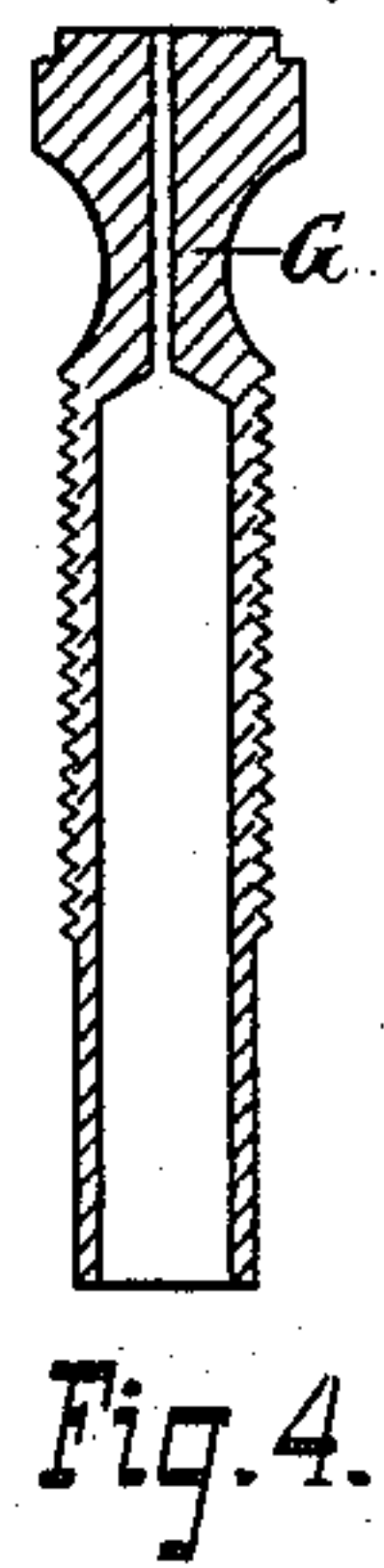
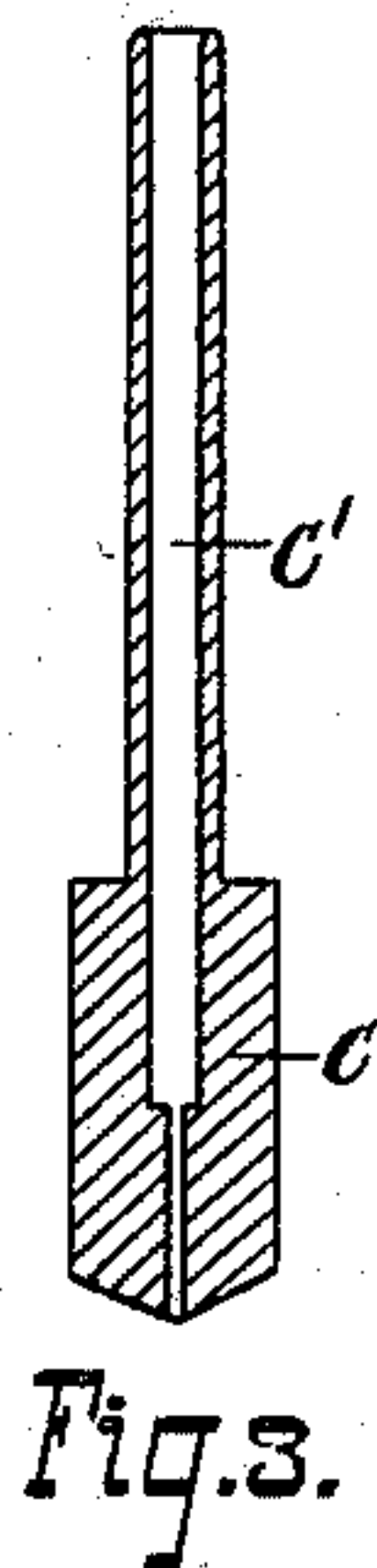
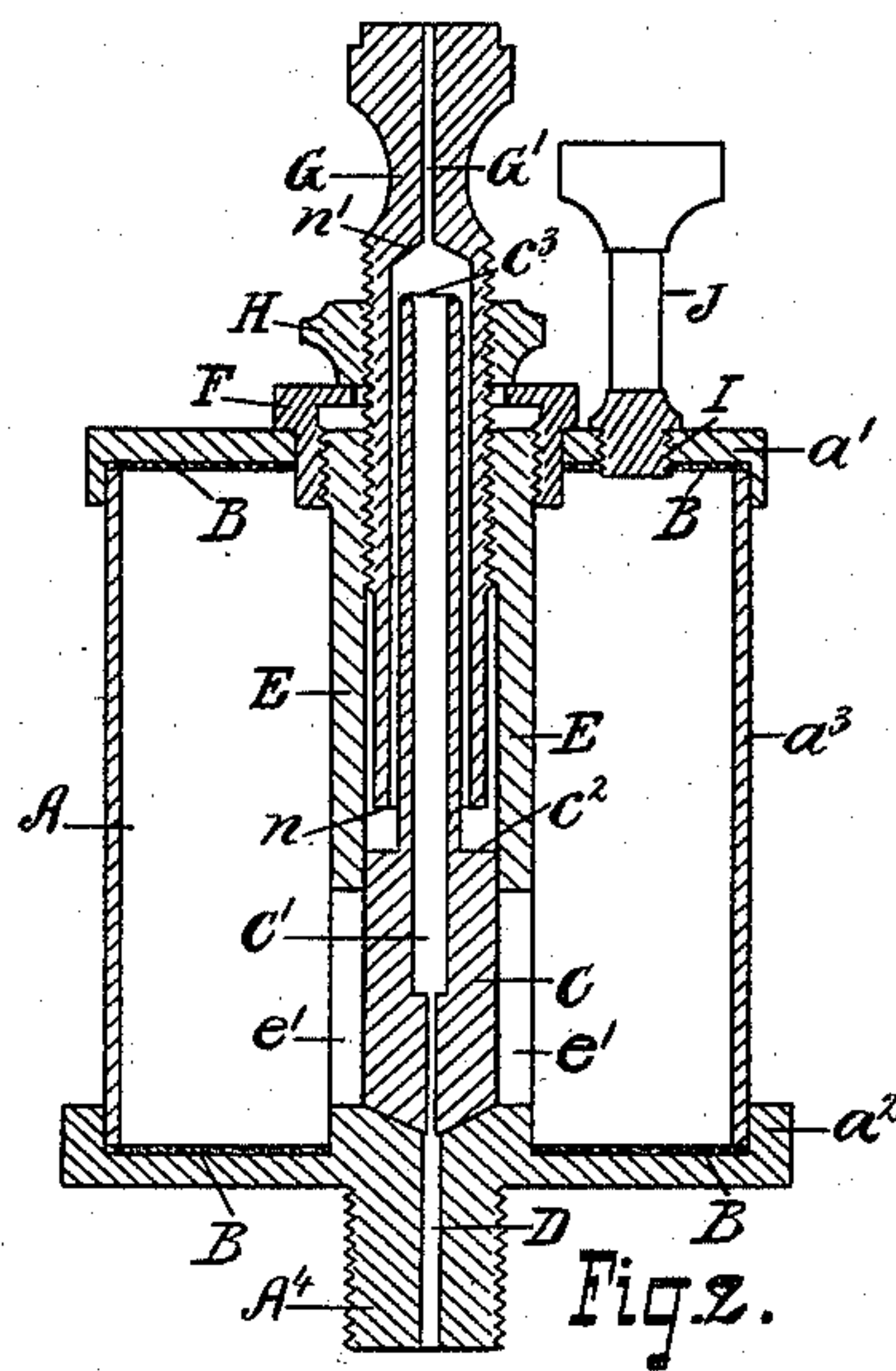
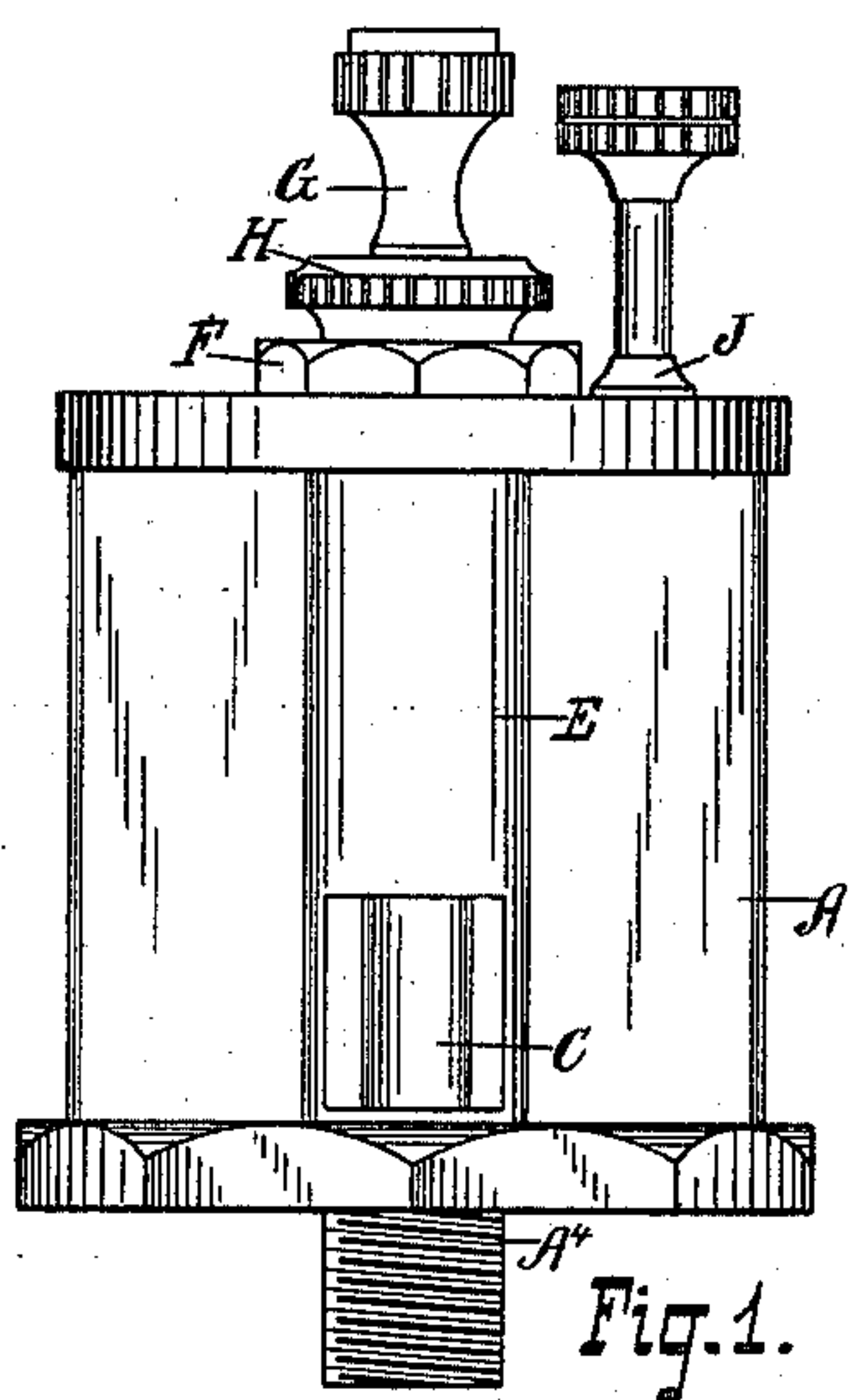


(No Model.)

T. NOPPER.  
AUTOMATIC LUBRICATOR.

No. 385,369.

Patented July 3, 1888.



Attest.  
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Carl Hayden.

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# UNITED STATES PATENT OFFICE.

THOMAS NOPPER, OF LONDON, ONTARIO, CANADA.

## AUTOMATIC LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 385,369, dated July 3, 1888.

Application filed April 2, 1887. Serial No. 233,393. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS NOPPER, a subject of the Queen of Great Britain, and a resident of London, Ontario, Canada, have invented certain new and useful Improvements in Automatic Lubricators, of which the following is a specification.

This invention relates to improvements on lubricators or oil-cups for automatically lubricating pitman or eccentric connections operating at a high speed.

These improvements consist of a loose valve, through which a longitudinal aperture is formed, said valve being operated automatically by the movement of the pitman or eccentric to permit the passage of the lubricant through the port which said valve guards. The longitudinal opening in this loose valve, in connection with a longitudinal opening through the set-nut, communicates with the outside of the lubricator to permit the free access of air to the bottom of the lubricant-reservoir and to the under side of the valve to permit the lubricant to flow regularly and perfectly free when the pitman or eccentric is operating.

It also consists of the improved construction and combination of parts of the same, as will be hereinafter more fully described and claimed, reference being had to the accompanying drawings, wherein—

Figure 1 is a side elevation of a lubricator or oil-cup embodying my invention. Fig. 2 is a vertical sectional view of same. Fig. 3 is a detail vertical sectional view of the loose valve. Fig. 4 is a detail vertical sectional view of the set-nut which regulates the movement of the valve.

A designates a lubricant-reservoir constructed of any suitable size or shape, and of any suitable material, and of one or more sections; but this reservoir is preferably constructed as shown in the annexed drawings—that is, with a cap,  $a'$ , and base  $a^2$  of metal, and the body  $a^3$  of glass; but these may all be formed in one piece and of metal or other suitable material, when constructed, as hereinafter described, with a glass body and metal base and cap. A packing of rubber, B, or other suitable material, is placed between the joints to prevent the escape of the contents of the reservoir A at those points.

C designates a loose valve, which guards the port D, which leads from the lubricant-reservoir A to the rubbing-surfaces of the pitman, eccentric, or other suitable connection requiring lubrication.

A screw-thread may be formed on a reduced portion,  $A^4$ , of the lubricator, through which the port D extends. This forms a ready and easy method of securing the lubricator to the pitman, eccentric, or other suitable connection.

$C'$  is an aperture formed in the valve C, which permits the free access of air to the bottom of the lubricant-reservoir A and to the under side of the valve C, which free access and circulation of a current of air permits the lubricant to flow regularly and perfectly free when the valve is opened automatically by the movement of the pitman, eccentric, or other similar connection to which it may be attached.

E designates a guide or guides, which retain the valve in a vertical position while in operation. These guides E may be in the form of a chamber, which has an aperture,  $e'$ , therein, as shown in Fig. 2 of annexed drawings, to permit the free access of the lubricant to the port D. These guides E may be attached to the cap  $a'$ , or to the base  $a^2$ , or to any other part of the reservoir, as found most suitable. As shown in annexed drawings, they are rigidly secured to the base  $a^2$ , and a screw-thread may be formed near the upper end, with which a screw-thread in an aperture in the cap  $a'$  may engage, or the aperture in the cap may permit it to rest on the glass body  $a^3$ , and a nut, F, may be screwed on the guide E, which would rest and press on the cap  $a'$  to firmly and securely bind the whole together, and at the same time permit of the ready and easy adjustment of the parts by simply loosening said nut.

G designates a set-nut on which a screw-thread is formed, which is fitted to engage with a screw-thread on the interior of the guides E. This permits the set-nut G to be vertically adjusted; but the screw-thread may be on the interior or exterior face of the set-nut G, and it may engage with a screw-thread on the interior or exterior of the guides E, or any other suitable part.

$G'$  is an aperture extending through the set-



nut G. This forms a convenient method of forming a clear passage for air to and through the valve C from the outside of the lubricator.

As shown in the annexed drawings, the movement of the valve C is regulated by the height of the set-nut G, because part of the stem of the valve C is shown in an enlarged portion of the aperture G', and the movement of the valve is regulated by the shoulders  $c^2$  or end  $c^3$  of the valve abutting against the end  $n$  or shoulder  $n'$  of the set-nut G, respectively. When the set-nut G is properly regulated, it may be rigidly held at that point by the check-nut H.

The construction herein described forms an easy, practical, and simple method for regulating the movement of the valve C, and thereby regulating the flow of the lubricant from the reservoir to the rubbing surfaces of the pitman, eccentric, or other suitable connections requiring lubrication, and any quantity of lubricant required may be regularly supplied.

There are several forms of construction whereby the movement of the valve C may be regulated, which would suggest themselves to the skilled mechanic; but the construction hereinbefore described is considered preferable by me.

This lubricator may be replenished with oil or other lubricant through the opening I, to which the screw-plug J is fitted to close the same when required, to prevent the contents splashing out or escaping at that point.

The operation is as follows: As soon as the pitman, eccentric, or other suitable connection to which this lubricator is secured, is op-

erated in an upward direction, the momentum of this movement causes the valve C to slightly rise. This permits the lubricant to flow into the port D. The instant that the device to which the lubricator is attached is operated in a downward direction or stops operating the weight of the valve C causes it to lower on the port D, and thereby prevent the flow of the lubricant, thereby rendering this lubricator or oil-cup automatic in its action. As the lubricant is permitted to flow into the port D only when the device to which the lubricator is secured is operated, as a necessary result, when the device to which the lubricator is attached is stationary, the port D is closed, thereby completely preventing the flow of said lubricant.

Having thus described my invention, what I claim as new is—

A loose valve, C, formed with an aperture, C', extending longitudinally through the same to permit the free access of air to the lubricant under the valve, and to allow the lubricant to flow regularly and perfectly free when the valve is raised, in combination with a guide, E, set-nut G, formed with a longitudinal aperture, G', and reservoir A, substantially as shown and described and for the purpose set forth.

In testimony whereof I affix my signature in the presence of the two undersigned witnesses.

THOMAS NOPPER.

Witnesses:

P. J. EDMUNDS,  
A. S. McLEAN.