(No Model.)

J. T. SMITH.

SELF ACTING LUBRICATING CUP AND FILTER.

No. 306,542. Patented Oct. 14, 1884.

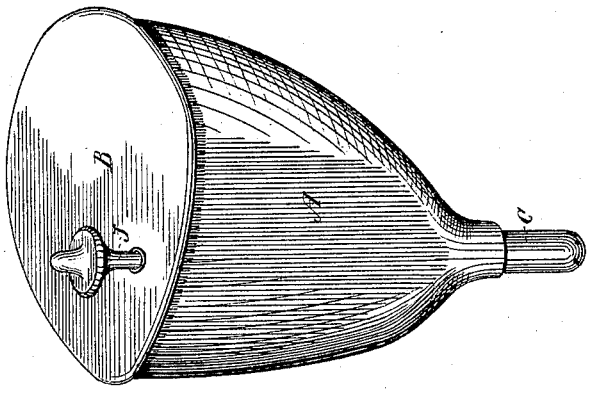

Fig. 2.

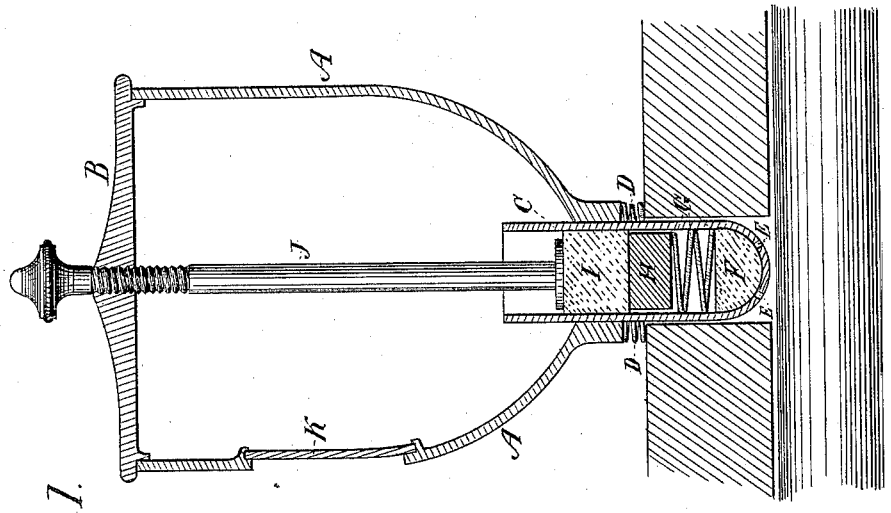

Fig. 1.

Witnesses;
Geo. H. Strong
J. S. Sowers.

Inventor,
John T. Smith
By Dewey & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JOHN T. SMITH, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF TO JOHN WILLIAMS, OF SAME PLACE.

SELF-ACTING LUBRICATING CUP AND FILTER.

SPECIFICATION forming part of Letters Patent No. 306,542, dated October 14, 1884.

Application filed June 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. SMITH, of the city and county of San Francisco, and State of California, have invented an Improvement in Self-Acting Lubricating Cup and Filter; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to a self-acting oil cup and filter.

It consists of a cup of any suitable material, with a stem adapted to pass down through the cap of the bearing or journal-box to a point nearly in contact with the revolving shaft. This stem is of considerable diameter, closed at the lower end, and having small perforations through which oil may pass out by the action produced by the revolution of the shaft. The interior of this tube is filled with alternate layers of material, which may serve as a filter, and a screw-stem extends through the cover and into the top of this tube, so that it may be made to press upon the material within it to any desired degree.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical section taken through the center of the cup. Fig. 2 shows the cup adapted to be used at a joint close to some obstruction, with a feed-tube at one side.

A is a cup, which may be made of any suitable material, and has a cap or cover, B. From the lower part of the cup a tube, C, extends downward sufficiently far to pass through the cap of a journal-box or bearing, and with its bottom or lower end, which is closed, in close proximity with the shaft. A spring, D, surrounds this tube, resting on the top of the cap, and the bowl of the cup rests upon this spring, which is sufficient to just keep the lower end of the tube out of absolute contact with the shaft, while allowing it to be so near to it that the action of the revolving shaft will produce a slight vacuum, thus causing the oil to flow through holes E, which are made in the closed bottom of the tube. The oil will flow only while the shaft is revolving, and when it ceases the flow of the oil will also stop. The upper end of the tube extends upward a short distance into the cup A, so that any sediment which may be in the oil will settle around its sides, rather than flow into it. Within this cup I place alternate layers of cork, sponge, sawdust, wood fiber, hair, wool, flax, hemp, cotton, vegetable fiber, leather, or any suitable porous or similar substance which may allow the oil to pass through, and at the same time serve as a filter. In the present case I have shown a layer of some porous substance, F, in the bottom of this tube, and above this a light spiral spring, G. Above this spring is a piece of cork, H, or other similar substance, with space enough to allow the oil to trickle through, and above this again is another layer of porous substance at I.

J is a stem, extending through the cup B, having screw-threads upon it, so that it may be turned up or down, as desired, and its lower end enters the top of the tube C, and by screwing it down it may be made to press upon the material within the tube, so as to compress it more or less; or, if desired, so much as to entirely stop the flow of the oil.

In the side of the cup A, I insert a glass, K, a suitable opening being made to receive it, so that the condition and quantity of the oil within the cup may be seen at any time. The oil within the cup will not flow out through the opening E when the shaft is stationary; but when the latter is set in motion the revolution produces a slight suction through the openings, and causes the oil to flow through at a rate which is determined by the closeness of the packing or the amount of compression. The oil will thus be filtered, and any foreign substance will be prevented from passing down to the shaft.

In some cases it will be necessary to use oil-cups where the tube must pass down in close proximity to some obstruction which would prevent the cup of the ordinary shape from being used. In order to accommodate my cup to such a condition, I form it with one side made flat, so that the oil-tube will extend down very close to this flat side, as shown in Fig. 2.

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

1. A lubricating-cup having a tube extending outwardly from its bottom, closed at the lower end, and with perforations, a filtering material within the tube, and a screw-stem extending through the top of the cup with its

lower end entering the upper end of the tube, so as to press upon the contained material, as herein described.

2. In a lubricator, the containing-cup having the tube extending a short distance upward from its bottom and downward to such a point as to be in close proximity with the shaft to be lubricated, said tube being closed at its lower end, perforated with small holes, and containing the filtering material, with a spring, together with a screw-stem, J, passing through the top of the cup with its lower end entering the tube, substantially as herein described.

In witness whereof I have hereunto set my hand.

JOHN T. SMITH.

Witnesses:
S. H. NOURSE,
H. C. LEE.