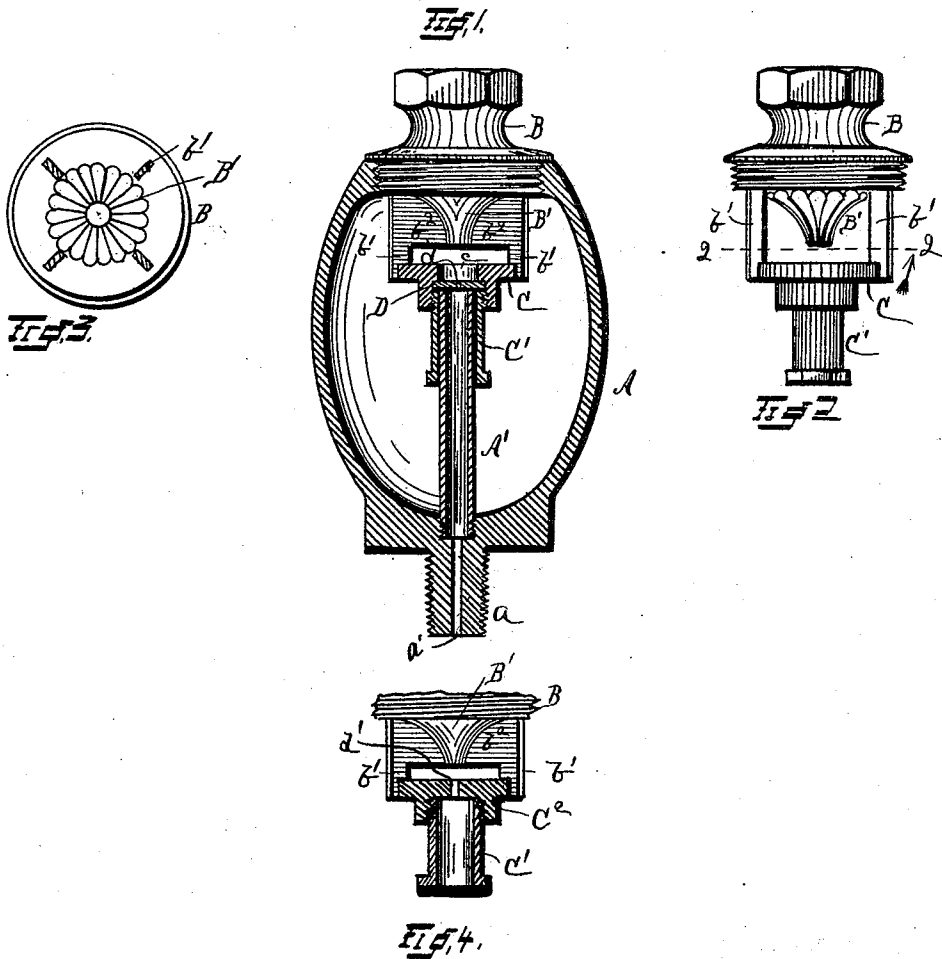


(Model.)

L. MERTENS.
LUBRICATOR.

No. 515,404.

Patented Feb. 27, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

LOUIS MERTENS, OF ERIE, PENNSYLVANIA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 515,404, dated February 27, 1894.

Application filed August 5, 1893. Serial No. 482,419. (Model.)

To all whom it may concern:

Be it known that I, LOUIS MERTENS, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in 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 and particularly to such as are used for lubricating the crank pins of steam engines or carried by the movable parts of machines of various kinds, and wherein the oil is agitated by the reciprocating or other action of the part to which the lubricator is attached.

My invention consists in the construction and combination of parts as will be hereinafter fully described and pointed out in the claims.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 is a vertical central section view. Fig. 2 is an elevation view of the cap and parts carried thereby, detached from the cup. Fig. 3 is a transverse section on the line 2—2 in Fig. 2. Fig. 4 shows a modified construction of the parts carried by the cap, the same being in vertical section.

A marks the cup body; *a*, its attaching stem; *a'* its discharge opening; *A'* the contained discharge tube; B, the cap or screw plug which closes the top of the cup; *B'* a deflecting cone formed on the lower end of the plug; *b'*, hangers attached to the plug which supports the tube-cover, C; *b²* wings or partitions extending from the hangers *b'* to the cone *B'*; C, a disk which forms a cover for the tube *A'*; *C'*, a sleeve extending down from the disk and over the tube *A'*; *c*, an opening through said disk; D, a diaphragm held within said opening *c*; *d*, a drip hole in said diaphragm; *d'* the drip opening in the disk C, when as in Fig. 4.

In this class of lubricators the oil, when agitated by the reciprocal or other movement of the cup, is thrown up against the top of the cup, and means are provided for directing a part of the oil into the discharge tube which extends above the main body of oil.

Various devices for directing the oil into

the discharge tube have been provided, and my invention consists primarily in improved means for this purpose.

One of the leading features of my invention consists in having all the means for catching the swashed-up oil and conveying the proper amount thereof into the discharge tube connected to and removable with the cap or plug, B. This is not broadly new, as will be seen by reference to Letters-Patent No. 86,540, issued to D. Harrigan February 2, 1869, on which construction my invention may be considered as an improvement.

The construction of my device is as follows: The cup or shell A, may be of any desired material or form, but as shown it is made of cast metal, such as brass, and is elliptical or egg-shaped which shape is especially desirable, particularly in the upper portion, as it directs the swashing oil toward the center of the cup at the top; but this feature is not new with me, as it is shown in Letters-Patent No. 239,461, issued to S. W. Davis March 29, 1881. The means for attaching the cup, to wit, the screw shank *a*, is common in cups of this character; and the attaching means is immaterial as it forms no part of my invention. The cap or plug B, is preferably screwed into the cup shell, and on its lower face is a depending cone *B'*, which may be made plain as in Fig. 1, or fluted as in Figs. 2 and 3. This cone is made so that, when the plug is screwed down to place, the edge of the base of the cone is just even with the top of the cup so that the surface of the cone forms a continuation of the swash or dash lines of the sides and top of the cup, and so it serves as a deflector and directs the swashed up oil which comes in contact with it directly downward at the center of the cup. Directly below the cone is a disk C, supported from the plug by hangers, *b'*. If desired the hangers may be extended inwardly so as to intersect or connect with the cone, thus forming deflecting wings, *b²*, as shown in Figs. 1 and 4. The object of channeling the cone, either by means of flutes as shown in Figs. 2 and 3, or by wings as shown in Figs. 1 and 4, is that the swash of the oil is deflected and its force concentrated by the converging sides of the channels toward a central point, at which point in my device is the drip opening. This

result is of course, much more effectually accomplished by the use of the wings as they make much wider and deeper channels and catch and deflect a much greater proportion of the oil as it is swashed against them, hence I prefer this construction.

Connected with the disk C, and depending from it, is a sleeve C', which extends down over the discharge tube A'. This sleeve entirely prevents oil from gaining access to the tube A', except through the provided opening for the purpose.

In Fig. 4 I show the disk C provided with a small opening, d', directly under the apex of the cone. Such a construction is sufficient except where it is desirable to vary the size of the opening to suit the fluidity of the oil used or the amount of oil necessary to be consumed. To allow for such variation I provide a changeable diaphragm D, which is secured in the disk at the upper end of the sleeve, C', in which case the disk is provided with a large opening c, opposite the apex of the cone, the diaphragm D closing said opening and being provided with a small opening d.

The users of my cups will be provided with several diaphragms for each cup, and these will have openings, d, of varying size, and the user can insert in the cup a diaphragm having an opening of the proper size to pass the proper amount of oil.

In all devices of this kind with which I am acquainted wherein there is a cover for the discharge tube in which is a drip opening (properly so called) the cover is supported by the discharge tube. By attaching this cover to the plug, it is always removed from the cup with the plug, so that it can be readily examined and cleaned. This construction is particularly advantageous where a drip opening is used, because being so much smaller than the discharge tube, it forms the only place in the discharge passage liable to become stopped. When the cover with this small opening is attached to the discharge tube and the cup is in place on a bearing, it is impossible to see whether it is stopped or not. When it is attached to the plug, as in my device, and is removed with the plug, it has the light on both sides of the opening, so that it can be readily seen whether or not the opening is stopped. This construction is also particularly advantageous in connection with the removable diaphragm in which is the drip opening, as the position of the top of the tube with relation to the surrounding cup is such that it would be much more difficult to remove it from the top of the discharge tube, than is the case when it is carried by the plug, and consequently lifted out of the cup with the plug.

What I claim as new is—

1. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein, of a downwardly deflecting cone at the top of said cup

having channels formed by wings or plates extending radially from the surface of the cone and converging at the apex of said cone, said apex being above said tube for the purposes set forth.

2. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein, of a downwardly deflecting cone at the top of said cup, and a cover for said discharge tube having a drip opening opposite the apex of said cone.

3. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein, of a downwardly deflecting cone at the top of said cup having channels therein converging at its apex, and a cover for said discharge tube having a drip opening opposite the apex of said cone.

4. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein, and the plug on said cup, of a deflecting cone depending from said plug, and a cover for said discharge tube supported by hangers from said plug and having a drip opening therein opposite the apex of said cone.

5. In a lubricator of the class named, the combination with the cup, the upwardly extending discharge tube in said cup, and the plug of said cup, of a deflecting cone depending from said plug, a cover for said discharge tube, supported by hangers from said plug and having a drip opening therein opposite the apex of said cone, and wings which are formed by extending said hangers inwardly so as to intersect or connect with said cone and which converge toward a central axis in line with said drip opening.

6. In a lubricator of the class named, the combination with the cup, A, the upwardly extending discharge tube therein rising above the oil level, of the plug, B, on said cup, of the cone, B', depending from said plug, and disk, C, provided with a removable diaphragm, D, with a drip opening therein opposite the apex of the cone, said disk being below said cone and carried by said plug and said disk and diaphragm serving as a cover to the discharge tube.

7. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein; of a disk over said discharge tube having a central opening therein; and a removable diaphragm carried by said disk and filling said opening therein, and in which is a drip opening leading to the discharge tube; said disk and diaphragm forming a cover for the discharge tube.

8. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein; and the plug of said cup; of a disk supported by said plug, and having an opening therein over the discharge tube; and a removable diaphragm carried by said disk in which is a drip open-

ing leading to the discharge tube; said disk and diaphragm forming a cover for the discharge tube.

5 9. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein; and the plug of said cup; of a cover for said discharge tube carried by said plug and in which is a drip opening leading to the discharge tube.

10 10. In a lubricator of the class named, the combination with the cup having an upwardly extending discharge tube therein; and the plug of said cup; of the disk, C, supported by said plug and having an opening through its

center and an internally threaded boss on its 15 under side; the diaphragm, D, having the drip opening therein and which is placed within said boss; and sleeve, C', screwed into said boss against the diaphragm, D, and which, when said plug is in place in the cup, fits 20 over the discharge tube of the cup.

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

LOUIS MERTENS.

Witnesses:

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WM. MARKS, Jr.