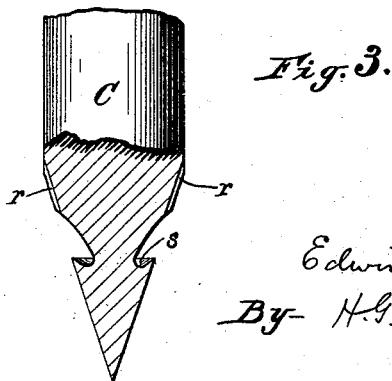
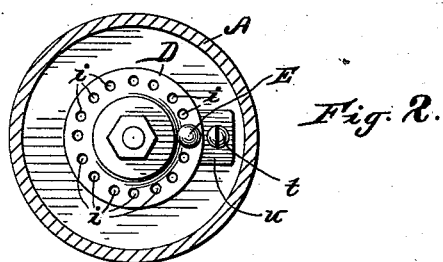
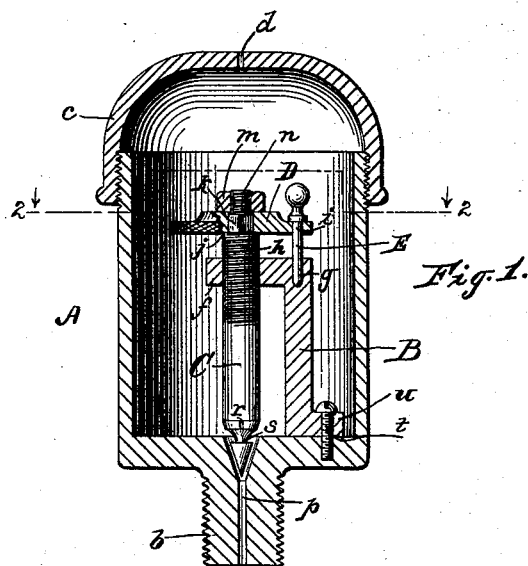


(No Model.)

E. D. BANGS.  
LUBRICATOR.

No. 494,315.

Patented Mar. 28, 1893.



Witnesses,  
John E. Wiles,  
H. E. Oliphant

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Attorney.

# UNITED STATES PATENT OFFICE.

EDWIN D. BANGS, OF MILWAUKEE, WISCONSIN.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 494,315, dated March 28, 1893.

Application filed June 3, 1892. Serial No. 435,407. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN D. BANGS, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee, and in the State of Wisconsin, have invented certain new and useful Improvements in Oil-Cups; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its objects to provide for an accurate regulation of the feed from an oil-cup, as well as to absolutely insure the maintenance of this feed, regardless of vibration on the part of the machinery to which the cup may be connected, and to prevent sediment or grit, in the oil, from clogging the feed or being carried into a bearing with which said cup communicates. These objects I attain by certain peculiarities of construction and combination of parts to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a vertical transverse section of an oil-cup provided with my improvements; Fig. 2, a horizontal section of the same on line 2—2 of the preceding figure; and Fig. 3, an enlarged elevation, partly in section, of a portion of a peculiar feed-stem that constitutes one of the features of my invention.

Referring by letter to the drawings, A represents an ordinary oil-cup provided with the usual nozzle *b* and removable cover *c*, the latter having a vent *d* therein.

Rigidly secured to the interior of the cup, is a support B that is preferably in the form of a vertical standard terminated at its upper end in a horizontal arm *f* that has a screw-threaded opening therein, and, in line with this opening, the standard is provided with another opening or recess *g* for the purpose hereinafter described.

Engaging the screw-threaded opening in the standard-arm *f* is a corresponding thread *h* cut on a stem C, and this stem is provided with a head D that has a series of openings *i* therein, these openings being preferably proportionate in number to that of the threads to the inch on said stem and arranged on a circle equi-distant apart, the diameter of this circle being such that said openings may be brought into successive register with the re-

cess *g* in the standard. It is essential that the head D be rigid with the stem C, and to this end it may be made in one piece therewith or joined thereto by any suitable means, but as a matter of preference, as well as convenience in manufacture, especially to facilitate the cutting of the screw-thread *h* on said stem I prefer to reduce the upper extremity of the latter, square a portion of this reduced extremity and screw-thread the remainder of the same. By this construction I provide a shoulder *j* on the stem for the support of the head, the latter having a central opening corresponding in shape and dimensions with the squared portion *k* of said stem, on which it is positioned, and by means of a nut *m*, run on the screw-threaded portion *n* of the reduced extremity of the aforesaid stem, said head is held down against said shoulder. The head D is preferably milled on its periphery, and by means of a vertical pin *E*, engaging any one of the openings *i* of said head and the registering recess *g* in the standard B, the stem C is locked in the position to which it may have been vertically adjusted, and consequently said stem cannot be effected by the vibration of the machinery to which the cup may be connected, this result being of especial advantage when said cup is used on locomotives. The openings *i* in the head being proportioned, as above described, it will be apparent that as each succeeding one comes into register with the recess in the standard, the stem will have moved vertically a predetermined fraction of an inch, and consequently its adjustment in either direction may be accurately determined.

The lower portion of the stem C is in the form of a conical valve that enters the nozzle *b* of the cup A, the upper extremity of the passage *p* in this nozzle being of a suitable contour to form a seat for said valve, the latter being provided with channels *r* at its upper terminus and reduced about midway of its length to form a concavity *s*, this concavity being for the arrest of such grit or sediment as may be in the oil fed from said cup.

In Fig. 1, the valve is shown a considerable distance off its seat, for convenience in the matter of illustration, but it is to be understood that in practice this valve is set to per-

mit the feed of the oil, within certain limits, and that while grit or sediment in this oil may pass down through the channels *r* of said valve, it will be arrested in the concavity *s* above described and thereby kept away from the bearing to which the cup is connected. It will also be seen that while the primary space intermediate of the valve and its seat may clog up by reason of grit or sediment, the additional space formed by the channels *r* will permit the oil to pass down even though some of said grit or sediment be carried therewith and arrested by the concavity *s*, as previously set forth.

As shown, the standard B is preferably secured in position by a screw *t* passed through a lug *u* at its lower end and engaging a suitable recess in the bottom of the cup. Consequently if the cup and feed mechanism are to be cleaned it is only necessary to loosen the screw *t* in order that the standard B and parts connected thereto may be removed from said cup without disturbing the predetermined adjustment of the valve.

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

1. The combination of an oil-cup having the passage in its nozzle terminated at one end in a conical seat, a valve that corresponds to the seat, has vertical channels and a concavity below the channels; and a stem for the valve held adjustable in the cup, substantially as set forth.

2. The combination of an oil-cup having the passage in its nozzle terminated at one end in a conical seat, a valve that corresponds to the seat, has vertical channels and a concavity below the channels; a stationary support upon the interior of the cup, a stem extended from the valve and having a screw-adjustment in the support, a head rigid on the stem, and suitable means for locking this

head to said support at various elevations due to the adjustment of said stem, substantially as set forth.

3. The combination of an oil-cup, a stationary support in the cup independent of the cap for the same and provided with two openings one of which is screw-threaded, a valve controlling the cup-outlet, a stem extended from the valve and provided with screw-threads engaging those in the support, a head rigid on the stem and having a series of openings arranged on a circle to come into successive register with the non-threaded opening in said support, and a pin for engagement with said non-threaded opening and any one of the head-openings in register therewith, substantially as set forth.

4. The combination of an oil-cup, a standard having a foot-lug provided with a screw-threaded opening that registers with a similar opening in the cup-bottom, a screw for engagement with said opening, an arm extended at right angles from the upper end of the standard, a valve controlling the cup-outlet, and a stem that extends from the valve and has a screw-adjustment in the standard-arm, substantially as set forth.

5. The combination of an oil-cup having the passage in its nozzle terminated at one end in a conical seat, a valve that corresponds to the seat, has vertical channels and a concavity below the channels; a stem extended from the valve, and a support for the stem, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

EDWIN D. BANGS.

Witnesses:

N. E. OLIPHANT,  
JOHN E. WILES.