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GRAVITY FEED OILER

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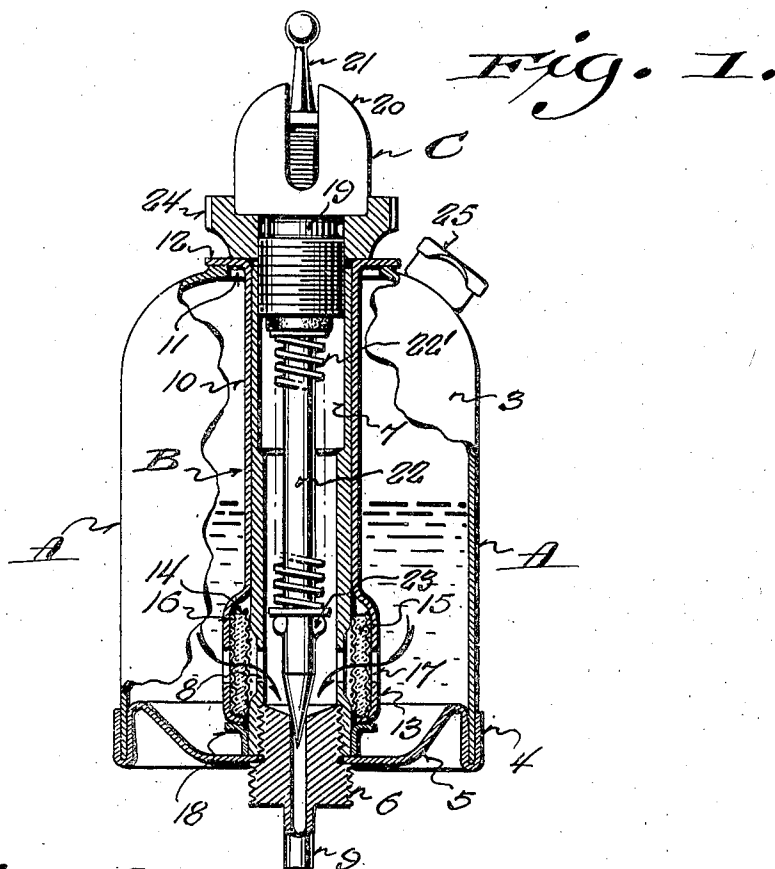
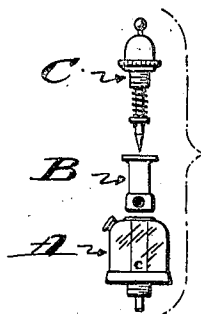


Fig. 2.



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GRAVITY FEED OILER

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7 Claims. (Cl. 184—82)

This invention pertains generally to gravity feed oilers for attachment to the bearings of motors and high-speed precision machinery of all types.

More particularly the invention is directed to an improved filter incorporated in oilers of the foregoing character.

I am aware that gravity feed oilers have been provided with filters, but as far as is known, those structures now in use require dismantling of the oiler in order to remove and clean the filter because of its inaccessibility. This requires both an awkward and tedious operation, and is therefore often neglected, which frequently results in complete failure of the oiler accompanied by costly damage or destruction of the bearing.

To overcome the foregoing objection the primary purpose of the present invention resides in the provision of a gravity feed oiler incorporating a filter unit accessible exteriorly of the oil reservoir to permit ready removal for cleaning without dismantling the oiler or removal of parts of the reservoir.

Incidental to the foregoing, a more specific object of the invention resides in the provision of a supporting tube located in the reservoir for reception of a filter unit projected through the top of the oil reservoir for accessibility.

A further object includes the provision of quick detachable means for locking the filter sleeve to the supporting tube.

Another object contemplates the use of a domed reservoir in combination with a quick detachable element for both controlling the oil feed and locking the filter sleeve to the supporting tube.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination, and arrangement of parts, substantially as hereinafter described, and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawing is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof.

In the drawing:

Fig. 1 is a vertical sectional view, with parts partially in elevation illustrating the preferred form of the present invention;

Fig. 2 is a schematic showing of the detachable elements of the present oiler in disassembled relation.

Referring now more particularly to the accompanying drawing, the oiler disclosed includes primarily three elements consisting of a reservoir A, a filter sleeve B, and a detachable feed control valve unit C.

While the reservoir A may be variously constructed, in the present instance it consists of an inverted domed cup 3 formed of transparent plastic material or glass and having its lower edge clamped within a peripheral fold 4 formed on a metallic bottom cup 5, which serves as a sump or sediment well. Connected to the cup 5 by means of a threaded fitting 6 is a supporting tube 7 having openings 8 provided in its lower end above the bottom well.

The lower portion of the fitting 6 is provided with exterior threads for insertion into a fitting or threaded opening in a bearing, and depending from the fitting is a restricted drain tube 9 for the purpose of delivering drops of lubricant from the reservoir A to the bearing.

Surrounding the supporting tube 7 is a filter sleeve 10 projecting upwardly through an opening 11 formed in the domed top of the cup 3, the upper end of the sleeve being provided with a flange 12 seated on the top of the cup and accessible exteriorly of the same.

The lower end of the filter sleeve 10 is provided with an enlargement 13 for reception of a filter 14, which in the present instance is composed of a felt band or other flocculent material 15 encased within a folded wire mesh strip 16, which is preferably formed as a split ring. The enlargement 13 of the filter sleeve is provided with openings 17 affording communication between the reservoir and the openings 8 in the supporting tube 7. A flanged washer 18 secured upon the lower end of the supporting tube 7, and also to the bottom cup 5 by solder or welding serves to support the filter sleeve 10 in its operative position.

While the feed control unit C is incorporated in the present showing of the invention, it is to be understood that it is not essential to the primary object of the invention, in that the results sought may be accomplished in a gravity feed oiler without a valve control.

The control unit illustrated is of a conventional type including a head 19, exteriorly threaded for insertion into the supporting tube 7. Secured upon the head 19 is a dome 20, which houses a conventional toggle lever 21 connected with a

needle valve 22 slidably journaled in the head and adapted to control the drain opening in the fitting 6. A spring 22' disposed between the lower end of the head 19 and nibs 23, punched out of the valve shank, serves to normally urge the valve to its closed position. When the valve is raised lubricant flows through the openings 17, the filter 14, and the openings 8, as indicated by the arrows in Fig. 1.

There is nothing novel in a toggle actuated valve, which is eliminated in less expensive oilers. Incidentally, for replenishing the reservoir A with lubricant, the domed cup 3 is provided with a filling cap 25.

Independently threaded upon the lower end of the head 19 is a knurled nut 24, which serves to jam or lock the head 19 in its adjusted position for regulating the feed of lubricant through the fitting 6, and also provide a seal to prevent dust or dirt from entering the reservoir 3.

In practice the reservoir A, including the supporting tube 7 may be considered as an integral unit, the filter B and the sleeve unit C as detachable elements. Here it might be explained that a simple cap screw will serve the main purpose of the invention insofar as locking the filter unit B within the reservoir A is concerned. Also, when the valve unit C is not used it is contemplated that the upper end of the filter sleeve may be closed, in which event no lock or closure cap need be employed.

In operation, when it is desired to clean or replace the filter 14, it is merely necessary to remove the valve unit C and withdraw the filter element B, which is accessible exteriorly of the reservoir.

From the foregoing explanation considered in connection with the accompanying drawing, it will be apparent that an exceedingly simple and inexpensive filter has been provided for conventional gravity feed oilers, which is readily accessible without the necessity of dismantling the oiler, thus facilitating cleaning or replacement of the filtering medium.

It will also be noted that the present invention is particularly applicable to a reservoir of the domed type, which is not provided with a removable cover such as is found in conventional oilers utilizing a tubular glass or plastic shell.

Having described one form of my invention in considerable detail, I claim the following:

1. A gravity feed oiler comprising a reservoir provided with a drain opening, a filter unit for said opening, said unit projecting through said

reservoir for removal from the exterior of said reservoir, and quick detachable means operable from the exterior of said reservoir for locking the filter unit in operative position.

2. A gravity feed oiler comprising a reservoir, a supporting tube mounted in said reservoir, and a filter unit slidably associated with said supporting tube, said unit projecting through said reservoir for removal from the exterior of said reservoir.

3. A gravity feed oiler comprising a reservoir, a supporting tube mounted in said reservoir, a filter unit slidably associated with said supporting tube, said unit projecting through said reservoir for removal from the exterior of said reservoir, and means for locking said filter unit on said supporting tube.

4. A gravity feed oiler comprising a reservoir, a supporting tube mounted in said reservoir, a filter unit slidably associated with said supporting tube, said unit projecting through said reservoir for removal from the exterior of said reservoir, and quick detachable means operable from the exterior of said reservoir for locking the filter unit in operative position and controlling the feed of lubricant from said reservoir.

5. A gravity feed oiler comprising a reservoir, a supporting tube mounted in said reservoir, a filter sleeve surrounding said supporting tube, said unit projecting through said reservoir for removal from the exterior of said reservoir, and means carried by said supporting tube for locking said filter sleeve thereon and sealing the top of said reservoir.

6. A gravity feed oiler comprising a reservoir having a domed top provided with an opening, a supporting tube mounted in the bottom of said reservoir and in line with said opening, a filter sleeve slidably mounted upon said supporting tube and provided with an upper flange positioned exteriorly of said opening, and means for locking said filter sleeve on said supporting tube.

7. A gravity feed oiler comprising a reservoir having a domed top provided with an opening, a supporting tube mounted in the bottom of said reservoir and aligned with said opening, a filter sleeve slidably mounted upon said supporting tube and provided with an upper flange positioned exteriorly of said opening, and means for locking said filter sleeve on said supporting tube and controlling the feed of lubricant from said reservoir.

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