J. W. REED.

LUBRICATOR.

No. 180,925. Patented Aug. 8, 1876.

Fig. 2.

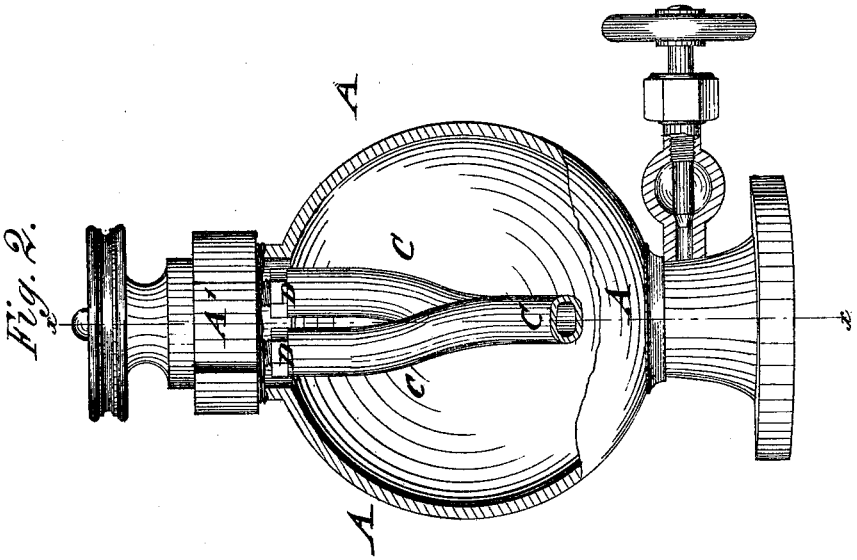
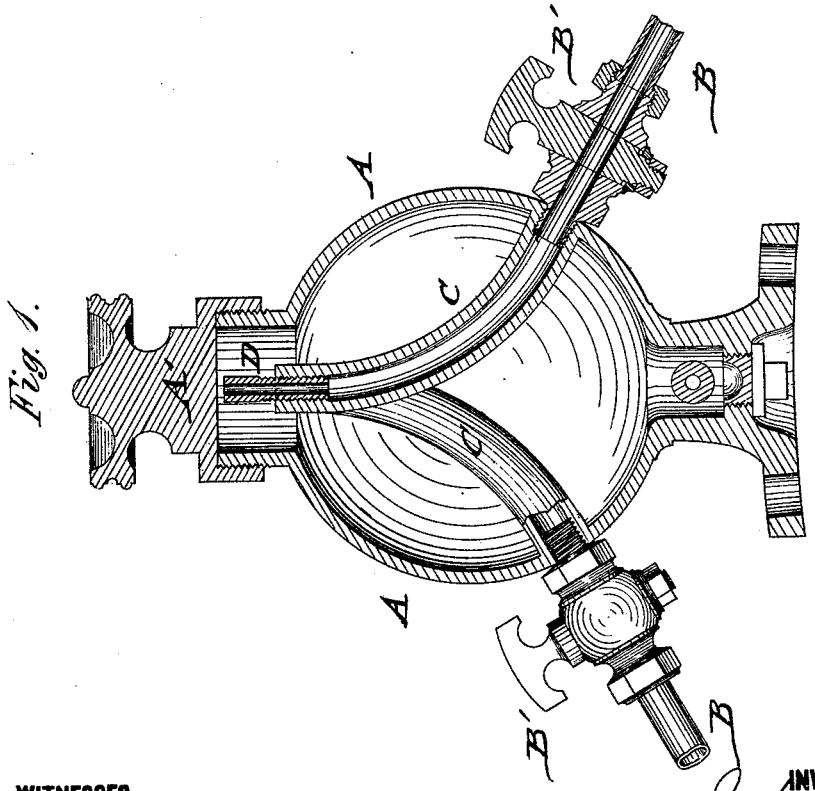



Fig. 1.




WITNESSES:

H. Tydgwick.

John Goethals

INVENTOR:

J. W. Reed

BY

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JOSEPH W. REED, OF KALAMAZOO, MICHIGAN.

## IMPROVEMENT IN LUBRICATORS.

Specification forming part of Letters Patent No. **180,925**, dated August 8, 1876; application filed May 22, 1876.

*To all whom it may concern:*

Be it known that I, JOSEPH W. REED, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and Improved Lubricator, of which the following is a specification:

In the accompanying drawing, Figure 1 is a vertical longitudinal section of my improved lubricator, taken on the line X X, Fig. 2; and Fig. 2 is a side view of the same, with part broken off to show the interior.

Similar letters of reference indicate corresponding parts.

My invention relates to a double automatic lubricator for steam-cylinders of locomotives and other engines, by which one of the lubricators may be dispensed with; and it consists of a cup cast in one piece with fixed internal feed-pipes, having regulating top nozzles and outer cocks for shutting off the steam.

In the drawing, A represents the cup of my improved lubricator, which is fastened to the top of the boiler, back of the smoke-stack. The cup A is connected, by steam-pipes B at opposite sides of the cup, with the steam-chests of the cylinder. Each pipe B has a stop-cock, B′, at the outside of the cup, by which the steam-connection may be shut off in case one side of the engine breaks down. The feed-pipes C at the inside of the cup are made in one casting with the body of the cup, and extended from the exit-points, at opposite sides, in an upward curve, to some distance from the cup A′. The upper ends of the feed-pipes are placed sidewise to each other, and provided with regulating-nozzles D, that are screwed into the feed-pipes, so as to be set conveniently a small distance (about one-eighth of an inch, more or less) from the cup.

The casting of feed-pipes and cup in one piece makes the cup cheaper, and without joints. The connecting-pipes B are screwed from the outside into the feed-pipes C. The steam passes up the pipes from the steam-cylinder, and condenses gradually in the cup, which, by the double condensation of the pipes forces the oil up the nozzles and down the pipes as long as the engine is running. When the steam is shut off, the supply of oil is interrupted, being regularly supplied when the steam is let on again.

The cup A′ is readily unscrewed for filling, and the lubricator cleaned by blowing out from below, a bottom stop-cock and pipe-connection with the boiler admitting the required steam.

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

1. The combination of the lubricator, having interior feed-pipes, with cylinder connecting-pipes and stop-cocks at opposite points, to shut off either pipe, substantially as herein shown and described.

2. A lubricator having the feed-pipes cast in one piece with the body of the cup, substantially as herein shown and described.

3. The combination of the interior feed-pipes with adjustable top nozzles and the cap of the lubricator, to regulate oil-supply, substantially as herein shown and described.

JOSEPH WARREN REED.

Witnesses:
EDWIN W. DE YOE,
G. W. RUSSELL.