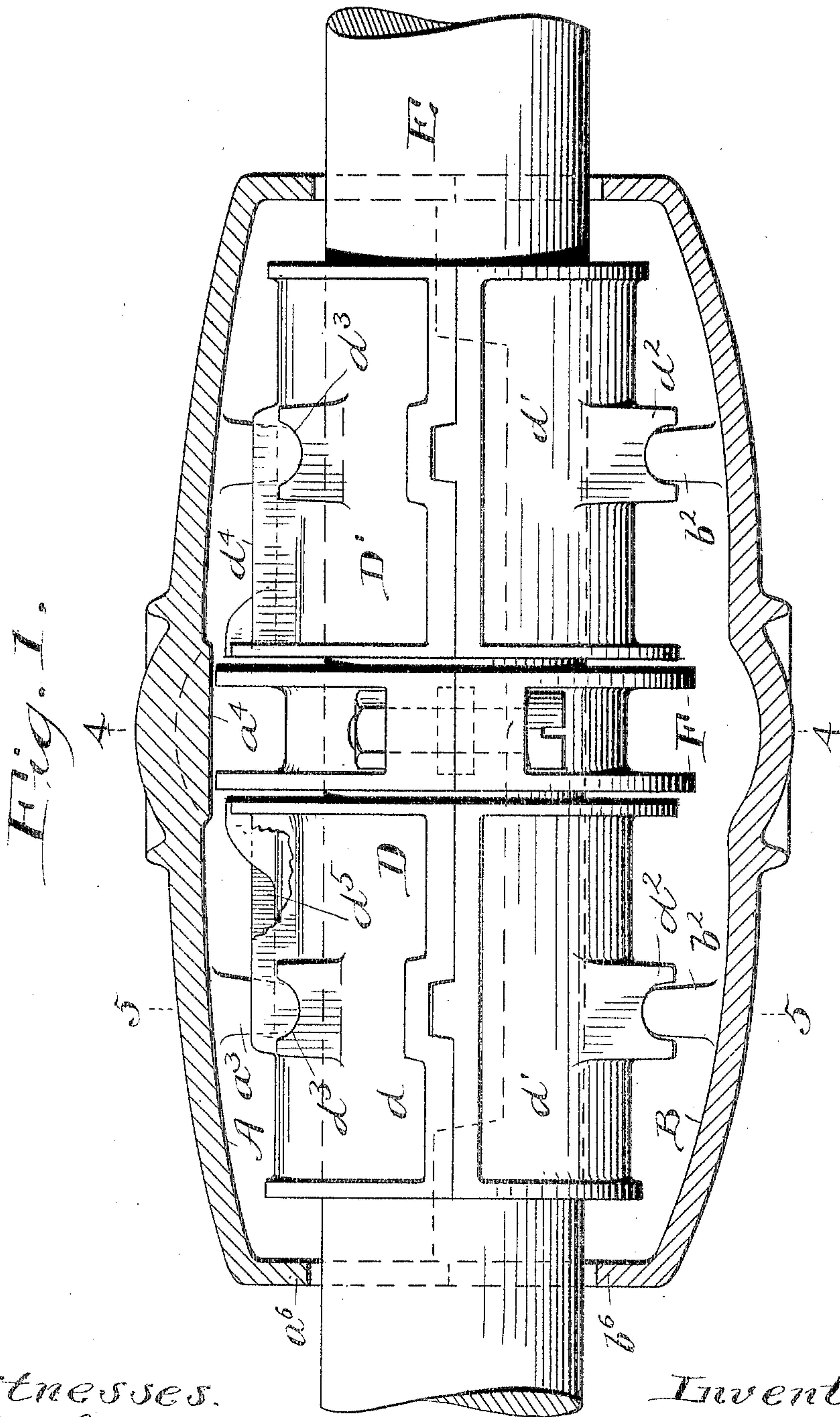


H. W. HILL.  
SELF OILING JOURNAL BOX.  
APPLICATION FILED JAN. 5, 1905.

3 SHEETS—SHEET 1.



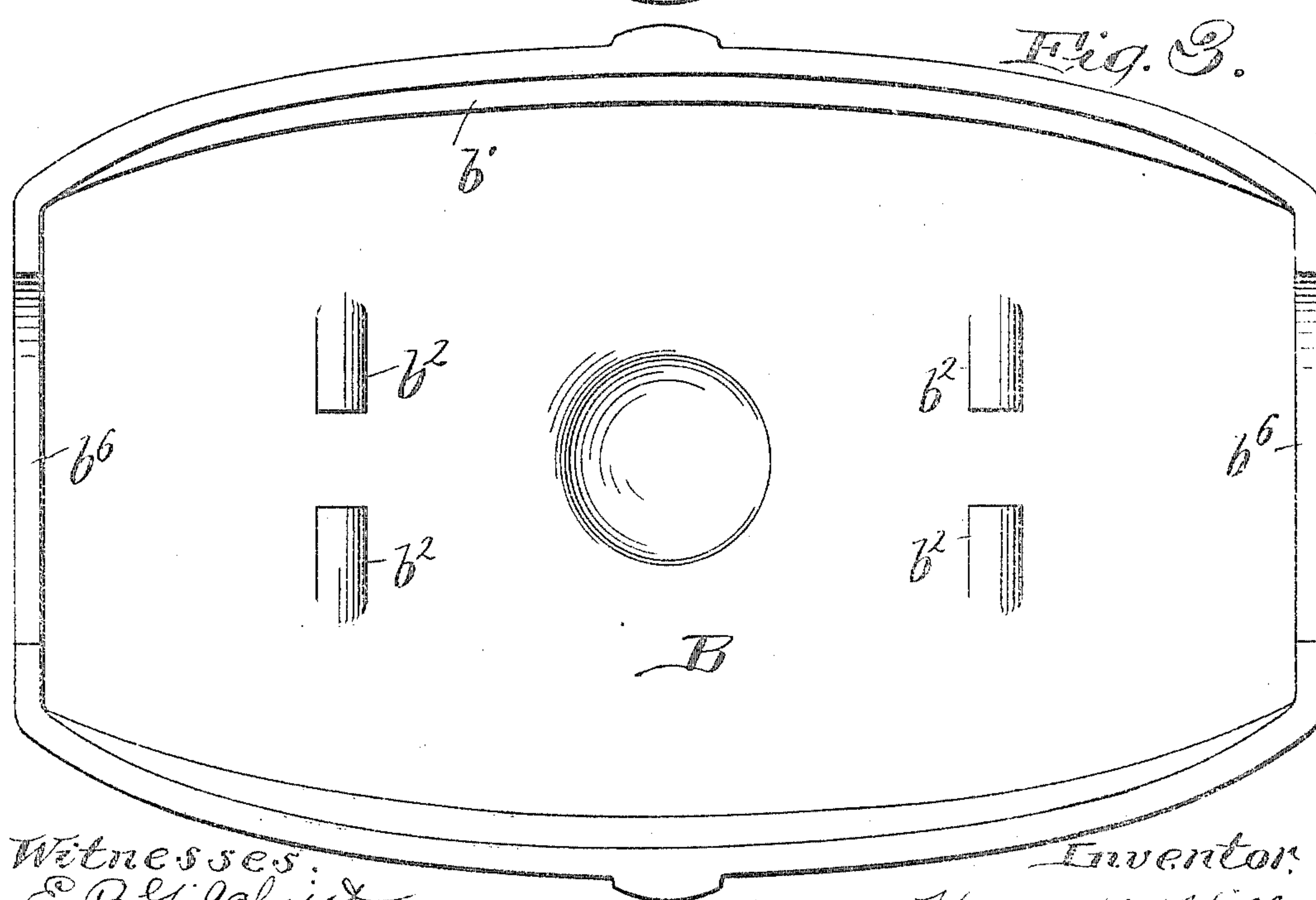
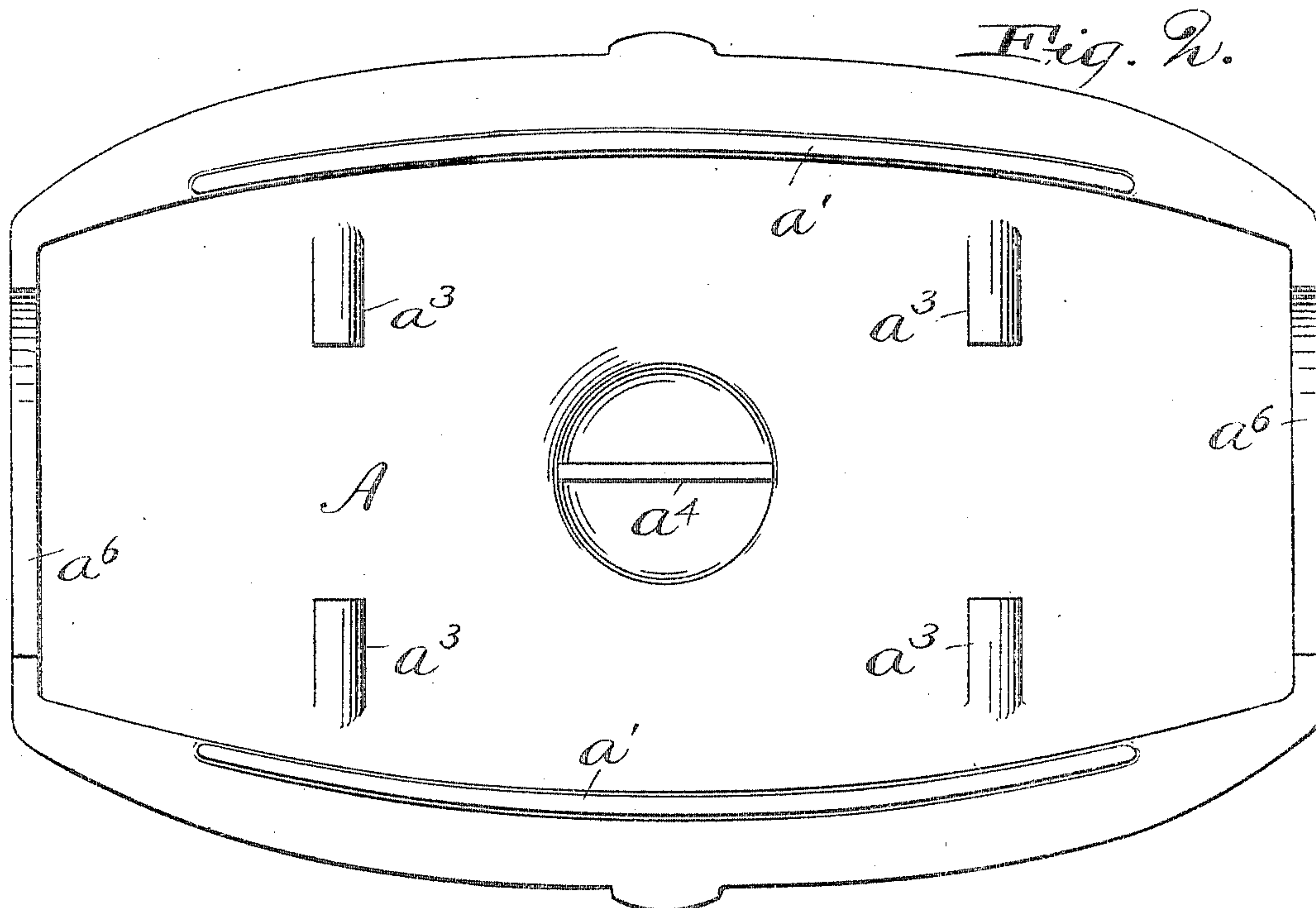
Witnesses.  
E. B. Gilchrist  
H. L. Greenau

Inventor:  
Harry W. Hill,  
By his Attorneys,  
Shurston & Bates.

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3 SHEETS—SHEET 2.



Witnesses:  
E. B. Gilchrist  
N. L. Quensen

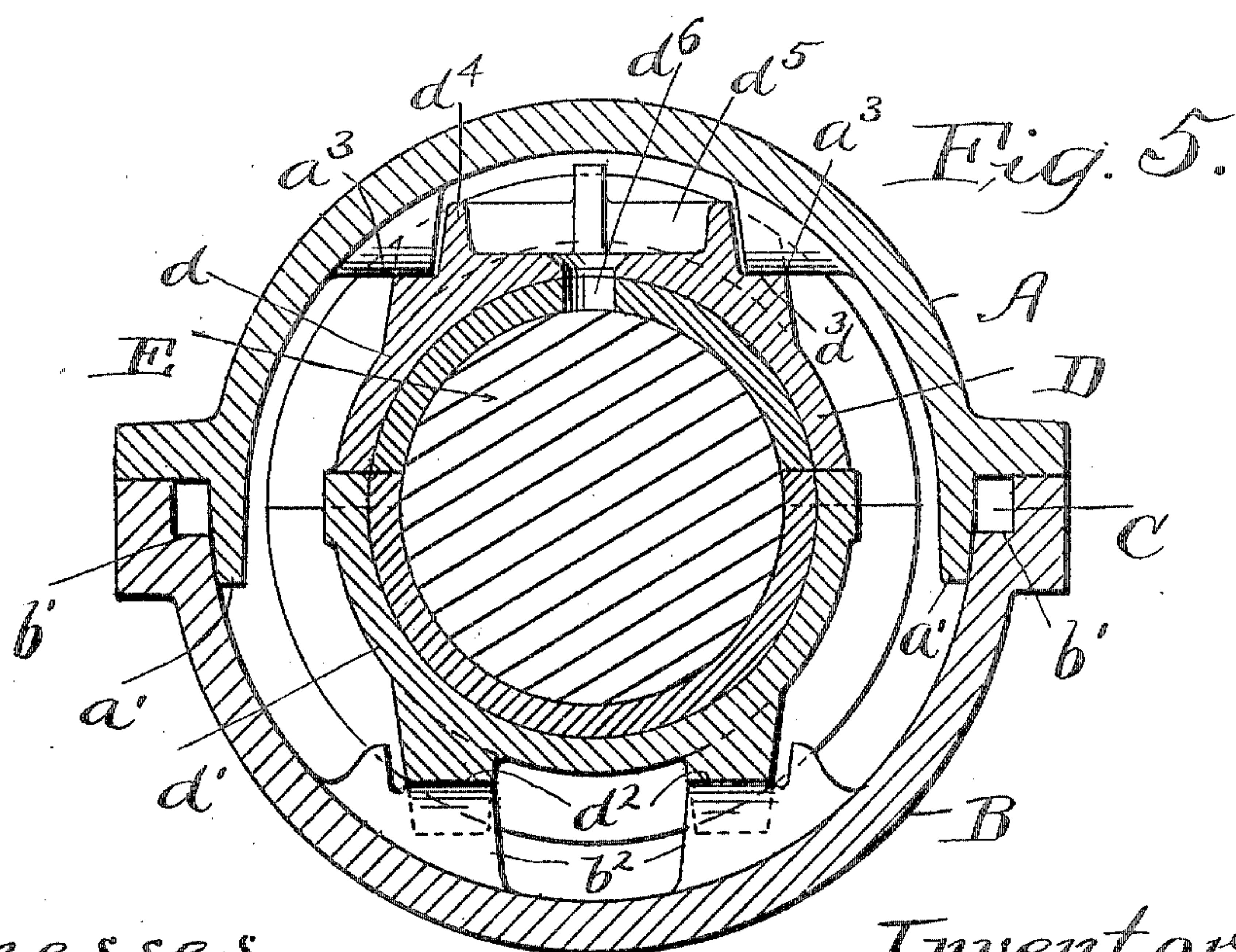
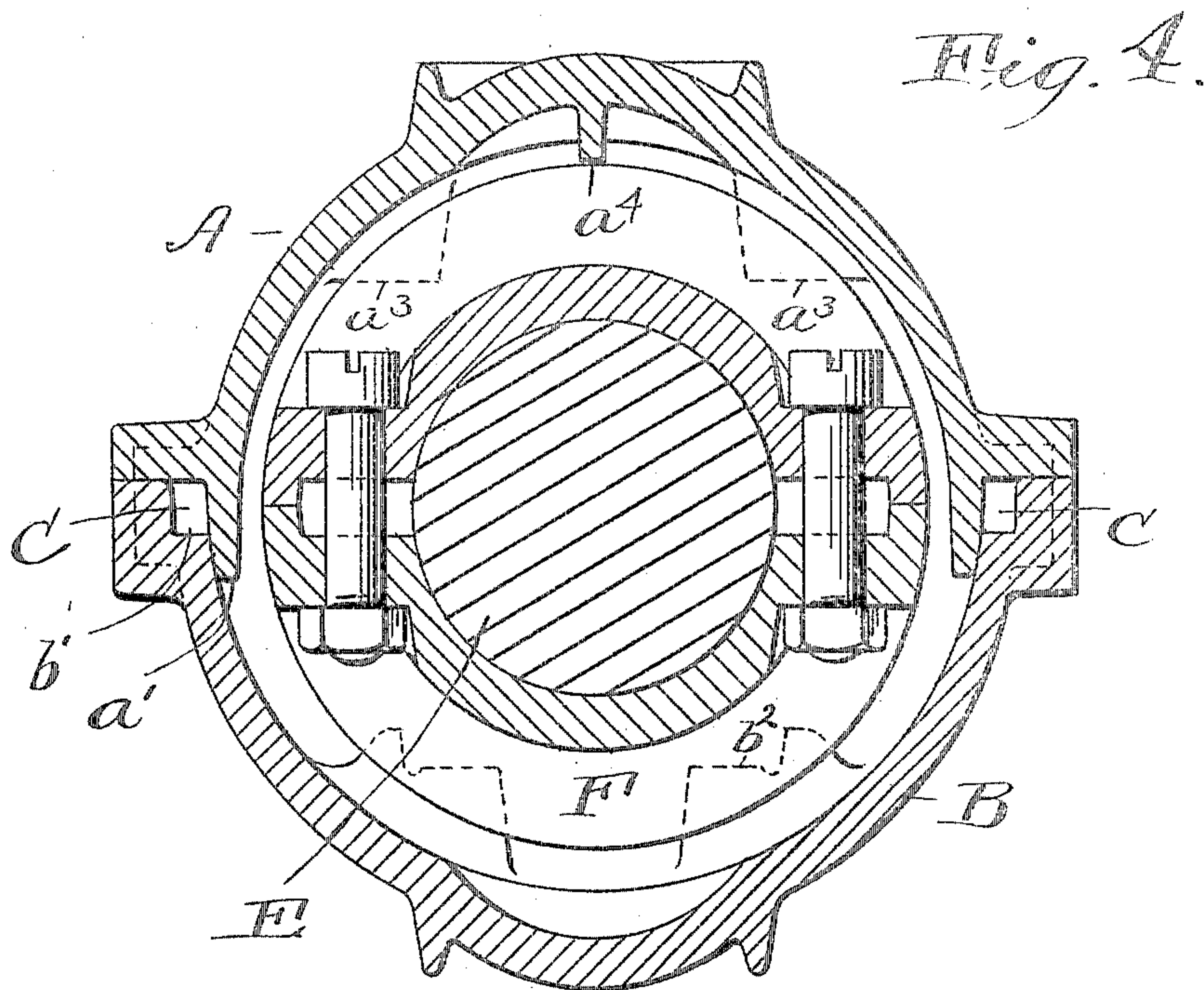
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3 SHEETS--SHEET 3.



*Witnesses.*

*E. B. Gilchrist  
N. L. Brennan.*

*Inventor.*

*Harry W. Hill*

*By his Attorneys,  
Thurston & Bates*



# UNITED STATES PATENT OFFICE.

HARRY W. HILL, OF CLEVELAND, OHIO.

## SELF-OILING JOURNAL-BOX.

No. 804,601.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed January 5, 1905. Serial No. 239,745.

*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 a certain new and useful Improvement in Self-Oiling Journal-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of the invention is to produce a thoroughly efficient but very inexpensive self-oiling journal-box which will remain externally clean while in use.

The invention by which this result is secured consists of the novel combination of parts shown in the drawings, hereinafter described, and definitely pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the box with the outer shell thereof in the vertical longitudinal section. Fig. 2 is a bottom view of the upper member of the shell. Fig. 3 is a plan view of the lower member of the shell. Fig. 4 is a transverse sectional view in the plane indicated by line 4 4 of Fig. 1. Fig. 5 is a transverse sectional view indicated by line 5 5 of Fig. 1.

The outer shell is composed of two separable members A and B of approximately semi-cylindrical form, the plane of separation between said members being substantially horizontal. As a matter of fact, the outer shell when the two members are secured together is more nearly in the shape of an elongated barrel. The particular shape shown of the lower shell member is useful because a fairly large oil-reservoir is thereby formed therein, and the upper shell member is made of the same form to make the shell of symmetrical appearance. At the ends of these sections are inwardly-extended flanges  $a^6$  and  $b^6$ .

The shaft E, for which the box shown serves as a bearing, passes longitudinally through the box and is rotatably mounted in two sleeves D and D', which are located in the shell. A collar F is clamped or otherwise secured upon the shaft between the two bearing-sleeves and serves as an oil-lifting collar. Each of the sleeves D and D' is made of two separable halves  $d$   $d'$ . On the lower side of each bottom half of a sleeve are two notched lugs  $d^2$ , which are placed about midway between the ends of the sleeve and which embrace lugs  $b^2$  on the inner surface of the shell member B. Similarly two notched lugs  $d^3$  on each upper

half of a sleeve embrace lugs  $a^3$  on the upper shell member. The engagement of these lugs permits a limited self-adjustment rocking movement of the sleeves, but prevents any substantial endwise movement thereof. The side faces of the collar D, as well as its periphery, are preferably finished. The sleeves are babbitted in the usual way. In all other respects, however, the various parts of the box are ready to be assembled and used as they come from the foundry, and it will be noted that there is no corework required for making the several castings of the shell or bearing-sleeves.

The top edges of the lower shell member B are internally rabbeted, the bottoms of the grooves  $b'$  thereby formed being of decreasing width from the middle toward both ends of the shell and terminating close to said ends. On the upper shell member A are two depending flanges  $a'$   $a'$ , which fit within the shell member B, contacting with the inner walls thereof below the grooves  $b'$ . When the two shell members are assembled, as shown, two longitudinally-extended oil-channels are formed by the grooves  $b'$  and these flanges  $a'$ .

On the top of each of the sleeve members D D' are the upwardly-extended flanges  $d^4$ , which form oil-pockets  $d^5$ , and there are holes  $d^6$  in said sleeves leading from said pockets down to the shaft-bearings. On the upper shell member A is a wiper-flange  $a^4$ , which is located over and nearly in contact with the periphery of the oiling-collar.

When the described journal-box is put to use, a sufficient quantity of lubricating-oil is put into the oil-receptacle in the lower shell member, and the oiling-collar dips into this oil. As the shaft revolves, carrying the collar with it, oil is lifted by the collar and some of the oil is wiped off by the wiper  $a^4$  into the oil-pockets referred to, from which it flows through holes  $d^6$  on the shaft. In addition to this oil, much oil will be thrown against the walls of the shell. The greater part of this oil will of course run down the walls of the shell members into the oil-receptacle in the lower shell member; but capillary attraction always causes some oil to flow between two contacting surfaces. It will therefore flow between the contacting surfaces on the flange  $a'$  and the inner wall of the lower shell member B. If these contacting surfaces extended, as they do in the self-oiling journals which are now in common use, through to the out-



side surface of the shell, this outside surface would soon become smeared with oil, and the oil would accumulate thereon and would drip off. With the construction shown, however, the oil which capillary attraction causes to flow between the flanges *a'* and the wall of the lower shell member will be delivered into the oil-channels C, in which such oil will accumulate and run out of the ends of said channels down into the lower part of the lower shell member.

The particular journal-box shown is for use in a hanger, which will hold the two parts of the shell together; but any suitable means may be provided for the purpose.

I claim—

1. In a self-oiling journal-box, the combination of a shell composed of two shell members which are separable in a substantially horizontal plane, the lower member serving as an oil-receptacle, with two aligned bearing-sleeves removably secured within said shell, and an oiling-collar between said sleeves and adapted to be secured to the shaft which is mounted in said sleeves, said sleeves having on their top sides upwardly-extended flanges which form oil-pockets, lugs depending from the upper shell member in such position as to cooperate with the said flanges to position the sleeves and a hole extending down from each oil-pocket to the shaft-bearing.

2. In a self-oiling journal-box, the combination of a shell composed of two members which are separable in a substantially horizontal plane, of which the lower member has its upper edges internally rabbeted, and the upper member has flanges depending from its lower edges, which flanges fit the inner walls of the lower member below the rabbeted grooves, bearing-sleeves within said shell, and a rotatable oiling-collar between the adjacent ends of said sleeves.

3. In a self-oiling journal-box, the combination of a shell composed of two members which are separable in a substantially horizontal plane, each member being provided with lugs, with two bearing-sleeves, each composed of two halves, and each half being provided with forked lugs for engagement with the lugs on

the shell, and an oiling-collar lying between the adjacent ends of the sleeves.

4. In a self-oiling journal-box, a shell composed of two members, which are separable in a substantially horizontal plane, the lower member having internally-rabbeted grooves along its horizontal edges, and the upper member having flanges which extend downward from its horizontal edges and extend below the bottoms of said rabbeted grooves and are fitted to the inner walls of the lower member, said flanges being discontinued at points back from the ends of the shell member; and both of said shell members having at their ends inwardly-extended flanges.

5. In a self-oiling journal-box, the combination of a shell composed of two members which are separable in a substantially horizontal plane, of which the lower member has its upper edges internally rabbeted, and the upper member has flanges depending from its lower edges, which flanges fit the inner walls of the lower member below the rabbeted grooves, bearing-sleeves removably mounted in said shell, means preventing endwise movement of said sleeves within said shell, and a rotatable oiling-collar between the adjacent ends of said sleeves.

6. In a self-oiling journal-box, the combination of a shell composed of two members which are separable in a substantially horizontal plane, of which the lower member has its upper edges internally rabbeted, and the upper member has flanges depending from its lower edges, which flanges fit the inner walls of the lower member below the rabbeted grooves, bearing-sleeves within said shell, which sleeve members and shell members have interlocking lugs which prevent endwise movement of the sleeves within the shell, and a rotatable oiling-collar between the adjacent ends of said sleeves.

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

HARRY W. HILL.

Witnesses:

ALBERT H. BATES,  
E. L. THURSTON.