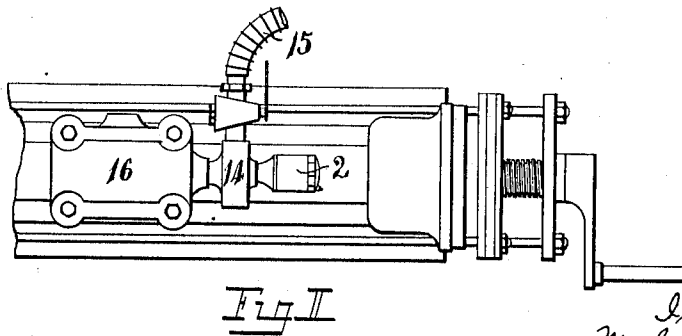
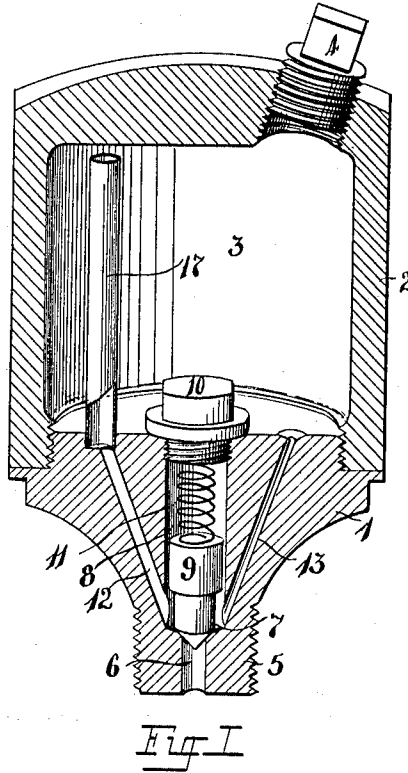


M. S. BEATON, J. EASON & J. H. WILSON.
 AUTOMATIC LUBRICATING APPARATUS.
 APPLICATION FILED SEPT. 24, 1910.

1,040,491.

Patented Oct. 8, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

MALCOLM STEWART BEATON, JAMES EASON, AND JOHN HAWTHORNE WILSON, OF
GERMISTON, TRANSVAAL.

AUTOMATIC LUBRICATING APPARATUS.

1,040,491.

Specification of Letters Patent.

Patented Oct. 8, 1912.

Application filed September 24, 1910. Serial No. 583,588.

To all whom it may concern:

Be it known that we, MALCOLM STEWART BEATON, JAMES EASON, and JOHN HAWTHORNE WILSON, of Germiston, Transvaal, all British subjects, have invented certain new and useful Improvements in Automatic Lubricating Apparatus, of which the following is a specification.

The present invention relates to self contained lubricating apparatus of the kind comprising an oil vessel furnished with a single oil discharge orifice, solely by means of which the interior of the vessel is put into communication with a region of fluctuating fluid pressure; such orifice being controlled by a valve opening inwardly to the oil vessel and serving, when seated, completely to close the orifice. In the operation of such devices the fluctuating pressure of the fluid under the valve causes such fluid to surge in and out of the valve-controlled orifice whereby it carries successive small quantities of the oil with it.

The purpose of the present invention is to provide a self contained lubricator of the kind referred to which will operate in practically any position without adjustment according to its position, and is thus particularly applicable for use with rock drilling machines and similar apparatus subject to extreme change of position when at work.

To this end the invention consists in placing the valve-controlled orifice in the base of the oil vessel and affording communication from above the valve seat and the interior of the vessel by two holes, one of which opens directly to the adjacent part of the oil chamber, and the other being extended, as by means of a pipe, to open at the distant part of the oil vessel.

In the accompanying drawings: Figure I is a sectional view of the device; and Fig. II shows the same in position on a rock drilling machine.

1 indicates a base to which a hood 2 is screwed to form the oil chamber 3. The hood 2 is provided with a filling cap 4. The base 1 is formed suitably for fixing the device to the machine, usually by providing it with a screw stem 5. From the end of the stem 5 a small hole 6 passes up to a valve seat 7; above which is formed a valve chamber 8. A valve 9 is free to move in said

chamber to and from its seat. The valve is retained within the valve chamber and the latter closed by means of a screw cap 10. A light spring 11 is interposed between the cap and the valve to insure the latter coming to its seat. By adjusting the cap 10 into or out of the base, the tension of the spring may be varied and thus the lift of the valve and the rate of discharge of oil may be controlled.

The end of the valve adjacent to the seat is cut away to form a clear space above the valve seat and from this space two holes 12 and 13 are carried up to open into the oil chamber 3. It is found that the best results are obtained by making these holes of different diameters. One of the holes *e. g.* 13, terminates at the top of the base, well toward one side of the chamber, while the other 12, is extended, as by means of pipe 17 to open near to the other end and toward the opposite side of the chamber.

The device is fixed to a convenient part of the machine so that hole 6 opens into a space containing fluid, the pressure of which fluctuates. Thus, it may advantageously be fixed into the T piece 14, Fig. II, which connects the supply hose 15 to the valve chest 16. At this point the pressure of the fluid rises and falls rapidly owing to the distributing valve alternately closing and opening the inlet ports to the cylinder. Moreover by thus mixing the ejected oil with the ingoing fluid, the mixture is carried right through the machine and thus effects the lubrication of every moving part. It will be seen that with a sufficient initial supply of oil, at least one of the holes 12 and 13 is practically always covered by the oil in the chamber, whatever the position of the lubricator.

What we claim and desire to secure by Letters Patent is:—

A lubricator adapted to be put into communication with a region of fluctuating fluid pressure to supply lubricant thereto, embodying an oil vessel provided with a base, said base being formed with an orifice affording the sole means of communication with the part to be lubricated and being also formed with a valve seat and valve chamber above said seat, and a spring closed valve working on said seat to control said orifice

--- and closing outwardly from the oil vessel, there being also two holes extending separately from said valve chamber in the immediate proximity of the valve seat to the interior of the oil vessel one of said holes opening into the vessel adjacent to the base and the other opening into a distant part of said vessel.

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

MALCOLM STEWART BEATON.

JAMES EASON.

JOHN HAWTHORNE WILSON.

Witnesses:

WESLEY E. JOHN,

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