No. 757,399. PATENTED APR. 12, 1904.

L. P. GRAHAM.

CORN PLANTER.

APPLICATION FILED OCT. 26, 1903.

NO MODEL.

Fig. 2.

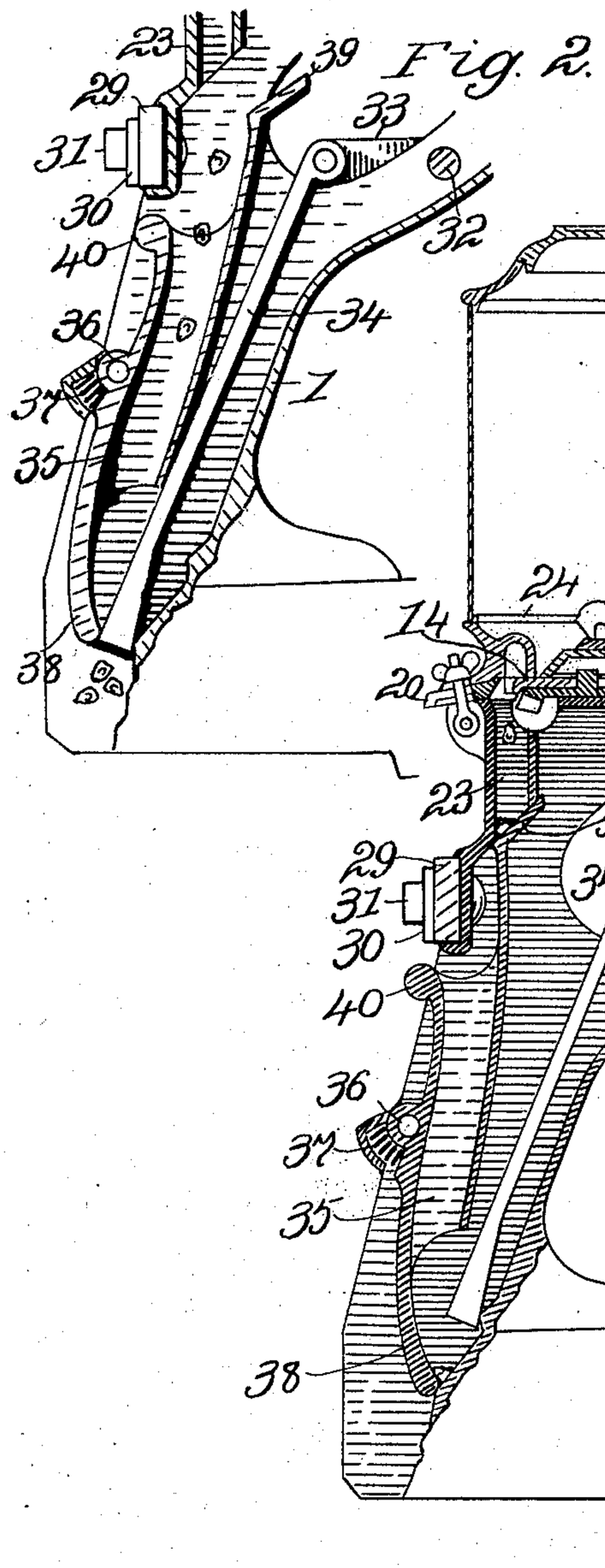
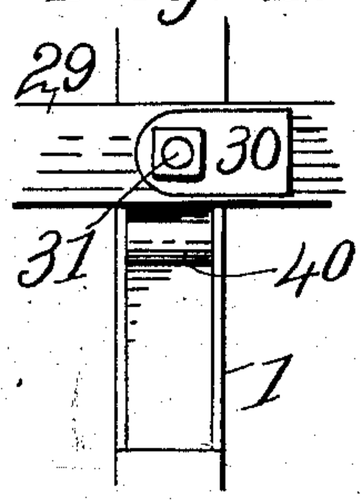


Fig. 1.

Fig. 3.

Fig. 4.



Witnesses.

Nora Graham

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No. 757,399. Patented April 12, 1904.

UNITED STATES PATENT OFFICE.

LEVI P. GRAHAM, OF DECATUR, ILLINOIS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 757,399, dated April 12, 1904.

Application filed October 26, 1903. Serial No. 178,608. (No model.)

To all whom it may concern:

Be it known that I, LEVI P. GRAHAM, of the city of Decatur, county of Macon, and State of Illinois, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification.

This invention relates to the dropping mechanism in planter-shanks as distinguished from that in the seedboxes; and the object is to provide simple and effective final and intermediate drop mechanism for convertible drill and check-row planters of the cumulative drop type.

In cumulative drop planters or planters wherein the grains for a hill are drilled from the seed-plate into the shank an intermediate valve to hold the grains near the seed-plate until a hill has accumulated is a necessity. The intermediate valve is opened at the same time as the lower or final valve, which requires special provision to prevent grains from falling from the seed-plate entirely through the shank when the planter is running slowly or about stopping at the ends of the field, and means is needed to hold both valves open while drilling. In this invention the final drop valve-passage is never open to permit discharge of grains falling from the seed-plate, as the means used to force a hill past the final valve closes the passage-way until the valve is again closed. The final or lower valve and the intermediate or upper valve are integral, so that the means employed to open one will also open the other, and both are readily secured in an open position to permit drilling of the seed.

In the drawings forming part of this specification, Figure 1 is a vertical section from front to back through a seedbox and shank of a planter, showing the valves closed. Fig. 2 is a vertical section through a shank of a planter, showing the valves open and illustrating the expulsion of a hill of corn from the lower valve. Fig. 3 is a vertical section through the shank, showing the valves held open for drilling; and Fig. 4 is a detail in rear elevation of the means used to hold the valves open to drill the corn.

A seedbox is shown at 25, the bottom therefor at 24, a hinge at 16, and a detachable connection at 20. The hollow shank 1 has an upward extension 15, to which the seedbox is hinged. It has a chute or passage-way 23 leading downward from the discharge-opening of the seed-plate, and it is attached to cross-bars 28 and 29.

The drill-shaft through which motion is imparted to the seed-plate 14 is shown at 26, and the check-row shaft is shown at 32.

The lower valve is shown at 38, the upper valve is shown at 39, and at 35 is shown a web or side wall, which connects the two valves together. The lower valve closes against the front of the lower part of the shank, and the upper valve closes against chute 23 by a backward motion. The valves are pivoted on pin 36 about midway of their ends, and a spring 37 tends to hold both valves closed. The upper end 40 of the lower valve-plate swings under cross-bar 29 when the valves are open, as shown in Figs. 2 and 3, and a turn-button 30 on the rear of cross-bar 29 provides means for holding the valves open, as shown in Fig. 3. In this instance the turn-button is pivoted on the bolt 31, which is used to secure the shank to cross-bar 29; but this is not material, and it is obvious that there are various mechanical equivalents of the turn-button which may be used in its place.

An arm 33 is fastened onto the check-row shaft 32 and a plunger-bar 34 is pivotally connected with the swinging end of arm 33. The plunger-bar extends downward from arm 33 inside the shank and in front of the valves, and it terminates an inch or so above the lower end of the lower valve when the check-row shaft is rocked forward. When the check-row shaft is rocked backward, the plunger forces the lower valve open, expels the hill of corn held by the lower valve, carries the upper valve open by the swing of the lower valve, and closes the passage-way against escape of corn falling from the upper valve. (See Fig. 2.)

The lower valve-plate extends from near the lower end of the shank to near the cross-bar 29, while the upper valve-plate is higher at both ends than the lower valve-plate. The lower valve-plate is in the rear of the upper valve-plate, and there is a space between

the two for the passage of corn. The two valve-plates, with their conjoining side wall or walls, form a tubular structure with the forward wall extending upward above the tube and the rear wall extending downward below the tube. The two valves comprise a single structure, and when they are held open, as shown in Fig. 3, a clear and approximately straight passage is formed for drilling corn.

I claim—

1. In a planter, the combination of a hollow shank, a valve-plate pivoted between its ends in the rear part of the shank with its lower end closable against the lower front wall of the shank, a second valve-plate connected with the first valve-plate in front thereof and closable backward above the pivot against a surface of the shank, a spring to hold the valves closed, a plunger-bar to force the valves open and expel the seed from the lower valve, and means other than the plunger-bar for holding the valves open.

2. In a planter the combination of a hollow shank, a tubular structure pivoted between its ends in the rear part of the shank, a lower valve formed of a downward continuation of the rear wall of the tube, an upper valve formed of an upward continuation of the front wall of the tube, a spring to hold the valves closed against surfaces of the shank, a plunger-bar to force the valves open and expel seed from the lower valve, and means independent of the plunger-bar for holding the valves open.

3. In a planter, the combination of a hollow shank, a valve-plate pivoted between its ends in the rear part of the shank and closable against the lower front wall of the shank, a second valve-plate connected with the first valve-plate in front thereof and closable backward above the pivot against a surface of the shank, a spring to hold the valves closed, a plunger-bar to force the valves open and expel seed from the lower valve, and a turn-button on the shank in position to engage the valves and hold them open.

4. In a planter, the combination of a hollow shank, a valve-plate pivoted between its ends in the rear part of the shank and closable against the lower front wall of the shank, and a second valve-plate connected with the first valve-plate in front thereof and closable backward above the pivot against a surface of the shank.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

LEVI P. GRAHAM.

Witnesses:

CHARLES G. POWERS,

ROSA VOELCKER.