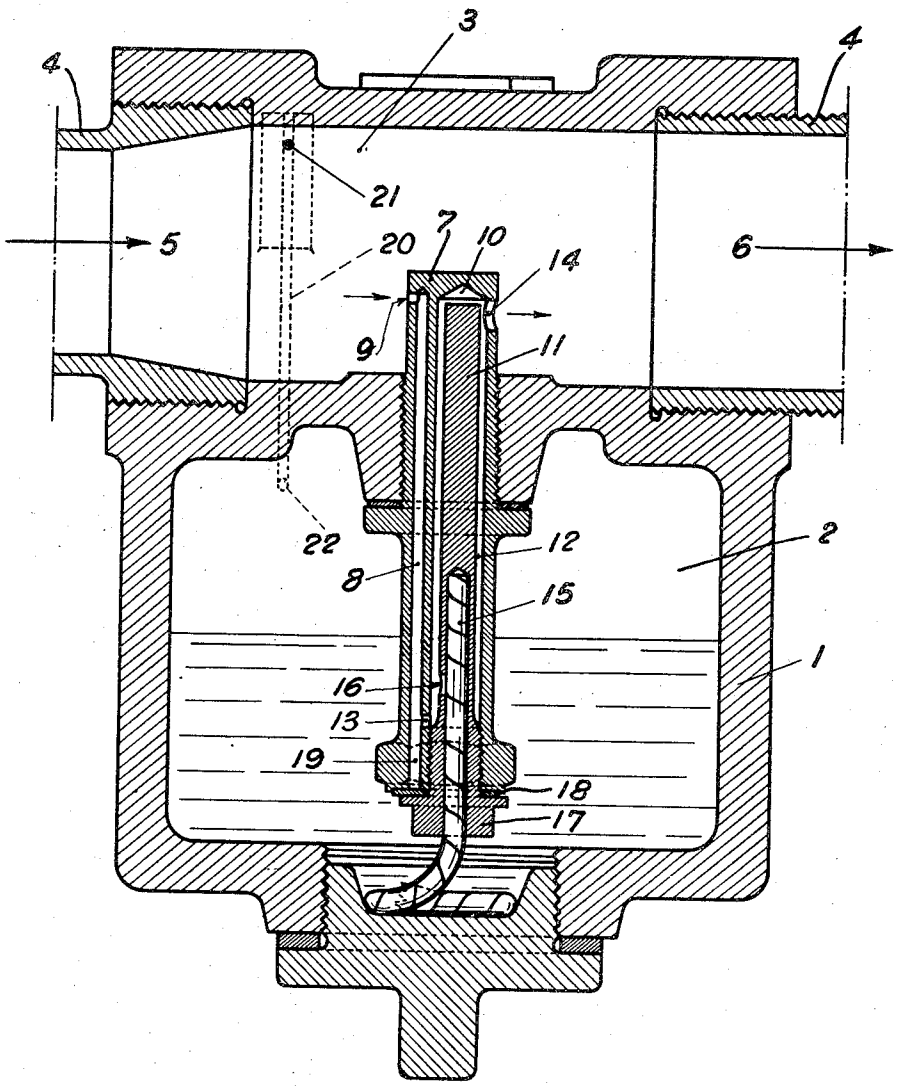
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LUBRICATOR FOR MACHINES SUPPLIED WITH COMPRESSED AIR

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Inventor:

HENRI GABRIEL ANDRE MARIE COSTES

by: Attorney

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LUBRICATOR FOR MACHINES SUPPLIED WITH COMPRESSED AIR

Henri Gabriel André Marie Costes, Sarrebruck, Saar Territory, assignor to Regie des Mines de la Sarre, Sarrebruck, Sarre, a public corporation of France

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3 Claims. (Cl. 184—55)

My invention relates to oilers and more particularly to oilers for interposition in air lines for automatically lubricating air operated machines and other devices.

It has already been suggested to use in such oilers a wick which extends from the oil reservoir into the air line and which is contacted by the air stream passing therethrough. Oilers of this type have many disadvantages particularly in view of the fact that the wick has to draw oil from the reservoir all the way up into the air line. This requires for safe operation a high oil level in the oil reservoir, therefore frequent refilling of the same, and the use of an oil of not too great viscosity.

It is an object of my invention to avoid the said and other disadvantages of the known oilers of said type and to provide an oiling device which will efficiently and safely operate under all working conditions particularly even at low oil levels in the reservoir and notwithstanding the use of oil of high viscosity.

The said and other objects of my invention will be more fully understood from the following specification taken with the accompanying drawing in which a sectional view of an embodiment of my new oiling device is shown.

As shown in the drawing my oiling device comprises a casing 1 which includes an oil reservoir 2 and above the same an air passageway 3 adapted to be interposed in an air line 4, the air passing therethrough from the frontal inlet opening 5 to the rear outlet opening 6 as indicated by the arrows.

An oil dispensing member is mounted in the casing 1 with its longitudinal axis at least substantially perpendicular to the axis of said air passageway 3. Said dispensing member 7 extends with its upper portion into said passageway 3 and with its lower portion close to the bottom of the oil reservoir 2. It contains a longitudinal boring 8 having at its upper end a lateral orifice 9 which faces the air intake opening 5 of the passageway 3, and a second longitudinal boring 10 which houses a cylindrical wick holder 11 of smaller diameter leaving an annular channel 12. The said boring 8 and the said annular channel 12 are connected by a transverse opening 13 which is arranged below the expected lowest level of oil in the reservoir 2 and thus the said boring 8 and channel 12 form a substantially U-shaped duct. At its upper end the said annular channel 12 is provided with a lateral orifice 14 which faces the rear outlet opening 6 of the air passageway 3. It will be understood that air from the passageway 3 will enter through the orifice 9 the boring 8 forming one arm of said U-shaped duct and will pass through the transverse opening 13 into the channel 12 which forms the second arm of said U-shaped duct to leave the same through the orifice 14. The boring 8 conducting air downward may customarily be called a downcomer duct and the channel 12 conducting air upward a riser duct.

The said wick holder 11 which is screwed into the lower position of the boring 10 below the transverse opening 13 houses and holds in an axial boring thereof

the upper end of a wick 15 which draws oil from the reservoir 2. One or more orifices 16 in the wick holder 11 expose the wick 15 to the air flowing in the channel 12 in upward direction. Said orifices 16 are arranged below the expected lowest oil level in the reservoir 2.

In the shown embodiment the head 17 of the wick holder 11 presses a gasket 18 against the lower face of the dispensing member 7 and closes tightly the lower open end of the boring 8. The portion 19 thereof below the opening 13 serves as a chamber to collect any dust carried by the air flowing downward through the boring 8.

The pressure in the air passageway 3 and that in the oil reservoir 2 are balanced by means of a channel 20 arranged in the casing 1 said channel opening at 21 into the air passageway in the upper part thereof and into the oil reservoir 2 at 22 above the expected highest level of oil therein. The amount of air which will flow through the channel 20 into the reservoir 2 is insignificant and will practically be equal to the amount of oil discharged by the oil dispensing member. This will permit the use of compound oils in the reservoir avoiding large accumulations of water therein. The location of the channel openings 21, 22 as indicated above will permit the operation of the oiling device even in inclined positions without danger of loss of oil.

Although only one specific embodiment of my invention has been shown and described in detail to illustrate the application of the principles of my invention, it will be well understood that the same may otherwise be embodied without departing from such principles.

What I claim as my invention is:

1. An oiling device for interposition in an air line, comprising in combination a casing; an oil reservoir therein; an air passageway traversing said casing above said oil reservoir and having a frontal air inlet opening and a rear air outlet opening; an oil dispensing member mounted in said casing with its longitudinal axis at least substantially perpendicular to the axis of said air passageway; said oil dispensing member reaching with its upper part into said passageway and with its lower part close to the bottom of said reservoir; an essentially U-shaped air duct including a downcomer duct arm and a riser duct arm extending within said dispensing member in longitudinal direction thereof; the bend of said U-shaped duct being close to the lower end of the dispensing member; an air intake orifice in the upper part of said downcomer arm, said intake orifice facing the frontal air inlet opening of the passageway; an air outlet orifice in the upper part of said riser arm, said outlet orifice facing the rear air outlet opening of the passageway; an oil wick within the reservoir; a longitudinal bore in the lower portion of said dispensing member reaching above the bend of said U-shaped duct and receiving and holding the upper end portion of the wick; at least one opening connecting said bore and said riser arm within the dispensing member to expose a portion of the surface of the wick to the air passing upwards through said riser arm; said opening arranged below the expected lowest oil level in the reservoir during the operation of the device; and means to establish equality of static pressure in said air passageway and in the reservoir.

2. An oiling device for interposition in air line, comprising in combination a casing, an oil reservoir therein; an air passageway traversing said casing above said oil reservoir and having a frontal air inlet opening and a rear air outlet opening; an essentially cylindrical body mounted in said casing with its longitudinal axis at least substantially perpendicular to the axis of said air passageway; said body reaching with its upper part into said passageway and with its lower part close to the bottom of said reservoir; two parallel borings axially extending into said body from its lower end; a transverse duct

within said body connecting said parallel borings to form a U-shaped air duct composed of a downcomer duct arm and a riser duct arm; said transverse duct arranged below the expected lowest oil level in the reservoir; an air intake orifice in the upper part of said downcomer arm, said orifice facing the frontal air inlet opening of the passageway; an air outlet orifice in the upper part of said riser arm, said outlet orifice facing the rear air outlet opening of the passageway; a wick to draw oil within the reservoir; a rodlike wick holder having an outer diameter smaller than the inner diameter of the riser duct arm and inserted therein to leave an annular channel therein; means to secure the wick holder in such inserted position within said riser duct arm; an axial boring in said wick holder receiving and holding the upper end portion of the wick; said boring extending from the lower end of said holder to above the expected lowest oil level in the reservoir; at least one opening connecting said axial boring in the wick holder with said annular channel to expose a portion of the surface

of the wick to the air passing upwards through said annular channel; said opening arranged below the said expected lowest oil level in the reservoir; means to tightly close the lower ends of said parallel borings; and means to establish equality of static pressure in said passageway and in said reservoir.

3. In an oiling device according to claim 1 wherein the means to establish said equality of static pressure comprise a pipe connecting the upper part of the reservoir space with the upper part of the space within said air passageway.

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