(No Model.)

S. W. DAVIS.

Lubricating Device.

No. 239,461. Patented March 29, 1881.

FIG. 1.

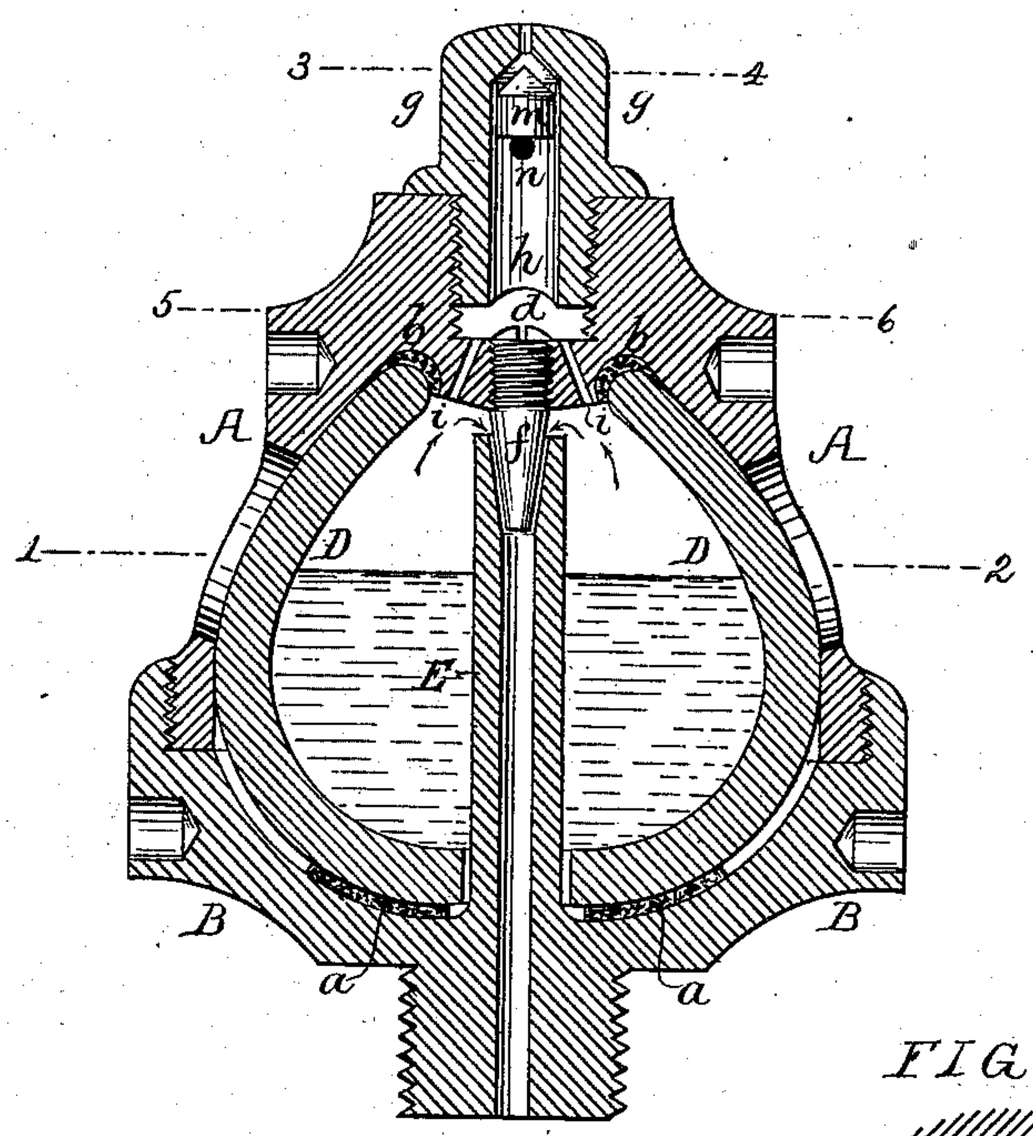


FIG. 3.

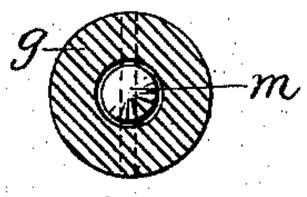


FIG. 4.

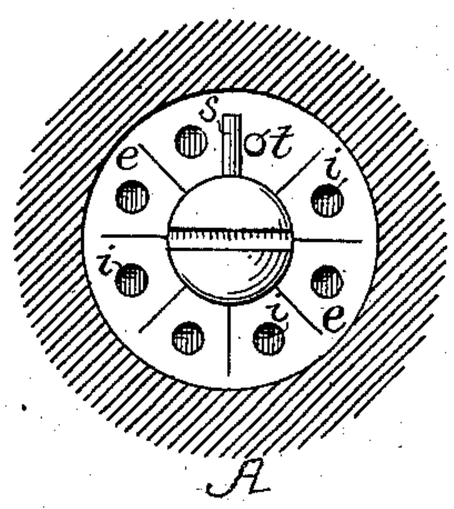
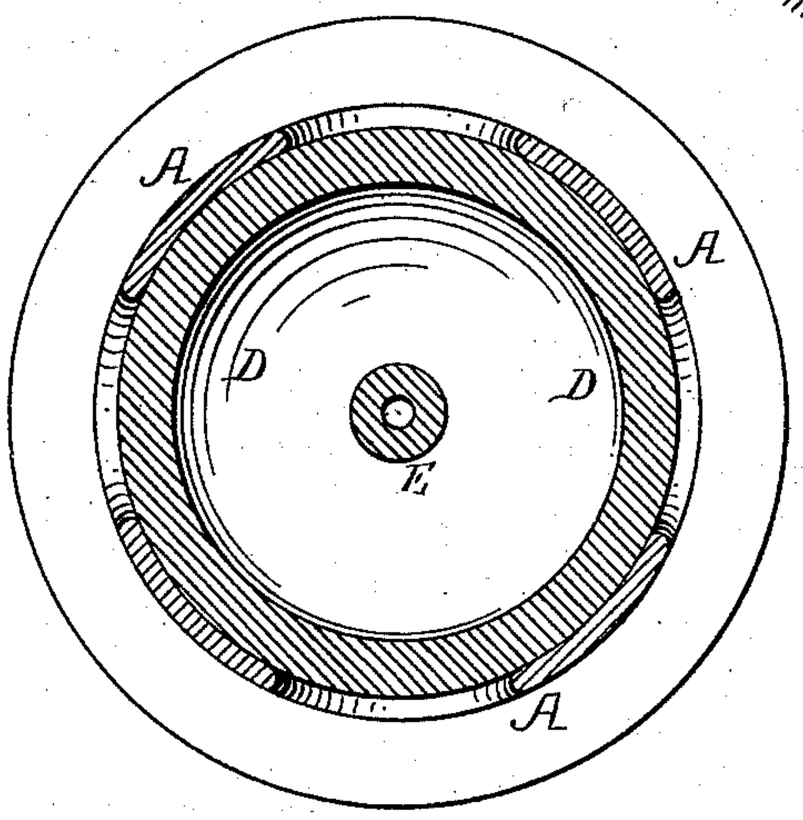


FIG. 2.



Witnesses.

Harry Smith

James F. Tobin.

Inventor.

Samuel W. Davis

by his Attorneys

Howson and Son

UNITED STATES PATENT OFFICE.

SAMUEL W. DAVIS, OF WILMINGTON, DEL., ASSIGNOR OF ONE-HALF TO WILLIAM S. COOPER, THOMAS J. JONES, JOHN W. CADBURY, JOEL CADBURY, AND JONATHAN EVANS, OF PHILADELPHIA, PA.

LUBRICATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 239,461, dated March 29, 1881.

Application filed January 17, 1881. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL W. DAVIS, a citizen of the United States, residing in Wilmington, Delaware, have invented certain Improvements in Lubricating Devices, of which the following is a specification.

My invention relates to certain improvements in that class of lubricators which are intended for application to moving parts of machinery, and in which the flow of oil to the bearing depends upon the movement of the cup, the main objects of my improvements being to provide for the proper lubrication of the bearing until the supply of oil is almost entirely exhausted, and to readily and accurately govern the volume of said supply.

In the accompanying drawings, Figure 1 is a vertical section of my improved lubricator; Fig. 2, a sectional plan on the line 1 2; Fig. 3, a sectional plan on the line 3 4, and Fig. 4 a sectional plan on the line 5 6.

The casing of the lubricator comprises the upper and lower sections, A and B, between which is confined the oil-reservoir D, the lower end of the upper section, A, of the casing being threaded and adapted to an internally-threaded recess formed in the lower section, B. A packing, *a*, of leather, cork, or other suitable elastic or semi-elastic material, is interposed between the bottom of the reservoir D and the lower section, B, of the casing, a similar packing, *b*, being fitted to a recess in the upper section, A, and bearing upon the upper edge of the reservoir. Each section of the casing has in its periphery a series of recesses adapted for the reception of a pin on a spanner, whereby the two sections may be screwed together; or, instead of being provided with recesses, these portions of the casing may be made hexagonal, octagonal, or of other suitable form for the application of an ordinary wrench.

In the upper section, A, of the casing is formed a threaded recess, *d*, between which and the interior of the reservoir D intervenes a partition, *e*, having a central threaded opening adapted for the reception of the threaded stem of a tapered valve, *f*, the latter being adapted to a conical valve-seat formed in the upper end of a tubular stem, E, which forms part of the lower section, B, of the casing, projects through a central opening in the bottom of the reservoir D, and extends almost to the top of said reservoir. Openings *i* in the partition *e* serve to establish communication between the interior of the reservoir D and the recess *d*, so that oil poured into said recess will at once find its way into the reservoir. When the lubricator is at work, however, the recess *d* is closed by a cap, *g*, in which is formed a central passage, *h*, contracted near the top, so as to form a seat for a conical valve, *m*, the latter having slight vertical play in the passage *h*, and being supported therein by a transverse pin, *n*. (See Fig. 3.)

The lubricator is intended for application to a crank-pin, cross-head, or some other portion of machinery having a rotary or vertical reciprocating movement, so that on each downward movement of the lubricator the oil in the reservoir D will have a tendency to seek the upper portion of said reservoir, and to pass between the valve *f* and its seat into the tubular stem E, and thence to the bearing to be lubricated, the amount of oil permitted to pass to the bearing being governed by the adjustment of the valve *f* in respect to its seat. In order that this adjustment may be accurately regulated, I provide the upper surface of the partition *e* with suitable graduations and furnish the stem of the valve *f* with a pin or pointer, *s*, as shown in Fig. 4. When this pointer *s* is at the zero-mark on the scale, and is in contact with the pin *t*, the valve *f* is in contact with its seat; but on turning the valve-stem to the left, by means of a suitable instrument applied to the notched head of the said stem, the valve will be raised to an extent determined by the extent of said rotary movement. For instance, each graduation of the scale may represent an elevation of the valve equivalent to a feed of five drops of oil per hour to the bearing. When it has once been adjusted the valve *f* demands no further attention until it becomes necessary to increase or decrease the flow of oil to the bearing. The valve *m* in the cap *g* opens on the upward movement of the lubricator and permits a supply of air to enter the reservoir D;

but on the downward movement the valve is closed before the oil can reach the same, and the escape of oil is thus prevented.

It will be observed that the reservoir D is pear-shaped, and one of the features of my invention consists in making the said reservoir of this or some other substantially conical interior form, in order that the area of the upper portion of the reservoir adjacent to the end of the stem E is contracted, whereby the oil, when forced to seek said upper portion of the reservoir, will be subjected to a certain amount of pressure, and thus, in its passage between the valve and its seat, exert a cleaning or scouring effect on these surfaces, and prevent the same from becoming gummed up. The contraction in the area of the upper portion of the casing also insures the proper working of the lubricator until the supply of oil in the reservoir D is almost entirely exhausted.

When that portion of the machinery to which the lubricator is attached is not in motion the oil remains in the lower portion of the reservoir D, and there is no flow of oil to the bearing.

I claim as my invention—

1. The combination of the reservoir D, open at top and bottom, the lower section, B, of the casing, having a central tubular projection, E, extending to the upper portion of the reservoir, the upper section, A, having a recess, *d*, and a partition, *e*, with valve *f* and openings *i*, the cap *g*, and the packings *a* and *b*, all substantially as set forth.

2. The combination of the reservoir D, contracted at and near the top, with the outer casing, A B, having the tubular stem E and valve *f*, forming a controllable oil-outlet located in said contracted portion of the reservoir, as specified.

3. The combination of the reservoir D, the casing A B, having the tubular stem E and regulating-valve *f*, and the cap *g*, having a valve, *m*, free to rise and fall under the influence of gravity or the movement of the cup, as set forth.

4. The combination of the cap *g*, having a central passage, *h*, contracted at the top, with the valve *m* and transverse pin *n*, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL W. DAVIS.

Witnesses:
JAMES F. TOBIN,
HARRY SMITH.