

No. 773,538.

PATENTED NOV. 1, 1904.

M. H. BORLAND.  
LUBRICATING CUP.

APPLICATION FILED NOV. 10, 1903.

NO MODEL.

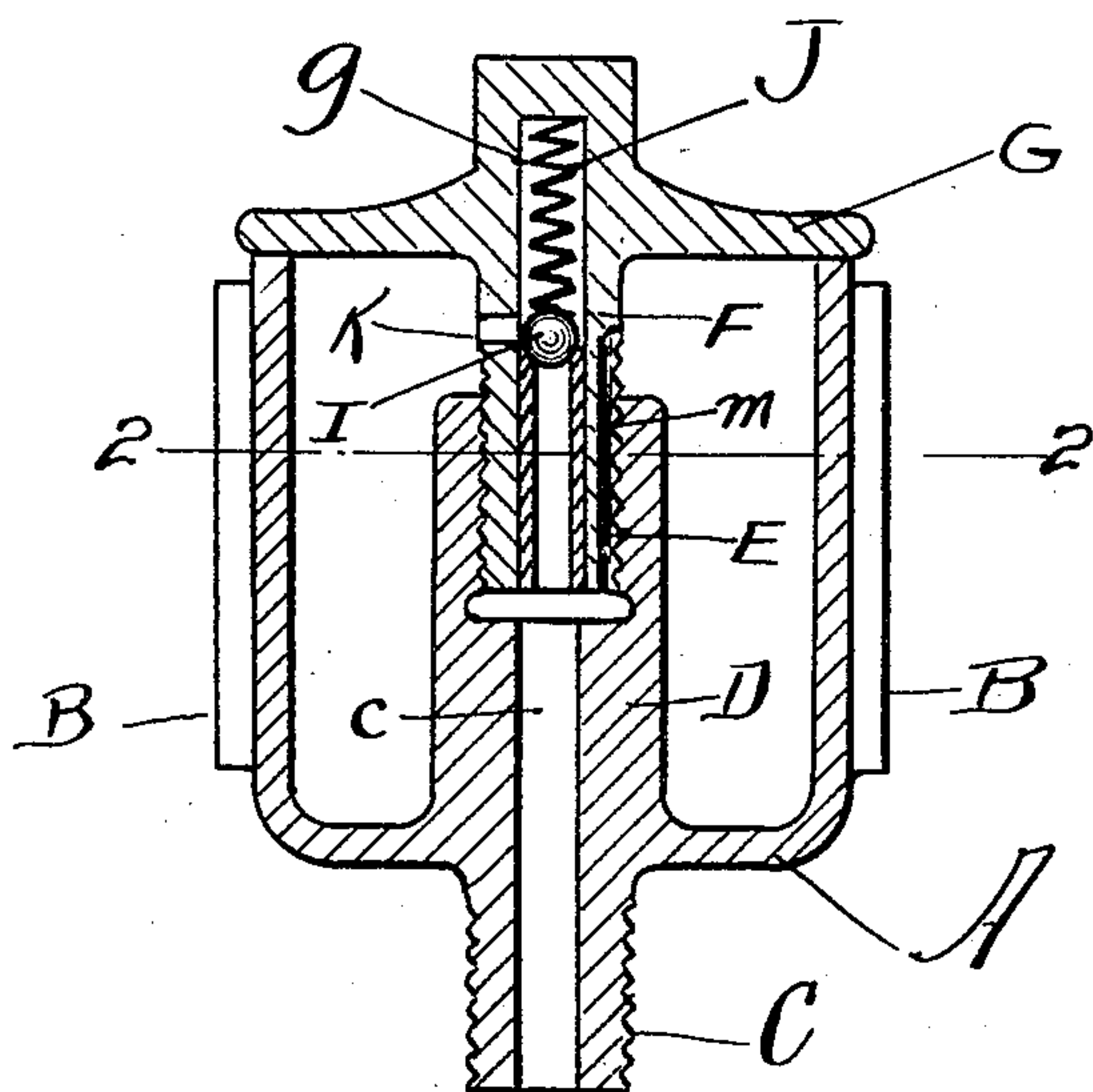


Fig. 1.

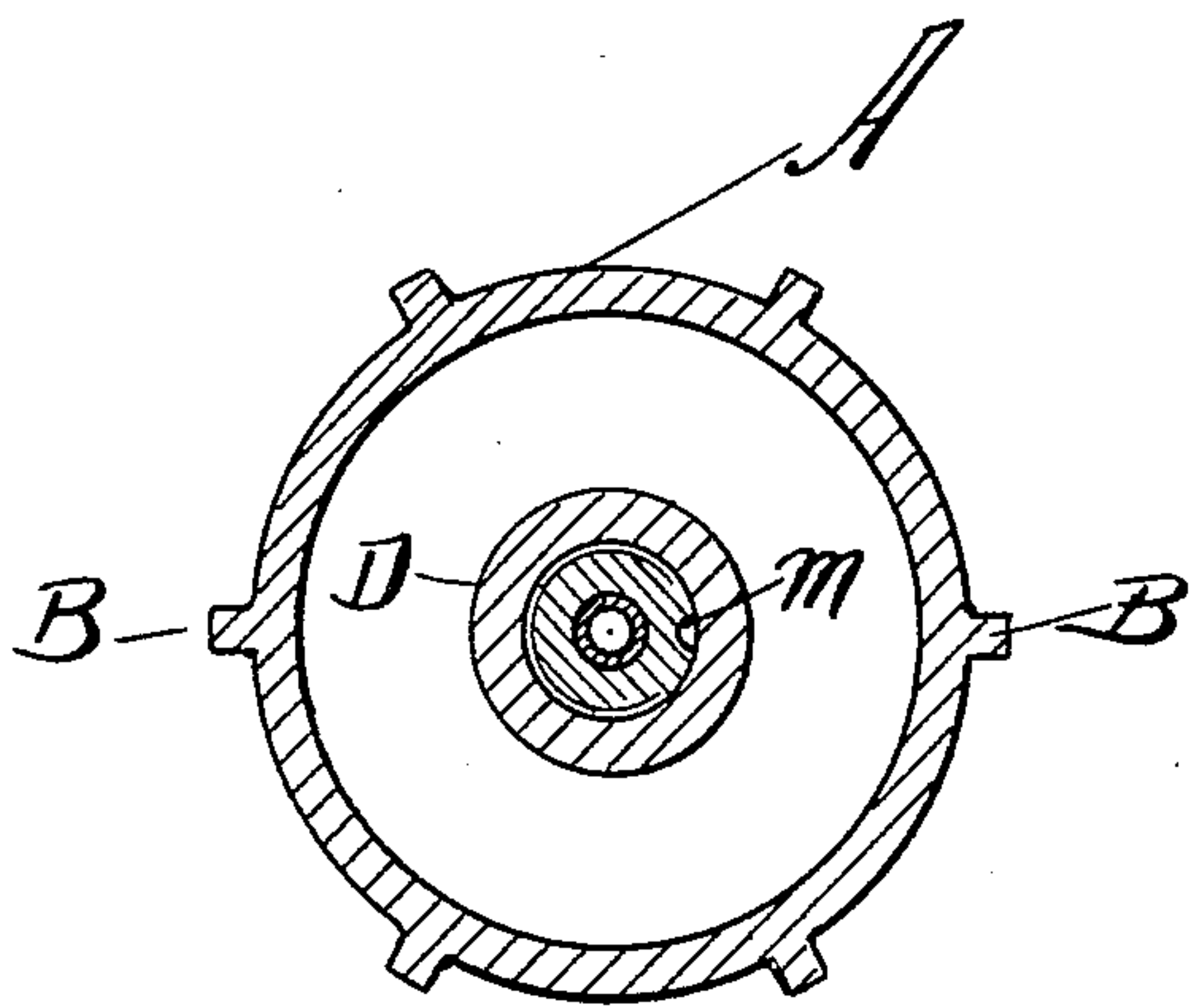


Fig. 2.

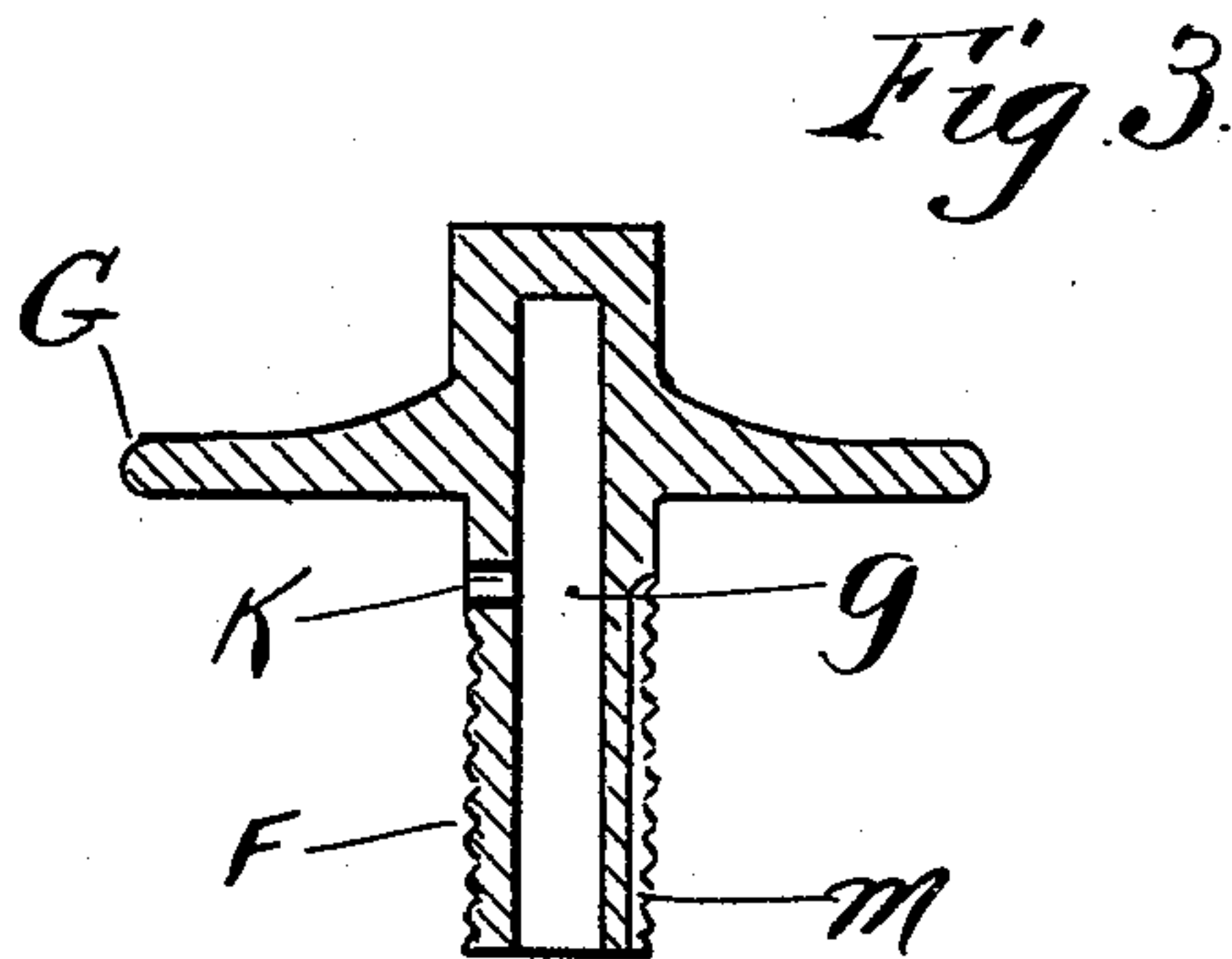


Fig. 3.

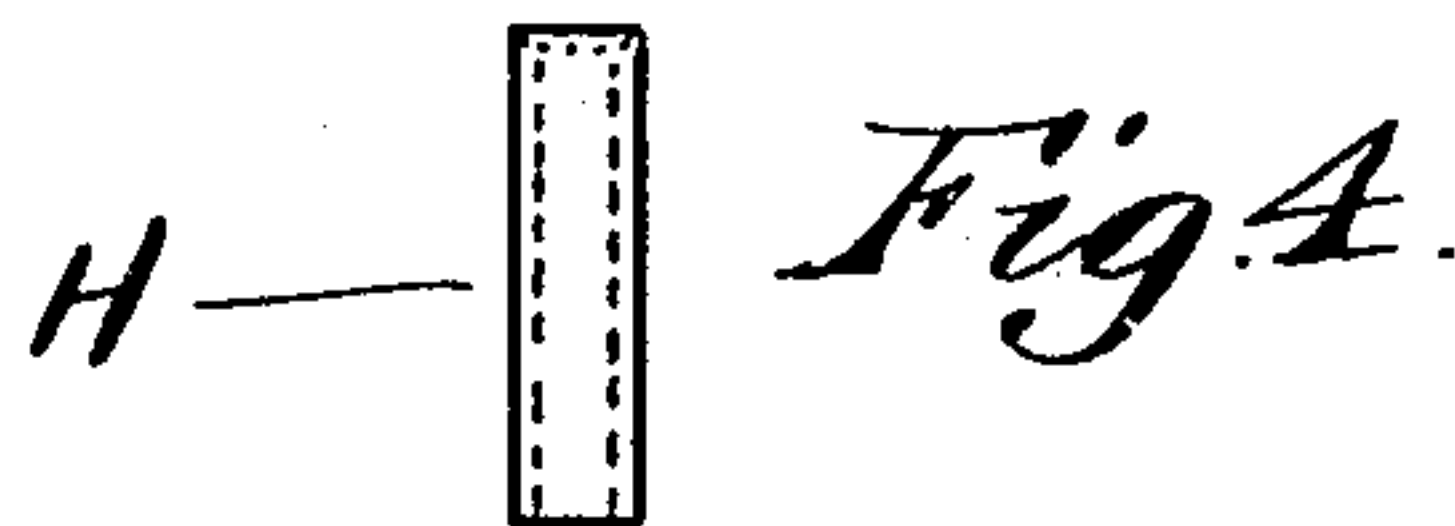


Fig. 4.

Witnesses

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# UNITED STATES PATENT OFFICE.

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## LUBRICATING-CUP.

SPECIFICATION forming part of Letters Patent No. 773,538, dated November 1, 1904.

Application filed November 10, 1903. Serial No. 180,621. (No model.)

*To all whom it may concern:*

Be it known that I, MATTHEW H. BORLAND, a resident of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Lubricating-Cups; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in lubricating-cups, and has for its object the production of a simple and inexpensive device for use on revolving parts of machinery for the purpose of feeding oil thereto and to positively and automatically cut off the supply of oil whenever the part ceases to revolve.

The further object of the invention is to construct the parts in such a way as to enable the valve to remain on its seat at all times except when the parts are revolving at a predetermined speed.

With these ends in view the invention consists of a lubricating-cup embodying novel features of construction and arrangement, which are illustrated in the drawings and will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a vertical cross-section through the lubricating-cup, showing my improvements applied thereto. Fig. 2 is a horizontal section on line 2 2 of Fig. 1. Fig. 3 is a detail sectional view of the cap with the sleeve, ball, and spring removed. Fig. 4 is the sleeve, which is forced into the tubular portion of the cap to form a seat for the ball-valve.

Referring to the drawings, A is the outside shell of the lubricating-cup, having a plurality of ribs B running lengthwise of said shell along its outside surface. These ribs may also be made short, as they are exclusively for the purpose of presenting convenient surfaces onto which a wrench may fit to facilitate the screwing of the cup into the bearing. On the lower end of said shell is cast an extension C, which is threaded for the purpose of being screwed into a tapped hole made to receive it in that part of the machine to which it may

be attached. Extending upwardly from the bottom of said cup and on the inside thereof is a hub D, having a hollow center *c*, through which the lubricant may run out. The upper end of this hub D is a short distance below the top of the cup and is tapped out on its inside at E to receive the threaded end of the spur F, which spur projects downwardly from the inside of the cap or cover. The center of this spur is chambered out at *g*. Into the lower end of this chamber is forced the hollow sleeve or tube H, (see Fig. 4,) the upper end of which sleeve forms a seat on which the ball I rests. The oil or other lubricant is admitted to the hollow center of the spur through the hole K. The ball I serves as a valve for shutting off the supply of oil or other lubricant from going into that part of the mechanism to which the cup may be attached. Said ball-valve is held in position on its seat by the tension of the spiral spring J upon it when the part to which it is attached is at rest. The groove or slot *m* in the side of the spur serves as a vent to supply the cup with air as the oil runs out.

In the use of ordinary lubricating-cups which are secured to the revolving parts of machinery it has heretofore been found that when the part is stopped in a position to bring the cup in a horizontal position the oil would run out of the cup and flood the bearing causing considerable annoyance and oftentimes some damage. To avoid this difficulty, I have constructed a cup which will close automatically when the part to which it is attached ceases to revolve.

The valve is a ball which is held to its seat by a light spring, the tension of which may be varied by varying the size of the wire. When the part is revolved at a given speed, the centrifugal force acting on the ball will cause it to leave its seat and allow the oil to flow through the center channel into the bearing.

The quantity of oil to run out is controlled in a great measure by the size of the air-duct *m*, as the oil cannot run out only as fast as the air can come in to take its place.

My device is extremely simple and prac-



tical in construction as well as inexpensive to manufacture.

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

1. In a lubricator-cup, a hollow hub within said cup, a cover for the top of said cup, a threaded hollow spur projecting from the under side of said cover and screwed into said hub, there being means for communicating from the passage-way in said hub to the inside of said cup to allow air to enter, a removable valve-seat held within said hollow spur, a valve to engage said seat and a spring acting on said valve to return it to its seat after having been thrown off by the rotation of said cup.

2. In a lubricator, a cup, a hollow hub within said cup projecting upward from the bottom thereof, a cap having a spur projecting from its under side and removably secured in said hub, a valve, a sleeve within said spur forming a seat for said valve and a spring acting on said valve to return it to its seat after having been thrown off by centrifugal force.

3. In a lubricator, a cup, a hollow hub within said cup projecting toward the top from the bottom thereof, a cap having a threaded spur projecting from it, said spur being screwed into said hub, a sleeve fixed within said spur forming a seat for the valve, a ball-valve to engage said seat and a spring acting on said ball-valve to return it to its seat after having been thrown off by centrifugal force.

4. In a lubricator, a cup, a hub having a hollow center extending from the bottom toward the top of said cup, a cap for said cup, a spur having a hollow center projecting from said cap, said spur being screwed into said hub, a valve, a sleeve forced into the hollow center of said spur forming a seat for said valve, and a spring acting on said valve to return it to its seat after having been thrown off by centrifugal force.

In testimony whereof I have hereunto set my hand this 9th day of November, A. D. 1903.

MATTHEW H. BORLAND.

Witnesses:

HOWARD E. BARLOW,  
FRANK A. FOSTER.