

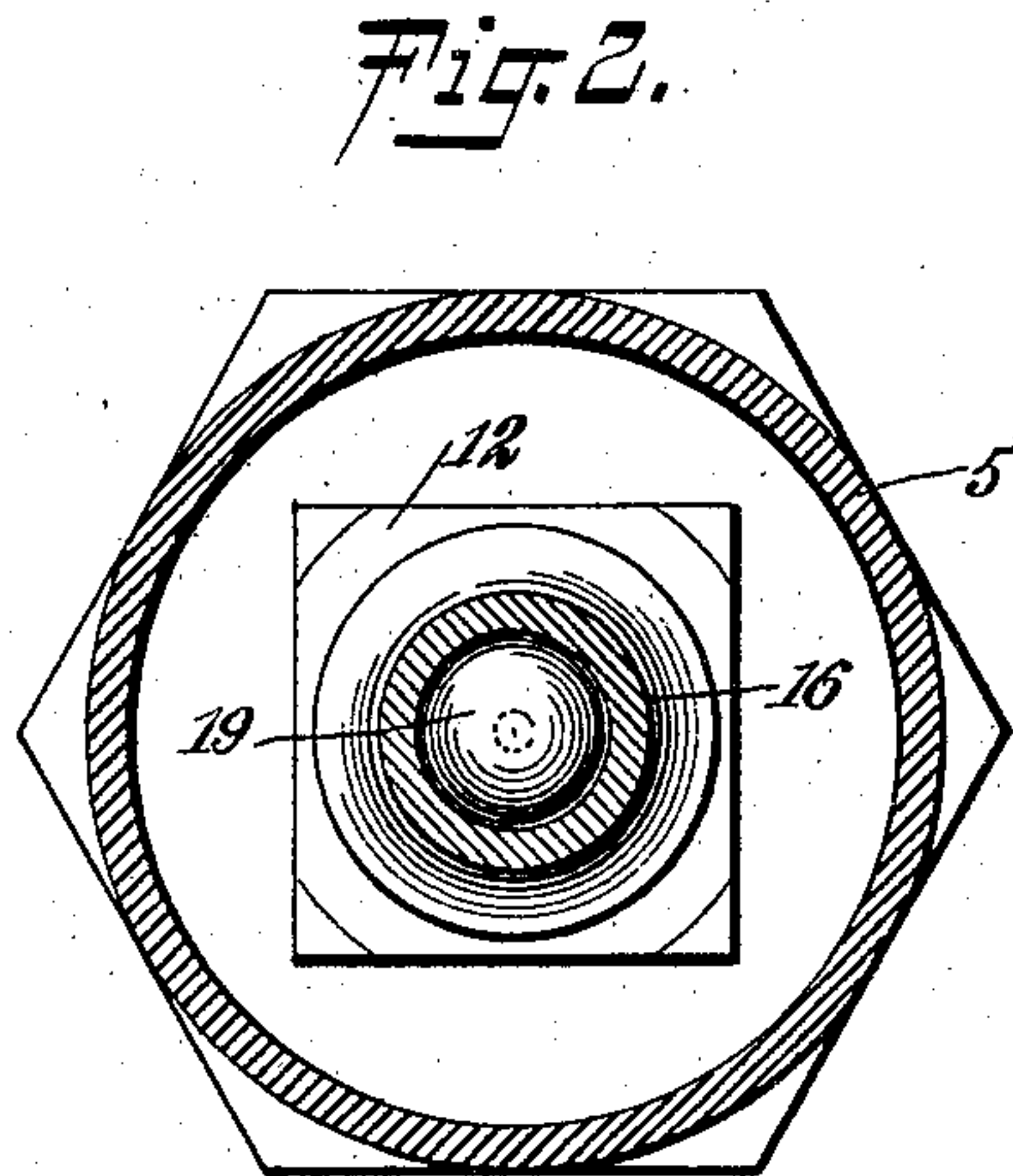
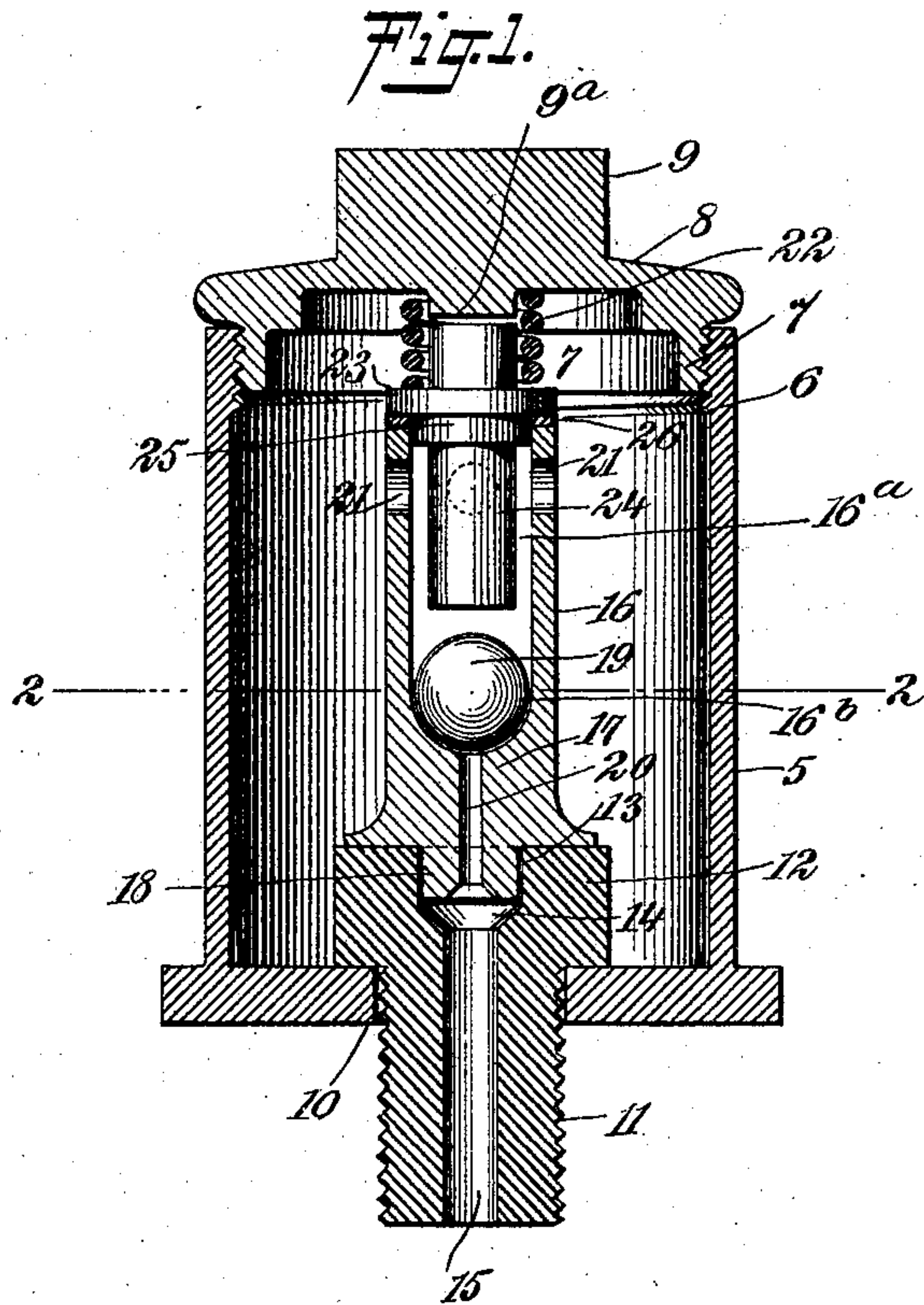
No. 734,443.

PATENTED JULY 21, 1903.

J. M. STAPP.
LUBRICATING CUP.

APPLICATION FILED SEPT. 10, 1902.

NO MODEL.



WITNESSES:

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LUBRICATING-CUP.

SPECIFICATION forming part of Letters Patent No. 734,443, dated July 21, 1903.

Application filed September 10, 1902. Serial No. 122,818. (No model.)

To all whom it may concern:

Be it known that I, JOHN MILTON STAPP, a citizen of the United States, and a resident of Alamogordo, in the county of Otero and Territory of New Mexico, have invented a new and Improved Lubricating-Cup, of which the following is a full, clear, and exact description.

My invention relates to improvements in lubricating-cups; and the primary object that I have in view is the provision of a simple and cheap contrivance for use on revolving or oscillating parts of machinery for the purpose of automatically feeding oil thereto when the part is in motion, while the feed is effectively cut off on the stoppage of the part, thus overcoming the waste of the lubricant.

A further object is to construct the parts in such a way as to enable the use of a ball-valve, which when the cup moves with the moving part of the machine is capable of a rotary motion, so that the valve sweeps off the seat any sediment which may have a tendency to adhere thereto, thus preventing clogging of the oil-duct and insuring free passage of the lubricant.

A further object of the invention is to provide means which may be easily and quickly removed from the oil-cup, so as to obtain access to the journal or other part for supplying lubricant directly thereto before starting the engine, as is frequently desired in cold weather, when the oil does not flow readily.

A further object is to increase the durability of the parts by minimizing the friction and wear thereon and also to provide for adjustment of the movement of the valve, so that a greater or less quantity of oil may pass to the part to be lubricated.

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

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a vertical section through a lubricating-cup and showing my improvements

applied thereto, and Fig. 2 is a horizontal section taken in the plane of the dotted line 2 2 of Fig. 1.

An ordinary lubricating-cup is indicated at 5, the same having an interiorly-threaded upper portion adapted for the reception of the male threaded flange 7 of an ordinary screw-cap 8, the latter having an angular projecting stud 9, to which may be applied a wrench or other implement for the convenient adjustment of the cap. All these parts are ordinary in the art, and I do not consider it necessary to more particularly describe the same.

As shown by Fig. 1, the bottom of the cup 5 is provided with a central orifice 10, through which is adapted to pass a male-threaded plug 11, the latter having an enlarged head 12, which is disposed within the chamber of the cup and is adapted to bear upon the bottom thereof. This headed plug provides a convenient means whereby the cup may be clamped to a crank or any other rotating or oscillating part of a machine which it is desired to lubricate; but, if desired, the cup may be provided with an integral or rigid stem at the bottom thereof for attaching the lubricator to the moving part of the machine. The head 12 of the plug is provided with a central socket 13, which has its bottom flared, as at 14, and with this socket communicates a passage or duct 15, which extends longitudinally through the plug 11, the lower end of said duct opening through the lower extremity of the plug.

One of the important features of my improved device is a feed-tube 16, which is provided with a solid lower portion 17, the latter terminating in a stud 18, which is integral with said solid portion. This stud is constructed to fit snugly in the socket 13 of the headed plug, and the lower solid end of the feed-tube 16 is provided with a flat face adapted to rest firmly upon the top face of the head 12. The tube 16 is provided with a longitudinal passage 16^a, which terminates in a rounded or concave bottom face 16^b, adapted to serve as a seat for a spherical valve 19. This valve is made of metal and turned to a truly spherical form in order that it may fit accurately on the seat 16^b. In the lower solid

part 17 of the tube is formed a longitudinal duct or passage 20, which extends through the stud 18 and opens through the valve-seat 16^b in order to communicate with the passage 16^a, whereby the lower part of the passage 20 of the feed-tube is adapted to open directly into the passage 15 of the plug 11. The outer or upper end of the feed-tube 16 is open, and near this open end the feed-tube is provided with a series of radial inlet-ports 21, the latter establishing communication between the chamber of the cup 5 and the passage 16^a of the feed-tube.

The cap 8 is provided on its under side with a boss 9^a, around which is fitted the upper end of a coiled spring 22. The lower end of the spring bears against a collar 23 on a stem 24, said stem having another collar 25, arranged to extend into the upper open end of the feed-tube 16. The collar 23 is of larger diameter than the collar 25, and said collar 23 affords a seat for the spring 22, and it is also adapted to rest upon the top edge of the feed-tube 16, thereby limiting the inward projection of the stem 24 into the feed-tube. If desired, a metallic washer may be placed around the boss 9^a of the cap in order to afford a seat for the spring; but the washer may be adjusted, as at 26, between the end of the feed-tube and the lower side of the collar 23, thereby raising the stem with relation to the valve 19. The lower end of this stem terminates quite close to the valve in order to limit the movement of the same with relation to the seat 16^b; but the play of the valve may be increased by the employment of two or more of the washers 26 between the end of the tube and the collar 23 on the stem. The spring serves to yieldingly hold the stem in proper relation to the valve, and the tension of this spring may be regulated by adjusting the cap 8 as desired.

The lubricator herein described may be easily and quickly applied to a rotary or oscillating part of any kind of machine, and when this part is at rest the valve 19 occupies the seat 16^b, so as to effectually cut off the passage of oil through the ducts 20 15 to the moving part, thus preventing waste of the oil when the machine is at rest, and does not require lubrication. When the part is in motion, the lubricator travels with it, and the oil finds its way from the cup through the ports 21 into the passage 16^a of the feed-tube. The motion of the part operates to displace the valve and to impart a turning or rotary motion to said valve, thus permitting the lubricant to pass by the valve into the passage 20 and through the passage 15 to the moving part. The motion of the valve 19 on its axis, due to the operation of the moving part of the machine, prevents any sediment from adhering to the valve-seat or the interior of the feed-tube, because the valve is adapted to sweep any adhering substance from the face of the valve-seat, thus insuring at all times the passage of the lubricant and overcoming

any tendency of the parts to become clogged and rendered inoperative.

It will be noted that the feed-tube 16 is clamped between the plug 11 and the shouldered stem by the action of the spring. This is an important feature of my invention, because the stem is not attached by threads or other parts to the inside of the cup. The cap 8 can be easily dismounted, and the feed-tube, with the valve 19, the stem, and the spring, can be readily removed from the chamber of the cup, whereby the engineer can easily obtain access to the passage 15 for the purpose of supplying lubricant to the moving part before starting the engine, such lubrication of the machine when it is at rest being particularly desirable in cold weather.

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

1. A lubricator having a cup, a removable cover therefor, a removable feed-tube seated in the cup, clamping devices disposed between the cover and the feed-tube and confining the feed-tube under endwise pressure between the cup and the cover, and a valve in said feed-tube.

2. A lubricator having a cup, a removable cover therefor, a feed-tube stepped removably on the bottom part of the cup, a valve within said feed-tube, and spring clamping devices interposed between the cover and the feed-tube and holding the latter under endwise pressure within said cup.

3. A lubricator having a cup, a feed-tube within the cup provided with an interior valve-seat and near its upper end with inlet-ports, a stem seated against the end of said feed-tube and projecting into the same, a valve within said feed-tube, and a spring seated against the stem and a part of the cup.

4. A lubricator having a cup, a headed and perforated plug fitted to an opening in the base of the cup, a feed-tube detachably fitted on said plug and provided with a valve-seat and with ports located near the upper end thereof, a shouldered stem seated on the tube and projecting into the same, a ball-valve within the said tube, and a spring seated on the shouldered stem and against a part of the cup.

5. A lubricator having a cup provided with a removable cover, a feed-tube mounted removably within said cup and having an internal valve-seat, a shouldered stem fitted to the upper end of the tube, a spring seated against the stem and against the cover of the cup, a washer arranged to determine the longitudinal position of the stem, and a valve within the tube.

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

JOHN MILTON STAPP.

Witnesses:

FRED E. BARBER,
J. W. MASON.