

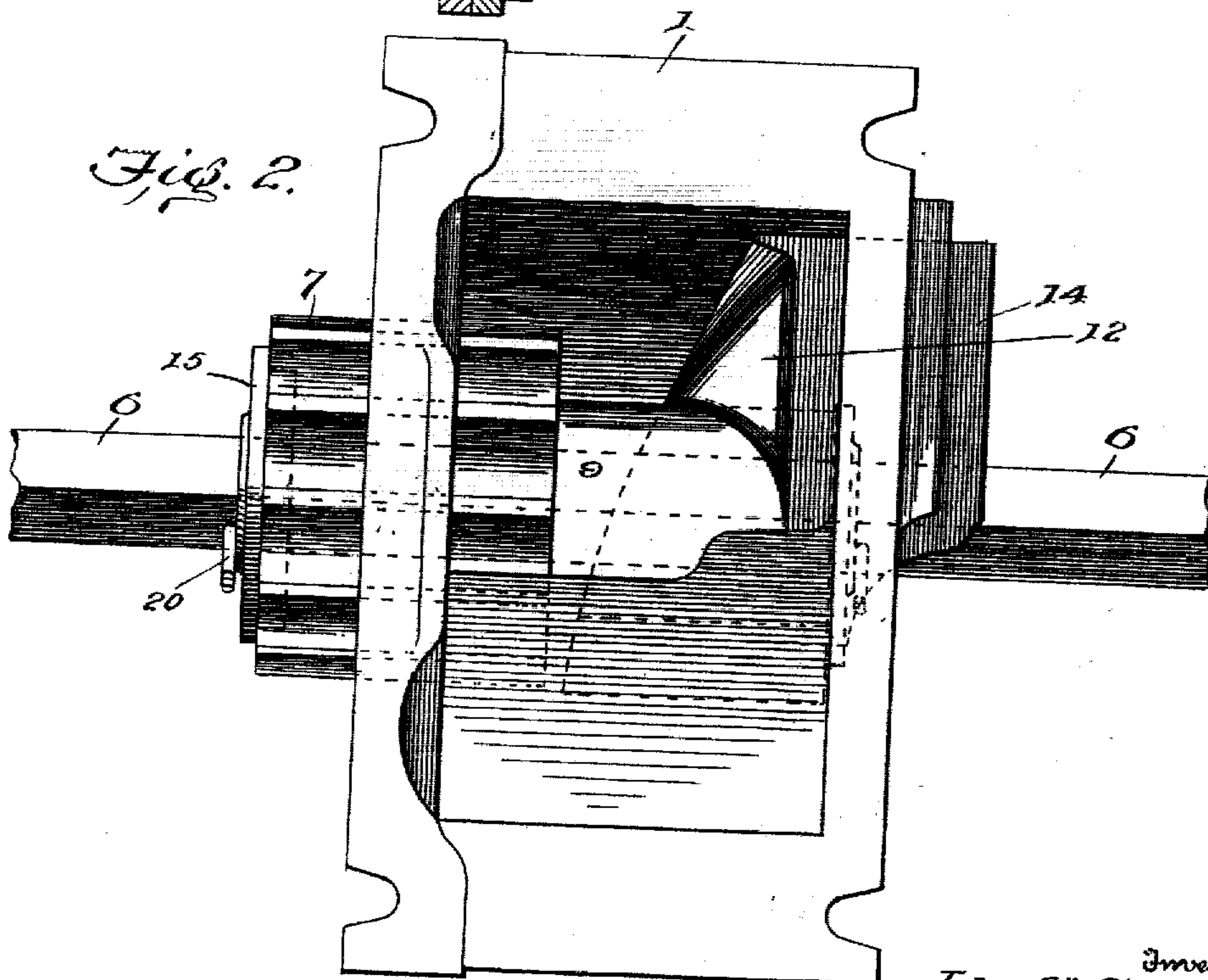
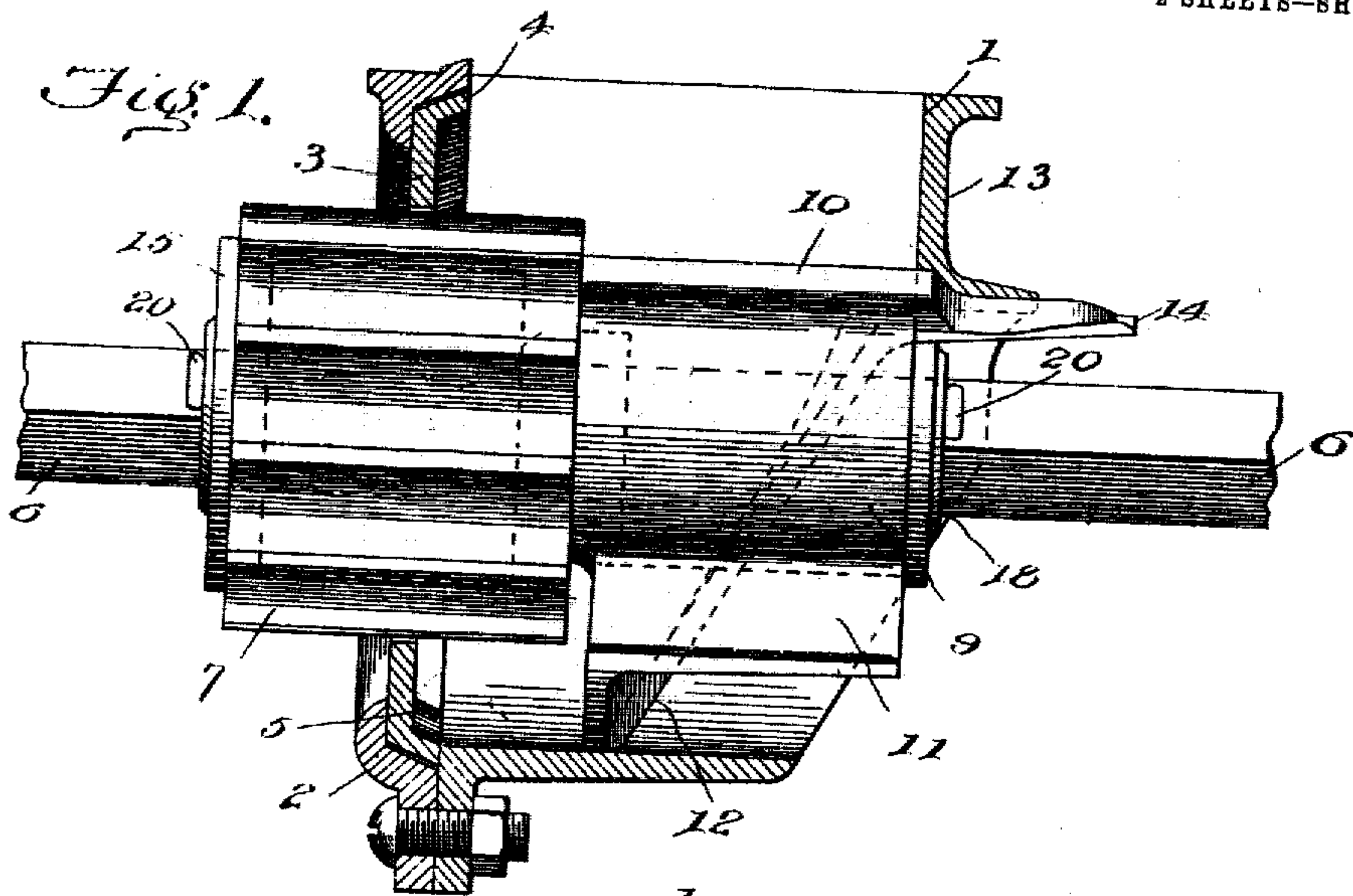
No. 822,872.

PATENTED JUNE 5, 1906.

J. W. SMITH & N. L. HECKMAN.
GRAIN DISTRIBUTER.

APPLICATION FILED FEB. 13, 1904.

2 SHEETS--SHEET 1.



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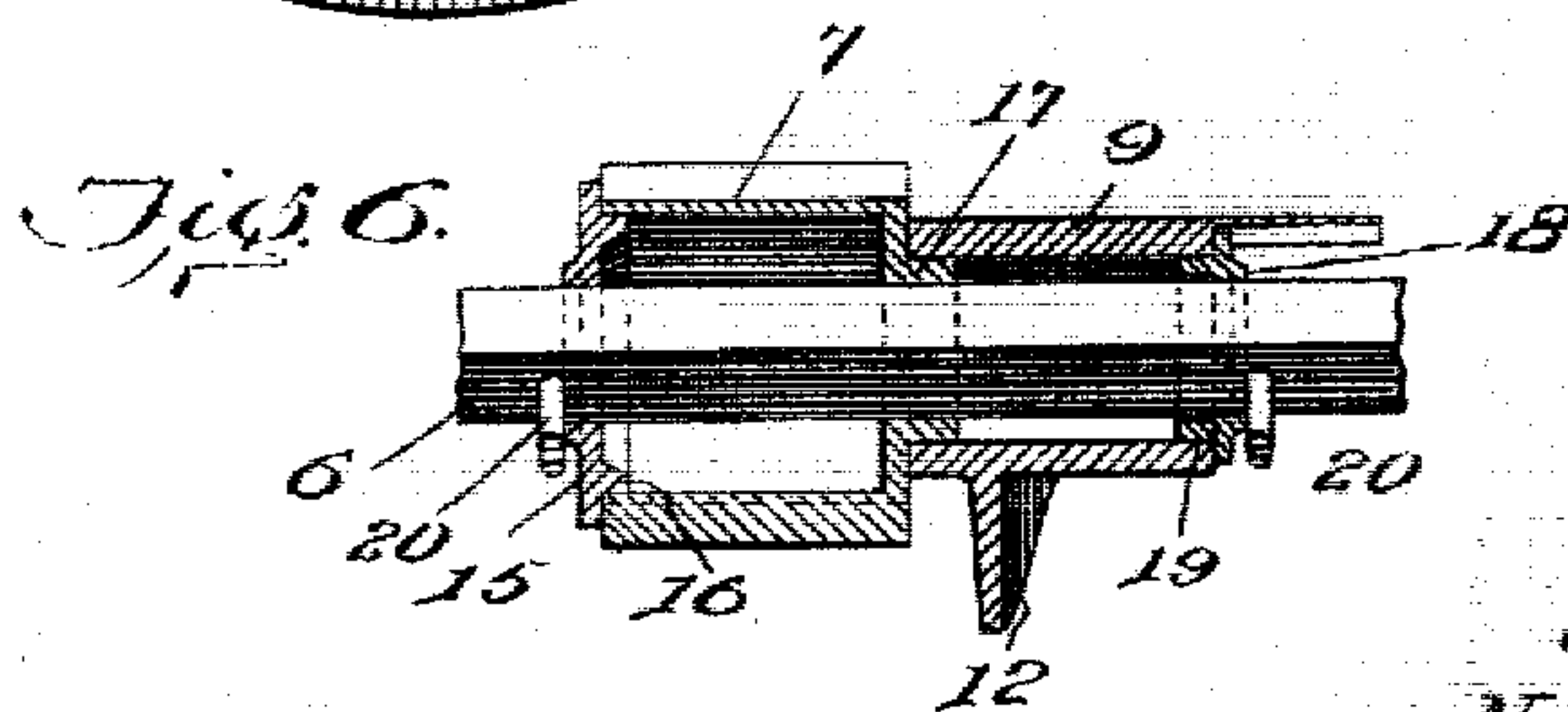
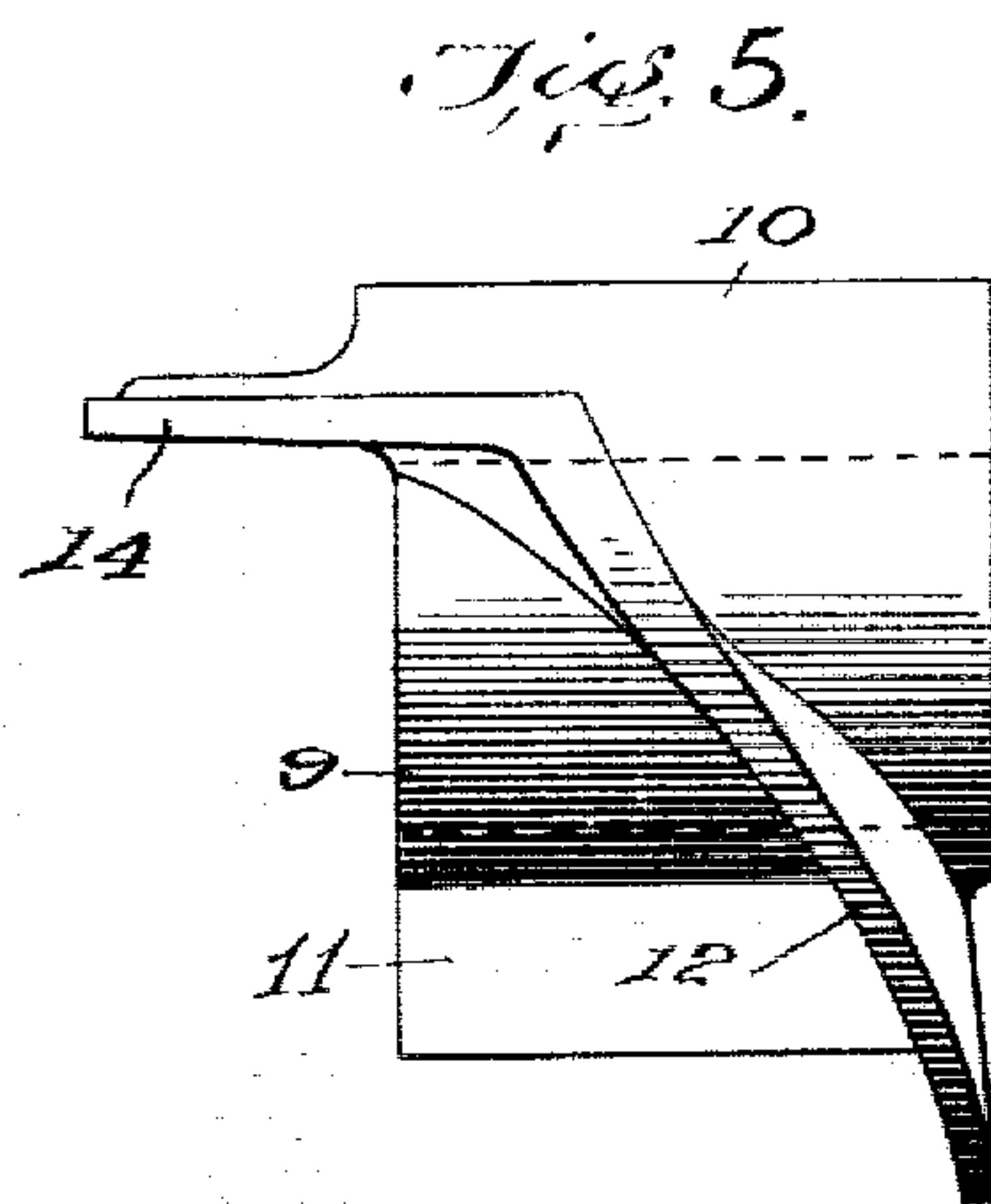
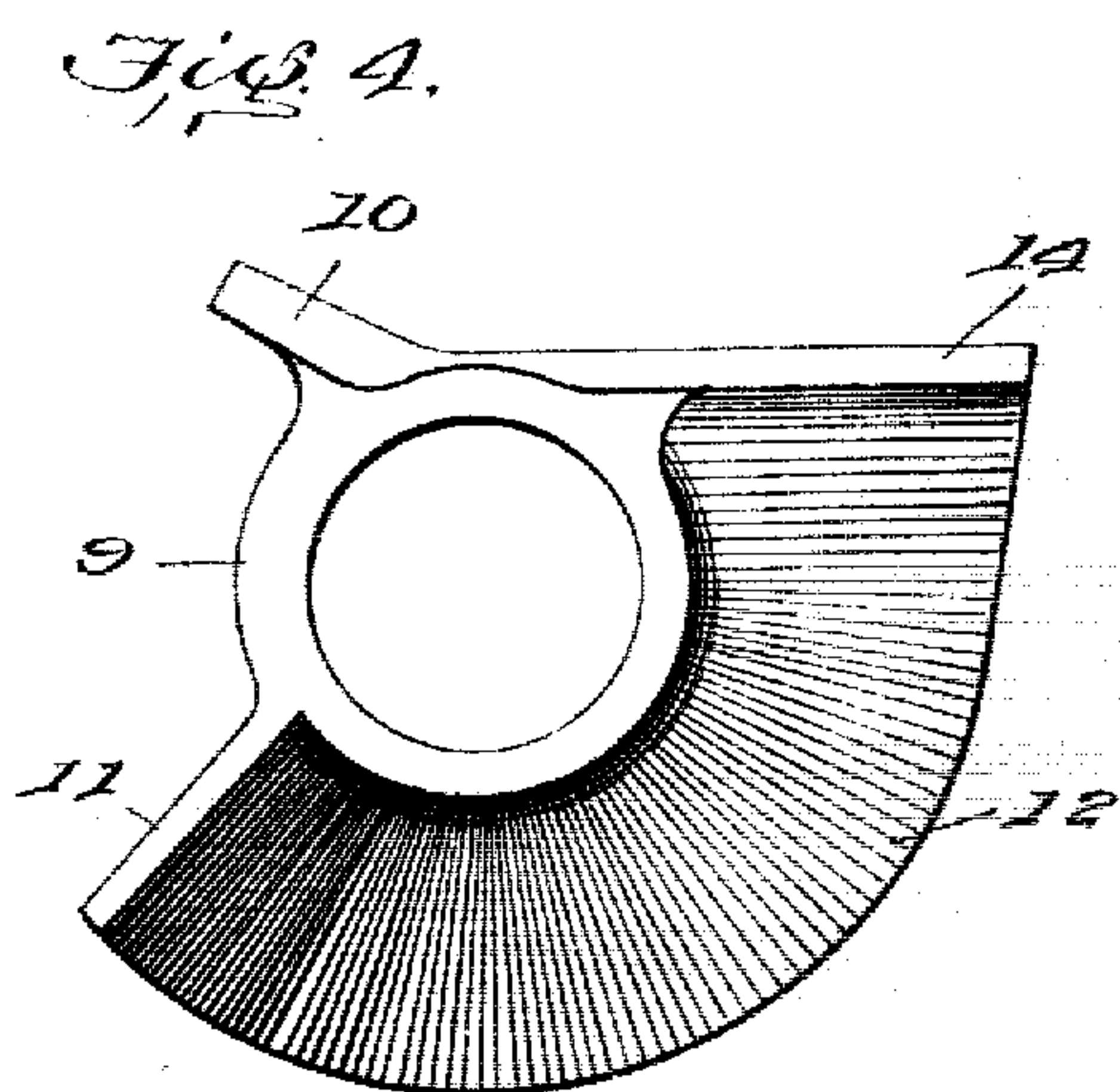
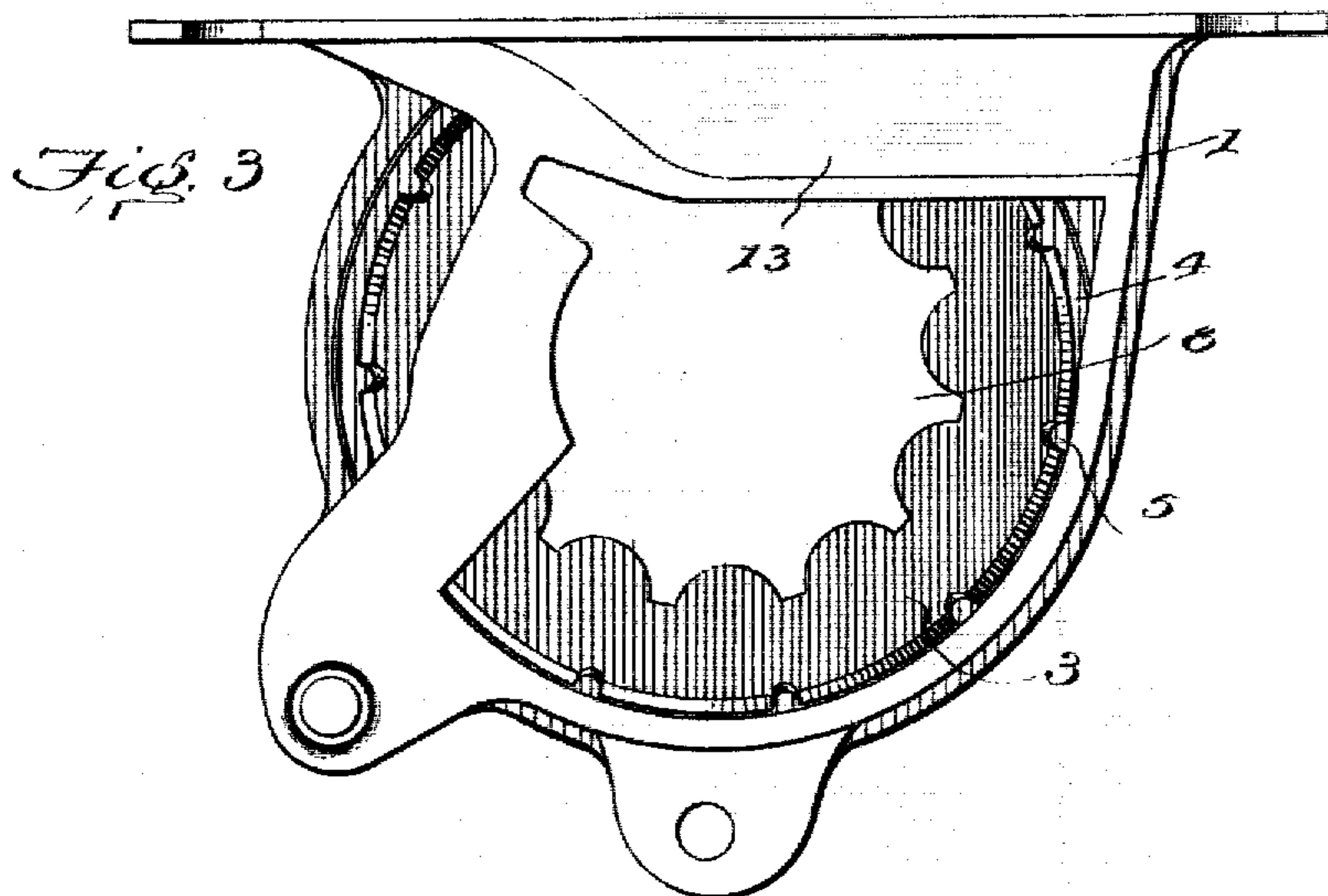
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2 SHEETS—SHEET 2



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN W. SMITH AND NOAH L. HECKMAN, OF LIBERTY, INDIANA; SAID SMITH ASSIGNOR OF HIS RIGHT AND SAID HECKMAN ASSIGNOR OF ONE-THIRD OF HIS RIGHT TO JUSTICE W. SHARICK, OF SPRINGFIELD, OHIO.

GRAIN-DISTRIBUTER.

No. 822,872.

Specification of Letters Patent.

Patented June 5, 1906.

Application filed February 13, 1904. Serial No. 193,374.

To all whom it may concern:

Be it known that we, JOHN W. SMITH and NOAH L. HECKMAN, citizens of the United States, residing at Liberty, in the county of Union and State of Indiana, have invented certain new and useful Improvements in Grain-Distributers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to grain-distributers, and is in the nature of an improvement upon that class of devices of which the type is found in Letters Patent Nos. 310,228, of January 6, 1885; 315,168, of April 7, 1885, 15 and 317,204, of May 5, 1885, to John L. Riter. This class of distributers employs a seed-cup into which projects a fluted seed wheel or roll, movable lengthwise of its axis, in conjunction with a cut-off at one side 20 thereof, and moving longitudinally in unison therewith, the speed of the seed-wheel being constant and the feed being controlled by the extent to which the seed-wheel projects into the cup. The cut-off closes that part of the 25 discharge-mouth of the seed-cup which is not occupied by the seed-wheel, and an objection to this type of distributer is that the cut-off and the adjacent walls of the seed-cup form a pocket in which the material to be sown ac- 30 cumulates, so that the device is not a positive force-feed in all positions of the parts.

It is the object of our invention to overcome this objection; and to this end our invention consists in certain novel features 35 which we will now proceed to describe and will then particularly point out in the claim.

In the accompanying drawings, Figure 1 is an elevation, partly in vertical section, of a structure embodying our invention in one 40 form. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of the cup with the feed-wheel cut off and other parts removed therefrom. Fig. 4 is a side elevation of the sleeve which carries the cut-off and the mov- 45 able wall of the cup detached. Fig. 5 is a front elevation of the same, and Fig. 6 is a detail sectional view showing the mode of mounting the several parts carried by the feed-shaft.

50 In the said drawings, 1 indicates the seed-cup, which has one of its side walls (indicated at 2) detachably connected therewith and

recessed to receive the usual rosette or rose washer 3, having the feed-rim 4 and feed- 55 ribs 5.

6 indicates the feed-shaft, having secured thereon so as to rotate therewith the fluted seed wheel or roll 7, which passes through the correspondingly-shaped aperture 8 of the rosette in the usual way, the feed-shaft and 60 seed-wheel being longitudinally movable together through said rosette, so as to be projected to a greater or less extent into the interior of the seed-cup. The feed rim or flange 4 of the rose-washer 3 extends inward 65 so as to encircle that portion of the roll or wheel 7 which lies within the cup.

9 indicates a non-rotating sleeve mounted on the feed-shaft 6 adjacent to the inner end of the seed-wheel 7 and moving longitudi- 70 nally with said seed-wheel and shaft. This sleeve carries the upper cut-off or gate 10 and lower cut-off or gate 11, which control, respectively, the front portion of the receiving-mouth of the cup and the discharge-mouth 75 thereof.

In order to provide means for insuring the delivery from the discharge-mouth of the cup of all of the seed which enters at the receiving-mouth of said cup, we make that 80 side wall of the cup which lies opposite the side wall in which the rosette is mounted movable toward and from said rosette-bearing wall in unison with the seed-wall and cut-off and give to it a downward and in- 85 ward inclination, so that while its upper end is located at a suitable distance from the opposite wall its lower end always lies adjacent to the end of the seed-wheel. In our preferred construction, which is that shown, 90 this movable wall of the cup is indicated by the numeral 12 and is attached to or formed integrally with the sleeve 9, so as to move in unison therewith. The entire wall need not be movable, and in practice we prefer to 95 form the upper part 13 of this wall integral with the fixed body of the cup to form a receiving-mouth for the cup, which receiving-mouth has a fixed size. To prevent the escape of the seed from the opening thus 100 formed in the side of the body of the cup when the wall is moving inward, we employ a gate or cut-off plate 14, extending horizontally outward from the upper edge of the

movable portion 12 of said wall, which gate or cut-off will keep closed the space between the upper edge of the movable portion 12 of the wall and the lower edge of the fixed portion 13 when said movable portion is moved inward from its outermost position.

It will be seen that when the seed-wheel is moved from its position of maximum feed for the purpose of diminishing the feed by withdrawing a portion thereof from the interior of the cup, which movement will be a movement to the left in Fig. 1, the movable wall 12 of the cup will move with the said seed-wheel and will always maintain its lower end closely adjacent to the end of the seed-wheel, guiding the descending grain and delivering it to the flutes of the seed-wheel, whatever the position of this latter may be. In other words, the feeding-throat of the cup is contracted or expanded to conform in width at its lower end to the width of that portion of the periphery of the seed-wheel which lies within the cup. The formation of a pocket between the inner end of the seed-wheel, the cut-off, and the opposite wall of the cup, which pocket, of greater or less dimensions, according to the position of the seed-wheel, is formed in the ordinary construction of devices of this character where the opposite wall is fixed, is avoided and all of the grain carried down through the feeding-throat of the cup to the seed-wheel is delivered from the discharge-mouth of the cup. The rosette-wheel, with its feeding-rim and ribs, coöperates with the seed-wheel to effect this positive feed of the seed.

By reason of the relations existing between the ribbed feeding-rim of the rosette-wheel and the fluted roll, taken in conjunction with the inclined movable wall, the distributor as a whole constitutes a positive force-feed to the successful operation of which each of these elements contributes. By reason of this construction the feed may be positively regulated by moving the feed-shaft 6 longitudinally, and since said feed-shaft may therefore be driven at a fixed rate of speed we are enabled to employ a simple chain-drive or other simple means for transmitting power to the feed-shaft and can dispense with the change-speed gearing which is required

where feeding devices of the vertical disk type are employed.

The parts may be mounted upon the feed-shaft in any suitable manner, and in Fig. 6 of the drawings we have illustrated a simple mode of mounting, in which 15 indicates a washer having a square opening to fit a correspondingly-shaped feed-shaft, the body of the washer abutting against the outer end of the seed-wheel and having an annular flange 16 extending into the correspondingly-shaped open end of said wheel. At its other end the seed-wheel has a hub 17, provided with a square aperture to fit the shaft, said hub extending into one end of the non-rotating sleeve 9, the hub being cylindrical externally and the sleeve having an opening circular in cross-section. A washer 18 at the farther end of the sleeve 9 has an annular flange 19 extending into the end of the sleeve and a square aperture to fit the shaft 6. Pins 20 or other suitable devices lying outside of the washers 15 and 18 hold the parts together.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

A grain-distributor comprising a seed-cup having a rosette-wheel mounted in one of its side walls, said wheel being provided with a feeding-flange extending into the cup and having feeding-ribs on its internal surface, a longitudinally-movable rotating shaft provided with a fluted seed-wheel rotating and moving longitudinally therewith through the rosette-wheel, and a non-rotating sleeve mounted on and moving longitudinally with said feed-shaft, said sleeve being provided with cut-offs, the lower portion of the opposite side wall of the cup being inclined downward and inward toward the inner end of the feed-wheel and being carried by and movable along with the sleeve, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN W. SMITH.
NOAH L. HECKMAN.

Witnesses:

J. DAVIS,
A. B. GILMORE.