(No Model.) 2 Sheets—Sheet 1

T. GIFFORD.

COMBINED PLANTER, COVERER, AND MARKER.

No. 318,977. Patented June 2, 1885.

Fig. 1.

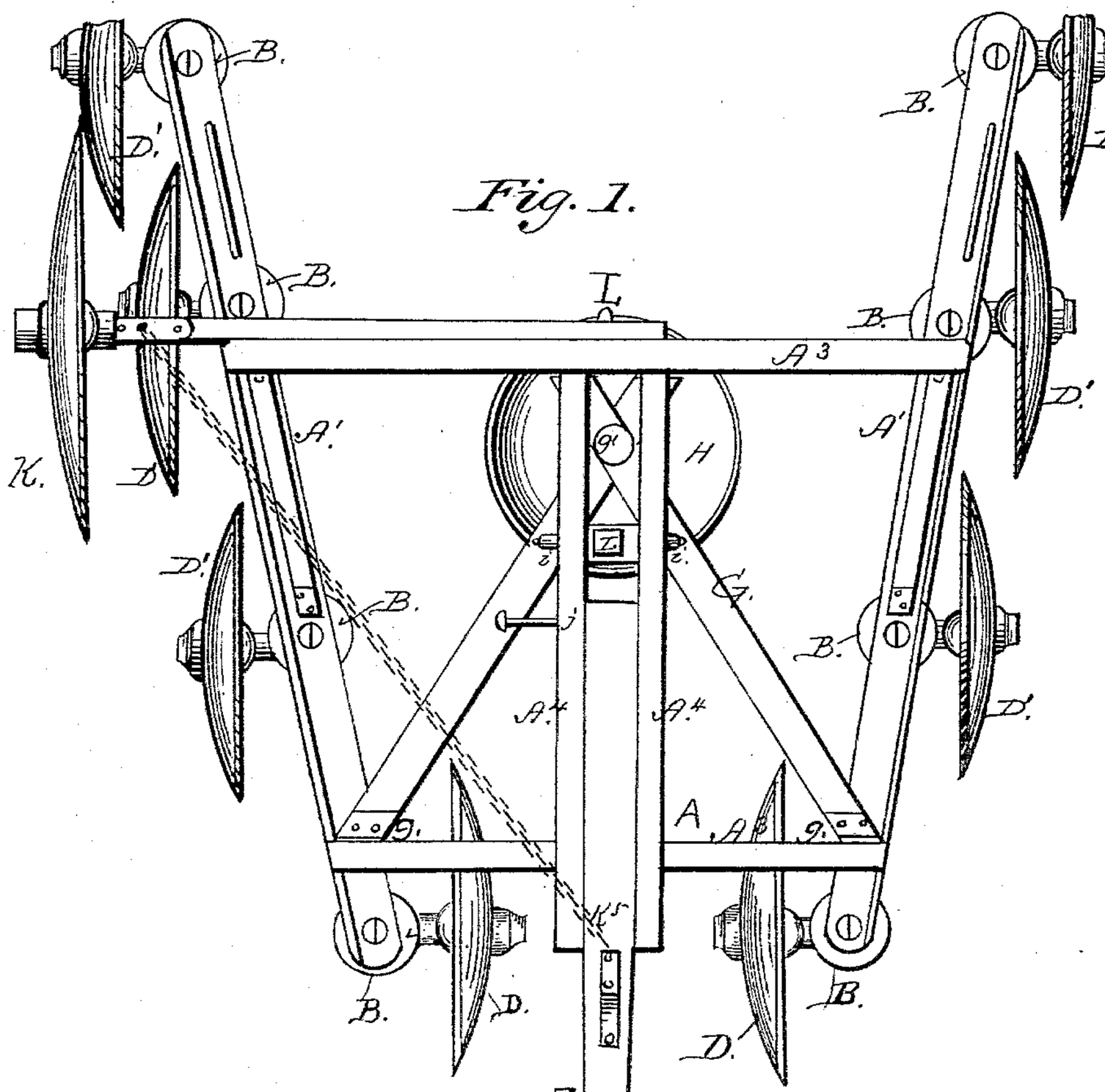
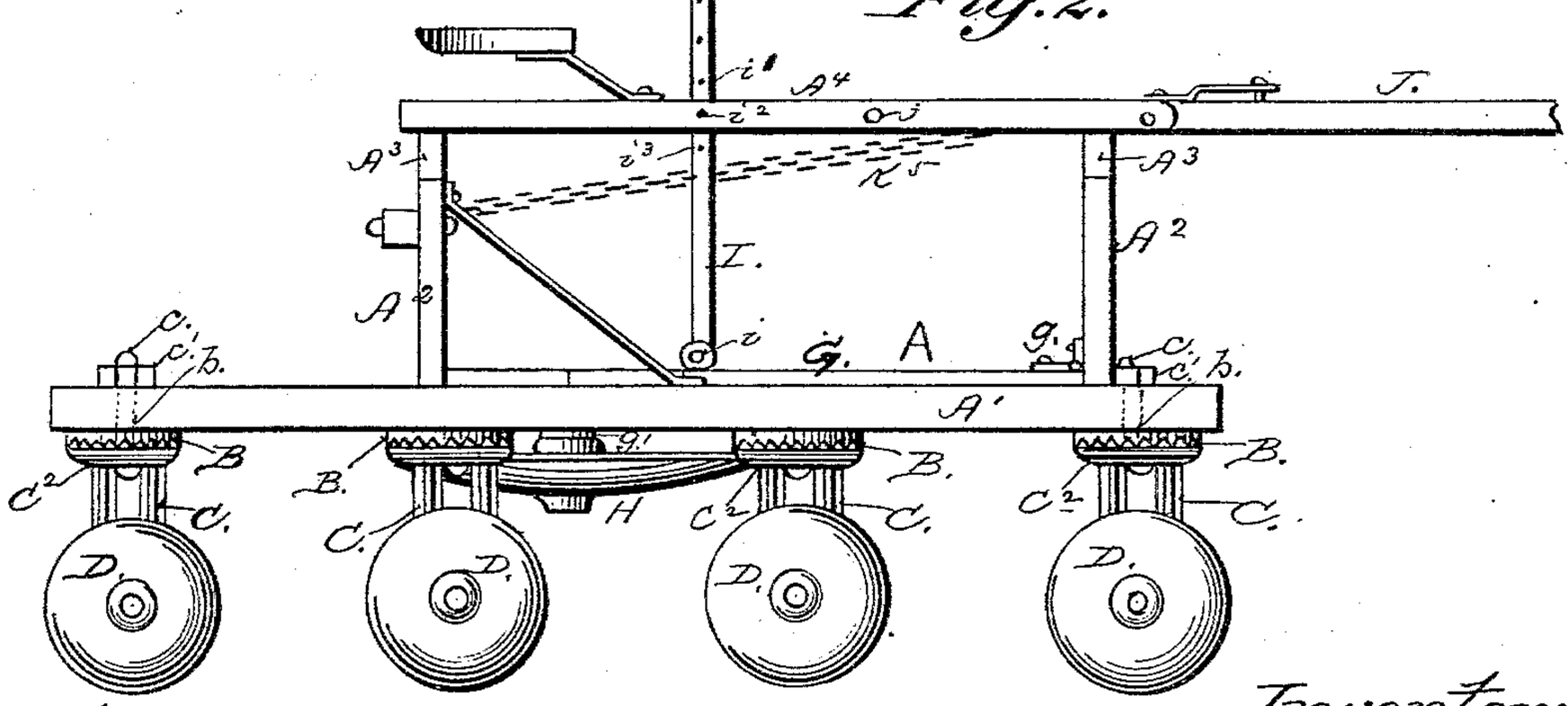


Fig. 2.



Witnesses:
Fred. Hollers.
H. W. Howard

Inventor:
Thomas Gifford,
By Parker H. Sweet, Jr.
Atty

(No Model.) 2 Sheets—Sheet 2.

T. GIFFORD.

COMBINED PLANTER, COVERER, AND MARKER.

No. 318,977. Patented June 2, 1885.

Fig. 4.

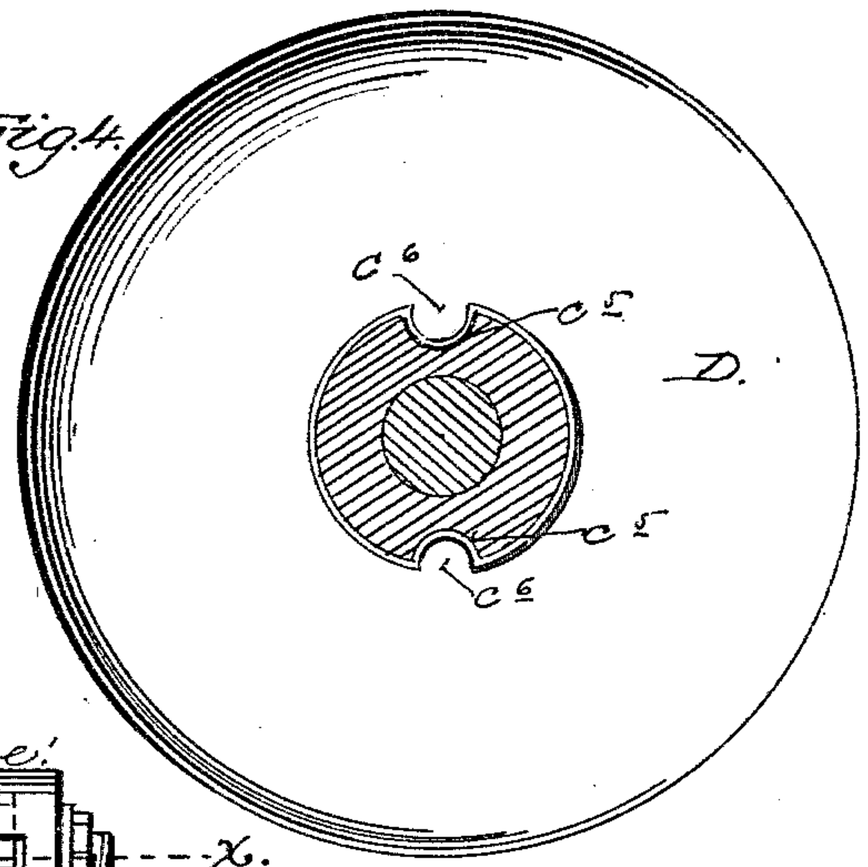
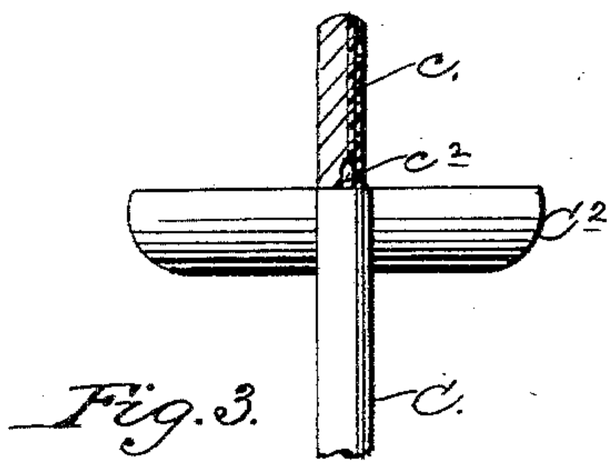


Fig. 3.



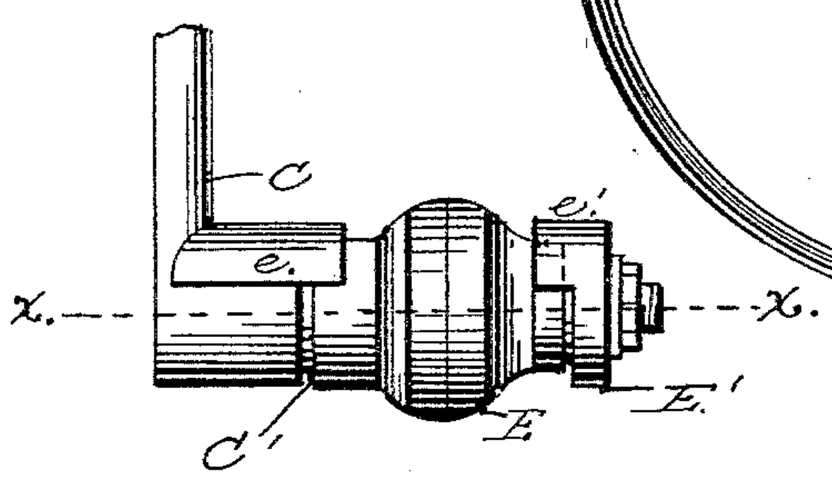


Fig. 5.

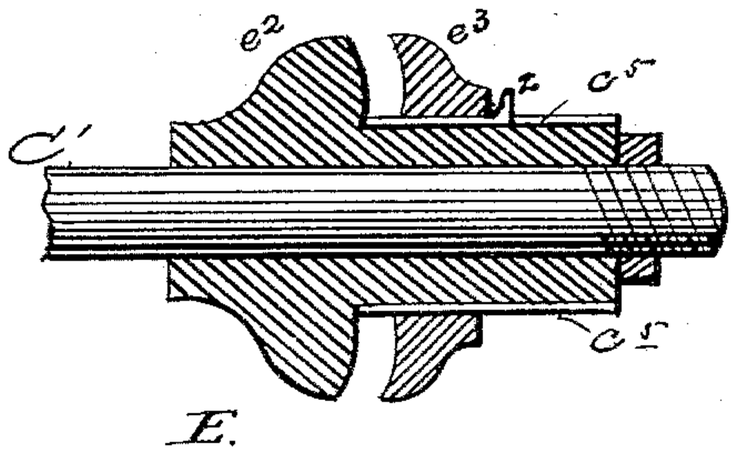


Fig. 6.

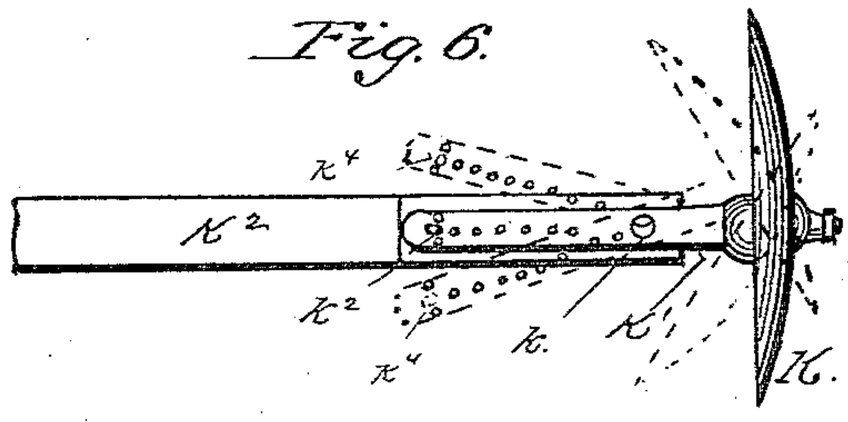
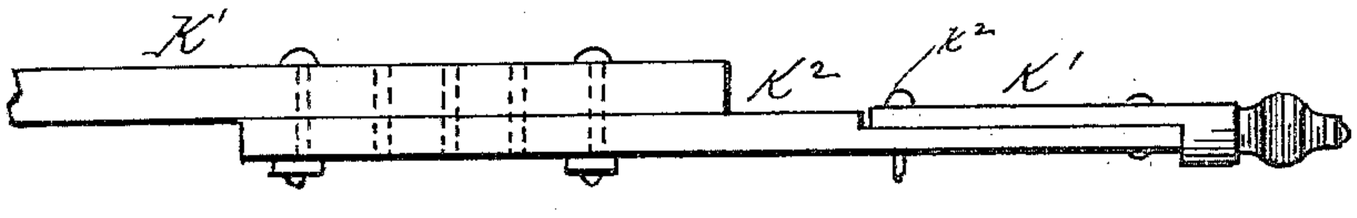


Fig. 7.



Witnesses:
H. Ord. Keller.
H. W. Howard.

Inventor:
Thomas Gifford,
By Parker & Burton
Atty.

UNITED STATES PATENT OFFICE.

THOMAS GIFFORD, OF COLUMBUS, NEW JERSEY.

COMBINED PLANTER, COVERER, AND MARKER.

SPECIFICATION forming part of Letters Patent No. 318,977, dated June 2, 1885.

Application filed July 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS GIFFORD, a citizen of the United States, residing at Columbus, in the county of Burlington and State of New Jersey, have invented certain new and useful Improvements in Combined Corn Planters, Coverers, and Markers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to combined planters, coverers, and markers, and its purposes are fully shown in the description and claims. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a top plan view of a machine embodying the principles of my invention; Fig. 2, a side elevation of the same, partly broken away; Fig. 3, an enlarged detail view of the means by which the furrowing-disk is mounted on the bracket-arm. Fig. 4 represents a detail view of the furrowing-disk; Fig. 5, a vertical section of the disk-supporter on the line *x x* of Fig. 3; Fig. 6, a detail view of the marker and its suspension-bar, illustrating also the means of varying its angle to said bar; and Fig. 7, an enlarged detail view of the suspension-bar and of the means for telescoping the same.

Similar letters of reference occurring on the several figures indicate like parts.

The frame A of the machine is composed of the diverging arms A′ A′, the standards A^2 A^2, the cross-bars A^3 A^3, and the central longitudinal bars, A^4 A^4. Ratchet-disks B B are rigidly secured to the under surface of the arms A′ A′, so that by means of the corresponding serrations, c^2 c^2, on disks C^2 C^2, integral with the bracket-arm C C′, on which the disk D is mounted, the said disk may readily assume and maintain any position in which it is adjusted. The brackets C C′ are suspended from the frame by nuts *c′ c′*, which engage the threaded stems of the brackets passed through the apertures *b b*. Spindles C′ C′ project perpendicularly from the arms C C, and serve as axes mediately for the furrowing-disks D. These disks are preferably of concavo-convex form, and operate as wheels to the frame, as well as plows. Disks D D are mounted upon the spindles C′, so that furrows of different widths shall be made by varying their angles to the frame by means of the nuts *c′ c′*, engaging the bracket-stems, or by other well-known and suitable mechanism. A hub, E, having a concentric radial prolongation, c^5, is adjusted upon the spindle C′, the face e^2 of this hub being of a convex shape, and the prolongation c^5, constituting an axis for the disk D, has arc-like grooves on antipodal sides of its center line, to assist the passage of said disk, which has corresponding radial projections, c^6, fitting in the arc-like grooves, to prevent the disk from turning on the hub. After the disk D is slipped on its axis c^5 a concave-faced collar, e^3, is adjusted upon the said axis in such manner that the disk D is securely held in place between the convex face e^2 of the hub and the concave face of the collar e^3, the latter being held firmly in position against the disk by the wedge or pin 2. A cap, *e*, having its conformation reversed from that of the hub E, projects from the spindle-arm, and, overlapping a short distance upon said hub, serves to exclude dust, &c., from the spindle and disk-axis at one end, while a collar, E′, which follows the collar e^3 and is rigidly held upon the spindle C′ by suitable means, subserves a similar function at the opposite end.

The seed drilling and dropping mechanisms are not illustrated on the drawings, as it is obvious that any approved devices for this purpose may be used on the machine.

An armed frame, G, pivoted to the arms A′ A′ at their junction with the forward uprights, A^2 A^2, by hinges *g g*, and from which a perpendicular journal-pin, *g′*, depends, on which the covering-disk H is mounted, operates to vary the pressure of the coverer on the soil by means of the rod I, the said hinged frame being actuated by foot. This coverer H follows closely upon the seed-dropper, (not shown,) and by reason of its revolutions on the journal, imparted by friction on the soil, serves to spread a layer of earth, more or less compact, over the seed, said coverer H being slightly slanted to one side, so as to insure its being revolved in one direction by reason of fric-

tional contact with the soil as the apparatus is moved along.

The rod I, pivoted at *i* to the frame G, has a series of perforations, i^3, in its upper end, so that by a pin, i^2, it is adjustable in the bars A^4 A^4, so as to be readily lowered to an operative position or elevated and locked out of contact with the soil, as shown in Fig. 2, and thus the pressure of the coverer on the earth may be regulated, and, if desired, force may be applied to the power end *i'* of rod I, to increase the pressure.

J is the pole to which the draft is applied, and this may be altered in position relatively to the frame-bars A^4 A^4 by ordinary means.

K is a marker-disk journaled upon a spindle, K', which is pivoted at *k* to the arm K^2, and is provided with a pin, k^2. By inserting the pin in different holes of a series, k^4, respectively, on the outer ends of the arms K' K^2, the angle of the marker is varied; also, by reason of the guy-chain K^5, attached to the pole, the marker partakes of the movements of the latter, and because of the pivotal connection of the arm K^2 with the frame-bar A^3 at L it may operate on either side of the frame, and may on the same account be relieved of action entirely by any obvious means.

It will be understood that in planting the first disks, D, will be turned with the convex side inwardly, and the following ones, D', conversely. Thus a furrow will be made in the middle by the banking of earth on either side, seed will be dropped therein, the rotary coverer H will spread a layer of earth over the seed, and this action will be aided by the follower-disks D'. So long as the salient features comprehending the principles of my invention are accomplished, structural changes may be made, if deemed judicious, without departing from its spirit.

Having thus described my invention, I claim as new and useful—

1. In combination with the frame of a planter, as herein described, a horizontal covering-disk and means, substantially as shown, for varying its position in a vertical plane, as set forth.

2. The pivoted frame G, having journal-pin *g'* and hinged perforated rod I, in combination with the bars A^4 A^4, the pin i^2, and the disk-coverer H, substantially as specified.

3. The pivoted arm K^2, having holes k^4 and marker-disk K, in combination with the spindle K', pivoted at *k* to the arm K^2, and the adjusting-pin k^2, for the purpose set forth.

4. The frame A, telescopic arm K^2, having a series of holes, k^4, spindle K', disk K, and pin k^2, in combination with the guy-chain K^5 and pole J, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS GIFFORD.

Witnesses:
PARKER H. SWEET, Jr.,
RILEY A. SHINN.