

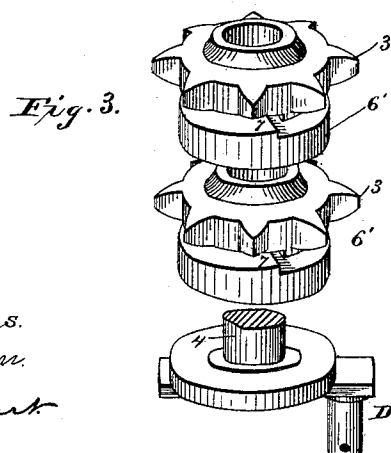
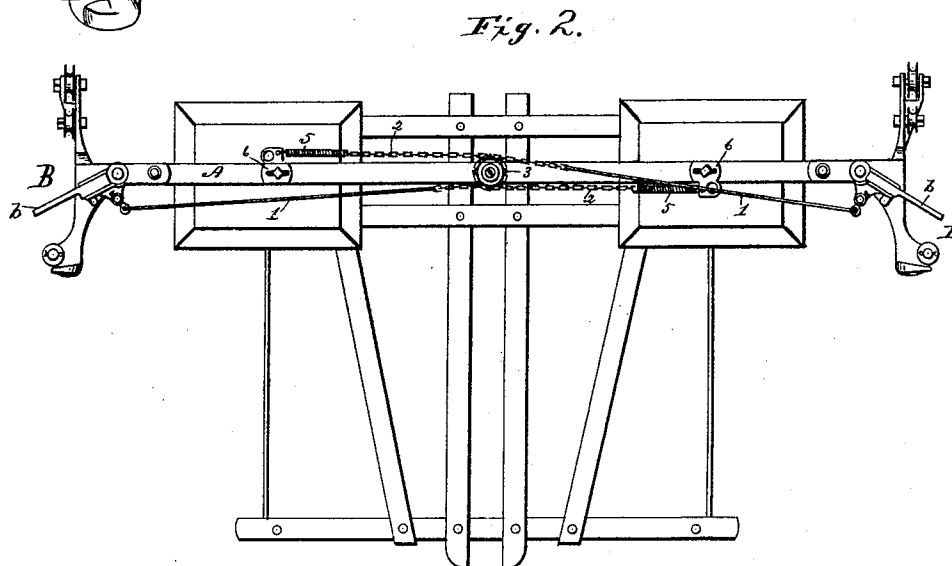
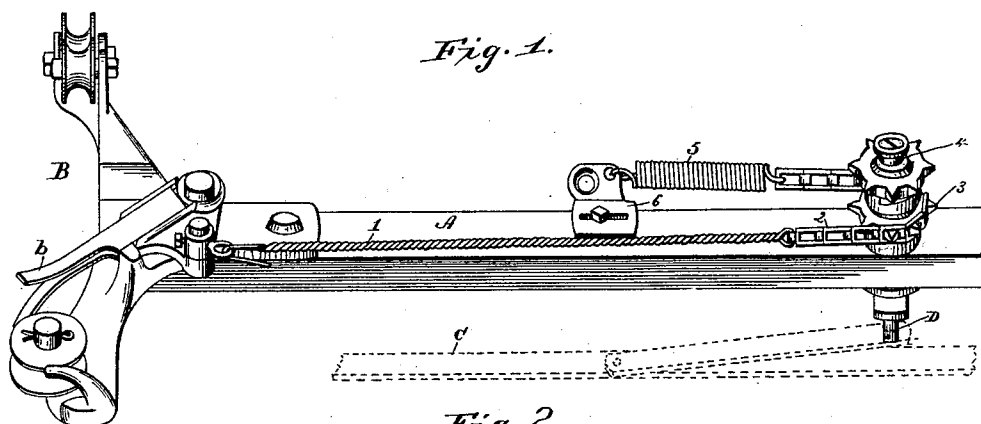
(No Model.)

R. C. ROBINSON.

CHECK ROW ATTACHMENT FOR PLANTERS.

No. 390,707.

Patented Oct. 9, 1888.



Witnesses.
Chas. R. Burr.
A. Stewart.

Inventor.
Robert C. Robinson.
by Church & Chund.
his Attorneys.

UNITED STATES PATENT OFFICE.

ROBERT C. ROBINSON, OF GRAND HAVEN, MICHIGAN.

CHECK-ROW ATTACHMENT FOR PLANTERS.

SPECIFICATION forming part of Letters Patent No. 390,707, dated October 9, 1888.

Application filed March 7, 1888. Serial No. 266,445. (No model.)

To all whom it may concern:

Be it known that I, ROBERT C. ROBINSON, of Grand Haven, in the county of Ottawa and State of Michigan, have invented certain new and useful Improvements in Check-Row Attachments for Planters; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the figures and letters of reference marked thereon.

This invention relates more particularly to improvements in the mechanism employed for transmitting motion from the devices receiving motion from the check-row cord or wire to the devices controlling the movements of the feeding mechanism; and it consists, generally, in the construction, arrangement, and combination of parts, hereinafter described, and pointed out in the claims.

In the accompanying drawings, illustrating one of the preferred forms of embodiment, Figure 1 is a view in perspective of my improved attachment. Fig. 2 is a top plan view showing the application to a corn-planter. Fig. 3 is a view in perspective showing the ratchet devices and crank-shaft detached and separated.

Similar letters of reference in the several figures indicate the same parts.

The letter A designates the cross-bar supporting the check-row attachment; B, the devices engaging and operated directly by the check-row cord or wire; C, the bar or slide controlling the feeding mechanism; and D, the crank-shaft connected to said slide, these several parts being of any usual or approved form or construction competent for use in connection with my improved attachment.

The devices B, of whatever form or construction, should be provided with a reciprocating member—such, for example, as the lever *b*, provided with a furcated end to receive the check-row cord or wire and engage the knots or protuberances thereon. To this reciprocating member is attached one end of a rod, wire, or equivalent connection, 1, the opposite end being secured to a section of chain, 2, partially encircling a sprocket-wheel, 3, on shaft 4. The opposite end of this chain is connected to one end of a spring or tension device, 5, connected to a bracket, 6, adjustably secured to the bar A. As is obvious, any other

form of connection might be interposed between the lever *b* and chain, or the latter might be extended and connected directly to the lever; but I prefer the wire connection shown as the cheaper and more convenient and effective.

The reciprocating member *b* of the check-row attachment operates through the chain and in connection with the spring to oscillate the sprocket-wheel, the movement in one direction being produced by the check-row cord or wire engaging the lever *b* and in the opposite direction by the spring. The spring and reciprocating member *b* are thus caused to operate simultaneously but in opposite directions upon the chain, and through the latter upon the sprocket-wheel, and as the lever *b* is brought into operative connection with the check-row cord or wire at intervals only, and is released as the knot passes off, the spring, put under tension by the movement of the lever, serves not only to effect the reverse movement of the sprocket-wheel, but also to retract the reciprocating member *b* and hold it in position to engage the next succeeding knot.

It will thus be seen that the reciprocating member or lever *b* and the spring operate successively to effect the oscillation of the sprocket-wheel alternately in opposite directions, the spring also serving to hold the lever retracted and the sprocket-wheel at the limit of its movement in one direction, said limit being fixed and determined by the position of the stop for limiting the return of the reciprocating member *b* when released from the knot on the check-row cord.

Having thus provided a means for effecting the necessary reciprocating movements of the sprocket-wheel positively in alternately opposite directions and by an extremely light, simple, and efficient mechanism, it only becomes necessary to provide a means for positively connecting said sprocket-wheel to the crank or other actuating device connected to and controlling the movements of the bar C, or other devices controlling the feeding mechanism, said connecting devices being arranged to engage the sprocket-wheel while moving in one direction and being disengaged from, so as to move independently thereof, while reciprocating in the opposite direction. A connection of this character is furnished by a pawl and ratchet or equivalent frictional clutching

device so arranged that as the sprocket-wheel is moved in one direction it will engage and carry with it the crank-shaft or equivalent driving mechanism, and when moved in the opposite direction it will be disengaged and turn independently of the crank-shaft, to be again connected thereto as the direction of its motion is reversed. A clutch mechanism of this character is illustrated, consisting, essentially, of a disk, 6', secured to the crank-shaft beneath the sprocket-wheel and provided with inclined shoulders or teeth 7, facing similarly-formed teeth or shoulders on the sprocket-wheel. These shoulders or teeth are so arranged and disposed that as the sprocket-wheel is rotated by the action of the lever *b* the vertical faces of the shoulders will engage and the disk 6' will be locked to and rotated by the sprocket-wheel; but when the spring operates to return the sprocket-wheel the inclined faces of the shoulders will permit said wheel to move independently of the disk, and as the former approaches the extreme of its movement the points of one set of teeth or shoulders will pass over and drop behind those on the opposite member preparatory to the next movement in the opposite direction. In this form of ratchet-connection springs are dispensed with, the weight of the sprocket-wheel or loose member serving to insure the locking together of the parts at or near the end of the back-stroke.

It will be observed that with the parts arranged as described the sprocket-wheel is reciprocated by and in unison with the movable member or lever *b* of the check-row attachment, and the reciprocating motion is converted into an intermitting rotary motion through the medium of the ratchet connection. It is desirable, therefore, that a detent or locking device should be provided for holding the crank or driving shaft in position during the return or backward reciprocation of the sprocket-wheel.

When two check-row attachments are employed, one located upon the right and the other upon the left hand side of the machine, as in the illustration, the operating mechanisms being duplicates and each operating upon the crank-shaft through a separate sprocket-wheel, and the chains being passed around their respective sprocket-wheels in opposite directions, the holding operation is performed by the sprocket-wheel not in action. Thus while the attachment on one side is being operated by the check-row cord, that on the opposite side remains stationary with its sprocket-wheel held retracted by the spring, and at each forward reciprocation of the crank-shaft the disk, co-operating with the sprocket-wheel of the idle attachment, will be carried beyond the shoulders on said idle sprocket-wheel, and the shaft will thus be prevented from moving back as the operating sprocket-wheel turns back.

As hereinbefore stated, my improvements are applicable to and can be used in connection with any desired form of actuating de-

vices B, having a reciprocating or equivalent member, *b*, to which the chain can be attached, and other forms of ratchet or clutch connections, the equivalent in operation to the toothed disk and sprocket-wheel, may be employed, the special embodiment of the features illustrated forming a subordinate though substantive part of the invention as set forth in the more limited claims.

Having thus described my invention, what I claim as new is—

1. In a check-row attachment for planters, the combination, with a reciprocating member thereof, a chain interposed between said reciprocating member and a retracting-spring, a sprocket-wheel engaging said chain, and a shaft for actuating the feeding devices, of a ratchet or clutch connection between said sprocket-wheel and shaft, substantially as described.

2. In a check-row attachment such as described, the combination, with shaft for actuating the feeding mechanism, and the sprocket-wheel connected to said shaft by a clutch or ratchet device, of a chain partially encircling said sprocket-wheel and connected at one end to a spring or yielding retracting device and at the other end to a reciprocating or equivalent member, of an actuating mechanism B, substantially as described.

3. In a check-row attachment such as described, the combination, with a reciprocating member, *b*, of the actuating devices, the chain connected by a rod or wire to said member, the spring attached to said chain, the sprocket-wheel engaging the chain and provided with inclines or teeth, and the toothed disk located beneath said sprocket-wheel and engaging the shaft for operating the feed mechanism, substantially as described.

4. In a check-row attachment such as described, the shaft supported upon the cross-bar and between the two actuating mechanisms B, two sprocket-wheels independently supported and connected to said shaft through clutch devices, and chains engaging said sprocket-wheels, one end of each being connected to a reciprocating member of one of the actuating devices B, and at the opposite end to an elastic or yielding retracting device, substantially as described.

5. In a check-row attachment, and in combination with the actuating device B, the chain connected at one end to a reciprocating member of said device and at the other to a spring, a sprocket-wheel engaging said chain, a shaft or prime mover for the feeding devices, a clutch interposed between the sprocket-wheel and said prime mover, and a detent operating to prevent backward motion of the prime mover when the sprocket-wheel is retracted, substantially as described.

ROBERT C. ROBINSON.

Witnesses:

CHARLES CHRISTMAS,
LEVI SEAFIELD.