May 8, 1928. 1,669,375

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AIR LINE OILER

Filed Sept. 30, 1927

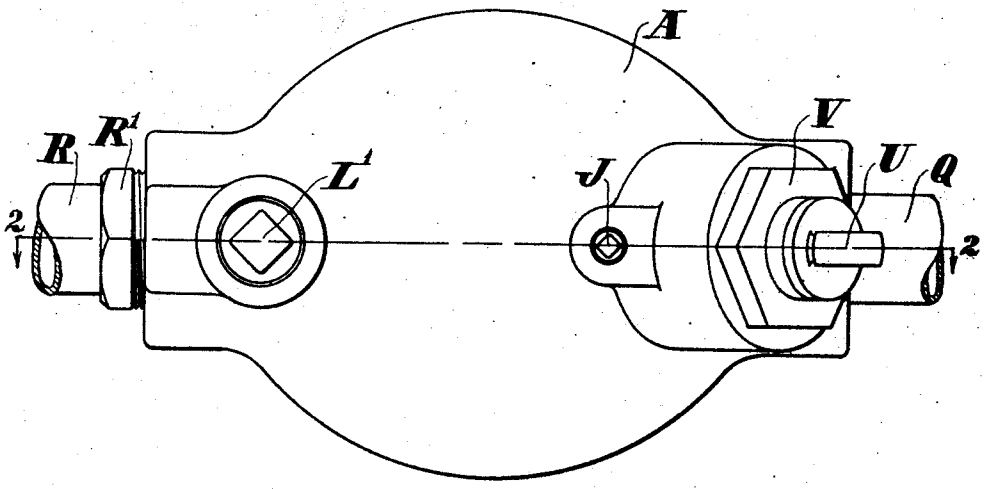


FIG.-1.

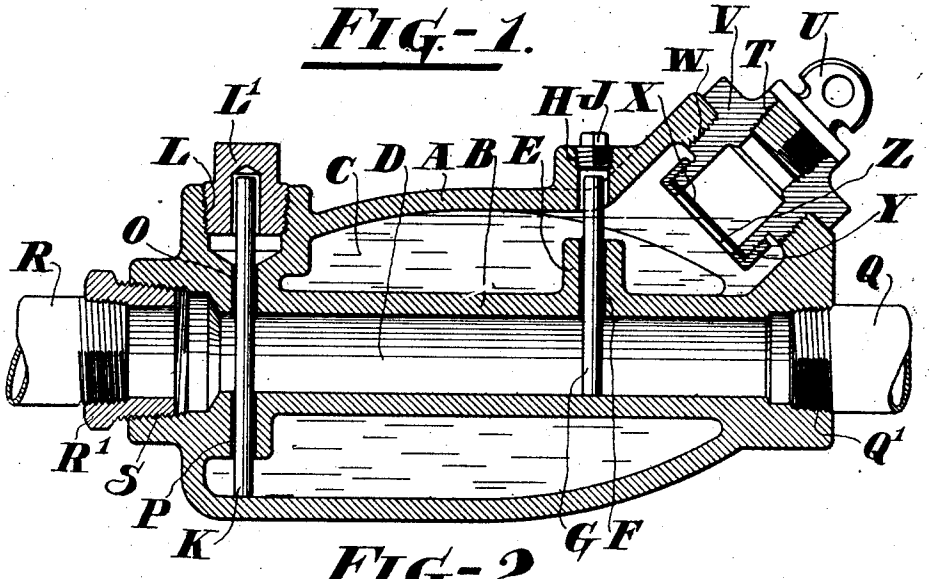


FIG.-2.

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UNITED STATES PATENT OFFICE.

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AIR-LINE OILER.

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This invention relates to oiling devices, but more particularly to devices which are attached to air lines for introducing oil into the air current use for operating fluid actuated machines.

It is an object of this invention to eliminate interruptions in drilling and similar operations, which must occur if the tool is to be manually lubricated, and to introduce the oil into the air current uniformly and in suitable quantities while the tool is in operation.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention consists of the combination of elements, features of construction and arrangement of parts having the general mode of operation substantially as hereinafter described and pointed out in the appended claim and illustrated in the accompanying drawings, in which

Figure 1 is a top longitudinal view of an air line oiler, and

Figure 2 is a longitudinal sectional view of Figure 1 taken on the line 2—2 looking in the direction indicated by the arrows.

Referring more particularly to the drawings, A indicates a casing having a tubular wall or partition B which divides the interior of the casing A into an oil reservoir C and a passageway D. The reservoir C is so arranged as to surround the passageway D and the casing preferably has its outward shape substantially like that shown in the drawings so that it will slide easily over rough surfaces and be less likely to catch onto projections and irregularities when being drawn from place to place.

In order to enable part of the pressure fluid flowing through the passageway D to enter the reservoir C and exert a pressure on the oil in the reservoir, and to provide a means of delivering this oil into the passageway, a hole F is drilled through the partition B at the place where an enlargement E is formed on the outer wall of the partition B. Into this hole a cylindrical pin G is loosely fitted by passing it through the partly threaded opening H in the casing A. A threaded plug J is adapted to cooperate with the opening H and to limit the longitudinal movement of the pin G. The pin G is of such diameter that a slight movement is permitted between it and the walls of the hole F, and of such length that its lower end rests on the bottom of the passage D and its upper end extends through the oil reservoir and into the opening H.

In a similar manner a pin K is passed through a threaded opening L near the end of the oiler and loosely fitted in the holes O and P so as to extend into the oil at the bottom of the reservoir C and through the passageway D.

Compressed air or another pressure fluid is delivered to and from the passageway D by the pipes Q and R screwed into the oiler at Q′ and into a threaded plug R′ respectively. The plug R′ is in turn screwed into the oiler at S.

The reservoir C is filled with oil through a filling hole T which is closed by a filling plug U. The threaded oil hole or filling hole T is formed in a large plug V screwed into a threaded hole W in the casing A. The oil hole is closed at its lower end by a screen X held in place by a screw cap Y which is provided with an opening Z. The oil is filtered and cleaned by the screen X before it enters the reservoir C.

The operation of the device is as follows: Pressure fluid such as compressed air entering the passageway D from the air line Q, will, by the pulsations caused by the cut-off and admission of pressure fluid in the tool to be oiled cause the pins G and K to vibrate transversely of the holes F and P respectively. At the same time a portion of pressure fluid will pass between the pins and the walls of the holes and create a pressure within the reservoir C corresponding to the pressure in the passageway D and some of the oil will be forced into the clearance between pins and the walls of the holes and be squeezed out into the pressure fluid current by the vibrations of the pins G and K.

The great advantage of the pin K is found when the oiler is used in a vertical or nearly vertical pipe line. The oil in the reservoir C will then all flow to the left end of the oiler which will be the bottom of the oiler when the oiler is in a vertical position. In this position the oiler will function properly due to the fact that oil will still enter the passageway D by way of the hole P.

It will be readily seen that by having an opening L in the same side of the oiler as the opening H, it is unnecessary to invert

the oiler when it is necessary to remove pins G and K. A plug L′ normally closes the hole L.

I claim:

An air line oiler comprising a casing having a threaded aperture, a passageway for pressure fluid through said casing, a reservoir for oil surrounding said passageway, a pin loosely mounted transversely to said fluid pressure passageway having one end supported by the bottom wall of said passageway and the other end projecting through said passageway and into said oil reservoir, a second pin loosely mounted transversely to said passageway having one end supported by the bottom wall of said oil reservoir and the other end extending through said passageway and into a plug threaded into said casing, both of said pins being actuated transversely of said passageway for carrying oil from said reservoir into said passageway, and means to limit the longitudinal movement of said pins.

In testimony whereof I have signed this specification.

GIDEON IHRMARK.