

No. 666,263.

Patented Jan. 22, 1901.

M. F. COX.
LUBRICATOR.

(Application filed July 20, 1899.)

(No Model.)

Fig. I.

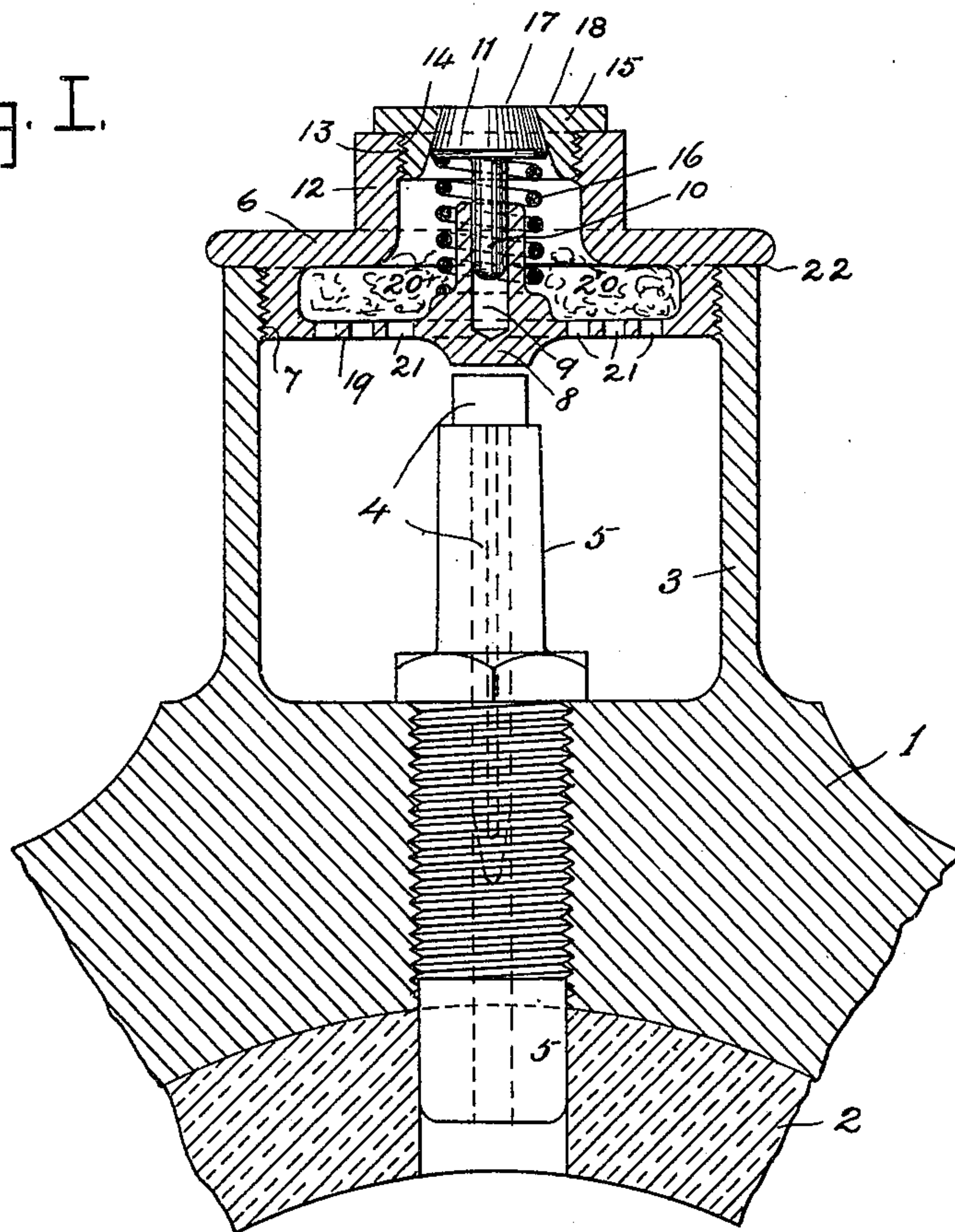
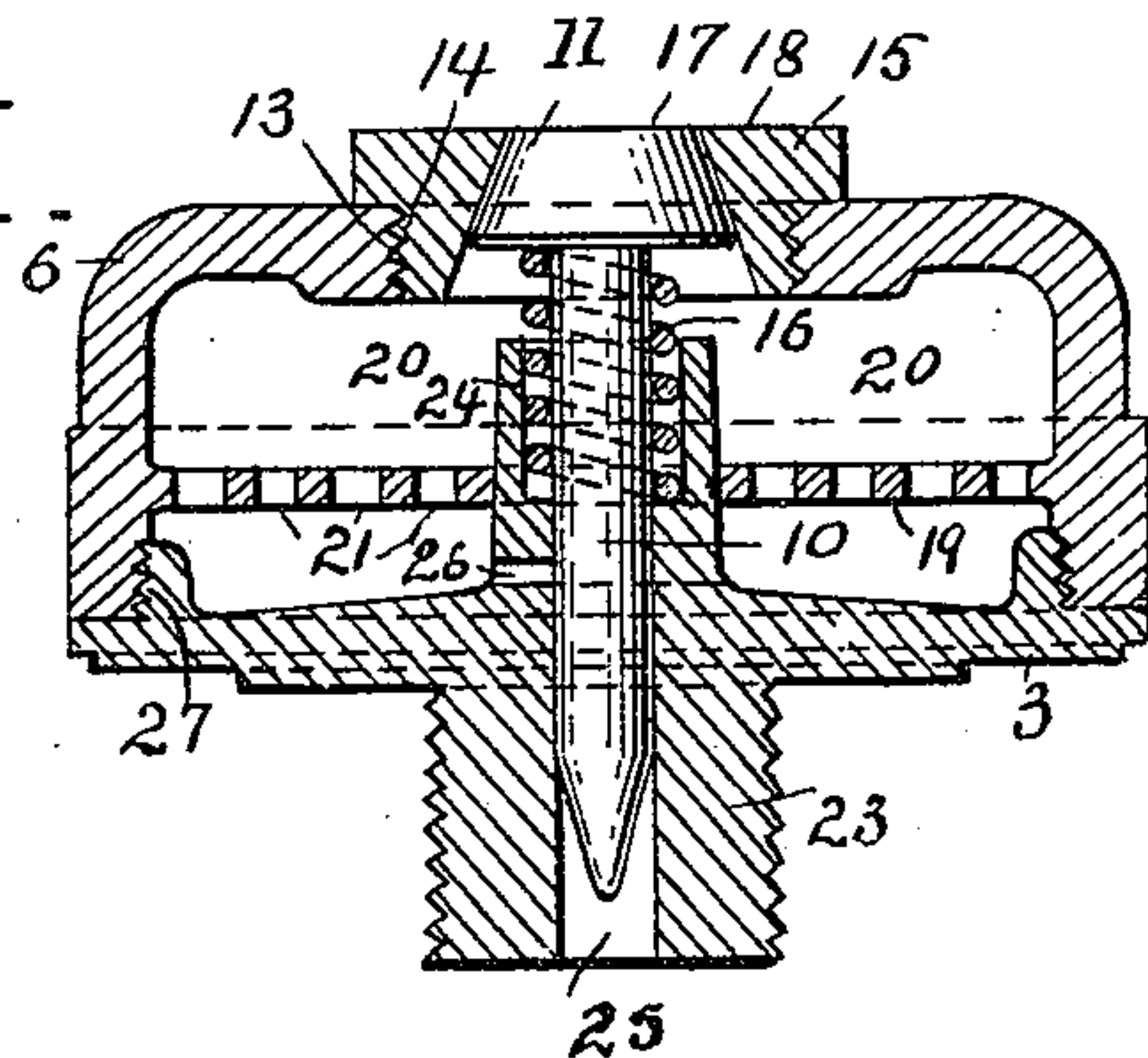


Fig. II.



WITNESSES:

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MILLARD F. COX, OF RICHMOND, VIRGINIA.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 666,263, dated January 22, 1901.

Application filed July 20, 1899. Serial No. 724,570. (No model.)

To all whom it may concern:

Be it known that I, MILLARD F. COX, a citizen of the United States of America, and a resident of Richmond city, in the State of Virginia, have invented certain new and useful Improvements in Lubricators, of which the following is a specification.

My invention relates to lubricators for stationary and moving machinery; and its object is to provide a lubricator which shall not only admit of the filling of the cup with oil without removing any part, but which shall at the same time be dust-proof.

The great objection to all lubricators which are constructed on the oil-valve principle is that they are not dust-proof and, in fact, in many cases form veritable dust-traps. The dust and fine cinder which are collected in such lubricators find their way with the oil to the bearings, which in a very short time become badly cut. This is especially so in the case of lubricators on the main rods, side rods, and cross-heads of locomotives. This objection my improved lubricator entirely overcomes, since it provides a flush surface, formed by the upper faces of the oil-valve and its seat, from which any dust that may have accumulated may be completely wiped before oiling, and it also provides a strainer or filter so arranged as to arrest any particles of dust or grit that may be present in the oil.

My invention will be more readily understood by referring to the drawings which accompany and form a part of this specification.

In the drawings, Figure I is a section through a lubricator of the kind in common use on locomotive main and side rods and showing my improved filling device. Fig. II is a section through a different form of lubricator such as is used on cross-heads and in other cramped positions and also showing my improved filling device.

In Figs. I and II the lubricator is shown as consisting of two main portions—namely, the cup and the cap. This construction is preferred, as it admits of easier access to the interior for cleaning and also since the upper portion or cap, to which I prefer my improved filling device to be attached, can be fitted to existing lubricators.

In Fig. I, 1 is a part of a rod end. 2 is a part of the "brass." 3 is the lubricator-cup,

and 4 the oil-plunger, which fits loosely in the spud 5, the bore of which forms a passage for the oil from the lubricator-cup 3 to the bearing. 6 is the lubricator-cap, which may be attached to the lubricator-cup by means of the screw-thread 7 and which is provided with the stop 8, which limits the vertical movement of the oil-plunger 4, the upper part of the said stop being extended vertically and being provided with the bore 9 to form a guide for the stem 10 of the oil-valve 11. The upper surface of the cap 6 is provided with a neck 12, having an internal screw-thread 13, which engages the external screw-thread 14 on the oil-valve seat 15.

The oil-valve 11 is pressed into its seat by means of the spring 16, the lower end of which may be supported by a shoulder formed on the stop 8, the said oil-valve being so constructed that its upper face 17 shall form a continuous or flush surface with the upper face 18 of the valve-seat 15. The oil-valve and its seat are preferably made of hardened steel, and for this and other reasons the said seat is preferably made separate from the lubricator-cap.

Extending from the stop 8 to the base-ring of the lubricator-cap there is a plate 19, forming within the lubricator-cap the chamber 20 and having perforations 21 to allow the oil to pass from the chamber 20 to the interior of the lubricator-cup 3.

It is sometimes considered desirable to so arrange the stop 8 that it may be adjusted vertically in order to lengthen or shorten the throw of the oil-plunger 4. This adjustment is readily and simply attained by placing annular liners or washers in the joint 22, formed between the rim of the cap 6 and the upper surface of the cup 3.

When about to fill the lubricator-cup with oil, the oiler first wipes all dust or grit from the flush surface formed by the upper faces of the oil-valve and its seat, and the wiping of these faces free from grit is impossible where they do not form a continuous and flush surface. The oiler then depresses the oil-valve 11 and allows the oil to pass around the said oil-valve into the chamber 20, whence it escapes by the perforations 21 in the plate 19 into the lubricator-cup 3.

Now the oil used for lubrication frequently

contains much dust and gritty matter, and this dust and gritty matter would unless removed pass with the oil to the bearings. I therefore place in the chamber 20 some cotton or other suitable material, which acts as a filter and arrests any solid matter that may be contained in the oil. This filtering material may be renewed from time to time as occasion requires. An important and valuable feature of the chamber 20 is, as can be readily seen from the drawings, that its lower portion extends over a comparatively large area, thereby providing sufficient surface to allow of the rapid filtration of the oil.

In Fig. II, which shows a form of lubricator suitable for use on cross-heads and in cramped positions, 3 is the base, having a lower threaded portion 23, adapted to engage similar threads in that part of the machine to which it is intended that the lubricator shall be attached, and also having on its upper side the neck 24, passing through which and the lower threaded part 23 is the bore 25, adapted to engage the stem 10 of the oil-valve 11. The neck 24 is further recessed to receive the lower end of the valve-spring 16. At the bottom of the neck 24 is a small hole 26 to permit the flow of oil from the lubricator through the bore 25 to the part to be lubricated. Engaging the screw-thread 27 of the base 3 is the screw-thread on the lower extremity of the cap 6. Extending from the walls of the cap 6 and making a neat fit around the neck 24 is the strainer-plate 19, having perforations 21 and forming above it the chamber 20, adapted to receive cotton or other suitable filtering material. 11 is the oil-valve, its upper face 17 forming a continuous surface with the upper face 18 of the valve-seat 15.

Having now described my invention, what I claim, and desire to protect by United States Letters Patent, is—

1. In a lubricator, the combination of a lubricator-cup, a lubricator-cap, a valve-seat removably attached to the lubricator-cap, a spring-controlled conical valve, the exposed faces of the valve-seat and of the valve together forming a plane surface when the valve

is closed, and a strainer integral with the lubricator-cap, and forming with the said cap a chamber adapted to contain filtering material, and having perforations adapted to allow the filtered oil to pass from the said chamber to the lubricator-cup.

2. In a lubricator, the combination of a lubricator-cup, a lubricator-cap, a valve-seat removably attached to the lubricator-cap, a spring-controlled conical valve, the exposed faces of the valve-seat and of the valve together forming a plane surface when the valve is closed, and a strainer integral with the lubricator-cap and forming with the said cap a chamber adapted to contain filtering material, and having perforations adapted to allow the filtered oil to pass from the said chamber to the lubricator-cup, and also having in its central part a projection, the said projection being bored so as to receive and form a guide for the stem of the valve.

3. In a lubricator, the combination of a lubricator-cup, a lubricator-cap, a valve-seat removably attached to the lubricator-cap, a spring-controlled conical valve, the exposed faces of the valve-seat and of the valve together forming a plane surface when the valve is closed, a strainer integral with the lubricator-cap and forming with the said cap a chamber adapted to contain filtering material, and having perforations adapted to allow the filtered oil to pass from the said chamber to the lubricator-cup, and also having in its central part an upwardly-extending projection bored so as to receive and form a guide for the stem of the valve, and also having another projection extending downward to form a stop for the oil-plunger, an oil-plunger, and a spud bored so as to receive and form a guide for the stem of the oil-plunger and to provide a passage for the oil from the lubricator-cup to the bearing.

Signed by me at Richmond, Virginia, this 11th day of July, 1899.

MILLARD F. COX.

Witnesses:

EUGENE JONES,
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