

(No Model.)

2 Sheets—Sheet 1.

J. W. CLOUD & S. PORCHER.  
LUBRICATOR FOR STEAM ENGINES.

No. 324,362.

Patented Aug. 18, 1885.

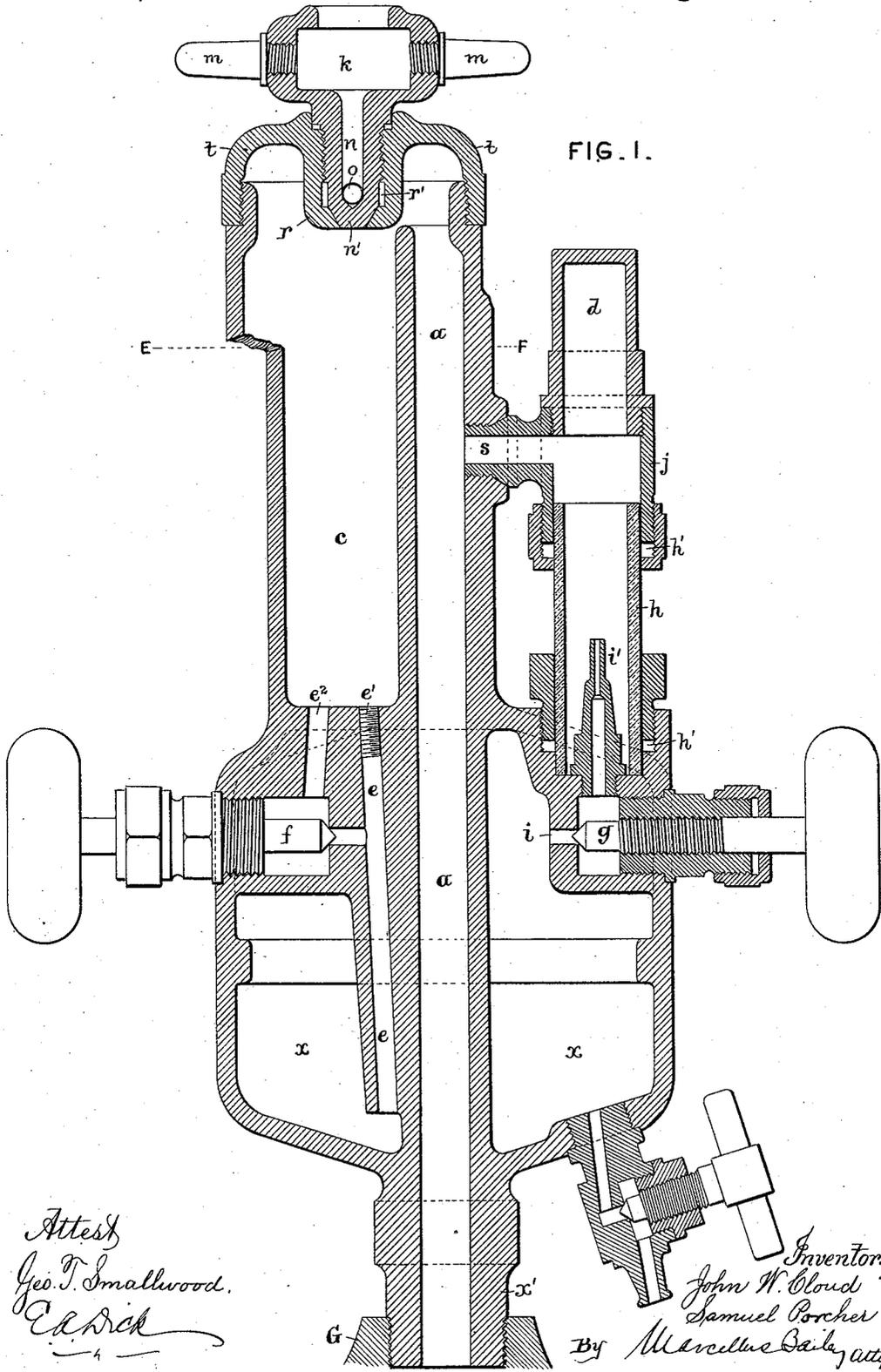


FIG. 1.

Attest  
Geo. T. Smallwood.  
C. A. Dick

Inventors:  
John W. Cloud &  
Samuel Porcher  
By Marcellus Bailey atty.

(No Model.)

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FIG. II.

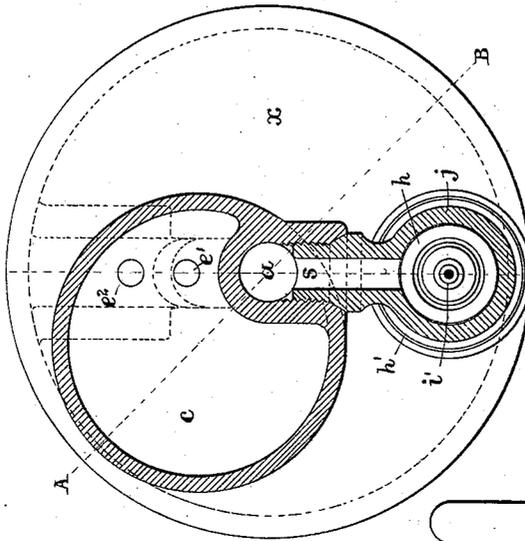
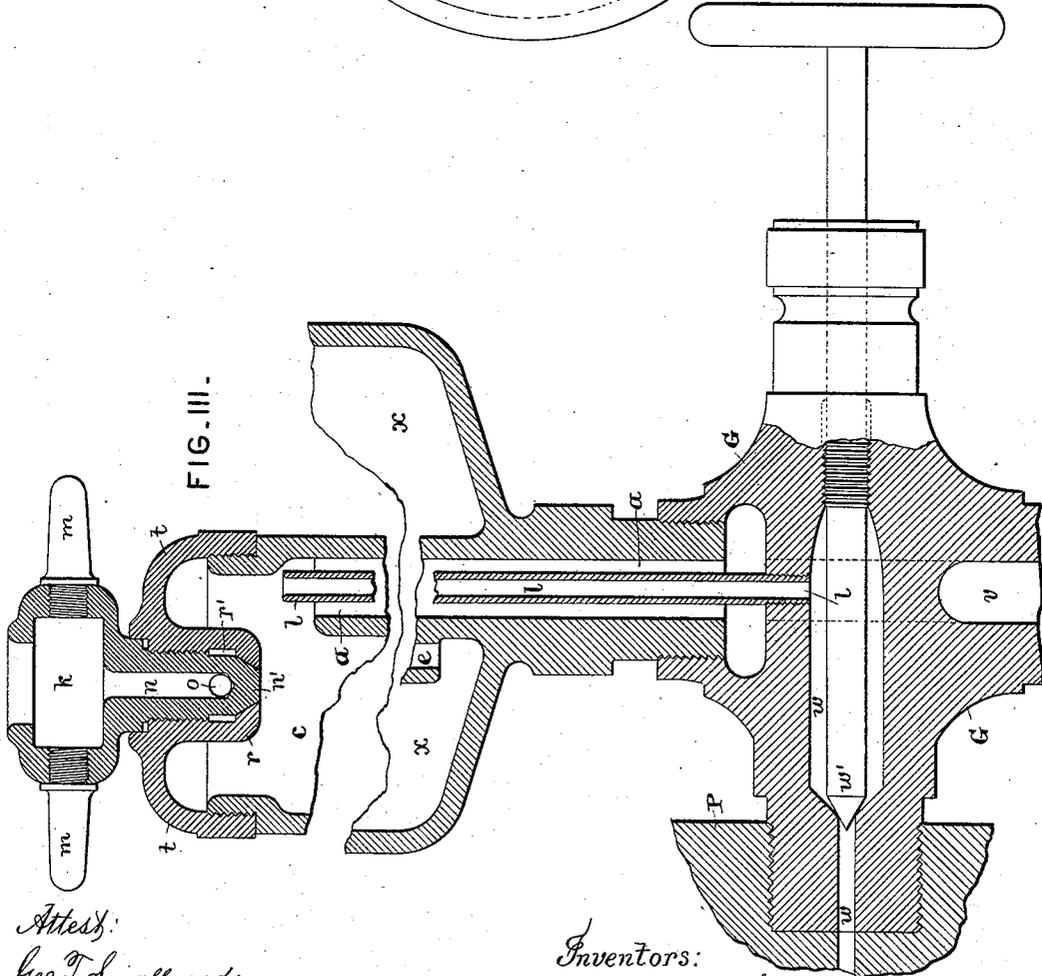


FIG. III.



Attest:  
Geo. T. Smallwood,  
Ed. Dick

Inventors:  
John W. Cloud and  
Samuel Porcher  
By Maxwell Bailey atty.

# UNITED STATES PATENT OFFICE.

JOHN W. CLOUD AND SAMUEL PORCHER, OF ALTOONA, PENNSYLVANIA.

## LUBRICATOR FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 324,362, dated August 18, 1885.

Application filed July 9, 1885. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN W. CLOUD and SAMUEL PORCHER, both of Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Lubricators for Steam-Engines, of which the following is a specification.

Our invention relates, mainly, to that class of visible-feed lubricator which has but one connection with the steam space or passage, and that at the base or lower part of the lubricator.

The invention principally consists in forming the casting of which the body of the lubricator is composed with a single cored passage open at both ends and extending from the lowest point of the lubricator to a point inside of the condensing-chamber, which surmounts the oil-space, the arrangement being such that this cored passage thus formed in the casting serves both to supply the steam needed for condensing purposes and also to conduct the lubricant downward from the top of the sight-feed glass or chamber on its way to the valves and cylinders to be lubricated. In addition to the usual condenser, we make use of an auxiliary condenser located above and in direct communication with the sight-feed chamber, and the cored passage first above referred to serves to supply steam to both of said condensers.

The foregoing and other features of our invention can best be explained and understood by reference to the accompanying drawings, in which—

Figure I is a vertical central section of a lubricator embodying our improvements. The plane of section is partly on line A B, Fig. II, and partly on line C D, Fig. II. That portion above the line E F is on line A B, and that portion below line E F is on line C D. Fig. II is a view of the lubricator, partly in plan and partly in horizontal section. Fig. III is a vertical central section of a modification which will be hereinafter described.

The body of the lubricator is a single casting, in which are formed the oil-chamber *x*, the condensing-chamber *y*, above the oil-chamber, and the cored passage *a*, open at both ends and extending from the threaded stem *x'* below (which stem screws into the part to which the lubricator is to be attached) to near

the top of the condensing-chamber *y* above. The walls of that portion of the passage within the condensing-chamber are formed in part by the walls of said chamber itself, as indicated in the drawings. That portion of the passage within the oil-chamber has its walls formed with an enlargement in which is bored the passage *e*, through which water from the condensing-chamber is supplied to the oil-chamber. This passage *e*, after being bored, has its upper end plugged tight, as indicated at *e*. The condensed water is conducted to passage *e* through a duct, *e'*, controlled by a valve, *f*, in the usual way.

The transparent sight-feed chamber is shown at *h*, held in place by stuffing-boxes *h' h'*, as usual. The oil enters the lower end of the sight-feed chamber through passage *i* (controlled by valve *g*) and nozzle *i'*. The upper stuffing-box *h'* screws onto a coupling, *j*, which is attached to the exterior of the condensing-chamber *c*, and is formed with a branch passage, *s*, communicating with the interior of the passage *a*, said passage *s* serving as an outlet for the oil from the sight-feed chamber and also as a conduit for steam into the sight-feed chamber. The sight-feed chamber *h* is thus brought into direct communication with the passage *a*, with the effect of securing equality of pressure in the two chambers *c* and *h*. Screwed to the top of the coupling *j* is the tube *d*, closed at its upper end. This tube forms a chamber, which is above the level of the passage *s*, and is thus wholly available as a condenser to supply the transparent tube with clear water continuously. Under this arrangement it will be noted that the passage *a* serves the treble purpose of supplying steam both to the usual condenser and also to an auxiliary condenser and of conducting the lubricant from the top of the sight-feed chamber downward through the lubricator on its way to the parts to be lubricated.

The top of the condenser *c* is closed by a screw-cap, *t*, provided with a central downwardly-projecting tubular extension, *r*, into which screws the stem *n'* of a cup, *k*. The stem *n'* has formed in it a passage, *n*, leading from the bottom of the cup, and terminating in one or more lateral openings, *o*, which communicate with an internal enlargement, *r'*, of the tubular extension *r*. The lower end of

the stem has a conical form, and is adapted to fit upon a conical seat formed for it in the lower end of the tubular extension *r*. By reason of lugs or handles *m* the cup can be screwed up and down, and it can thus be used for filling the condenser with water in case that be needed or for supplying lubricant (through the condensing-chamber and passage *a*) to the valves and cylinders in case the glass tube *h* should break or the lubricator should be otherwise disabled.

To provide for cases where it is desired to feed the lubricant to the parts to be lubricated by a passage or pipe independent of that which supplies the steam, the arrangement illustrated in Fig. 3 may be employed. The lubricator in this figure is similar to the one illustrated in Figs. 1 and 2, and we therefore represent only the lower and upper ends of it. In this arrangement the globe-valve *G* into which the lubricator is screwed is formed with two separate and distinct passages, *v w*, which have no communication with one another. Passage *v* communicates above with passage *a* of the lubricator and below with the pipe which carries off the lubricant to the parts to be lubricated. The cross-passage *w*, at its outer end, leads into the part *P*, which opens into the steam pipe or boiler, and at its inner end it is provided with a vertical opening under the lower end of passage *a*. Into this vertical opening is screwed a pipe, (of smaller diameter than passage *a*,) *H*, which extends centrally up through said passage *a* to a point above the top of the latter. Thus steam is supplied to the condenser through the inner pipe, *H*, while the lubricant is conducted away through the outer concentric passage, *a*.

The steam-passage *w* in the globe-valve is controlled by a valve, *w'*. The oil-passage *v* may be controlled in a similar way, if desired. We prefer to arrange the sight-feed glass above the oil-reservoir and to place the condenser *c* eccentrically to the passage *a*, with a view to simplifying the construction of the lubricator; but we do not confine ourselves to these arrangements.

What we claim as new and of our own invention is—

1. A sight-feed lubricator for steam-engines, provided with means for attachment at its base only, a main condenser, and an auxiliary condenser above and communicating with the

sight-feed glass, in combination with a single passage extending from said base upward, both for supplying steam to the two condensers and for conducting the lubricant downward, substantially as and for the purposes hereinbefore set forth.

2. The combination of the oil-reservoir, the main condenser, the sight-feed glass and its connections, the auxiliary condenser above the outlet of the sight-feed glass, and the passage *a*, extending from the base of the lubricator up into the main condenser and communicating directly with both condensers, substantially as and for the purposes hereinbefore set forth.

3. The combination of the globe-valve provided with independent and separate passages, one for oil and steam and one for steam only, the lubricator provided with the passage *a*, communicating only with the oil-passage of the globe-valve, and a pipe communicating with the steam-passage of the globe-valve and extending up through the passage *a*, substantially as and for the purposes hereinbefore set forth.

4. A sight-feed lubricator for steam-engines, provided with means for attachment at its base only, and having an upwardly-extending passage, *a*, in combination with the screw-cup *k*, applied to the top of the condenser, and constructed and arranged, substantially as described, so that it may be used at will as a seal to the condensing-chamber or as a means by which lubricant can be supplied through the condenser and passage *a* in case the sight-feed should become disabled, substantially as hereinbefore set forth.

5. In a sight-feed lubricator, the combination, with the oil-cup, the main condenser, and the sight-feed chamber, of an auxiliary condenser, *d*, arranged above the outlet-passage of said chamber so as to be wholly available as a condenser, and adapted to continuously supply the sight-feed chamber with clear water, substantially as hereinbefore set forth.

In testimony whereof we have hereunto set our hands.

JNO. W. CLOUD.  
SAMUEL PORCHER.

Witnesses:

EDMUND P. LORD,  
E. J. CASSIDY.