

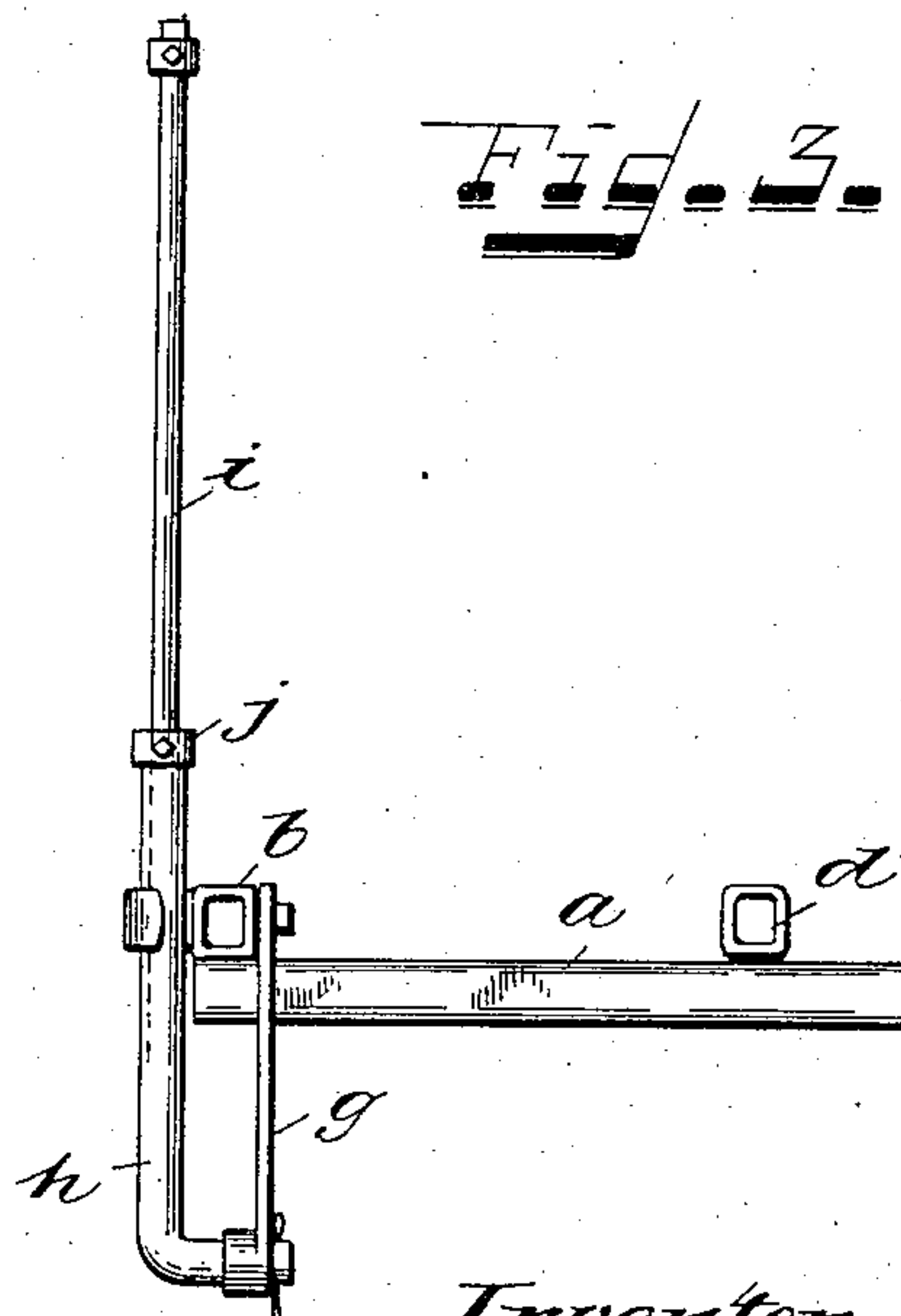
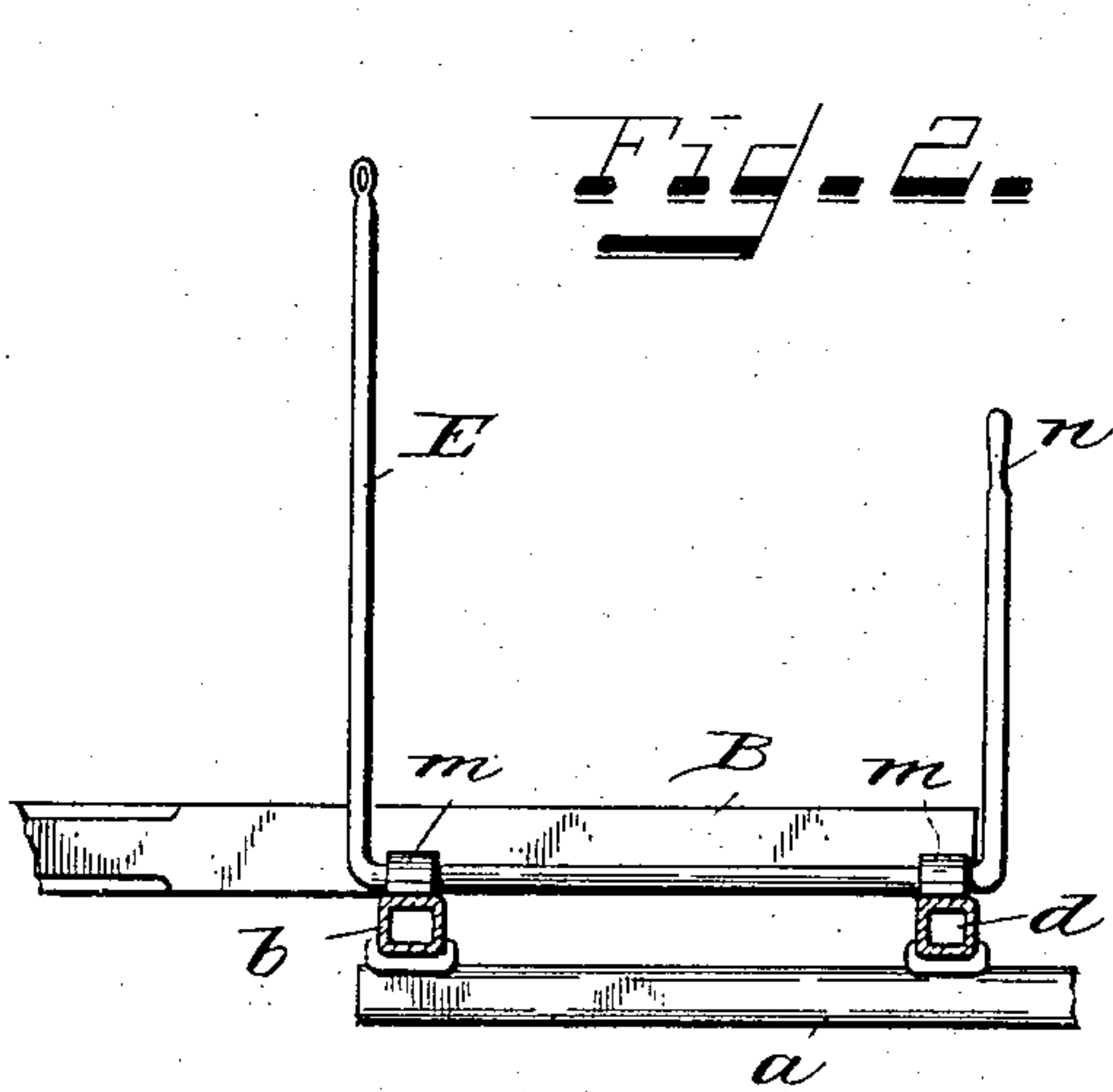
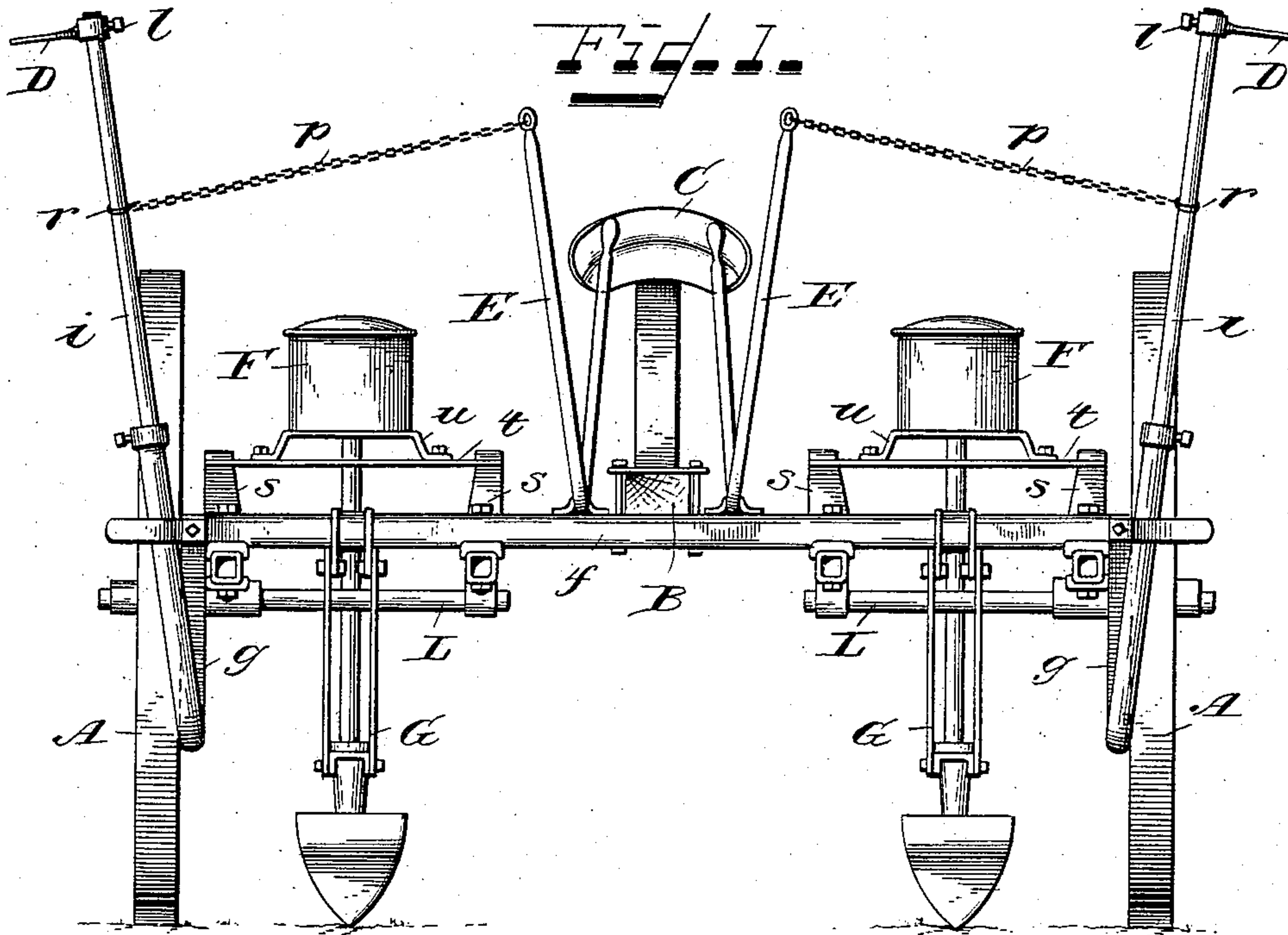
(No Model.)

3 Sheets—Sheet 1.

H. C. HAM.
CORN DRILL.

No 564,425

Patented July 21, 1896.



Witnesses.

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(No Model.)

3 Sheets—Sheet 2.

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Fig. 4.

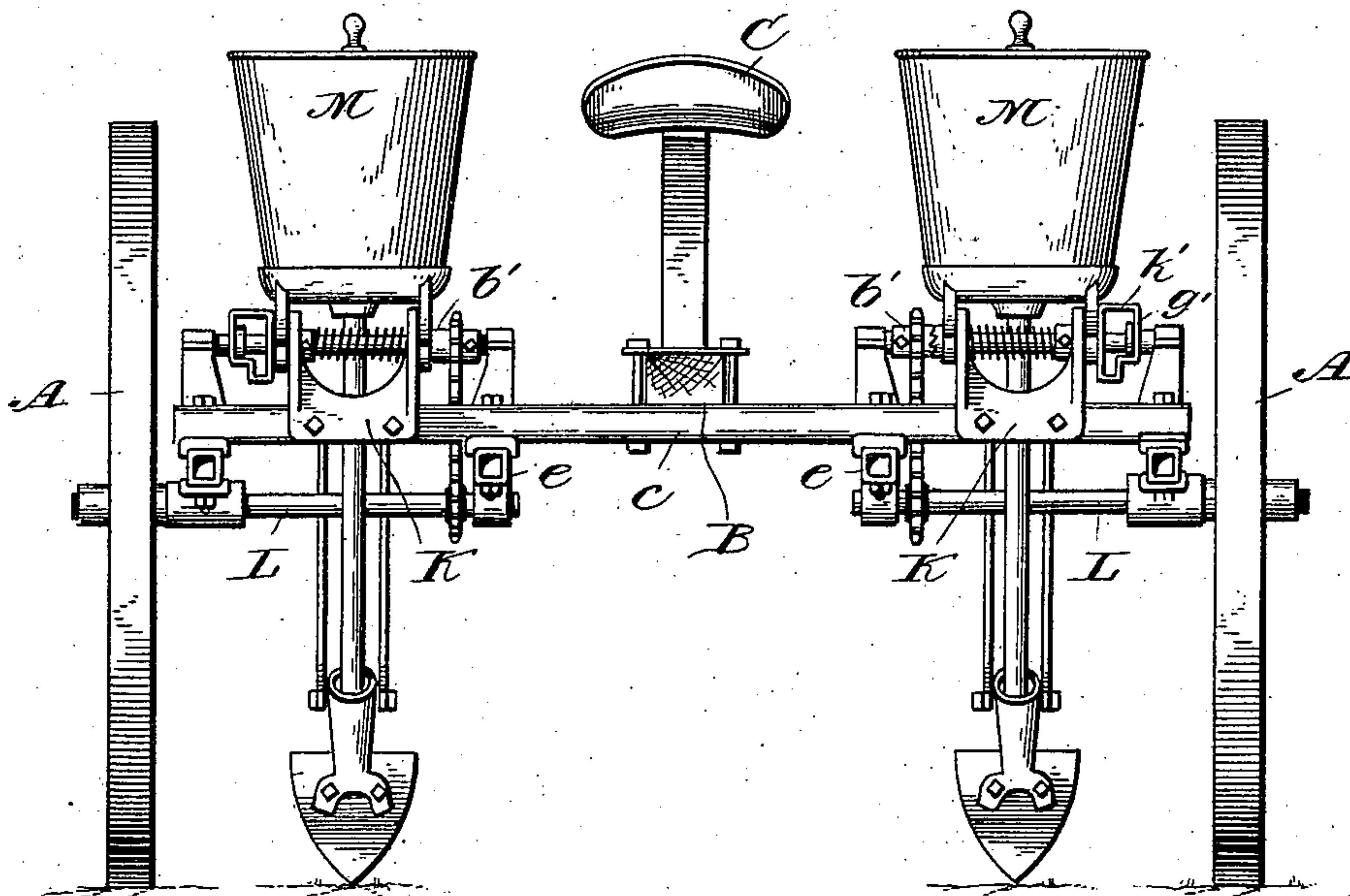


Fig. 5.

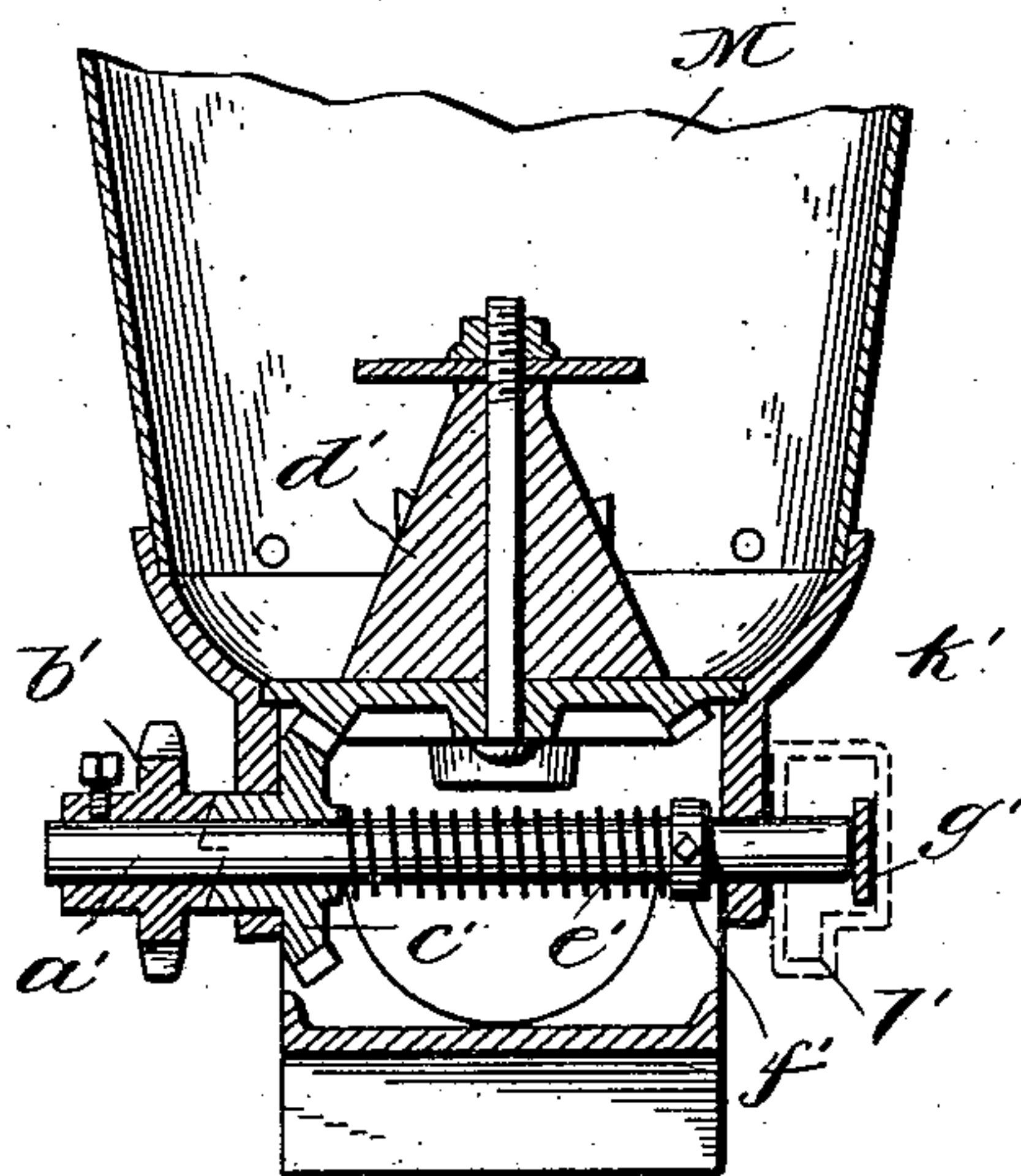
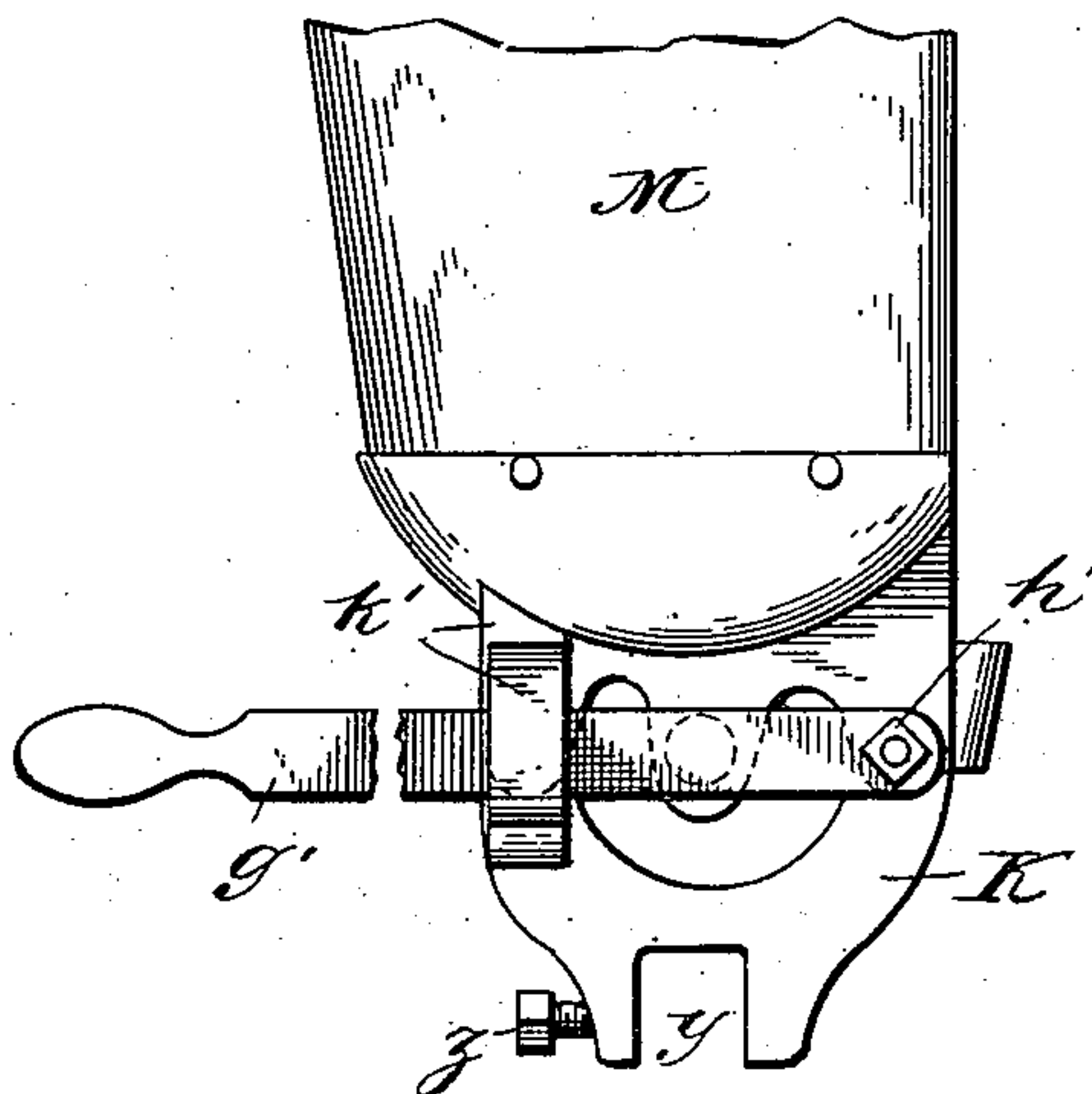


Fig. 6.



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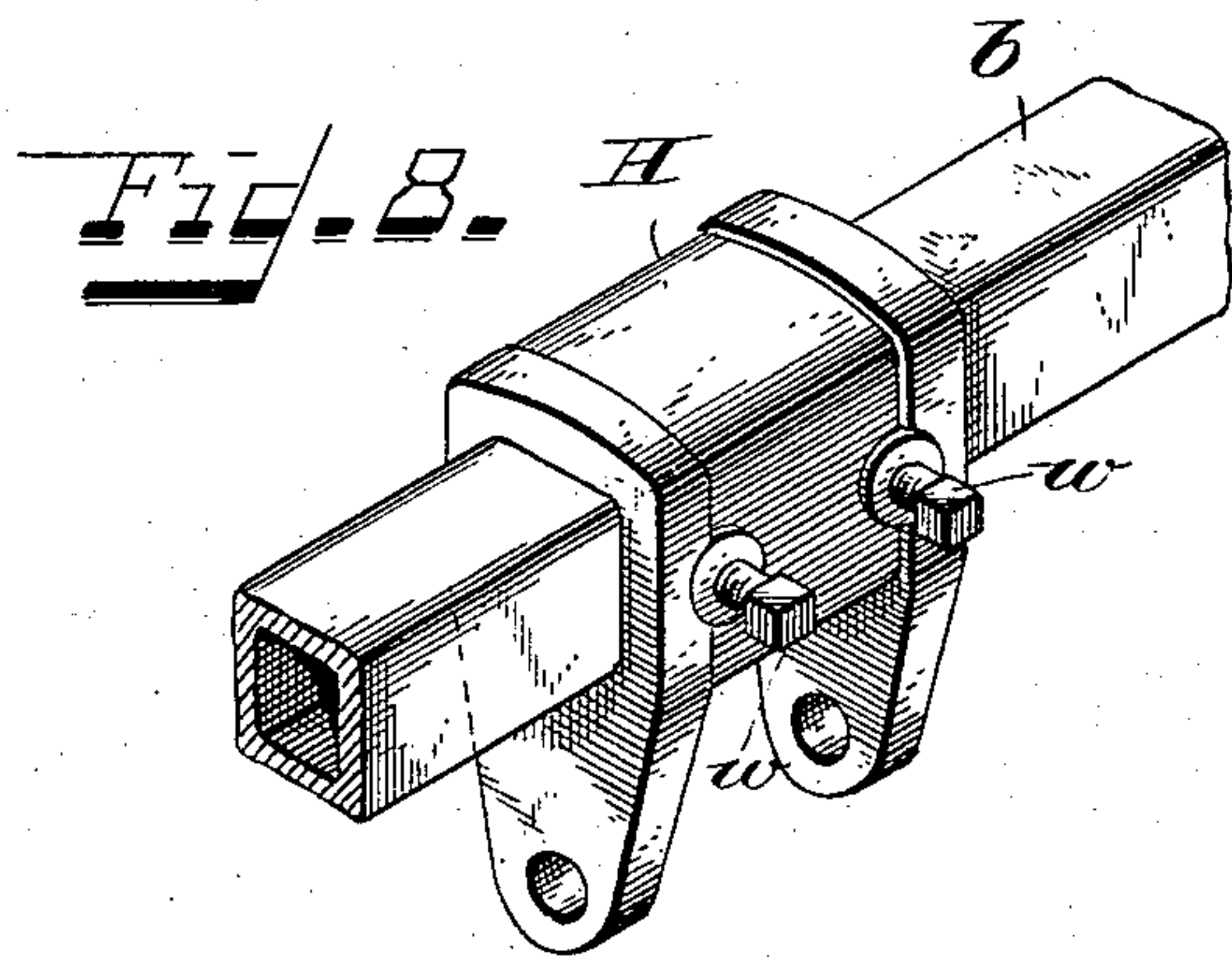
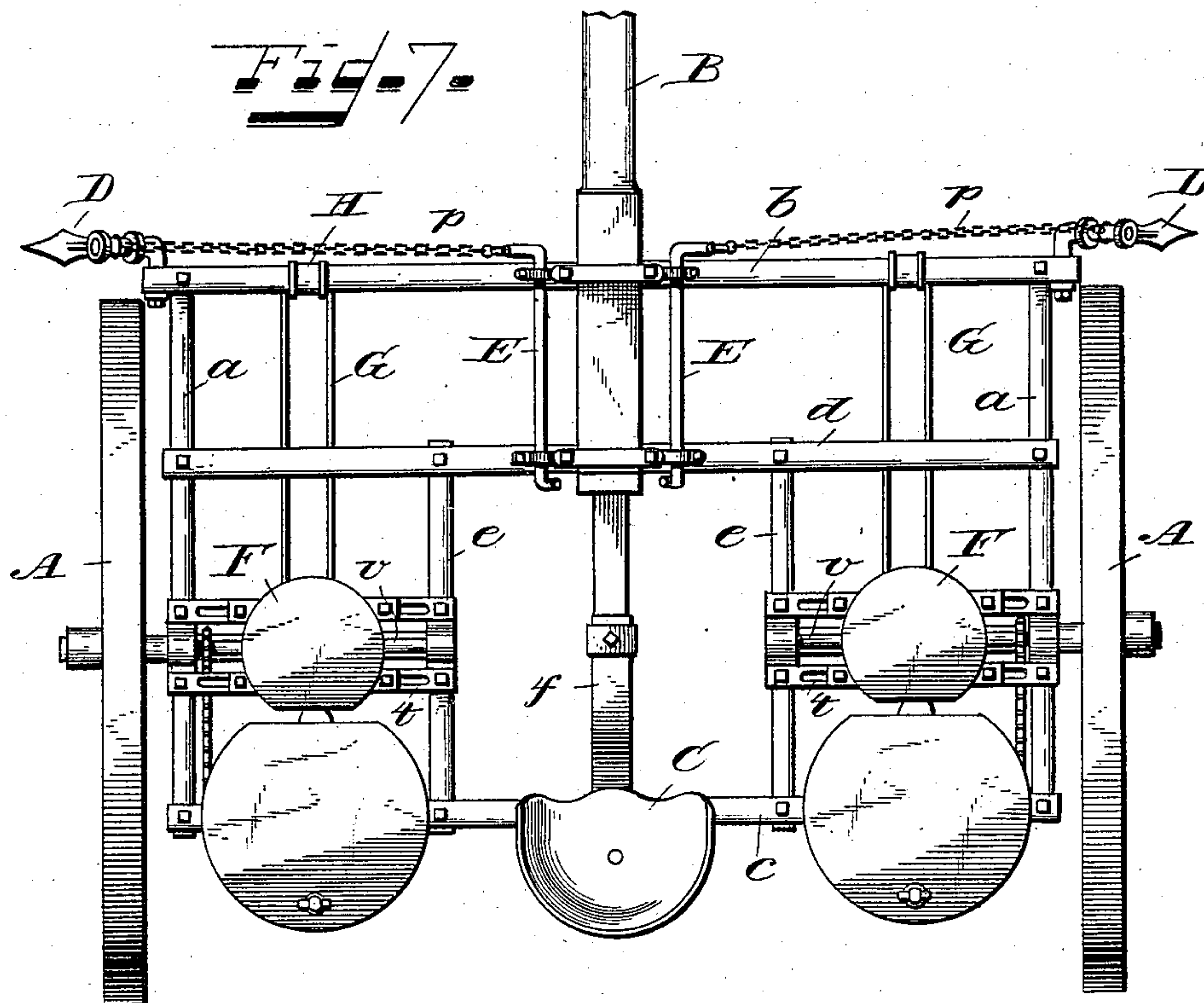
(No Model.)

3 Sheets—Sheet 3.

H. C. HAM.
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No 564,425.

Patented July 21, 1896.



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UNITED STATES PATENT OFFICE.

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MANUFACTURING COMPANY, OF SAME PLACE.

CORN-DRILL.

SPECIFICATION forming part of Letters Patent No. 564,425, dated July 21, 1896.

Application filed March 11, 1896. Serial No. 582,740. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. HAM, a citizen of the United States, residing at Liberty, in the county of Union and State of Indiana, have invented certain new and useful Improvements in Corn-Drills, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

The first part of my improvements relates to a certain novel construction and arrangement for raising and lowering the markers for the rows. In corn-drills in which the framework of the machine is carried some distance from the ground it is desirable that the marker shall be pivoted to the frame as near the ground as possible, so that when raised it shall not be too high and when lowered it shall extend out as nearly horizontal as possible. If the marker-rod is pivoted directly to the high frame when the marker is lowered in certain adjustments, the rod extending out beyond the marker is very apt to strike the ground and bend or damage the device. It is therefore customary to pivot the markers at the end of arms extending vertically downward from the frame. With this construction, however, it has heretofore been impossible to raise and lower the marker by a hand-lever because it is only practicable to pivot the hand-lever to the frame, and when this is done, the pivotal points of the hand-lever and the marker-rod not being in the same horizontal plane, it has been impracticable to connect the hand-lever by a chain to the marker-rod at any fixed point, because the two swing in different planes. It is the purpose of my invention to overcome this difficulty by a certain novel construction and arrangement, whereby the hand-lever and marker-rod may be pivoted in different planes and the connecting-chain between the two will automatically adjust itself along the rod as the marker is raised or lowered.

The second part of my invention consists in a certain novel construction and arrangement of means for throwing into and out of clutch the fertilizer-feeding devices, all of which improvements will be hereinafter more particularly pointed out and claimed.

In the drawings, Figure 1 is a front view of my improved corn-drill with the row-markers raised. Fig. 2 is a detail side elevation of the hand-lever for operating the marker. Fig. 3 is a detail side elevation of one of the row-markers. Fig. 4 is a rear view of the corn-drill. Fig. 5 is a central vertical section of the lower portion of one of the fertilizer-hoppers. Fig. 6 is a side elevation of same. Fig. 7 is a top plan view of the corn-drill, and Fig. 8 is a detail view in perspective of one of the coupling-blocks for the drag-bars.

The framework of the machine, mounted on the usual carrying-wheels A A, is preferably constructed of square steel or metallic tubing, made up of side bars *a a*, front cross-bar *b*, rear cross-bar *c*, and intermediate cross-bars *d e e*, these various bars being securely bolted together to form a strong, rigid, light, and durable framework.

B is the tongue, bolted to the central portion of the frame, and C the seat, mounted on the usual spring-bar *f*.

Securely bolted to the front cross-bar *b*, at each side, are the arms *g g*, to which are pivoted, at the lower end thereof, the metallic tubes *h h*, while sliding in these tubes are the marker-rods *i i*, held at any point of adjustment by the set-screws *j j*. At the outer end of these rods *i i* are secured the wooden or metallic markers D D, the markers being adjusted on these rods and held at any desired position by the screws *l l*. Pivoted in straps *m m*, secured to the cross-bars at each side of the tongue, are the levers E E, provided with a handle *n* at one end and an eye at the other.

p p are chains secured to the eyes at the end of these levers E E, the outer ends of the chains being connected with the marker-rod by loops *r r*. These loops do not make a fixed connection with the rod, but as the operator shifts the hand-lever *n* to draw up or lower the marker the loops slip on the rods, keeping the chain always taut. The distance between the end of the lever E and any fixed point on the marker-rod will evidently change as the rod is raised or lowered, because the pivotal points of the two bars are not in the

same horizontal plane, but inasmuch as the loop *r* slides on the rod *i*, the chain *p* will always remain taut.

For the purpose of adjusting the drag-bars, fertilizer and corn hoppers, and their connections to and from each other, to vary the width of the rows, I have provided the construction that will now be described.

Mounted on standards *s s*, secured to the bars *a* and *e*, are pairs of slotted parallel bars *t t*, while within these slots are secured the feet *u* of the corn-hoppers *F F*, while in these same standards *s s* are journaled the shafts *v v*, which carry the sprocket connections and feeding devices for the corn-hopper.

G G are the drag-bars, which are pivoted in coupling-sleeves *H*, mounted on the front cross-bar *b*, the coupling-sleeves being held in any fixed position and being adjustable along the cross-bar *b* by the set-screws *w w*. Mounted on the rear cross-bar *c* are the standards *K K*, upon which the fertilizer-hopper *M* is mounted. These standards are provided with a slot or groove *y*, which fits over the rear cross-bar *c* and is held in any desired position by the set-screws *z z*. Journaled in lugs extending down from the base of the fertilizer-hopper are shafts *a' a'*, on the inner end of which are secured the sprocket-wheels *b' b'*. Mounted loosely on these shafts are the gear-wheels *c' c'*, which mesh with the fertilizer-feed devices *d' d'*.

e' e' are coiled springs mounted on these shafts *a'* and bearing between the gear-wheel *c'* and the collar *f'*, secured to the shafts.

g' are hand-levers pivoted on studs *h'*, bearing against the ends of the shafts *a'*. These levers are confined in loops *k'*, which loops are provided with a shoulder or offset *l'*, so that when the levers are shifted laterally they can be locked against the pressure of the springs *e'* behind these shoulders. A clutch connection is provided between the sprocket-wheels *b'* and the loosely-mounted gear-wheel *c'*, and so long as the hand-levers *g'* are in their normal position these devices are in clutch. When it is desired, however, to disconnect the fertilizer-feed devices, the operator shifts the hand-lever *g'*, which in turn shifts laterally the shaft *a'* and throws the gearing out of clutch, the parts being locked in this position, as above described, by catching the hand-lever within the offset *l'*. The

usual sprocket-chains connect the sprocket-wheels *b'* with the carrying-axles *L* of the machine. It will be further understood that each of the sprocket-wheels, both for the corn-feed and for the fertilizer-feed, are mounted on their respective shafts and secured by set-screws, so that they can be adjusted along their shafts.

It will be evident, therefore, from the construction already noted that all the operating parts of the corn-hopper and the fertilizer-hopper, with the drag-bars and their hoes and the connecting feed-tubes, can be readily and at a moment's notice adjusted toward or away from each other to change or vary the width of the rows by merely loosening the respective set-screws.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a corn-drill, the combination with the frame, of a row-marker and a hand-lever pivoted in different horizontal planes, with flexible connection between said lever and marker, and loop sliding on said marker-rod to which said connection is made, substantially as shown and described.

2. In a corn-drill, the combination with a high supporting-frame and a downwardly-extending arm therefor, of a row-marker pivoted at the lower extremity of said arm, with hand-lever pivoted on said frame, and chain or rope, with sliding loop mounted on said marker-rod, whereby an adjustable connection may be made between said hand-lever and marker, substantially as shown and described.

3. In a corn-drill, the combination, with a fertilizer-hopper, and feed devices therefor, of a laterally-shiftable shaft, sprocket-wheel secured to said shaft, gear-wheel for driving the feed mechanism loosely mounted thereon, clutch-teeth between said sprocket and gear wheel, collar on said shaft, with spring bearing between said collar and said gear-wheel to keep said sprocket and gear in clutch, and hand-lever, bearing against the end of said shaft for shifting said sprocket into and out of clutch, substantially as shown and described.

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Witnesses:

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HERBERT DARR.