

(No Model.)

2 Sheets—Sheet 1.

J. H. BURGESS.  
LUBRICATOR.

No. 302,188.

Patented July 15, 1884.

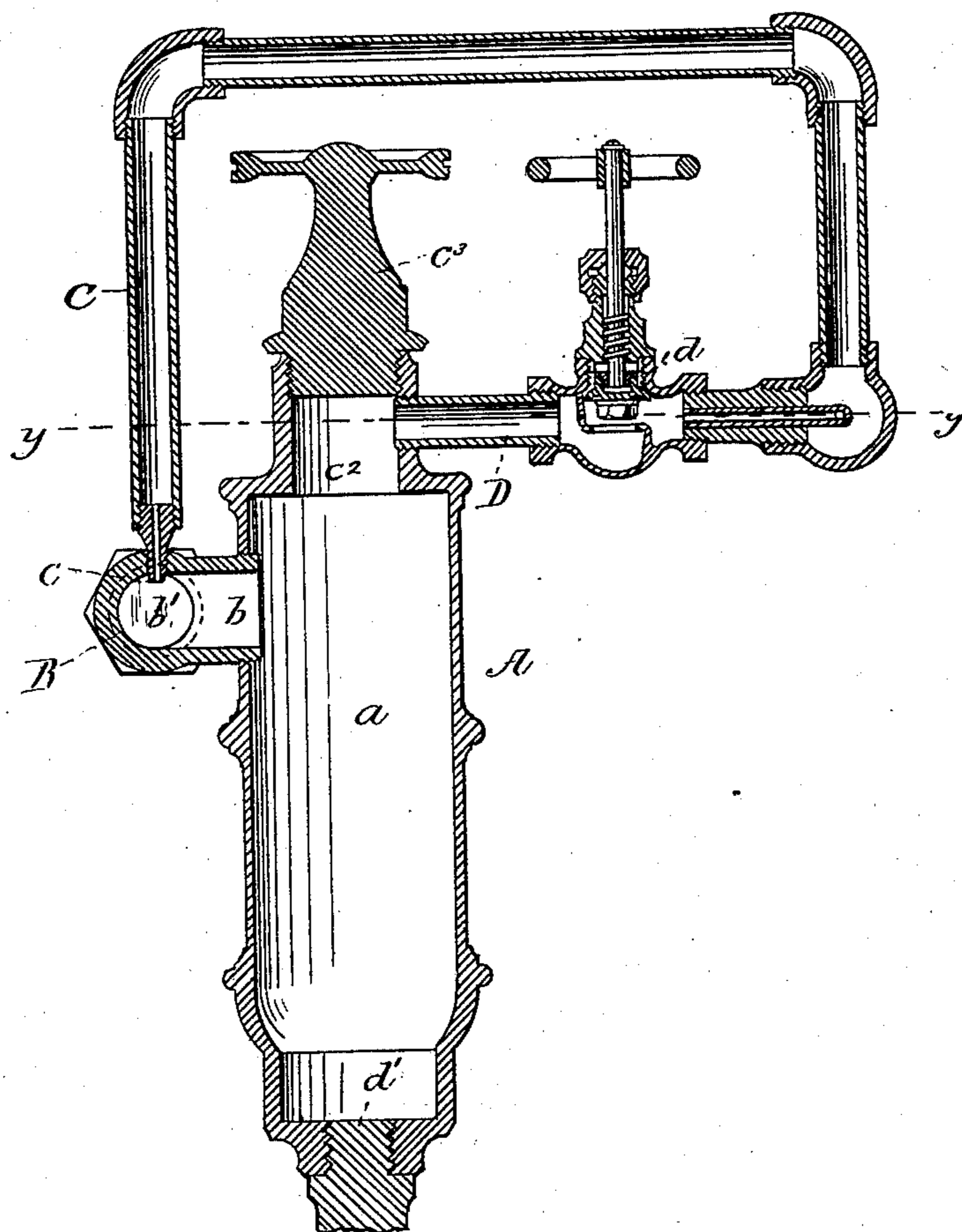


FIG-1-

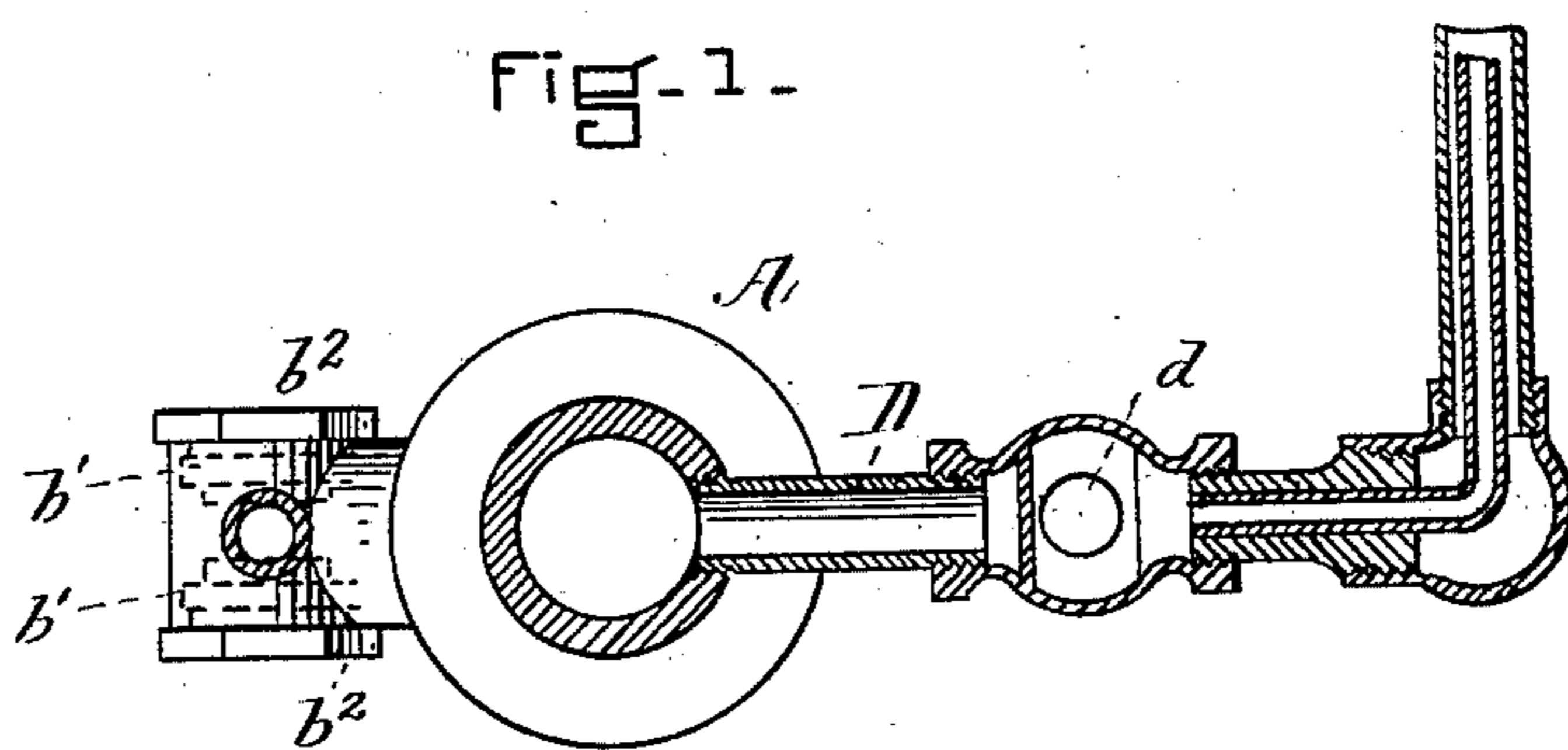


FIG-2-

WITNESSES

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*Fred C. Nolan*

INVENTOR

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by his attys  
*Clarke & Raymond*

(No Model.)

2 Sheets—Sheet 2..

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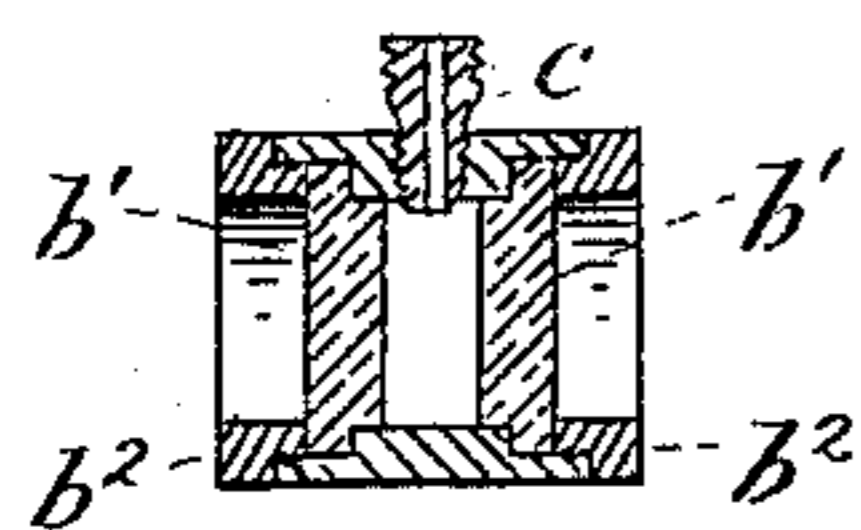


Fig. 4.

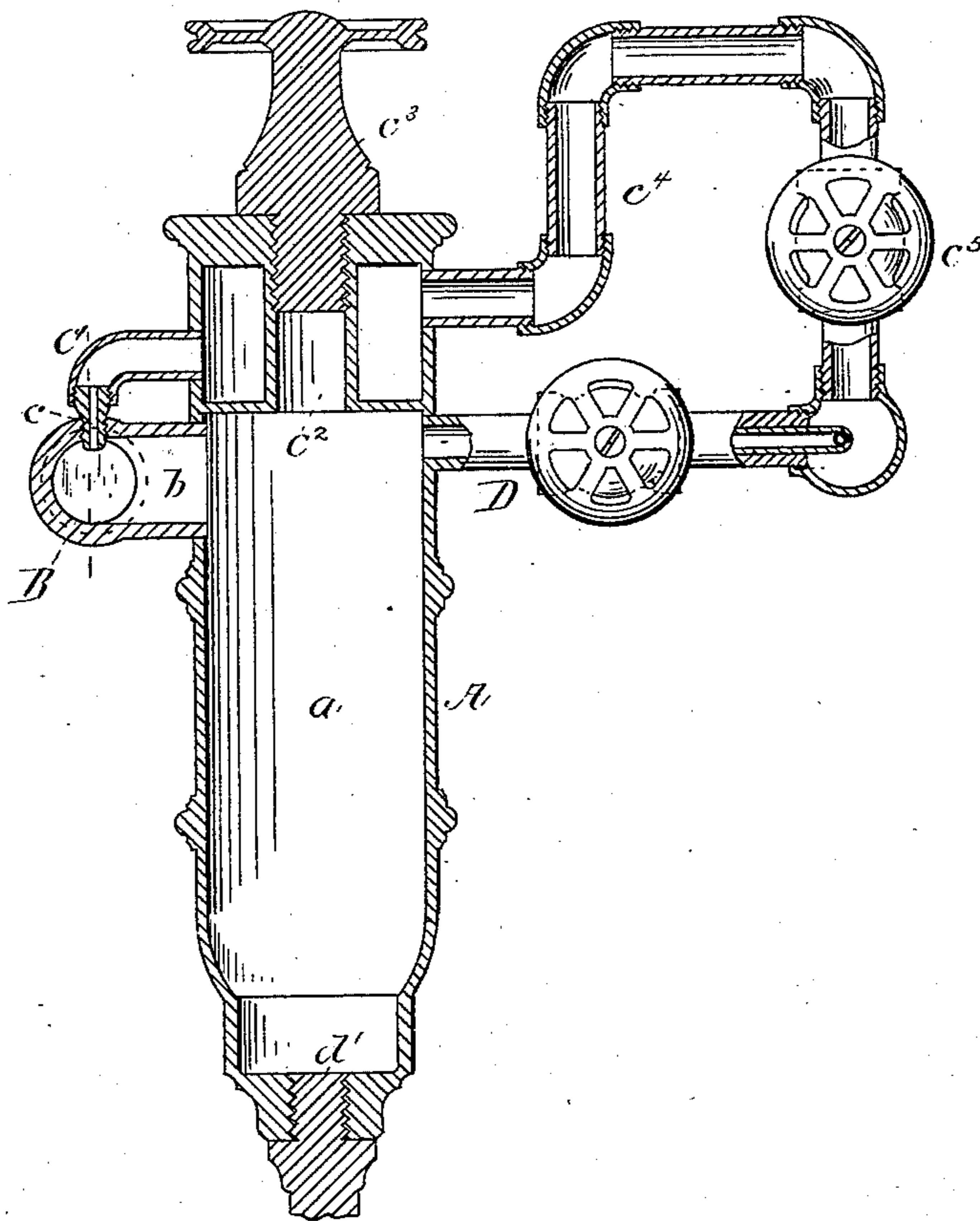


Fig. 3.

WITNESSES

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INVENTOR

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*by his atty*  
*Charles H. Raymond*

# UNITED STATES PATENT OFFICE.

JAMES H. BURGESS, OF MALDEN, MASSACHUSETTS.

## LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 302,188, dated July 15, 1884.

Application filed November 12, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. BURGESS, of Malden, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a certain new and useful Improvement in Lubricators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature, in which—

Figure 1 is a vertical section of a lubricator containing my improvement. Fig. 2 is a horizontal section on the line *yy* of Fig. 1. Fig. 3 is a vertical section of a lubricator, showing a water-chamber in the upper part of the oil-cup. Fig. 4 is a vertical section of the sight-feed chamber.

The invention consists, especially, in a lubricator having a sight-feed chamber of peculiar shape and arrangement upon the side of the oil-chamber, at or near its top, and into which sight-feed chamber drops of water from a hydrostatic column are allowed to pass.

Referring to the drawings, A represents the oil-cup. *a* is the chamber therein. B is the sight-feed chamber, which is connected by the passage *b* with the oil-chamber *a*. This passage enters the oil-chamber at or near its upper end. The sight-feed chamber B preferably is made or formed, as shown in Figs. 1 and 2, of a cylindrical shape, and its ends are closed by the glass disks *b'*, which are held in place against shoulders upon the cylinders by means of the hollow nuts *b''*, which screw into the ends of the cylinder. These disks may be of the same thickness, or they may be formed as represented in Fig. 4, so that a portion shall extend into the cylinder beyond the shoulder. Between these disks is the sight-feed chamber, and, preferably, it should be narrow, in order that the drops of water that pass through it may be readily observable. A nozzle, *c*, extends into the sight-feed chamber, and it is arranged at the lower end of a water-supply pipe. This pipe may be a long condensing-pipe, as represented in Fig. 1, or it may be a short connecting-pipe, as represented at *c'*, Fig. 3, connecting the nozzle with a chamber, C, in the upper part of the casing A, which is adapted to be filled with water from the con-

densing-pipe *c'*, or in any other desirable way, the only difference between the constructions shown in Figs. 1 and 3 being that in the construction shown in Fig. 3 the water-chamber is interposed between the two sections of the pipe which connects the source of water-supply with the nozzle *c*. The said chamber C is shaped substantially as shown in Fig. 3, and has extending through it a hole, *c''*, adapted to be closed by a screw-plug, *c'''*, through which oil is introduced to the oil-chamber. The water-chamber, which may also be a condensing-chamber, is connected by means of a bent or syphon tube, *c'*, with the steam-supply pipe, and this tube may have a valve, *c''*, for limiting or controlling the supply of steam.

Extending from the side of the oil-chamber, near the top, is the oil-escape passage D, which also communicates or opens into the said steam-pipe, and this passage of oil through this tube is controlled by means of the valve *d*. The oil-chamber also has the drainage-passage *d'*, which is closed by a suitable plug.

In operation the oil-chamber is filled with oil, and it overflows through the passage *b*, and also fills the sight-feed chamber. The water-chamber is also filled with water either by condensation of steam or otherwise, and the cock is then turned sufficiently to allow an escape of oil from the reservoir. The water will immediately drop from the end of the nozzle *c* in the sight-feed chamber through the oil therein, and will enter the passage *b* and fall to the bottom of the cup, lifting or displacing a like quantity of oil, and as the sight-feed chamber is narrow the passage of the drops of water therethrough can be readily seen. If the oil is light, the drops of water are of a white sparkling appearance, and if the oil is dark, the drops show red; but in either event they are very clearly shown. It is preferable to make the passage connecting the sight-feed chamber with the chamber in the oil-cup somewhat inclined from the bottom of the sight-feed chamber to the cup, in order that the water may freely escape therefrom.

It will be obvious that as the sight-feed chamber is located at or near the top of the oil-chamber, it will continue filled with oil un-

til very nearly all the oil has been fed from the oil-chamber and its place taken by the water.

By arranging the sight-feed chamber as described, two or three desirable results are obtained: first, the construction is simple and cheap; second, the sight-feed chamber is so placed that for locomotive-cups especially the feed is in a position to be seen by both the engineer and fireman while they are in their ordinary positions in the cab; third, the method of its operation is very simple and easily understood; fourth, the sight-feed glasses are entirely protected from any danger of breakage and are easily removable, and can therefore be cleansed as often as may be necessary without any trouble.

It will be noticed that the sight-feed chamber is made very narrow, in order to obtain a thin body of oil, so that the passage of each drop of water through it may be distinctly visible from both sides of the chamber. It will also be seen that the sight-feed chamber is so located that it permits the feed or the passage of drops of water through it to be observed equally well from both sides of the chamber.

It will be noticed that because the body of oil is thin, and because it receives light from both sides of the chamber, the oil and even drops of water that pass through it are illuminated, even the darkest oil becoming sufficiently clear to show the passage of the drops of water through it with very great distinctness. Moreover, the passage of the drops through the chamber is so slow that often more than one or two are visible at the same time. The sight-feed also indicates when the

cup is empty, because the chamber will show water when the oil has been very nearly expelled from the lubricator by the rise of the water.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. A lubricator consisting of an oil-cup having the chamber *a*, the oil-escape passage *D*, and the sight-feed chamber *B*, connected with chamber *a* by a single passage, *b*, only, upon the side of the oil-cup at or near its top, connected with said chamber by the passage *b*, and having a water-supply passage opening into the same, all substantially as and for the purposes described.

2. A lubricator having an oil-chamber and a thin disk-shaped sight-feed chamber glazed at each end, at the side, and near the top of the oil-chamber, which sight-feed chamber is adapted to be filled with oil through a single side passage only, and a nozzle in the top of the sight-feed chamber through which water is dropped into said sight-feed chamber near to each glass thereof, substantially as described.

3. In a lubricator, the oil-cup *A*, having laterally connected therewith by passage *b*, near the top of said oil-cup and below the oil-delivery passage, a thin disk-shaped sight-feed chamber, *B*, glazed at opposite ends, into the top of which sight-feed chamber, between the glasses, is inserted the water-inlet *c*, substantially as described.

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Witnesses:

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