

(Model.)

T. COOPER.
LUBRICATOR.

No. 531,836.

Patented Jan. 1, 1895.

Fig. 1.

Fig. 2.

Fig. 3.

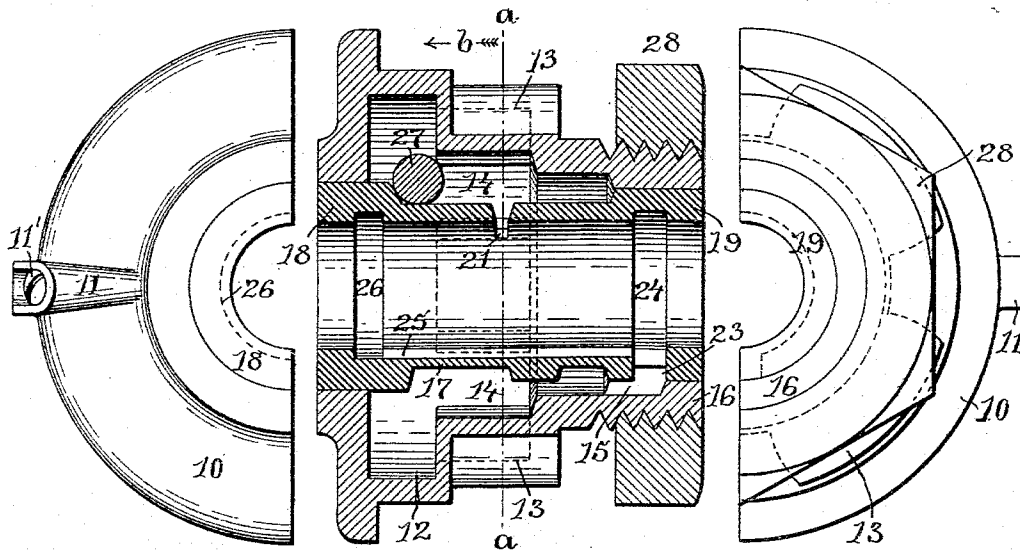


Fig. 4.

Fig. 5.

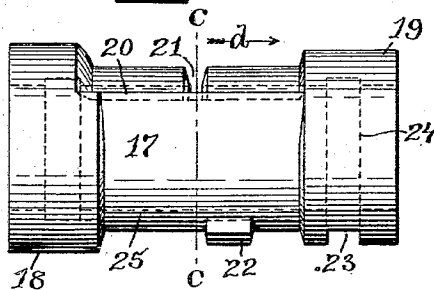
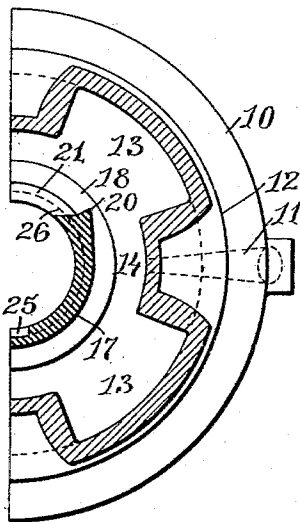
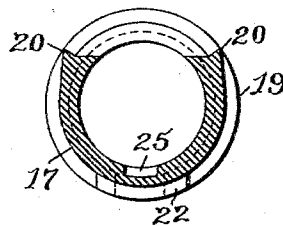


Fig. 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THEODORE COOPER, OF PROVIDENCE, RHODE ISLAND.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 531,836, dated January 1, 1895.

Application filed September 17, 1894. Serial No. 523,197. (Model.)

To all whom it may concern:

Be it known that I, THEODORE COOPER, of the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Lubricators; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in devices for lubricating bearings.

One object of the invention is to so construct a device for lubricating pulleys, or other mechanisms loosely mounted to rotate on a shaft, that a constant circulation of the lubricant may be maintained to and from the bearing surface.

Another object of the invention is to so construct a lubricating device of the nature herein described that the flow of the lubricant may be automatically regulated.

Still another object is to provide a lubricator of this construction with means whereby a supply of lubricant may be introduced into the reservoir from time to time.

The invention consists in the peculiar construction of the reservoir for containing the body of lubricating fluid.

The invention also consists in the novel construction of the bushing and its combination with an oil-reservoir.

The invention still further consists in the combination with the peculiar oil-reservoir and the novel bushing of the ball-valve free to move between the longitudinal ribs of the bushing.

The invention likewise consists in such other novel features of construction and combination of parts as will hereinafter be more fully described and pointed out in the claims.

Figure 1 represents a one-half plan view of the reservoir end of the lubricator, the mouth of the supply-passage being shown as closed by a screw. Fig. 2 represents a longitudinal section of the lubricator. Fig. 3 represents a one-half plan view from the end of the securing nut. Fig. 4 represents a one-half vertical sectional view taken on a line *a-a*, Fig. 2, looking in the direction indicated by the arrow *b*. Fig. 5 represents a side elevation of the bushing removed from the lubricator.

Fig. 6 represents a sectional view of the same taken on a line *c-c*, Fig. 5, looking in the direction indicated by the arrow *d*.

Similar numbers of reference designate corresponding parts throughout.

In the drawings 10 represents the face-plate of the lubricator, through which is formed an inclined channel 11, connecting with the interior, through which the lubricating fluid may be introduced, this channel being closed by a screw-plug 11'. The central portion of the plate 10 has a circular opening through which the bushing may be inserted. Extending from the inner side of the face-plate is an annular reservoir 12, beyond which is located a series of chambered projections 13—13 of an outside diameter equal to that of the reservoir 12 and increasing the capacity of the same, while connecting these chambers is an annular space 14. Again, beyond the chambered projections the outer diameter of the lubricator wall is reduced, the inner bore being also reduced in diameter and having the channel 15 extending toward the open end of the screw-threaded sleeve 16.

The bushing 17 has enlarged ends 18 and 19 which closely fit the bore of the plate 10 and of the sleeve 16 its central portion being contracted in diameter and furnished with the longitudinal-ribs 20—20 between which is the lateral outlet 21. Extending from that portion of the wall opposite the outlet 21 is the stud 22 which fits into the channel 15 and prevents the independent rotation of the bushing. Through this portion of the enlarged end 19 is formed the opening 23 connecting with the annular groove 24 formed in the inner surface of the end 19, this being connected by the longitudinal groove 25 with the annular-groove 26 in the inner surface of the end 18. The ball-valve 27 is free to move on the contracted surface of the bushing between the ribs 20—20, its movement and the space it occupies tending to interrupt the flow of lubricant to the outlet 21.

The sleeve 16 is furnished with a nut 28 whereby after the lubricator has been inserted through a central opening in the pulley, trolley, &c., for which it is adapted, the whole may be secured in place.

When a supply of oil or other fluid lubricant is placed in the reservoir and the lubri-

cator is rotated, the oil passes through the outlet 21 in the bushing to the inner surface of the same and is applied to the shaft on which the bushing is journaled, the surplus 5 collecting in the groove 25 and passing to the grooves 24 and 26. From the groove 24 the surplus then passes back through the wall of the bushing to the channel 15 and so to the reservoir.

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

1. In a bushing lubricator for loose pulleys, the combination with an annular reservoir 15 open at its center to receive the bushing and having a series of chambered projections radially disposed beyond the reservoir, and a screw-threaded sleeve extending from the reservoir having an inner channel, of a bushing, 20 extending through the reservoir and secured from independent rotation, having enlarged ends one of which is furnished with an opening, longitudinal ribs on the reduced portion of the bushing and an outlet located between 25 the ribs, and a ball-valve movable in the reservoir between the ribs of the bushing.

2. The combination with the reservoir 12 partially closed by the face-plate 10 through which is formed the passage 11, the chambered projections radially disposed around 30 the contracted portion 14 of the reservoir, and the sleeve 16 having the channel 15, of the bushing 17, having the enlarged ends 18 and 19, adapted to fit the bores of the face-plate and of the sleeve 16, the ribs 20 on the 35 contracted portion of the bushing, the outlet 21 between these ribs, the opening 23 in the end 18, the stud 22 extending from the contracted portion between the ends, the annular grooves 24 and 26 formed in the inner sur- 40 faces of the ends and the longitudinal-groove 25 connecting these annular grooves, the ball 27 movable in the reservoir between the ribs 20—20, and the nut 28 for securing the lubricator in place, as described. 45

In witness whereof I have hereunto set my hand.

THEODORE COOPER.

Witnesses:

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JOSEPH A. MILLER.