

J. SCHERER.
GOVERNOR.

APPLICATION FILED FEB. 20, 1903.

NO MODEL.

Fig. 1.

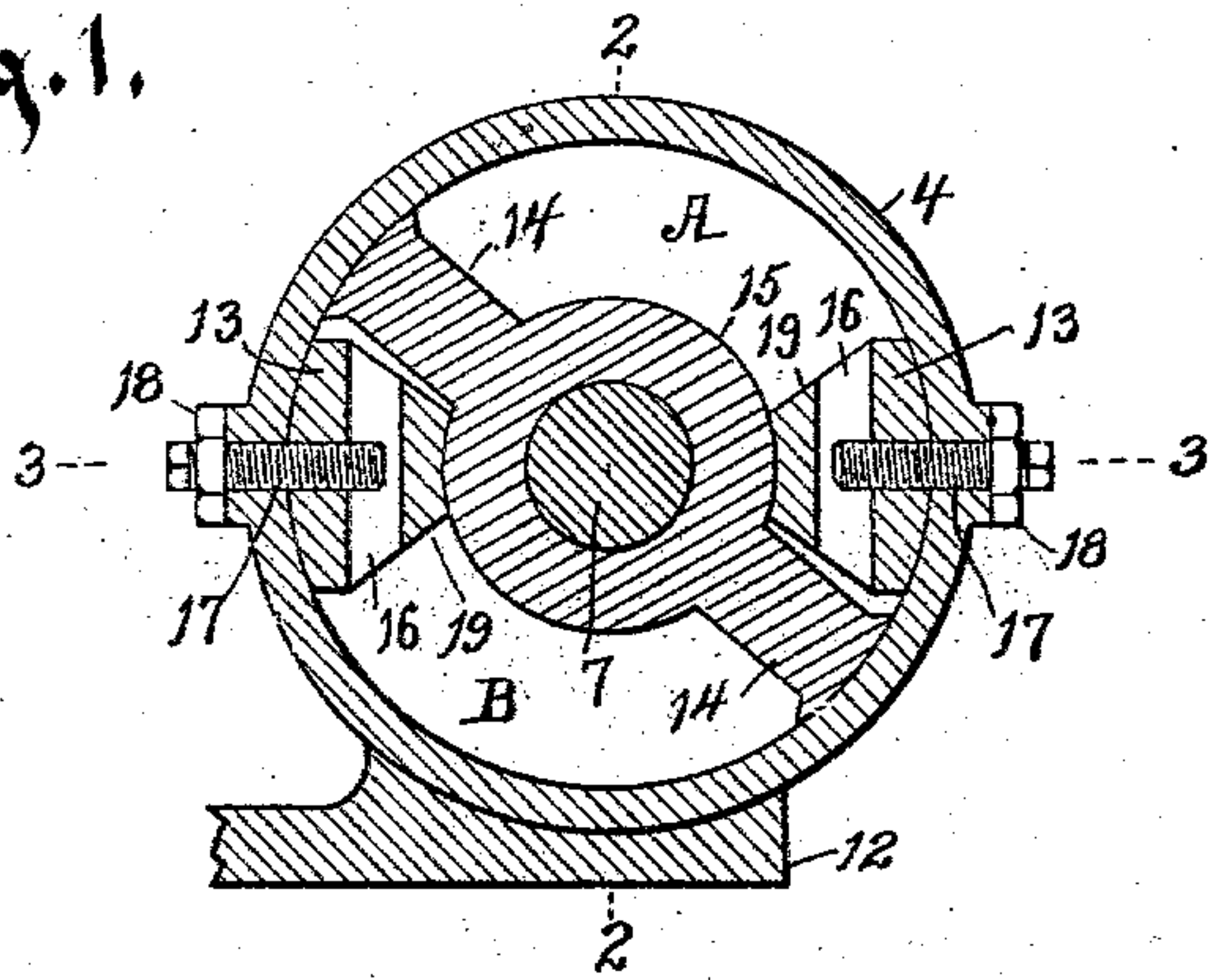


Fig. 2.

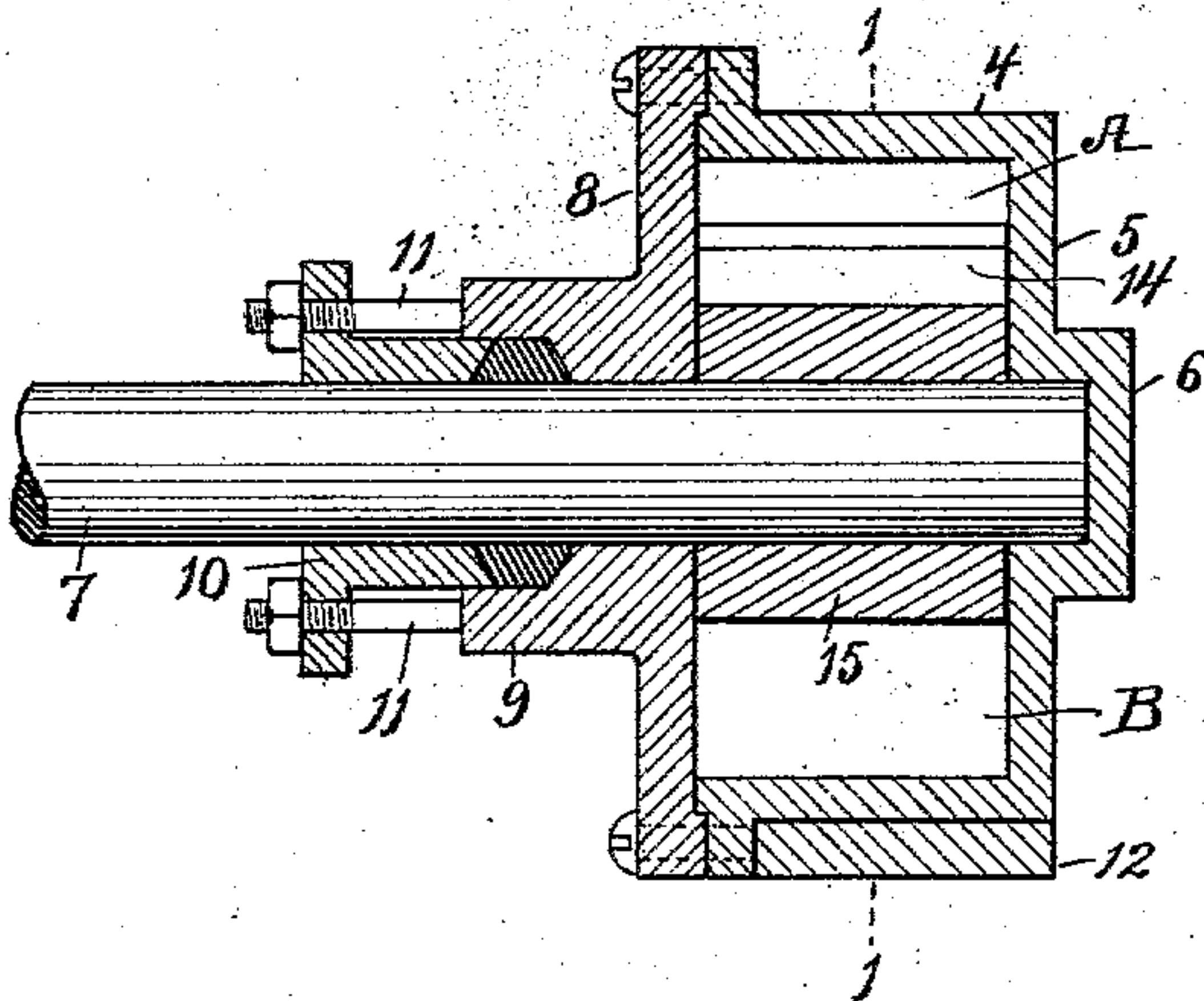
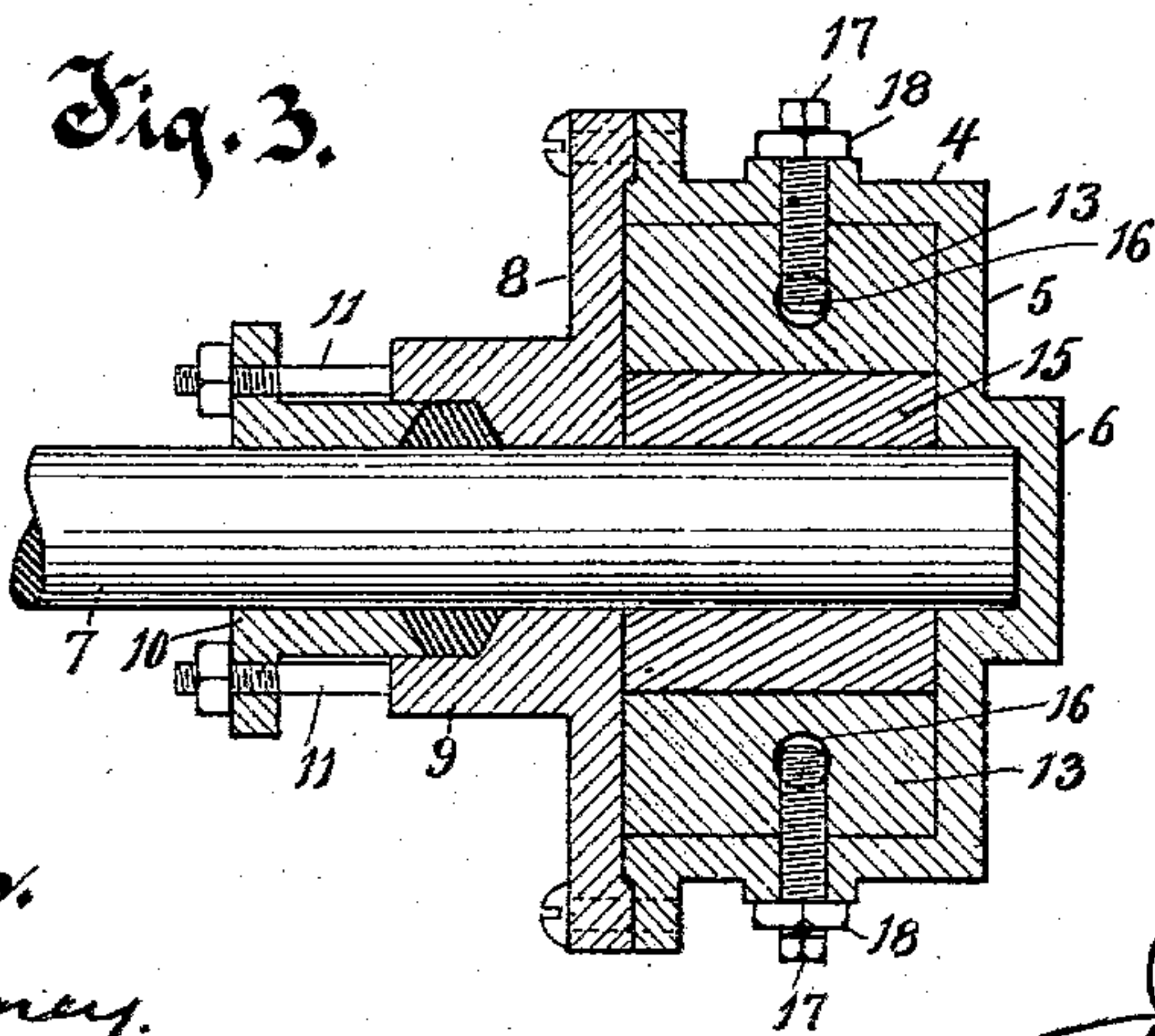


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN SCHERER, OF MARINETTE, WISCONSIN.

GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 740,473, dated October 6, 1903.

Application filed February 20, 1903. Serial No. 144,210. (No model.)

To all whom it may concern:

Be it known that I, JOHN SCHERER, residing at Marinette, in the county of Marinette and State of Wisconsin, have invented a new and useful Improvement in Governors, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention in governors relates to a novel device adapted to use a liquid medium (as oil, alcohol, water, or other fluid) therein to regulate and control the oscillations of a rock-shaft. The improved governor may be employed with rock-shafts operated by a fluid-actuating medium wherever they are used, and I have employed such a governor with excellent results in connection with steam-actuated rock-shafts in set-works in sawmills.

The invention consists of the governor, its parts, and combinations of parts, as herein described and claimed, or the equivalents thereof.

In the drawings, Figure 1 is a transverse section of my improved governor on line 1 1 of Fig. 2. Fig. 2 is a longitudinal section of the improved governor on line 2 2 of Fig. 1. Fig. 3 is a longitudinal section of the improved governor on line 3 3 of Fig. 1.

In the drawings, 4 represents the shell of a cylinder, and 5 is the rigid head of the cylinder, which for convenience in construction is cast integrally with the shell 4. The head 5 is provided with a central boss 6, which has a socket in the inner surface thereof, the walls of which socket serve as a bearing for the end of the shaft 7. The other end of the cylinder is closed by a cylinder-head 8, secured to the shell 4 releasably. The cylinder-head 8 may be provided with a packing-box 9 and a gland 10, secured adjustably to the box by means of bolts 11, thus providing means for packing the shaft 7 in the cylinder. A base 12 may be employed to support the cylinder in fixed position.

One object of my invention is to provide a balanced governor employing a liquid medium, and for this purpose the cylinder is to be divided into a plurality of compartments, preferably into two chambers, though more than two chambers may be provided if desired. In the drawings I have shown the cylinder as divided into two chambers A and

B by means of partitions or abutment-blocks 13 13, which are secured to and project rigidly from the shell 4 at opposite sides thereof and extend lengthwise from one cylinder-head to the other. The shaft 7 is provided with blades 14 14, that are conveniently secured to the shaft by means of a hub 15, advantageously formed integrally with the blades, which hub is preferably made cylindrical and of such thickness as is deemed desirable, having in view the size of the shaft in any particular case. These blades 14 and the hub 15 extend on the shaft from end to end of the cylinder-chamber, and the outer edges of the blades fit movably but liquid-tight on the inner surface of the cylinder, and their ends fit movably but tightly against the cylinder-heads. These blades extend opposite each other respectively into the chamber A and chamber B, in which they are adapted to move forward and back as the shaft oscillates. The inner edges of the abutment-blocks 13 fit onto the exterior surfaces of the hub 15, thereby completely dividing the cylinder into the liquid-tight chambers A and B.

The abutment-blocks 13 are each provided with a duct 16 through it connecting the adjacent chambers A and B. These ducts are of such size as to permit only a limited flow of the fluid medium from one chamber to the other, being thus adapted to permit only a slow movement of the blades in the chambers from one side thereof to the other when the chambers are filled with a liquid medium, such as oil, alcohol, or water or the equivalent of any of these. I also provide screw-threaded plugs 17 17, turning through the shell 4 into the ducts 16 16, whereby the capacity of the ducts can be diminished, and thereby action of the blades in the chambers can be controlled to such extent as is desired. Jam-nuts 18 18 turn on the plugs against the shell.

I advisably bevel the walls of the abutment-blocks at 19 19, as shown in Fig. 1, so as to fit closely against the sides of the blades 14 when the blades come thereto. This provides for a complete oscillation of the blades with the shaft 7 from side to side of the chambers A B. It will, however, be understood that when the chambers A and B are filled with a liquid the blades can move from one side of their

chambers to the other side only so fast as the liquid in front of the blades in the chambers can escape from those chambers, through the ducts 16, into the other chambers and at the
5 then rear of the blades and that this escape of the liquid can be controlled, or at least diminished, by reducing the size of the ducts 16 by the plugs 17.

What I claim as my invention is—

10 1. A liquid - medium governor for rock-shafts, comprising a fixed cylinder, a shaft mounted in the cylinder axially, rigid partitions dividing the cylinder longitudinally into chambers but having ducts permitting the es-
15 cape of a liquid from one chamber to the other, and blades opposite each other fixed rigidly on the shaft fitted into and movable rotatably with the shaft in the cylinder.

2. A governor for a fluid-medium-actuated
20 rock-shaft, comprising a cylinder, a rock-shaft mounted revolubly in the cylinder axially, partitions fixed to and rigid in the cylinder dividing the cylinder longitudinally into chambers but having ducts connecting the cham-
25 bers, blades fixed rigidly on the shaft and fitted into the cylinder-chambers and movable therein revolubly with the shaft, and means adjustably entering the chamber-connecting ducts for reducing the size thereof.

30 3. A balanced governor for a rock-shaft,

comprising a liquid-medium cylinder, a rock-shaft mounted revolubly in the cylinder axially, abutment-blocks fixed in the cylinder opposite each other dividing the cylinder into
35 opposite chambers, the blocks being each provided with a fluid-restricting leaking duct connecting the two chambers, rigid blades fixed opposite each other on the shaft fitting respectively revolubly in each chamber and adapted to move oscillatingly from one side
40 to the other of the chamber.

4. In a balanced liquid-medium governor for a rock-shaft, a fixed cylinder, a rock-shaft mounted in the cylinder axially, opposite rigid
45 radial blades having a cylindrical hub fixed on the rock-shaft and fitted revolubly in the cylinder, rigid segmental abutment-blocks opposite each other fixed in the cylinder dividing it into equal segmental chambers, the
50 blocks being provided with beveled sides adapted to fit to the adjacent sides of the blades and with leaking ducts from one chamber to the other.

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

JOHN SCHERER.

Witnesses:

JOHN S. PETERSON,
C. J. SETTERSTEN.