Jan. 3, 1956 S. MALKO 2,729,364

OIL CONTAINER AND DISPENSER

Filed Aug. 12, 1952

Fig. 1.

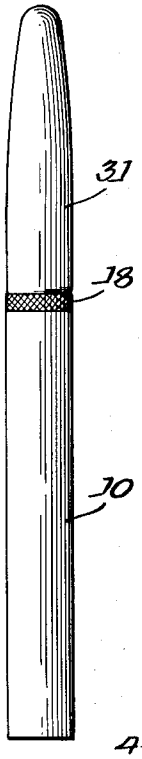


Fig. 2.

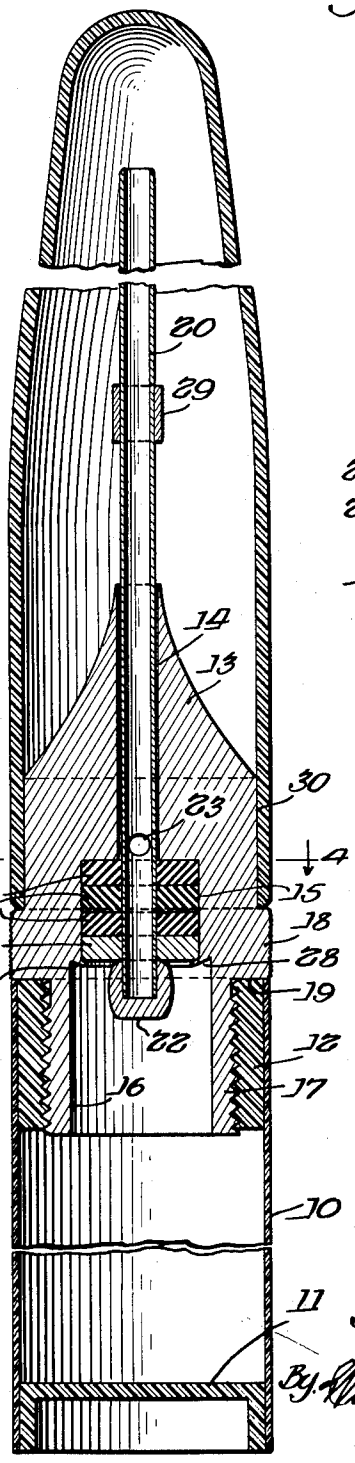


Fig. 3.

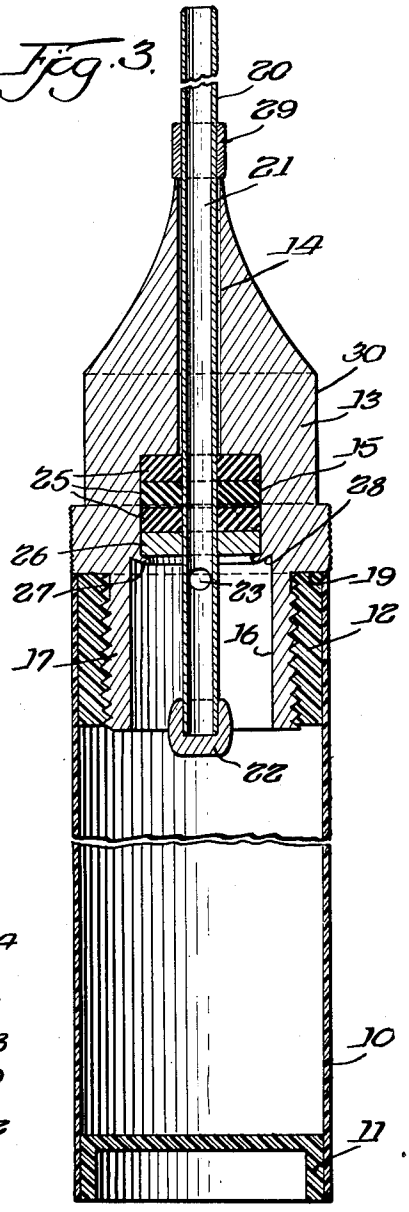
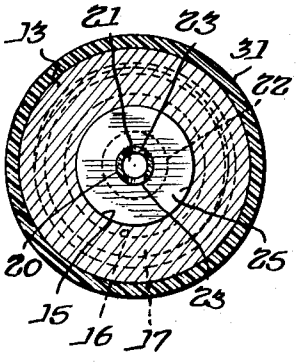


Fig. 4.



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OIL CONTAINER AND DISPENSER

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6 Claims. (Cl. 222—211)

My invention relates to an oil container and dispenser which is adapted primarily for household, office and outing use for oiling mixing machines, sewing machines and other household appliances, also for typewriters and miscellaneous office use and especially for fishing reels, skates, guns and the like where an oil container is carried for purposes of convenience but in which, because of the very fine character of the oil used for such purposes, it is extremely difficult to keep it confined and to keep it from leaking when the oiler is not in use.

Another and further object of my invention is the provision of an oil container and dispenser in which the oil is dispensed in very small quantities in the form of small drops or droplets so that an excessive amount of oil is not placed upon the working parts of various equipment and it is not necessary to remove excessive quantities of oil from the parts as is common with many oiling devices of this type and character.

Another and further object of my invention is the provision of an oiling device in which the body of the container is made of transparent plastic material so that the quantity of oil carried in reserve at all times can be easily and quickly ascertained and with an appropriate fitting for the container the device can be carried in a vest or shirt pocket, or among tools and other equipment such as a tackle box and the like without danger of leakage upon the clothing of the user or into the tackle box or the like among other equipment carried therein.

Another and further object of my invention is the provision of an oil dispenser in which a small quantity of oil can be delivered to the working parts of various kinds of equipment not easily accessible and in very small quantities sufficient to lubricate the working surfaces but not in an excessive quantity so that the oil spreads over the various surfaces among other equipment carried in the tool box or the like and, because of the oil adhering to such surfaces is transferred to the hands of the user, making such articles undesirable to use.

Another and further object of my invention is the provision of an oil dispenser and container which is simple in operation and which will not leak oil when in normal closed position regardless of the position of the container or where it is placed.

Another and further object of my invention is the provision of an oil dispenser having a body member of flexible elastic walls which, upon pressure being applied thereto, force a small quantity of oil out through a hollow stem having a very small bore through which the oil is forced but, because of the very small diameter of the opening in the stem, the air pressure is such that flow is interrupted until air replaces the oil removed from the container, which results in only very small drops or droplets of oil being forced out of the container each time pressure is applied thereto, which results in the use of a smaller quantity of oil for any given purpose and prevents the usual smearing of the oil upon the machine parts and hands of the operator in the devices of this kind now in use.

These and other objects of my invention will be more fully and better understood by reference to the accompanying drawings and in which—

Fig. 1 is an elevational view of my improved oil container and dispenser;

Fig. 2 is a longitudinal sectional view showing the various parts of the oil dispenser with the working parts in closed position;

Fig. 3 is a view similar to Fig. 2 with the cap removed and showing the oiler with the working parts in open position; and

Fig. 4 is a transverse view on line 4, 4 of Fig. 2.

Referring now specifically to the drawings and in which like reference characters refer to like parts throughout, an elastic transparent tubular body **10**, preferably made of a plastic material, is shown having a permanently positioned closure member **11** fitted in one end of the tubular member **10**, which member is also made of plastic material and sealed into the end of the tube **10** against removal and against leakage. At the opposite end of the tubular member **10** is a plastic collar member **12** which is also sealed to the inner wall of the tubular member **10** by any approved sealing material and which is internally threaded for purposes hereinafter described. A closure member **13**, preferably of metal, is provided having a small bore **14** extending longitudinally thereof and terminating in a recess **15** formed in the base of the body of the member **13**, with the recess **15** opening into a recess **16** of somewhat larger diameter than the recess **15** formed in a reduced end **17** of the closure member **13**, which reduced end portion **17** is externally threaded for engagement with the internal threads on the closure member **12** whereby access is had to the member **10** for filling with oil when occasion requires. The member **13** has an enlarged annular portion **18** serrated on its outer surface to allow a finger grip and has an annular shoulder **19** formed thereon which fits against the end of the member **10** and the plug **12** to form a tight closure joint at this point to prevent leakage of oil from the body **10** of the container when the closure member **13** is screwed into tight engagement with the member **10**. A stem **20** is provided which has a bore **21** therein and which extends longitudinally of the closure member **13** through the bore **14** and into the recess **16** and which is slidably mounted in the member **13** and has a closure member **22** at the lower end thereof by means of which the lower end of the tube **20** is closed and also operating as a closure member to prevent oil from leaking into the closure member **13** externally of the tube **20**. The tube **20** has ports **23** in the sides thereof spaced from the closed end thereof through which oil passes into the bore **21** of the tube **20** for dispensing purposes when it is desired to apply oil from the container to the operating parts of any of the equipment from which the oil is to be used. A plurality of washers **25**, **25** are provided, preferably of synthetic rubber or of a rubber composition highly resistant to the effect of oil, which are fitted into the recess **15** in the closure member **13** with a fiber washer **26** being provided, which is the lowermost washer of the series and with which the oil from the container is in contact during the dispensing operation and when the oiler is lying flat in a tool box or on a shelf or the like. An annular ring **27** is formed in the wall of the member **13** separating the recesses **15** and **16** by undercutting the member **13** at **28** and normally when formed extends parallel with the longitudinal axis of the bore **16**, but when the device is assembled, as will be hereinafter described, is upset for engagement with the washer **26** as shown particularly in Figs. 2 and 3 of the drawings to hold the washers in position in the recess **15** but also to place the washers **25**, **25** under compression so these washers frictionally engage the stem **20**. A collar **29** is

provided on the tube 20 spaced from the discharge end of the member 13 relative to the spacing of the transverse openings 23 in the tube 20 adjacent its closed end so as to provide a limit stop against the longitudinal movement of the tube 20 as it is moved in the member 13 to bring the ports 23, 23 below the washers 25, 25 and 26 and into the recess 16 so that oil can be dispensed through the stem 20.

When the member 13 and component elements are assembled, the washers 25, 25 are placed over the tube 20 with the fiber washer 26 in the lowermost position and the stem 20 and washers placed in position in the plug 13 after having the closure member 22 applied to the lower end thereof and an annular upsetting tool is used to bend the annular member 27 into the position shown in Figs. 2 and 3 whereby the washers 25, 25 are placed under compression, which causes these rubber washers to adhere closely to the external wall of the stem 20 but yet permits the tube 20 to be moved longitudinally through the washers 25, 25 when it is desired to use the oil dispensing device for oiling purposes. The collar 29 is thereupon fixed to the stem 20 in such spaced relation that when the stem 20 is pushed inward the transverse openings 23, 23 will be below the fiber washer 26 so that oil may flow through the stem 20 and out of the end thereof in small drops or droplets to the surface desired to be oiled. After the oiling operation is complete, the stem 20 is drawn outward longitudinally of the oiling device so that the openings 23, 23 are above the washers (as shown particularly in Fig. 2), and the closure member 22 is drawn tightly against the washer 26 thereby providing an additional seal against or leakage of the oil from the container.

In operation the device is exceedingly simple in that when it is desired to fill the container 10 the member 13 is removed by unscrewing it from the closure member 12 and the container 10 filled with oil, with the closure member 13 being placed back in position and screwed on tightly to prevent leakage of the oil between the shoulder 19 of the collar 18, although very little oil will leak through the threads externally of the portion 17 of the plug and internally of the collar 12, so that a tight closure member is formed at this position. The stem 20 is thereupon withdrawn until the member 22 is in engagement with the washer 26, so that the device is thereupon sealed and can be carried in any desirable position without leakage of oil therefrom. A cap 31 is provided which is fitted over and frictionally engages a surface 30 formed upon the member 13 which can be fitted with a clip if desired for carrying in the pocket of the user or secured to any other position which may be desired. When it is desired to use the oiler, the cap 31 is removed, the operator pushes the stem 20 inward until the collar 29 is engaged against the end of the member 13, in which position the openings 23, 23 will be below the washer 26, and by inverting the device oil will flow by gravity through the bore 21 of the tube 20, or the flow can be accelerated by pressure upon the flexible walls of the container 10. Because of smallness of the bore in the stem 20 and the fact that air must be admitted to the container 10 to keep an air pressure balance in the said container, the oil will be delivered to the end of the stem 20 in very small drops or droplets sufficient for oiling the delicate parts of most operating machines but insufficient in quantity to cause the oil to run over the surface of the machine or parts to be lubricated.

While I have described more or less precisely the details of construction, I do not wish to be understood as limiting myself thereto, as I contemplate changes in form and the proportion of parts and the substitution of equivalents as circumstances may suggest or render expedient without departing from the spirit or scope of my invention.

What is claimed is:

1. An oil container and dispenser comprising in combination a hollow flexibly walled body member, a closure member at one of its ends, a removable closure member at its opposite end having a longitudinal bore therethrough and having a recessed portion in communication with said longitudinal bore, resilient sealing members having registering bores therein in the said recessed portion of the closure member, a slidably movable hollow stem mounted in the longitudinal bore in the said closure member and extending through the central bores in the said sealing members, the said hollow stem having transverse ports adjacent one end, a closure member on one end of the said hollow stem and a fixed collar on the said hollow stem adjacent the end of the said stem opposite to the said closure member, the said sealing members being tightly fitted into the said recess and having a close sliding fitting engagement with the hollow movable stem.

2. An oil container and dispenser comprising in combination a hollow flexibly walled body member, a closure at one end of said body member, an internally threaded collar at the opposite end of said body member, a closure member having an externally threaded portion and a bore longitudinally thereof in communication with a recess formed in the body of the said closure member in communication with a recess of a slightly larger diameter formed in the said threaded extension of the said closure member, a slidably mounted hollow stem in said closure member extending through the bore therein and the recess formed in the body of the said closure member and having ports adjacent one end of the said stem, a closure member on one end of said hollow stem, resilient sealing members under tension in the recess formed in the body of the said closure member through which the said hollow stem extends and a fixed collar on the said stem spaced from the open end thereof.

3. An oil container and dispenser comprising in combination a hollow flexibly walled body member, a closure at one end of said body member, an internally threaded collar at the opposite end of said body member, a closure member having an externally threaded portion and a bore longitudinally thereof in communication with a recess formed in the body of the said closure member, which said recess is in communication with a recess of a slightly larger diameter formed in the said threaded extension of the said closure member, a slidably mounted hollow stem in said closure member extending through the bore therein and the recess formed in the body of the said closure member and having ports adjacent one end of the said stem, a closure member on one end of said hollow stem, resilient sealing members in the recess formed in the body of the said closure member through which the said hollow stem extends, means whereby the said sealing members are compressed in the recess in the body portion of the said closure member and a fixed collar on the said stem spaced from the open end thereof.

4. An oil container and dispenser comprising in combination a hollow flexibly walled body member, a closure at one end of said body member, an internally threaded collar at the opposite end of the said container, a closure member having an externally threaded reduced end portion with a recess formed therein, the said closure member having a second recess formed therein of slightly less diameter than the recess formed in the said threaded end portion of the said closure member and in communication with the first mentioned recess, the said closure member being undercut in the wall thereof whereby an annular ring portion is formed adjacent the end of the recess formed in the body thereof, a plurality of resilient seals having central bores therein in the recess in the said body portion and having the said ring portion upset whereby the said seals are placed under tension, the said closure member having a bore therein extending from the recess in the said body thereof to the free end of the said closure member, a hollow stem in the said bore extending through the said central bores in the seals and having transverse ports in one end thereof communicating with the opening in the

hollow stem, a closure member for the said hollow stem and a fixed collar on the said stem spaced from the open end thereof.

5. An oil container and dispenser comprising in combination a hollow flexibly walled body member, a closure at one end of said body member, an internally threaded collar at the opposite end of the said container, a closure member having an externally threaded reduced end portion with a recess formed therein, the said closure member having a second recess formed therein of slightly less diameter than the recess formed in the said threaded end portion of the said closure member, the said closure member being undercut in the wall thereof whereby an annular ring portion is formed adjacent the end of the recess formed in the body thereof, a plurality of resilient seals having registering central bores therein in the recess in the said body portion, the said ring portion being upset whereby the said seals are placed under tension, the said closure member having a bore therein extending from the recess in the said body thereof to the free end of the said closure member, a hollow stem in the said bore extending through the registering central bores in the said seals and having spaced transverse ports in one end thereof, a closure member for the said hollow stem and a fixed collar on the said stem spaced from the open end thereof, the said collar being spaced from the end of the closure member a distance equal to the distance of travel of the slidably mounted stem when the ports are on one side of the seals and are moved to a point on the opposite side of the said seals.

6. An oil container and dispenser comprising in combination a hollow flexibly walled body member, a closure at one end of said body member, an internally threaded collar at the opposite end of the said container, a closure member having an externally threaded reduced end portion with a recess formed therein, the said closure member having a second recess formed therein of slightly less diameter than the recess formed in the said threaded end portion of the said closure member, the said closure member being undercut in the wall thereof whereby an annular ring portion is formed adjacent the end of the recess formed in the body thereof, a plurality of seals in the recess in the said body portion having the said ring portion upset whereby the said seals are placed under tension, the said closure member having a bore therein extending from the recess in the said body thereof to the free end of the said closure member, a hollow stem in the said bore extending through the said seals having ports in the side wall adjacent one end thereof, a closure member for the said hollow stem and a fixed collar on the said stem spaced from the open end thereof, the said collar being spaced from the open end of the closure member a distance equal to the distance of travel of the slidably mounted stem when the ports are on one side of the seals and are moved to a point on the opposite side of the said seals, the tension on the said seals bringing them into close contact with the side of the said hollow stem and forming a seal about the said stem adjacent the said container.

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