(No Model.)

H. GLANZ.

LUBRICATOR.

No. 588,566. Patented Aug. 24, 1897.

Fig. 1.

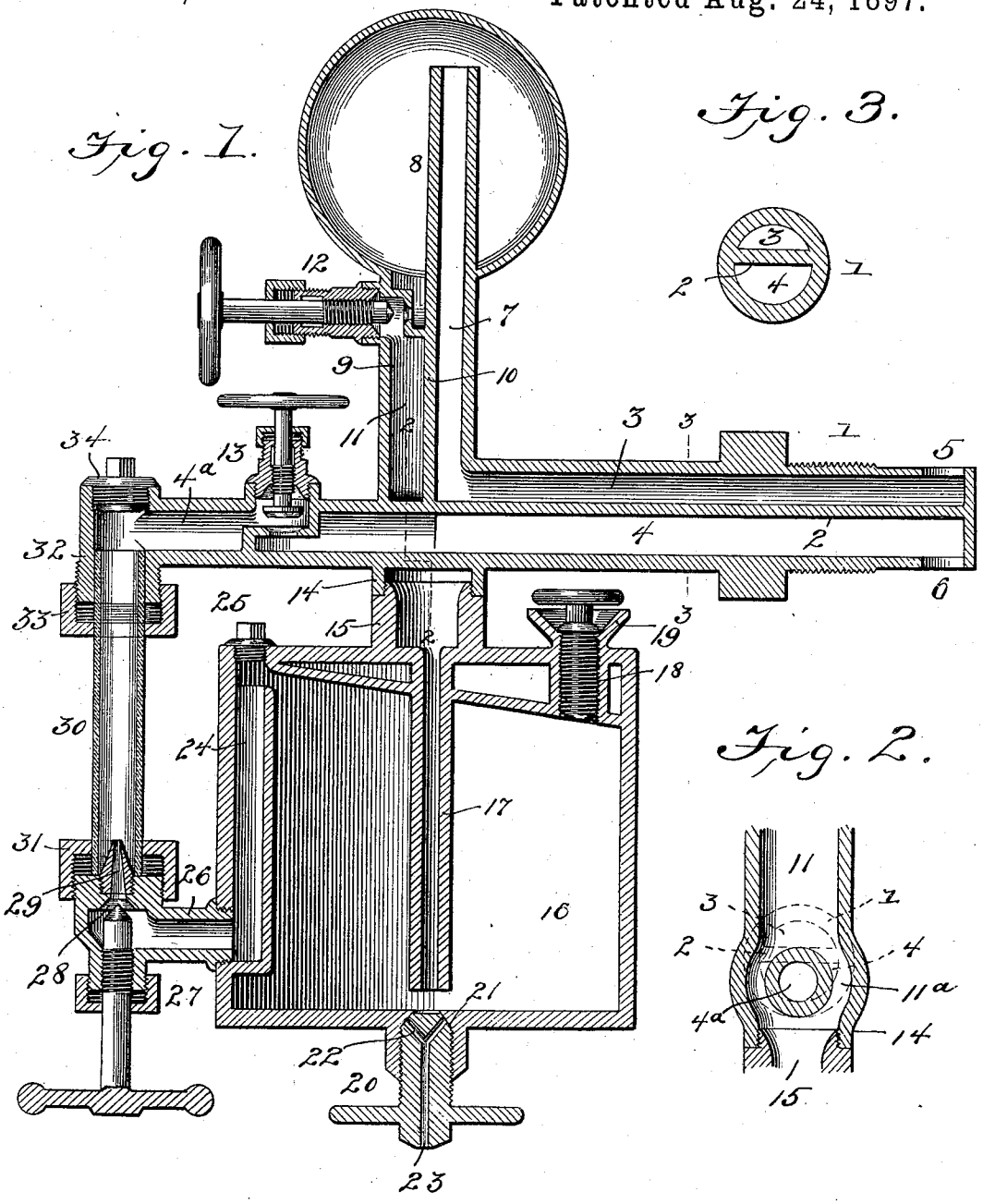


Fig. 3.

Fig. 2.

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LUBRICATOR.

SPECIFICATION forming part of Letters Patent No. 588,566, dated August 24, 1897.

Application filed March 16, 1897. Serial No. 627,820. (No model.)

To all whom it may concern:

Be it known that I, HENRY GLANZ, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Lubricator, of which the following is a specification.

My invention relates to lubricators adapted for use in connection with steam-engine and pump cylinders and similar devices, and has for its objects to provide a simple and efficient construction and arrangement of parts whereby the application of the lubricator to the cylinder is facilitated, to provide simple and efficient means whereby broken or injured parts may be replaced, and, furthermore, to provide means whereby the oil in the oil chamber or reservoir may be wholly discharged before water of condensation is allowed to enter the outlet-passage of the apparatus.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a vertical sectional view of a lubricating device constructed in accordance with my invention. Fig. 2 is a detail vertical section of the water-passage on the plane indicated by the line 2 2 of Fig 1. Fig. 3 is a detail transverse section of the main pipe containing the steam and oil passages on the plane indicated by the line 3 3 of Fig. 1.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a main tube or pipe constituting the stem of the apparatus, and this pipe is divided interiorly by a longitudinal diametrical partition 2 to form parallel steam and oil passages 3 and 4, both of which are formed within the contour of the cross-sectionally round pipe. It will be understood that this construction of the main stem or pipe enables the entire capacity of the pipe to be utilized with the exception of that which is occupied by the thin partition 2. The steam and oil passages are provided, respectively, with an inlet 5 and an outlet 6, formed in diametrically opposite walls thereof.

Communicating with the steam-passage 3 is a vertical branch 7, which in turn communicates with a condensation-chamber 8, said branch 7 being formed in a cross-sectionally round branch pipe 9 and being separated by an intermediate partition 10 from a contiguous parallel water-passage 11, in which is arranged a cut-off valve 12.

The oil-passage 2 extends beyond the junction with the main pipe or stem of said branch pipe 9 and is fitted with a second cut-off 13, and the water-passage 11 is spread or carried around the oil-passage, as shown at 11^a, and communicates with a sleeve 14, formed in the under side of the main pipe or stem, preferably in alinement with the branch pipe 9.

Fitted into the sleeve 44 is a thimble 15, preferably cast integral with an oil chamber or reservoir 16, and in communication with the thimble is an inlet-tube 17, which extends axially through the oil-chamber, approximately to the bottom thereof, to introduce steam or water of condensation, flowing from the condensation-chamber, at a point near the bottom of the oil-chamber. This oil-chamber is fitted with a filling-plug 18 and hopper 19, and also in its bottom with an outlet or relief valve 20, of which the upwardly-tapered seat 21 is adapted to close a plurality of branches 22, with which the axial bore 23 of said valve is provided. The object of this outlet or relief valve is to withdraw water of condensation from the oil-chamber when it is desired to introduce a fresh supply of oil. Also, communicating with the interior of the oil-chamber and preferably arranged within the contour thereof, with its extremity contiguous to the plane of the upper wall of the chamber, is a discharge-tube 24, and the top of the oil-chamber is preferably provided, in alinement with said tube or passage, with a removable plug 25 to facilitate the cleaning of the tube or passage. The outlet-tube communicates by means of a branch 26 with the casing of a regulating-valve 27, and oil entering said casing and passing the valve-seat 28 is conducted by a reducing-nozzle 29 into a sight-tube 30, preferably made of glass or its equivalent. The lower extremity of this sight-tube is seated around the nozzle 29 and is secured in place by means of the cap 31 of

a packing-box, while the upper end of the sight-tube is seated in a sleeve 32, formed in the extremity of the extension 4^a of the above-described oil-passage 4, and is held in place by means of a cap 33, forming a packing-box. In the diametrically opposite side of the extension 4^a, in alinement with the sight-tube, is a plug 34, of larger diameter than the seat provided for the sight-tube, whereby a new sight-tube may be introduced therethrough, or the sight-tube may be removed for the purpose of cleaning.

I have found in practice that as the lubricant is raised in the oil chamber or reservoir by the influx of water of condensation there is a liability of the accumulation of a portion of the lubricant upon the top of the reservoir, or the water begins to escape through the tube 24 or its equivalent before all of the oil has been discharged. As a result the operation of the lubricator must be stopped and the water withdrawn to give place for a fresh supply of oil, and any oil on the top of the water which has not been discharged is thereby wasted. To avoid this, I have adopted an inclined top or roof in connection with the oil-chamber, which inclines upwardly toward the inlet end of the outlet-tube 24. This arranges said inlet end of the tube at the uppermost point of the oil chamber or reservoir, and at the same time the inclined roof, of which the depressed or lowermost portion is arranged in a lower plane than the extremity of the tube, causes the oil, which of course floats upon the surface of the water, to be concentrated at a point gradually approaching the extremity of the outlet-tube as the surface of the water rises, until, as the surface of the water approaches the plane of the extremity of the tube 24, the only remaining oil in the reservoir is concentrated in a small area in close proximity to the tube, and therefore must escape before the water of condensation can reach the level of the mouth of the tube.

When it is desired to refill the oil chamber or reservoir, the cut-off valve 12 and the regulating-valve 27 must be closed, and when it is desired to clean or introduce a new sight-tube the cut-off valve 13 and the regulating-valve must be closed.

It will be understood that while the above-described construction of the connection between the pipe containing the inlet and outlet channels and the oil-reservoir is preferable it is not indispensable, for the reason that said pipe may be cast integral with the oil-reservoir and bored out to form the channels.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a lubricator, the combination of a main supporting pipe or stem, having separate steam and oil passages and independent contiguous inlet and outlet openings, a branch steam-passage, in communication with a condensation-chamber, an oil-chamber having its top inclined upwardly, in a common plane, to a point near one side of the chamber and having an inlet-tube in communication with the condensation-chamber, a discharge-tube communicating at one end with the oil-chamber contiguous to said uppermost point of its top, and in alinement with a removably-plugged opening in the top of the chamber, a passage, including a sight-tube, connecting the other end of the discharge-tube with the said oil-passage, and a regulating-valve arranged in said connecting-passage, substantially as specified.

2. A lubricator having a main supporting pipe or stem 1 having separate steam and oil passages 3 and 4, a condensation-chamber, a branch pipe having separate steam and water passages 7 and 11, of which the former is in communication with the steam-passage of the main pipe or stem, the oil-passage of the main pipe or stem being extended, as at 4^a, beyond the point of intersection of said branch pipe, and the water-passage being divided and carried around the extension of the oil-passage to communicate with a sleeve 14, an oil-chamber having a thimble 15 fitted in said sleeve and being provided with inlet and outlet tubes 17 and 24, filling and cleaning plugs 18 and 25, and a top which is inclined upwardly from the filling-plug to the cleaning-plug, the latter being in alinement with the outlet-tube, and a valved connection between the outlet-tube and said oil-passage, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY GLANZ.

Witnesses:
E. E. SPIES,
ALBERT SPIES.