

(No Model.)

C. B. McALVAY & C. H. CHRISTOPHER.

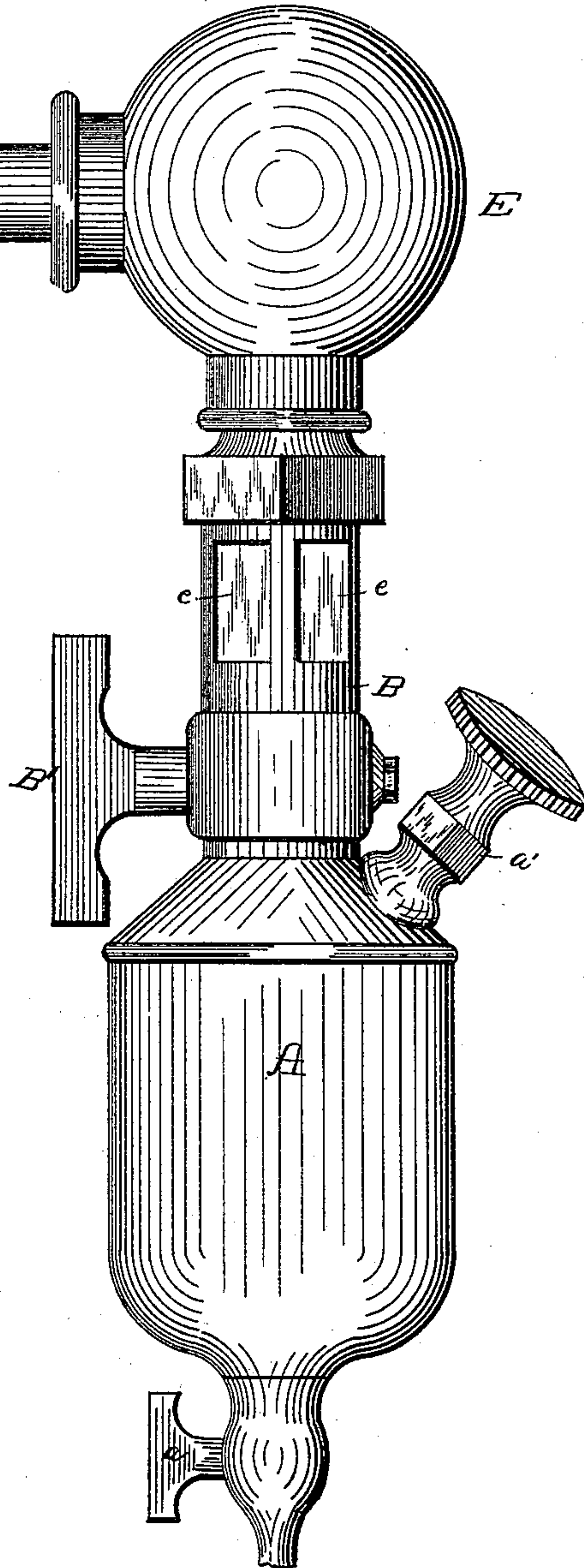
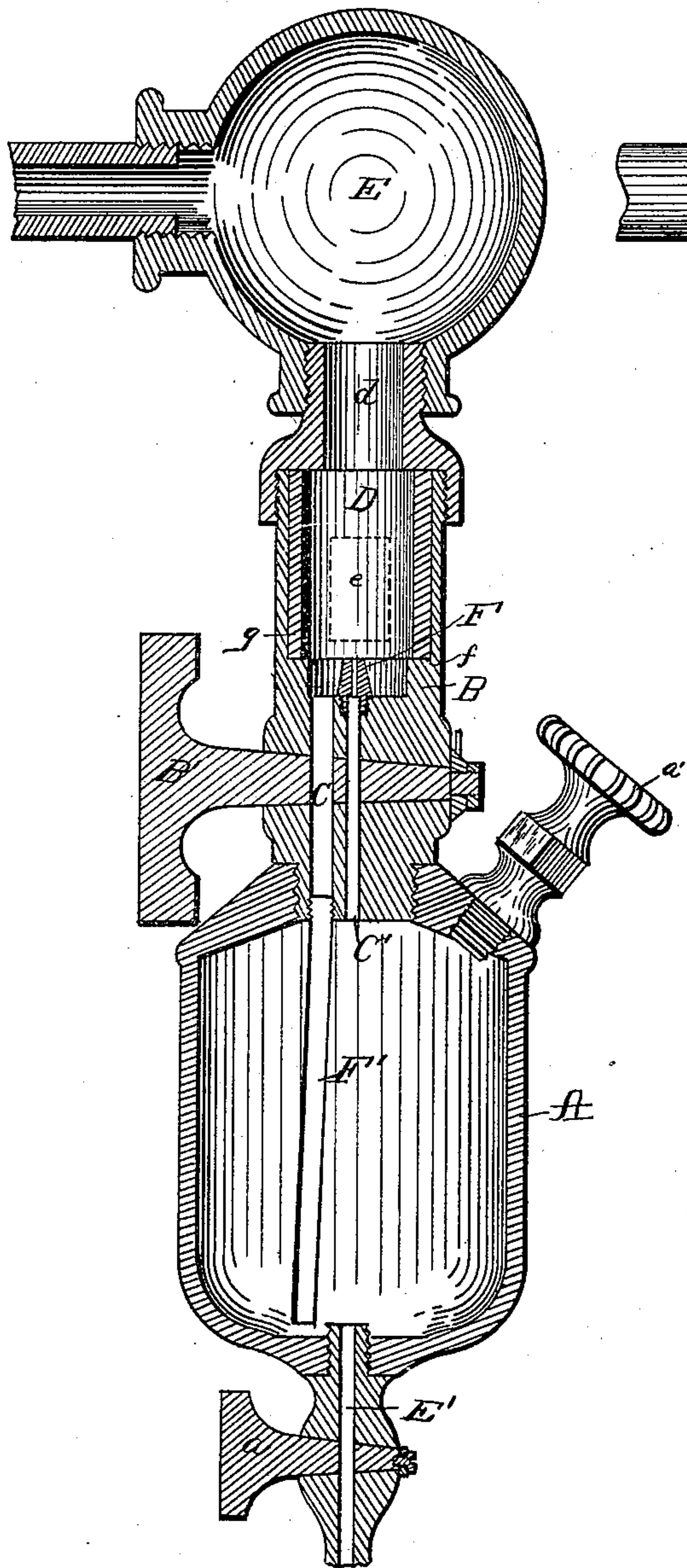
LUBRICATOR FOR STEAM ENGINES.

No. 300,619.

Patented June 17, 1884.

*Fig. 1.*

*Fig. 2.*



WITNESSES  
*A. W. Green*  
*J. H. McMill*

INVENTORS.  
*Chas. B. McAlvay*  
*Chas. H. Christopher*  
*By Myer H. ...* Attorneys.



# UNITED STATES PATENT OFFICE.

CHARLES B. McALVAY AND CHARLES H. CHRISTOPHER, OF JACKSON, MICH.

## LUBRICATOR FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 300,619, dated June 17, 1884.

Application filed April 24, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, CHAS. B. McALVAY and CHAS. H. CHRISTOPHER, citizens of the United States of America, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Lubricators for Steam-Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention consists of certain improvements upon the lubricator patented to Chas. B. McAlvay, March 4, A.D. 1884, whereby greater simplicity of construction and increased effectiveness of action are secured, substantially as hereinafter fully described, and pointed out in the claims.

Figure 1 is a sectional elevation of our lubricator, and Fig. 2 is a side elevation of the same.

In the organization of our invention we employ a vessel or reservoir, preferably cylindrical in form, to hold the oil or other lubricant, to the lower end of which reservoir is applied a waste-cock or "petcock," to permit the withdrawal of the water of condensation accumulating in the cylinder or reservoir. The lubricant is put in the cylinder or reservoir through an opening in its upper end, said opening being fitted with a screw-plug, *a*'.

B is a casting screwed centrally into the upper end of the cylinder or reservoir A, and provided in that portion adjacent to said end of the cylinder or reservoir with two vertical passages, C C', while transversely through said casting B, at a right angle to said passages, is made an opening to receive, and within which is inserted and properly secured, a plug, B', having two apertures which register with the said passages C C'. In the upper half or portion of casting B is a water or condensed-steam chamber, D, receiving the water of condensation from a globular chambered casting, E, communicating by a valved pipe-connection with a steam-chamber of the engine, said casting or elbow-chamber E being connected by a screw-threaded tubular coupling or neck, *d*, with the chambered casting or elbow D. In the sides of the chamber or casting D are openings, which are supplied, as presently described, with glass or other transparent material, *e*, to permit viewing the rising of the lu-

bricant, as presently explained. The chamber of the casting B is formed near its lower end with an annular shoulder, *f*, upon which is seated an inner concentric short glass cylinder, *g*, arranged inside of the opening of the casting B, to form the viewing-chamber D, whereby (the cylinder *g* being thus removable) the glass cylinder *g* can be readily put in place, or, when required, be readily removed. One of the passages, C', connects the chamber D with the upper end of the chamber of the reservoir A, and has affixed over its upper end, within the chamber D, a cup-pointed tip or nozzle, F, with a narrow passage extending through it, while the other passage, C, (which is the larger,) connects the same chamber, D, with a tube, F', located in the cylinder or reservoir A, and reaching down closely to the bottom of the chamber of said cylinder or reservoir, and slightly below and contiguous to the inwardly and upwardly projecting end of the petcock-pipe *a*.

To the smaller or rear end of the plug B', outside of the casting B, is designed to be applied a pointer or index to register with a properly-graduated arc to indicate the amount of the lubricant fed or supplied to the parts being lubricated.

In operation, after having attached the lubricator to the steam-chamber of the engine, the valve in the pipe leading to the globular chambered casting or elbow E (not shown) is opened, when the steam will rush in and cause the chamber D to become filled with water from condensation, (the plug B' remaining as yet closed.) The reservoir A being filled with the lubricant, the plug B' is opened, and as the water-passage C is larger than the lubricant-passage C' communication with the reservoir or cylinder is first established through it, allowing the water to pass from the chamber D into the reservoir A through tube F', thereby creating pressure in the cylinder or reservoir A before communication is had through the lubricant-feed passage C'. The water passing through pipe C and tube F', forming a seal at the lower end of tube F', prevents the lubricant from passing up through said tube into the receiving-chamber. So soon as communication is had through the lubricant-feed passage C' the lubricant is forced up through



the cup-shaped tip or nozzle F, and no water will pass through the lubricant-feed passage C' after the passage of that which it may have contained before the plug B' was opened. The  
5 lubricant is delivered from the cup-shaped tip or nozzle E drop by drop, which is capable of being viewed through the glass cylinder e, and of being regulated by plug B', as desired.

Having thus fully described our invention,  
10 what we claim, and desire to secure by Letters Patent, is—

1. In a lubricator, the combination of the chambered casting E, communicating with a steam-chamber, coupling d, casting B, pro-  
15 vided with chamber D, having transparent material e and glass cylinder g to form a viewing-chamber, passage C', having nozzle F, and passage C, having tube F', connecting cham-

ber D with reservoir A, substantially as shown, and for the purpose described. 20

2. The combination of the chambered casting E, coupling d, casting B, provided with chamber D, having transparent material e, glass cylinder g, apertured plug B', registering with small passage C', having nozzle F, and  
25 large passage C, having tube F', and reservoir A, substantially as shown, and for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES B. McALVAY.  
CHARLES H. CHRISTOPHER.

Witnesses:

W. C. LEWIS,  
L. O. BEEBEE.