E. S. McEWEN.
Check-Rower.

No. 219,361. Patented Sept. 9, 1879.

Fig. 1.

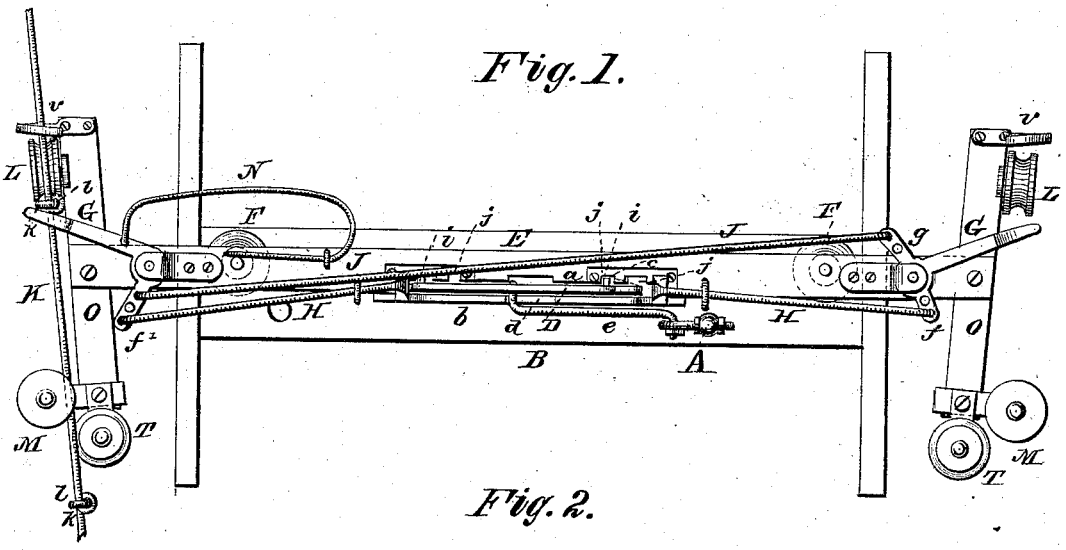


Fig. 2.

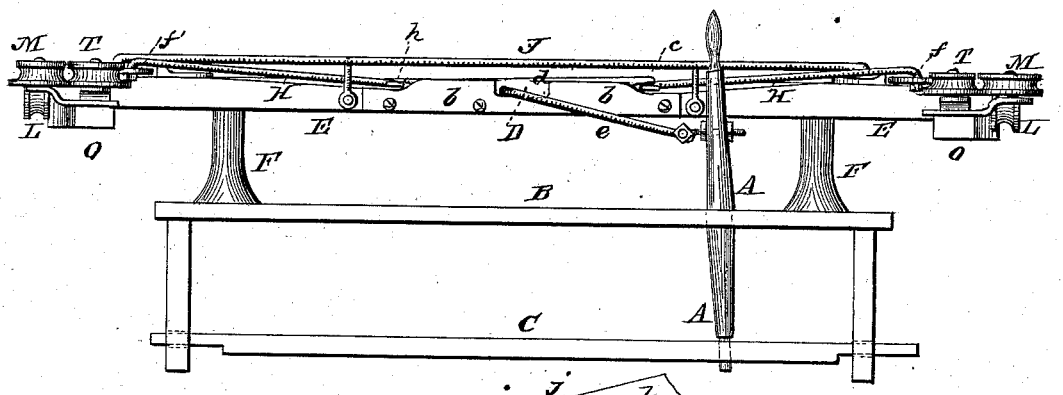


Fig. 3.

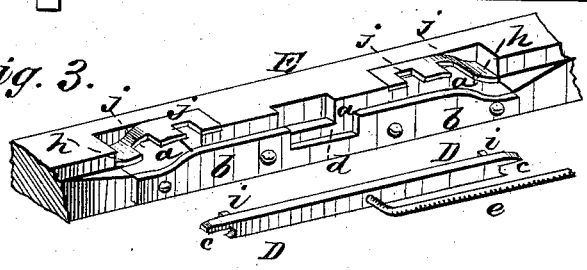
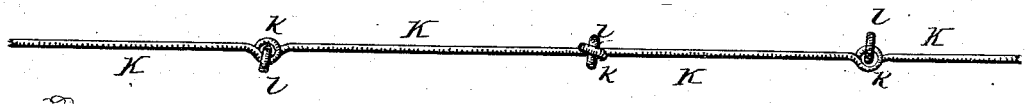


Fig. 4.



Witnesses:

P. C. Dieterich

Jno. A. Stockman.

Inventor

Ezra S. McEwen.

Per Manahan & Ward Attorneys.

UNITED STATES PATENT OFFICE.

EZRA S. McEWEN, OF LISBON, ASSIGNOR TO THOMAS A. GALT AND GEORGE S. TRACY, OF STERLING, ILLINOIS.

IMPROVEMENT IN CHECK-ROWERS.

Specification forming part of Letters Patent No. **219,361**, dated September 9, 1879; application filed June 10, 1879.

To all whom it may concern:

Be it known that I, EZRA S. McEWEN, of Lisbon, in the county of Kendall and State of Illinois, have invented certain new and useful Improvements in Check-Rowers; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to that class of check-rowers adapted to be used on horse corn-planters which plant two rows simultaneously; and consists, first, in originating and applying certain novel devices by which both of the seed-slides are actuated at once from either side of the planter, and, second, in a continuously-looped wire for engaging and operating such devices.

Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a rear elevation of the same. Fig. 3 shows enlarged detached views of the central reciprocating bar, D, and the transverse chamber in which it plays. Fig. 4 is a section of the wire K, showing the loops *k*.

As the construction of the planters to which my invention is applicable is well known, and the mode of attachment easily understood, I do not deem it necessary to exhibit any part of the planter except the usual hand-lever A, fulcrumed in the operator's seat-board B, and operating the transverse bar C, which ordinarily connects and actuates the seeding devices in the seed-hoppers at either end thereof. (Not shown.)

E is a transverse bar extending at each end slightly beyond the outside of the seed-hoppers, and supported by short posts F F upon, and at a proper height above, the seat-board B. In the central part of the rear upper surface of the bar E is formed the chamber *a*, having for its rear wall the plate *b*, which is bolted, as shown, against the rear side of the bar E. The reciprocating bar D, having the notched ends *c c*, is placed in and traverses the chamber *a* of the bar E. A recess, *d*, is formed in the center of the upper part of the plate *b*, and through this recess *d* a rod, *e*, is pivoted from the rear into the center of the bar D, and the other end of such rod *e* suitably hinged to the hand-lever A, so that the transverse movements of the bar D will be communicated to such hand-lever. On the upper surface and near each end of the bar E are pivoted the oscillating clutches G G, having outwardly-extending ends to engage the looped wire K. One of the clutches G is provided with the short arms *f g*, and the other with the corresponding arm *f'*. From the respective arms *f* and *f'* of the clutches G extend inwardly the reciprocating rods H H, which have their respective outer ends pivoted in the arms *f* and *f'*, and their inner ends fitted to engage, respectively, the notches in the ends of the bar D. The ends of the chamber *a* have sloping walls *h*, and the inner ends of the rods H are made sufficiently broad to extend over and be carried upon such walls, so that the inner end of one rod H may pass over the end of the bar D when the opposite rod H is operating such bar, the engaging and actuating of the bar D by the rods H being alternative. The arm *g* of one clutch G is connected to the arm *f'* of the other clutch by the diagonal rod J, by which the action of one clutch is communicated to the other, and thus the rods H H pass inward simultaneously.

The operation of my invention is as follows: The looped wire K is stretched across the field in the line in which the planter is designed to be moved, the intervals between the loops upon such wire being the distance between the check or cross rows. In the forward movement of the machine the wire K passes over the front pulley, L, through the clutch G, (on that side of the machine,) and inside of the pulley M and outside of the pulley T. As the loops upon the wire K engage the clutch G, the slot in the latter not being of sufficient width to permit the passage of the loops *k*, the loop carries the clutch toward the rear sufficient to permit the wire K to be drawn out of the end of the clutch, when the latter is released and is thrown back into position by the

spring N. At the next loop the operation is repeated. As the clutch G is carried toward the rear the arms *f* and *f'*, and thereby the rods H H, are moved inward, and one of the rods H, engaging the end of the bar D, moves the latter endwise, and thereby the rod *e* and lever A, thus actuating the bar C and the seeding devices. As one rod H engages the bar D the other rod H rises upon the sloping end of the walls of the chamber *a*, and permits that end of the bar D to pass under the latter rod. The instant the clutch G is released from the loop *k* the spring N returns the clutch to its original position, the latter withdrawing with it both of the rods H. The bar D, having been pushed to one end of the chamber *a*, projects at that end beyond the sloping walls of the latter in position to be engaged by the rod H at that end. Thus the rods H act alternately, and at each action discharge any desired *quantum* of seed from both of the seed-hoppers.

Each time the clutch G engages a loop, *k*, upon the wire K the operation last above described is repeated.

In the arms *f*, *f'*, and *g* are provided a series of holes for adjusting the length of stroke to suit different styles of planters; or such arms may be provided, respectively, with a longitudinal slot, in which, by means of a screw and nut, the rods H and J may be attached at any point in such slots.

On the front side and near the end of the bar D are formed the short horizontal spurs *i i*, each of which, when the bar D makes a full stroke, drops alternately into one of the two recesses *j j* in the front wall of the chamber *a*, the object in this provision being to prevent the operating end of the bar D from dropping down into the chamber *a*, so as to escape the end of the rod H, except at the end of a full stroke.

It will be observed that when the rod H engages the end of the bar D, such end of the bar D, by reason of the rod H passing up the sloping end of the chamber *a*, is raised thereon, the spur *i* being raised out of the end recess *j* and carried over and dropped into the inner recess *j*.

For a reacting spring I use the bent wire N, attached rigidly at one end to the front of the bar E, and having its other end bowed outwardly and attached from the front to the clutches G; but any suitable spring, spiral or otherwise, may be used for this purpose.

The pulleys L and M are attached (the first vertically and the last horizontally) to the short bar O, which latter is affixed across the end of the bar E in a line diagonal to the line of movement of the planter, so as to be parallel with the line of direction of the wire K.

At the rear end of the bar O, I place the horizontal pulley T, between which and the pulley M is placed the wire K. The function of the pulley T is to hold the wire in position in starting. By the use of the pulley T, I am enabled to set the starting-stake sufficiently beyond the center of the machine to bring that end of the wire K half-way of the interval over which such wire is taken laterally in the two passages of the machine across the field. In front of the pulley L, I place the guide *v*, to prevent the escape of the wire K. I construct the wire K by forming therein at desired intervals the loops *k*, into which are inserted bent wires *l*, thus forming on a continuous wire loops which cannot slip, and which engage and operate the clutches G.

Instead of the bent wire *l*, metallic spurs may be molded on the loops *k*.

The advantage of a continuous wire is, that having no joints, there is no possibility of entanglement, and a consequent change of lengths.

I prefer wire to rope for the purposes intended, for the reason that the latter is liable to shrink or stretch, particularly if it becomes damp or wet.

The wire K is of the length of the field to be planted, and is attached at each end to a strong iron stake to be pushed into the ground. In beginning to plant, the wire K is stretched at one side of and across the field in the direction intended to be taken by the planter, and one end thereof staked behind and beyond the center of the planter at the point of departure. The wire is then placed on the pulleys L and M and T, and in the clutch G, and the operation of planting begun. When the machine reaches the other side of the field, the wire K is thrown off the planter, and after the planter is placed for the return trip, that end of the wire is staked behind the planter and put on the pulleys L and M and T, and in the clutches G, as before.

It will be seen that most of the parts of my invention are duplicated. This is rendered necessary from the fact that the planter, in traversing the field, presents its sides alternately to the wire K.

By the diagonal positions of the pulleys L and M and T, the wire passes diagonally over the planter without binding, so that the planter can be run so near the end of the wire that but one change of the latter is required at each trip.

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

1. In a check-rower, the bar E, provided with the chamber *a* and clutches G, or their equivalents, bar D, and rods H, substantially as shown, and for the purpose described.

2. The reciprocating bar D, rods H, and rod J, each constructed and operating substantially as and for the purpose specified.

3. The clutches G, rods H, bar D, rod J, rod *e*, and lever A, in combination with the bar C, for operating the seeding devices of a corn-planter, substantially as shown, and for the purpose described.

4. The continuous wire K, having its engaging points formed by looping the wire and

inserting in such loop a wire ring or metallic plug, and adapted to be used for the purpose described.

5. As an attachment to a corn-planter, a check-rower having the bar E, oscillating clutches G, or their equivalent, the rods H, bar D, rod J, and springs N, each constructed and operating in the manner substantially as shown, and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 20th day of May, 1879.

EZRA S. McEWEN.

Witnesses:
J. G. MANEHAN,
JNO. J. CUSHING.