(No Model.)

A. RUNSTETLER & J. A. MARLAY.

CHECK ROW ATTACHMENT FOR CORN PLANTERS.

No. 282,012. Patented July 24, 1883.

Fig. 1.

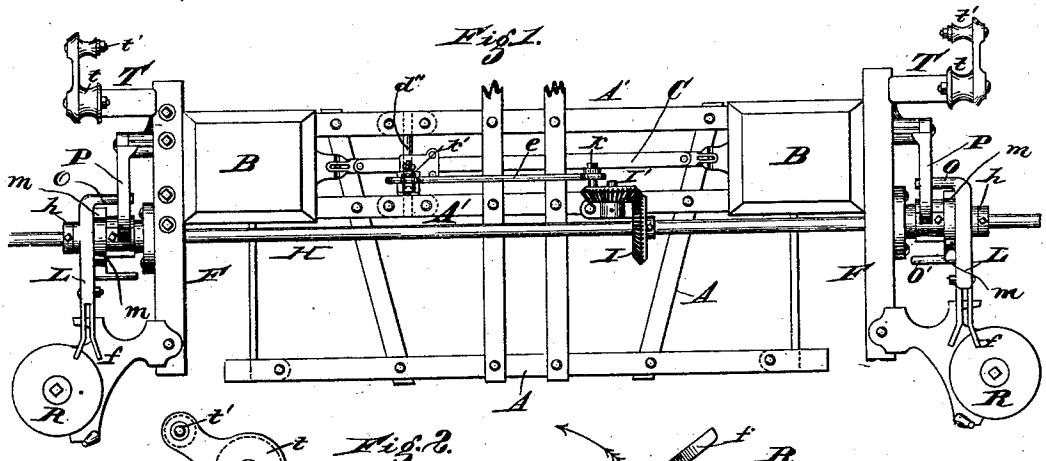


Fig. 2.

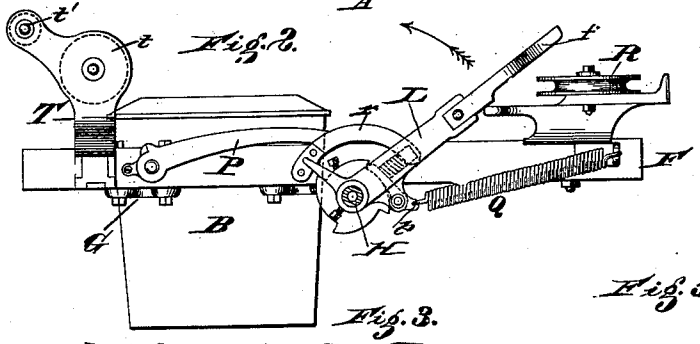


Fig. 3.

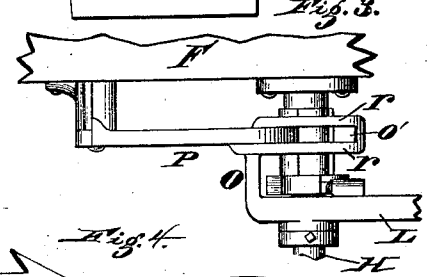


Fig. 5.

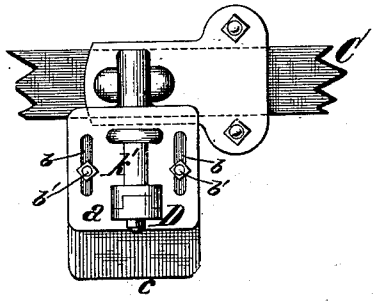


Fig. 4.

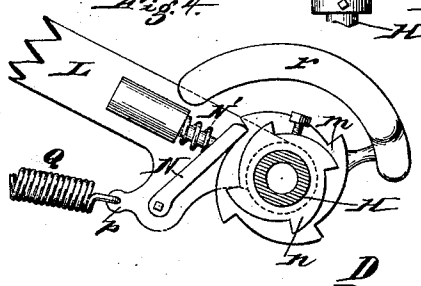
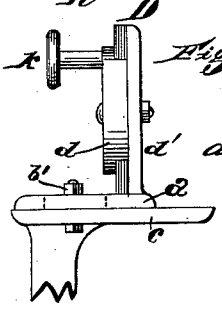


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CHECK-ROW ATTACHMENT FOR CORN-PLANTERS.

SPECIFICATION forming part of Letters Patent No. 282,012, dated July 24, 1883.

Application filed April 12, 1883. (No model.)

To all whom it may concern:

Be it known that we, ANDREW RUNSTETLER and JAMES A. MARLAY, both citizens of the United States, and residents of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Check-Row Attachments for Corn-Planters, of which the following is a specification.

Our invention relates to a check-row attachment for corn-planters.

The object of our invention is to provide an intermittently-rotating shaft placed transversely across a corn-planter, upon each end of which is journaled a forked lever carrying an automatic driving-pawl engaging with a ratchet keyed on said shaft and combined with a stop-pawl attached to the check-rower frame engaging with another ratchet-wheel, also keyed on said shaft, which stop-pawl is lifted for rotating the shaft by a lifting device rigidly affixed to the forked arm. This mode of journaling the forked arm directly on the intermittently-rotating shaft which operates the seeding device is very important, as the driving-pawl attached to the forked arm at one end of the machine acts as a stop against a backward movement of the shaft, while the driving-pawl attached to the other lever is moving backward over the ratchet-teeth. This is a positive and easy-working device.

In the accompanying drawings, Figure 1 is a plan view of the runner-frame of a double-row corn-planter having our check-rower attachments applied thereto. Fig. 2 is an end view of our check-rower attachment secured in position on one of the seed-boxes. Fig. 3 is a broken plan of a modified form of the forked-lever attachments. Fig. 4 is an inside elevation of the lower end of the forked lever, shown in Fig. 3, and the ratchets and pawl connected to the transverse driving-shaft. Fig. 5 is a plan view of the adjustable shaker-lever, showing its driving connection with the seed-dropper bar. Fig. 6 is an elevation of the shaker-lever.

A A′ represent the frame-bars of the runner-frame of an ordinary two-wheeled corn-planter; B B the seed-boxes; C, the reciprocating dropper-bar.

D represents the shaker-lever. It is preferably made in two parts, *d d′*, attached by a flange, *a*, and bolts *b′* to section *c*, which is attached at *d″*, by suitable journal-boxes, to the cross-bars A′ A′ of the runner-frame. Sections *d d′* of the shaker-lever are attached to section *c* by means of bolts passing through slots *b* made in the flange *a* of the section, so as to allow the shaker-lever to be adjusted to the plane of the pitman *e*, laterally as well as vertically.

F represents the frame of the check-rower attachment, which is attached to the seed-boxes by means of brackets G.

H represents a transverse rotating shaft journaled upon the frames F F.

I represents a beveled gear keyed upon said shaft and meshing with bevel-gear I′, mounted upon the runner-frame.

K represents a crank-pin, upon which the pitman *e* journals at one end, the other notched end of the pitman resting upon the pin *k′* of the shaker-lever for reciprocating the seed-bar C, with which said shaker-bar is connected in the ordinary manner.

Duplicate forked levers and intermittently-operating driving devices are used upon each end of the shaft H, so as to be operated by a knotted cord, wire, or chain, which is stretched in right lines across the field, and engaging with either one of said forked levers without passing transversely across the machine.

L represents the forked levers loosely journaled upon the shaft H. *h* represents a nut and collar for holding said forked levers in position laterally against the ratchets *m n*, which are rigidly mounted on shaft H. These ratchets are made with two sets of ratchet-teeth, *m n*, which are in a reverse direction to each other.

N represents a driving-pawl acting on teeth *m* to rotate shaft H.

N′ represents a spring for holding pawl N down against teeth *m* in its forward movement, and allowing it to rise on the incline of the teeth with the backward movement of lever L.

P represents a stop-pawl.

O represents a lifting finger or pin attached

to lever L, so as to raise pawl P out of contact with teeth *n* to allow of the rotation of shaft H, driven by pawl N.

O′ represents a finger which may be used to strike upon pawl P and force it into contact with one of the teeth, *n*, and thereby arrest the rotation of shaft H.

Figs. 2, 3, and 4 represent a modified form of constructing the lifting-arm O and finger O′. This modification consists in providing segmental loop or guide arms *r r*, which are connected to lifting-arm O. It is obvious that pawl P, being a gravitating pawl, will automatically engage with the teeth *n* and be lifted out of contact therewith by means of the lifting-arm O, and that parts O′ and arms *r r* could be omitted.

Q represents a retractile spring attached to arm or lug *p* of lever L, and connected at the forward end to a lug on the frame F, the recoil of which retracts the lever L to its normal position (shown in Fig. 2) as soon as the knot is passed out of engagement with fork *f* of the lever L.

R represents a guide-pulley for directing the cord into the fork *f*; and *t t′* represent friction-pulleys mounted upon a bracket attached to arm T for sustaining the weight of the cord and chain.

The operation is as follows: Forked lever L occupies its normal position, as shown in Figs. 1, 2, and 4. When a knot upon the cord or chain engages with the fork *f*, lever L is carried backward and shaft H is rotated by means of the driving-pawl N and rack-teeth *m*. This movement carries lifting-finger O away from supporting stop-pawl P, which drops upon rack *n* and engages one of the teeth and arrests the motion of shaft H. Spring Q instantly retracts the lever L, which moves freely forward upon the shaft H, pawl N sliding over one of the teeth, *m*, engaging with the next in rear for a second motion of the dropper devices. During the operation of one of the levers L the lever on the other end of said shaft is in its normal position, with its pawl N in engagement with one of the ratchet-teeth, *m*, and acts as a stop to prevent a backward movement of the shaft while the opposite forked lever is being retracted for a second engagement. As the lever L moves backward finger O lifts stop-pawl P from contact with one of the teeth, *n*, allowing shaft H to be rotated by driving-pawl N. Each partial revolution of the shaft H moves gears I I′ a sufficient distance to make a half-revolution of crank-pin K, and makes a complete single throw of the dropper-bar C, and hence dropping one charge of seed for the hills.

We do not broadly claim an intermittently-rotating shaft for operating the seed-dropping devices of a check-rower, said shaft having at each end a disk provided with ratchet-wheels, the teeth of which sit in opposite directions, a forked lever being pivoted to the disk and having a rigid end for engaging one ratchet-wheel to rotate the shaft and operate the seed devices, and a pivoted pawl acting on the other ratchet-wheel to prevent backward rotation of the shaft, said pawl being disengaged from its ratchet by a cam projection on the forked lever to permit the latter to rotate the shaft on its return movement.

We claim—

1. The combination, with the rotating shaft H, of the levers L, journaled on opposite ends thereof, and each carrying an automatic driving-pawl, N, engaging with rack-teeth *m*, one of which levers and its driving-pawl remains in normal position for driving while acting as a back stop while the opposite lever is operated by the knotted cord, substantially as described.

2. The combination, with the intermittently-rotating shaft H, of the forked lever L, journaled directly on said shaft and carrying an automatic driving-pawl, N, and a lifting-finger, O, for operating the stop-pawl P, substantially as described.

3. The combination, with the intermittently-oscillating shaft H, of the oscillating levers L, journaled directly upon said shaft, and each carrying an automatically-operating driving-pawl, N, one of which pawls is at all times ready for driving, and each armed with a rigidly-attached lifting-finger, O, for releasing a stop-pawl, P, substantially as described.

4. In a corn-planter check-rower having an intermittently-rotating shaft, H, and ratchets *m* and *n* rotating therewith, the oscillating lever L, journaled on shaft H, having the finger O, and slotted guide *r r* for operating the pawl P, substantially as herein set forth.

In testimony whereof we have hereunto set our hands.

ANDREW RUNSTETLER.
JAMES A. MARLAY.

Witnesses:
GEO. F. KUHNS,
GEORGE O. WARRINGTON.