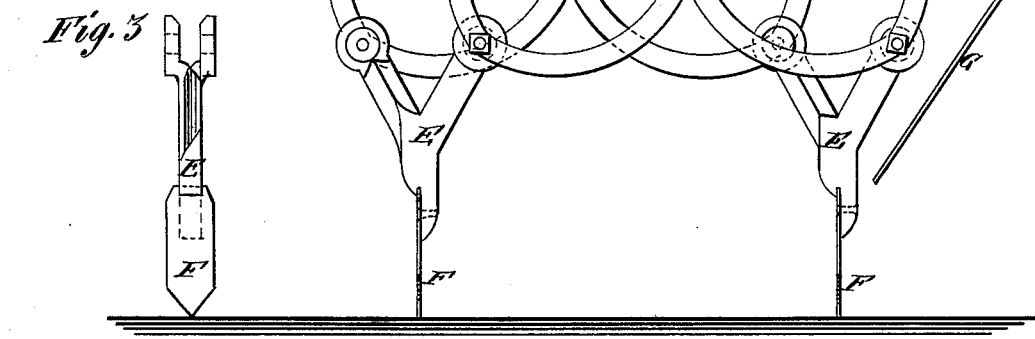
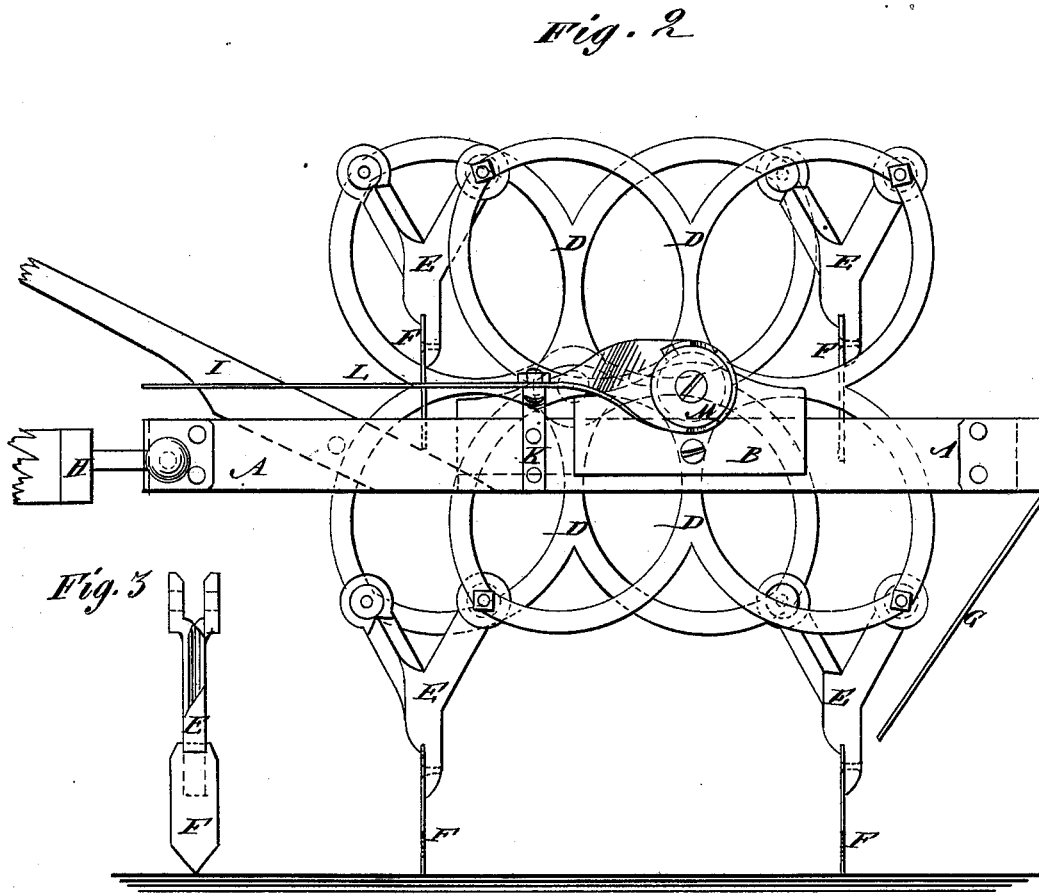
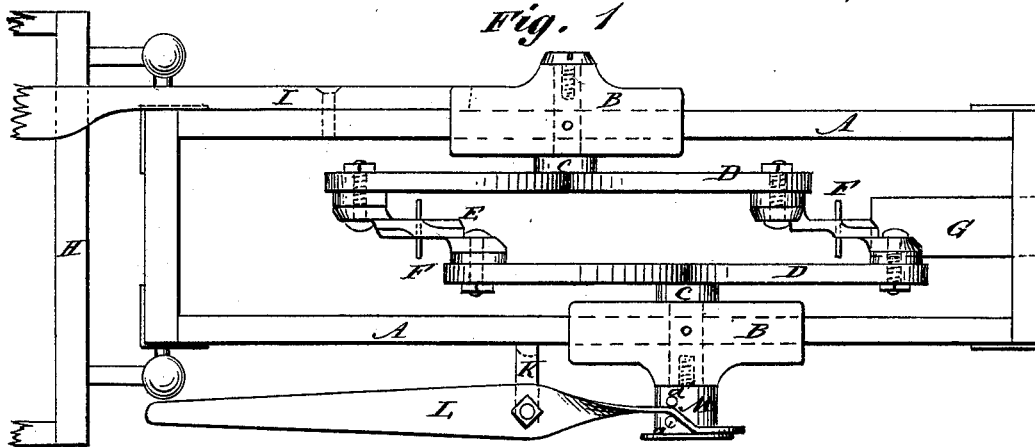


R. H. & W. A. McNAIR.
Check-Rower.

No. 220,403.

Patented Oct. 7, 1879.



WITNESSES:
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UNITED STATES PATENT OFFICE.

ROBERT H. McNAIR AND WILLIAM A. McNAIR, OF ELSAH, ILLINOIS.

IMPROVEMENT IN CHECK-ROWERS.

Specification forming part of Letters Patent No. **220,403**, dated October 7, 1879; application filed April 30, 1879.

To all whom it may concern:

Be it known that we, ROBERT H. McNAIR and WILLIAM A. McNAIR, of Elsay, in the county of Jersey and State of Illinois, have invented an Improved Check-Rower, of which the following is a specification.

Figure 1 is a plan of the rower. Fig. 2 is a side elevation of the same. Fig. 3 is a front elevation of the spade.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide an improved check-rower to be attached to corn and other seed planters.

The rectangular frame A has on the upper faces of its side beams two journal-boxes, B B, that serve as bearings for the axles C C of two spiders, D D, each of which is composed of four elliptic frames, more or less, radiating from a common center, through which an axle passes. These spiders are set within the frame A, ten or twelve inches apart, or thereabout; and pivoted to the extreme outer part of each ellipse is one leg of a V-shaped hanger, E, whose other leg straddles across the space between the spiders, and is pivoted to the opposite ellipse, so that the point of the hanger depends midway between the two spiders.

To the point of each of these hangers are secured the sharp-pointed spades F F. The lateral distance between the pivoted points of each hanger is precisely the same as the lateral distance between the centers of the spiders. This arrangement assures that the hangers shall be easily carried over and shall maintain their vertical position as the spiders revolve.

Attached to the rear of the frame A, and sloping inward and downward, is a scraper, G, of plate iron or steel, which frees the spades from earth, &c., as they scrape against it in their revolutions, or rather in their upward movements.

By means of a pivoted bar, H, this implement is attached to a planter, and as it is drawn along, the entrance of the spades alternately into the ground causes the spiders to revolve, and to drive each spade one after another and in constant succession perpen-

dicularly into the ground to the depth required for the proper checking of the rows, and at equal distances apart, each spade being held rigidly in the ground until the next spade is down into the ground, and the space traveled over causes it to be withdrawn in a perpendicular line.

Thus it will be seen that this device must measure accurately and space accurately the ground traveled over.

Secured to a side beam near the front, and inclining upward and forward, is a lever, I, that may be operated by hand or foot to raise the spades clear of the ground when turning at the ends of the rows or when going to and from the field.

From the outer face of the opposite side beam extends a lug, K, to which is pivoted the lever L, the short arm of which is twisted, so that its end which is pierced with a hole shall fit over a thimble, M, that is rigidly fixed upon the projecting end of a spider-axle; and this end of the lever is so shaped that as the axle revolves an eccentric motion or an intermittent outward and inward motion is given to the lever by the pins *a' a'*, that are set in the thimble on either side of the lever end.

The free end of the lever is designed to be connected with the slide-bar of the planter, to control the dropping of the corn or other seed.

We do not, however, confine ourselves to this precise arrangement of the lever and its actuating mechanism, for the same intermittent motion may be secured by having an eccentric slot in the thimble M, with inclines outward and inward, to actuate the lever L, which might extend into said slot, with a friction-roller on its end, and thus plant the corn or other seed, as before.

We also intend to provide interchangeable slotted thimbles for different distances or differential gearing, if necessary, for a large variety of work.

We also place a rim or flange on the upper half of the disks of the spade-hangers, that extends over the spider-disks, to cover the point and keep out all dirt and grit.

Having thus described our invention, we

claim as new and desire to secure by Letters Patent—

1. In a check-rower, the combination of frame A, axles C, spiders D, hangers E, spades F, scraper-levers I L, thimble M, and pins *a'*, as herein shown and described.

2. In a check-rower, the combination of the eccentrically-journaled spiders D, hangers E,

spades F, and spring-scraper G, as herein shown and described.

ROBERT HANES McNAIR.

WILLIAM ALEXANDER McNAIR.

Witnesses:

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