

E. McCOY.
LUBRICATOR.

APPLICATION FILED JUNE 6, 1908.

997,400.

Patented July 11, 1911.

2 SHEETS—SHEET 1.

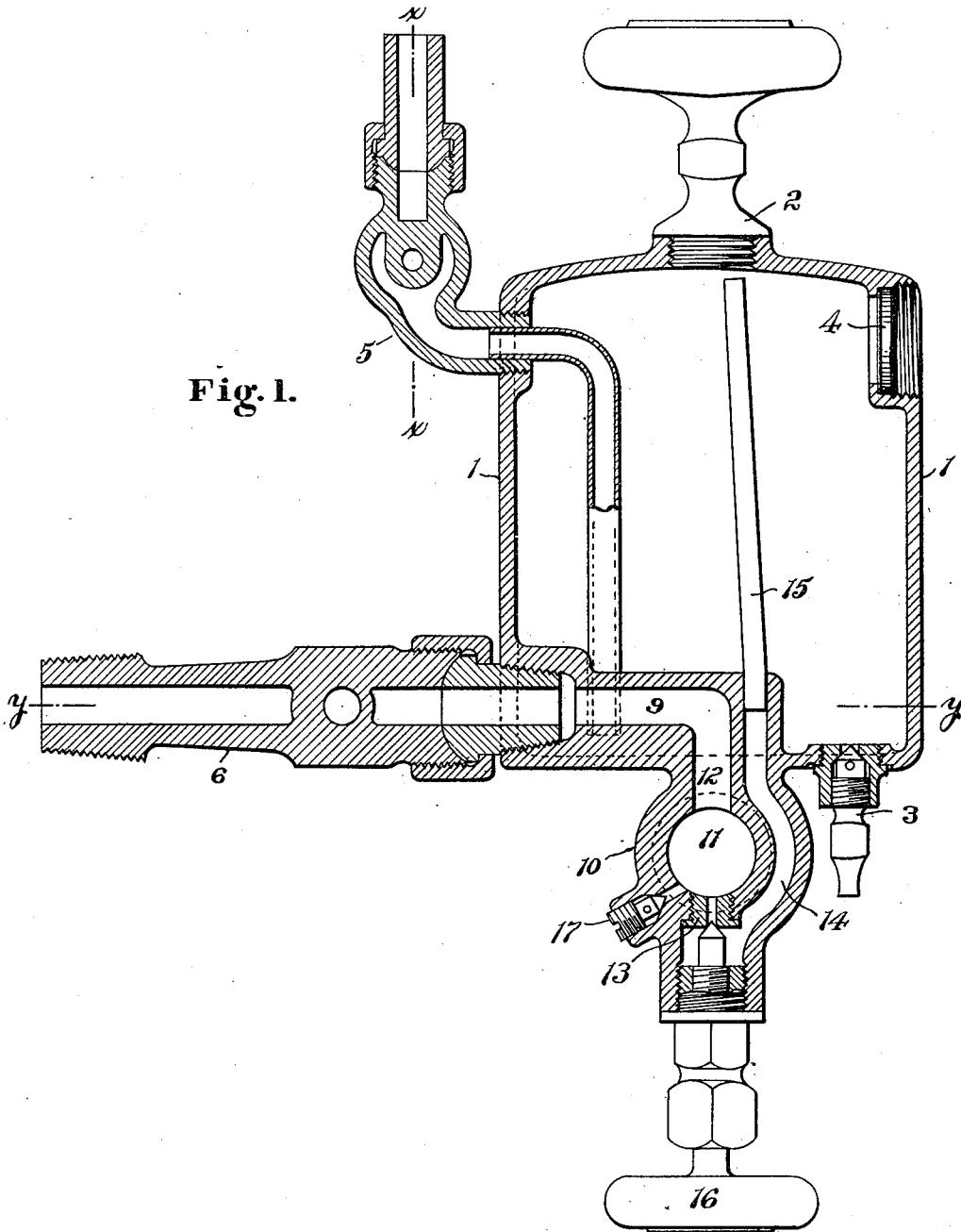


Fig. 1.

WITNESSES:

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INVENTOR

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2 SHEETS—SHEET 2.

Fig. 3.

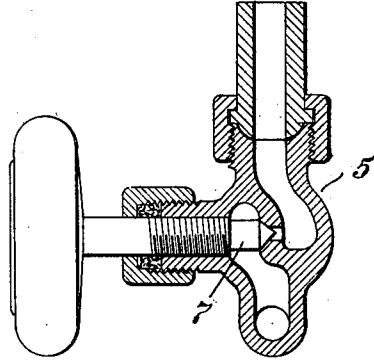
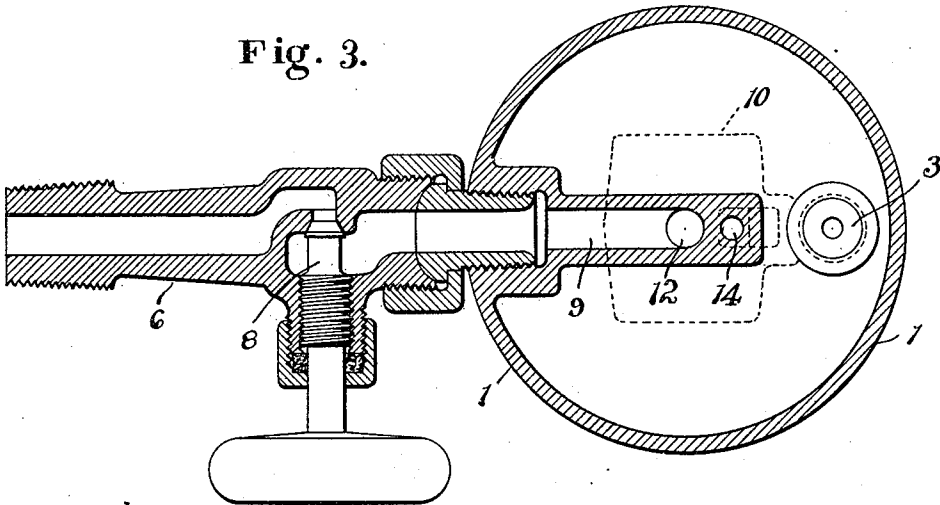


Fig. 2.

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UNITED STATES PATENT OFFICE.

ELIJAH McCOY, OF DETROIT, MICHIGAN, ASSIGNOR TO PENBERTHY INJECTOR COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

LUBRICATOR.

997,400.

Specification of Letters Patent.

Patented July 11, 1911.

Application filed June 6, 1908. Serial No. 437,052.

To all whom it may concern:

Be it known that I, ELIJAH McCOY, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to a sight-feed condensation displacement lubricator, and the primary object of the invention is to provide a lubricator of this character which does away with the trouble arising in cold
15 weather from the chilling of the lubricant when the lubricator is used in exposed positions as on traction engines and the like. All lubricants, especially the heavier grades of oil, become sluggish when chilled and
20 when in this condition the action of the lubricator becomes spasmodic or it may stop altogether, the usual remedy being to turn on the maximum feed, which is a wasteful way to overcome the trouble.

25 There are lubricators in which the chilling of the lubricant is prevented by contact with steam heated parts, but experience has shown that this is liable to overheat it and cause it to foam, the foam gathering in the
30 sight feed chamber and obstructing the view so that it is impossible to tell whether the lubricator is working or not.

My invention consists in so constructing the lubricator that the temperature of the
35 lubricant is maintained at a workable temperature by keeping the water of condensation therein in heating contact with steam and the lubricant in heating contact with the water of condensation in the reservoir as
40 well as in the passages therefrom to the discharge outlet.

In a former application for United States Patent granted June 16, 1908, No. 890,787, I have described a lubricator which
45 involves the same broad idea, but the present application applies it in different form which I consider to be more simple, efficient and economical to construct and better adapted for vehicular use, all as more fully
50 hereinafter described and shown in the accompanying drawings, in which:—

Figure 1 is a vertical central section of my improved lubricator. Fig. 2 is a vertical section on line $x-x$ Fig. 1, and Fig. 3
55 is a horizontal section on line $y-y$ Fig. 1.

In the drawings 1 represents the oil reservoir provided with a filler plug 2 draining plug 3 and sight opening 4 all of known construction. The reservoir is provided with two side arms 5 and 6, one at the top
60 and the other at the bottom, the two arms forming the connections of the lubricator with the steam lead (not shown) in what is known as a double connection lubricator. The arm 5 is provided with the controlling
65 valve 7 and extends within the reservoir to near the bottom thereof as in the usual construction of condensation displacement lubricators. The arm 6 has a controlling
70 valve 8 and communicates with a steam chamber 9 cast in the bottom of the reservoir and forming a direct horizontal continuation of the steam passage in the arm 6.

Centrally below the bottom of the reservoir is located in close proximity thereto
75 the sight feed fixture 10 preferably integrally cast with the reservoir. This fixture is formed with the bull's eye sight chamber 11 which communicates with the steam chamber through a downward extension 12
80 forming a continuation thereof and leading into the top of the sight chamber. In the bottom of the sight chamber is secured the feed nozzle 13 which communicates through a passage 14 in the sight fixture
85 with the oil duct 15 adapted to convey the lubricant displaced in the reservoir to the passage 14. The sight fixture is provided at the bottom with the regulating valve 16 and with the drainage plug 17 the function
90 of which parts are well understood.

The side arms 5 and 6, connecting the lubricator with the steam lead, supply the reservoir and the sight feed with the water of condensation; and the lubricant displaced
95 in the reservoir passes down through pipe 15, passage 14 to nozzle 13 and thence through the condenser head formed by the chamber 11 and the extension 12 of the chamber 9 into the side arm 6 which conducts
100 the lubricant to the part to be lubricated.

The chamber 9 will always contain a head of steam but the lubricant in the reservoir is kept out of heating contact therewith by the water of condensation therein even if the
105 chamber slightly projects above the bottom since some water of condensation may be left in the reservoir or be allowed to accumulate before refilling. On the other hand the water of condensation in the reservoir
110

is heated by the steam in the chamber 9 in its coolest part where it is exposed to the greatest cooling influence of the outside temperature and its temperature will be readily communicated to the lubricant above it and keep it from being chilled while the condensation produced thereby will supply the condenser head in the sight feed fixture with water of condensation at a temperature corresponding to that in the reservoir. The lubricant in the passage 14 is thus prevented from being chilled by the close proximity to the condenser head in the sight feed fixture. By forming the chamber 9 and sight feed fixture as integral parts of the metallic body of the reservoir and in close proximity to each other the temperature of the different parts will also readily be equalized.

The novel feature of my invention consists in admitting steam through a discharge arm into a chamber or passage provided on the bottom of the reservoir in such manner that it supplies heat to the lubricant indirectly through the water of condensation while at the same time the chamber forms a condenser for supplying the condenser head of the sight feed fixture, the latter being arranged at the bottom of the reservoir and having a passage arranged contiguous to the condenser head through which the lubricant is conducted into the sight feed chamber by downward displacement from the reservoir.

What I claim as my invention is:—

1. The combination with the oil reservoir and sight chamber depending from the bottom thereof and communicating therewith through an oil passage leading into the bottom of the chamber, of a steam chamber in

the bottom of the reservoir in heating contact with the water of condensation therein and forming the condenser for supplying the sight chamber with the water of condensation, said steam chamber communicating with the top of the sight chamber and forming a horizontal outlet therefrom into the discharge arm.

2. The combination with the oil reservoir and sight chamber depending from the bottom thereof and communicating therewith through an oil passage leading into the bottom of the sight chamber, of a steam chamber in the bottom of the reservoir in heating contact with the water of condensation therein and forming the condenser for the sight chamber, the steam chamber communicating with the sight chamber through a vertical passage forming a downward continuation of the steam chamber, and a discharge arm forming a horizontal extension of the steam chamber.

3. The combination with the oil reservoir and sight chamber depending from the bottom thereof and communicating therewith through an oil passage leading from the top of the reservoir into the bottom of the sight chamber, of a steam chamber in the bottom of the reservoir above the sight chamber and forming the condenser for the same, said steam chamber extending vertically downwardly into the top of the oil chamber and horizontally outwardly into a discharge arm.

In testimony whereof I affix my signature in presence of two witnesses.

ELIJAH McCOY.

Witnesses:

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C. R. STICKNEY.