L. C. BAYLES.

OILER FOR PRESSURE FLUID TOOLS.

APPLICATION FILED JUNE 24, 1910.

989,558. Patented Apr. 18, 1911.

Fig. 1.

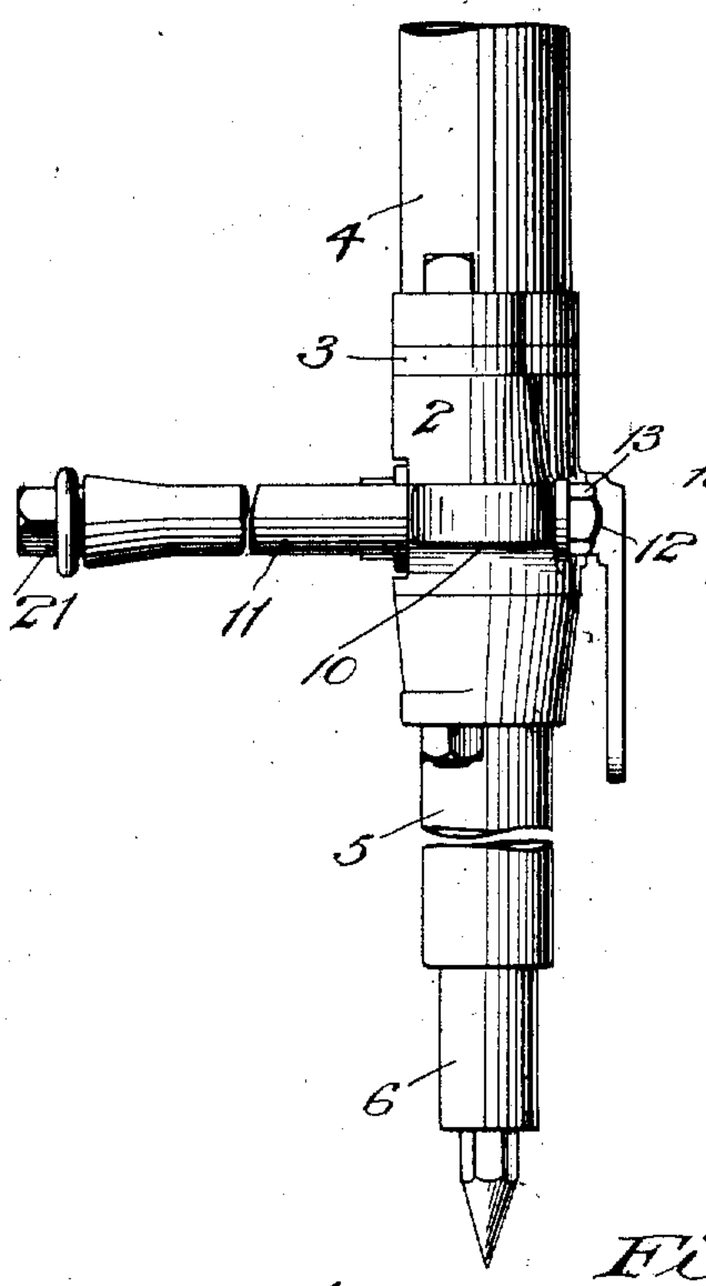


Fig. 2.

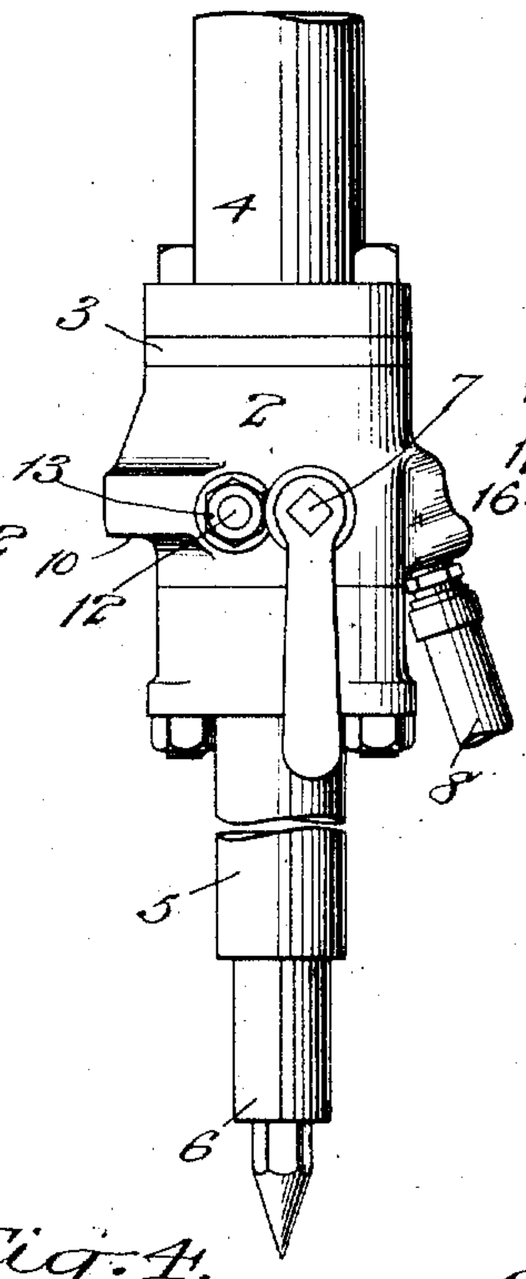


Fig. 3.

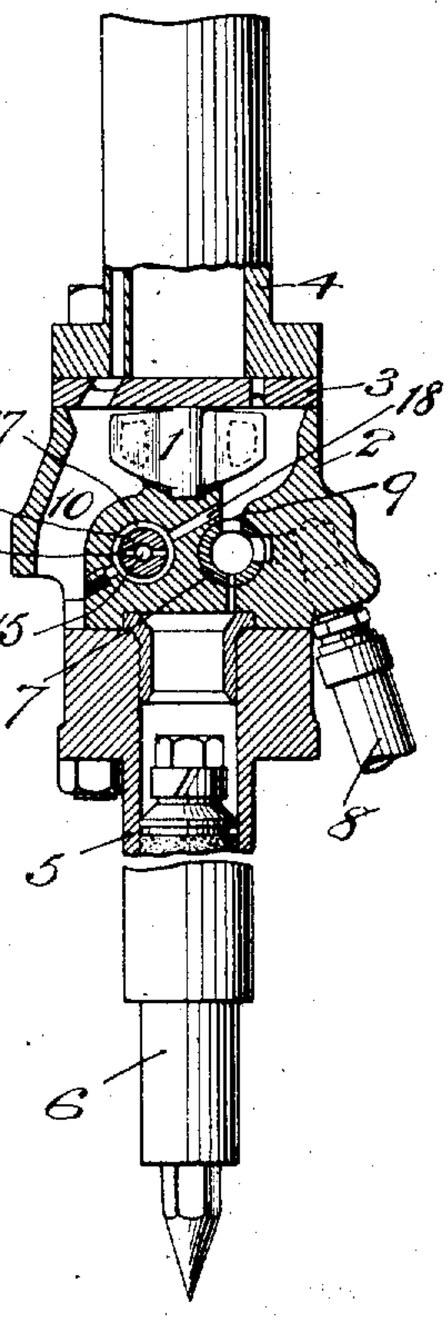


Fig. 4.

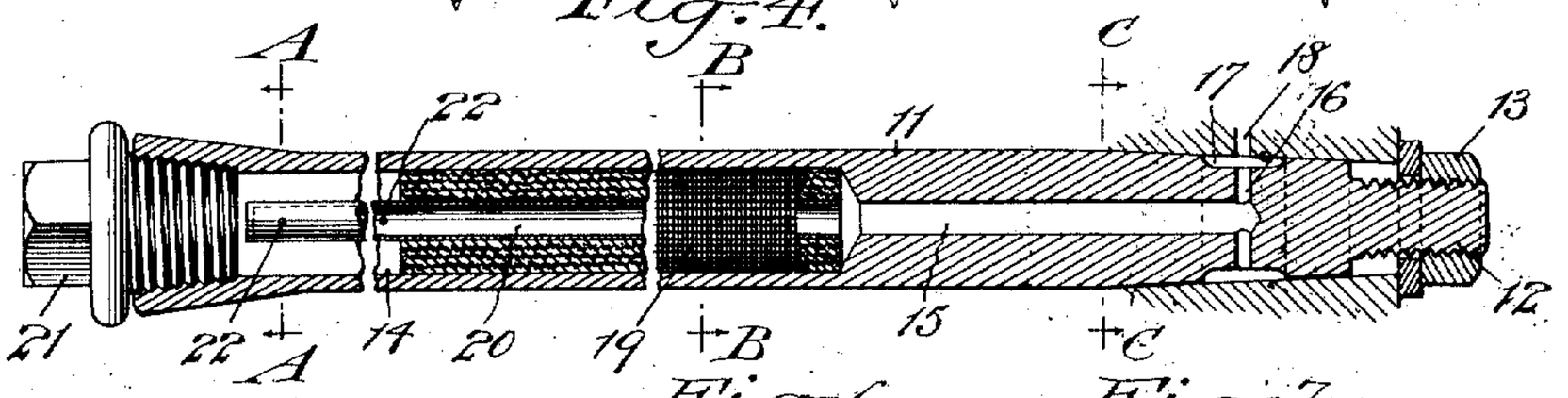


Fig. 5.

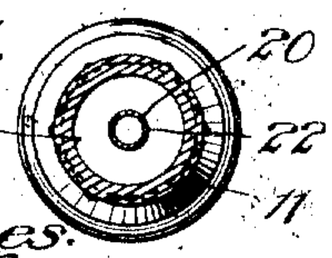


Fig. 6.

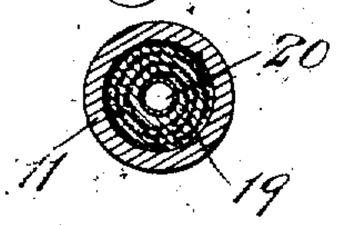
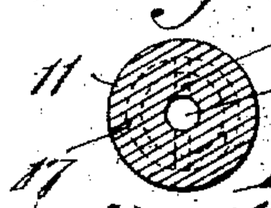


Fig. 7.



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UNITED STATES PATENT OFFICE.

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OILER FOR PRESSURE-FLUID TOOLS.

989,558. Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed June 24, 1910. Serial No. 568,684.

To all whom it may concern:

Be it known that I, LEWIS C. BAYLES, a citizen of the United States, and resident of Johannesburg, Transvaal, have invented a new and useful Improvement in Oilers for Pressure-Fluid Tools, of which the following is a specification.

The object of my invention is to provide an oiler for fluid pressure operated tools, the object being to provide a device in which the oil may be fed in the required quantities directly to the supply side of the tool controlling valve, the oiler serving also as a rotating handle for the tool.

A further object of my invention is to provide the oiler with a porous plug arranged to serve the double purpose of regulating the flow of oil and of cleansing the oil of any grit or dirt it may contain, before permitting it to be fed to the tool.

A practical embodiment of the invention is represented in the accompanying drawings in which,

Figure 1 represents in side elevation, so much of a fluid pressure actuated tool as will give a clear understanding of the location of my improved oiler thereon. Fig. 2 is a similar view taken at right angles to Fig. 1. Fig. 3 represents the same partially in side elevation and partially in longitudinal central section. Fig. 4 represents the oiler in longitudinal central section on an enlarged scale. Fig. 5 is a section taken in the plane of the line A—A of Fig. 4. Fig. 6 is a section taken in the plane of the line B—B of Fig. 4, and Fig. 7 is a section taken in the plane of the line C—C of Fig. 4.

In the fluid pressure actuated tool herein represented, the tool controlling valve is denoted by 1, the valve chest by 2, the valve plate by 3, the tool cylinder by 4, the air feed cylinder by 5 and its piston by 6. A suitable manually operated controlling valve 7 is provided in the valve chest 2 for controlling the admission of the motive fluid from the supply pipe 8 to either the air feed cylinder 5 or the valve 1 or to both at pleasure. The pressure fluid supply passage leading from the manually operated valve 7 to the tool controlling valve 1, is denoted by 9, and the discharge passage leading from the tool controlling valve 1 to external atmosphere is denoted by 10.

Proceeding to describe my improved oiler, the casing 11 of the oiler forms the rotating handle for the tool, which handle is secured firmly in the valve chest 2, as follows. The inner end of the handle 11 is provided with a screw-threaded portion 12 and adjacent thereto the handle is tapered, which tapered portion is adapted to enter a tapered seat formed in the valve chest 2. A nut 13 is engaged with the screw-threaded end 12 of the handle exterior to the valve chest, which nut as it is screwed home, will draw the tapered portion of the handle snugly down in its tapered seat in the valve chest, thus forming a tight joint between the two and obviating the necessity of a threaded connection between the handle and the tool. The interior of this handle or casing 11, is provided with an enlarged bore or chamber 14 and a smaller bore 15 leading from the inner end of the chamber 14 to a point near the inner end of the casing. The inner end of the reduced bore 15 is provided with one or more lateral passages 16 opening into a circumferential groove 17 in the casing. This groove 17 is in open communication with a passage 18 leading to the pressure fluid supply passage 9 in the valve chest 2, between the valve 1 and the manually operated controlling valve 12.

Within the chamber 14, I locate a porous plug 19, through which a small tube 20 is passed, the inner end of which tube is open and the outer end of which tube is closed. In the space within the chamber 14, between the outer end of the porous plug 19 and the cap 21, the tube 20 is provided with one or more minute holes 22, through its walls by means of which pressure from within the valve chest at the supply side of the valve 1 may be permitted to pass into the chamber 14. This porous plug 19 may be formed in any suitable manner as for instance, by

rolling a strip of brass wire netting and a strip of fabric, such as flannel or cotton, together around the tube 20.

In operation, the cap 21 is removed and the casing or rotating handle 11 is filled with oil. The cap 21 is then replaced. As the manually operated controlling valve 7 is opened to operate the tool, the oil is drawn through the porous plug, the reduced bore 15, the port 16 and passage 18 into the supply passage 9. This is accomplished in either or both of the following methods; by the fluctuations in pressure due to the operation of the tool; or by the pressure in the chamber 14, as follows. The oil in the chamber 14 between the porous plug 19 and the cap 21 is soon absorbed in the porous plug 19. When the manually operated valve 7 is opened the motive fluid is admitted to the passage 9 and a portion of the motive fluid passes through the ports and passages 18, 17, 16, 15, tube 20 and the small holes 22 into the chamber 14 and fills said chamber 14 with compressed motive fluid. When the valve 7 is closed the pressure of the motive fluid in port 9 at once falls below that in chamber 14 resulting in a rush of motive fluid from 14 to 9. A portion will pass through the ports and passages 22, 20, 15, 16, 17 and 18, but owing to the minute size of port 22, the greater portion will pass through the porous plug 19 and ports and passages 15, 16, 17 and 18 taking up a small amount of oil in its passage through the porous plug 19. Thus the porous plug serves the double purpose of regulating the flow of oil to the fluid supply passage 9 where it may pass from thence through the tool and also of cleansing the oil of any grit or dirt which it may contain before it is fed to the said supply passage. The rotating handle for the tool also serves as the oiler complete, thus obviating the necessity of providing a separate oiler for the tool.

While I have shown this oiler in connection with the particular form of fluid pressure actuated tool, it is to be understood that I do not limit its use to this particular form of tool, but

What I claim is:

1. In a pressure fluid tool, a tool cylinder, its piston, a piston operating valve, its chest, a manually operated throttle valve seated in said chest for controlling the admission of pressure fluid to said piston operating valve and means for feeding oil to the supply side of the piston operating valve between it and the throttle valve.

2. In a pressure fluid tool, a tool cylinder, its piston, a piston operating valve, its chest, a manually operated throttle valve for controlling the admission of pressure fluid to said piston operating valve, a rotating handle and an oiling device located entirely within said handle for feeding oil to the supply side of the piston operating valve between it and the throttle valve.

3. In a pressure fluid tool, a tool cylinder, its piston, a piston operating valve, its chest, a manually operated throttle valve seated in said chest for controlling the admission of pressure fluid to said piston operating valve, a rotating handle carried by the chest and an oiling device located entirely within said handle for feeding oil to the supply side of the piston operating valve between it and the throttle valve.

4. An oiler for pressure fluid tools comprising a casing forming a rotating handle for the tool, an oil chamber within the casing having a passage in communication with the tool and a porous plug located in the oil chamber in position to cause the oil to pass therethrough for regulating the flow of oil to said passage.

5. An oiler for pressure fluid tools comprising a casing forming a rotating handle for the tool, an oil chamber within the casing having a passage in communication with the pressure fluid supply for the tool and a porous plug located in the oil chamber in position to cause the oil to pass therethrough for regulating the flow of oil to said passage.

6. An oiler for pressure fluid tools comprising a casing forming a rotating handle for the tool, an oil chamber within the casing having a passage in communication with the pressure fluid supply for the tool and a porous plug located in the oil chamber in position to cause the oil to pass therethrough for regulating the flow of oil to said passage, and for cleansing the oil of impurities.

7. An oiler for pressure fluid tools comprising a hollow casing forming a rotating handle for the tool, an oil chamber within the casing having a passage in communication with the pressure fluid supply for the tool, a porous plug located in the chamber in position to regulate the flow of oil to said passage and a tube in the casing for opening communication from said passage to the oil chamber for feeding fluid pressure thereto.

8. An oiler for pressure fluid tools comprising a casing containing an oil chamber and a passage leading therefrom and a porous plug located in the chamber in position to cause the oil to pass therethrough for regulating the flow of oil to the passage.

9. An oiler for pressure fluid tools comprising a casing containing an oil chamber and a passage leading therefrom, a porous plug located in the chamber in position to cause the oil to pass therethrough for regulating the flow of oil to the passage and a tube in the casing for opening communication from said passage to the oil chamber.

10. An oiler for pressure fluid tools comprising a casing containing an oil chamber, an axially arranged passage leading therefrom, a porous plug located in the chamber

in position to regulate the flow of oil to the passage and a tube leading through the porous plug in alinement with said passage for opening communication from said passage to the oil chamber.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this twenty-second day of June 1910.

LEWIS C. BAYLES.

Witnesses:
F. GEORGE BARRY,
C. S. SUNDGREN.