

(Model.)

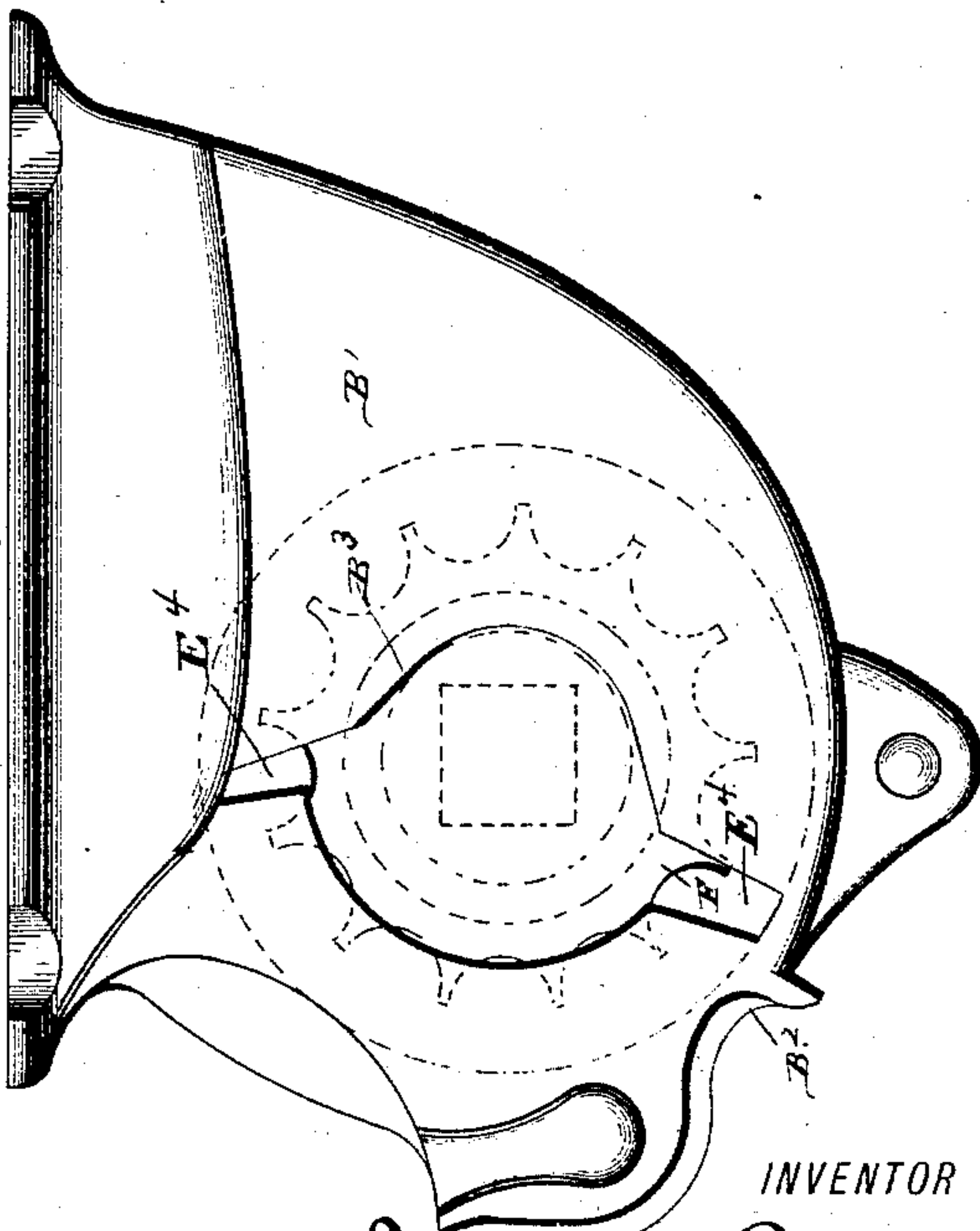
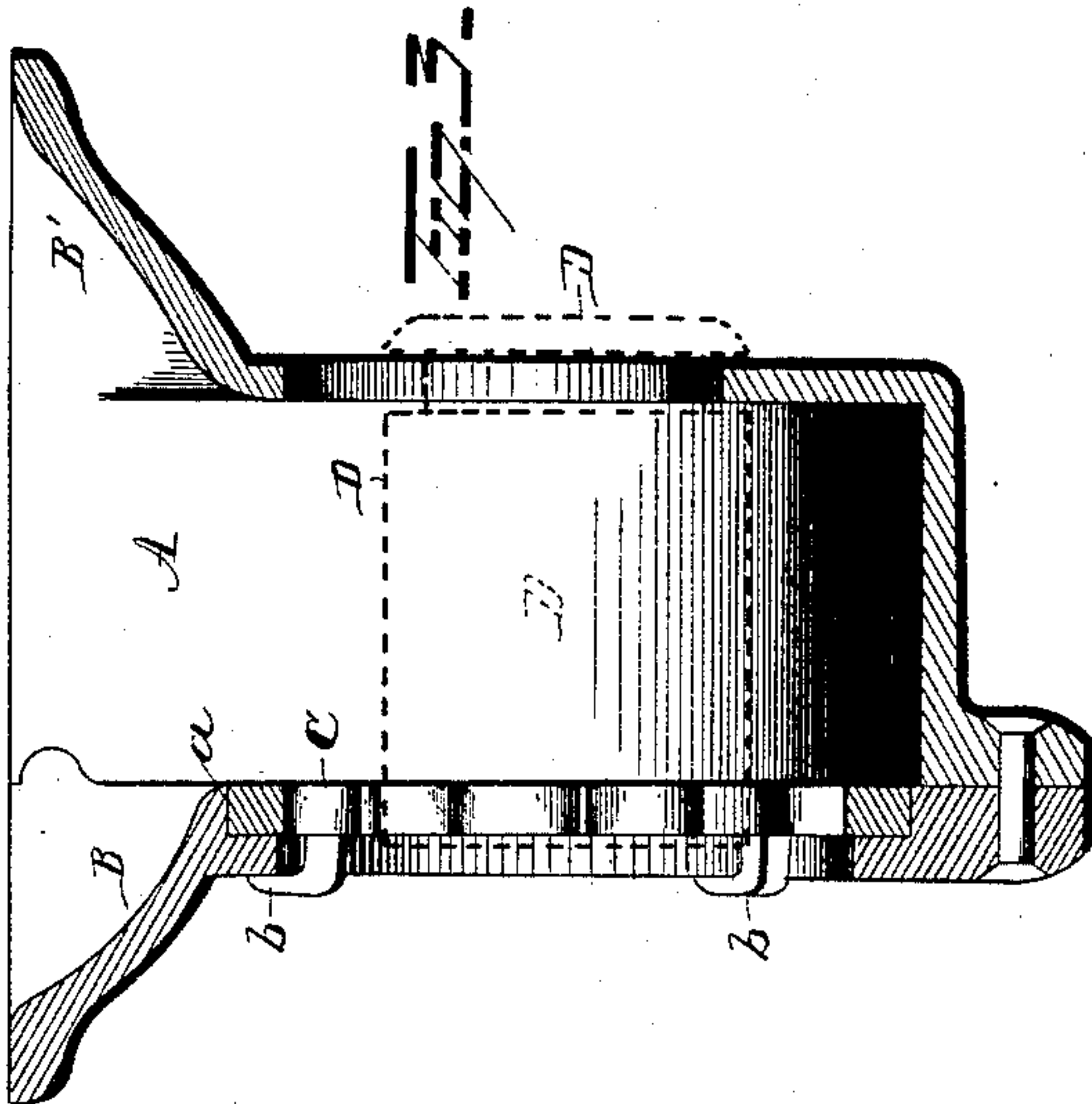
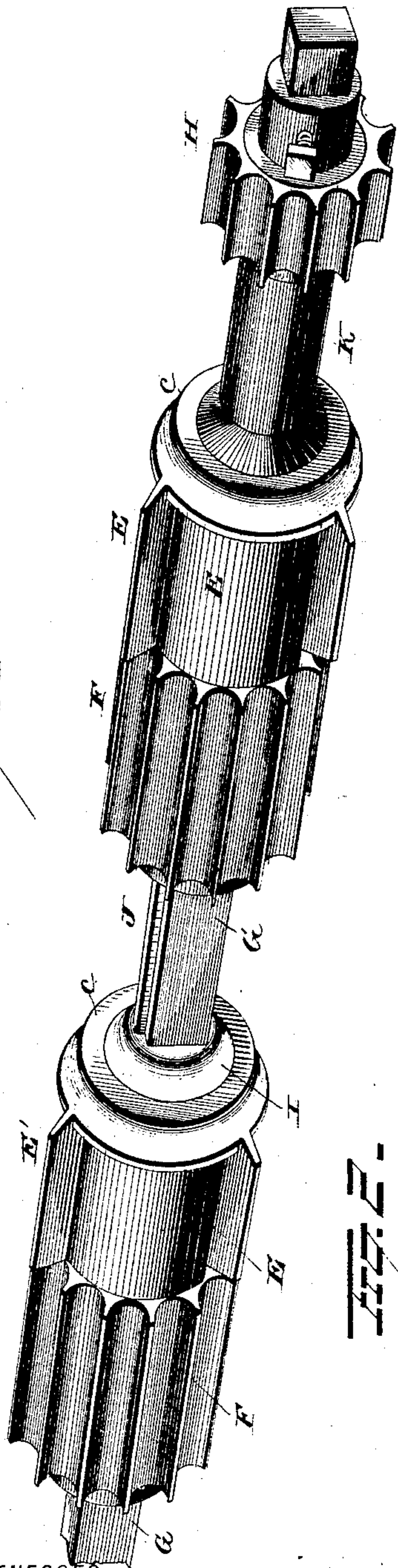
2 Sheets—Sheet 1.

J. L. RITER.

FORCE FEED SEEDING MACHINE.

No. 315,168.

Patented Apr. 7, 1885.



WITNESSES

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(Model.)

2 Sheets—Sheet 2.

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Fig. 4.

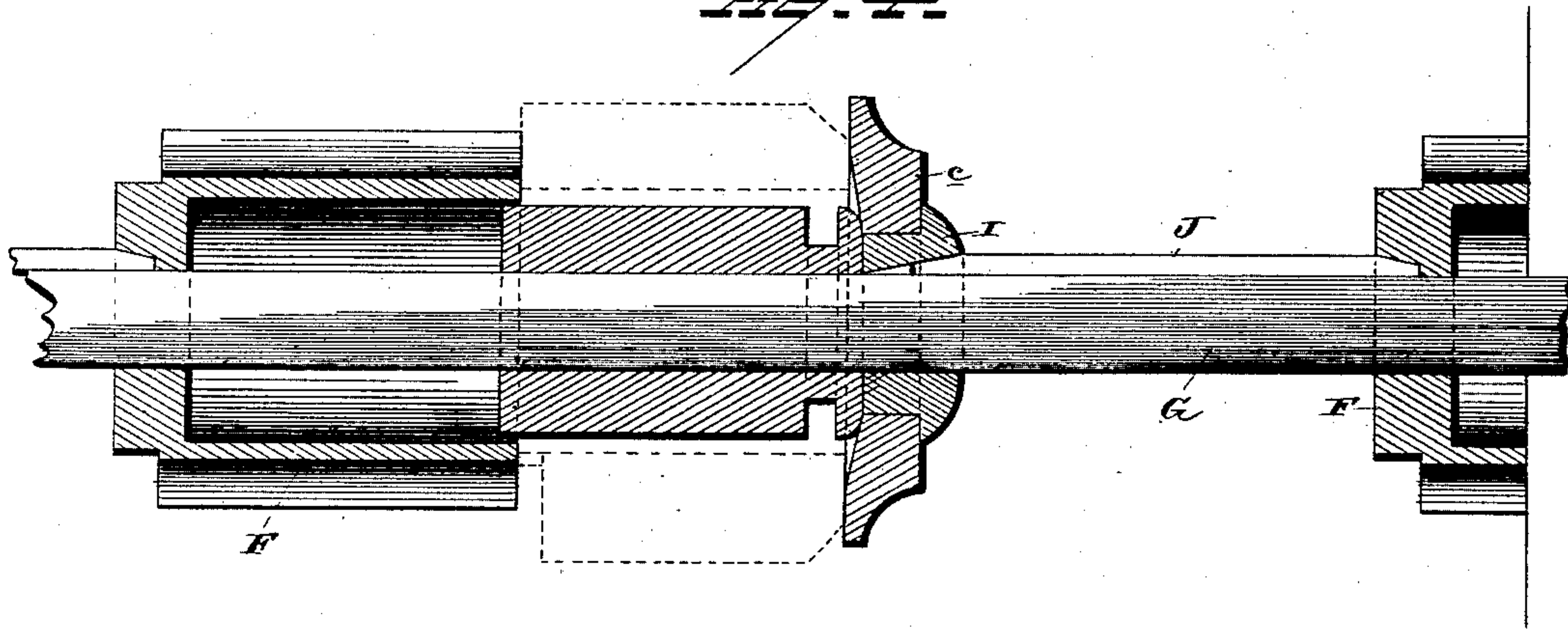
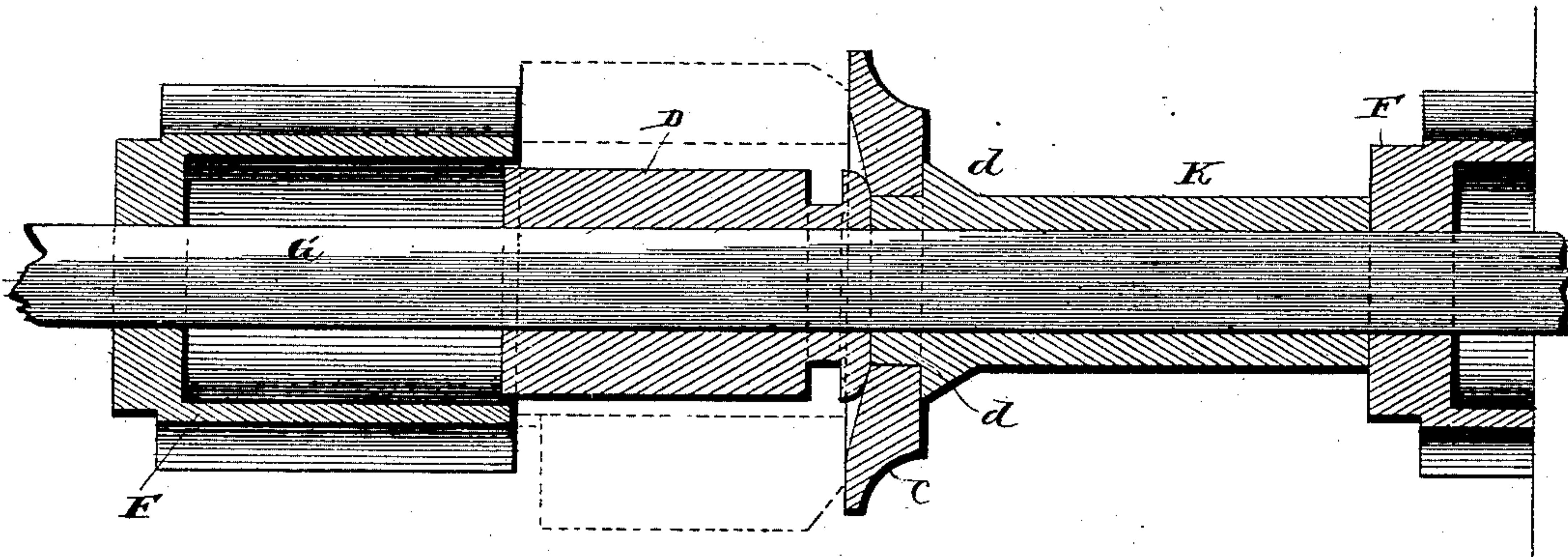


Fig. 5.



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# UNITED STATES PATENT OFFICE.

JOHN L. RITER, OF BROWNSVILLE, INDIANA.

## FORCE-FEED SEEDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 315,168, dated April 7, 1885.

Application filed November 7, 1884. (Model.)

*To all whom it may concern:*

Be it known that I, JOHN L. RITER, of Brownsville, in the county of Union and State of Indiana, have invented certain new and useful Improvements in Force-Feed Seeding-Machines; and I do hereby 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 make and use the same.

My invention relates to an improvement in force-feed seeding-machines, the object of the same being first to provide improved means for securing the rose-washer within the seed-cup. A further object is to provide improved means for securing a rotating and non-sliding sleeve within the seed-cup. A further object is to provide improved means for holding the feed-wheels and cut-off gates in their proper relative positions on the driving-shaft; and with these ends in view my invention consists in the parts and combinations of parts, as will be more fully explained, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in perspective of the shaft, showing two ways of securing feed wheels and gates thereon. Fig. 2 is a view in side elevation of the seed-cup with the feed-wheel and cut-off gates removed. Fig. 3 is a view in section of the same, showing the manner of securing the rose-washer thereto. Fig. 4 is a transverse vertical sectional view through the shaft and bar, showing the devices for holding a feed-wheel and cut-off gate in proper relative position; and Fig. 5 is a similar view showing a tube for performing precisely the same function.

A represents a seed-cup constructed of two parts, B B', the former of which is provided on its inner face with a circular seat or depression, *a*, in which the rose-washer C rests. This rose-washer is fluted to correspond with the depressions in the feed-wheel, and is provided on one face (preferably its outer) with a series of fingers, *b*, which latter are bent outwardly and overlap the edges of the section B of the cup and hold the rose-washer in place. This rose-washer can be made of malleable iron, and the fingers formed integral therewith, or the fingers can be formed independently of the

rose-washer, and secured thereto by riveting or by threading the ends of the fingers and screwing them into the washer. The other or larger section, B', of the seed-cup A is provided with the seed-discharge opening B<sup>2</sup>, and on its side face with an opening, B<sup>3</sup>, through which one end of the sleeve D rests, and in which the cut-off gates slide. The portion of this opening B<sup>3</sup>, to the right of the dotted line *x x* of Fig. 2, is curved to conform to the circumference of the grooved portion of the wheel, while the portion of the opening B<sup>3</sup> to the left of the dotted line is shaped to conform to the web E of the cut-off gates E'. When the cut-off gates are removed from the seed-cup, the opening B in the section B' is sufficiently large to permit the sleeve D to be passed through the same; but when the gates are in position the opening is too small. The sleeve D is first entered into the opening until the groove therein comes opposite the side wall of the section B', which permits the sleeve to be moved forwardly. After the sleeve is moved sidewise or forwardly, the web E, with its attached gates E', is next placed in position by passing it through the opening in the section B' behind the sleeve D. This web then prevents the sleeve from moving rearwardly, and consequently holds it in locked position. By this arrangement of parts the sleeve is journaled in one side wall of the cup and is free to turn therein, but is held securely against endwise movement. The feed-wheel F can be fluted or provided with any shaped depressions or pockets for carrying the seed, and is provided with a central opening or bore sufficiently large to receive the sleeve D, which, as before stated, is journaled in one side wall of the seed-cup. This feed-wheel is provided at one end with a hub having an opening or bore centrally through the same, through which the shaft G passes. This shaft is preferably angular in cross-section, but can be made round or of any other desired shape, and passes through the sleeve and imparts a rotary motion thereto. One end of the web of the cut-off gates is formed into or provided with a hub or collar, *c*, through which the shaft passes and in which the shaft turns; but is so secured on the shaft, as will be hereinafter explained, as to be moved longitudinally simultaneously with the



shaft. This web and the cut-off gates rest snugly against the inner end of the feed-wheel, and move simultaneously with the feed-wheel, so as to wholly or partly cut off the feed as circumstances demand. A series of seed-cups are secured to the hopper in the usual manner, and are operated by a common shaft, G, which is provided with a pinion, H, at one end, through which motion is imparted thereto. This shaft is adapted to be moved longitudinally by a hand-lever or other suitable device.

In arranging or adjusting the parts I first place the sleeves within the cups, and then insert the cut-off gate, which, as before stated, locks the sleeves in position. I then pass the shaft through the hub of the cut-off gates, sleeve, and feed-wheel, and move it longitudinally, or move the seed-cup with its parts on the shaft until the seed-cup is in proper position. Between the hub of the cut-off gates of one of the end seed-cups and a stop (which can be the pinion rigidly secured to the shaft) I secure a bar, J, preferably flat, (if the shaft be angular,) which latter rests snugly on the shaft. One end of this bar enters a notch formed in a collar or box, I, rigidly secured on the shaft, and resting within the hub of the cut-off gates, while the other end enters a similar notch in the stop above referred to. The next cup, with its attached parts, is then placed in position and secured at the proper distance apart by another bar, J, one end of which enters a notch in the hub of the feed-wheel of one cup, and a notch in the box on which the hub of the cut-off gate of the next adjacent box rests, and so on until the entire series are secured in place, the feed-wheel of the last seed-cup being secured against endwise movement by a collar removably secured to the shaft. These bars or rods simply hold the cut-off gates and feed-wheel of the same cup together and prevent them from moving longitudinally independently of the shaft. As the feed-wheels and the boxes inside of the hubs of the cut-off gates are secured to the shaft and are rotated thereby, there is no torsional strain on the bars or rods, and, as their sole function is to prevent an independent longitudinal movement of the feed-wheel and cut-off gates, there is nothing to displace the rods.

If desired, I can, instead of employing the flat bars or rods, use tubes K, which latter encircle the shaft. These tubes are provided near one end with a collar, d, adapted to bear against the outer face of the hub of the cut-off gates, while the extreme end of the said tube forms a box or seat for said hub. The opposite end of said tube bears against the end of the adjacent feed-wheel, and so on throughout the entire series. The sleeve D is slightly smaller than the feed-wheel, but as it revolves simultaneously with the feed-wheel it prevents the grain from bridging and being crushed when the feed is partly cut off.

By the employment of the tubes or rods

above described I obviate the necessity of forming two pin-holes through the shaft for each seed-cup, and consequently produce a stronger shaft and secure the parts thereon against independent endwise movement at a reduced cost.

It is evident that numerous changes in the form and arrangement of the several parts described may be made without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the construction herein set forth; but,

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

1. The combination, with a seed-cup and a feed-wheel, of a rose-washer resting against one face of the seed-cup and provided with bent fingers which overlap or rest against the opposite side of said face, substantially as set forth.

2. The combination, with a seed-cup having a depressed seat in one face thereof and a feed-wheel, of a rose-washer resting in said depressed seat and provided with bent fingers, which latter overlap or rest against the opposite side of said face and hold the washer in position.

3. The combination, with a seed-cup and a feed-wheel, of a rose-washer resting against one face of said cup, and the bent fingers rigidly secured to said washer and holding it in position, substantially as set forth.

4. The combination, with a seed-cup having an opening in one side wall thereof, and a sleeve having a groove therein, of a cut-off gate or gates for locking the sleeve against endwise movement within said opening.

5. The combination, with a seed-cup having an opening in one side wall, and a rotating and non-sliding sleeve having a grooved end, of the cut-off gate and the web for locking the sleeve against displacement, substantially as set forth.

6. The combination, with a seed-cup, the rotating and longitudinal movable feed-wheel, and the sleeve, of the cut-off gates and web for locking the sleeve against endwise movement.

7. The combination, with a series of seed-cups, feed-wheels, and cut-off gates, of a shaft and a support or distance-piece located between the feed-wheel of one seed-cup and the cut-off gate or gates of the next adjacent cup, substantially as set forth.

8. The combination, with a series of seed-cups, feed-wheels, and cut-off gates, of a rotating and longitudinally-sliding shaft and supports or distance-pieces located between the cut-off gate or gates of one seed-cup and the feed-wheel of the next adjacent cup.

9. The combination, with a series of seed-cups, feed-wheels, and cut-off gates, of a shaft and distance-pieces or supports located on the shaft, the opposite ends of each of said pieces resting, respectively, against the hub of a feed-



wheel and the hub or collar of the next adjacent cut-off gate.

10. The combination, with a series of seed-cups, feed-wheels, and cut-off gates, of the  
5 angular rotating and sliding shaft and the rods or bars resting on said shaft and bearing against the adjacent ends of the feed-wheels and cut-off gates, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN L. RITER.

Witnesses:

WM. J. HENLEY,  
A. L. RIGGS.