(No Model.) 2 Sheets—Sheet 1.

L. & J. CHARLES.

PLANTER AND FERTILIZER DISTRIBUTER.

No. 381,335. Patented Apr. 17, 1888.

Fig. 1.

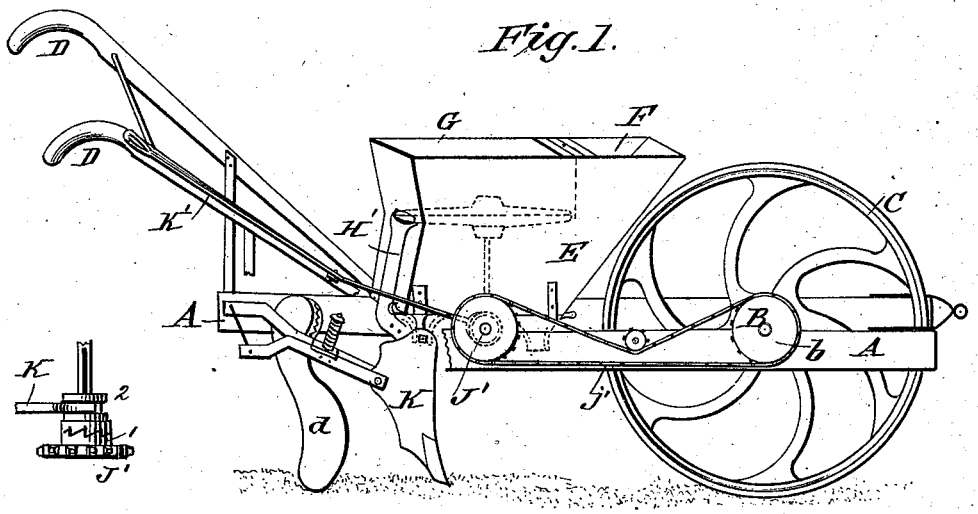
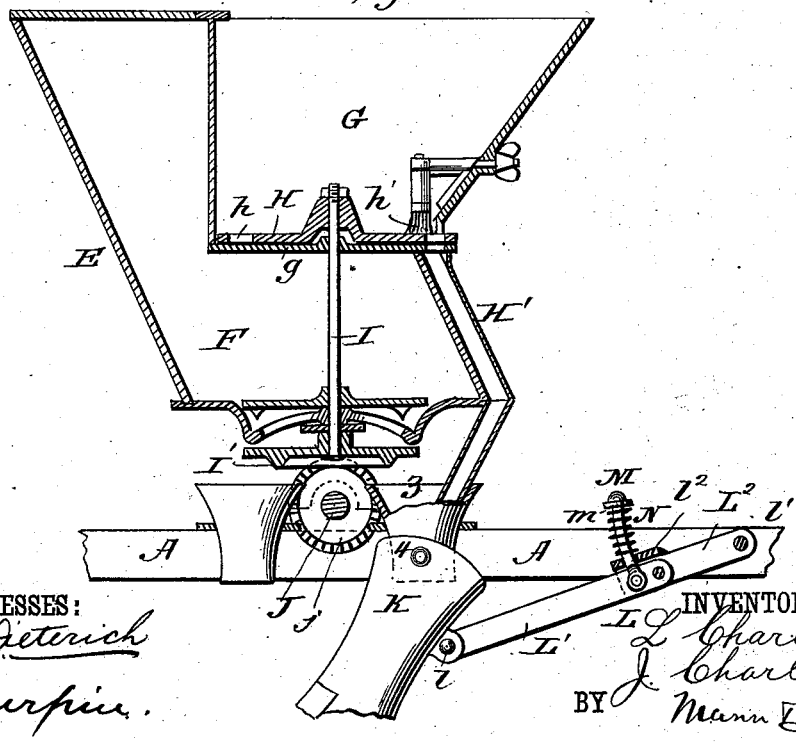


Fig. 2.



WITNESSES:
Fred G. Dieterich
P. B. Turpin.

INVENTOR:
L. Charles
J. Charles
BY Munn & Co.
ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

L. & J. CHARLES.

PLANTER AND FERTILIZER DISTRIBUTER.

No. 381,335. Patented Apr. 17, 1888.

Fig. 5.

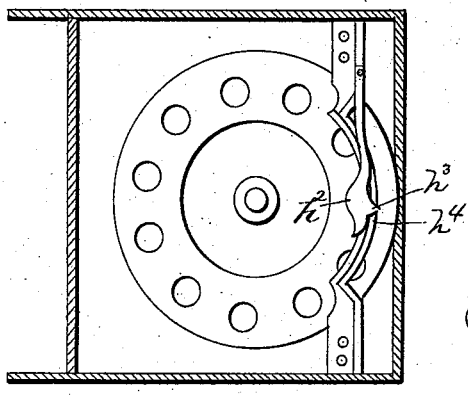


Fig. 4.

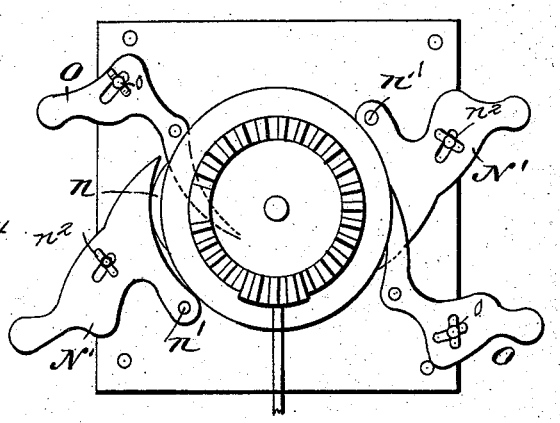


Fig. 3.

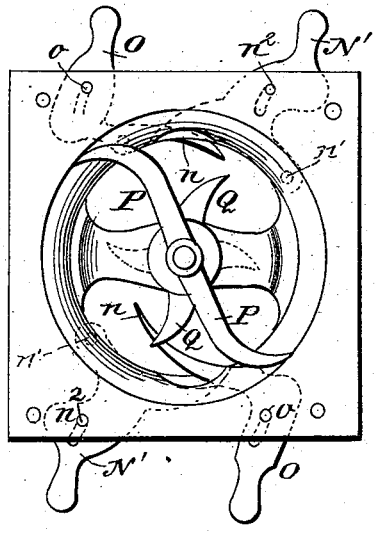
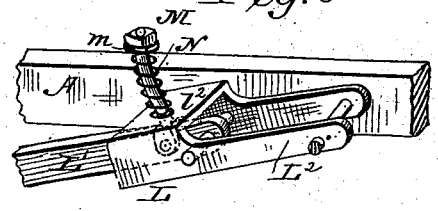


Fig. 6



WITNESSES:
Fred G. Dieterich.
P. B. Perkins.

INVENTORS.
L. Charles.
J. Charles.
BY Munn & Co
ATTORNEYS.

UNITED STATES PATENT OFFICE.

LEWIS CHARLES AND JOHN CHARLES, OF CLEAR SPRING, MARYLAND.

PLANTER AND FERTILIZER-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 381,335, dated April 17, 1888.

Application filed August 9, 1887. Serial No. 246,552. (No model.)

To all whom it may concern:

Be it known that we, LEWIS CHARLES and JOHN CHARLES, of Clear Spring, in the county of Washington and State of Maryland, have invented a new Improvement in Planters and Fertilizer-Distributers, of which the following is a specification.

This invention is an improved combined planter and fertilizer-distributer; and it consists in certain features of construction and novel combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a side view, parts being broken away, of the improved machine. Fig. 2 is a detail vertical section through the hopper. Figs. 3 and 4 are detail views of the fertilizer discharging devices. Fig. 5 is a detail view of the knocker and its supports. Fig. 6 is an enlarged detail view of a part of the boot-support.

The framing comprises side beams, A A, between which, near their forward ends, we journal the axle B of wheel C, which axle B is fixed to said wheel and is provided with a sprocket or other suitable pulley, *b*. At its rear end suitable handles, D, are connected with the main frame, and coverers *d* are also connected with such frame and arranged to run on opposite sides of the row planted by the aid of the boot presently described. It is usual and preferable to connect the coverers adjustably with the frame, it may be by the aid of the interlocking serrations, as shown in Fig. 1.

The hopper E is supported on the main frame, and is divided into a fertilizer-compartment, F, and a seed-compartment, G, the latter being preferably above the fertilizer-compartment, as shown. The plate *g*, which forms the bottom of the seed-compartment, also forms a base on which the seed-wheel—or, as it may be termed, the "seed-dropper"—H, rests and moves. This seed-dropper H is shown as a wheel provided with pockets *h*, and turning out of the rear end of the hopper to bring its seed-pockets into position to discharge into the seed-conducting tube H', which leads down to and discharges into the upper end of the boot. The dropper, it will be seen, turns through a slot or opening in the rear of the hopper, and a brush, h', and knocker h^2 are provided to prevent any clogging of the device. The knocker h^2 has a portion, h^3, which overlaps a bar or other suitable stop, h^4, and serves to limit the movement of the knocker. The dropper is secured to and operated by a shaft, I, which extends down through the fertilizer-compartment, and has fixed to it a bevel or similar gear-wheel, I', meshed by a pinion, *j*, on a horizontal shaft, J. A sprocket or similar pulley, J', is sleeved on the shaft J, and is connected by a sprocket belt or chain, *j'*, with the pulley *b* on the axle of the drive-wheel. This pulley J' has a clutch-section, 1, and a suitable clutch-section, 2, is keyed on shaft J and movable into and out of engagement with the pulley J' to key that pulley at will to the horizontal shaft. By this construction, it will be seen, the dropping devices can be thrown into or out of gear with the drive-wheel, as desired.

A lever, K', pivoted to one of the handles, connects at its forward end with the movable clutch-section, and serves as a means for adjusting the said section into and out of engagement with the sprocket-pulley.

In practice it will be understood that the pulley J' may be removed and replaced by a larger or smaller one, as desired.

The boot K, which receives the corn or other seed from the conducting-tube, also receives fertilizer from the fertilizer-compartment through a discharge-opening, 3, and such boot is pivoted at or near its upper end at 4, so it may turn backward at its lower end to properly pass stones, roots, and like obstructions. To bring the boot properly back to place we employ the sectional support L, pivoted at one end, *l*, to the boot and at the other end, *l'*, to the framing. This support is formed of sections L' and L^2, pivotally joined and overlapping at their juncture, the overlapping portion l^2 of section L^2 resting on the section L', as shown. To the section L', under the portion l^2, we secure a rod or bolt, M, which extends up through or past the said portion l^2, and supports a spring, N, which bears between said portion l^2 and a stop, *m*, on the rod, said stop being usually a nut threaded on the rod M, as shown. The operation of this construc-

tion, it will be seen, is to tend to straighten the support L, which acts to press the boot forward to its normal position after an obstruction has been passed.

The adjustable gages N′ are pivoted at *n′* and serve to increase or diminish the capacity of the fertilizer-chamber. When these gages are closed, so as to meet the true circle, the capacity is diminished. When open, so as to clear the openings *n*, the capacity is increased. The arms O run on the fertilizer-disk and operate to regulate the quantity of fertilizer discharged. These parts N′ and O may be secured in their different adjustments by screws n^2 and *o*, as shown.

The arms P are connected with the vertical shaft and serve to draw the fertilizer down onto the disk, while the arms Q, also attached to the said shaft, serve to agitate and force the fertilizer outward through the discharge-openings.

Having thus described our invention, what we claim as new is—

1. The combination of the hopper provided with a fertilizer-compartment having a discharge-opening, the fertilizer-discharging disk, the adjustable gage N′, whereby the discharge-opening may be partially or wholly closed, and the arm O, having a portion extended within the fertilizer-compartment and adjustable substantially as and for the purposes specified.

2. In a machine, substantially as described, a boot-support consisting of two sections pivoted together, one of such sections having an extension beyond the pivot overlapping the other, the rod or bolt connected with one section and extended past the overlapping portion of the other, and a spring on said rod, substantially as and for the purpose specified.

3. The combination, with the pivoted boot and the framing of the boot-supporter, pivoted at its opposite ends, respectively, to the boot and framing and formed in sections pivoted together, of a portion extended from one of the sections past the pivot and partially overlapping the other portion, and a spring for forcing the said overlapping portion toward the section it overlaps, substantially as set forth.

4. The pivoted boot and the main frame, combined with the boot-support, consisting of sections L′ and L^2, pivoted together, one of which sections has an overlapping portion, l^2, the rod or bolt M, and the spring thereon, all being arranged and operating substantially as and for the purposes specified.

5. The improved planter and fertilizer-distributer herein described and shown, consisting of the framing, the hopper mounted thereon and formed into seed and fertilizer compartments, the seed-dropper, the conducting-tube leading thence to the boot, the pivoted boot, the fertilizer-discharging mechanism, the horizontal and vertical shafts geared together and with the drive-wheel, whereby to operate the seed-dropper and fertilizer-discharging mechanism, and the boot-support formed in sections pivoted together and having one of the sections formed with an overlapping extension, a rod or bolt, M, and a spring thereon, all substantially as and for the purposes specified.

LEWIS CHARLES.
JOHN CHARLES.

Witnesses:
A. V. HUNTZBER,
D. W. CROWTHER.