

**No. 688,884.**

Patented Dec. 17, 1901.

**F. J. RIPPL.**  
**LOOSE PULLEY LUBRICATOR.**

(Application filed Dec. 22, 1900.)

(No Model.)



# UNITED STATES PATENT OFFICE.

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## LOOSE-PULLEY LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 688,884, dated December 17, 1901.

Application filed December 22, 1900. Serial No. 40,811. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS J. RIPPL, a citizen of the United States, residing at Coshocton, in the county of Coshocton and State of Ohio, have invented certain new and useful Improvements in Loose-Pulley Lubricators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to lubricators of the type for automatically oiling loose pulleys, trolley-wheels, and analogous rotating parts.

The object of the invention is the provision of a device of the character aforesaid which will supply the oil in determinate quantity, according to speed and work, and only when the part carrying the lubricator is in action, the feed ceasing when the part comes to rest, thereby preventing waste of oil.

The lubricator may be a part of the pulley or other rotary device to be oiled or may be separate therefrom and constructed with a view of being attached thereto, the size and shape being immaterial so long as the essential features are preserved.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a lubricator embodying the invention, showing it applied. Fig. 2 is a section on the line X X of Fig. 1. Fig. 3 is an enlarged section of the feed-tube and adjunctive parts, showing the relation of the latter when the oil is cut off. Fig. 4 is a view similar to Fig. 3, showing the relative disposition of the parts when the valve is unseated to admit oil to the part to be lubricated.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The lubricator consists of a hollow body 1, which constitutes the reservoir or fount for containing the lubricant to be fed to the moving surfaces to be oiled. This body or reservoir may be of any form and size, according to the required capacity and specific purpose for which it is designed. In the preferable construction the reservoir or body is of annular formation, whereby the pulley or other part to which the lubricator is applied is not thrown out of balance. Within the purview of the invention it is unimportant whether the reservoir is an integral part of the pulley or rotating part or is separate therefrom and adapted to be attached thereto. As shown, the lubricator is in the nature of an attachment and is of circular outline. The lugs 2, applied to the body of the lubricator, are apertured and receive fastenings, by means of which the device is adapted to be connected to the spokes of a pulley or other rotating part. It is to be understood in this connection that any suitable means may be resorted to for attaching the lubricator to the part with which it coöperates.

The feeding mechanism consists of a tube 3, exteriorly threaded and provided at its outer end with a square portion 4, adapted to receive a wrench, spanner, or other tool, by means of which the tube is tightened and loosened in the manner presently to be described. A transverse opening 5 intersects the bore 6 of the tube and constitutes a duct or oil-passage. A valve-seat 7 is provided in the length of the tube at a convenient point and coöperates with the valve 8 to cut off the supply of lubricant when the pulley or other rotating part is at rest, thereby preventing waste of the oil. The valve 8 may be of any desired construction and is mounted so as to have a limited movement within the tube 3, and, as shown, the valve is preferably a ball, thereby obviating the necessity of providing means to insure a square seating of the valve, which would be necessary if of the puppet or other type. This valve has a limited movement between its seat 7 and an adjustable stop, which in the present instance is a set-screw 9, threaded into a sleeve 10, fitted into the outer end of the tube 3 and having a screw-thread connection therewith. By a proper



manipulation of the set-screw 9 the movement of the valve 8 can be controlled, so as to regulate the flow or feed of the lubricant to the part to be oiled. Should it be desirable to hold the valve seated for any purpose or from any cause, the set-screw 9 can be turned up, so as to bear against the valve 8. In order to accommodate the valve, set-screw 9, sleeve 10, and spring 11, the outer end portion of the bore 6 is enlarged, the base or inner end of the enlargement constituting the valve-seat. The outer end of the sleeve 10 is made square or otherwise constructed to enable a wrench or like tool to be fitted thereto when it is required to move the sleeve either inward or outward. The spring 10 is of the coil type and surrounds the inner end portion of the set-screw 9 and is confined between the valve 8 and the inner end of the sleeve 10 and exerts a pressure upon the valve to hold it seated under normal conditions. Upon screwing the sleeve 10 inward the tension of the spring 11 is increased, and greater force is required to unseat the valve 8, and upon backing the sleeve 10 the tension upon the spring 11 is lessened, thereby enabling the valve 8 to be unseated by a less force. The tube 3 is threaded into openings formed in coincident relation in the inner and outer walls of the reservoir or body 1, and its inner end is adapted to enter an opening 12, formed in the hub or bearing 13 of the pulley or other part to be lubricated. The tube 3, in addition to forming an essential part of the feeding mechanism, also serves to secure the lubricator to the part to be oiled. Filling-pieces 14 are interposed between the inner wall of the body 1 and the outer surface of the hub 13 when the diameter of the inner circle of the lubricator is greater than the diameter of the outer circle of the said hub. These filling-pieces 14 may be integral with the reservoir 1 or separate therefrom, as desired. After the lubricator is placed in position upon the hub 13 it is secured by means of the tube 3, which is screwed inward until its inner end enters the outer enlarged end of the opening 12 and creates a binding action sufficient to hold the device firmly in place.

As previously stated, the valve 8 is normally held seated by the action of the spring 11, or when the lubricator has acquired a given speed the valve 8 under centrifugal action leaves its seat and permits the oil in the reservoir to pass therefrom to the part to be lubricated through the opening 5 and bore 6 of the tube 3. Where the speed of the lubri-

cator is comparatively low, the tension of the spring 11 is required to be light in order to admit of the unseating of the valve 8, and where the speed of the lubricator is high the tension of the spring 11 should be greater, so as to prevent the unseating of the valve under abnormal conditions. A greater or less amount of oil may be fed to the part to be lubricated at a given time by adjusting the set-screw 9, so as to vary the size of the oil-passage between the valve and its seat.

The lubricator may be plain or ornamental and may be constructed solely of metal or partly of metal and glass, the latter admitting of the interior being observed at all times.

To replenish the reservoir, an opening is formed in a side thereof which is closed by means of a plug 14', having a tubular stem threaded into the said opening, and said stem having a side opening 16 to receive the spout of a can by means of which the oil is supplied to the lubricator when desired. When filling the reservoir, the plug 14' is unscrewed a sufficient distance to expose the opening 16, and after the required amount of lubricant has been poured into the reservoir the plug 14' is screwed up until its head bears against the side of the reservoir and completely closes the opening through which the oil is supplied.

Having thus described the invention, what is claimed as new is—

1. In a centrifugal lubricator, a reservoir, a feed-tube for conveying the lubricant from the outer portion of the reservoir to the part to be lubricated, an inwardly-seating valve for controlling the oil-passage and adapted to be unseated by centrifugal action, a spring for holding the valve seated, and means for regulating the tension of said spring to hold the valve seated against any required centrifugal force, substantially as specified.

2. In combination, a reservoir, an oil-supplying tube, an inwardly-seating valve for controlling the passage through said tube and adapted to be unseated by centrifugal action, a spring for holding said valve seated, a sleeve having adjustable connection with the oil-tube and adapted to regulate the tension of the said spring, and a stop for limiting the play of the valve and passing through the said sleeve, substantially as set forth.

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

FRANCIS J. RIPPL. [L. S.]

Witnesses:

D. H. MORTLEY,  
JACOB WERNER.