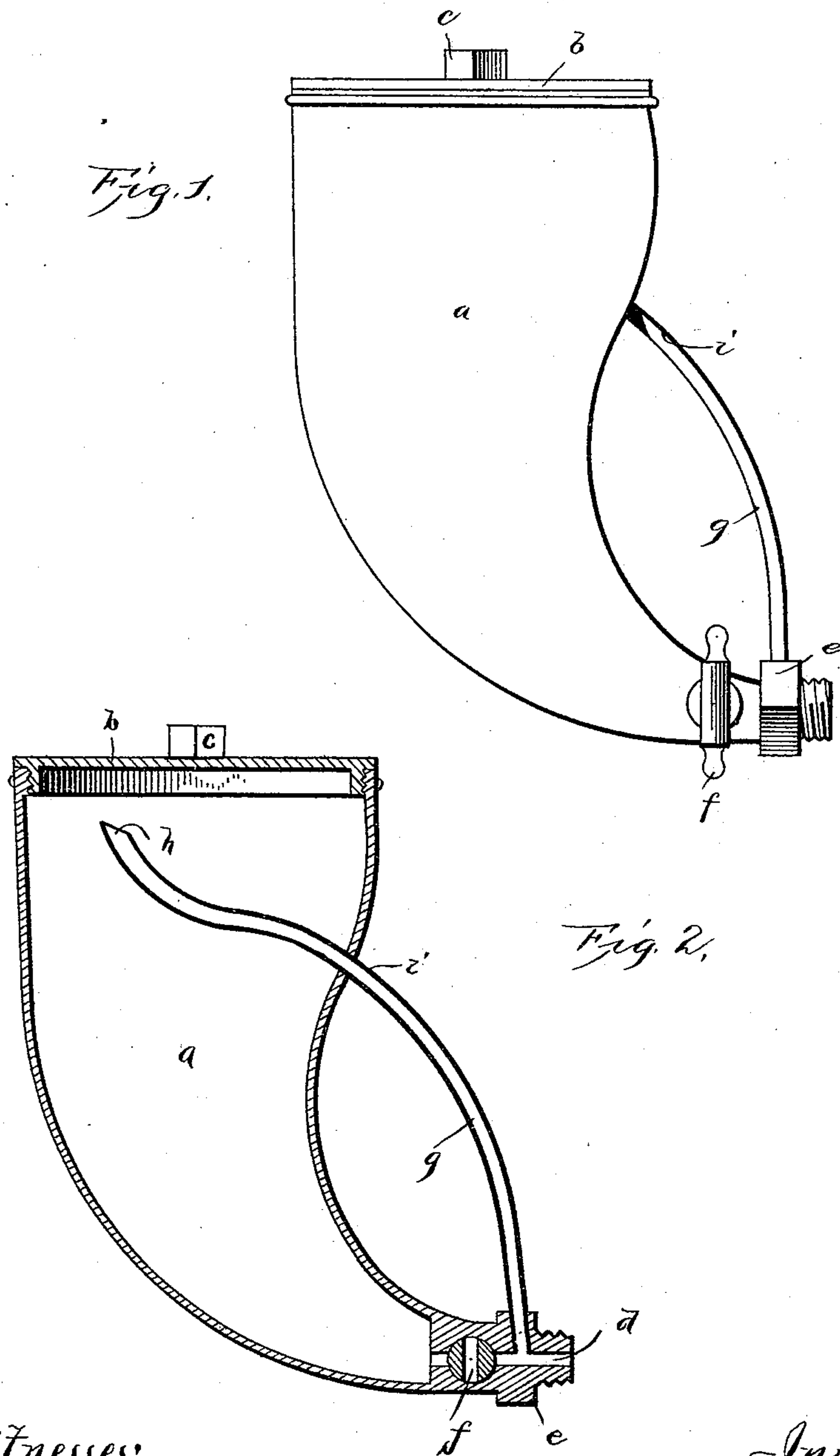


H. L. MILLER.  
LOOSE PULLEY LUBRICATOR.

No. 450,519.

Patented Apr. 14, 1891.



Witnesses:  
C. C. Ruffy  
Chas. M. Werk

per

Inventor:  
Henry L. Miller  
O. E. Ruffy  
Attorney

(No Model.)

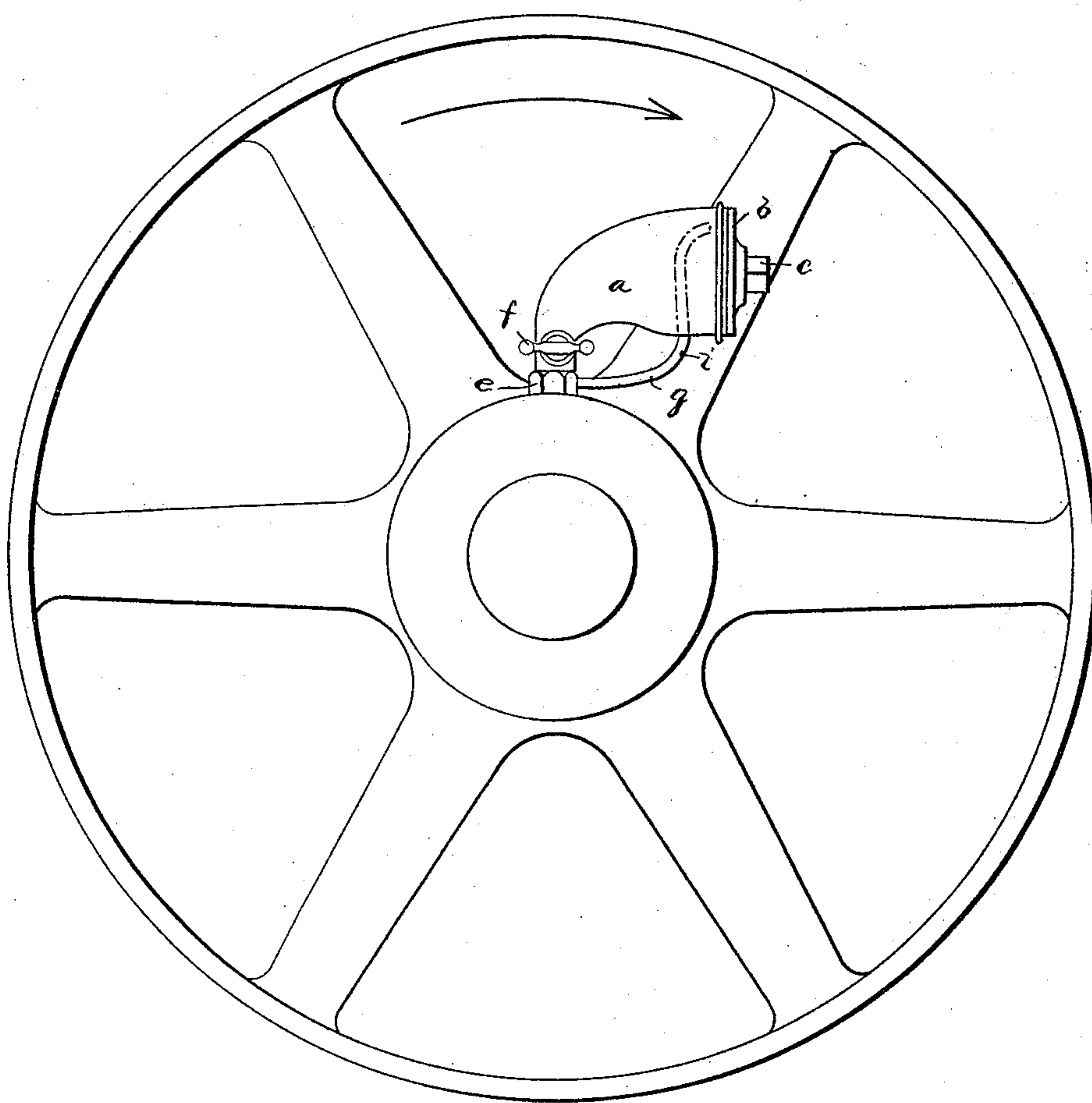
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*Fig. 3.*



WITNESSES:

*E. C. Duffy*  
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INVENTOR

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BY

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# UNITED STATES PATENT OFFICE.

HENRY L. MILLER, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF, CHARLES B. MILLER, AND EDWARD C. MILLER, OF SAME PLACE.

## LOOSE-PULLEY LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 450,519, dated April 14, 1891.

Application filed June 21, 1890. Serial No. 356,213. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY L. MILLER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Vacuum Oil-Cups; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in loose-pulley lubricators.

As loose pulleys require a large amount of almost constant lubrication and are sometimes located in almost inaccessible places, it is the object of this invention to provide an improved lubricator for loose pulleys or other purposes exceedingly simple, cheap, and durable in construction and which can be attached to the hub of the pulley and rotate therewith and which allows a free constant flow of the lubricant to the bearing. These objects are accomplished by and this invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is an elevation, and Fig. 2 a central vertical section, of the lubricator. Fig. 3 is an elevation of a pulley with the present cup applied thereto.

The lubricator consists of the cup *a*, open at the large upper end or top and provided with an internal screw-thread to receive the threaded flange of the closure or cap *b*, which screws into said open end and tightly closes the same. This cap is provided with nut *c* or other means whereby the cap can be turned. The cup tapers downwardly and preferably has its lower small end bent laterally into a plane substantially at right angles to the longitudinal axis or length of the cup, and said end is preferably solid and provided with the duct *d* for the passage of the lubricant to the bearing, and also is externally threaded, as shown, to screw into the hub to the bearing,

and has the enlarged or angular portion *e*, whereby the cup can be turned by a suitable tool. A plug or other valve *f* is located in said lower end of the cup in duct *d* to regulate or cut off the flow of lubricant. An air-tube *g* opens through the lower end of the cup into the duct *d* at the base of the externally-threaded portion of said end, and extends up and through the side wall of the cup a distance from its top and thence upwardly in the interior of the cup, with its upper open end *h* located just beneath the cover or closure of the cup. This tube is provided with one or more air-inlet ports *i*, open to the outer atmosphere. As the oil feeds through duct *d* into the bearing, air passes through port *i* into tube *g*, and through said tube *g* into the cup above the lubricant therein, thereby allowing free flow of the lubricant, because the constant pressure of air above the same prevents the formation of a partial vacuum; also, the air flows from the lower end of the tube *g* into the inner end of duct *d*, thereby hastening the outflow of lubricant through said duct.

The feature of tube *g* is not limited to use with the peculiarly-shaped cup herein set forth.

Fig. 3 shows how the cup is applied to a loose pulley. The cup is screwed into the hub or boss of the pulley with its large end or mouth facing in the direction of rotation of the pulley. When the pulley rotates at a high rate of speed, the oil does not collect in the outer corner of the cup, as it does where the cup is straight; but by reason of centrifugal force and the peculiar shape and contour of the cup the oil lies against the outer curved side or bend and is guided or forced down through duct *d*, so that the outflow can be controlled by valve *f*. The continuous taper and the fact that the outer end of the cup faces directly in the direction of movement prevents the oil collecting in the end of the cup; also, the aperture *i* is in the outer side of tube *g* and in the direction of movement, so that air is forced therein.

It is evident that various changes might be resorted to in the form and arrangements and constructions of the parts described without departing from the spirit and scope of my in-

vention; hence I do not wish to limit myself to the exact construction herein set forth. The cup after once being filled with lubricant will freely oil and lubricate any bearing without  
5 requiring attention until the lubricant is exhausted.

What I claim is—

1. A closed lubricator-cup having the tube with its opposite open ends opening, respectively, into the outer portion of the interior of the cup and into the oil-discharge duct from  
10 said cup and extending into the outer atmosphere and provided with an air-inlet opening.

2. The bent oil-cup having the open tube  
15 extending from its outer interior through its side wall and exteriorly of the cup into its lower discharge end and provided with an air-vent, as and for the purposes set forth.

3. As an article of manufacture, the herein-described oil-cup having the enlarged outer  
20 end provided with a closure and tapering downwardly to its small lower end formed to enter the bearing and having the discharge duct and valve, said cup being curved laterally, so that its lower end extends laterally  
25 substantially at a right angle, whereby the large end of the cup faces in the direction of rotation when in use, for the purposes set forth.

In testimony that I claim the foregoing as  
30 my own I affix my signature in presence of two witnesses.

HENRY L. MILLER.

Witnesses:

GRAHAM L. GORDON,  
H. E. PECK.