

No. 671,056.

Patented Apr. 2, 1901.

M. L. NICHOLS.  
SEED PLANTER.

(No Model.)

(Application filed Oct. 29, 1900.)

2 Sheets—Sheet 1.

Fig. 1

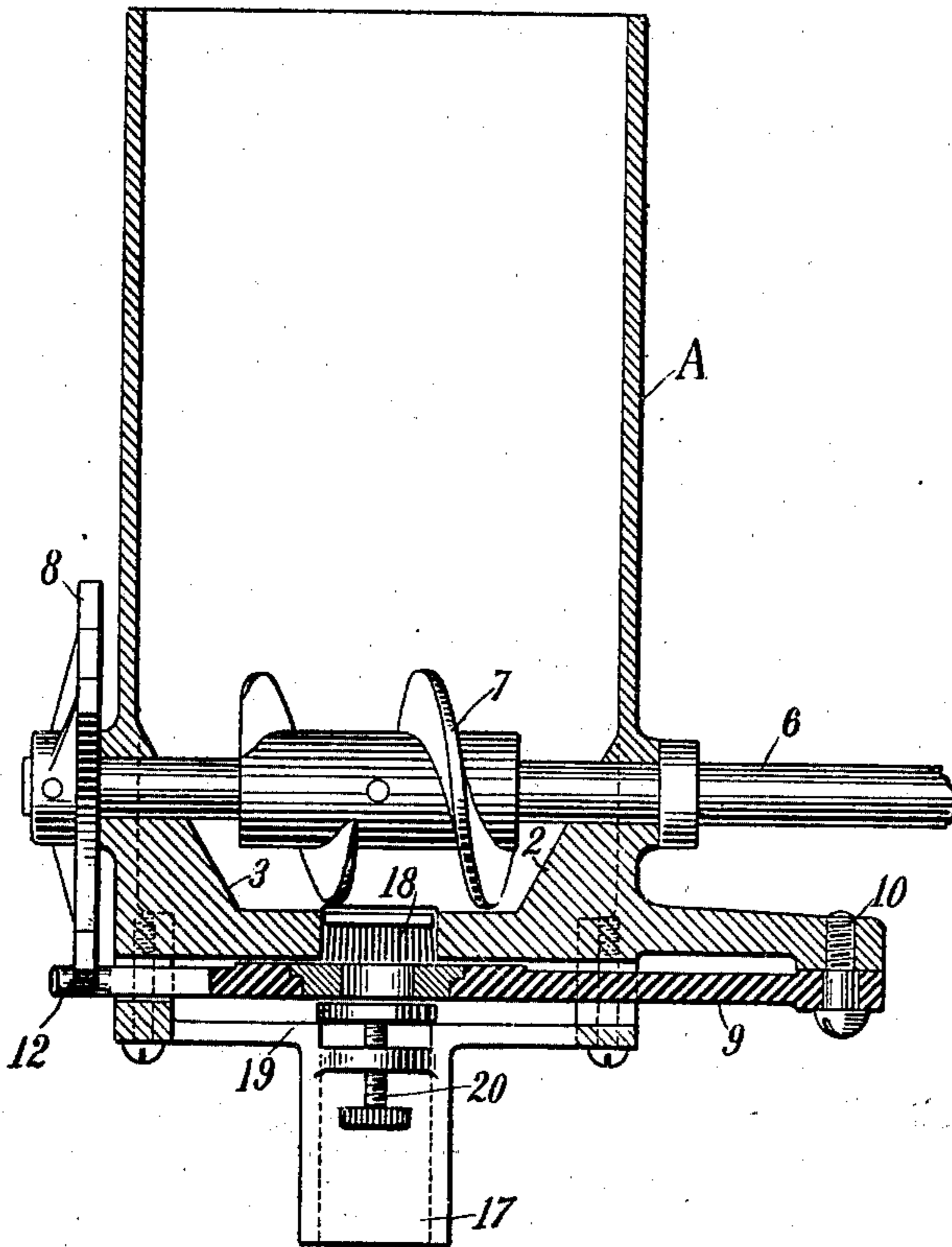


Fig. 2

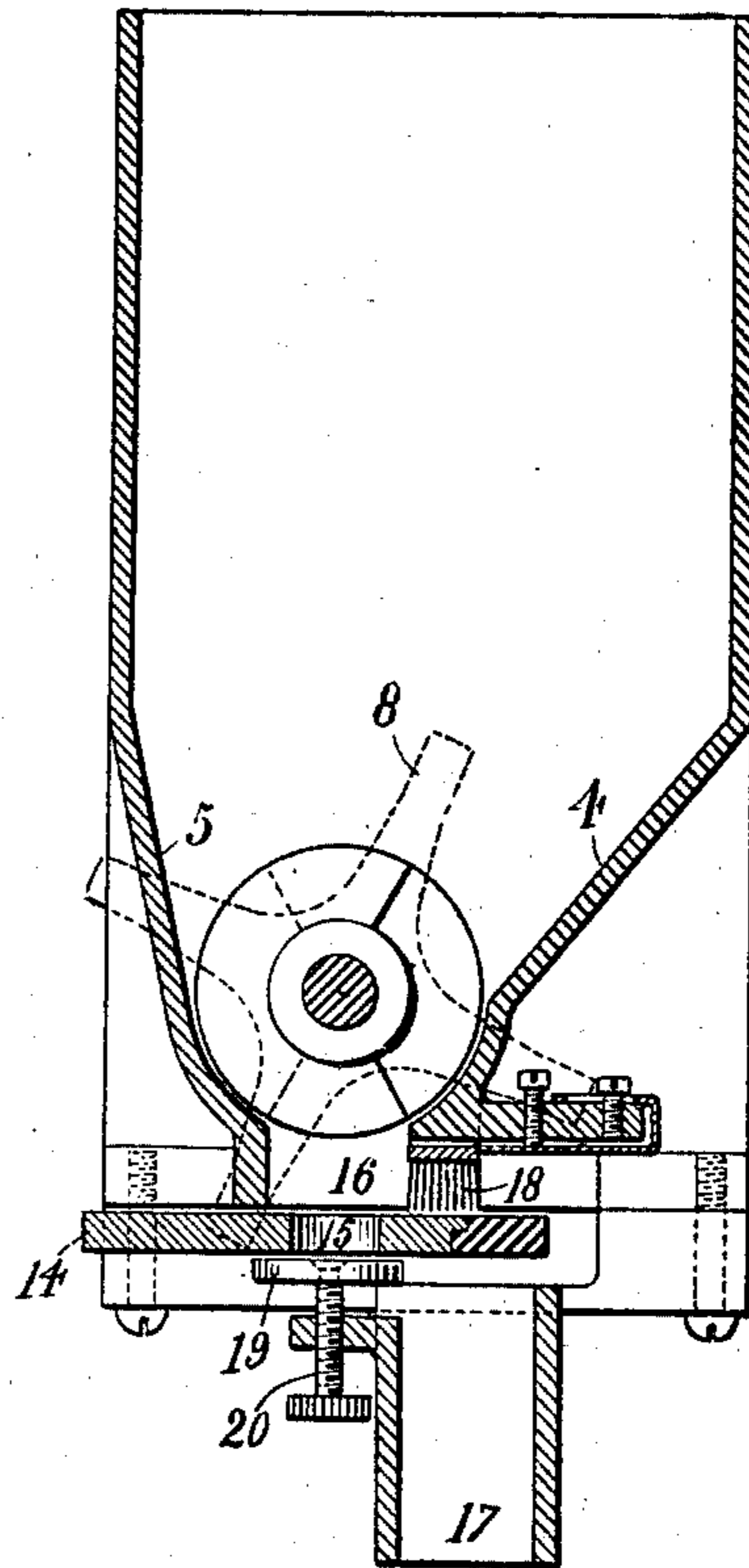


Fig. 3

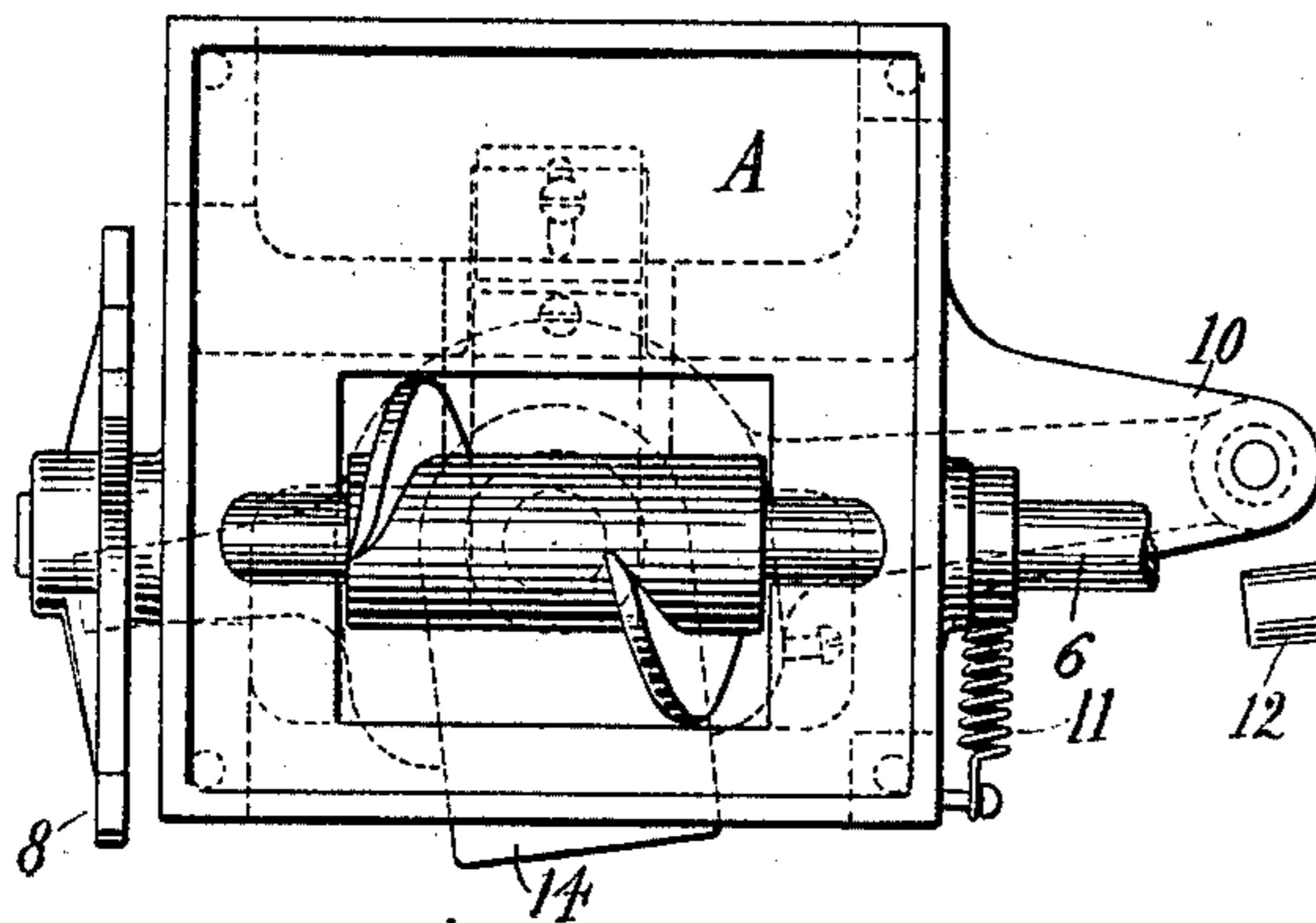
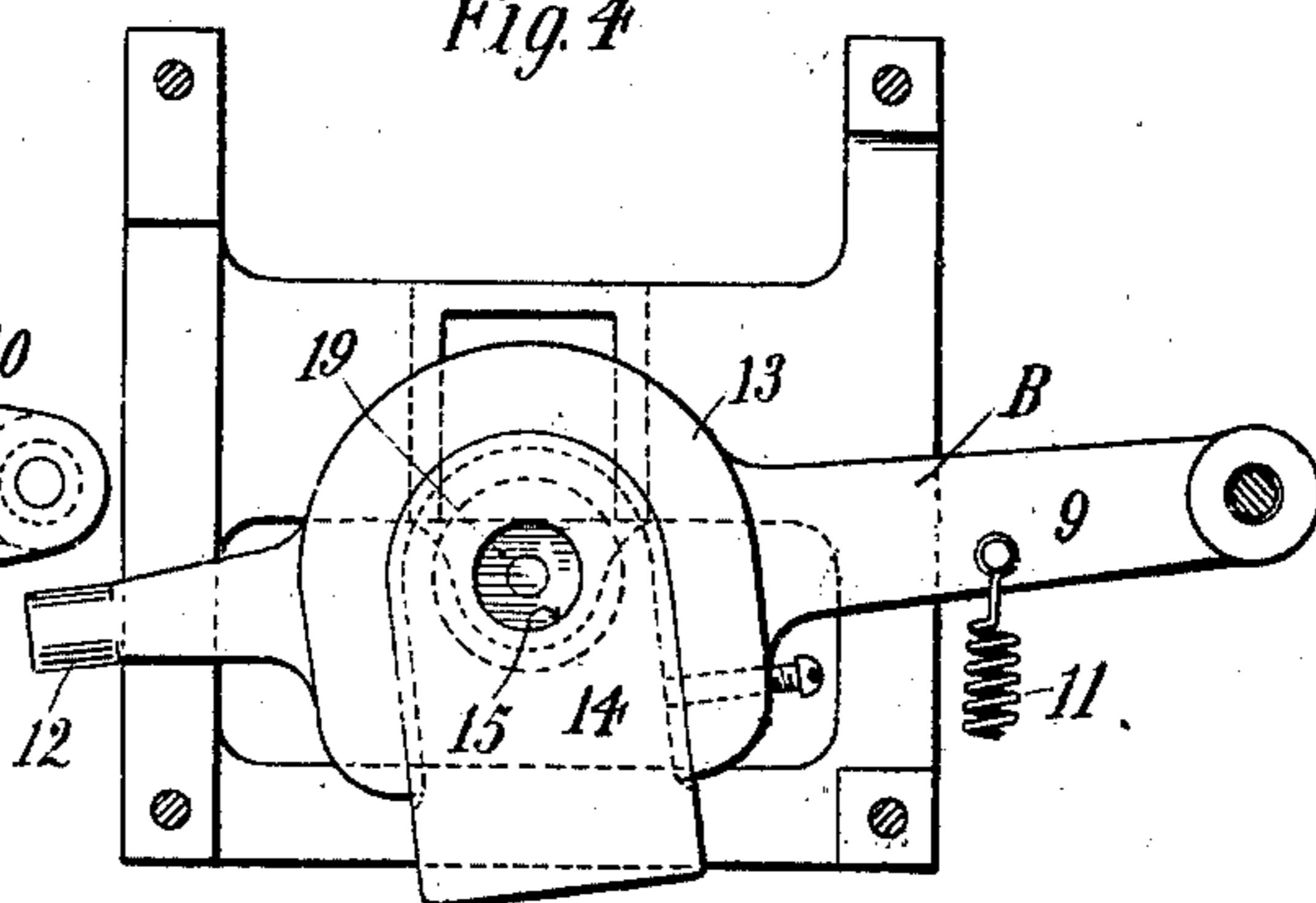


Fig. 4



Witnesses:  
*Raphael Ketter*  
*E. D. Morrill*

*Marion L. Nichols, Inventor*

by *J. D. Merwin* Atty

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Fig. 5

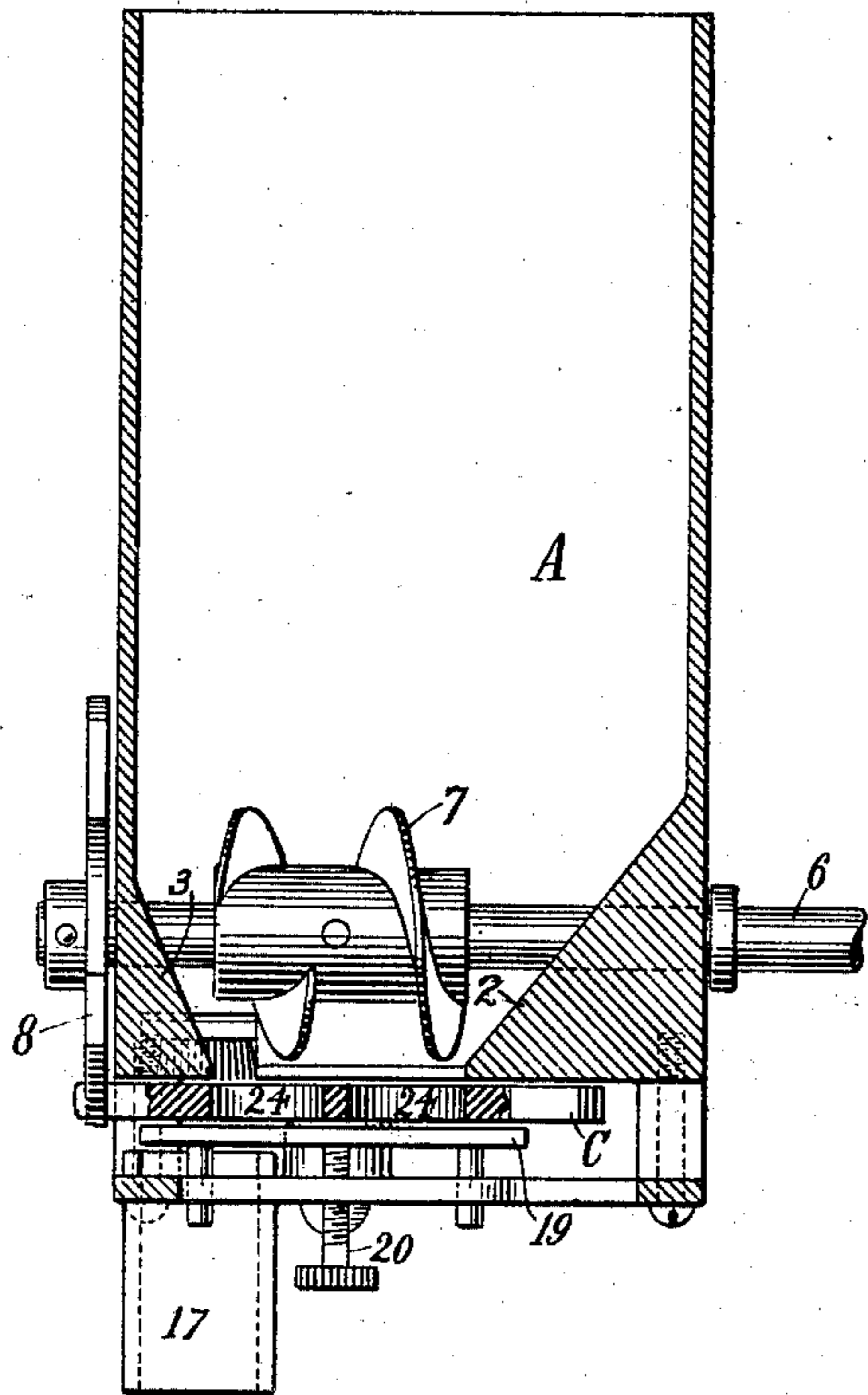


Fig. 6

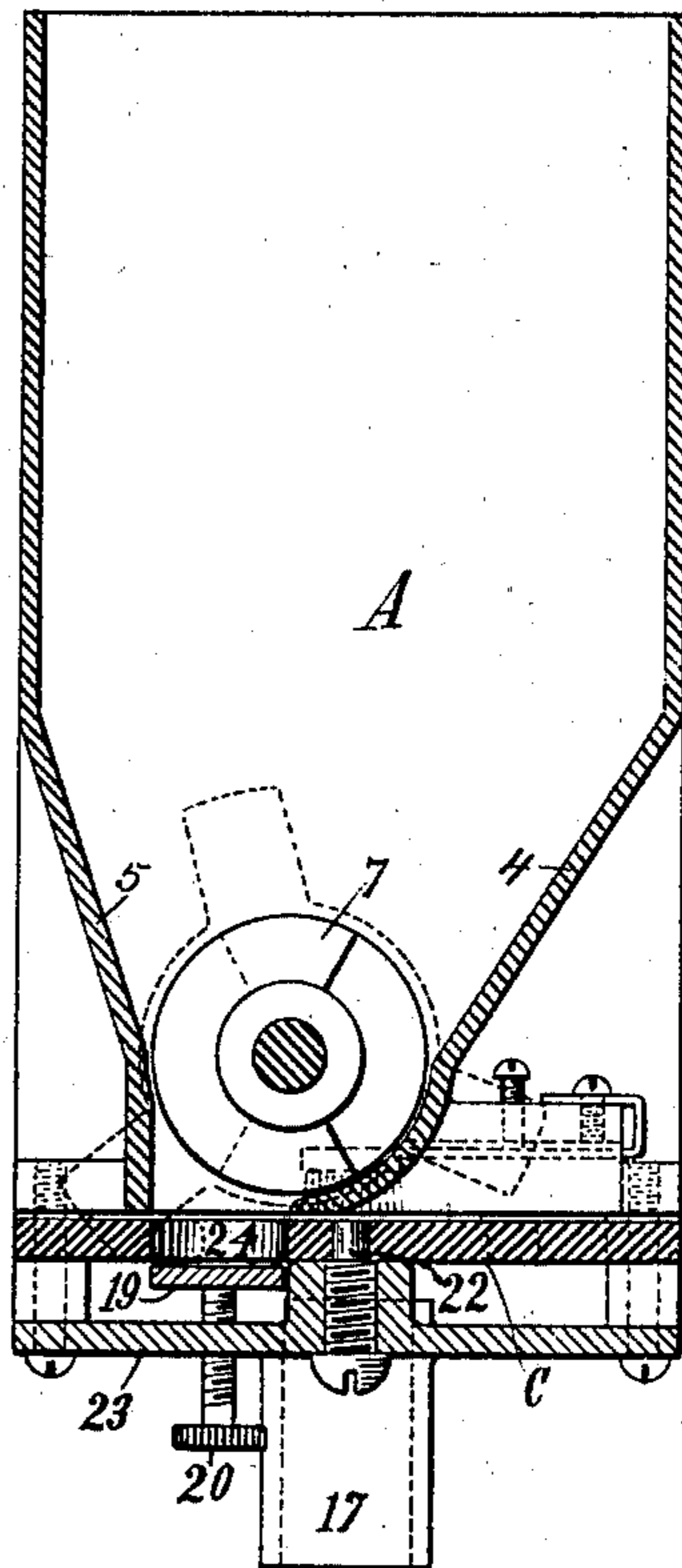


Fig. 7

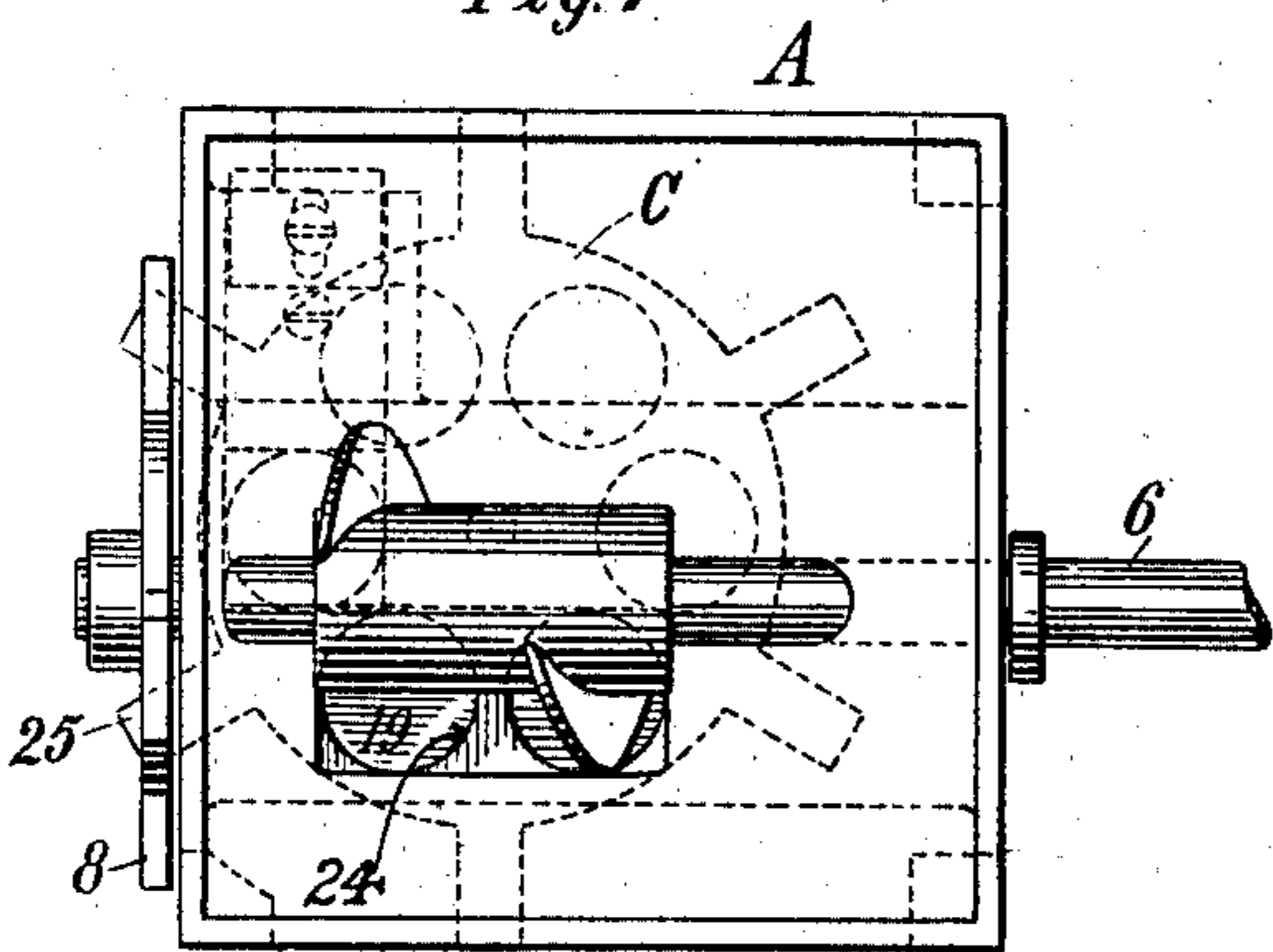


Fig. 8

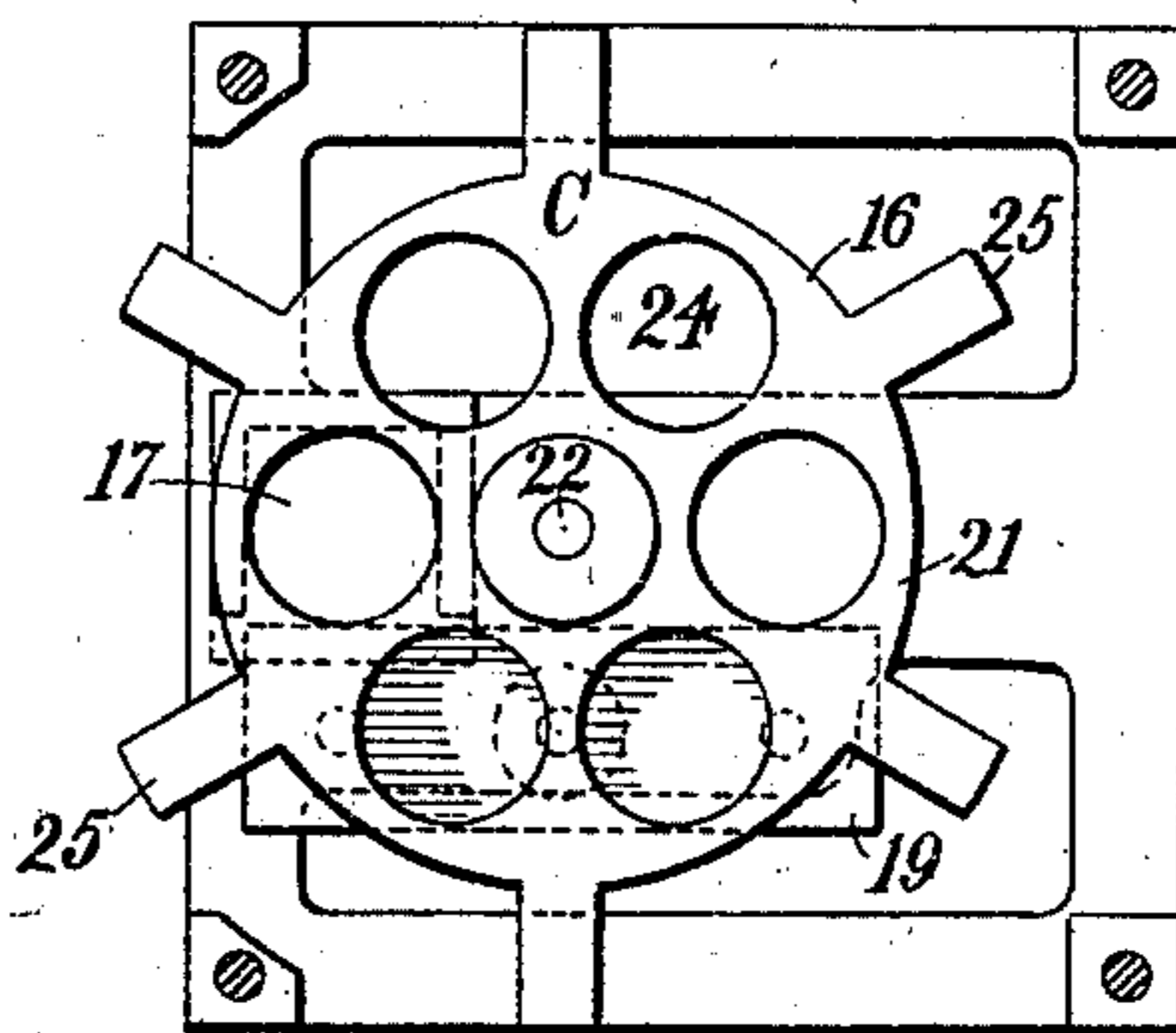
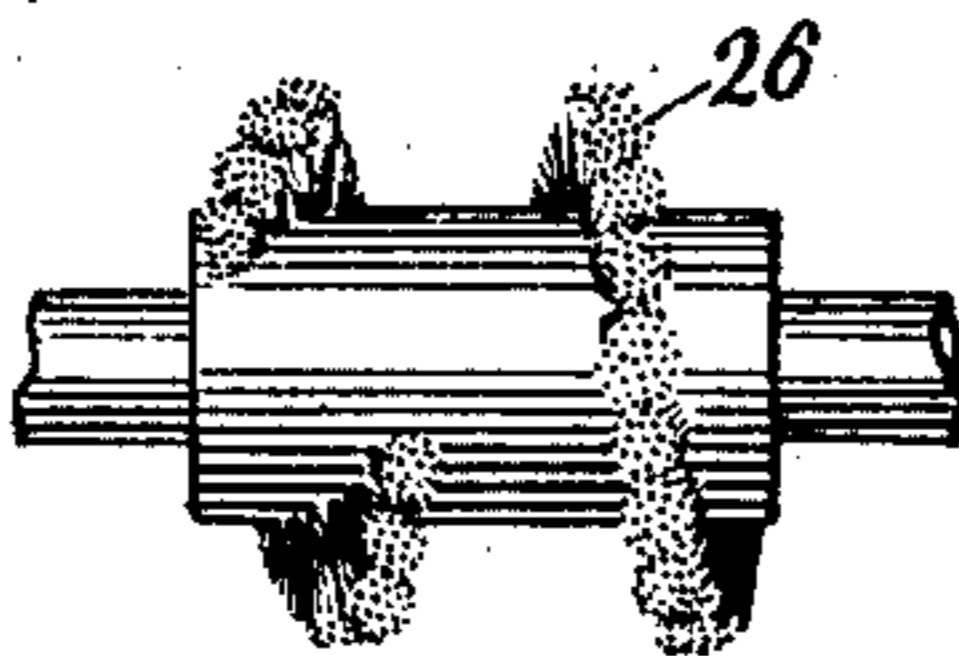


Fig. 9



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# UNITED STATES PATENT OFFICE.

MARION L. NICHOLS, OF WESTFIELD, NEW JERSEY.

## SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 671,056, dated April 2, 1901.

Application filed October 29, 1900. Serial No. 34,704. (No model.)

*To all whom it may concern:*

Be it known that I, MARION L. NICHOLS, of Westfield, county of Union, State of New Jersey, have invented a new and useful Seed-Planter, of which the following is a specification.

My invention relates to improvements in seed-planters, the object being to provide an improved construction of the same to secure absolute uniformity and accuracy of measurement of the seed to be dropped irrespective of the speed of operation of the device; and it consists in the features of construction hereinafter described and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 is a vertical central section of the device in the plane of the agitator and tripping-shaft. Fig. 2 is a similar section at right angles to that in Fig. 1. Fig. 3 is a plan view. Fig. 4 is an inverted plan view with the spout or delivery-chute removed. Figs. 5, 6, 7, and 8 are respectively a vertical section, plan, and inverted plan views corresponding to Figs. 1 to 4, inclusive, but with a modified construction of dropper; and Fig. 9 is a detail of a modified form of agitator.

In the drawings, A represents the hopper, having the converging sides 2, 3, 4, and 5. Journaled transversely in the bottom of the hopper is the shaft 6. Mounted upon this shaft within the hopper is the spiral agitator 7 for working in the seed. Upon the shaft outside of the hopper is mounted a star-wheel 8, which serves to trip the dropper B. The preferred construction of the dropper is shown in Figs. 1 to 4, inclusive, and consists of a lever 9, having pivotal support 10 and a retracting spring 11, the free end 12 of the lever extending into position to be engaged by the arms of the star-wheel 8. The lever has a U-shaped holder or guide 13, into which is removably fitted a pocket-plate consisting of a slide 14, having an opening 15 therethrough, serving as the pocket. The thickness of the slide and the diameter of the pocket 15 determine the quantity of seed to be measured and dropped with each action of the device. Interchangeable dropper-slides 14 are provided of varying thicknesses, having pockets of different diameters adapted for the various kinds of seeds which are intended to be used in the

machine. Offset from the opening 16 in the bottom of the hopper is a delivery chute or spout 17, so positioned that the dropper in the oscillation caused by the engagement of the star-wheel 8 in its rotation will carry the pocket 15 of the dropper away from the hopper-opening 16 into registering position with the chute to discharge the contained seeds thereinto. In order to secure accurate filling of the pocket 15, a brush 18 is arranged in its path of movement, so as to sweep off from the same all grain lying above the top of the slide. Underneath the slide, serving as a bottom for the pocket when the dropper is in position to receive the grain, is a disk 19, mounted on a set-screw 20. The screw serves to adjust the disk 19 and bring it closely into contact with the bottom of the slide, the position of the disk being varied according to the thickness of the slide used. In the modified construction shown in Figs. 5 to 8, inclusive, I substitute for the dropper B a modified dropper C. This consists of a disk 21, serving as a pocket-plate, having pivotal support 22, preferably the tip of the screw engaging a spider or frame 23, as shown best in Fig. 6. This disk is provided with a series of pockets 24 and with peripheral radial arms 25, rotating in the path of rotation of the star-wheel 8, so as to be successively tripped thereby and moved on its pivot step by step, the arms 25 being of the same number as and so positioned with reference to the pockets 24 that each step in the operation of the machine will carry one of the pockets into registering position with the chute 17. The movable disk 19 serves as a closure for the bottom of the openings 24 and is adjustable to different thicknesses of disks in the same manner as the adjustment is arranged in Figs. 1 to 4. The spiral agitator 7, as shown in Figs. 1 to 8, inclusive, may be of wood or metal or any other rigid material. In some cases, however, I prefer an elastic rib or spiral upon the shaft, such as brushes of bristle or other elastic material 26, as shown in Fig. 9.

The operation of the device is apparent from the drawings and the foregoing description. The shaft 6 is turned by engagement with proper driving mechanism common to machines of this character, the speed of rotation of the shaft being adjusted to the work

to be performed. As the machine is moved over the ground the star-wheel 8 successively trips the lever 9 or the disk 21, carrying the measuring-pocket from the bottom of the chute laterally over the discharge-chute, the surplus grain being swept off by the brush 18. To adapt the machine for different kinds of seeds, it is necessary merely to interchange the pocket-plate to secure the proper capacity of pocket and adjust the disk 19 by means of its set-screw 20, so that it be fitted closely to the bottom of the pocket. Some seeds used in such machines are liable to become packed in the hopper unless stirred, and for this purpose the agitator 7 is employed, so that the seeds are all the time being changed in position, and the delivery to and filling of the dropper-pocket are positive.

I claim—

1. In a seed-planter having interchangeable pocket-plates of varying thicknesses, an adjustable disk or plate for closing the bottom of the pockets while in registering position with the hopper.
2. In a seed-planter having a hopper and offset delivery-chute, interchangeable pocket-plates of varying thicknesses, and an adjustable closure for the bottom of the pockets while in registering position with the hopper.
3. In a seed-planter, the combination with its hopper and offset delivery-chute, of a pocket-plate arranged intermediate said hopper and chute, an adjustable disk for closing the bottom of the pocket while standing beneath the hopper, means for sweeping off the surplus seed projecting above the top of the pocket, and step-by-step means for turning or reciprocating said plate so as to receive seed from the hopper into its pocket and discharge the same therefrom into the chute.
4. In a seed-planter having a hopper and offset delivering-chute, a seed-dropper arranged intermediate said hopper and chute, comprising in combination a pivoted spring-controlled lever, a removable pocket-plate

carried by said lever, having an opening there-through constituting the pocket, an adjustable closure for the bottom of said pocket, and step-by-step means for turning said lever against the tension of its spring so as to carry said pocket from registering position with the hopper to registering position with the chute.

5. In a seed-planter, in combination with its hopper and an offset delivery-chute, an intermediately-disposed pivoted lever, interchangeable plates fitted to said lever, each provided with an opening therethrough serving as a seed-measuring pocket, an adjustable closure-plate for the bottom of said pocket while the same is standing beneath the hopper, a restraining-spring for said lever, and a step-by-step attachment for engaging said lever to turn it against the tension of said spring, the parts being of such dimensions and so disposed that said spring tends to hold said measuring-pocket in registering position with the hopper, while the step-by-step mechanism carries the same to registering position with the chute, substantially as and for the purposes specified.

6. In a seed-planter having a hopper and an offset delivery-chute, the combination therewith of a pocket-plate, means for moving said plate causing it to alternately register with the hopper and the chute, an adjustable closure for the bottom of the pocket while in registering position with the hopper, and a feeding and stirring device arranged in said hopper, comprising a rotatable shaft with a spiral flange, exposed throughout its intermediate length to the mass of seed in the hopper.

Signed at New York city, New York, this 25th day of October, 1900.

MARION L. NICHOLS.

Witnesses:

T. D. MERWIN,

FRANK S. GANNON, Jr.