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AUTOMATIC OILER.

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1,020,835.

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Fig. 2.

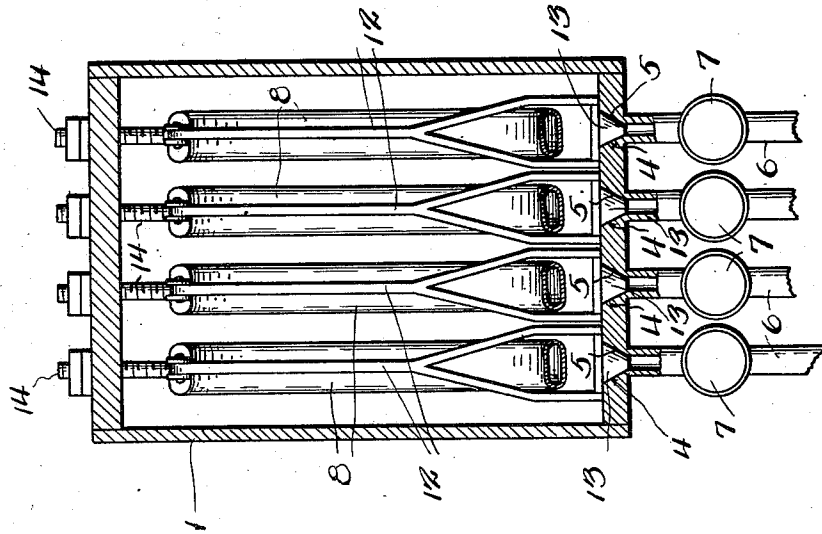
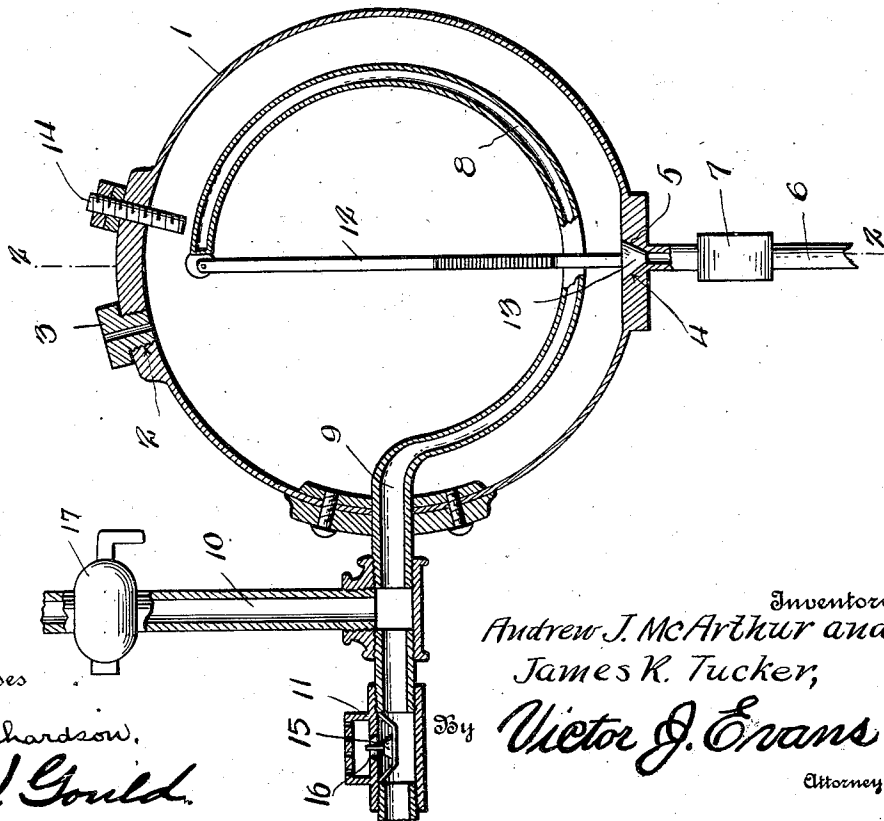


Fig. 1.



Witnesses

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UNITED STATES PATENT OFFICE.

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AUTOMATIC OILER.

1,020,835.

Specification of Letters Patent.

Patented Mar. 19, 1912.

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To all whom it may concern:

Be it known that we, ANDREW J. McARTHUR and JAMES R. TUCKER, citizens of the United States, residing at Springfield, in the county of Effingham and State of Georgia, have invented new and useful Improvements in Automatic Oilers, of which the following is a specification.

The invention relates to automatic oiling devices, being particularly directed to a construction for use on steam engines or the like and adapted to automatically supply oil to the desired parts while the engine is taking steam.

The main object of the present invention is the provision of an automatic oiling device in which the oil supply from a reservoir is controlled by a valve, the construction including automatically operated means whereby the valve is actuated under predetermined conditions to provide for the flow of a supply of oil from the reservoir to the desired bearings.

A further object of the invention is the utilization of the valve actuating means as a heating medium for the body of oil within the reservoir to maintain the latter in proper fluid condition.

A further object is to provide means whereby the valve actuating means may be manually limited in movement to regulate the maximum opening of the valve and thereby control the quantity of oil flowing from the reservoir in a given time.

A still further object of the invention is the provision of means whereby the valve actuating mechanism may be manually controlled to adapt the lubricator for service when the engine is not taking steam, as may, under some circumstances, be desired.

The invention in its preferred details of construction will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a vertical sectional view illustrating the improvement. Fig. 2 is a section on line 2—2 of Fig. 1.

Referring particularly to the accompanying drawings, the improved automatic oiler includes a reservoir 1 comprising a suitable casing of any contour or size desired. The casing is formed with a filling opening 2 designed to be normally closed by a removable

plug 3 and with an oil outlet 4, through which the oil is directed by gravity, the walls of the outlet being formed to provide a valve seat 5. The oil outlet in the reservoir communicates with a tube or pipe 6 leading to the bearing to be served, and said tube preferably includes, in an appropriate part thereof, a sight glass 7 by means of which the passage of the oil may be noted and the failure of operation guarded against.

Within the reservoir is arranged an actuator 8, preferably a Bourdon tube. The tube is in open communication with a steam pipe 9 opening through the wall of the reservoir and leading preferably to the valve chest or other appropriate part of the engine, the object sought being to supply steam to the actuator while the engine is taking steam. Immediately adjacent the reservoir the tube 9 is, through a suitable coupling, in communication with a steam pipe 10 leading to any suitable source of steam supply and controlled by a valve 17 so that the lubricator can, by the manipulation of the valve, admit steam to the actuator at will. Beyond the pipe 10 with relation to the reservoir is arranged an automatic relief valve 11 of any usual or preferred type designed to relieve the pressure in the pipe 9 upon the cessation of the steam supply thereto. As shown this relief valve comprises a puppet valve 15 adapted to be forced against its seat 16 by pressure of the steam entering the actuator. When the steam is cut off from the actuator condensation takes place therein and the atmospheric pressure on the valve 15 together with the weight thereof causes the said valve to open and thereby relieve all pressure in the actuator.

Secured to the free end of the actuator 8 is one end of a rod 12, the opposite end being provided with a valve 13 designed to cooperate with the valve seat 5 to close the oil outlet from the reservoir when the valve is in normal or lowered position. A set screw 14 is threaded through the reservoir, preferably through a thickened portion thereof, and has its free or inner end immediately overlying the free end of the actuator 8, said set screw being longitudinally adjustable, through the reservoir wall, to dispose its free end at a desired distance above the actuator and thereby, in an obvious manner,

limit the opening movement of the valve to control the quantity of oil delivered to the reservoir in a predetermined time.

As will be plain from the drawings, the invention contemplates a plurality of actuators arranged within a single casing or reservoir, each actuator controlling its own outlet and the respective oil outlets leading to different bearings. It is of course to be understood that we contemplate the use of but a single actuator and correspondingly limited number of cooperating parts, or the use of any number, as may be found expeditious in a particular case.

In operation the engine on taking steam will permit the passage of such fluid to the actuator 8, and under the well-known operation of such part the valve will be open to the extent limited by the position of the adjusting screw. The bearing or bearings connected with the reservoir will thus be supplied with oil automatically during running of the engine. If manual control of the lubrication is desired, the operation of the lubricator may be effected manually through the pipe 10, as previously explained. The arrangement of the actuator within the reservoir, and hence within the oil contained therein, insures the proper temperature of

the oil under any and all conditions and thereby provides for an even and regular flow of oil from the reservoir.

The pipe 10 and control of the oiler thereby is particularly advantageous in the use of the device in locomotives as it permits the engineer to control the supply of oil to the moving parts when the engine is standing still or traveling under its own momentum or under grade influence without taking steam.

Having thus described the invention, what we claim as new is:—

An automatic lubricator comprising an oil reservoir, formed with a valved outlet, a valve controlling said outlet, a steam receiving valve actuator arranged within the reservoir, whereby the heat from the steam within the actuator maintains the fluidity of the lubricant, and a set screw carried by said reservoir for regulating the movement of the valve.

In testimony whereof we affix our signatures in presence of two witnesses.

ANDREW J. MCARTHUR.

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Witnesses:

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