Feb. 19, 1952 E. D. SMYSER 2,586,104

AUTOMATIC OILER

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Fig 1

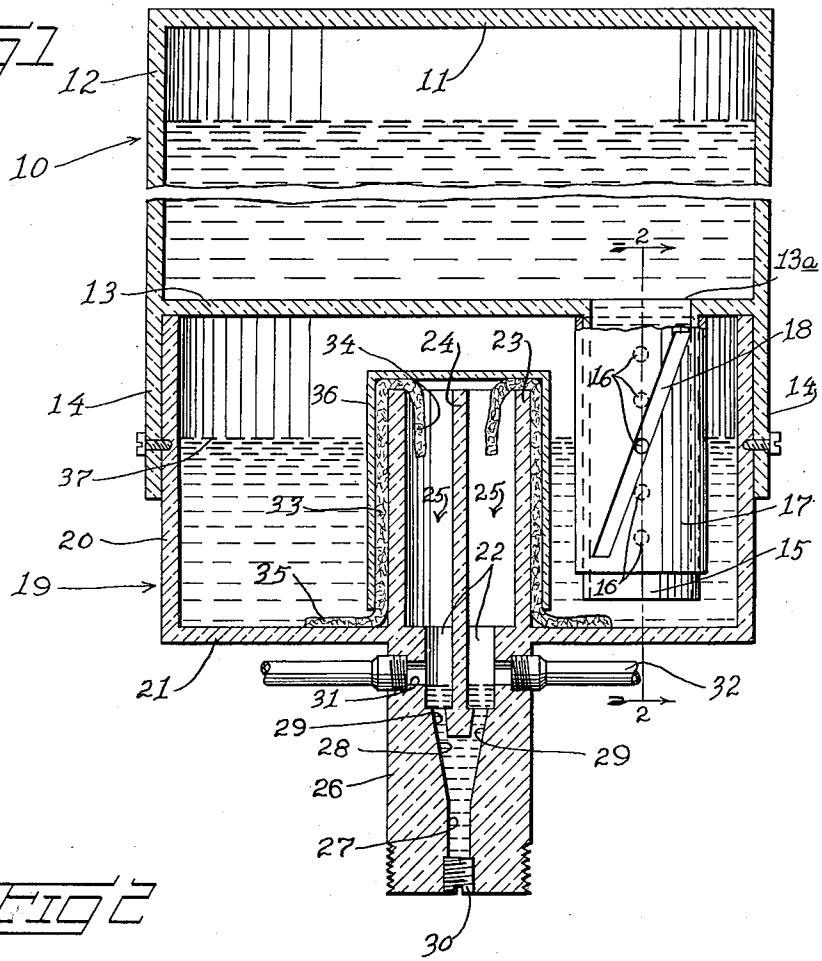
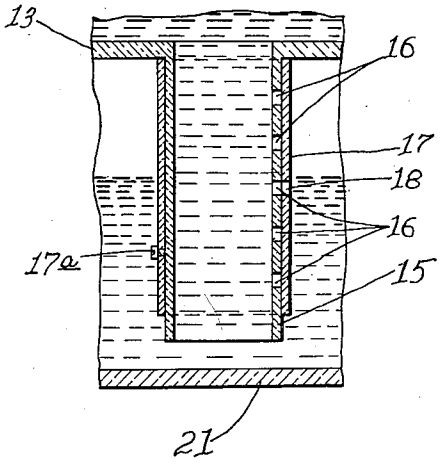


Fig 2



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AUTOMATIC OILER

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1 Claim. (Cl. 184—103)

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This invention relates to automatic oilers and the primary object of the invention is to provide an automatic oiler adapted to be regulated so that it feeds approximately a selectively predetermined amount of oil per minute to a bearing or the like connected with the oiler whereby an over oiling or under oiling is prevented.

Another object of the invention is to provide an oiler of the character indicated above which is economical, trouble-free and positive in action.

A further object of the invention is to provide an oiler of the character indicated above preventing dirt, grit and the like from entering a bearing or the like together with the oil, even if impure oil is fed into the oiler.

A still further object of the invention is to provide an oiler of the character indicated above needing a minimum of attention.

An additional object of the invention is to provide an oiler of the character indicated above permitting permanent inspection of the oil levels in the several chambers of the oiler.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved automatic oiler, whereby certain advantages are attained, as will be hereinafter more fully set forth.

In order that my invention may be better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a vertical sectional view taken through an oiler constructed in accordance with an embodiment of the invention; and

Figure 2 is a detail sectional view taken substantially on the line 2—2 of Figure 1.

The automatic oiler as herein embodied comprises an oil container 10 having a top wall 11, a curcumferential wall 12 and a bottom wall 13. The latter is arranged at a level above the lower edge of the circumferential wall, so that this wall extends downwardly beyond the bottom wall 13 as at 14. A hole 13*a* is provided in the bottom wall adjacent to the circumferential wall 12 and a downwardly extending cylindrical spout 15 is formed on the bottom wall 13 and surrounds the hole 13*a*. A plurality of control holes 16 are arranged in the spout 15 equidistantly from and in axial alignment to each other.

A control sleeve 17 surrounds the cylindrical spout 15 and fits snugly on said spout. It is adapted to be rotated about the spout but is prevented from movement in the axial direction in relation thereto in any conventional manner

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as, for example, by the use of a set screw 17*a*, Figure 3.

A slot 18 is provided in the sleeve 17 and extends at an oblique angle with respect to the length of said sleeve. The width of the slot 18 is approximately equal to the diameters of the control holes 16. By rotating the control sleeve 17 about the spout 15, the slot 18 can be arranged to open any one of the other control holes 16 and keep the other ones closed or close all control holes.

An oil chamber 19 has a circumferential wall 20 and a bottom wall 21 and is open on top. A hole 22 is provided in the bottom wall 21 and an upwardly extending wall 23 is formed on said bottom wall and surrounds the hole 22. The space inside of the upwardly extending wall 23 is divided by a diametrical partition 24 into two wick chambers 25.

A screw plug 26 is formed on the under side of the bottom wall 21 and is arranged coaxially with the hole 22. The screw plug 26 is provided with a centrally located axially extending bore 27, the upper portion of which flares out upwardly as at 28. The lower end portion of the partition 24 extends into the upper flared out bore portion 28 dividing the latter into two passages 29 connecting the bore 27 with the hole 22 which extends downwardly into the screw plug 26. The lower end portion of the bore 27 is tapped and a small screw plug 30 is adapted to close the bore 27.

A plurality of radial holes 31 are provided in the upper portion of the screw plug 26 and each hole 31 has a tapped counter bore adapted to receive the end portion of an oil line 32. The holes 31 end into the hole 22 above the lower end of the partition 24.

A wick 33 is arranged so that it hangs over the upper edge of the upwardly extending wall 23. One end portion 34 of the wick extends into the wick chambers 25. The wick extends downwardly along the outside surface of the wall 23 and the other end portion 35 of the said wick is arranged to extend into the oil chamber 19. A wick protector 36 fits loosely over the upwardly extending wall 23 and the wick 33.

In use the oil chamber 19 is mounted in upright position on any convenient support. The control sleeve 17 is adjusted on the cylindrical spout 15 so that a selected control hole 16 is open. The oil container 10 is arranged up-side down and is filled through the spout 15 with oil. Then the container is mounted on the oil chamber 19 so that the bottom wall 13 of the former rests on

the upper edge of the circumferential wall **20** of the latter, and the lower end portion **14** of the circumferential wall **11** of the container **10** extends along the circumferential wall **20** of the oil chamber **19**. Oil flows freely into the oil chamber until the rising oil level **37** seals the outlet of the spout **15**. Then air from the oil chamber **19** enters into the spout **15** through the open hole **16** and travels in the form of bubbles upwardly through the oil in the container **10** permitting the oil to flow slowly through the spout **15** into the oil chamber **19**. When the level **37** of the oil in said chamber rises high enough to seal the open hole **16** so that air is prevented from entering through said hole, the flow of oil from the container **10** is automatically stopped. The wick **33** conducts oil from the oil chamber **19** into the wick chambers **25** filling the bore **27**, the upper portion **28** of the said bore and the passages **29** from where it flows into the oil lines **32**. The oil is conducted through the wick **33** by capillary attraction and drips from the wick end portion **34** into the wick chambers **25**.

The oiler is made from a transparent suitable material so that the oil levels in the container **10** and the chamber **19** can be observed at all times. The oil level **37** in the oil chamber **19** can be lowered or raised by opening a control hole **16** located at a lower or higher level.

By using an oil of a certain gravity and a wick of a certain size and made from a certain material such as pure wool, the amount of oil conducted by the wick from the oil chamber **19** to the wick chambers **25** and the oil lines **32** can be predetermined, and if it should be necessary to increase the oil flow, the control sleeve **17** is adjusted to open the next higher control hole **16**, whereby the oil level **37** in the oil chamber **19** is raised.

The wick protector **36** prevents excessive wear of the wick and the latter serves as a filter preventing foreign matter present in impure oil from entering bearings or the like serviced by the oiler in accordance with the present invention.

I claim:

An automatic oiler, comprising a closed cylindrical oil container, a spout depending from and opening through the bottom wall of said container at one side of the center thereof, an annular flange depending below said bottom wall from the side wall of said container, a cylindrical open top chamber having its open end telescoped into said annular flange, means carried by said flange for securing said chamber in place with the edge of its open top in contact with the bottom wall of said container, said spout being provided with a series of vertically aligned and equidistantly spaced apertures, a sleeve mounted to turn on said spout and having a spiral slot of a length slightly greater than the distance between the uppermost and lowermost of said apertures, to successively open and close the apertures when turned, a tubular member upstanding within the center of said chamber from about an opening in the bottom wall of the chamber, a wick extending generally vertically along the outer side of said member and having its upper end depending within the member, and a cap fitted over said member and enclosing the intermediate portion of said wick between the cap and said member.

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