

No. 681,795.

Patented Sept. 3, 1901.

C. Y. JARED.
CORN PLANTER.

(Application filed Dec. 17, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

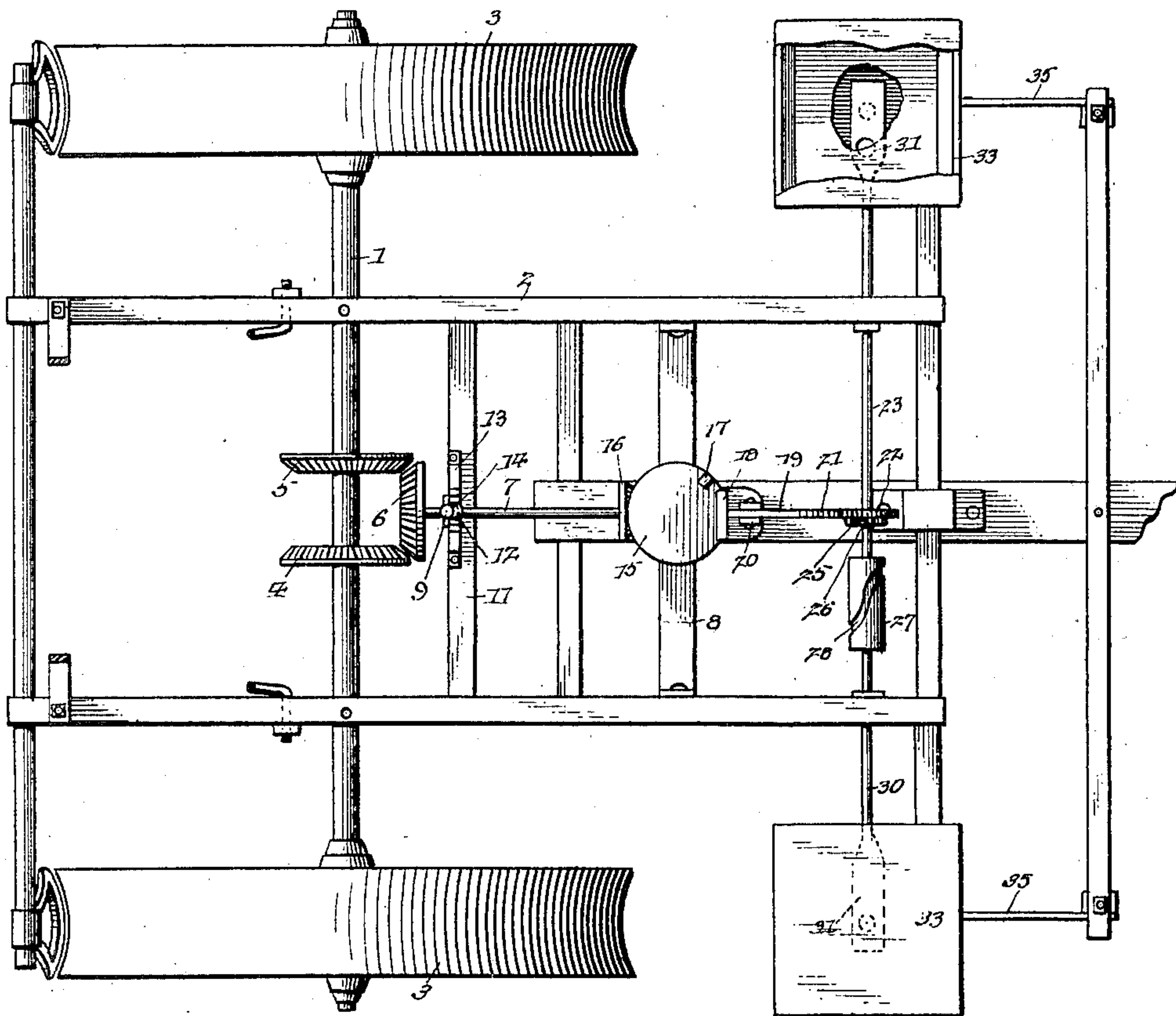
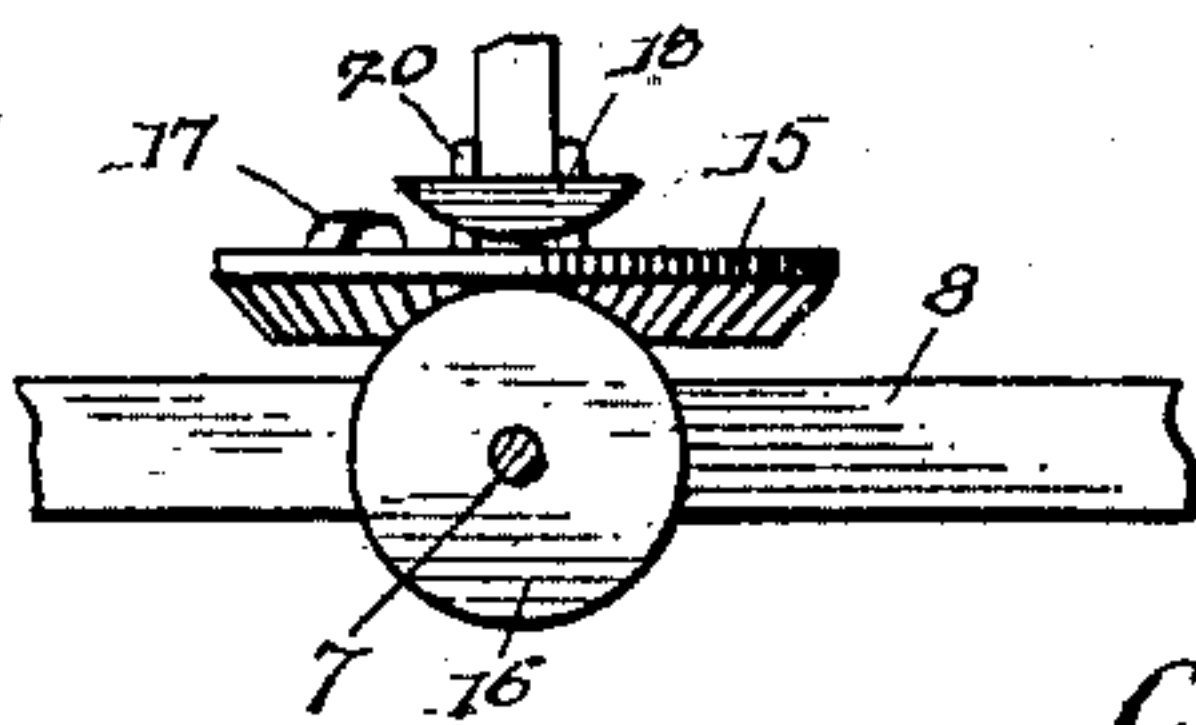


Fig. 5.



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COMER Y. JARED, OF ALEXANDRIA, TENNESSEE.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 681,795, dated September 3, 1901.

Application filed December 17, 1900. Serial No. 40,193. (No model.)

To all whom it may concern:

Be it known that I, COMER Y. JARED, a citizen of the United States, residing at Alexandria, in the county of Dekalb and State of Tennessee, have invented a new and useful Corn-Planter, of which the following is a specification.

The invention relates to improvements in corn-planters.

The object of the present invention is to improve the construction of corn-planters and to provide a simple and comparatively inexpensive construction adapted to be applied to the ordinary two-horse corn-planter having reciprocating seed-slides and capable of dispensing with the chain, wire, or cord usually employed for regulating the discharge of seed.

A further object of the invention is to provide a device of this character which may be readily operated by one man from the seat of the corn-planter and which will not necessitate the operator dismounting or even stopping at the end of a row.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a plan view of a corn-planter constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a detail view illustrating the construction of the operating mechanism for reversing the movement of the seed-dropping mechanism. Fig. 4 is a detail view of the construction for reciprocating the seed-slides. Fig. 5 is a detail view illustrating the arrangement of the tappet or lug for actuating the oscillating lever, and Fig. 6 is a detail view of the arm of the rod which connects the seed-slides.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a transverse shaft or axle journaled in suitable bearings of a wheel-frame 2 and having wheels 3 secured to its ends, whereby it is rotated when the planter moves forward, and mounted upon the said shaft or axle 1 are gear-wheels 4 and 5, provided at their inner opposite faces with bevel-teeth and adapted to mesh with a bevel-pinion 6

of a longitudinal shaft 7, which is capable of movement in either direction to engage the pinion 6 with either of the cog-wheels 4 and 5, whereby the said shaft 7 may be rotated in either direction. The shaft 7, which is journaled on a front transverse bar 8 of the frame 2, is connected near its rear end with the lower terminal of an operating-lever 9, fulcrumed between its ends at 10 on a transverse bar 11 and adapted to be oscillated to shift the shaft 7 to carry the pinion 6 into engagement with either of the wheels 4 and 5. The shifting-lever is provided with a spring-actuated pawl or detent 12, adapted to engage a notched segment 13 for holding the said lever in its adjusted position to maintain the bevel-pinion in engagement with either of the gear-wheels or out of engagement with the same. The spring-actuated pawl or detent, which is of the ordinary construction, is controlled by a latch 14, mounted on the shifting-lever, adjacent to the handle or grip portion thereof, whereby it may be readily grasped by the operator when it is desired to change the position of the pinion 6. The front end of the longitudinal shaft is located beneath the axis of a horizontally-disposed gear-wheel 15, provided at its lower face with bevel-teeth which mesh with a bevel-pinion 16, keyed or otherwise secured to the front portion of the longitudinal shaft 7. The bevel-pinion 16, which is located beneath the periphery of the gear-wheel 15, is adapted to move laterally in a curved line concentric with the gear-wheel 15 to permit the shaft 7 to be shifted laterally without disengaging the gears 15 and 16. When the longitudinal shaft is rotated, motion is communicated to the horizontal gear-wheel, which is provided adjacent to its periphery with a rounded lug or tappet 17, located upon its upper face and adapted to engage a segmental head 18 of an oscillating lever 19. The lever 19, which is fulcrumed between its ends in a bifurcation of a bracket 20, extends longitudinally of the planter and is located at the front portion thereof, as clearly shown in Fig. 2. The segmental head 18 is disposed transversely of the lever and is provided at its lower face with a curved edge arranged to be engaged by the lug or tappet of the gear-wheel 15, whereby the rear end of the lever is readily swung upward by the said lug

or tappet 17. The front end of the lever is provided with spur-teeth 21, formed at the outer convex edge of a curved arm, which extends upward and downward from the front end of the oscillating lever. The teeth at the front end of the oscillating lever mesh with a vertical gear-wheel 22 of a front transverse shaft 23, which is rotated one-half of a revolution at each oscillation of the lever incident to its contact with the lug or tappet of the continuously-rotating gear-wheel 15. The vertical gear-wheel 22 is reversely rotated, being moved first in one direction through the engagement of the lever with the lug or tappet of the horizontal gear-wheel 15, and then in the opposite direction by a coiled spring 24, connected with the rear arm of the oscillating lever and with the bracket 20. In order to impart a continuous rotation to the front transverse shaft, the reversely-rotating gear-wheel 22 is connected with the front transverse shaft by a clutch, consisting of a ratchet-wheel 25 and a spring-actuated pawl 26, the ratchet-wheel being fixed to the shaft 23 and the spring-actuated pawl being mounted on the reversely-rotating gear-wheel 22. Any other form of clutch may be employed, and it will be clear that when the reversely-rotating gear-wheel moves forward it will actuate the front transverse shaft, and when it moves backward the clutch will permit it to rotate without actuating the shaft 23. As the continuously-rotating gear-wheel 15 is connected by gearing with the rear transverse shaft or axle 1, the front transverse shaft will be rotated at regular intervals when the planter moves forward. The front transverse shaft is provided at one side with a cam 27, consisting of a cylindrical enlargement or body provided with a continuous groove 28, composed of two approximately sigmoidally-curved portions extending from one end of the body or enlargement to the other and back again, so that with each complete rotation of the front transverse shaft 23 an arm 29 of a rod 30 will be reciprocated backward and forward to operate a pair of seed-slides 31. The groove forms a continuous cam, and the arm 29 is provided with an antifriction-wheel 32, arranged in the said groove and adapted to reduce the friction to a minimum. The seed-slides, which may be of any ordinary construction, are mounted in the usual manner at the bottom of seed boxes or receptacles 33, located at the tops of seed-tubes 34 of runners or furrow-openers 35. When the connecting-rod 30 is reciprocated, the seed-slides will be actuated and the corn or other contents of the seed boxes or receptacles will be delivered to the seed-tubes in the usual manner.

When the corn-planter moves forward, the seed will be deposited at regular intervals, and in starting the planting operation the bevel gear-wheel at the rear end of the longitudinal shaft is engaged with the right-hand gear-wheel of the rear shaft or axle, and when

the planter arrives at the end of a row the bevel-pinion 6 is thrown out of engagement with the right-hand gear-wheel 4 and is held at an intermediate position between the gear-wheels 4 and 5 while the planter is being turned for recrossing the field. The bevel-pinion 6 is then engaged with the other gear-wheel 5, and the longitudinal shaft 7 will be rotated in the opposite direction and the first seed will be deposited directly opposite the place where the last seed of the previous row was dropped. In other words, the first hill of the new row will be the same distance from the end of the row as the last hill of the previous row, and the hills will throughout all the rows be exactly the same distance apart.

The invention has the following advantages: The improvement is adapted to be readily applied to any ordinary two-horse corn-planter having a reciprocating bar for operating the seed-dropping mechanism. It is adapted to dispense with the chain, wire, or cord usually employed for controlling the discharge of the seed, and it does not require a field to be marked off before planting. One man can operate the planter, and he does not have to dismount at the ends of the rows, and it is unnecessary to stop the planter at those points, as the operating-lever may be readily shifted to throw the seed-dropping mechanism into and out of operation. As there is no chain or cord there is of course no side draft, and the expense is greatly lessened. The hills are planted at regular intervals, and it is unnecessary to drive across a field before commencing to plant.

What is claimed is—

1. In a planter, the combination of a frame, a rear shaft or axle, a front shaft, a reciprocating rod designed to be connected with seed-slides, means for connecting the reciprocating rod with the front transverse shaft, a reversely-rotating gear-wheel mounted on the front transverse shaft and having a clutch connection with the same, an oscillating lever provided with teeth and adapted to oscillate the said gear-wheel, a continuously-rotating gear-wheel arranged to engage the lever to move the same in one direction, a spring for moving the lever in the opposite direction, and gearing for connecting the continuously-rotating gear-wheel with the rear shaft or axle, substantially as described.

2. In a planter, the combination of a frame, a rear shaft or axle, a front shaft, a reciprocating rod designed to be connected with seed-slides, means for connecting the reciprocating rod with the front transverse shaft, a reversely-reciprocating gear-wheel mounted on the front transverse shaft and having a clutch connection with the same, an oscillating lever provided with teeth and adapted to oscillate the said gear-wheel, a continuously-rotating gear-wheel arranged to engage the lever to move the same in one direction, means for moving the lever in the opposite direction, a pair of gear-wheels mounted on the

rear shaft or axle, a pinion located between and adapted to mesh with either of the said gear-wheels, and gearing for communicating motion from the pinion to the continuously-rotating gear-wheel, substantially as described.

3. In a planter, the combination with a frame, seed-slides, and a rear shaft or axle, of a front transverse shaft, a reciprocating rod connected with and operated by the front transverse shaft, said rod being also connected with and adapted to actuate the seed-slides, an oscillating lever, a continuously-rotating gear-wheel provided with means for actuating the lever at intervals, and gearing for connecting the continuously-rotating gear-wheel with the rear shaft or axle, and for communicating motion from the lever to the front transverse shaft, substantially as described.

4. In a planter, the combination with a frame, of a reciprocating rod adapted to operate the seed-dropping mechanism, a front shaft connected with and adapted to actuate the reciprocating rod, a reversely-rotating gear-wheel mounted on the front shaft and having a clutch connection with the same, an oscillating lever provided with teeth meshing with the said gear-wheel, and means for oscillating the lever at regular intervals, substantially as described.

5. In a planter, the combination with a frame, of a reciprocating rod adapted to operate seed-dropping mechanism and provided with an arm, a shaft having a continuous cam engaging the arm and adapted to reciprocate the rod, a reversely-reciprocating gear-wheel mounted on the shaft and having a clutch connection with the same, an oscillating lever having teeth meshing with the gear-wheel, and means for operating the lever at intervals, substantially as described.

6. In a planter, the combination with a frame, of a shaft, a reciprocating rod connected with and actuated by the said shaft, a reversely-rotating gear-wheel having a clutch connection with the shaft, an oscillating lever provided with teeth meshing with and actuating the said gear-wheel, a continuously-rotating gear-wheel having a lug or tappet arranged to actuate the lever at intervals to move the same in one direction, means for moving the lever in the opposite direction, and gearing for rotating the said continuously-rotating gear-wheel, substantially as described.

7. In a planter, the combination with a frame, of a shaft, a reciprocating rod connected with and actuated by the shaft and adapted to operate the seed-dropping mechanism, a reversely-rotating gear-wheel having a clutch connection with the said shaft, an oscillating lever fulcrumed between its ends and provided at one end with teeth meshing with the said gear-wheel, a continuously-rotating gear-wheel provided with a lug or tappet arranged to engage the other end of the lever to move

the latter in one direction, means for moving the lever in the opposite direction, and means for rotating the continuously-rotating gear-wheel and for changing the direction of such rotation, substantially as described.

8. In a planter, the combination with a frame, of a shaft having a continuous cam-groove, an arm arranged in the groove and reciprocated by the same and adapted to operate seed-dropping mechanism, a reversely-rotating gear-wheel having a clutch connection with the shaft, a lever fulcrumed between its ends and provided at one end with teeth meshing with the said gear-wheel, a continuously-rotating gear-wheel provided with means for engaging the other end of the lever, a laterally-movable shaft provided at its ends with pinions, one of the pinions meshing with the continuously-rotating gear-wheel, and a pair of gear-wheels located at opposite sides of the other pinion and adapted to actuate the same, substantially as described.

9. In a planter, the combination with a frame, an axle, seedboxes located at opposite sides of the frame and having seed-slides, a rod connecting the seed-slides and provided with an arm, a front shaft provided with a continuous cam-groove receiving the arm and adapted to reciprocate the said rod, a reversely-reciprocating gear-wheel having a clutch connection with the front shaft, an oscillating lever fulcrumed between its ends and provided at its front end with teeth meshing with the gear-wheel, said lever being provided at its other end with a head, a continuously-rotating gear-wheel having a lug or tappet for engaging the head of the lever to move the latter in one direction, a spring for moving the lever in the opposite direction, a laterally-movable longitudinal shaft, provided with front and rear pinions, the front pinion meshing with the continuously-rotating gear-wheel, a pair of gear-wheels mounted on the axle and arranged to be engaged by the rear pinion, and operating mechanism for shifting the longitudinal shaft, substantially as described.

10. In a planter, the combination of a shaft, a gear-wheel mounted thereon, means for communicating motion from the shaft to seed-dropping mechanism, an oscillating lever provided with teeth meshing with the said gear-wheel, a continuously-rotating gear-wheel provided with means for engaging the lever to move the same in one direction, means for moving the lever in the opposite direction, and gearing for actuating the continuously-rotating gear-wheel, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

COMER Y. JARED.

Witnesses:

JAS. TUBB,
HAL TUBB.