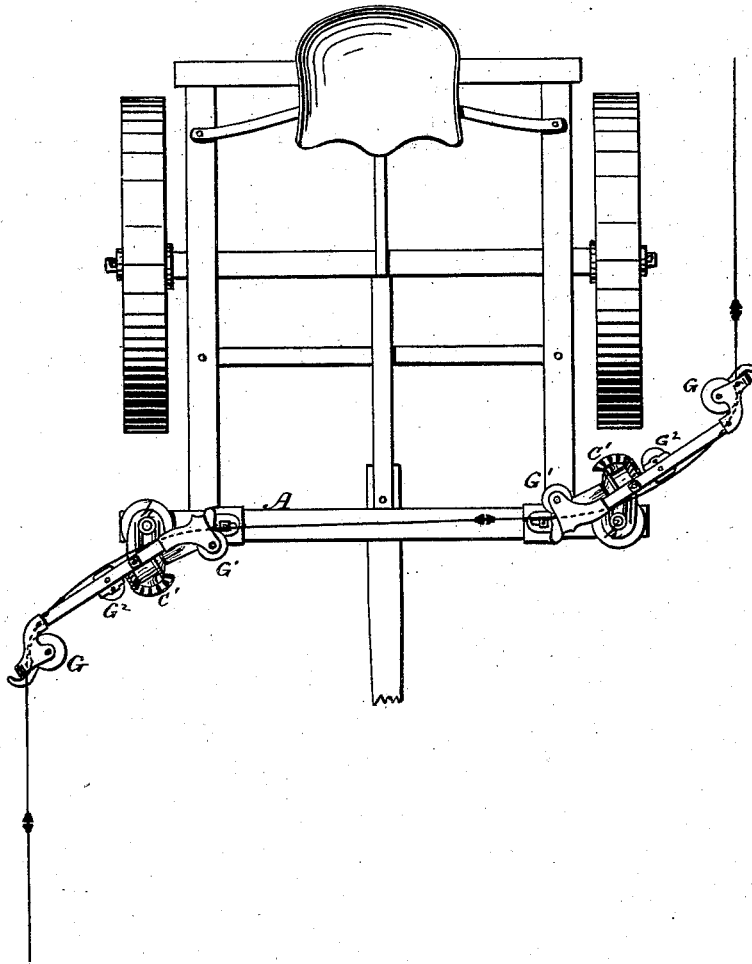
Inventor  
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*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

GEORGE D. HAWORTH, OF DECATUR, ILLINOIS.

## IMPROVEMENT IN GUIDES FOR CHECK-ROW WIRES OR CORDS.

Specification forming part of Letters Patent No. 209,477, dated October 29, 1878; application filed September 16, 1878.

To all whom it may concern:

Be it known that I, GEORGE D. HAWORTH, of Decatur, county of Macon, State of Illinois, have invented certain new and useful Improvements in Guides for Check-Row Wires or Cords, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a perspective view of the guide. Fig. 2 is a plan or top view of the same. Fig. 3 is a similar view, showing the guide in a reverse position from that shown in Fig. 2, and Fig. 4 represents the frame-bar and a part of the guide attachments in section. Fig. 5 is a plan or top view, showing the relation of the guides and check-row wire to each other and to the machine-frame.

Similar letters of reference denote corresponding parts in all the figures.

My invention consists in a novel construction of guide for check-row wires or cords for adapting the wire or cord to be transferred or laid over without removing it from the machine as the latter approaches the end of the rows of corn, and also to certain details of construction and arrangement of parts, all as hereinafter explained.

In the accompanying drawings, A represents a portion of the frame-bar on which the check-rowing devices are mounted. B is a plate or disk, mounted on the outer end of the bar A, and provided with a central tubular upright stud, through which a bolt, *b*, passes for securing the disk to the bar A. C is a slotted arm, swiveled on the central stud of disk B, and held in place thereon by the head of bolt *b*. The outer end of this arm C has a beveled rack or segment, C', formed upon it, and just inside of said segment C' is an upright stud or pin connecting the arm C with a second arm, D, pivoted to the bar at *d*. The arm D, at a point just inside of the eye *d'*, connecting it with the pin or arm C, has an upright, D', formed upon it, provided with a horizontal stud or pivot, upon which is mounted a beveled pinion, E, which engages with the rack or segment C'. The sleeve of the pinion or part pinion E is provided with a grooved longitudinal flange or flanges, *e e*, to which the parallel bars F F of the pulley-guide are

bolted, as shown. To the outer swinging ends of these bars are secured plates *f f*, in lugs or ears of which a guide-pulley, G, has its bearings, other lugs or arms, *f' f'*, extending beyond, and being curved over and interlocking outside of said pulley in such manner as to form a guiding-loop, *g*, which serves to prevent the accidental escape of the check-row cord or wire from the pulley G, while at the same time permitting the withdrawal of the cord or wire when the latter is turned to the proper angle to pass out between the interlocked ends of arms *f'*. Similar plates *h h* at the inner ends of bars F serve to support a guiding-pulley, G<sup>1</sup>, and to form a guiding-loop, *g'*, at said end, the latter being arranged, in this instance, at or near the longitudinal plane of the guide-pulley axle, instead of nearly in the horizontal plane of said pulley, as at the outer end.

A guide-pulley, G<sup>2</sup>, is secured in bearing-plates *i i'* to the bars F at a point intermediate between the pulleys G and G<sup>1</sup>, as shown. The disk B and the cap-plate H, on which the pivot *d* is formed, are made adjustable on the bar A through perforations at *a a'* therein, in such manner that their relation to each other may be varied for changing the throw or extent of movement of the guide or bars F.

In operation, two of the guides described are employed, one upon each end of the bar A, and the cord or wire passes from the front of the machine, outside of and behind the pulley G, and behind the pulleys G<sup>2</sup> G<sup>1</sup>, thence across the machine and in front of the pulleys on the opposite guide and to the rear, the tension on the cord thus deflecting the first-named guide forward and the latter to the rear of the line of bar A.

When the machine is swung around at the end of the field or rows being planted the tension on the cord or wire first draws the guides into line with the bar A, when, the turning movement being continued, the tension of the cord serves to give a semi-rotation to the guide F and to the pinion E connected therewith, and the latter, acting through the rack C', causes the slotted arm to swing upon its pivot, carrying the arm D with it to the opposite side of bar A, and reversing the position of the guide, thereby adapting it to the move-

ment of the machine in the opposite direction. After the guide has been turned over, the slotted arm C slides outward on its guiding pin or pivot, and serves to lock the guide F against further rotation until the direction of movement of the machine is again reversed. The guides are thus automatically adjusted to suit the direction of movement of the machine, and all necessity for removing and replacing the check-row cord or wire at the ends of the rows is obviated.

The guide described, although well adapted to the use of a cord, is more especially adapted for a wire check-line. The pulleys are arranged so as to hold the wire to a uniform curve or arc in its passage, the curve being large enough to not cause any displacement or bending, the natural spring or elasticity of the wire being sufficient to admit of its conforming thereto, and the tension that is given the line in practical use is not sufficient to draw it from the regular curve.

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

1. The series of pulleys having the curved arrangement on the swiveling arms, in combi-

nation with the wire check-row line, for the purpose of transferring said line over a suitable distance for planting the next succeeding rows.

2. The swiveling guide for the check-row cord or wire, in combination with the pinion E and traveling rack C', or equivalent devices, arranged and operating substantially as described.

3. The pivoted arms C and D, provided with the rack and pinion, in combination with the swiveling guide for the check-row cord or wire, arranged and operating substantially as described.

4. The pivoted and slotted arm C and pivoted arm D, made adjustable on the frame or bar A for changing the throw of the guide for the check-row cord or wire.

5. The combination of the guide for the check-row cord or wire, composed of the arm or bars F and guide-pulleys G G', and the pivoted arms C and D, substantially as and for the purpose described.

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Witnesses:

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