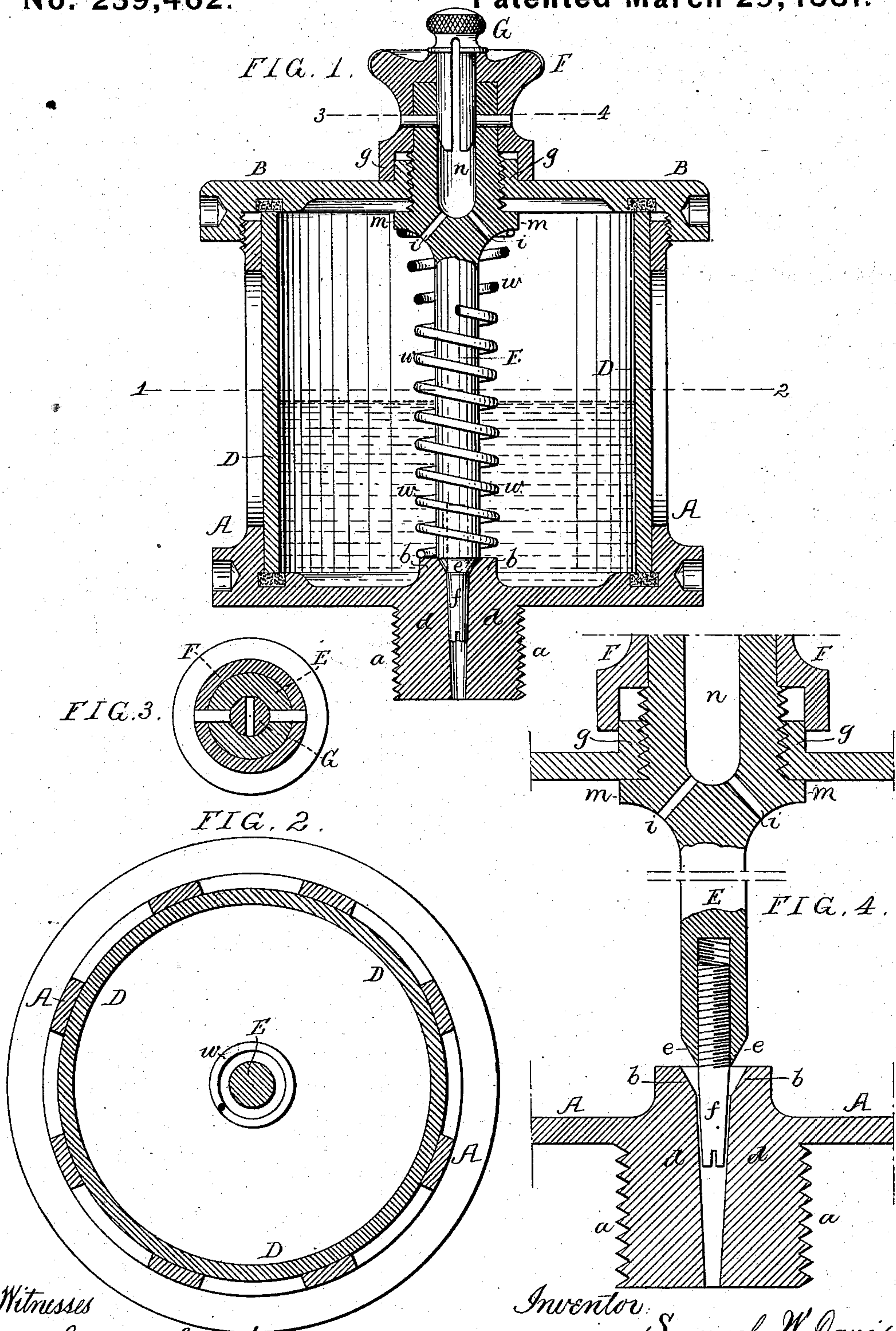


(No Model.)

S. W. DAVIS.  
Lubricating Device.

No. 239,462.

Patented March 29, 1881.



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. 239,462, 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 in which the oil flows to the bearing through a valved opening which regulates the flow, the main object of my invention being to so construct the regulating-valve as to accurately govern the flow of oil and readily cut off or re-establish said flow, a further object being to permit the ready filling of the lubricator and the free entrance of air to the oil-reservoir.

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, an enlarged section of part of Fig. 1, showing the parts in a different position.

The casing of the lubricator comprises the lower portion or body, A, and cover B, an internally-threaded recess in the cover being adapted to the threaded upper end of the body, and the glass vessel D, forming the oil-reservoir, being clamped between these two portions of the casing, suitable packing-strips being arranged at each edge of said vessel D to insure tight joints.

The body A and cap B may be provided with openings, as shown, so that they may be screwed together by means of a spanner, or they may have hexagonal or octagonal portions adapted to an ordinary wrench.

The base of the lubricator has a central tubular projection, *a*, the lower or external portion of which is threaded for adaptation to any desired piece of machinery, and in said tubular projection are formed two tapering valve-seats, *b* and *d*, adapted respectively to valves *e* and *f*, the valve *e* being formed by tapering the lower end of a spindle, E, and the valve *f* consisting of a plug the threaded stem of which is adapted to an internally-threaded opening in the said spindle E. Both valves are made in the form of inverted frustums of cones; but the valve *f* is of a much less

degree of taper than the valve *e*, and owing to its threaded stem is adjustable in respect to said valve *e*, the lower end of the plug being notched for the reception of a screw-driver, whereby the adjustment of the valve may be effected when desired. The spindle E is expanded and made tubular at the upper end, the exterior of this expanded portion having formed thereon a screw-thread, which is adapted to an internally-threaded projection, *g*, on the cover B, the threaded portion of the spindle terminating below in a shoulder formed by a flange, *m*, on the spindle.

To the spindle E, above the cover B, is secured a cap, F, in the top of which is a central opening coinciding with the passage *n* of the tubular spindle, openings *i i* serving to establish communication between said passage *n* and the interior of the oil-reservoir D, so that oil poured into the passage *n* will at once find its way into the reservoir.

Under ordinary circumstances the opening in the cap F is closed by a plug, G, which may be threaded and adapted to a threaded opening in the cap, but which I prefer to make with plain sides and a central slot, the latter extending above the top of the cap, so that while the entrance of dust and other obstructing particles is in a great measure prevented, air can at all times freely enter the passage *n* of the spindle and pass into the reservoir D. The central slot in the plug renders the opposite halves of the same elastic, so that there is sufficient friction to hold the said plug so firmly in place as to prevent accidental displacement, and yet permit the ready withdrawal of the plug for the introduction of oil.

When the spindle E is in the position shown in Fig. 1 the valve *e* is in its seat *b* and the flow of oil to the bearing through the tubular projection *a* is cut off; but by turning the cap F until the shoulder *m* of the spindle comes into contact with the under side of the cover B the spindle will be elevated and the valve *e* removed from its seat, so as to permit a flow of oil between the valve *f* and its seat *d*, the volume of which flow will depend upon the position to which the valve *f* has previously been adjusted in respect to the valve *e*. (See Fig. 4.) It will



thus be seen that the valve *e* acts as a stop-valve, and is always lifted from its seat to the same extent on properly turning the cap F, while the valve *f*, which regulates the flow of oil when the valve *e* is open, can be so adjusted in respect to the latter as to accurately govern the area of the oil-passage between said valve *f* and its seat *d*. The cap F, being exposed, can be readily manipulated in order to open or close the valve *e*, so that when the lubricator is applied to a locomotive-engine the valves can be closed instantly, thus preventing waste of oil while the locomotive is standing idle. The flange *m* prevents such an elevation of the spindle E as would permit more than the predetermined quantity of oil to pass the bearing, and in this respect my improved lubricator is more advantageous than those in which the regulating devices are on the outside of the cup, and the governing-valve is first lifted to a greater extent than necessary, and then allowed to return to a position for regulating the flow of oil.

In order to prevent the accidental lowering of the spindle E by the jarring to which the lubricator may be subjected, I interpose between the projection *a* of the base and the flange *m* on the spindle E a spiral spring, *w*, the tendency of which is to maintain the said spindle in its elevated position.

I claim as my invention—

1. The combination of the reservoir D and the casing having a tubular projection and valve-seats *b* and *d* with the spindle E, having a valve, *e*, adapted to the seat *b*, and a

plug-valve, *f*, adjustable in respect to the valve *e* and adapted to the seat *d*, said valves *e* and *f* being made in the form of inverted cones of different degrees of taper, as set forth.

2. The combination of the reservoir D, the casing having valve-seats *b* and *d*, the spindle E, having inverted-cone valves *e* and *f*, and the external cap, F, connected to said spindle E, as set forth.

3. The combination of the reservoir D, the casing having valve-seats *b* and *d* and threaded projection *g*, the spindle E, having inverted-cone valves *e* and *f* and a threaded portion adapted to said projection *g*, and the external cap, F, connected to said spindle E, as specified.

4. The combination of the reservoir D, the casing having valve-seats *b* and *d*, the spindle E, having inverted-cone valves *e* and *f*, and a shoulder, *m*, for limiting its upward movement, as set forth.

5. The combination of the reservoir D and casing, having valve-seats *b* and *d* and threaded projection *g*, the spindle E, having inverted-cone valves *e* and *f* and a flange, *m*, and the supporting-spring *w*, as set forth.

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.