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Patented Apr. 9, 1901.

G. W. DENYES & O. SCHUTT.

FEED FOR GRAIN DRILLS.

(Application filed June 4, 1900.)

(Model.)

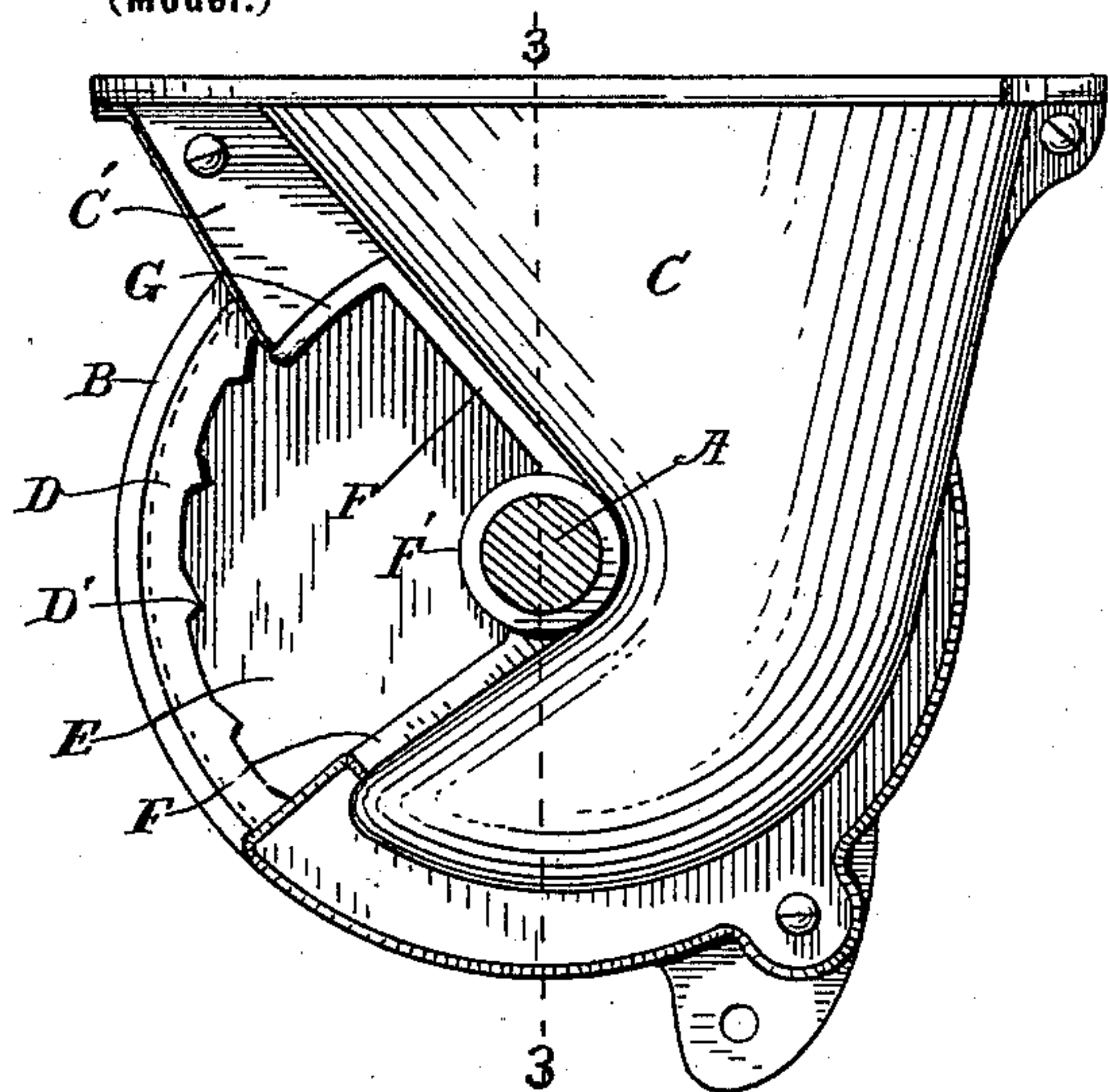


Fig. 1.

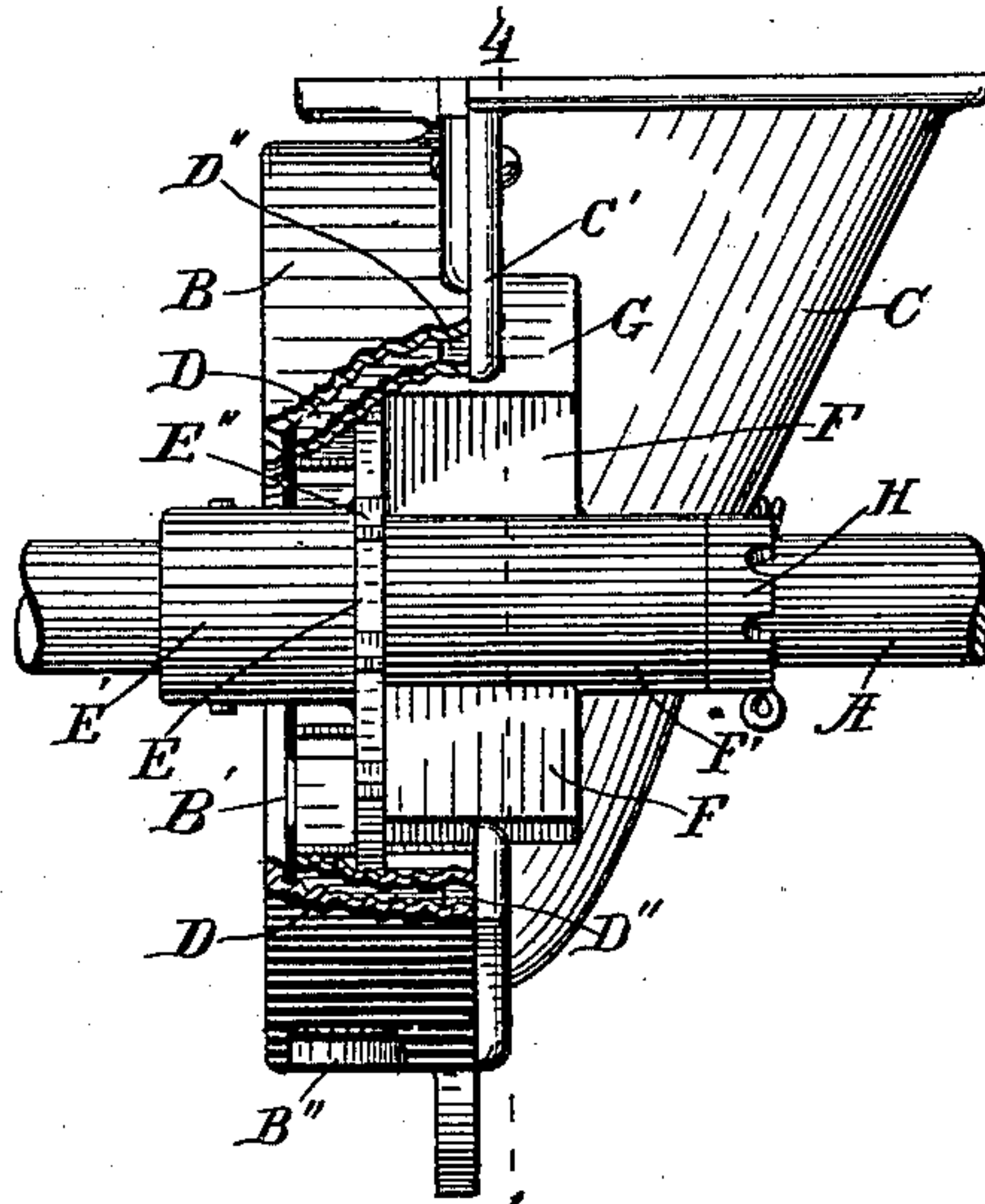


Fig. 2.

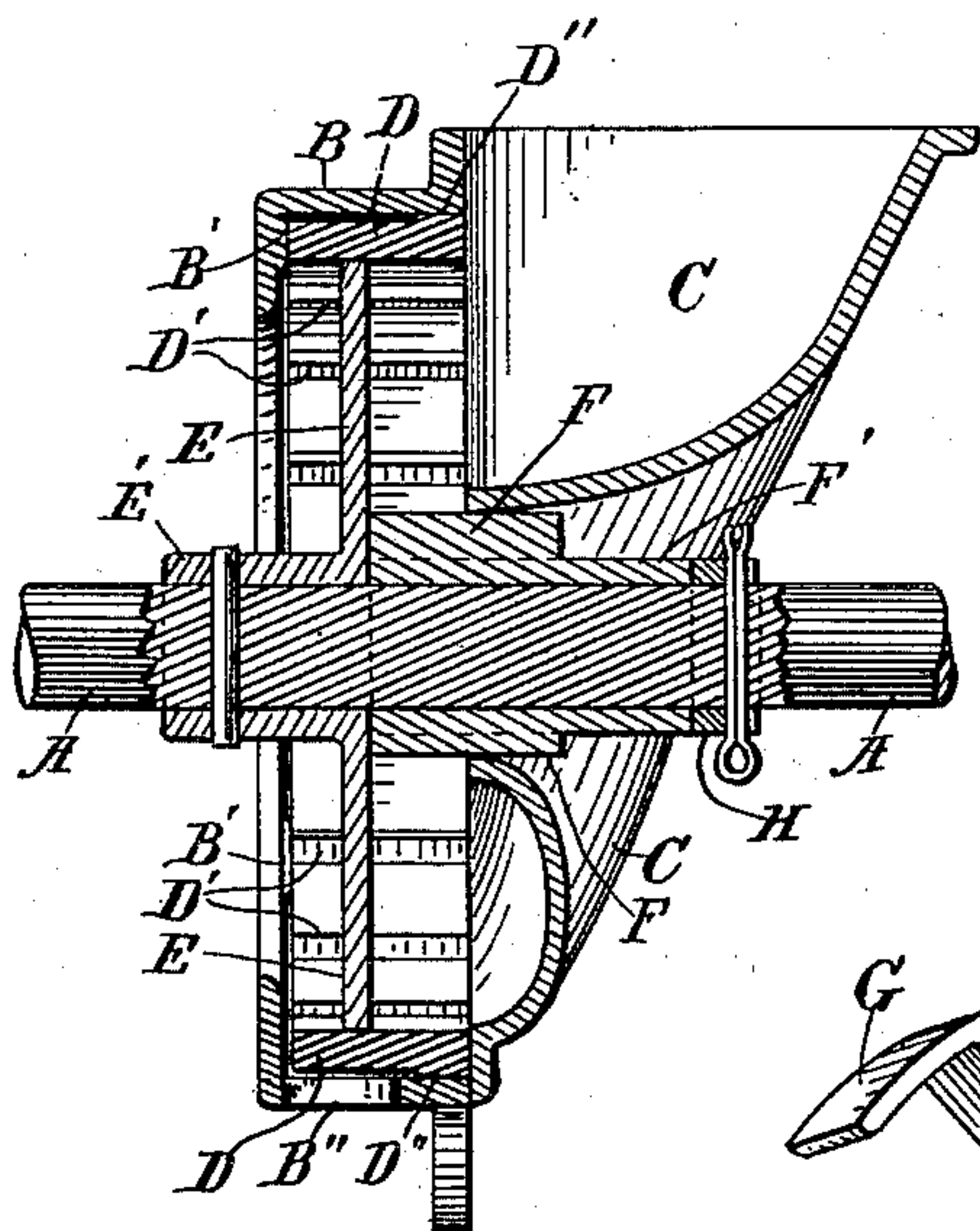


Fig. 3.

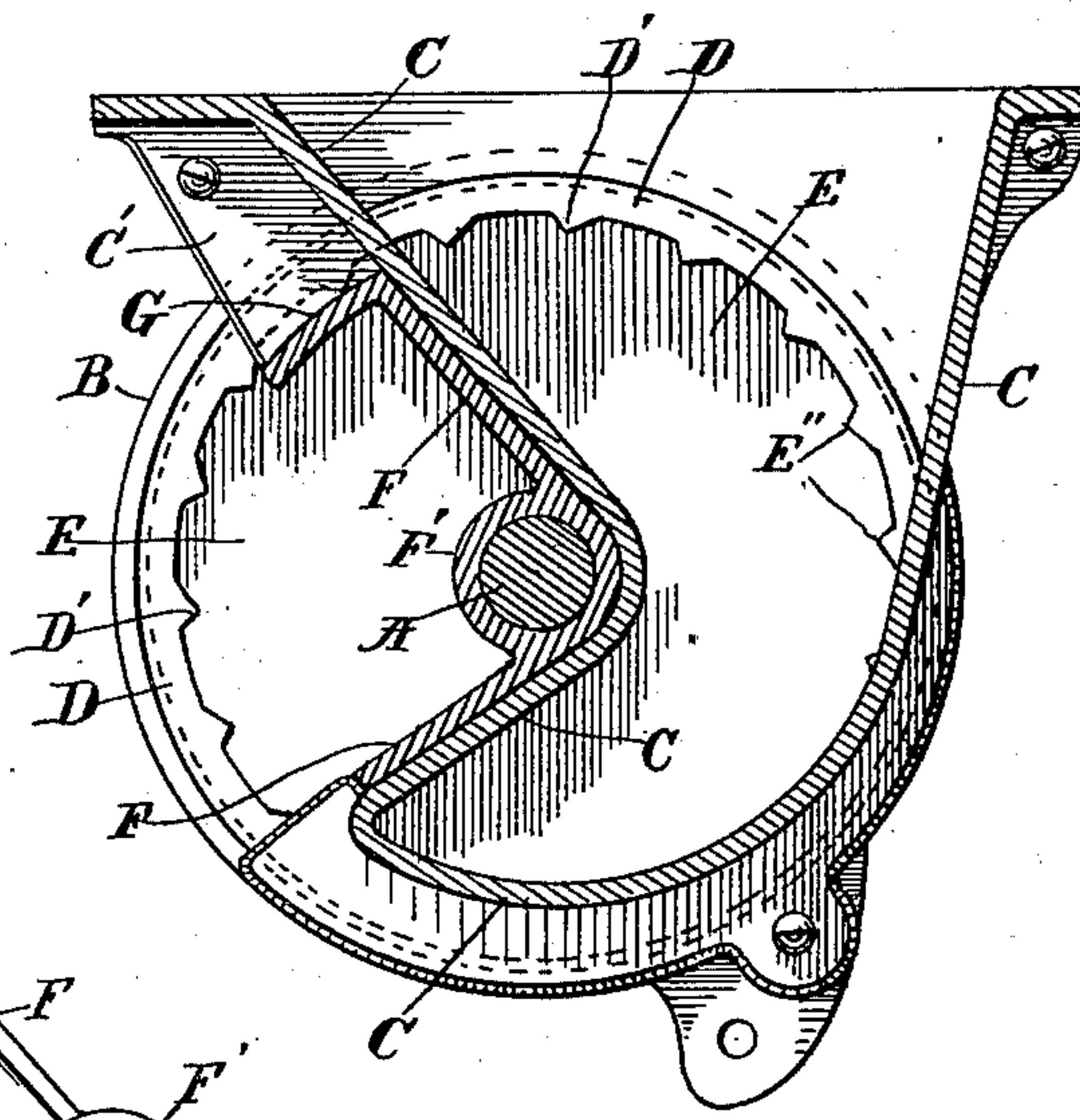


Fig. 4.

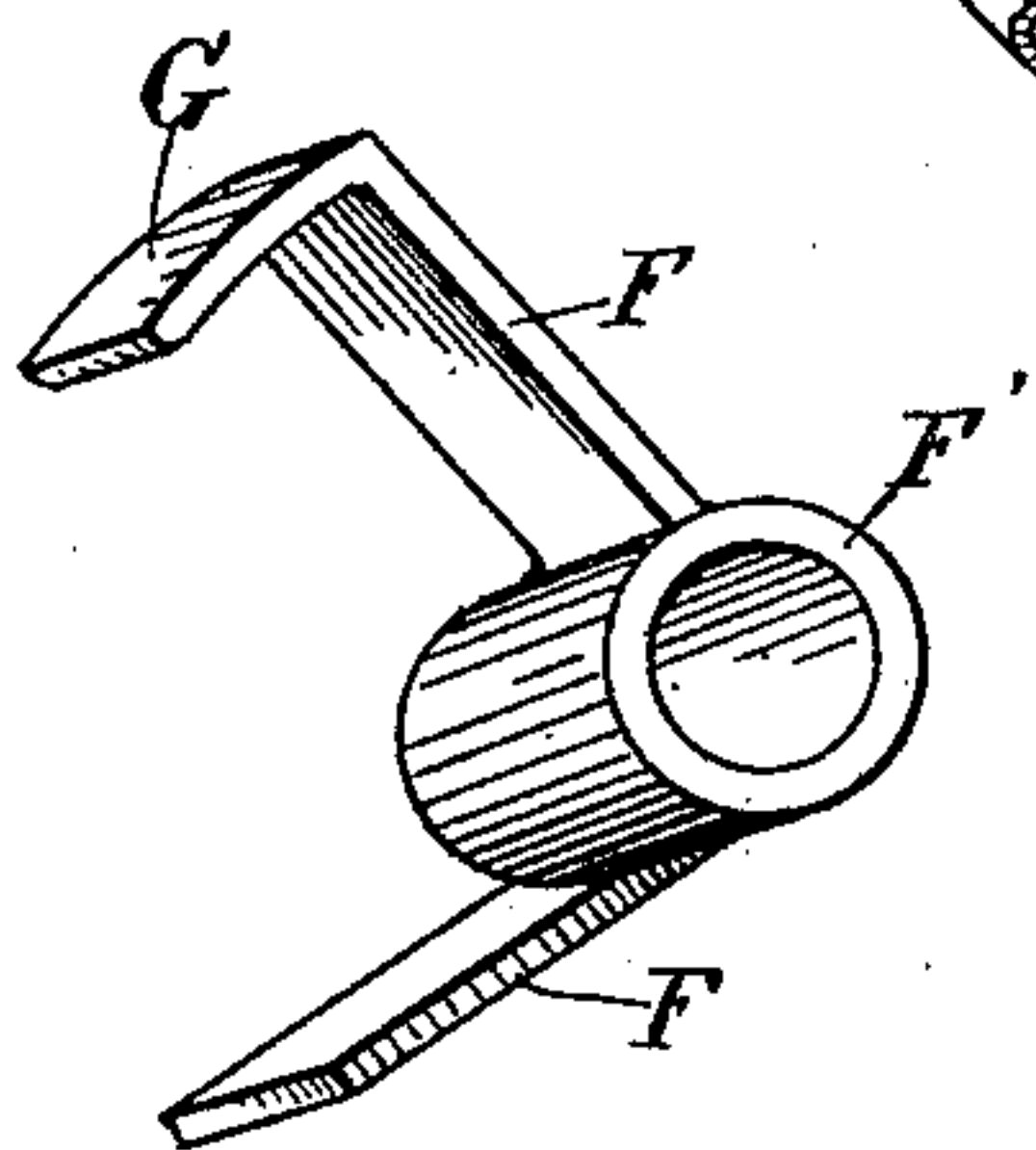


Fig. 5.

WITNESSES:

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FEED FOR GRAIN-DRILLS.

SPECIFICATION forming part of Letters Patent No. 671,587, dated April 9, 1901.

Application filed June 4, 1900. Serial No. 18,971. (Model.)

To all whom it may concern:

Be it known that we, GAYLARD W. DENYES and OWEN SCHUTT, citizens of the United States, residing at Cassopolis, in the county of Cass and State of Michigan, have invented certain new and useful Improvements in Feeds for Grain-Drills; and we 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.

Our invention relates to improvements in feed mechanism for grain-drills; and its objects are to provide a device that will feed a great variety of grain and seed without clogging or leakage, to provide means for readily clearing the device of any particles of sand that may get into it, and to provide the device with various other new and useful features hereinafter more fully described, and particularly pointed out in the claims.

Our invention consists, essentially, in certain details of construction and arrangement of a feed mechanism for grain-drills, as hereinafter more fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a device embodying our invention; Fig. 2, a rear elevation of the same with parts broken away; Fig. 3, a vertical section of the same on the line 3 3 of Fig. 1; Fig. 4, a vertical section of the same on the line 4 4 of Fig. 2, and Fig. 5 a perspective detail of the gate.

Like letters refer to like parts in all of the figures.

A represents a portion of the driving-shaft, arranged to rotate and adjust longitudinally in any usual and convenient manner.

B is a cylindrical case wholly open at the side adjacent to the cup C, except as partially closed by the said cup, and having a large central opening at the other side and having its axis coincident with the axis of the shaft A. This case is provided with an opening B' at the bottom, opposite the reduced portion of the ring D, for the escape of any sand that may work in between the ring and case. The case is also provided at intervals with projecting portions B', forming bearings to engage the ring D, which ring at its side adjacent the cup is provided with a circumferential enlargement D'', engaging the inner surface of

the case and forming a bearing-surface to support the ring, disk, and shaft. The ring D is also provided with inwardly-projecting transverse ribs D', which slidably engage corresponding recesses E'' in the periphery of the disk E, which disk is provided with a suitable hub E' at its side opposite the cup and projecting through the large opening in the case and fixed on the shaft to rotate and longitudinally adjust therewith. Extending downward in front of the shaft and thence rearward beneath the same is the cup C, the same being open at the top to receive the grain or seed and also open at the side opposite the disk E and the upper part of the ring D. Said cup is also provided with a rearwardly-extended flange C' at the top, having its face close to the side of the ring. The gate F extends within the ring and abuts at one side against the face of the disk and is provided near the middle with a sleeve F', within which the shaft A is freely rotative. This gate extends oppositely from the sleeve at substantially right angles and has a continuous smooth forward side and at its upper end is provided with a segmental extension G, having its outer or convex surface close to the path traversed by the inner angles of the ribs D' and movably abutting against the lower edge of the flange C'. This flange and extension are of such dimensions that at all times one or more of said ribs are opposite the same. They thus effectually prevent the escape of fine seed over the top of the gate and between the ribs of the ring. The forward surfaces of the gate and sleeve fit closely and slidably against the rear of the cup and close the space between the same and the disk and ring, except the opening at the bottom of the gate, where the grain escapes, which opening is varied, as usual, by adjustment of the shaft and disk longitudinally. The gate is held in place longitudinally by the disk at one side and the collar H at the other side and is supported in place by the shaft.

By the construction herein shown the moving parts rest on the enlarged part D'' of the ring, and any wear is taken up by a slight downward movement of the ring, disk, and shaft, thus transferring the opening to the top, where it will do no harm. Further, if any sand should get between the case and ring

the ring can yield vertically, and the result is to avoid binding and grinding of the parts, as would be the case if the shaft were in an unyielding bearing of its own. By providing the bearing D'' at the side adjacent the cup a close joint at this side is secured, and any sand in this bearing quickly works out opposite the reduced portion of the ring and escapes at the opening B''. By providing the bearings B' at intervals instead of continuous the sand quickly escapes from between the side of the ring and the case. It will be observed that there are no obstructions or projections within the cup to interfere with the flow of the seed or grain and cause it to "bridge" and hang up in the cup, the general result being a cheap, easy-running, and durable structure that will successfully feed coarse grain, liable to clog, or very fine seed, liable to leak through either over the gate or between the moving and fixed parts, and also a device that will quickly clear itself of sand without cutting or grinding.

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

1. The combination of a case, a cup, a feed-wheel rotative in the case and having a circumferential bearing engaging the bottom of the case, and a shaft in the axis of the wheel and supported by the wheel, substantially as described.

2. The combination of a case, a ring rotative in the case, a shaft in the case, a disk on the shaft and slidably engaging the ring, and a circumferential bearing on the ring engaging the interior of the case and supporting the ring, disk, and shaft, substantially as described.

3. The combination of a case, a shaft in the axis of the case, a disk attached to the shaft, a ring surrounding the disk and driven thereby, a circumferential bearing on the ring engaging the interior of the case, and raised portions on the case engaging the side of the ring at intervals, substantially as described.

4. The combination of a case open at one side and having a bottom opening, a cup partially closing the open side of the case and opening into the same, a shaft in the case, a disk on the shaft, a ring rotative in the case and driven by the disk, a circumferential enlargement on the ring at the side adjacent to the cup, said enlargement forming a bearing engaging the case and supporting the ring, shaft, and disk, substantially as described.

5. The combination of a case open at one side and having a large axial opening at the

other side, a bottom opening, and projecting portions engaging one side of the ring; a ring rotative in the case and having a circumferential enlargement forming a bearing engaging the interior of the case, a shaft in the axis of the case, and a disk on the shaft and slidably engaging the ring, substantially as described.

6. The combination of a case, a ring rotative in the case and having internal ribs, a disk within the ring, a cup partially closing the ring at one side and having a flange abutting against the side of the ring, and a gate in the interior of the ring having an extension within the ring, said extension having its surface close to the path of the ribs on the ring, substantially as described.

7. The combination of a rotating ring having internal ribs, a disk having recesses movably engaging the ribs, a cup partially closing the side of the ring, a gate within the ring and engaging the disk at one end and partially closing the rear of the cup, a flange on the cup adjacent to the sides of the ring, and a segmental extension on the gate adjacent to the ribs on the ring, substantially as described.

8. The combination of a case open at one side and having a large axial opening at the other side, a ring rotative in the case and having a circumferential bearing engaging the interior of the case, a shaft in the axis of the case, a disk on the shaft having a hub at one side projecting through the axial opening of the case and fixed on the shaft, a cup partially closing the open side of the case and opening into the case, a gate having a continuous smooth forward side partially closing the rear of the cup and having a sleeve, in which sleeve the shaft is rotative, substantially as described.

9. The combination of a case open at one side, a ring rotative in the case and having internal ribs and a circumferential bearing engaging the case, a cup partially closing the open side of the case, a flange on the cup adjacent to the side of the ring, a gate and a disk within the ring, and a segmental extension on the gate having its outer surface close to the ribs on the ring, substantially as described.

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

GAYLARD W. DENYES.
OWEN SCHUTT.

Witnesses:

LOWELL H. GLOVER,
C. C. ALLISON.