

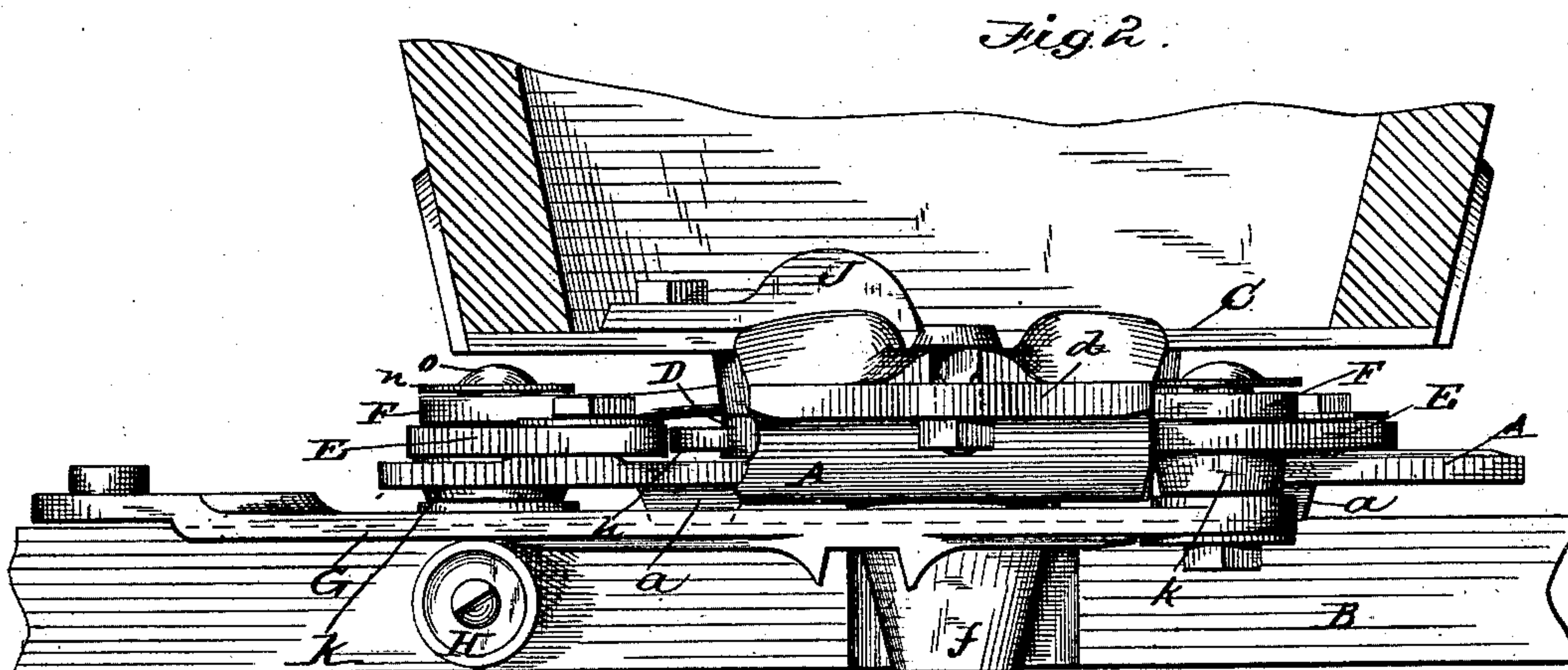
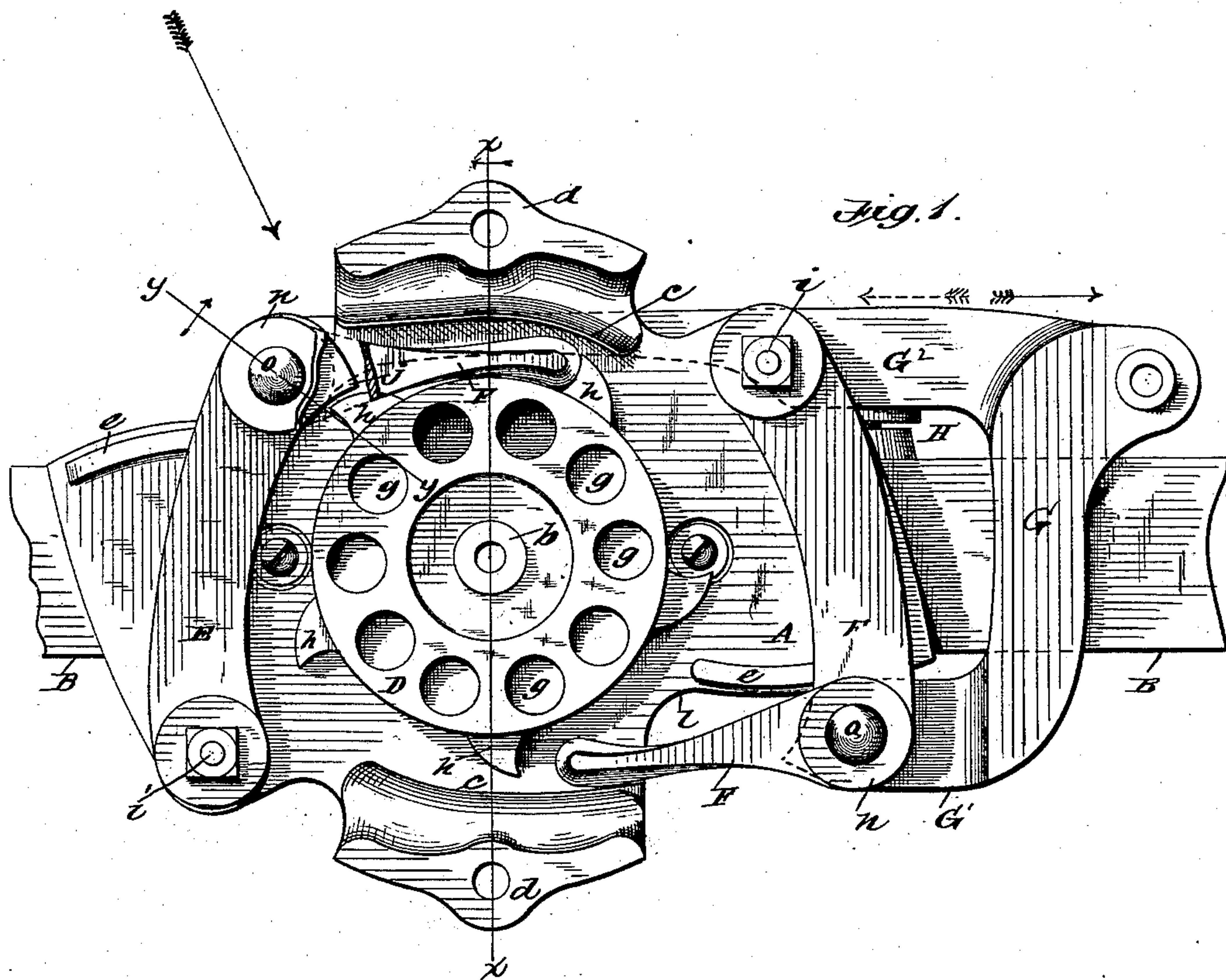
(Model.)

2 Sheets—Sheet 1.

L. SCOFIELD.  
CORN PLANTER.

No. 279,822.

Patented June 19, 1883.



WITNESSES:

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W. H. Knight.  
S. H. Church.

*INVENTOR*

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by Levi Asfield,  
Neville Church,  
His Attorney.

(Model.)

2 Sheets—Sheet 2.

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Fig. 3.

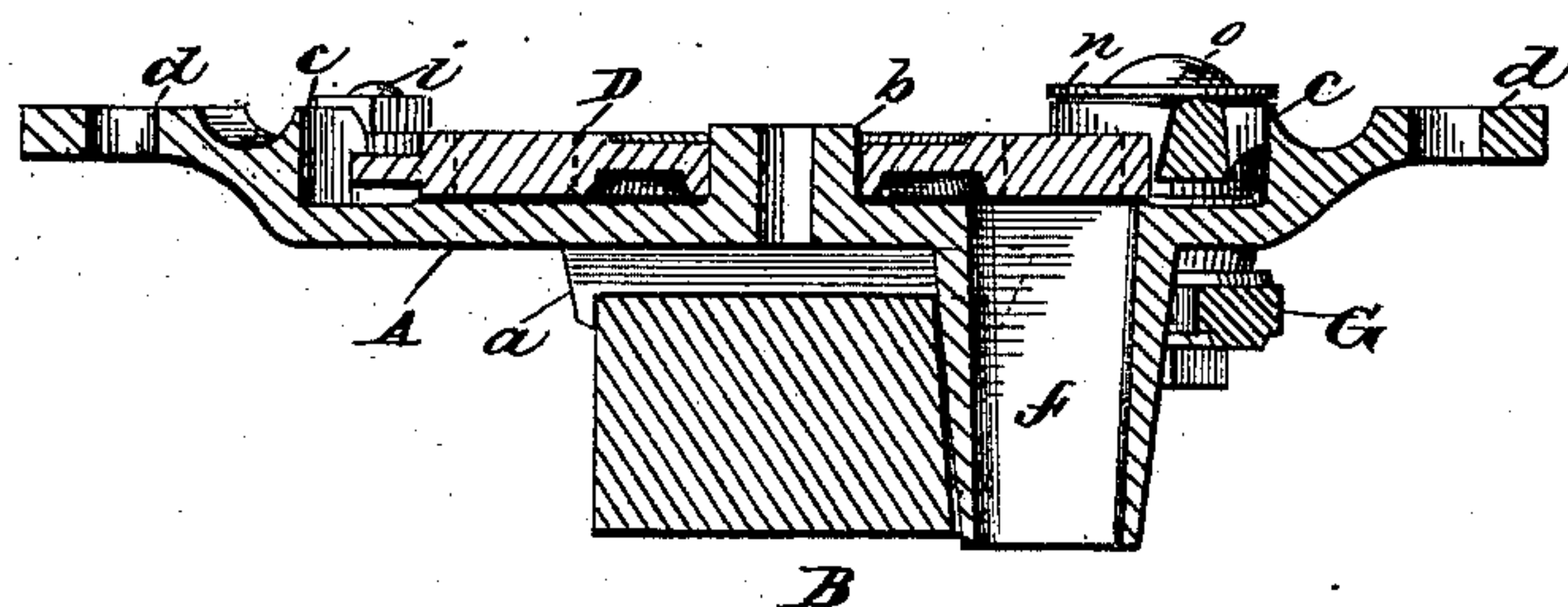


Fig. 4.

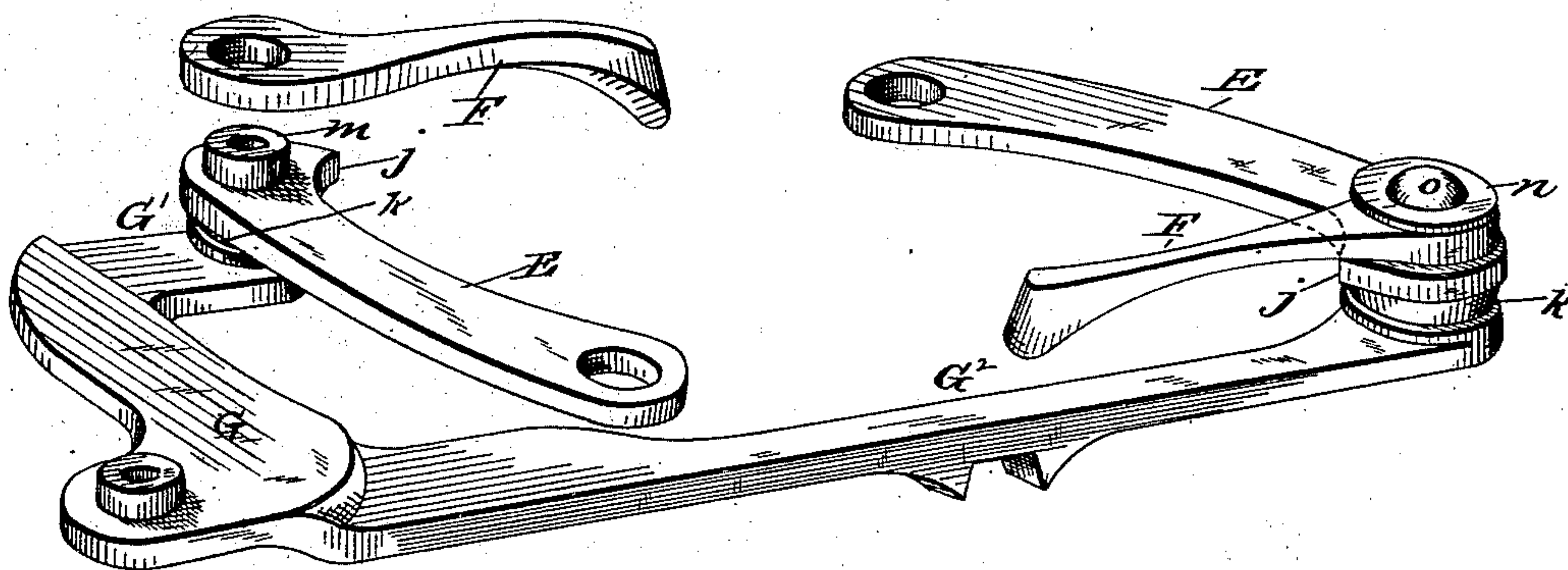


Fig. 5.

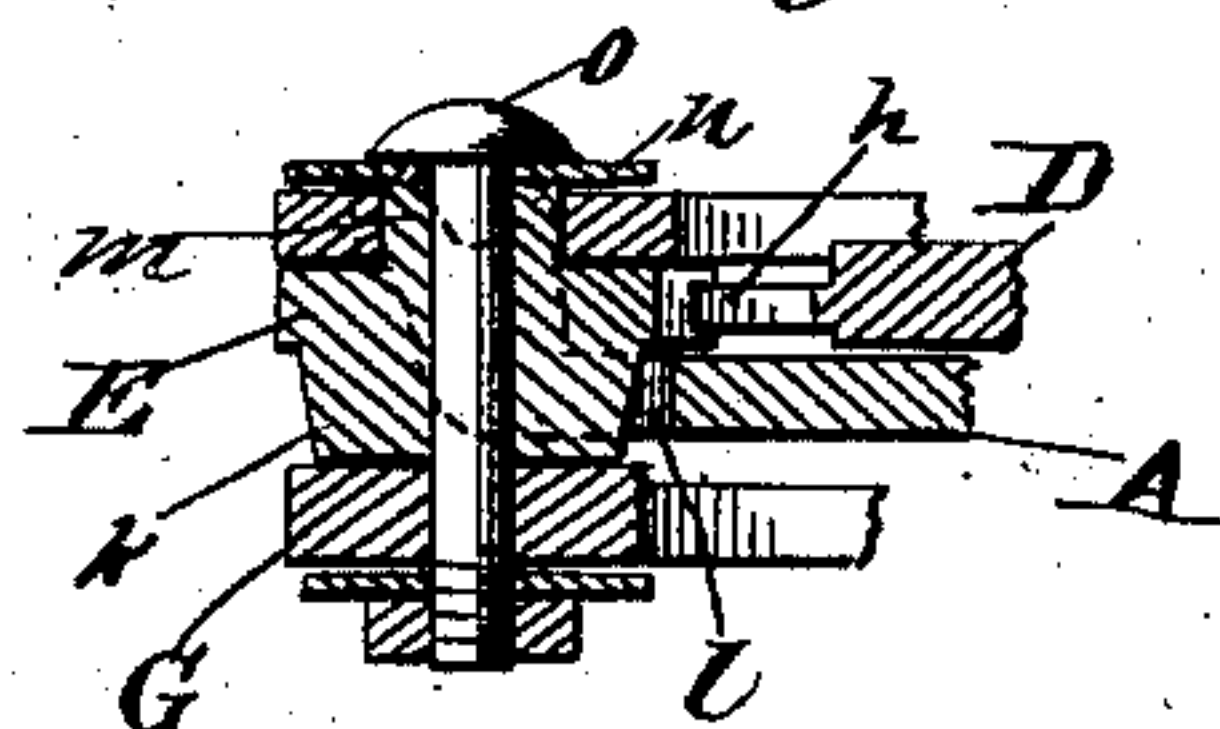


Fig. 6.



WITNESSES

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# UNITED STATES PATENT OFFICE.

LEVI SCOFIELD, OF CEDAR RAPIDS, IOWA.

## CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 279,822, dated June 19, 1883.

Application filed October 6, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, LEVI SCOFIELD, of Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful

5 Improvements in Corn-Planters; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

10 Figure 1 is a top plan view of my invention with the bottom plate of the hopper removed. Fig. 2 is a side elevation of the same with the hopper-plate in position. Fig. 3 is a transverse sectional view taken on the line *x x* of

15 Fig. 1. Fig. 4 is a perspective view of the bifurcated slide and pawl-carriers and pawl connected thereto. Fig. 5 is a sectional view taken on the line *y y* of Fig. 1, and Fig. 6 is a view of a modification of the bifurcated slide.

20 Similar letters of reference in the several figures denote the same parts.

My present invention is an improvement upon the device for which Letters Patent of the United States No. 252,808 were granted

25 and issued to me on the 24th day of January, 1882; and it consists in a novel construction and arrangement of parts, whereby a more compact, durable, and more easily operating device is produced, substantially as I will now

30 proceed to describe.

In the accompanying drawings, A represents a plate or casting provided with transverse ribs *a a*, which rest upon the beam B and elevate the plate proper slightly above

35 the top face of the beam, as shown in Figs. 2 and 3, and provided also with a central stud, *b*, forming the bearing for the seed-plate, flanges *c c*, for guiding the pawls in their movements, lugs *d d*, to which the bottom plate, C,

40 of the hopper is secured, ribs *e e*, forming the bearings for the pawl-carriers, and a downwardly-projecting tube or seed-conductor, *f*.

D is the seed-plate, mounted upon the stud *b*, so as to turn freely thereon, and having seed-

45 pockets *g* and peripheral ratchet-teeth *h*, as shown.

Hinged to diagonally-opposite corners of the plate or casting A by pivot-bolts *i* are two arms, E E, which I term "pawl-carriers."

50 The outer end of each of the pawl-carriers is provided with a laterally-projecting hook, *j*,

which, when the pawl-carrier is moved toward the seed-plate, projects in advance of one of the teeth of the seed-plate and operates as a stop to prevent the further rotation of the latter. Said pawl-carrier is further provided

55 with a downwardly-projecting boss, *k*, which, when the carrier is swung toward the seed-plate, as aforesaid, strikes against the casting A at *l*, and limits the movement of the carrier in that direction; and it is also provided with a boss, *m*, on its upper side, which forms the bearing of a pawl, F.

The pawls F F are free to turn on the bearings *m m*, and have also a slightly vertical

65 swinging motion on the same, having limiting-washers *n n*, resting down upon the bearings *m m* and held thereto by bolts *o o*, said bolts passing down through the pawl-carriers and through arms G' G<sup>2</sup>, respectively, of a reciprocating bifurcated slide, G. Nuts are screwed

70 upon the lower ends of the bolts, as shown. The outer ends of the pawls F F are adapted to play between the flanges *c c* and the edge of the seed-plate, being guided in their move-

75 ments thereby, and they are also adapted to engage alternately with the ratchet-teeth of the seed-plate, and to impart to the latter a uniform intermittent motion in one direction. While one of the pawls is moving for-

80 ward, engaged with a tooth of the seed-plate and rotating the plate, the other pawl is struck by the back of the opposite tooth of the plate, is lifted up, and then drops by gravity in front of the tooth in position to operate upon

85 the same upon the reverse movement of the slide.

The reciprocating slide works below the plate of the casting A, and is partially supported by the outer ends of the pawl-carriers,

90 while the latter in turn ride upon the ribs *e e* of casting A.

A friction-roller, H, mounted upon a stud projecting from the beam, further bears the greater part of the weight of the slide and re-

95 lieves the pawl-carrier, besides preventing the slide from resting upon the beam. The plate C, forming the bottom of the hopper, is formed with suitable recesses in its under face to permit of the requisite play of the pawls, and it

100 carries the usual spring cut-off, J, as shown.

By referring to my former patent, No.



252,808, hereinbefore alluded to, it will be seen that both arms or pawl-carriers therein shown are pivoted on one side of the beam—that is to say, back of the beam—and the actuating-bar is considerably in front of the beam. While this arrangement works satisfactorily, it lacks compactness, and the two pawl-carrying arms, being different, require two separate patterns. In the present device, however, the two pawl-carriers are exact counterparts of each other, and, being pivoted on opposite sides of the beam, economize space, besides being located so as to be each given the same amount of movement. The slide also works over instead of entirely outside of the beam, thus further contributing to the compactness of the device.

Another radical improvement over my former patented device consists in the arrangement of means for arresting the motion of the slide and causing the periodic retardation of the seed-plate. In the present device, at each movement of the slide the downwardly-projecting boss *k* on the outer end of the pawl-carrier whose pawl is for the time being actively engaged in turning the seed-plate strikes the co-operating shoulder *l* of the casting *A* and arrests the movement of the slide, while at the same time the curved stop *j* on said pawl-carrier is projected in advance of that tooth of the seed-plate which immediately succeeds the tooth which the pawl is operating upon, and checks further forward rotation of the seed-plate until the latter receives another impulse from the opposite pawl, when the slide is moved in the reverse direction. From this construction the whole concussion due to the sudden stoppage of the slide at the end of its movements is borne by the bosses *k k* and the shoulders *l l*, and the stops and seed-plate teeth are relieved, and there is no wear on the seed-plate teeth except that which results from its arrest, when it is carried forward by its momentum after the propelling-pawl has ceased to act upon it. Just before one engaged pawl reaches the limit of its throw, the opposite disengaged pawl is struck by the next succeeding tooth and raised, and the tooth passes under it, the pawl then dropping down behind said tooth in position for action. The pawls acting by gravity alone require no springs or other devices to keep them down, and being guided positively in their back and forth movements always make sure engagements with the teeth of the seed-plate.

Several advantages arise from the placing of the bifurcated slide under the plate of casting *A*, and the suspending of it from the pawl-carriers, viz: First, it enables the connection for the tip-valve in the leg of the planter to be made at a point just back of the discharge, the upper end of the tip-valve entering the notch *p*, as shown; secondly, it relieves the whole movement of much friction and wear by reducing the number of bearing-points to the minimum, for it will be observed that the friction-roller underneath the slide supports

in a great measure the weight of the slide, and the only other bearing-points are the ribs on the plate *A*, upon which the outer ends of the pawl-carriers rest, and there the friction is very slight; and, thirdly, the slide being below the plate and protected by it, no dust can gather upon it to obstruct its free movement.

Both pawls and pawl-carriers are duplicates, and are interchangeable, and the casting *A* and seed-plate can be used on the drop at either end of the beam, right or left, while the simple removal of a bolt will permit the replacing of a new part in case of breakage.

It will be noticed that the discharge through the casting *A* is extended in the form of a tube or conductor much longer than usual. This is important, as it allows the seed more time in passing from the seed-plate to the valve in the seed-conductor. Usually a separate short conducting-tube is attached to the beam for this purpose; or no conductor at all is employed.

Instead of forming the upper and lower bosses, *m* and *k*, on the pawl-carriers, the bifurcated slide, at the appropriate points, may be provided with studs *V*, as shown in the modification, Fig. 6, and the plain pawl-carriers, the pawls, and washers may then be applied in the order named, to such studs, and secured by a bolt passing down through.

Having thus described my invention, I claim as new—

1. In a corn-planter, the combination, with the toothed seed-plate, of the vibrating pawl-carriers pivoted on diagonally-opposite corners of the stationary casting, and carrying pawls for acting alternately upon the seed-plate to rotate it, substantially as described.

2. In a corn-planter, the combination, with the toothed seed-plate, of the pawl-carriers pivoted on diagonally-opposite corners of the stationary casting, the gravitating pawls mounted on said pawl-carriers, and the flanges on the stationary casting for guiding the pawls laterally and insuring their positive and certain engagement with the teeth of the seed-plate, substantially as described.

3. In a corn-planter, the combination, with the toothed seed-plate, of the vibrating pawl-carriers pivoted to diagonally-opposite corners of the stationary casting, the gravitating pawls mounted on said carriers, and the bifurcated operating-slide having its arms connected to the pawl-carriers, substantially as described.

4. In a corn-planter, the combination, with the stationary casting raised above the beam, of the seed-plate, the vibrating pawl-carriers pivoted to the diagonally-opposite corners of said stationary casting, the gravitating pawls mounted on said carriers, and the reciprocating slide working over the beam beneath the casting, and having its bifurcated arms connected to the carriers, substantially as described.

5. In a corn-planter, the combination, with the stationary casting, of the vibrating pawl-carriers pivoted on diagonally-opposite corners of the casting, the ribs on the casting for sup-



porting the outer ends of the pawl-carriers, the reciprocating slide connected to the pawl-carriers below the casting, and the roller for supporting the slide, substantially as described.

5 6. The combination, with the stationary casting, of the pawl-carriers pivoted thereto on diagonally-opposite corners, and having the depending bosses which co-operate with the shoulders on the casting to limit the move-  
10 ments of the operating-slide, substantially as described.

7. The combination, with the stationary cast-

ing and the toothed seed-plate, of the vibrating pawl-carriers pivoted to the said stationary casting, and having the depending bosses 15 for co-operating with the shoulders on the casting, and having also the stops for projecting in advance of the teeth of the seed-plate and arresting the rotation of the latter, substantially as described.

LEVI SCOFIELD.

Witnesses:

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RALPH VAN VECHTEN.