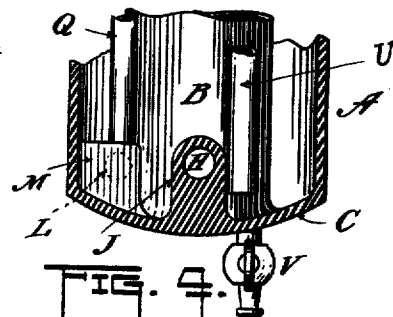
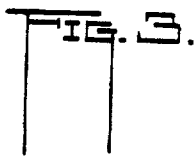
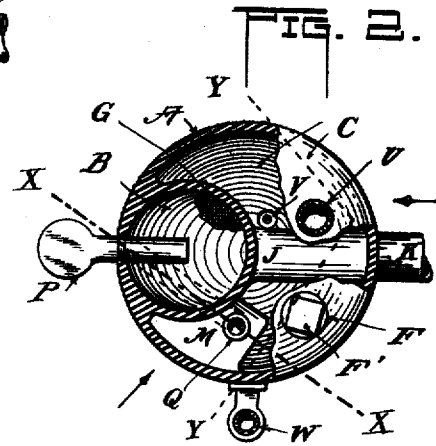
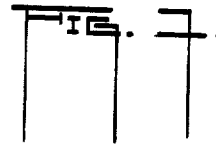
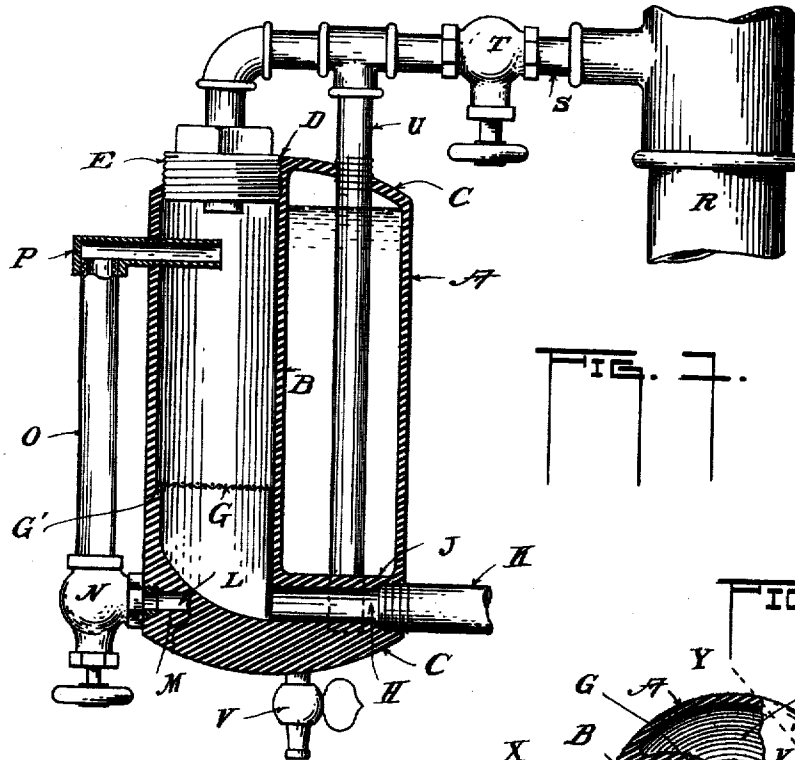


W. M. TEMPLETON.
LUBRICATOR.
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1,012,114.

Patented Dec. 19, 1911.



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UNITED STATES PATENT OFFICE.

WILLIAM M. TEMPLETON, OF AVERYVILLE, ILLINOIS.

LUBRICATOR.

1,012,114.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed July 5, 1910. Serial No. 570,300.

To all whom it may concern:

Be it known that I, WILLIAM M. TEMPLETON, citizen of the United States, residing at Averyville, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Lubricators; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to lubricators of the "sight-feed" type.

An object, as in other devices of which I am aware, is to provide a structure for nebulizing or atomizing a lubricant and introduce it in that state into a cylinder or other part to be lubricated whereby all of the surfaces of said cylinder or part will be thoroughly and evenly coated therewith.

Another object is to provide a new structure, in a lubricator by which the lubricant will be very finely divided so that it will be evenly and thoroughly distributed upon the wearing surfaces.

In addition to the above objects the invention relates to certain details of construction as will be pointed out herein but before entering upon the description of my device some of its advantages will be outlined.

Oil is quite heavy and when introduced into a cylinder it naturally falls upon and lies in the lowest part of said cylinder and only lubricates that portion. In my lubricator the oil is introduced into the cylinder in a nebulous form by being thrown with great force upon and through a member, preferably a foraminated one, by which it is very finely divided and nebulized so as to pass in that form to and upon all of the surfaces of the cylinder. In addition to this advantage my improved lubricator may be used in a zero temperature and perform its duties as perfectly as in a warm room from the fact that live steam, which constantly circulates through it, keeps its metal and the oil hot. Since live steam is constantly circulating through my lubricator the oil can be kept at an even temperature so that when the device is adjusted to feed a certain quantity of oil the rate of feed will be constant under all variations of external temperature.

In the appended drawing:—Figure 1 is a vertical section of my improved sight feed lubricator. Fig. 2 is a plan of the same with

parts broken away. Fig. 3 is a vertical section of the lubricator on line X X, Fig. 2. Fig. 4 is a vertical section of a portion of the lubricator on line Y Y, Fig. 2, as viewed in the direction of the arrow.

The body of the lubricator consists of a cylinder or shell A within which is a smaller cylinder or shell B the two being preferably cast as a single member as indicated in Fig. 2; the wall of the inner cylinder B and the wall of the cylinder A being connected at one side for convenience in more easily connecting a steam pipe into said inner cylinder B as will be described later, and the top and bottom walls or ends C C serve to cover both cylinders and to separate one from the other so as to form two separate receptacles. At the top of the cylinder B the upper end C is provided with an opening D preferably of the full inner diameter of said cylinder; said opening being provided with screw threads to receive a threaded plug E. The space within the cylinder A is provided for receiving and holding oil which is supplied thereto through a hole F closed by a plug F'; Figs. 2 and 3, in the top wall.

Placed within the cylinder B is a diaphragm G inserted through the opening D said diaphragm being foraminated or in the form of a wire strainer of very fine mesh which lies in place for instance upon a shoulder G' formed in the wall of said cylinder B, or supported and held in place in any other desired way, said diaphragm having a position a short distance above the bottom of the cylinder or about as shown. Preferably in the bottom of the cylinder A is a substantially horizontally disposed bore H extending through an integral cast portion J said bore communicating at one end with the cylinder B and extending through the outer wall of the cylinder A, as shown in Fig. 1 there being a conduit K connected into the said bore through which conduit the lubricant is introduced into the engine cylinder (not shown). Also in the bottom of the device is a second bore L extending through an enlargement or heavier part M said bore opening through that portion of the wall of the device where the cylinders A and B converge and join. Connected into the outer end of said bore L is a valve N, which carries a glass column O preferably filled, as in common practice, with a fluid such as water or glycerin. The upper end of said column is

carried by and communicates with the open end of a pipe P whose other end is threaded into the wall of the device and terminates within the cylinder B. Connected into one end of the bore L at the top of the enlargement M within the cylinder A is a stand pipe Q the upper end of which terminates in the top of said cylinder A.

R is pipe for supplying live steam to the engine and with this is connected a pipe S provided with a valve T said pipe leading into the top of the cylinder B through the plug E, the latter being properly bored and threaded to receive said pipe and to provide a steam tight joint. Connected with said pipe S is a pipe U which extends through the top of the cylinder A and extends preferably down to the bottom of the latter and serves to supply water of condensation to said cylinder to replace the oil as it is used.

The operation of the device is as follows:—The cylinder A is filled with oil to the top of the stand-pipe Q by removing the plug F'. The glass column O is also filled with water or glycerin, the valve N being closed, of course, to prevent the fluid from passing into the bore L and rising in the said stand pipe Q. Steam is now admitted into the pipe S by opening the valve T. This introduces live steam into the cylinder. The oil which runs down through the stand pipe Q reaches the valve N and the adjustment of that member provides for the desired rate of flow of the oil into and up through the glass column O. After passing said valve the oil rises through the fluid in said column and flows along the pipe P into the cylinder B and meets the steam jet issuing from the nozzle constituted by the discharge end of the pipe S in said cylinder. As the oil leaves the inner end of said pipe P drop by drop it is caught by the steam and driven with great force upon and through the diaphragm G causing it to be very finely broken up or nebulized and in that condition is carried along with the steam through the bore H and pipe K and deposited in the cylinder upon all of its walls. As the oil is removed little by little from the cylinder A it is replaced by water of condensation introduced into the cylinder A through the pipe U, the latter being preferably extended down to the bottom of the cylinder, as already stated, so as to deposit the water at once at the lowest point in order to raise the oil instantly to restore it to its original level. Since the cylinder A is a tightly closed one and is filled with oil there is a certain constant pressure upon the oil due to the steam pressure through the pipe U which pipe also must naturally contain water of condensation; the temperature of the oil being lower than that of the steam and causing such condensation. Now, as a portion of oil passes out of the cylinder

through the stand-pipe Q the pressure tends to lower slightly but is at once balanced by the entrance of an amount of water equal to the bulk of the oil released.

In order to clear the cylinder A and let out the water which has finally taken the place of the oil I provide a cock V in the bottom of the cylinder. This when opened permits the discharge of the water and all foreign matter such as grit which may have entered with the oil and just here another of the advantages of my lubricator may be mentioned. Since the oil is always kept hot and is consequently thin, any grit and other foreign matter carried by the oil will readily sink to the bottom of the cylinder. The top portion of the oil being naturally free from foreign matter therefore enters the engine cylinder perfectly clear of all injurious matter likely to abrade the metal surfaces and when cleaning the cylinder A through the cock V the foreign matter left behind will be discharged.

The usual gage glass W is indicated in Fig. 2 this being used in order that the height of the oil may be determined at all times.

The construction of the lubricator may be changed in one manner or another so long as the objects sought are accomplished since I do not wish to be confined particularly to what is shown.

Having thus described the invention, I claim:—

1. In a lubricator, a single hollow casting having a substantially vertically disposed dividing wall separating its interior into two compartments, one of them for oil, the other for steam, a pipe erected in the oil receptacle and terminating in the upper part thereof its passage communicating with the steam receptacle, a steam pipe having a branch terminating in the bottom of the oil receptacle and a branch terminating in the said steam receptacle, and a discharge pipe connected with the latter.

2. In a lubricator, the combination of a single hollow receptacle having a dividing wall separating it into two compartments one for containing oil, a stand-pipe erected within the oil-compartment and terminating in an open end in the upper portion of the same, a conduit terminating in an open end in the other of the compartments and communicating with the stand pipe, a discharge pipe connected into said compartment, a steam pipe having a branch terminating in the bottom of the compartment having the stand-pipe, and having a branch terminating in that part of the compartment having the terminus of the described conduit, and a foraminated diaphragm having a position within the last named compartment between the discharge pipe and the conduit opening into the same, the ter-

minus of the conduit lying between the diaphragm and the described terminus of the steam pipe.

3. In a lubricator, the combination of a
 5 single casting including a receptacle for oil
 and an adjoining receptacle for steam, a
 foraminated member dividing the latter
 into two parts, a pipe erected in the oil re-
 ceptacle and opening into the top of the
 10 same, a valve controlled pipe opening at one
 end within the steam receptacle in one of
 the parts thereof and communicating at its
 lower end with the lower end of the pipe
 in the said oil receptacle, a conduit connect-
 15 ed into the other of the parts of said steam
 receptacle and leading to the place to be
 lubricated, and a pipe for steam having a
 branch leading into the bottom of the oil
 receptacle and a branch terminating in that
 20 part of the steam receptacle having the pipe.

4. In a lubricator, an outer shell forming

a receptacle and an inner receptacle cast
 therewith and separated therefrom, a steam
 pipe connected into the top of the second
 named receptacle, a branch pipe extending 25
 from said steam pipe and terminating in
 the first named receptacle, an oil conduit
 leading from the top of the said first named
 receptacle and terminating in the upper por-
 tion of the second named receptacle, a fo- 30
 raminous diaphragm in said second recep-
 tacle, the oil conduit leading from the said
 first receptacle having its terminus between
 the diaphragm and the steam pipe, there be-
 ing an opening in the top of the first recep- 35
 tacle, and a member to close the same.

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

WILLIAM M. TEMPLETON.

Witnesses:

L. M. THURLOW,

A. KEITHLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
 Washington, D. C."