

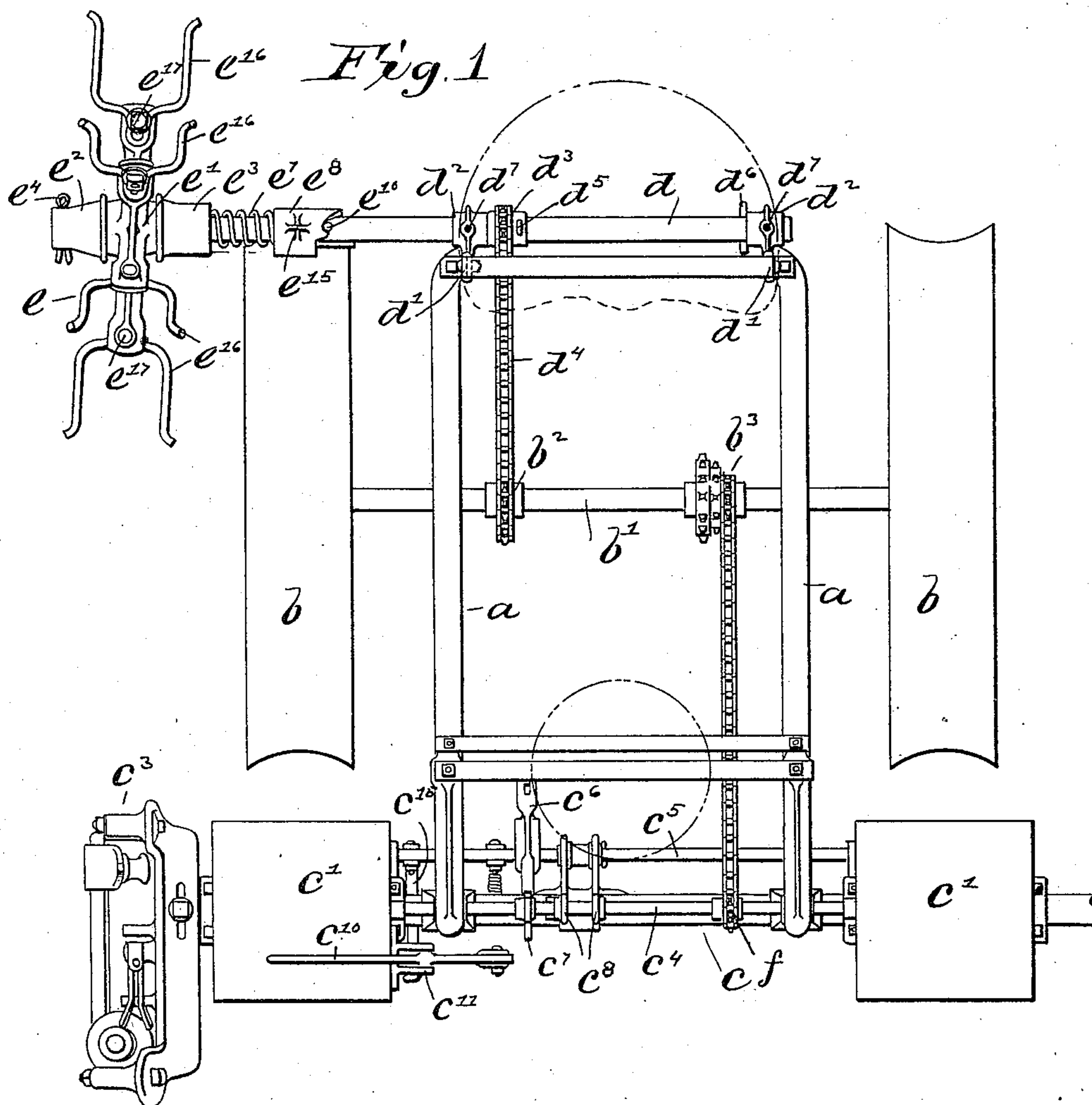
(No Model.)

3 Sheets—Sheet 1.

L. C. EVANS.
CORN PLANTER.

No. 577,290.

Patented Feb. 16, 1897.



Witnesses
G. M. Gridley
Chas. J. Welch

Inventor
Louis C. Evans
By his Attorney
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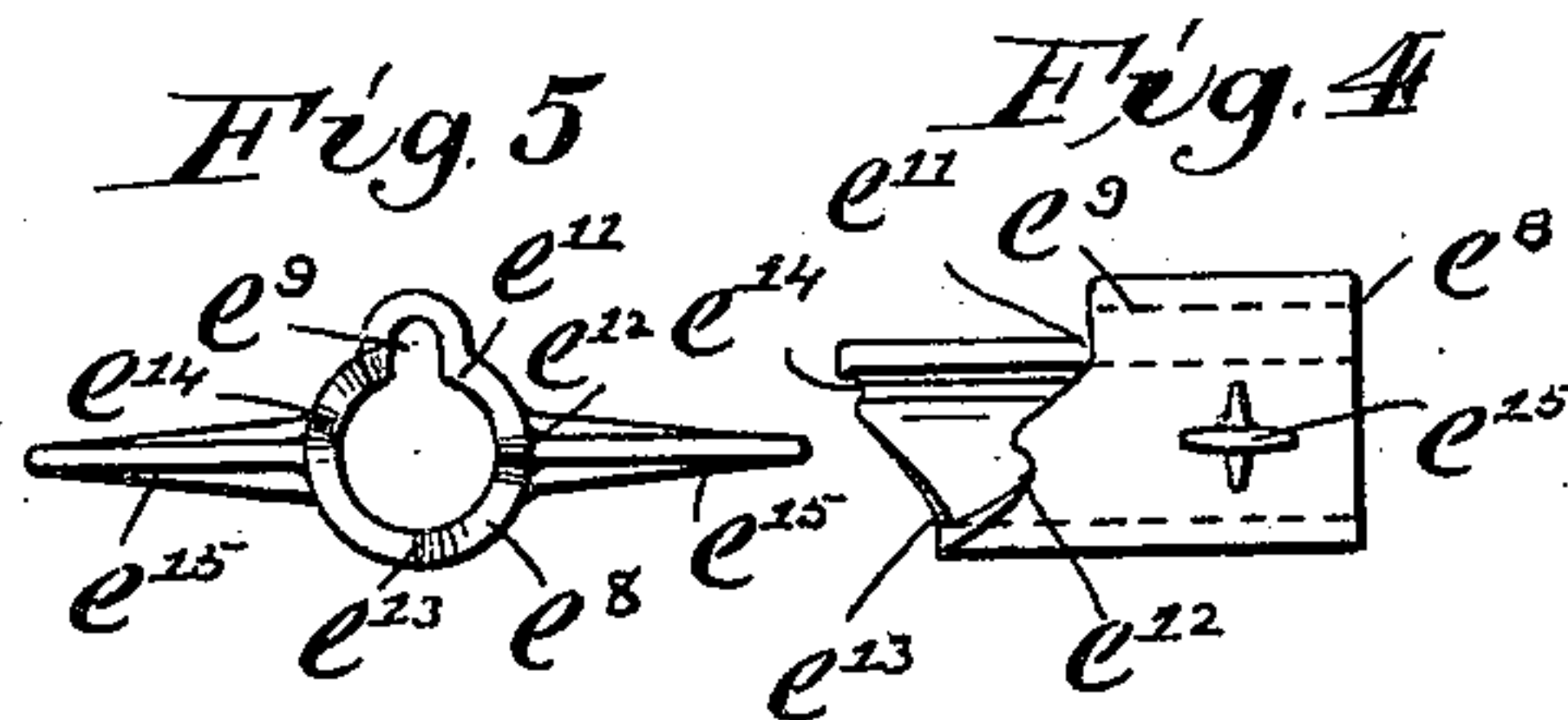
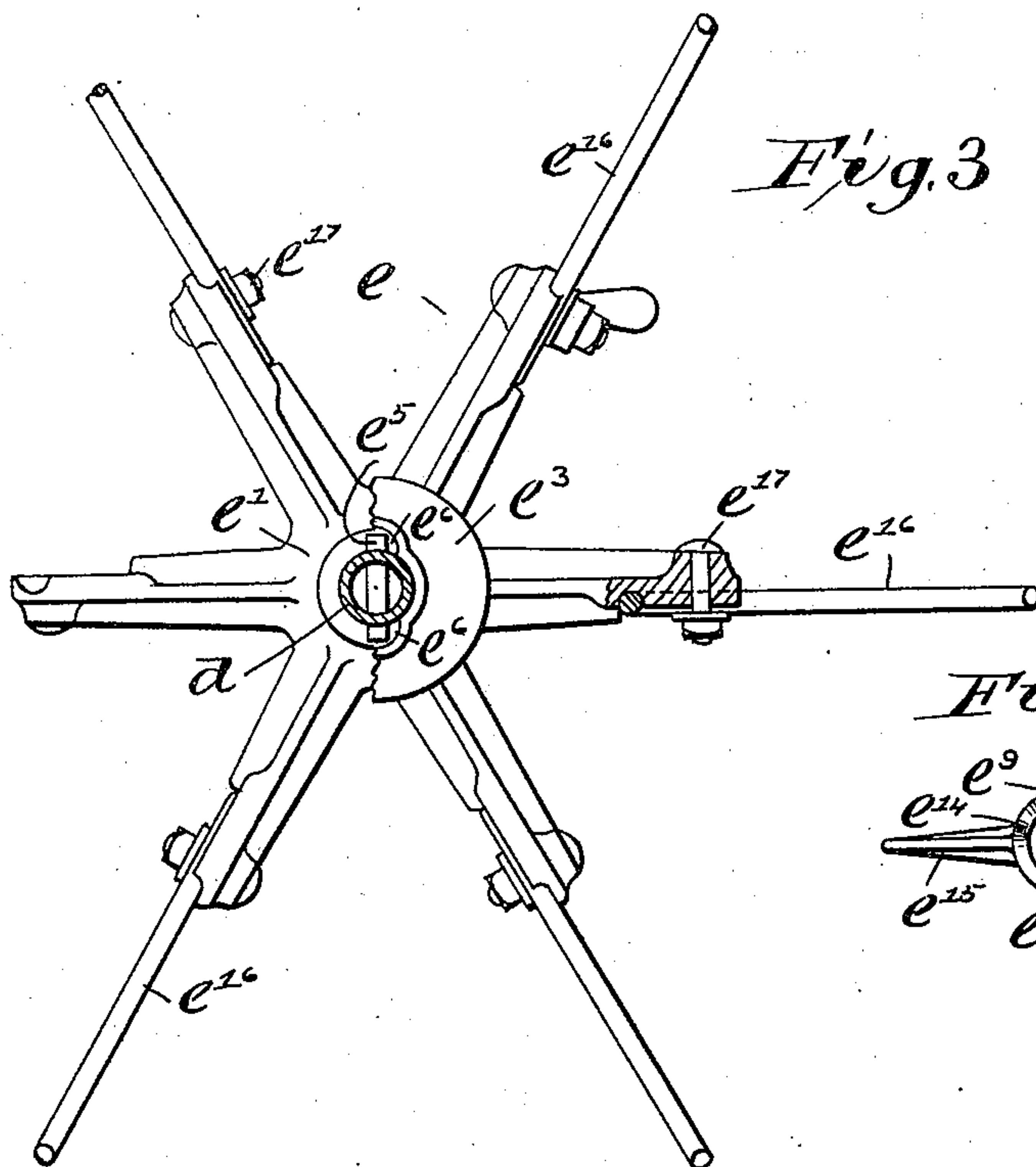
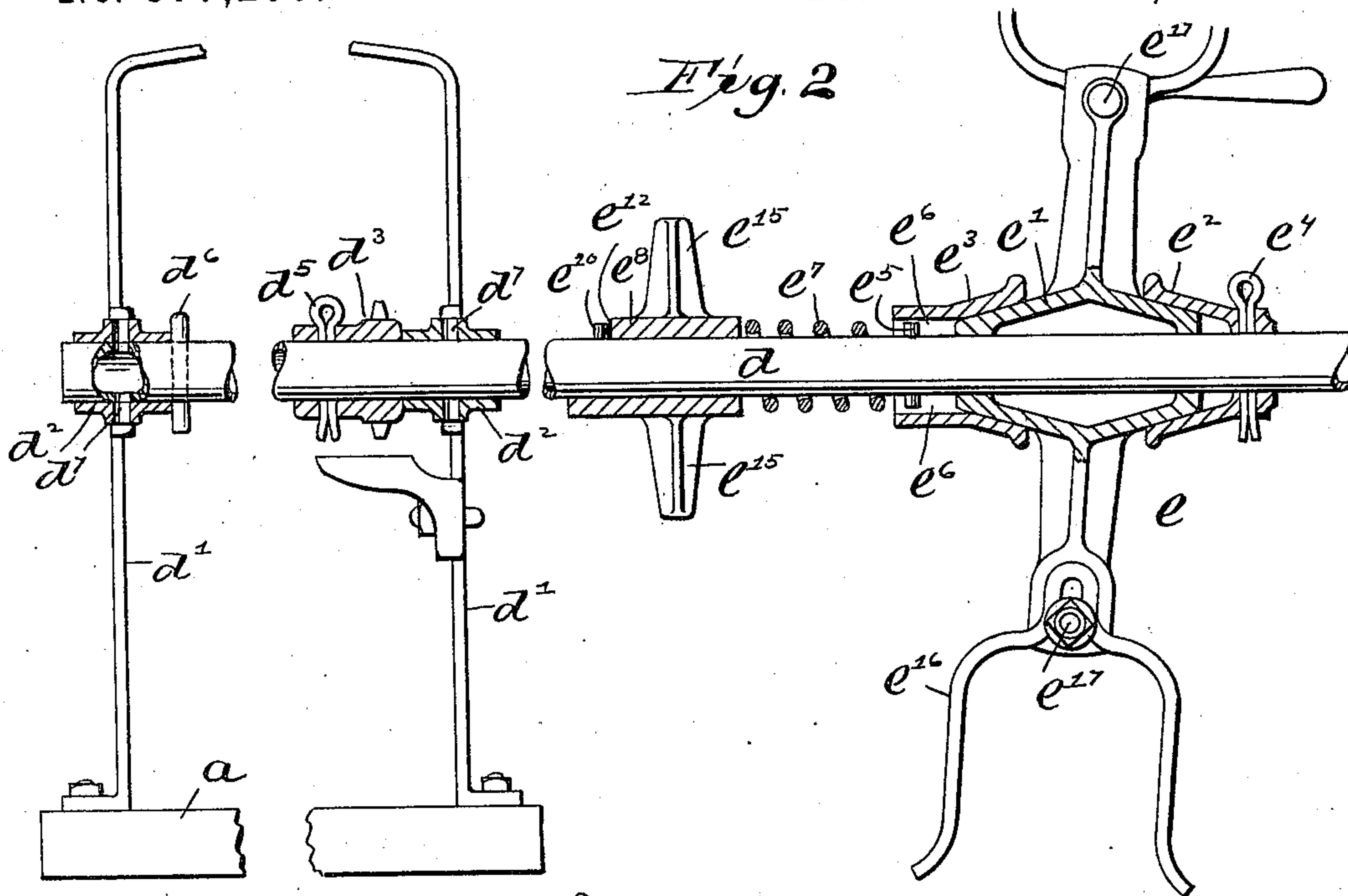
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3 Sheets—Sheet 2.

L. C. EVANS.
CORN PLANTER.

No. 577,290.

Patented Feb. 16, 1897.



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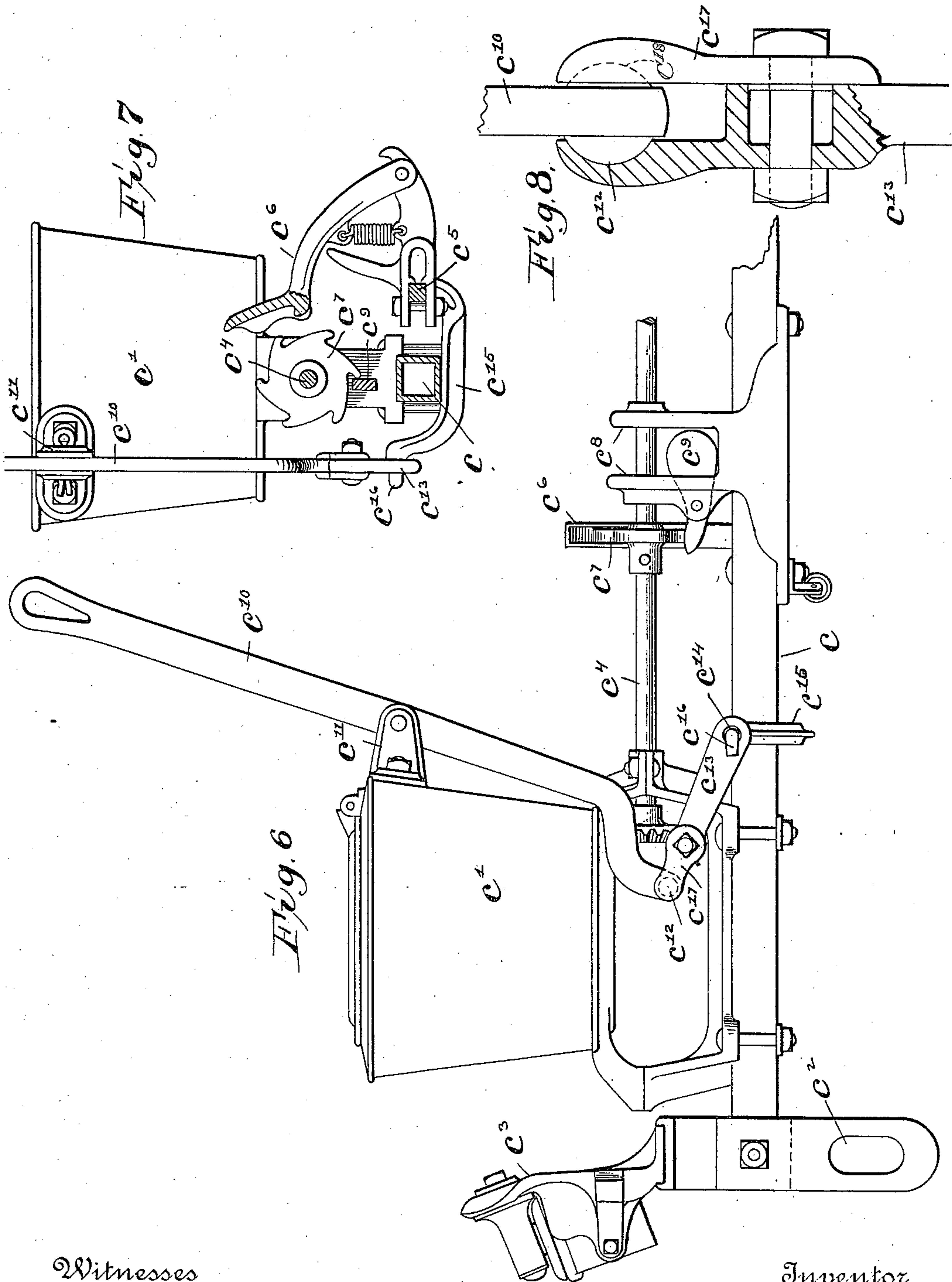
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3 Sheets—Sheet 3.

L. C. EVANS.
CORN PLANTER.

No. 577,290.

Patented Feb. 16, 1897.



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UNITED STATES PATENT OFFICE.

LOUIS C. EVANS, OF SPRINGFIELD, OHIO.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 577,290, dated February 16, 1897.

Application filed October 17, 1896. Serial No. 609,245. (No model.)

To all whom it may concern:

Be it known that I, LOUIS C. EVANS, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification.

My invention relates to improvements in corn-planters; and it consists in the various constructions and combinations of parts hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a plan view of a machine embodying my invention. Fig. 2 is a sectional elevation of a portion of the same, showing my improved reel for winding up and paying out the check-rower wire. Fig. 3 is a side elevation of the said reel, partly in section. Fig. 4 is a detail view of a portion of the adjusting device therefor. Fig. 5 is an end view of the same. Fig. 6 is a side elevation of a portion of the frame, showing the guide for the wire and some of the operating devices of the planter. Fig. 7 is a sectional view of the same. Fig. 8 is a detail view, partly in section, of a portion of the connecting devices of the same.

Like parts are represented by similar letters of reference in the several views.

In the said drawings, *a a* represent the wheel-frame; *b b*, the carrying and covering wheels, supporting the same through the medium of the axle *b'*.

c is a runner-frame having the usual hoppers *c'* supported thereon.

Supported on the wheel-frame, preferably by means of standards *d' d'*, (such as are usually employed for supporting the seat,) is a shaft *d*, journaled in bearings *d² d²* on the said standards. The shaft is preferably tubular, though it may be of any suitable construction, and has secured thereto a sprocket wheel or pinion *d³*, which is adapted to be connected by a chain *d⁴* to a sprocket-wheel *b²* on the axle *b'*.

The shaft *d* is extended laterally to a point beyond one of the covering-wheels *b* and carries near its outer end a reel *e*, adapted to receive the wire which operates the check-row. This reel *e* is of a peculiar and novel construction. It has a hub *e'*, with cone-shaped ends, to which are fitted cup-shaped frictional collars *e² e³*. The hub *e'* is adapted to turn on

the shaft. The collars *e² e³* are secured to the shaft so as to revolve therewith, the collar *e²* by means of a pin *e⁴*, which extends through said collar and the shaft, and the collar *e³* by means of a pin *e⁵*, which extends through the shaft and rests in slotted bearings or keyways *e⁶*, so that while the collar *e³* turns with the shaft it is permitted a longitudinal movement thereon. Located on the shaft and bearing at one end against the collar *e³* is a spring *e⁷*, the remaining end of which rests against a rotating adjustable sleeve *e⁸*. This sleeve *e⁸* is fitted to the shaft, but has at one side a recessed or slotted way *e⁹*, which extends through the sleeve and permits the same to be moved longitudinally on the shaft and over the end of a pin *e¹⁰* in the shaft. The end of the sleeve opposite to that which bears against the spring is formed cam-shaped, with a series of steps *e¹¹*, *e¹²*, *e¹³*, and *e¹⁴*, adapted, as the sleeve is revolved, to come successively in contact with the pin *e¹⁰*, and thus move the sleeve longitudinally on the shaft against the spring *e⁷*, which in turn presses against the friction-collar *e³*, which bears on the hub *e'* of the reel *e*, thus furnishing the means for tightening the friction devices on said hub. The sleeve is also provided with projecting handles *e¹⁵*, by which it may be rotated.

The reel *e* consists of a series of arms which extend radially from the hub, but not in a plane at right angles to the shaft. The arms are provided with U-shaped brackets *e¹⁶*, which may be secured thereto by clamping-bolts *e¹⁷* or in any other suitable manner, the location of the arms in a plane at a greater or less angle than a right angle to the axis of rotation being such as to cause the outer brackets *e¹⁶* to travel in different paths or orbits about the axis of revolution, which is the center of the shaft *d*.

The sprocket-wheel *d³* is preferably held in position on the shaft by a removable pin *d⁵* and normally rests at one end against one of the bearings *d²*, a removable pin *d⁶*, extending through the shaft, being adapted to rest on the inside of the other bearing *d²*, so that as the shaft rotates it is held against lateral movement through said bearing. The shaft, however, is provided with openings which correspond to similar openings *d⁷*, extending through the bearings, so that the pins *d⁵ d⁶*

may be removed and inserted through the openings d^7 in said bearings and through the shaft, and thus hold said shaft against rotation in said bearings.

5 The runner-frame c has secured thereto a guide-piece c^2 , which is preferably arranged beyond the hopper c' and below the check-head c^3 . This guide-piece c^2 stands in front of the reel and serves to guide the wire to the
10 reel in taking up the same.

The dropping devices in the hopper c' , which may be of the usual kind, are adapted to be revolved by a rotating shaft c^4 , and this shaft is intermittently rotated from a rock-shaft c^5 by means of a pawl c^6 and ratchet c^7
15 in the manner described in my prior patent, No. 546,486, dated September 17, 1895. The shaft c^4 is preferably journaled in standards c^8 , arranged in proximity to the ratchet-wheel c^7 , and there is pivoted in one of these stand-
20 ards a weighted pawl c^9 , the outer end of which extends laterally across the path of the ratchet-wheel c^7 and is adapted to engage the teeth thereof and prevent backward rotation
25 of the shaft as motion is being imparted thereto. The rock-shaft c^5 may be operated in the usual manner from the check-heads. It is desirable, however, that means be furnished for operating the same by hand, and I accom-
30 plish this by pivoting to the hopper c' a hand-lever c^{10} , a bifurcated bracket c^{11} being preferably employed for this purpose. The hand-lever is curved laterally, then downwardly, at its lower end, and is pivoted at c^{12} to a link
35 c^{13} , the opposite end of which is perforated, at shown at c^{14} , to receive the projecting end of an arm c^{15} , connected at its remaining end to the rock-shaft c^5 . This arm c^{15} has a finger c^{16} , the outer end of which is turned at
40 right angles to the body thereof.

The link c^{13} is bifurcated at the point where it connects with the hand-lever c^{10} and has a removable side c^{17} , which carries a socket c^{18} ,
45 adapted to engage a ball-shaped projection on the end of said lever, (see Fig. 8,) the construction being such that by removing the side c^{17} the link is disconnected from the lever, and then by a partial rotation of the link it may be threaded over the finger c^{16} and removed or
50 replaced on the end of the arm c^{15} . It will be seen that as the hand-lever is vibrated the angle of the link will be changed, the link and the said lever forming, in effect, a toggle-joint, which will cause the arm c^{15} to be depressed
55 and thus rock the rock-shaft c^5 to cause it to intermittently rotate the shaft c^4 . Means are also employed for rotating the shaft in the usual way from the axle b' , and for this purpose a sprocket-pinion f is secured to said
60 shaft in line with suitable sprockets b^3 on the axle b' , the chain d^4 , which is adapted to drive the shaft d , being also employed when occasion requires for driving the shaft c^4 through the medium of said sprocket-wheels.

65 The operation of the device thus described is as follows: When the planter is taken into the field, the check-wire is wound on the reel

e , with the chain d^4 on the sprockets b^3 and f . The shaft d is secured against rotation in its bearings d^2 by the removable pins, as before
70 described. One end of the check-wire is secured in the proper location and the machine driven across the field. As the machine advances, the check-wire pays off from the reel, the friction devices on the hub of said reel
75 being adjusted to give the wire the proper tension. When the wire is thus located, the chain d^4 is removed from its sprocket-wheels and placed on the sprockets b^3 and f in case it is desired to rotate the shaft c^4 from the
80 axle, and the operation of planting is carried on in the usual manner, either by rotating the shaft c^4 direct from the axle or by intermittently rotating it from the rock-shaft operated by the check-wire or by hand, as oc-
85 casion demands. When through planting, the chain d^4 is again placed on the sprockets d^3 and b^2 , the removable pins are withdrawn from the bearings d^2 and placed in the sprocket d^3 and the shaft, respectively, so as to permit
90 said shaft to rotate in its bearings; the check-wire is released at one end and passed through the guide-loop c^2 and connected to one of the reel-arms, the tension on the friction devices is adjusted to the proper degree, and the ma-
95 chine driven forward, rotating the reel as it goes, thus gathering up the check-wire and winding it on the reel. As the reel revolves, the arms or brackets thereon, traveling in different paths, cause the wire to be wound uni-
100 formly and automatically in said U-shaped brackets and prevent the climbing of the wire on one side or the other of the reel, while the friction devices permit the necessary
105 change in speed of the reel from that of the shaft as the size of the reel is increased by the wire wound thereon.

It will be seen that as thus described I produce a simple and effective mechanism for accomplishing the results set forth. By
110 the construction of the reel, the friction devices, and the adjustments therefor the parts are adapted to perform their functions with very little wear, and by employing the constructions described they are readily remov-
115 able for examination or repairs, as the case may be.

Having thus described my invention, I claim—

1. In a corn-planter, a main frame, driving-
120 wheels, a reel-shaft supported in said frame, and a reel on said shaft, said reel having arms arranged oblique to its axis of rotation, and means for rotating said reel from the driving-
125 wheels, substantially as specified.

2. The combination with a planter-frame and a driving-shaft, a reel-shaft connected to said driving-shaft, a reel on said reel-shaft, said reel having its axis parallel to the axis
130 of said shaft with its arms in a plane oblique to the axis of said shaft, substantially as specified.

3. The combination with the main axle, a shaft having a driving connection with said

axle, a reel on said shaft, said reel having hubs with conical ends, as described, and cup-shaped friction-collars adapted to fit over said conical ends, a spring resting against one end of said hub, and a rotating adjustable collar having cam-steps adapted to engage a pin on said shaft so as to adjust said spring, substantially as specified.

4. The combination with a reel and its hub, a friction-collar adapted to bear against the same, a shaft on which said hub is journaled, a pin in the shaft engaging in recessed openings in said hub, a sleeve having projecting arms journaled on said shaft, and a recessed or slotted way extending through said sleeve, a pin in said shaft, and a series of cam-shaped steps in one end of said sleeve, and a spring between the end of said sleeve and said friction-collar, substantially as specified.

5. In a corn-planter, a rotating shaft, a rock-shaft, a ratchet-wheel on said rotating shaft and a pawl on said rock-shaft to engage said ratchet-wheel, and a pivoted pawl in a stationary part adapted to engage said ratchet-wheel and hold it against backward movement, substantially as and for the purpose specified.

6. The combination with a rock-shaft having a projecting arm, a hinged lever pivotally connected at one end to a link, said link be-

ing perforated and threaded onto the end of said arm to form a toggle-jointed connection between said lever and said arm, substantially as specified.

7. The combination with a rock-shaft and arm thereon having a projecting finger turned at right angles, as described, a pivoted lever pivoted on an axis at right angles to said shaft, a two-part link adapted to embrace the end of said lever to which it is pivoted, said link being perforated to be threaded on the angularly-arranged finger of said arm, substantially as specified.

8. The combination with a wheel-frame, and a runner-frame, a guide on said runner-frame and a reel on said wheel-frame, said reel being journaled on a shaft whose axis is parallel to the axis of the driving-wheels, a driving connection from one or more of said driving-wheels to said shaft, said reel being arranged in a plane oblique to the axis of said shaft whereby the arms of said reel are caused to travel in different paths of the same diameter, substantially as specified.

In testimony whereof I have hereunto set my hand this 14th day of October, A. D. 1896.

LOUIS C. EVANS.

Witnesses:

CHAS. I. WELCH,
G. M. GRIDLEY.