

No. 785,492.

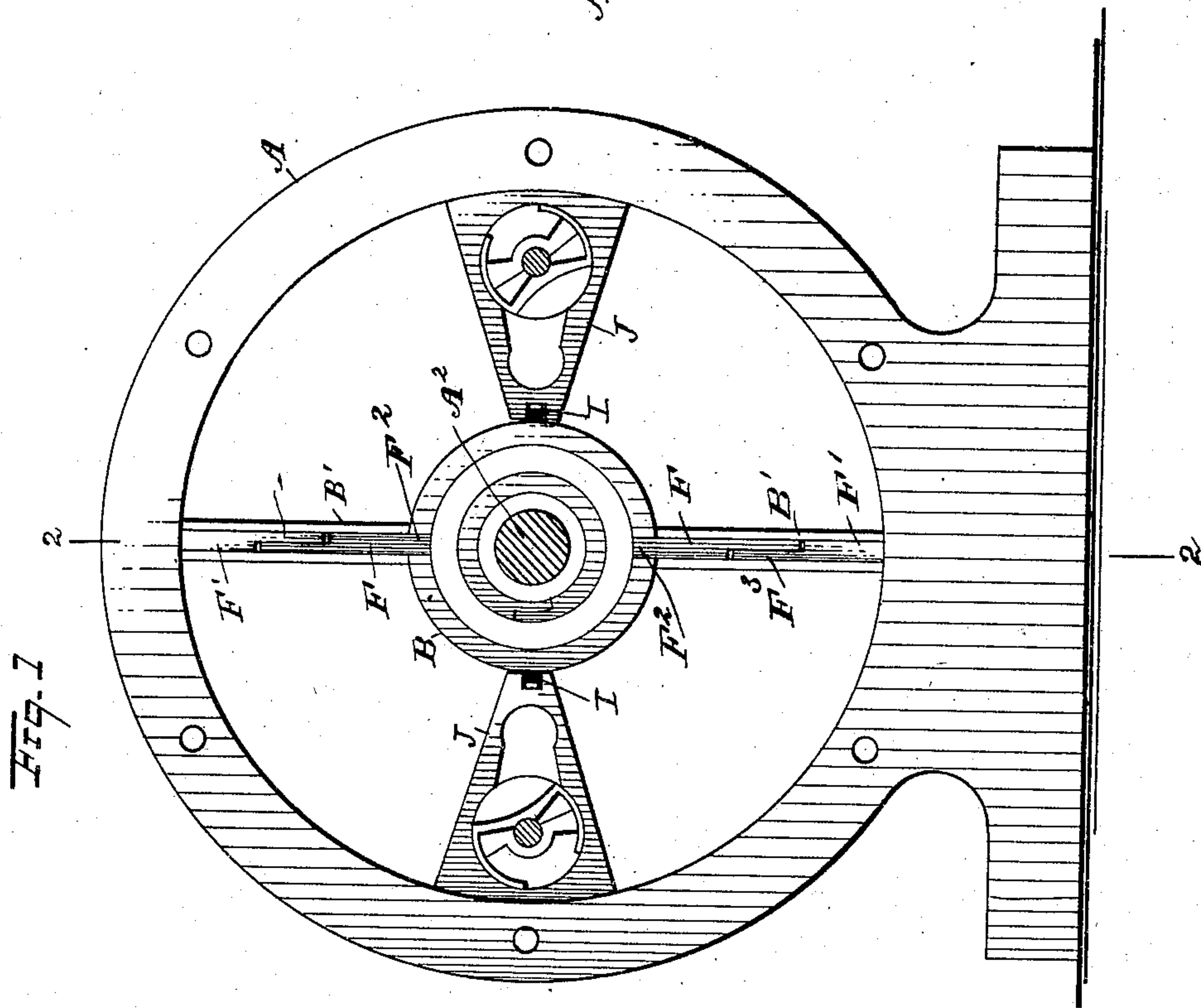
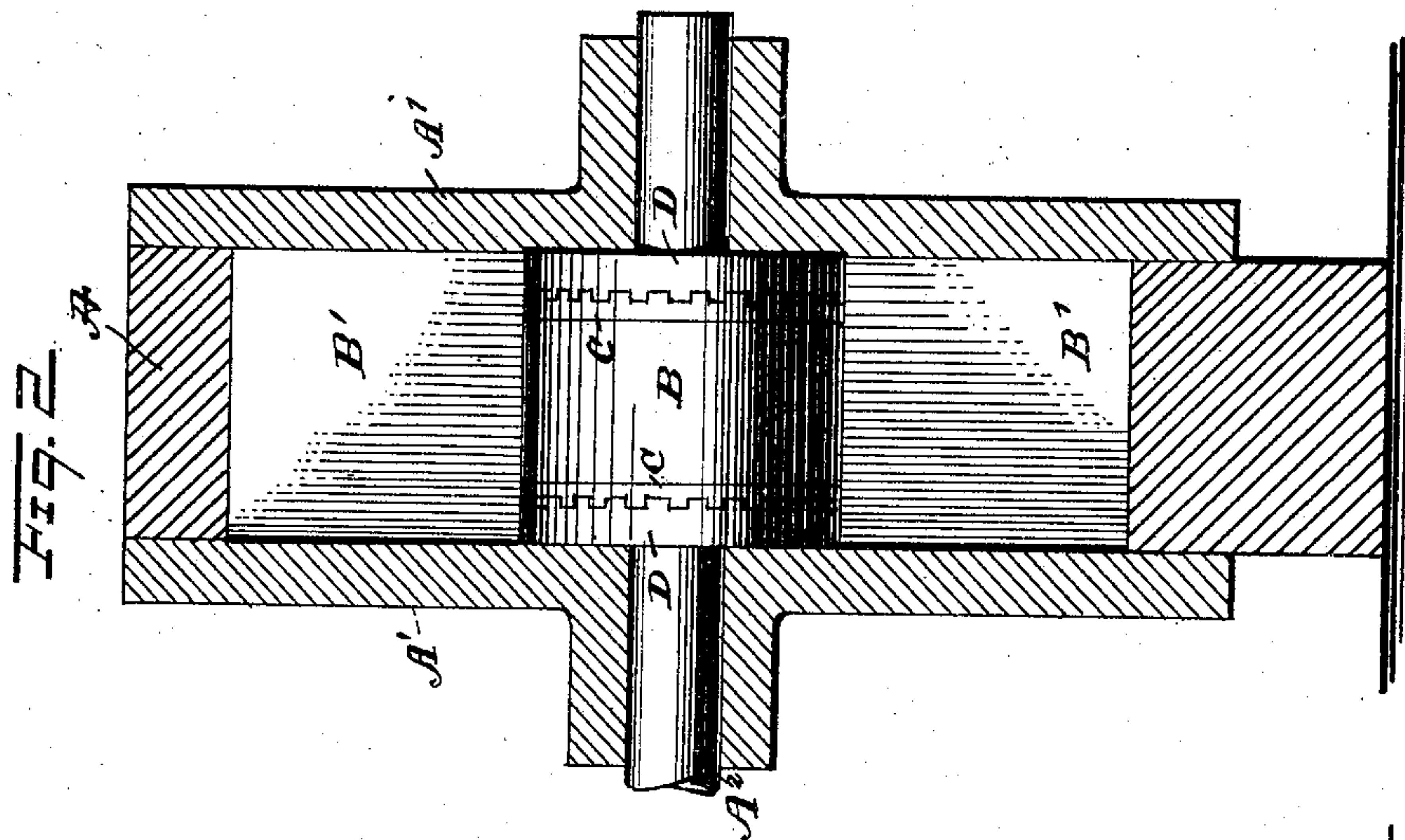
PATENTED MAR. 21, 1905.

C. G. HOLMBERG.

PACKING.

APPLICATION FILED JULY 30, 1904.

2 SHEETS—SHEET 1.



WITNESSES:
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2 SHEETS—SHEET 2.

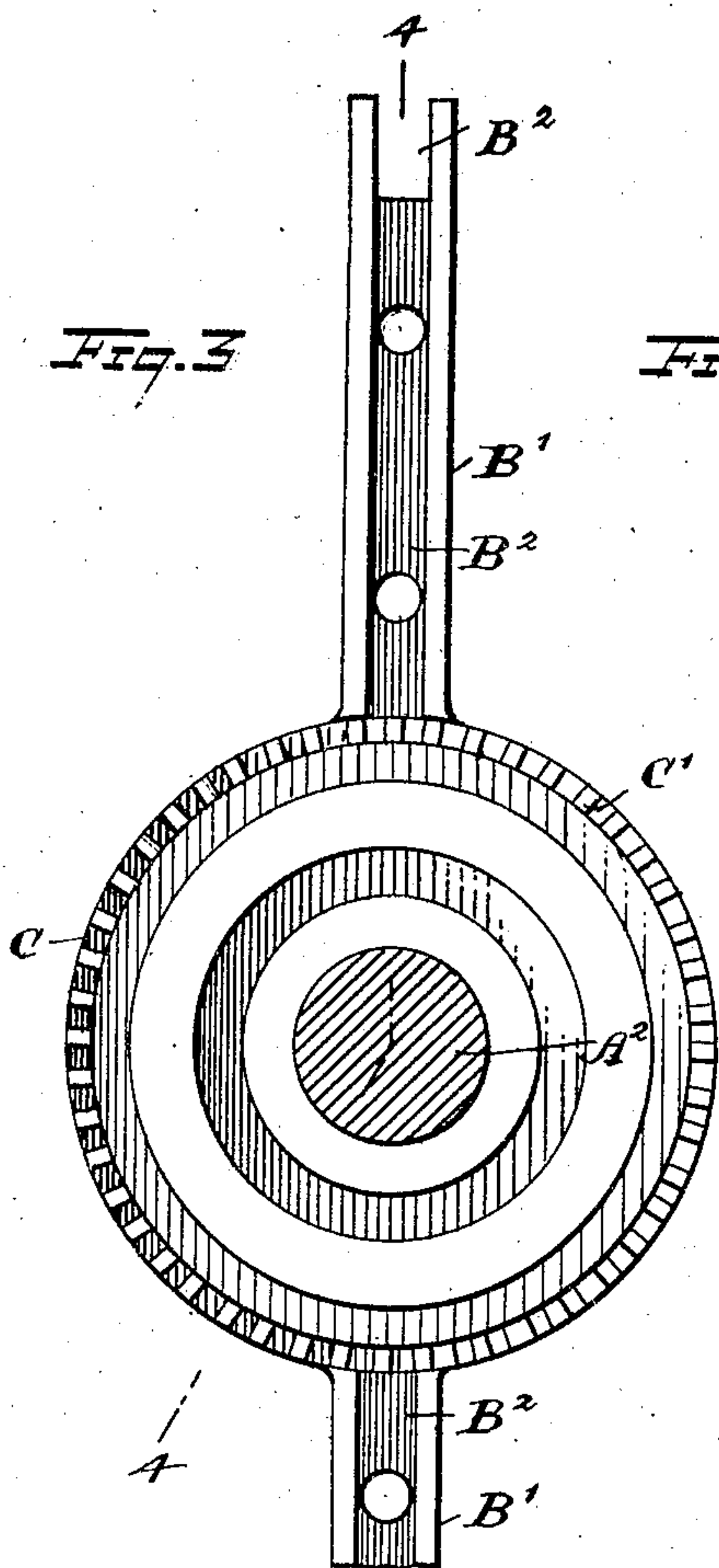


Fig. 4

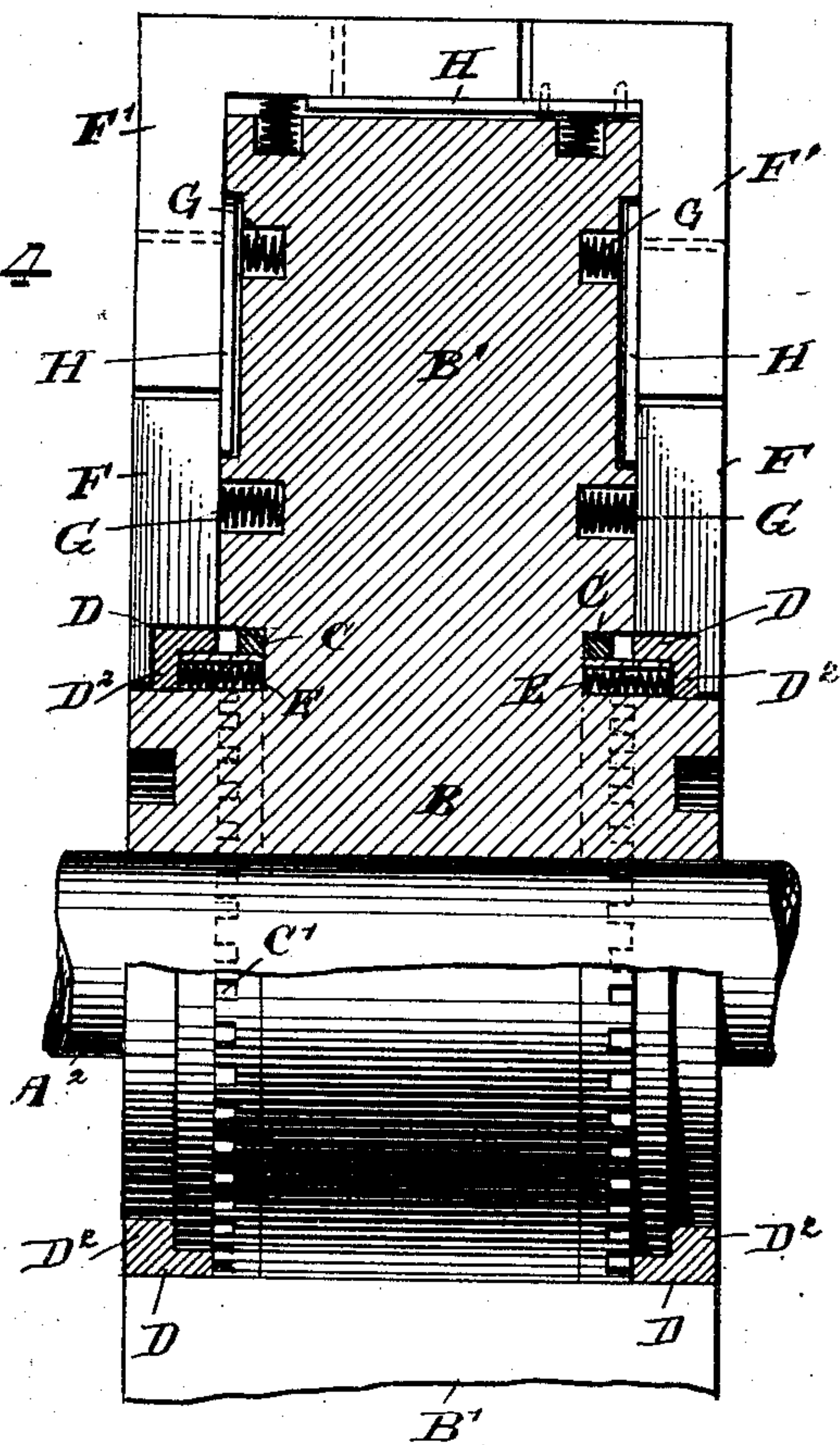
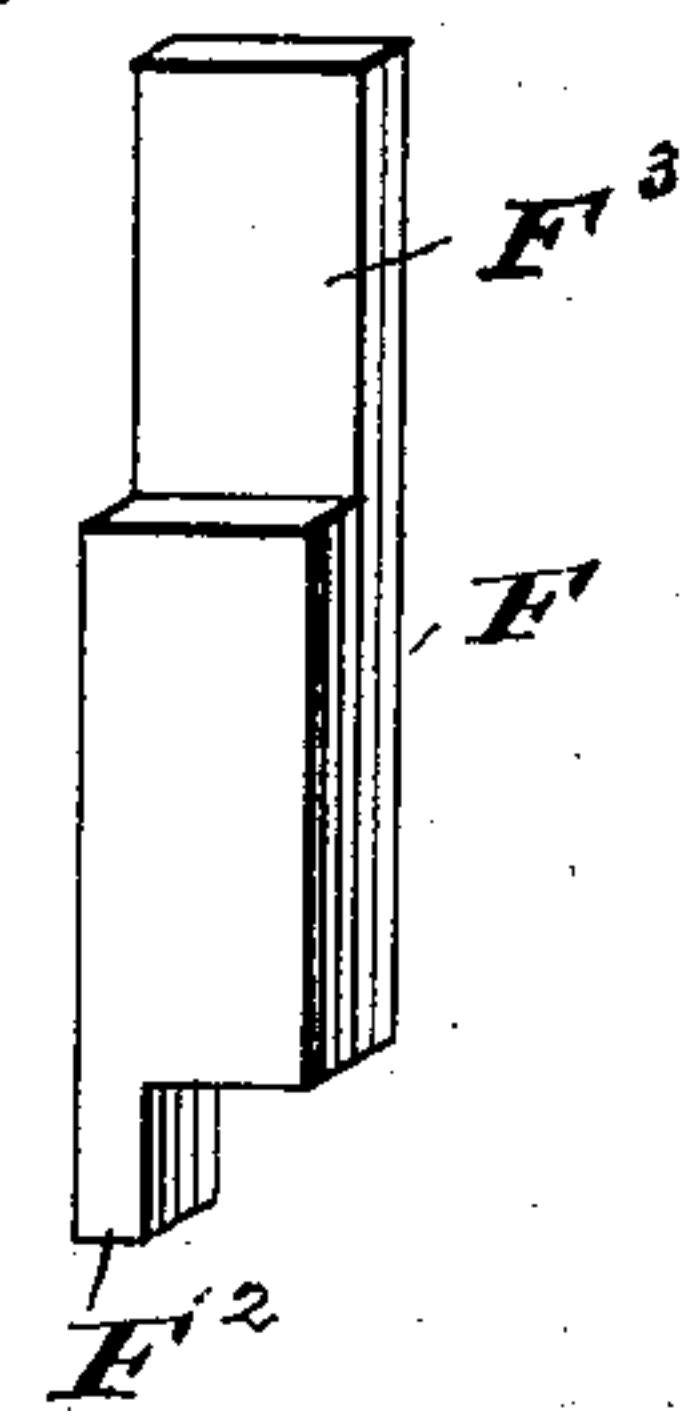
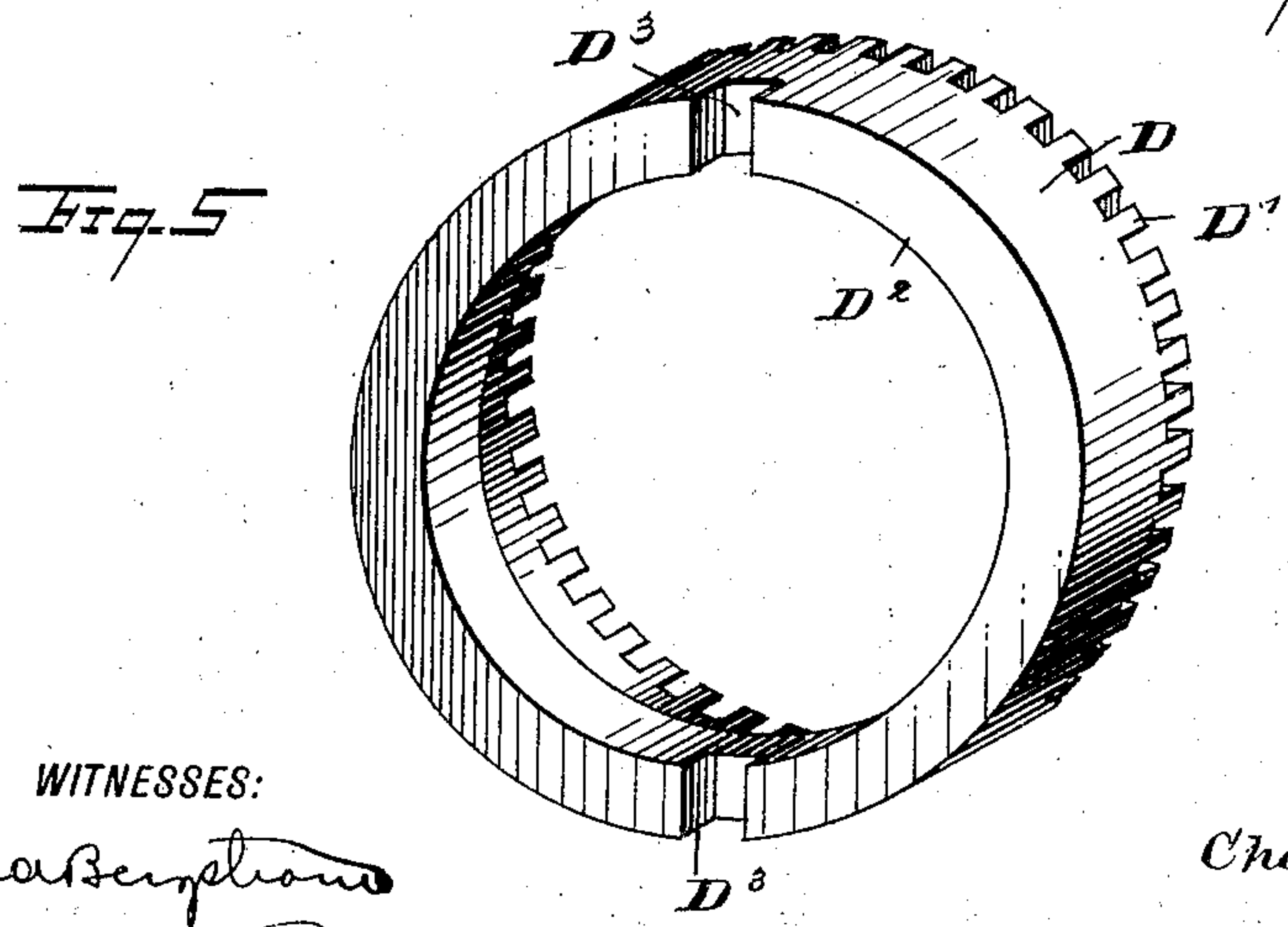


Fig. 5



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UNITED STATES PATENT OFFICE.

CHARLES GUSTAVE HOLMBERG, OF WOONSOCKET, SOUTH DAKOTA,
ASSIGNOR OF ONE-HALF TO ANNA HOLMBERG, OF WOONSOCKET,
SOUTH DAKOTA.

PACKING.

SPECIFICATION forming part of Letters Patent No. 785,492, dated March 21, 1905.

Application filed July 30, 1904. Serial No. 218,791.

To all whom it may concern:

Be it known that I, CHARLES GUSTAVE HOLMBERG, a citizen of the United States, and a resident of Woonsocket, in the county of Sanborn and State of South Dakota, have invented a new and Improved Packing, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved packing, more especially designed for packing the pistons of engines—preferably such, for instance, as shown and described in the Letters Patent of the United States No. 687,628, granted to me November 26, 1901—the packing being simple and durable in construction, easily applied, and arranged to yield in every direction to prevent leakage of the motive agent without creating undue friction.

The invention consists of novel features and parts and combinations of the same, as will be more fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement as applied to the piston in an engine of the kind above referred to, the cover of the engine-cylinder being removed and other parts of the engine being in section. Fig. 2 is a cross-section of the cylinder on the line 2-2 of Fig. 1, showing the piston and packing in elevation. Fig. 3 is an enlarged side elevation of the piston-body. Fig. 4 is a cross-section of the same on the line 4-4 of Fig. 3 with the packing in position. Fig. 5 is a perspective view of one of the packing-rings for the hub of the piston, and Fig. 6 is a similar view of one of the packing-bars for the rings of the piston.

In the heads A' of the cylinder A of the engine is journaled the shaft A², carrying the hub B of a piston having diametrically-extending wings B', as plainly illustrated in the drawings. On the hub B and near each end thereof is secured a ring C, formed on its forward face with teeth C' in mesh with corre-

spondingly-shaped teeth D', formed on the inner face of a packing-ring D, mounted to slide on the corresponding end portion of the hub B of the piston. Springs E, set in recesses in the hub B, press against an inwardly-extending flange D², so as to hold the outer face of the packing-ring D in firm contact with the corresponding head A' of the cylinder A, it being understood that the packing-rings D at both ends of the piston-hub B turn with the hub, owing to the meshing of the teeth D' with the teeth C'.

The edges of each of the wings B' are formed with recesses B² both at the sides and top to receive packing-bars F and F', pressed outwardly by springs G, set in the recesses in the said rings B', as plainly indicated in Fig. 4. The packing-bars F in the lower portions of the side recesses of the rings D are formed with lugs F², extending into corresponding recesses D³, formed in the packing-rings D, and the adjacent ends F³ of the packing-bars F and F' are halved to overlap, as plainly indicated in Figs. 1 and 6, to prevent escape of the steam between adjacent packing-bars and also to prevent the escape of steam between the packing-bars F and the packing-rings D, owing to the lug F² above described. The packing-bars F' are preferably made L shape, so as to extend partly in the side grooves of the wings B' and also in the end groove thereof, and in order to prevent leakage of steam between the halved ends F³ of the bars F and F' a sustaining-plate H is provided, secured to one of the bars F' and extending throughout the joint of the two bars. (See Fig. 4.) Packing-bars I are also arranged in the abutments J, fixed in the cylinder A, and the said packing-bars I are pressed by flat springs in contact with the peripheral face of the hub B, as plainly shown in Fig. 1, to prevent leakage from one side of the cylinder to the other.

The packing described is very simple and durable in construction and can be easily placed in position on the hub and rings of the piston and when so applied all leakage of the motive agent is prevented and friction between the contacting parts is reduced to a minimum.

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

1. A piston-packing comprising a ring
5 having teeth and fixed on the hub of the piston, and a spring-pressed packing-ring slidable on the piston and having teeth in mesh with the teeth on the said fixed ring.
2. A piston-packing comprising a fixed
10 toothed ring on the piston-hub, spring-pressed rings slidable on the ends of the said hub and having recesses, and spring-pressed bars slidable on the side edges of the piston-wings and having bars provided with lugs
15 engaging the said recesses.
3. The combination with an engine-piston consisting of a hub and diametrical wings having grooves in their edges, of a packing comprising a fixed ring on the said hub and
20 provided with teeth, a toothed ring slidable on the hub and engaging the teeth on the said fixed ring, springs set in the said hub and pressing the said slidable ring, and spring-pressed bars slidable in the said
25 grooves of the piston-wings.
4. The combination with an engine-piston consisting of a hub and diametrical wings having grooves in their edges, of a packing comprising a fixed ring on the said hub and
30 provided with teeth, a toothed ring slidable on the hub and engaging the teeth on the said fixed ring, springs set in the said hub and pressing the said slidable ring, spring-pressed bars slidable in the said grooves of
35 the piston-wings, the bars having halved end

portions, and a sustaining-plate secured to one of the bars and overlapping the halved ends of adjacent bars.

5. The combination with an engine-piston consisting of a hub and diametrical wings
40 having grooves in their edges, of a packing comprising a fixed ring on the said hub and provided with teeth, a toothed ring slidable on the hub and engaging the teeth on the said fixed rings, springs set in the said hub
45 and pressing the said slidable ring, and spring-pressed bars slidable in the said grooves of the piston-wings, the bars having halved end portions overlapping each other.

6. The combination with an engine-piston
50 consisting of a hub and diametrical wings having grooves in their edges, of a packing comprising a fixed ring on the said hub and provided with teeth, a toothed ring slidable on the hub and engaging the teeth on the
55 said fixed ring, springs set in the said hub and pressing the said slidable ring, and spring-pressed bars slidable in the said grooves of the piston-wings, the ends of the bars adjacent to the hub having integral lugs
60 projecting into recesses in the slidable packing-rings.

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

CHARLES GUSTAVE HOLMBERG.

Witnesses:

L. H. PIER,
B. W. BOER.