Pratt & Williams,

Lubricator.

No. 110,677. Patented Jan. 3. 1871.

Fig. 1

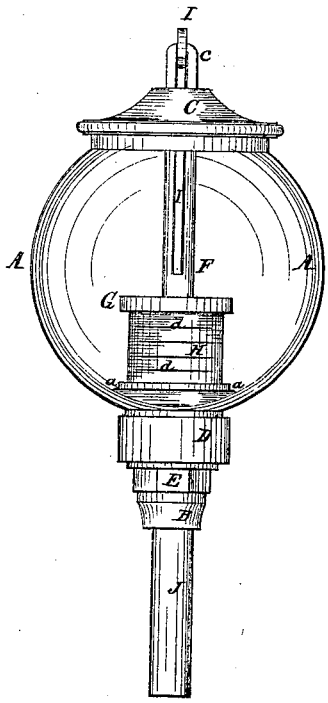


Fig. 5.

Fig. 4.

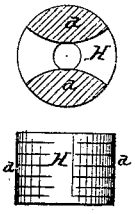


Fig. 3.

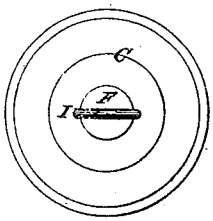
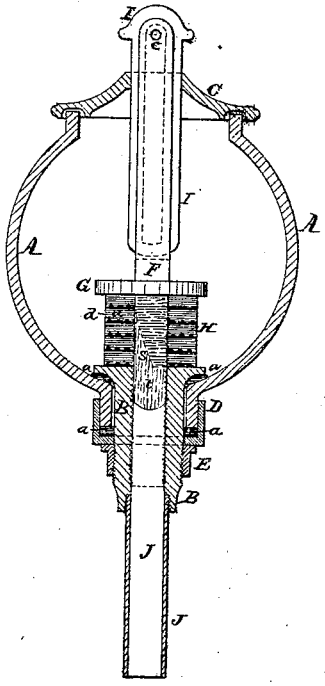


Fig. 2.



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United States Patent Office.

WILLIAM PRATT, OF PROVIDENCE, RHODE ISLAND, AND N. BANGS WILLIAMS, OF NEW YORK N. Y., ASSIGNORS TO ABBY A. WILLIAMS, OF BROOKLYN, NEW YORK.

Letters Patent No. 110,677, dated January 3, 1871.

IMPROVEMENT IN LUBRICATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, the subscribers, to wit, WILLIAM PRATT, of the city and county of Providence and State of Rhode Island, and N. BANGS WILLIAMS, of the city, county, and State of New York, have made certain Improvements in Oil-Cups used in the lubrication of engines and machinery; and in order that others skilled may understand the nature and method of construction of our invention, we hereby describe the same, and illustrate it by the accompanying drawings, which are referred to herein by letters and figures marked thereon.

Our invention has for its objects—

First, making the cover of the oil-cup the means of operating the device which graduates the flow of oil.

Second, to make this part of the device the means of securing the cover to the cup, so that it will not fall off in filtering or by jarring, as it is liable to do when not thus secured.

The third object is to furnish a filtering and graduating packing, which will allow the use of the heavier animal or fish-oils, or the lighter petroleum-oils, or mixtures of both.

We have found in practice that packings composed of wholly fibrous material, which, under compression, work satisfactorily with sperm and lard-oils, cannot, without great difficulty, be sufficiently compressed to use the petroleum or mixed oils, as petroleum and lard, with economy—*i. e.*, a cup which can be perfectly regulated, with moderate compression, to use sperm-oil, will allow a mixture of petroleum and sperm or lard-oils to run too freely through, even where the pressure upon an entirely fibrous packing is carried to its greatest practical point, and this is the case even where the mixture is of the same specific gravity as that of clear sperm-oil; and to furnish a packing which shall meet these conditions, and can easily be screwed down, is what we have achieved in this part of our invention.

Description of Drawings.

Figure 1 represents, in perspective, all parts of the cup, as made for a shafting-hanger.

The vessel A A is of glass or metal.

B is a metal stem passing through the glass, provided with the head *a* and the nut E to fasten it to the vessel, gaskets of leather or other suitable material being interposed in the joints to render them oil-tight.

The oil-duct is through the center of this socket, and is threaded to receive the regulating-screw F and the pipe J. This screw F is provided, on its threaded part, with a slit cut deeper at its point and growing shallower as it runs upward. It is also slit in the point to form a spring against the female thread of the main oil-duct in the socket, as seen in Figure 2, at S and *t*.

The regulating-screw F is divided into two parts by the broad head G, the lower part threaded and the upper part being plain, and extending upward through the cover C. This upward staff is slit centrally through it, to receive the slotted link I, shown in the opposite view in fig. 2, this latter being confined to the staff by the pin *e*.

The link I is made a little wider than the diameter of the staff, and extending each side of it.

The upper end of the link I has a slight projection or head to prevent it from slipping through the cover C.

The circular hole in the cover, which receives the staff, is slotted on each side to secure the link I, as seen in Figure 3.

We now come to the regulating and filtering device. On the slotted screw F is loosely fitted a perforated cylinder of cork, H, slit with any requisite number of slits, seen at *d d*, fig. 1, made preferably by a gang of small circular saws, and about the distance apart shown by the drawing.

Figure 4 shows this cork-cylinder both in side elevation and a top view, with the upper layer of cork removed to show, at *d d*, the form of the slots and their connection with the central hole, which receives the compressing-screw F. This method of slitting the cork, it will be perceived, leaves a certain portion of the cylinder solid, which always retains sufficient permanent elasticity to spread the slits apart, when the pressure of the screw is lessened.

The form of this packing may be varied from that which has been just described. For instance, the cylinder may be formed of thin disks of cork, laid one upon the other till a sufficient number is used to make a slightly-elastic cylinder. Again, these disks may be grooved on one surface, each grooved face lying next the plain surface of the succeeding disk. A pile or cylinder of this character is shown in section in fig. 2, and also in top view and section in Figure 5.

The parts which have not been referred to already are: A socket of metal, D, figs. 1 and 2, and which, as it is merely ornamental, is not further described; the oil-passage or duct K, seen in fig. 2; and the gaskets *a a a a*, seen in section in fig. 2.

The operation of the parts is as follows:

Supposing the cup to be filled with oil, the flow is regulated with the greatest accuracy by simply turning the cover as you would an ordinary screw, because the link I fits the slots in the cover and the slit in the screw-staff, and necessarily turns the regulating-screw with it; and, to fill the cup, the slot in the link allows the cover to be raised and turned aside without disturbing the graduating-point at which the screw is turned down, and the enlarged head of the link and the pin *e* connects the parts together.

The pressure of the broad head G of the screw

pon the cork diminishes the slits as it is screwed own, so that the oil percolates fast or slowly through hem into the tapering slot in the screw, and thence hrough the oil-duct K to the journal or shaft.

We are aware that compression of fibrous materials s used in oil-cups, both patented and unpatented; herefore we make no broad claim to this.

We are aware, also, that the broad-headed screw, vith the tapering slot as a secondary and graduating il-duct, and the compression of fibrous disks perfoated to receive this screw, are used in the oil-cup of N. BANGS WILLIAMS, patented August 11, 1868; herefore we make no claim to these features as shown nd described in this oil-cup.

We would further remark that the cork-cylinder nay be modified by perforating the cork to receive he screw, as above shown, and seating the lower end f it in a conical seat, and making the slits perpenicularly in the cork, so that endwise pressure will gather the slits more closely; but the method we have first described has been found best in practice.

From the above it will be seen that what we claim as novel and useful is—

1. Making the cover of the oil-cup the means of turning the regulating-screw by means of the slotted screw-staff, the slotted link, and slotted cover, and at the same time securing the cover to the cup.

2. The regulating the flow of oil in an oil-cup by means of pressure upon a cylinder of cork, made with a central perforation, and slits tending into this from its outer periphery, all made and operating substantially as described, or their mechanical equivalents.

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