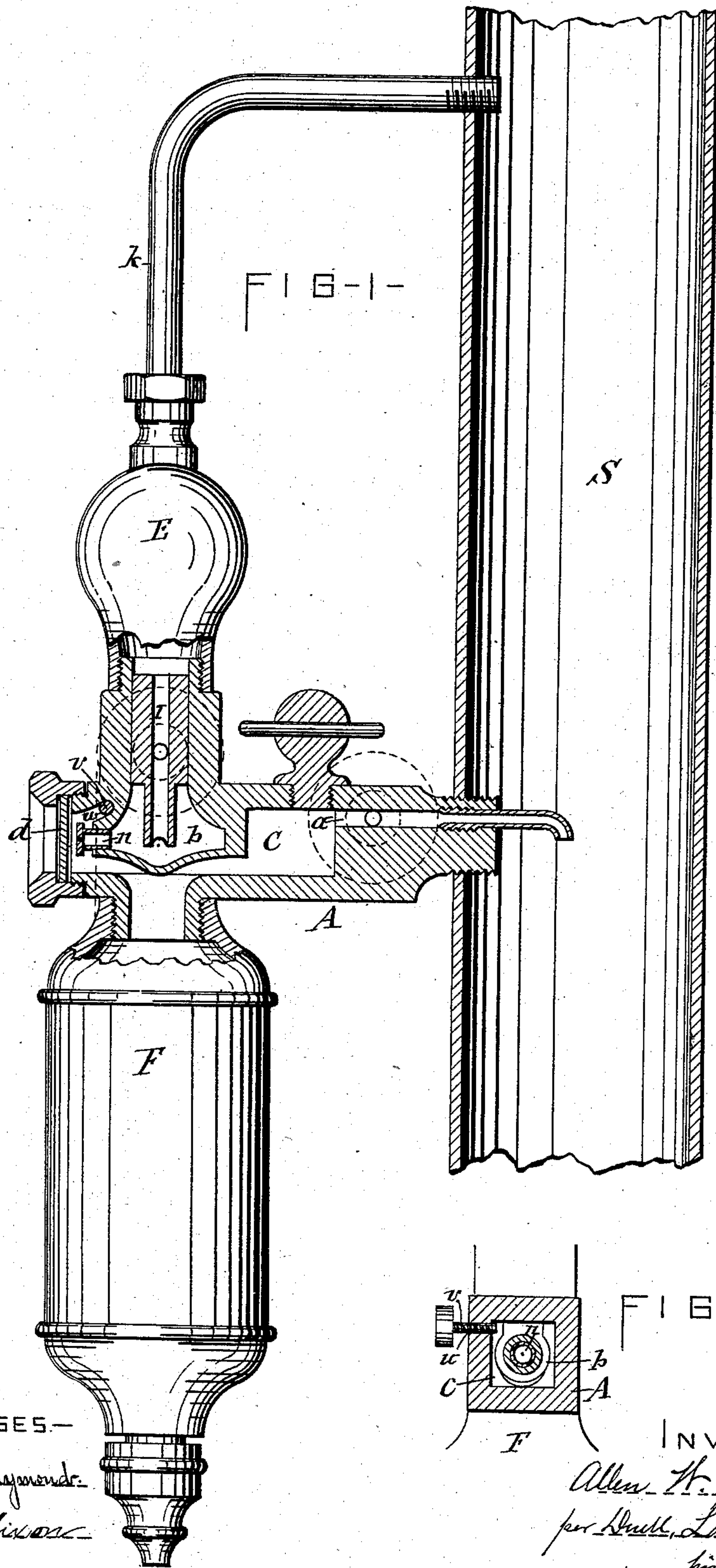


(No Model.)

A. W. SWIFT.
LUBRICATOR.

No. 284,340.

Patented Sept. 4, 1883.



WITNESSES—

Wm. G. Raymond.

Chas. Bendixson.

INVENTOR—

Allen H. Swift.
per Smith, Lusk & May
his Atty.

UNITED STATES PATENT OFFICE.

ALLEN W. SWIFT, OF ELMIRA, NEW YORK.

LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 284,340, dated September 4, 1883.

Application filed January 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALLEN W. SWIFT, of Elmira, in the county of Chemung, in the State of New York, have invented new and useful
5 Improvements in Lubricators, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of lubricators which are usually designated "displacement" lubricators, and in which the lubricant is automatically discharged from the cup by the pressure of water obtained from condensation of steam and admitted into the cup;
15 and it has, more particularly, reference to the style of lubricator illustrated in my patent of September 26, 1882.

In the operation of the said lubricator, I have found that owing to the peculiar arrangement of the oil-inlet, oil-outlet, water-inlet and observing-glass with the cavity of the arm which carries the lubricant-cup in a suspended position and forms an extension of said cup, the air which enters through the oil-inlet, while
25 filling the cup and becomes confined therein, forms an elastic cushion which conduces to the pulsations and irregularities in the action of the lubricator as observed through the observation-glass thereof.

To overcome this defect, my invention consists in providing an air-vent in the upper portion, and preferably near the glass end of the cavity of the arm which supports the cup.

The invention also consists in the application to the water-inlet to the lubricant-cup of an adjustable nozzle adapted to be set a greater or less distance from the observation-port or transparent portion of the cup, according to the quality of oil used as lubricant, thus
40 obtaining invariably the best effect of the so-called "sight-feed."

The invention is fully illustrated in the annexed drawings, wherein Figure 1 is a side view of a lubricator provided with my improvement, the portion containing said improvements being shown in section for a proper illustration of the same, and Fig. 2 is a transverse section taken immediately in front of the air-vent.

50 Like letters of reference denote like parts.

F denotes the lubricant-cup, secured in a suspended position to the horizontal support-

ing-arm A, by which it is connected to the steam-pipe S, said supporting-arm being formed with a longitudinal cavity, C, which
55 communicates with the interior of the cup F, and is closed at the free end of the arm by a glass plate, *d*. The opposite end of the said cavity communicates with the steam-pipe S by a channel, *a*, extended through the attached
60 end of the arm A. Above the arm A is a steam-condensing chamber, E, which receives steam through a tube, K, extended from the top of the condenser E and tapping the steam-pipe S. A drip-pipe, I, extended from the
65 base of the condenser and terminating in a water-trap, *b*, situated in the cavity C, allows the water of condensation to escape into the trap *b* and thence into the cup, the discharge end of the trap being arranged facing the glass
70 *d*, and provided with a polished face, so as to render this influx of water more readily observable through the glass *d*, the water entering the cup in drops, which, in their passage through the oil in front of the polished face, 75 present the appearance of bright pearls emerging from the trap *b*, and the speed of their ingress indicates a corresponding speed of the egress of the lubricant from the cup, the issuing lubricant passing through the channel *a*
80 into the steam-pipe S, and thence to the parts to be lubricated.

In order to render the described sight-feed operative with dark oil as effectively as with light oil, I make said sight-feed adjustable by
85 applying to the discharge end of the trap *b* a nozzle, *n*, fitted to slide telescopically in said discharge end, and provided at its outer end with a polished perforated plate, through which the inflowing water passes. By push-
90 ing the nozzle more or less into the end of the trap the polished plate of said nozzle is brought a greater or less distance from the transparent plate *d*. When using dark oil, the nozzle can be drawn out to bring the polished
95 plate thereof in closer proximity to the glass *d*, thus rendering the inflowing water more conspicuous through said glass.

Some irregularities have been experienced in the operation of the described automatic
100 lubricator, incident to air entering the cup when replenishing the same with lubricant. The air confined in said cup forms an elastic cushion, which yields to a certain extent to the

pressure exerted on the contents of the cup by its communications with the steam in the steam-pipe S. The action of said air-cushion contributes to a great extent to the pulsations and irregularities of the feed, which is sometimes noticed through the glass or observation-port *d*. To overcome this defect I provide the upper part of the cavity C, which constitutes an extension of the cup F, with a vent, *u*, which may be in the form of a screw-threaded channel tapping the cavity C, and provided with a correspondingly screw-threaded plug or valve-stem, *v*, by the removal or mere slacking of which latter the confined air is allowed to escape from the interior of the cup.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the lubricant-cup F, condenser E, supporting-arm A, provided with

the cavity C, eduction-channel *a*, trap *b*, and glass *d*, the valve *v*, applied to the upper part of the cavity C, substantially in the manner described and shown, for the purpose set forth.

2. In combination with a lubricant-cup provided with a transparent section and a water-inlet near said section, a nozzle applied adjustably to said inlet, and adapted to be set at a greater or less distance from the transparent portion of the cup, substantially as and for the purpose specified.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 4th day of January, 1883.

ALLEN W. SWIFT. [L. S.]

Witnesses:

F. H. GIBBS,

WM. C. RAYMOND.