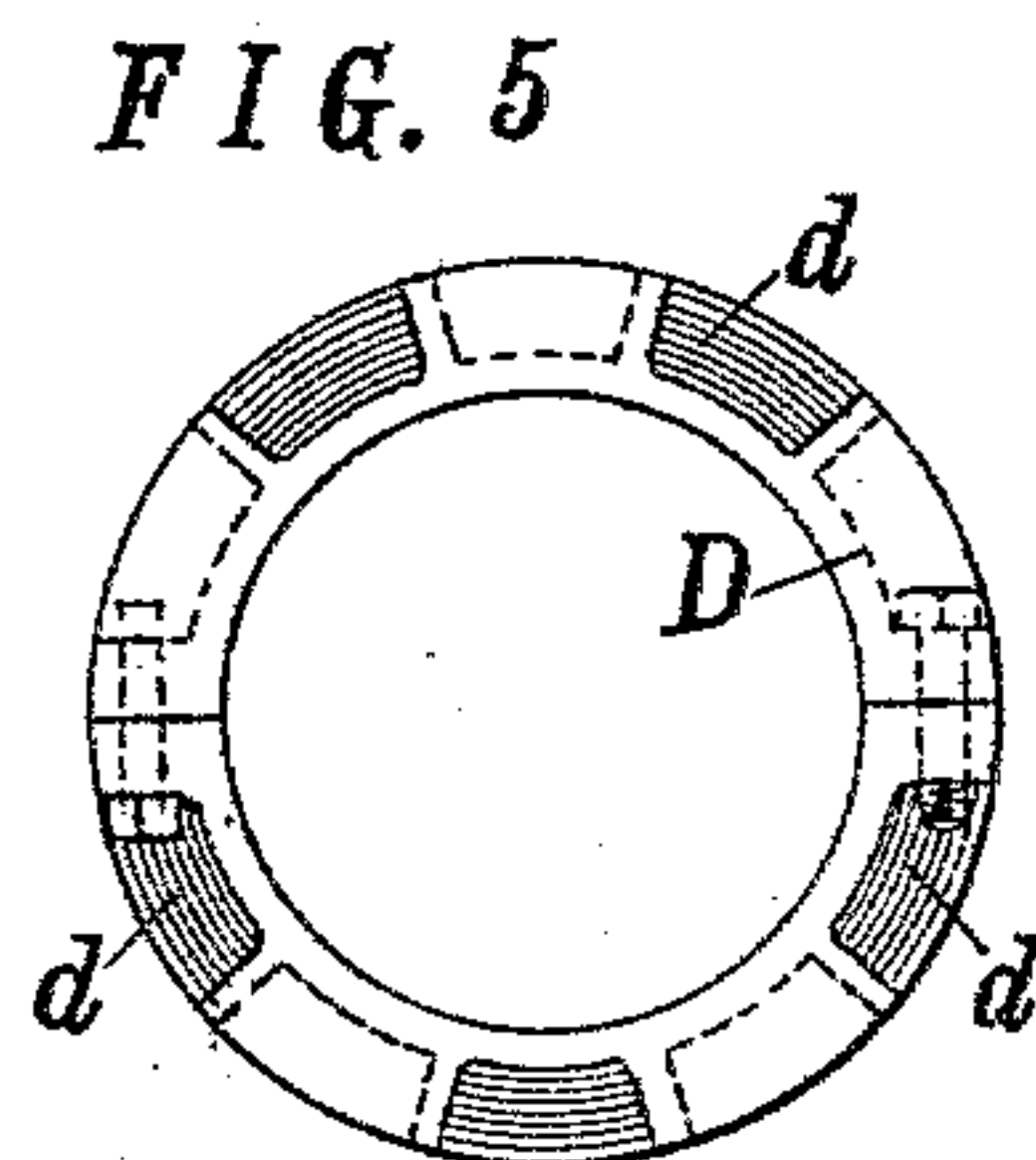
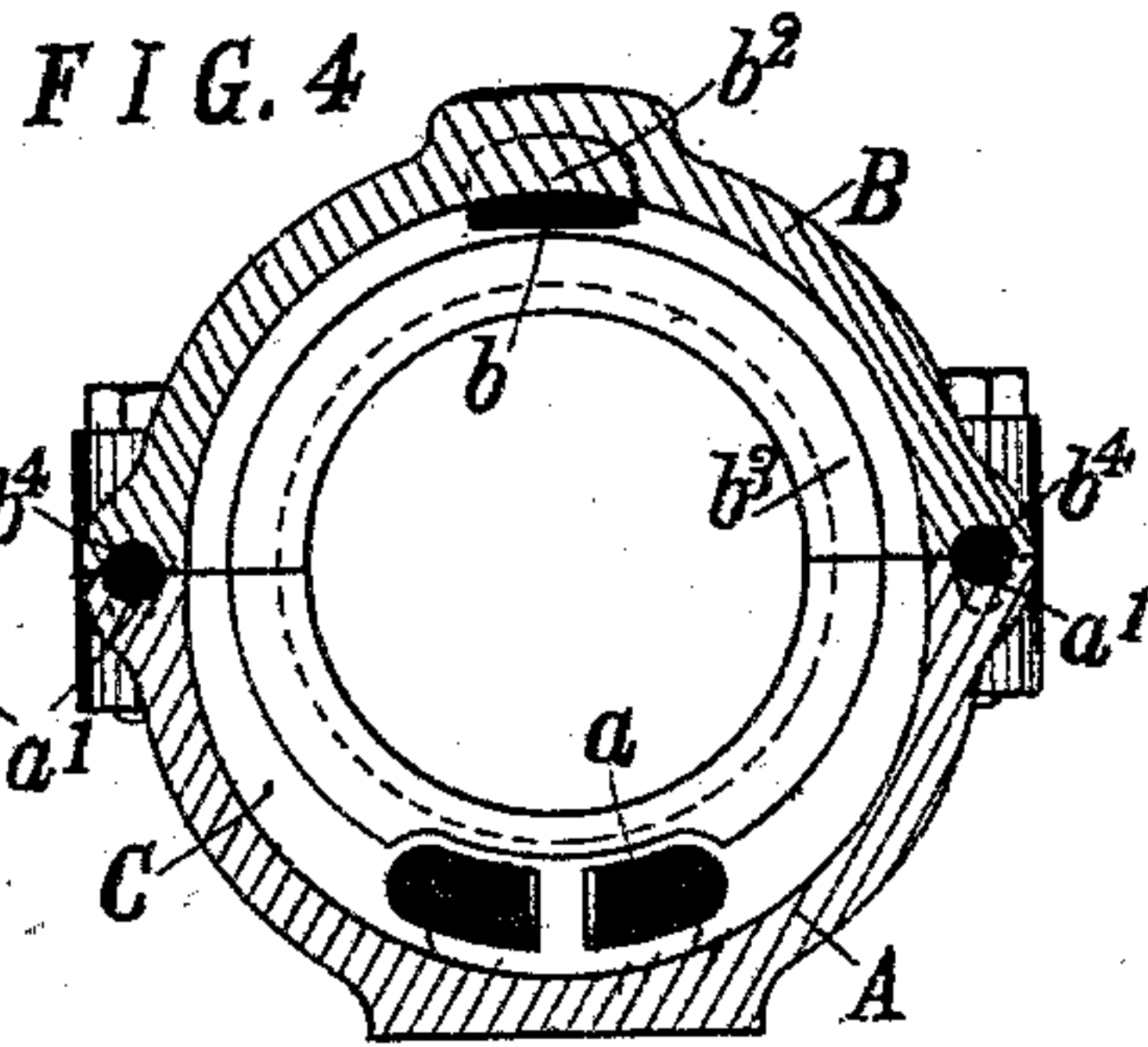
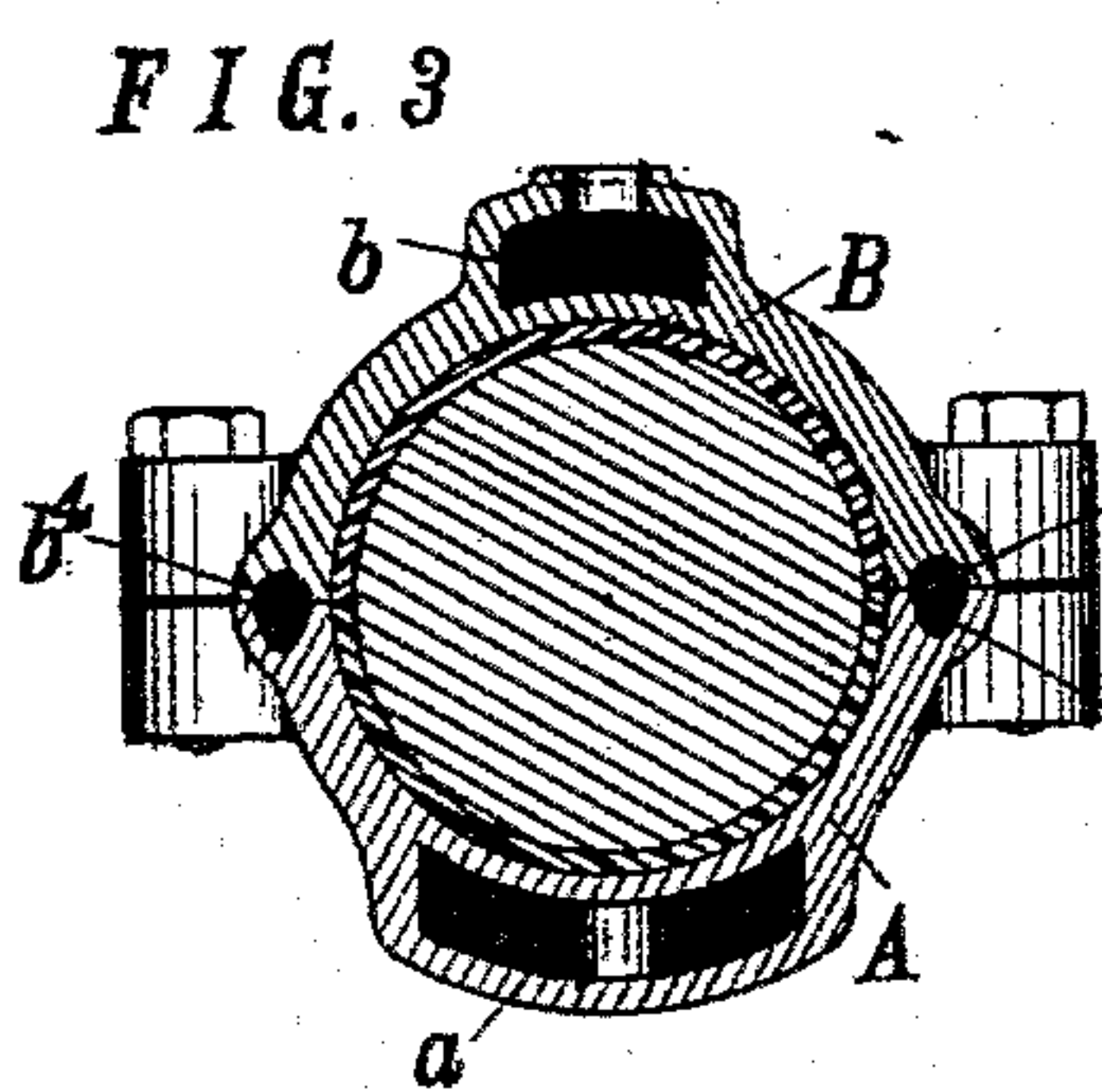
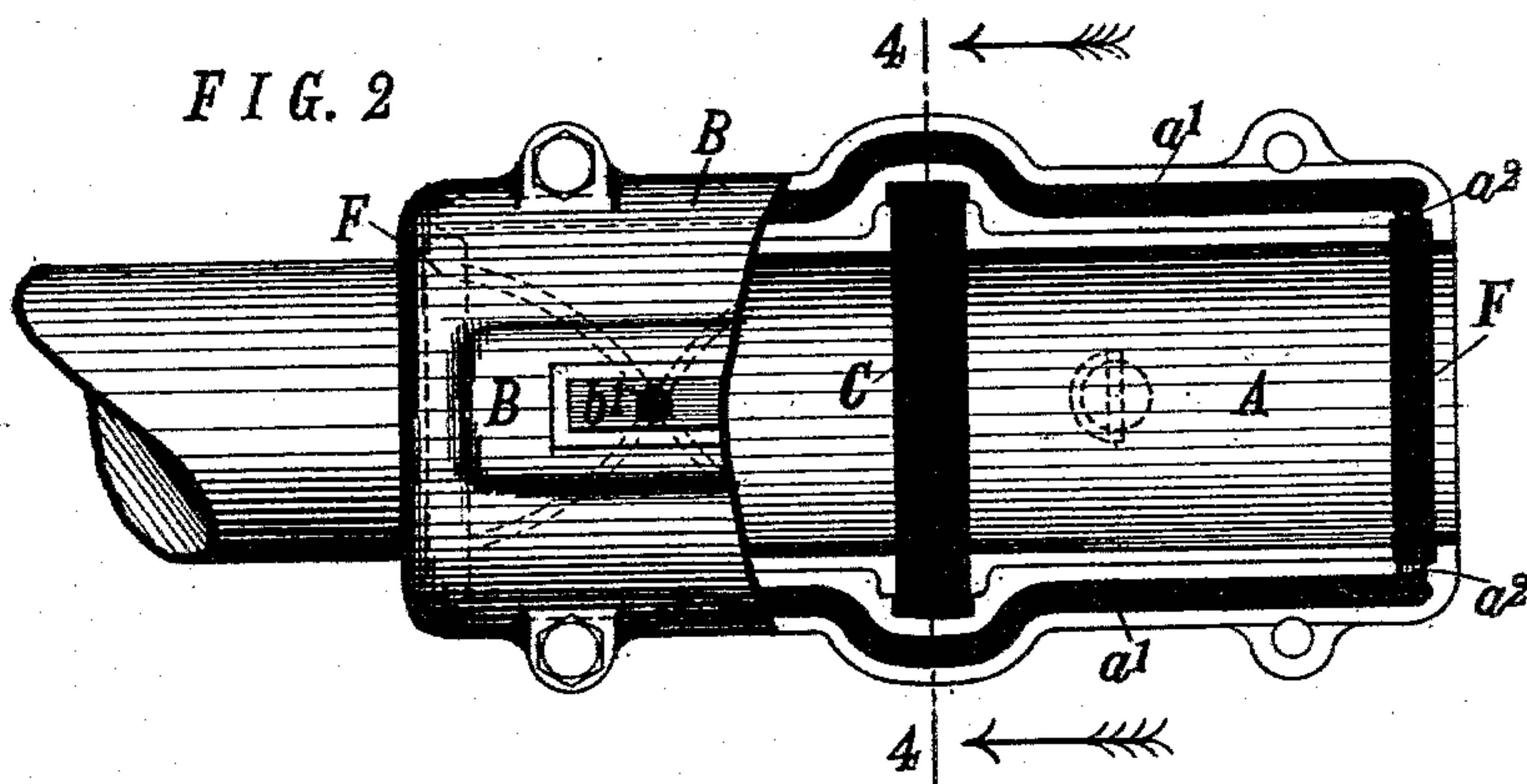
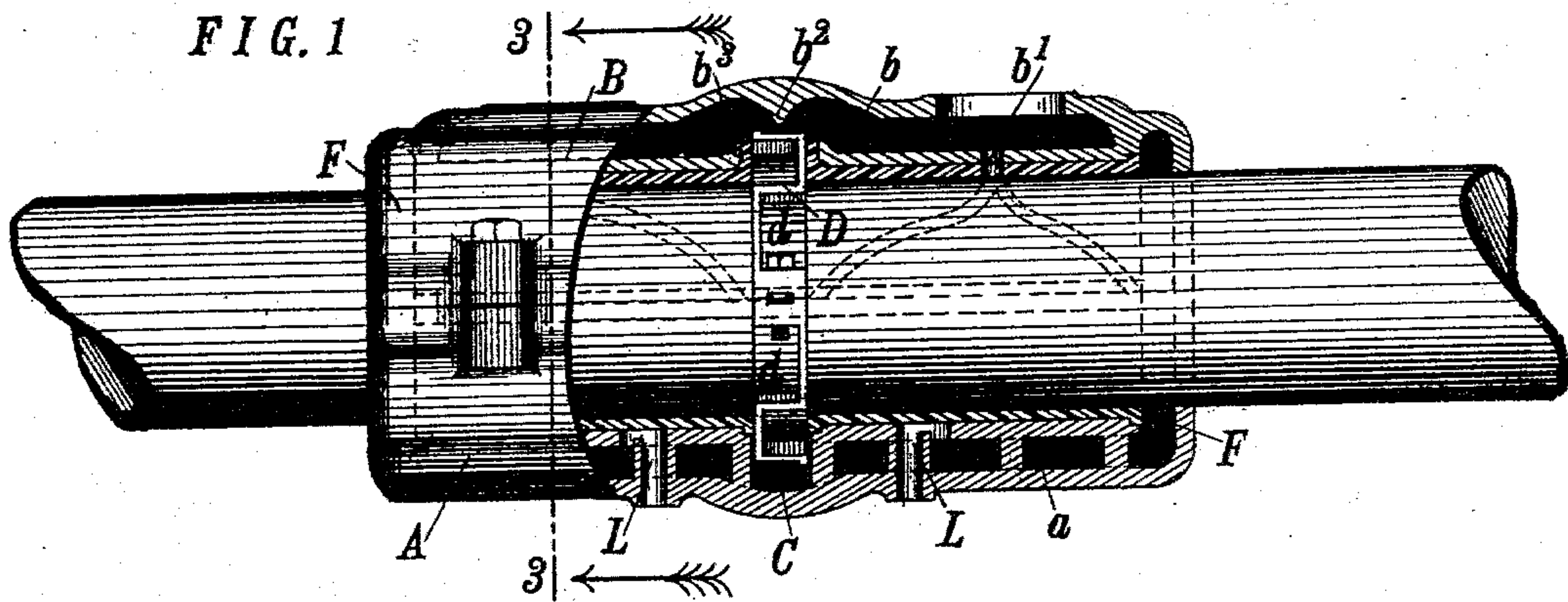


(No Model.)

H. W. HILL.
SELF OILING JOURNAL BOX.

No. 511,144.

Patented Dec. 19, 1893.



WITNESSES.

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UNITED STATES PATENT OFFICE.

HARRY W. HILL, OF CLEVELAND, OHIO.

SELF-OILING JOURNAL-BOX.

SPECIFICATION forming part of Letters Patent No. 511,144, dated December 19, 1893.

Application filed February 27, 1893. Serial No. 463,883. (No model.)

To all whom it may concern:

Be it known that I, HARRY W. HILL, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Self-Oiling Journal-Boxes; 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 self-oiling journal boxes.

The objects are, first, to provide means for automatically delivering a copious supply of oil to the shaft bearings; second, to prevent the exudation of oil from between the base and cap of the box; third, for preventing unpleasant results from the accidental overflowing of the oil receptacle.

With these ends in view, the invention consists in the construction and combination of parts hereinafter described and definitely pointed out in the claims.

In the drawings, Figure 1 is a side elevation of my improved journal box, shown partly in section. Fig. 2 is a plan view of the same, with a portion of the cap removed. Fig. 3 is a vertical sectional view on line 3—3 of Fig. 1. Fig. 4 is a vertical sectional view on line 4—4 of Fig. 2; and Fig. 5 is an end view of the ring with which the oil is lifted from the oil reservoir.

Referring to the parts by letter, A represents the base, which contains the lower half of the bearing for the shaft. In the lower part of the base below the bearing is a cavity *a*, which serves as a reservoir for oil.

B represents the removable cap, which contains the upper half of the shaft bearings. In the upper part of the cap is a cavity *b*, which is divided as hereinafter described, so as to form two oil receptacles, from which oil is delivered on to the shaft bearings through the holes *b'* *b'*. Near the center of the box is an annular groove C in both the base and cap. The lower part of the groove enters the oil reservoir *a*, while the upper part opens into the cavity *b*. Near both ends of the box the internal annular grooves F F are formed in both base and cap, and the lower parts of the said groove communicate with the oil reser-

voir *a*. The outer edges of these grooves should not, preferably, touch the shaft.

Securely bolted to the shaft, which is journaled in the box, is a ring D. This ring lies in the groove C, and one of its functions is to act as a set collar to limit the longitudinal movement of the shaft in the box. In the edges of this ring is a series of radial pockets *d*, a part of which are open on one side, while the alternate pockets are open on the other side, substantially as shown in Fig. 1. When the parts are assembled as shown, the lower part of the ring is submerged in the oil in the reservoir *a*. As the shaft revolves, the oil flows into the several pockets, in which it is lifted from the reservoir and thrown against the roof of the cavity *b* in the cap. Depending from the roof of this cavity *b*, directly over the center of the ring D, is a deflecting boss *b*², by which the oil is turned to the right and left into one or the other of the two oil receptacles formed in the cavity *b* by the ribs *b*³, which rise from the floor of said cavity on both sides of the ring D. Oil thus drawn from the reservoir *a* and discharged into the receptacle in the cap, flows through the holes *b'* *b'* on to the shaft. It distributes itself in all directions and finally flows into the grooves F F or into the middle groove C and thence back to the reservoir *a*. By the construction above described, a copious supply of oil is delivered constantly on to the shaft, and the excess flows back into the lower reservoir, from which it is again lifted and distributed as before explained.

In all journal boxes which have a base and a cap, there is a tendency on the part of the oil to exude through the joint between them, thereby occasioning loss of oil and making the box greasy and foul to handle. To prevent this action of the oil, longitudinal grooves *a'* and *b*⁴, in the meeting faces of the base and cap respectively, are formed, whereby when the cap and base are fastened together, canals are formed between them. Means are provided for draining these canals into the oil reservoir *a* in the base. The means shown consist of the notches *a*², which connect the canals referred to with the grooves F. The oil which, by the pressure of the shaft, or by capillary action, is forced between the base and cap, runs into these canals, which inter-

rupt the capillary action; and from these canals the oil is drained by the grooves F into the receptacle *a*.

To prevent the overflowing of the oil receptacle in the base, or to be more exact, to provide means whereby the oil, if too much be fed into the base, may be caught without loss and before it has made the box greasy, I form in the base, and preferably integral therewith, one or more small vertical overflow pipes L, which are open at their upper ends, and which discharge through the bottom of the box. The position of the open upper end is below the lowest point at which the oil might overflow from the ends of the box, whereby when too much oil is put into the reservoir, it will flow through the overflow pipe L hereinbefore referred to.

Having described my invention, I claim—

1. In a self-oiling journal box, the combination of the base having an oil reservoir and a removable cap having two oil receptacles in its upper part on opposite sides of the oil lifting device, and openings from said receptacles to the shaft bearing, with an oil lifting device adapted to lift the oil from the lower reservoir and to discharge it into the upper receptacles, substantially as and for the purpose specified.

2. In a self-oiling journal box, the combination of a base having an oil reservoir in its lower part, and a cap having a cavity in its upper part and openings from said cavity to the shaft bearing on both sides of the oil lifting ring, both base and cap being provided with an annular groove adapted to receive the oil lifting ring, with an oil lifting ring

adapted to be secured to the shaft with its lower edge extending into the oil reservoir; and a deflecting boss secured to the roof of the cavity in the cap, substantially as and for the purpose specified.

3. In a self-oiling journal box, the combination of a base having an oil receptacle in its lower part, and a cap having an oil receptacle in its upper part, with a ring adapted to be secured to the shaft and to enter both of said receptacles, said ring having radial openings in its edge, a part of which are open on one side and a part on the other side, substantially as and for the purpose specified.

4. In a self-oiling journal box, the combination of a base having an oil reservoir in its lower part, with a cap having a cavity in its upper part, and holes leading from said cavity to the shaft bearing, said base and cap being provided with a substantially central annular groove C adapted to receive the oil lifting ring and the annular end grooves F F, with a ring adapted to be secured to the shaft to enter the oil reservoir in the base, and to extend into the oil cavity in the cap, said ring having pockets in its outer edge, a part of which are open on one side and a part on the other side thereof, and a deflecting boss depending from the roof of the cavity in the cap, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

HARRY W. HILL.

Witnesses:

E. L. THURSTON,

FRANK MILLER.