No. 812,032. PATENTED FEB. 6, 1906

J. C. FICKES.

LUBRICATOR.

APPLICATION FILED AUG. 4, 1905.

Fig. 3.

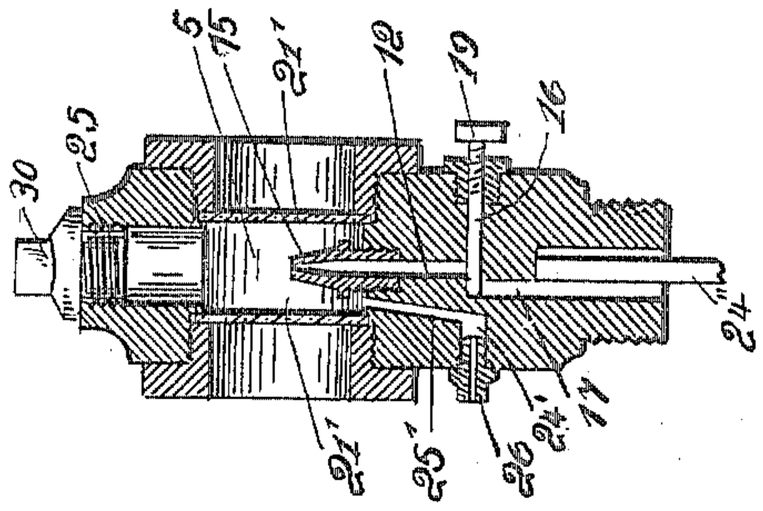


Fig. 2.

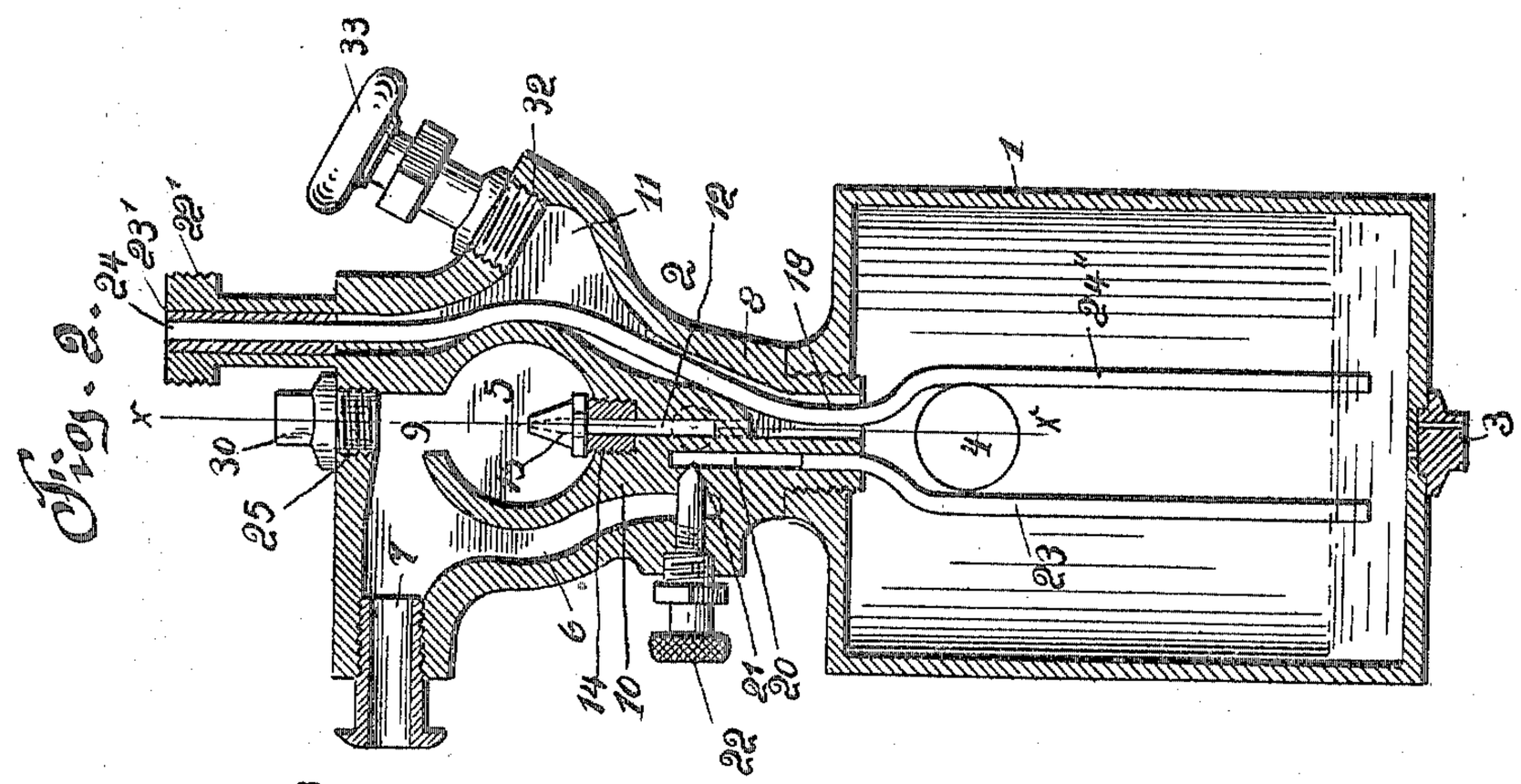
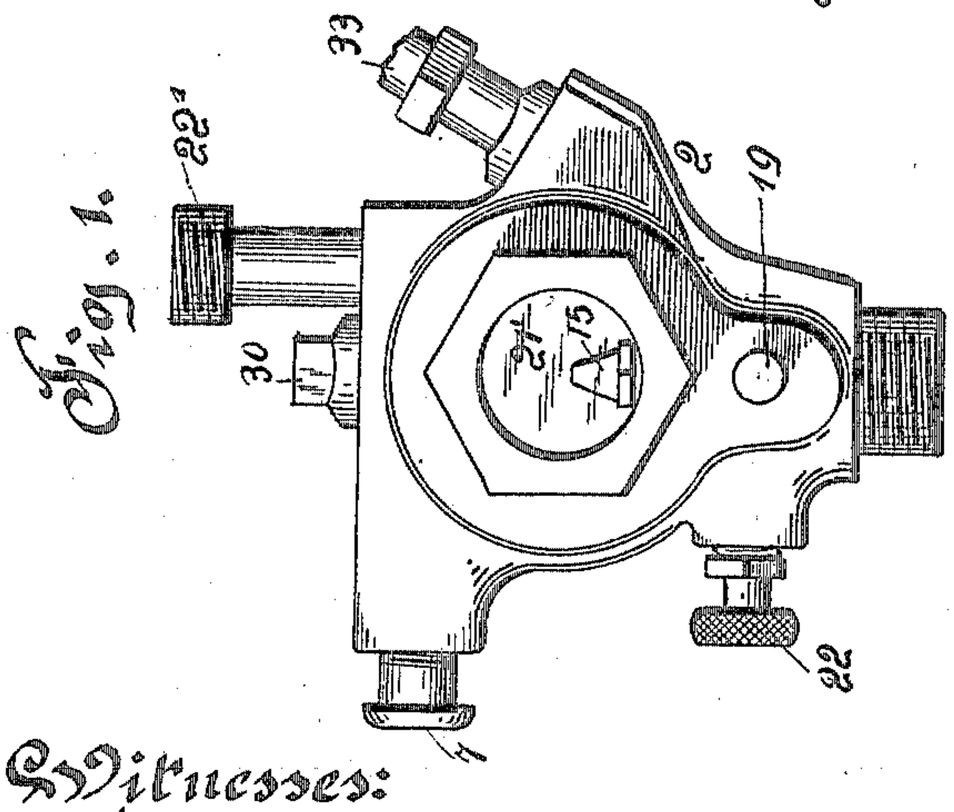


Fig. 1.



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UNITED STATES PATENT OFFICE.

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LUBRICATOR.

No. 812,032. Specification of Letters Patent. Patented Feb. 6, 1906.

Application filed August 4, 1905. Serial No. 272,703.

To all whom it may concern:

Be it known that I, JOHN C. FICKES, a citizen of the United States of America, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Lubricators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in lubricators, and more particularly to that character of lubricator adapted for automatically feeding oil or grease into a steam-line supplying a cylinder or steam-chest upon an engine.

The object of this invention is to provide a novel form of receptacle or cup connected with a steam-line, wherein the condensation of steam is utilized to force the contents of the receptacle into a steam-line supplying a cylinder or steam-chest.

A further object of this invention is to provide a novel form of lubricator in which premelted grease or oil is employed as a lubricant and novel means employed for heating and governing the amount of lubricant to be fed to the cylinder or steam-chest.

My invention consists in the novel construction, combination, and arrangement of parts which will be hereinafter more fully described and then specifically pointed out in the claims, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a side elevation of my improved lubricator, a portion of the same being removed. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a vertical transverse view of the lubricator, a portion of the same being removed.

To put my invention into practice, I employ a suitable oil or grease reservoir 1, the top of which is provided with a detachable head 2. The reservoir is also provided with a drain-opening 3, which is provided with a conventional form of drain cock or plug 3′ and a sight-indicating glass 4, the latter being preferably of a circular type.

The head portion 2 of my improved lubricator consists of a central chamber 5, the top of the same being open and communicating with a curved by-path 6, formed upon one side of the chamber 5 and extending toward the top of the detachable head 2. The top of the by-path 6 communicates with an opening 7, adapted to be connected with a steam-line supplying the cylinder and valve of an engine. In connection with the opening 7 I desire to call attention to the fact that the opening is in horizontal alinement with the opening 9, formed in the top of the steam-condensing chamber 5, the object of which will be presently more fully described.

The bridge-wall 10, which sustains the chamber 5 and serves functionally as a dividing-wall for the neck portion 8 of an oil-receptacle 11, is provided with a vertically-disposed port 12, which terminates in a screw-threaded recess 14, in which a nipple 15 is mounted, this nipple protruding upwardly into the central chamber 5 of the head 2. Communicating with the lower end of the port 12 is a horizontally-disposed port 16, the inner end of which extends slightly beyond the lower end of the port 12 and communicates with a vertically-disposed port 17, formed in the bridge-wall 10, this port communicating by a passage 18 with the reservoir 1 and the oil-receptacle 11. In the port 16 is mounted a needle-valve 19, which is adapted to control the passage of the oil or grease contained within the reservoir 1 to the chamber 5. In the bridge-wall 10 is also formed a vertically-disposed port 20, the upper end of which terminates in close proximity to the curved by-path 6 of the head 2, and this by-path and the port 20 communicate with one another by a horizontally-disposed port 21, in which a needle-valve 22 is mounted to control the outlet of steam condensations within the reservoir 1. In the lower end of the vertically-disposed port 20 is brazed or suitably secured a depending tube 23, which extends into close proximity to the bottom of the reservoir 1. In horizontal alinement with the needle-valve I provide the opposite side of the head 2 with a port 24′, which communicates with the chamber 5 by an angularly-disposed port 25′. In the end of the port 24 is mounted a pierced lug 26. The object of these ports will be presently described.

The sides of the chamber 5 are provided with substantially circular-shaped bull's-eye

sight-glasses 21′ 21′, through which may be observed the action of the oil or grease passing through the jet or nipple 15.

The top of the head 2 is provided with an upwardly-extending screw-threaded protuberance 22′, provided with a port 23′, and communicating with this port is a steam-condensing pipe 24″, that passes downwardly through the oil-reservoir 11 and around the chamber 5, through the neck portion 8 into the reservoir 1, the lower end extending in close proximity to the bottom of the reservoir. The top of the detachable head is also provided with a screw-threaded opening 25, adapted to retain a closure plug or nut 30, this plug permitting of access being had to the chamber 5, whereby the bull's-eye sight-glasses 21′ 21′ can be cleansed and also providing means whereby the nipple 15 can be removed. The oil-receptacle 11 is provided with a screw-threaded aperture 32, in which is adapted to be secured a closure-plug 33.

When it is desired to operate my improved lubricator, the upwardly-extending protuberance 22′ is connected with a suitable steam-line, this also being true of the opening 7. The receptacle or reservoir 11 is filled with premelted grease or oil, according to the desired lubricant to be fed through the lubricator. The condensation of the steam in the pipe 24″ will gradually fill this pipe and the steam-line, and the gravity of the condensed steam or water over and above the boiler-pressure will force the oil or liquid grease contained within the receptacle up through passage 18 into port 17, and should the engineer or operator of the engine equipped with my improved lubricator desire to inject the lubricant into the steam cylinder or chest of the engine a slight rotation of the needle-valve 19 will cause the lubricant to pass into the port 12 upwardly through the nipple 15 into the chamber 5, and as this chamber is full of water the lubricant emitted to the chamber will float across the same into the opening 7 and then to the cylinder or chest to be lubricated.

It is obvious that I have created a sufficient circulation of the condensation being deposited at the bottom of the reservoir 1 to force the melted grease or oil contained within the reservoir upwardly through the various ports to the chamber 5, also that the melted grease or oil contained within the receptacle and the head of the lubricator can be maintained at any desired temperature. In employing the condensation and circulation of steam I have devised novel means for retaining the lubricant of the reservoir at a sufficient temperature to retain the same in a warm and heated condition, consequently in a fluid or workable state, thus dispensing with the freezing or coagulation of the same.

In providing my improved lubricator with the ports 24′ and 25′ the plug 26 can be removed at any desired time and the chamber 5 thoroughly cleansed of any grease or oil that may adhere to the sides thereof, the back pressure being sufficient to remove these foreign ingredients. This is also true in connection with the reservoir 1 and the by-path 6, as these parts can be readily cleansed by removing the oil or grease from the reservoir 1.

I am aware that lubricators have been devised somewhat similar to my improved lubricator; but I desire to call particular attention to the location of the opening 7 relative to the opening 9 of the condensing-chamber, this location of the opening 7 greatly facilitating the passage of the lubricant to the steam chest or cylinder to be lubricated.

What I claim, and desire to secure by Letters Patent, is—

1. In a lubricator, the combination with a suitable reservoir having a drain-opening and sight-openings, of a detachable head carried by said reservoir, said head having a condensing-chamber formed therein with a suitable opening, said head having an opening formed therein in substantially horizontal alinement with said opening, a steam-pipe extending through said head into said reservoir, an oil-receptacle carried by said head and communicating with said reservoir, said head having vertically-disposed ports formed therein, and communicating with said chamber, a pipe carried by said head and communicating with one of said ports and extending downwardly into said reservoir, said head having a cleansing-port formed therein, needle-valves controlling the first-named ports, sight-glasses carried by said head, substantially as described.

2. In a lubricator, the combination with a suitable reservoir adapted to contain a premelted lubricant, of a head having a lubricant-receptacle formed therein, said head having a chamber formed therein, said head having a plurality of ports formed therein, establishing communication between said reservoir and said chamber, said head having an outlet-opening and said chamber having an opening at its top in substantially horizontal alinement with the outlet-opening of the head, means to separately control the communication between the chamber and the reservoir through said ports, and a steam-pipe extending through said lubricant-receptacle and through a port establishing communication between said receptacle and said reservoir to heat the lubricant in said receptacle.

3. In a lubricating device, the combination with a reservoir having a detachable head, of a chamber formed in said head, and having an opening in its top, said head being provided with an opening disposed in substantially horizontal alinement with the opening in the top of said chamber, and said head

being formed with a port extending from the chamber to the reservoir, a pipe extending into said reservoir and adapted to convey steam thereto, and means for controlling the passage of condensed steam from the reservoir into the chamber, through the said ports.

4. In a lubricating device, the combination with a reservoir and a detachable head mounted on said reservoir, said head being formed with a central chamber having an opening at its top, said head being also formed with a lateral opening in substantial alinement with the opening at the top of said chamber and said head being formed with an oil-receptacle disposed at one side of said chamber and with ports leading from said chamber to said reservoir and from said receptacle to said reservoir, of a steam-pipe passing through said receptacle and through the port leading from said receptacle to the reservoir, said head being formed with a by-pass port leading from said reservoir to the space between the lateral opening in the head and the opening at the top of said chamber.

5. In a lubricator, the combination with a suitable reservoir of a detachable head carried by said reservoir, said head having a condensing-chamber formed therein and with an opening in its top, said head having an outlet-opening disposed in substantially horizontal alinement with the opening in the top of said chamber, an oil-receptacle formed integral with said head, and communicating with said reservoir, said head being formed with a vertically-disposed port providing communication between the reservoir and chamber, and said head being provided with a port leading from the reservoir to a point between the opening in the top of the chamber and the outlet-opening of said head.

6. In a lubricator, the combination with a suitable reservoir of a detachable head carried by said reservoir, said head having a condensing-chamber formed therein and with an opening in its top, said head having an outlet-opening disposed in substantially horizontal alinement with the opening in the top of said chamber, an oil-receptacle formed integral with said head, and communicating with said reservoir, said head being formed with a vertically-disposed port providing communication between the reservoir and chamber, and said head being provided with a port leading from the reservoir to a point between the opening in the top of the chamber and the outlet-opening of said head, and a pipe carried by said head and extending from said port to a point adjacent the bottom of said reservoir.

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

JOHN C. FICKES.

Witnesses:
W. J. HILL,
D. M. GRUBER.