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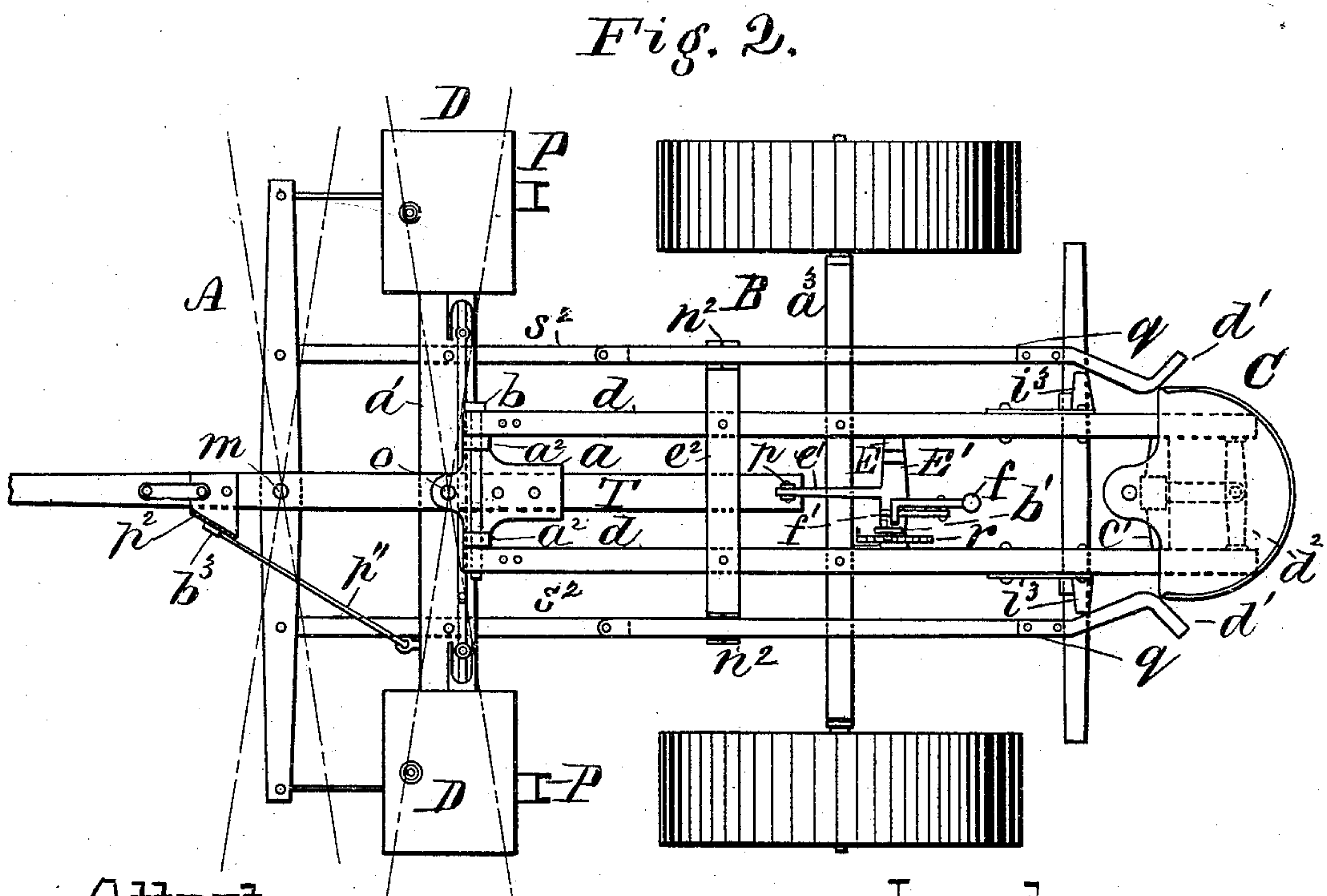
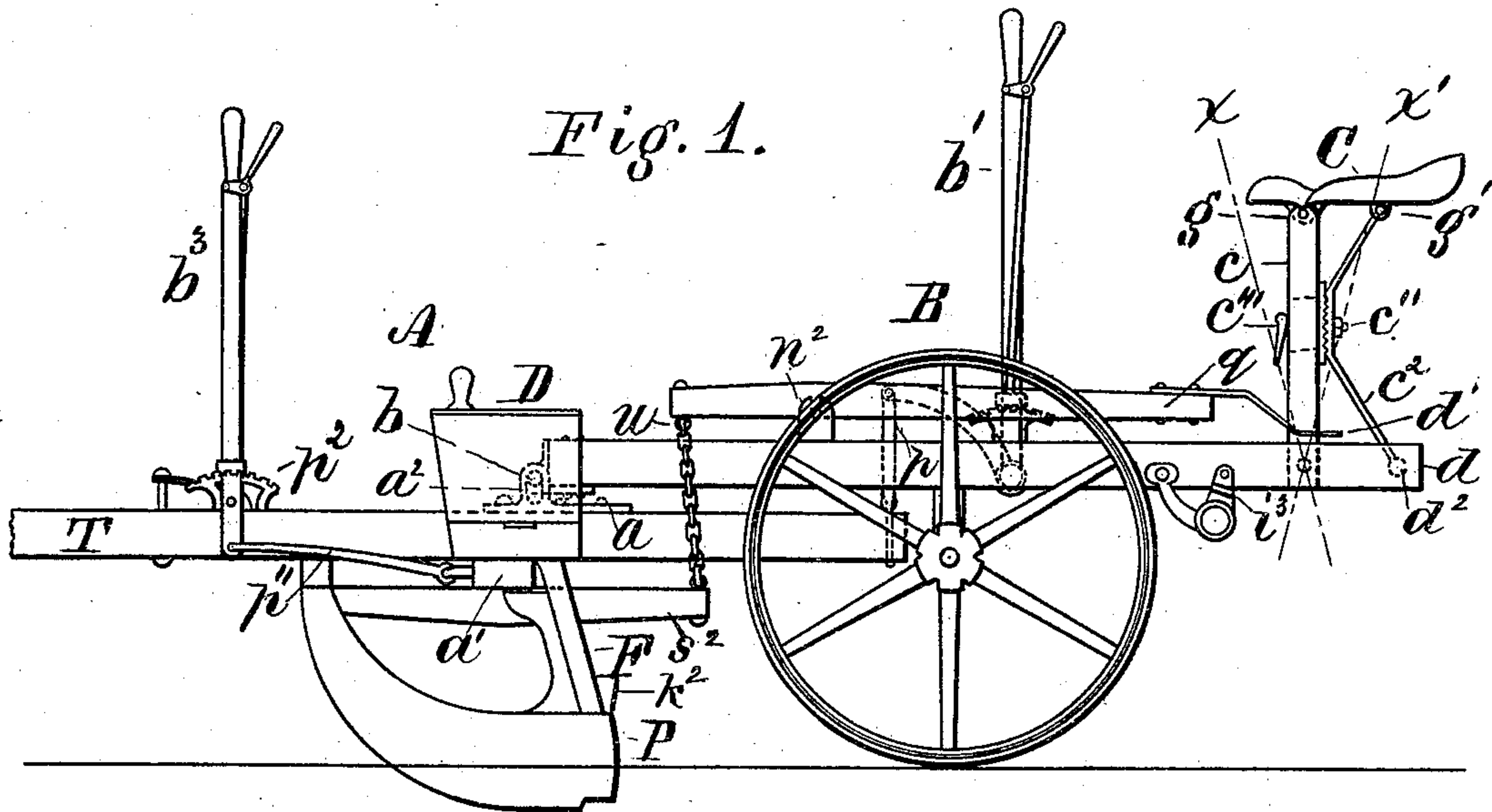
3 Sheets—Sheet 1.

F. W. SHELLABARGER.

CORN PLANTER.

No. 343,611.

Patented June 15, 1886.



Attest.

W. M. Converse  
G. W. Gridley

Inventor.

Flavius W. Shellabarger  
W. C. Converse,  
att'y.

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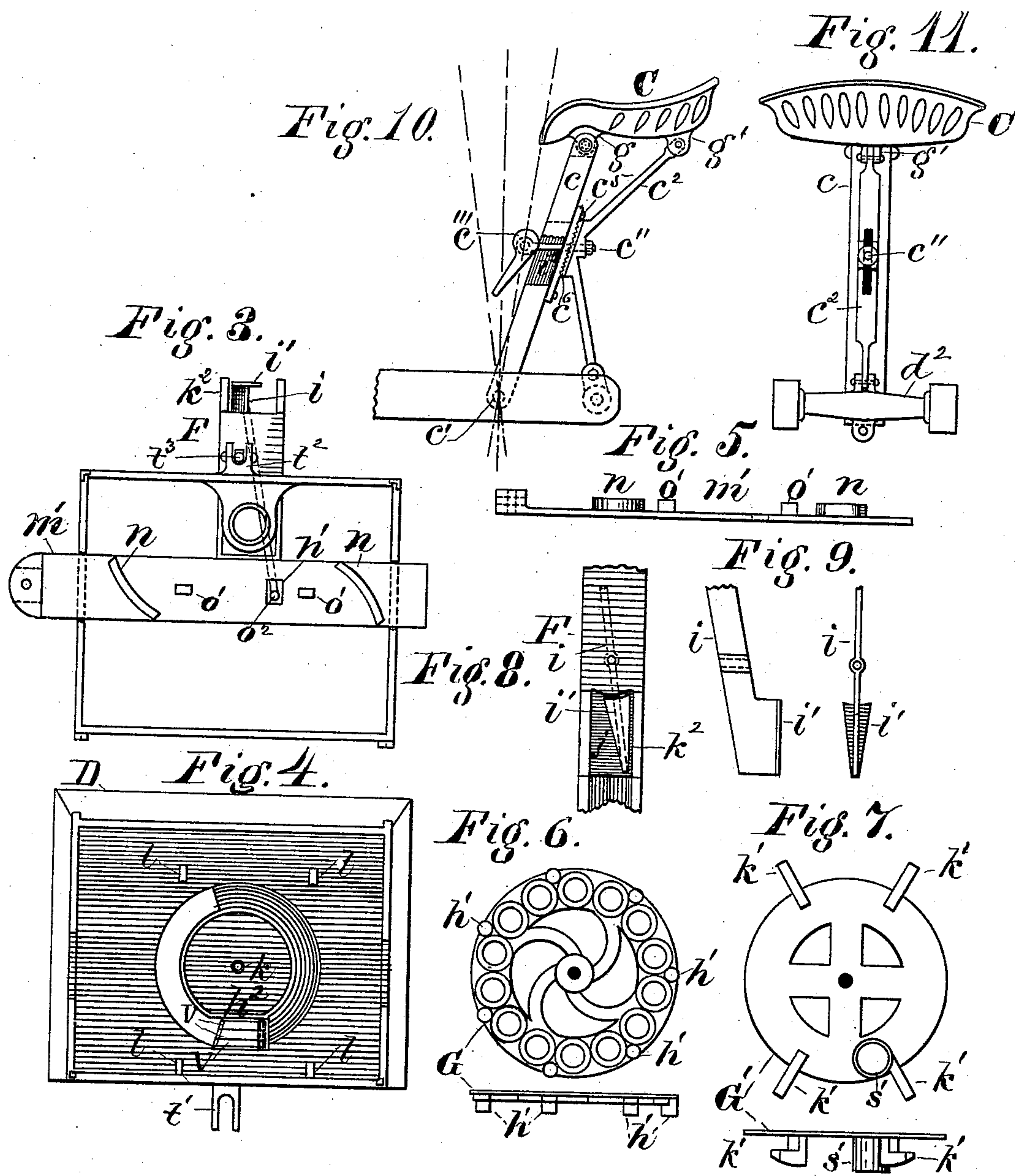
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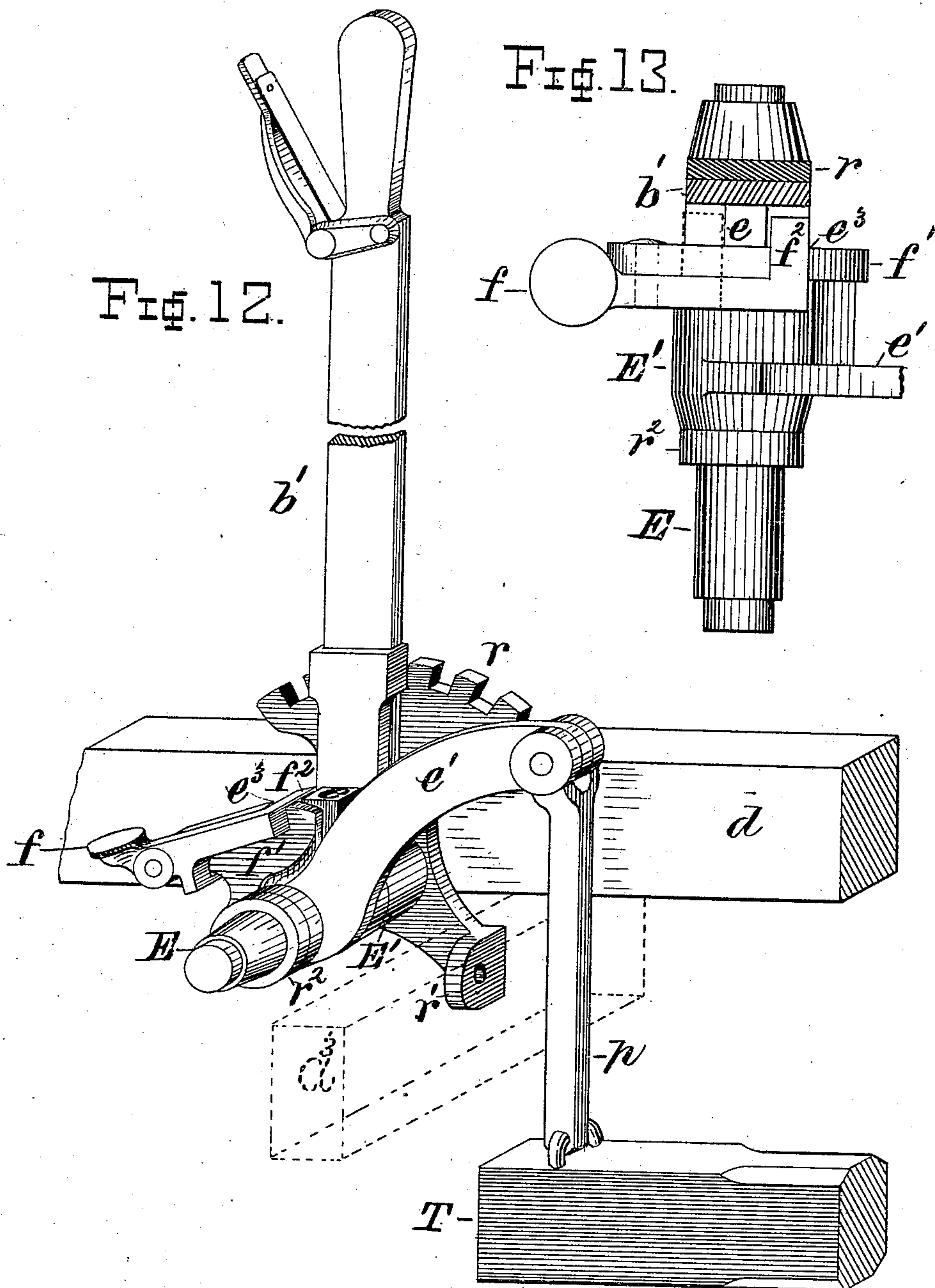
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# UNITED STATES PATENT OFFICE.

FLAVIUS W. SHELLABARGER, OF MIAMI COUNTY, OHIO.

## CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 343,611, dated June 15, 1886.

Application filed February 1, 1884. Serial No. 119,539. (No model.)

*To all whom it may concern:*

Be it known that I, FLAVIUS W. SHELLABARGER, a citizen of the United States, residing in the county of Miami and State of Ohio, have  
5 invented certain new and useful Improvements in Corn-Planters; 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  
10 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 improvements in  
15 corn-planters.

My invention relates to improvements in the different parts of a corn-planter.

These improvements consist, first, in a novel  
20 construction of the slide-bar and the attachments for rotating the seed-disk; second, in the construction of the cut-offs; third, in the construction of the runner-post and of the seed-valve operating therein; fourth, in the arrangement for producing the zigzag move-  
25 ment; fifth, in the adjustable coupling connecting the sections; sixth, in the devices for locking the runners into the ground and for retaining them in position when out of the ground, and for elevating and depressing the  
30 front section of the planter; seventh, in the means for adjusting the driver's seat.

Three sheets of drawings illustrate this invention—Sheet 1, with Figures 1 and 2, and Sheet 2, with Figs. 3 to 10, inclusive.

35 Fig. 1 is a side elevation of a corn-planter to which my improvements are applied. Fig. 2 is a top view of the same. Fig. 3 is a top view of the lower section of the seed-box with the slide-bar which operates across the same,  
40 showing also the rear of the runner-post with the seed-valve therein. Fig. 4 is a view of the under side of the seed-box, showing also the triple cut-offs. Fig. 5 is a longitudinal elevation of the slide-bar. Fig. 6 is a view of the under side of the seed-disk, also an edge  
45 view of the same. Fig. 7 is a view of the cap-plate, which fits over the bottom of the seed-disk after the latter is pivoted to the bottom plate of the seed-box, one of the views  
50 showing the edge of same. Fig. 8 is a rear view of the lower portion of the runner-post

and shoe, with the seed-valve therein. Fig. 9 shows side and edge views of the seed-valve. Fig. 10 is a side elevation of the driver's seat with the attachments, the dotted lines 55 showing its movement when adjusted. Fig. 11 is a rear view of the same. Fig. 12 is an isometric view of the hand-lever and its connections. Fig. 13 is a top view of the shaft of the hand-lever and the dog for locking the  
60 sections in position when either raised or lowered.

A is the front, and B the rear, section, of the planter. *a* is a flat cast-metal plate, bolted upon the tongue *T* over the rear edge of the 65 main cross-bar *a'*, and forms, in connection with a pivot-bolt, *b*, a flexible coupling, connecting the two sections of the planter together at the front ends of the frame-bars *d* of the rear section. The ears *a*<sup>2</sup> turn up at right 70 angles upon either edge near the front part of the plate, and have a vertically-elongated hole therein, through which the bolt *b* extends, pivoting the front ends of the two frame-bars *d* outside of the ears *a*<sup>2</sup> on either side of the 75 plate. The elongated holes in ears *a*<sup>2</sup> allow the oscillation of the planter-sections, so as to adjust itself to uneven ground when in operation. The front section can be raised or lowered, either by means of the hand-lever *b'* or 80 by the foot-levers *q q*.

The hand-lever *b'* and its connections I will proceed to describe: The hand-lever *b'* and the shaft *E* are formed in one piece, the latter being pivoted at either end in plates attached 85 upon the two frame-bars *d* in rear of the axle, one of these plates being formed with the toothed rack *r*, with which the latch-bolt of the hand-lever engages, to adjust the extent of the elevation or depression of the front section. 90 Shaft *E* has pivoted upon its middle part a lever, *e'*, which curves forward over the axle and has its front end flexibly connected by a vertical link, *p*, with the rear end of the tongue *T*, which latter extends back to near the axle 95 for this purpose. The rear part of lever *e'*, behind the shaft *E*, is formed into a flat arm, *f'*, having a single transverse notch, *e*<sup>3</sup>, there- in near its front part. At its extreme rear end, on one side, is pivoted a dog, *f*, the for- 100 ward end of which is bent at right angles and lies in the notch *e*<sup>3</sup>. Its end *f*<sup>2</sup> extends far



enough outside of plate  $f'$  to engage with a square stud,  $e$ , formed on the hand-lever just over the shaft E.

In the view Fig. 12, it will be noticed that the end  $f^2$  of the dog  $f$  is behind stud  $e$ , so that the parts are locked in this position, and the runners are supposed to be depressed or forced into the ground through the connection of lever  $e'$  with the rear end of the tongue-bar. Now, when it is desired to elevate the front section, the dog  $f$  is released by pressing down its rear end, and the engaging end  $f^2$  is thereby raised, so as to allow the stud  $e$  to pass under it as the hand-lever  $b'$  is thrown backward, after which it is again let down and the end  $f^2$  engages the stud on the front or opposite side, and the parts are locked in position with the front section elevated.

By reference to Fig. 13 the two positions of the engaging end of the dog can be seen, the first one described being shown in dotted lines. When the dog is thus locked in either position, the hand-lever and the curved lever  $e'$  are thereby rigidly connected, and the proper adjustment of height or depth can be made by the former in connection with the rack  $r$ . The latter has an arm,  $r'$ , extending downward and forward, by which it is bolted to the rear of the axle. The ring  $r^2$  (seen in Figs 12 and 13) is shrunk on the shaft E, to retain the lever  $e'$  and its rear attachments in the middle line of the shaft. The foot-levers  $q$  extend from the rear of the front section, where their rear ends are connected by chains  $u$  with the rear ends of the hound-bars  $s^2$ , and extend in line therewith back to the driver's seat, at which point a bar for a foot-piece is bolted thereto, and is bent inward and then outward to bring the foot-piece  $d'$  within easy reach of the driver's feet. These foot-levers are pivoted in ears  $n^2$  at the end of the cross-bar  $c^2$ , which latter is bolted upon the frame bars  $d$  forward of the axle and parallel with the latter over the rear of the tongue. Foot-levers  $d'$  may be used to elevate the front section without the aid of the hand-lever by the driver throwing his weight from the seat upon them. If desired to raise one side only of the front section, the foot-lever on that side may be used. The laterally-extended lugs  $i^3$ , seen over the scraper-bar attached to bars  $d$  upon either side, enables the operator to retain either or both sides of the front section in elevation by slipping the foot-lever on one or both sides under them.

To enable the dropper to manipulate the front section by throwing one shoe in advance of the other, the front cross-bar is pivoted in the center upon its bolt  $m$ , and the main cross-bar is also centrally pivoted upon its bolt  $o$ , both bolts extending through the tongue and the latter bolt through the front end of the coupling-plate  $a$ , also, in order to strengthen the connection at this point. All the bolts extending vertically through the two cross-bars and connecting them with the parts beneath are pivot-bolts, and permit of the ad-

justment of the section, as exhibited by the long dotted lines, Fig. 2. The object of this movement is to enable the operator to plant in the cross-furrows on side hills and to aid in turning the planter at the ends of rows. The front section is operated by the dropper, who uses the hand-lever  $b^3$ , seen pivoted upon the upright rack-plate  $p^2$ , which latter is bolted upon the tongue just forward of the front cross-bar. The hand-lever extends below the rack-plate, and its lower end is flexibly connected by link-rod  $p''$  with an eyebolt on the front of the main cross-bar on one side of the center, about half-way between the latter and the point where the top of the runner-post is pivoted to said cross-bar.

By reference to the view Fig. 1, it will be seen that the hand-lever  $b^3$  is within easy reach of the dropper. Link-rod  $p''$  and the rack  $p^2$  extend in the same diagonal line. By throwing hand-lever  $b^3$  forward the right side of the front section is thrown forward, and by throwing the hand-lever backward the left side of the section is thrown forward in the same manner, thus advancing the shoe and planting devices on either side, as required.

The means for operating the seed-disks embrace some novel features, which can only be properly understood by a description of all the parts connected therewith. The seed-box is made with an elevated iron bottom, forming a sunken panel on the under side, as seen in Fig. 3, to allow sufficient space between the bottom of the seed-box and the slide-bar  $m'$  for the seed-disk G and its covering-plate G'. (Seen in Figs. 6 and 7.) The journal  $k$  for the disk is cast upon the hopper-bottom, and its end is threaded for a nut, which is screwed on after the disk G and cap or covering plate G' are slipped over the journal. The covering-plate has L-shaped lugs  $k'$ , which rest upon the tops of the four upright studs  $l$ , extending from the hopper-bottom, thereby allowing the disk to rotate freely under it. A discharge-tube over the hollow runner-post communicates with the latter in dropping. The disk G has extending vertically downward from its periphery lugs  $h'$ . As the slide-bar  $m'$  is reciprocated under the disk, the segments  $n$  (seen on the top of the slide-bar standing obliquely to the line of the latter) alternately engage one of the lugs  $h'$  of the disk and imparts a movement thereto. The engagement is made upon the inside of the segment, and as the latter is released upon one side from the lug on the disk the stop  $o'$  on the opposite side checks the rotation by engaging one of the lugs  $h'$  on that side, and so on alternately as the slide-bar is reciprocated. In this kind of movement the lugs upon the disk are seven in number, and are placed so as to cause but one to be brought over the slide-bar at a time on either side, and as this is released the lug upon the opposite side passes over and is engaged by the segment on the same side. The movement is a simple and certain one, never missing the drop, and its elements are few and simple, and have the



advantage of being fixed upon the primary pieces. The cut-off  $h^2$  is a triple one, consisting of the three hinged spring cut-offs  $v v v$ , each adapted to have a separable movement apart from the others.

In my experiments with cut-offs I have found that the double cut-off which was patented by F. W. Shellabarger April 24, 1877, No. 190,087, does not entirely overcome the difficulty often experienced in having kernels of corn lodge under the same, as, where the kernel is carried under sidewise, it may raise both parts of the cut-off and prevent others from being carried under. I therefore have made a triple cut-off, each part being capable of both separate and simultaneous movements, so that should a grain lodge under one section the other two sections will continue to operate.

The connection of the slide-bar with the valve  $i$  is made by means of the hole  $n'$ , with which the pivot  $o^2$  on the top end of the valve engages. The runner-post projects backward above the shoe, for the purpose of forming, in connection with the valve, an open-topped pocket,  $k^2$ , to allow the operator, in dropping, to see the corn as it lies between the lower end of the valve and the inner wall of the runner-post, before being dropped from thence to the furrow. The valve is inclined to fit the runner-post, and consists of a flat plate with a spear-shaped flange,  $i'$ , on the lower end attached to its outer edge. This flange has its long angle terminating in a point with the end of the valve, and its object is to form the rear wall of the pocket, the front wall being formed by the front wall of the runner-post. The latter and views of the valve are shown in Figs. 8 and 9.

The valve  $i$  is pivoted in the usual manner to the runner-post, just above the rear opening in the latter. The shape of the lower end of the valve conforms to that of the lower end of the runner-post. The walls of the latter on either side of the rear opening,  $j$ , are parallel, so that when the flange  $i'$  comes in contact therewith it fits closely throughout its entire length, forming a tapering seed-pocket, closed on the sides and open at the top, as described.

The driver's seat  $C$  is formed with two lugs,  $g$  and  $g'$ , under the front and rear of the same, respectively. An upright,  $c$ , has its top end pivoted to the front lug by a pivot-bolt extending through it from one side to the other. The lower end of  $c$  is bolted to a bar,  $e'$ , the ends of which are pivoted on the inner sides of the frame-bars  $d$ . A brace-bar,  $e^2$ , has its upper end pivoted to the rear lug,  $g'$ , under the seat. This bar extends down to the center of the upright  $c$ , and from thence to a bar,  $d^2$ , between the ends of the frame-bar  $d$ , to which it is pivoted. Brace-bar  $e^2$  is flattened and slotted vertically at the middle part, and a bolt,  $e''$ , extends through this slot and through a vertical slot in the upright  $c$ , and is furnished with a small eccentric-headed lever,  $e'''$ , pivoted to its forward end, to secure the

parts when adjusted. To provide for the adjustment, a serrated plate,  $e^5$ , slotted to conform to the upright  $c$ , is fastened on the rear side of the latter, and between this and the brace-bar  $e^2$  is a serrated washer,  $e^6$ .

In the position Fig. 10, the parts are shown securely fastened by the lever  $e^2$ , the seat being thrown to the rear. By throwing up lever  $e'''$ , the parts are unclamped and the seat can be thrown forward to the position seen by the dotted lines in this figure. Fig. 11 exhibits a rear view of the parts connecting the seat with the frame-bars.

The bar  $d^2$  has a pair of upright ears, between which the lower end of the brace-bar  $e^2$  is pivoted. As both ends of the upright  $c$  and the brace  $e^2$  are pivoted, the adjustment of the seat is readily made. As the seat is thrown forward, the brace (and serrated washer) in contact with the rear of the upright is lowered, the connecting-bolt  $e''$  dropping down in the slot  $i^2$  in the upright, and as the seat is thrown backward the opposite will be the result.

The two parts of the seed-box are connected by engaging lugs at the corners, and are held by the forks  $t'$  and  $t^2$  on the rear side of each, a pivoted latch or dog,  $t^3$ , in the fork  $t^2$  being thrown up into the fork  $t'$ , attached to the hopper-section D, by which they are secured together.

I am aware that a device for elevating and depressing the front section of a flexibly-connected corn-planter, having a pivoted hand-lever and a rack upon either side of the latter, with latch-rods engaging notches in said racks, for locking the suspended front section at any point desired, is not new, and I do not claim such device, broadly; but

I claim as my invention—

1. In a corn-planter, a device for raising and lowering the front section and for forcing the runners into the ground, consisting of a hand-lever rigidly attached to a pivotal bar on the rear section, and provided with a stud on one side at the lower end, in combination with a lever pivoted upon the same bar, the forward end of which is flexibly connected with the rear end of the tongue, said lever having a rear extension to which a dog is pivoted, the free end of said dog being adapted to engage the stud on said hand-lever upon either side of the former in locking the sections together when the runners are in or out of the ground.

2. In a corn-planter having its sections flexibly connected together, a device for raising and lowering its front section and for forcing the runners into the ground, consisting of a hand-lever rigidly attached to a bar pivoted between the frame-bars of the rear section, provided with a stud upon one side, a lever pivoted upon said bar and extending forward therefrom, and having its front end flexibly connected by a link-rod with the rear end of the tongue, said lever being formed into a plate behind said pivotal bar and provided with a notch therein, a dog pivoted to the rear end of said plate on the inside of the same, the



engaging end of which extends at right angles through the notch in said plate, and is adapted to engage the stud on the hand-lever upon either side of the same to lock the sections together, and at the same time to allow the hand-lever to be operated in connection with the rack in adjusting the height or depth of the runners, as set forth.

3. The combination, with the frame-bars and the rack-plate attached to one of the latter, of the hand-lever rigidly attached to its pivotal bar, one end of the latter being pivoted in said rack-plate, and having the lever for elevating and depressing the front section pivoted thereon, and adapted to operate in connection with the locking devices, as set forth.

4. The combination, with bars  $d$   $d$ , hand-lever  $b'$ , cast in one piece with the pivotal bar  $E$ , and provided with stud  $e$ , of the pivoted lever  $E'$ , having the curved arm  $e'$ , extending forward therefrom, and connected by link-rod  $p$  with the rear end of tongue  $T$ , and having its rear part formed into a plate,  $f'$ , with a notch,  $e^3$ , therein, a dog,  $f$ , pivoted to the rear end of same, said dog having its front end,  $f^2$ , bent at right angles to pass or rest in through notch  $e^3$ , and adapted to engage with the stud  $e$  on the inside of the hand-lever upon either side of the same to lock the parts together in raising and lowering the front section, as set forth.

5. In a corn-planter having a removable seed-box, the combination, with the recessed bottom plate,  $D$ , having the studs  $l$ , and the journal for the disk cast thereon, and the latter adapted to be secured thereto, as described, of the disk  $G$  and the cap-plate  $G'$ , having the L-shaped lugs  $k'$ , said lugs being adapted to engage studs  $l$  on the bottom plate when the parts are secured together, as set forth.

6. The combination, with disk  $G$ , having lugs  $k'$ , of the slide-bar  $m'$ , having the raised segments  $n$ , and the stops  $o'$  thereon, the stop  $o'$  on the opposite side from the engaging-seg-

ment being adapted to engage one of said lugs  $k'$ , to check the rotation of said disk as the latter is operated by said slide-bar.

7. The combination, with the seeding devices and the runner-post  $F$ , having the rear extension,  $k^2$ , of the valve  $i$ , having the spear-shaped vertical flange  $i'$ , said flange being adapted to engage the inner side wall of said runner-post, substantially as and for the purpose set forth.

8. In a corn-planter having its front section pivoted upon the tongue, and adapted to have a zigzag movement, as described, in combination with said tongue and the front and main cross-bars pivoted centrally thereto, of the hand-lever  $b^3$ , rack  $p^2$ , and link-rod  $p''$ , the latter connecting the lower end of said hand-lever with the main cross-bar on one side, whereby the dropper may be enabled to manipulate said section, substantially as set forth.

9. In an adjustable seat for a corn-planter, the combination, with a supporting-post and its brace pivotally attached at their upper ends to said seat and at their lower ends to bars connecting the frame-bars of the rear section, of a device for adjusting said seat and for retaining the same when adjusted, consisting of a serrated plate attached to the rear of said post, a serrated washer adapted to engage therewith, a bolt extending through the brace, washer, and plate, and through a vertical longitudinal slot in the post, said bolt having a nut on its rear end and having pivoted on its front end an eccentric lever, whereby the adjustment of the seat can be made either forward or backward, and its retention in either position secured, as set forth.

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

FLAVIUS W. SHELLABARGER.

Witnesses:

M. M. GRISWOLD,

B. C. CONVERSE.