D. P. BALDWIN.
Lubricator.

No. 216,303. Patented June 10, 1879.

Fig. 1

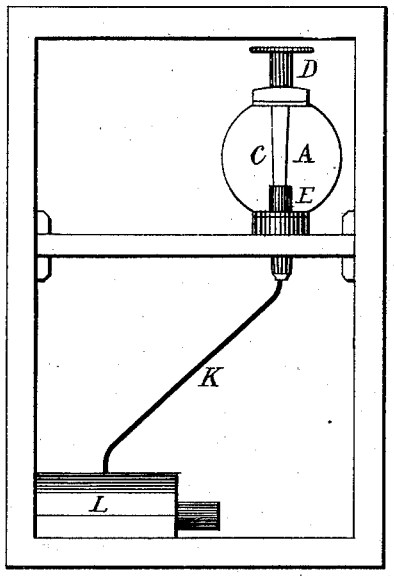


Fig. 2

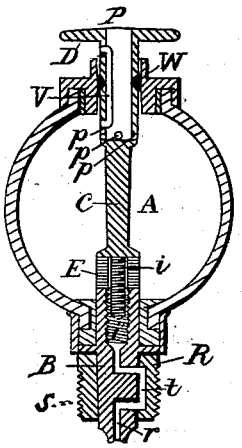


Fig. 3

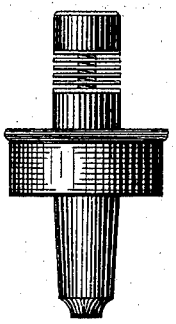
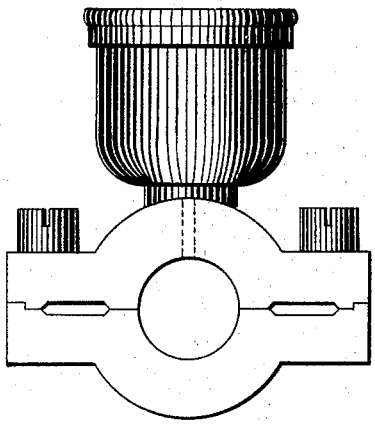


Fig. 4



Witnesses
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UNITED STATES PATENT OFFICE.

DANIEL P. BALDWIN, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **216,303**, dated June 10, 1879; application filed November 29, 1878.

To all whom it may concern:

Be it known that I, DANIEL P. BALDWIN, of the city and county of San Francisco, and State of California, have invented an Improved Lubricator; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the drawings accompanying this specification and forming a part of the same.

My invention has reference to improvements in lubricators or oil-cups for feeding oil and other lubricants to frictional surfaces; and it consists principally in the application of a filter or strainer, so that the oil or other lubricant will be compelled to pass through the filter and be purified before it passes to the friction-surface.

The device herewith represented shows an arrangement by which the filter or strainer also forms the regulator or feeder which determines and regulates the flow of oil from the oil-cup.

My invention also includes an arrangement for conducting the oil or lubricating-liquid from the cup or lubricator to the friction-surface when, by reason of location or surroundings, it is found necessary or convenient to place the cup or lubricator at a distance from the surface to be lubricated, all as hereinafter more fully described.

Referring to the drawings herewith, Figure 1 represents my oil-cup or lubricator located at a distance from and to one side of the surface to be lubricated, and having my conductor connecting them, as hereinafter specified. Fig. 2 is a vertical section of the cup and filtering-feeder. Fig. 3 is a view of the feeder-spindle. Fig. 4 shows a cast journal-box with oil-cup cast on it.

A is the cup or vessel in which the lubricant is contained, and B is the tube or passage through which the lubricant passes or is conducted to the friction-surface.

If the body of the cup is made of glass, a metal tube is secured in its bottom in the usual way, to which the feeding device is applied. This tube is made slightly tapering and with a smooth exterior. In the base R, in which the cup is supported, I secure a thimble or bushing, S, which is as long as the spindle. The passage through this bushing is made slightly tapering, and just large enough to receive the tube B, so that the tube B will fit in it and make a tight or faucet joint. The opening in the upper end of the tube B, I tap with screw-threads, so that the lower end of a screw or spindle, C, can be turned down into it. This spindle passes up through the vessel A, and has a large head, D, on its upper end above the top of the vessel. The lower end of the spindle C, I flatten on each side, so as to provide passages *i*, which lead downward and communicate with a main passage, *i'*, which leads out at the side of the tube at or near the middle of the tube B, and a short distance below the lower end of this passage I commence another passage, *r*, which leads from the outside of the tube to its center, and then downward through its center to its lower end. In one side of the bushing opposite the adjacent ends of these lower passages *i' r*, I make a recess, depression, or sink, *t*, so that when the cup and its tube B are turned so that both lower passages, *i' r*, connect with it, the oil will flow out of the upper passage, *i i'*, into the recess or depression, and thence pass into the lower passage, *r*, and thence down through the lower part of the tube to the parts to be lubricated; but by turning the cup and tube slightly the communication between the two passages is cut off and the oil ceases to feed. Upon the spindle I place a number of disks, E, which are made of paper, cloth, or other fibrous absorbent or filtering material. These disks need not be larger in diameter than the lower head of the spindle, and each one is perforated with a hole in its center, so that any desired number of disks can be slipped on over the spindle just above the tube B, and thus give any desired length of filtering-surface. Now, when the screw end of the spindle is turned down into the tube B the series or layers of disks can be compressed more or less, as desired. If sufficient force is applied the feeding can be entirely stopped; but by retreating or loosening the screw end of the spindle the oil in the cup or vessel A will be absorbed by or through the series of disks and the oil will flow down into the passage *i*. By loosening the spindle the oil can be fed as fast as desired, and every particle will be thoroughly filtered as it leaves the cup,

so that it goes to the bearing-surface in the very best condition, leaving all sediment or impurities in the cup, from which it can be occasionally cleaned.

Disks of blotting-paper make the best filter, but cloth or any fibrous filtering material can be used.

The head D of the spindle I shall usually extend upward through the cup and above its top, so that the spindle can be turned up or down by it, and thus regulate the feed.

To enable me to fill the cup readily I bore a hole, P, in the upper end of this head or spindle deep enough to enter the cup, and from the bottom of this bore I make radial holes *p* leading from it into the cup, so that by pouring the oil into the bore it will pass into the cup. The upper end of this bore should be kept plugged.

An air-duct, V, is made in one side of the passage, through which the air in the cup escapes as the oil enters.

Around the upper end of the spindle C, where it fits in the mouth of the cup, I make a groove, W, in which I place a suitable packing substance, so as to make a tight fit or stuffing-box, which will prevent the oil from being forced out of the cup when the oiler is used on crank-pins or other moving parts of machinery.

I can also cast the cup directly upon, and so as to form an integral part of, the journal-box, as shown at Fig. 4, in which case all I have to do to finish the cup is to bore out the passage between the cup and bearing, make the recess or depression in its side, and insert my improved filtering-spindle, as above specified. In some instances this will be convenient and preferable.

By this arrangement I provide a very simple and efficient oil-feeder. In fact, either of the devices mentioned—that is, the filtering device or the connected passages—will make a good oil feeder and regulator when used separately; but I prefer to use them both, as above explained.

It often happens that a bearing or friction surface which requires to be lubricated is so situated that it is impossible, by reason of its surroundings and location, to apply the cup directly above it. I have discovered that in this case I can place the lubricator or oil-cup at any desired distance to one side of it, and employ a very simple and effective device for conducting the oil to the bearing-surface. This is shown at Fig. 1, and consists of a small wire, K, the upper end of which enters the lower end of the spindle B. The wire is then bent at the desired angle, and its opposite end entered into the oil-hole of the box L, which is located below and at one side of the lubricator. The oil, as it leaves the lower end of the tube B, will cling to the wire and follow it until it drops into the oil-hole at the opposite end, thus providing an extremely simple and cheap conductor.

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

1. The cup or vessel A, with its tube B, the upper end of the passage in said tube being tapped with screw-threads, in combination with the screw-spindle C, with its grooves or passages *i r*, and filtering medium E, substantially as and for the purpose described.

2. In a lubricator, the wire K for conducting the lubricant down its exterior surface from the oil-cup to friction-surfaces at a distance, substantially as described.

In witness whereof I have hereunto set my hand and seal.

DANIEL P. BALDWIN. [L. S.]

Witnesses:
D. B. LAWLER,
H. M. CHACE.