Oct. 20, 1942. C. A. ANDERSON 2,299,450

PRESSURE OIL CAN

Filed March 13, 1940

Fig. 4.

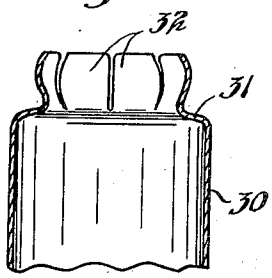


Fig. 3.

Fig. 1.

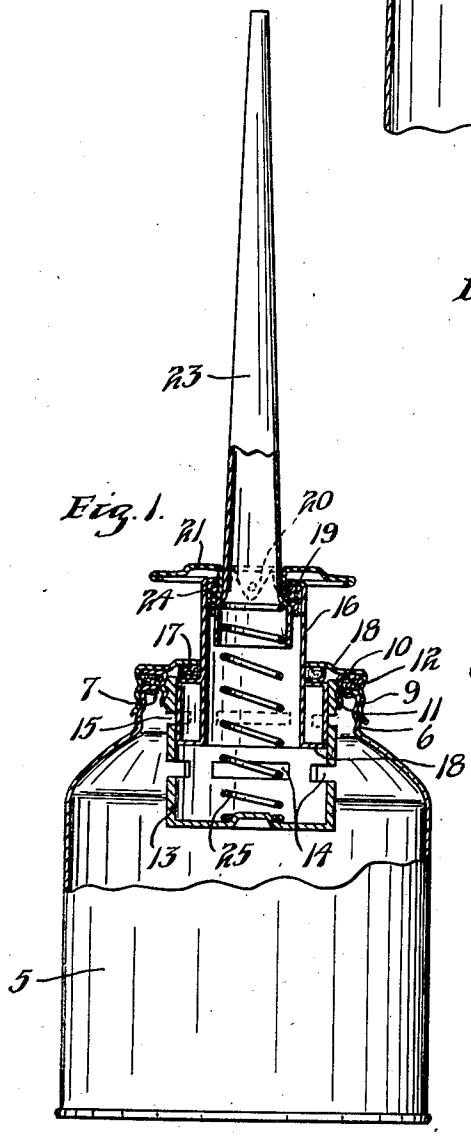
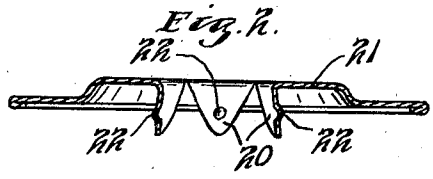


Fig. 2.



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PRESSURE OILCAN

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6 Claims. (Cl. 221—50)

This invention relates to hand oilers and more particularly to pressure oil cans of a type generally similar to that shown in my prior Patent No. 2,169,209, issued August 15, 1939.

One of the objects of my invention is to provide a hand oiler wherein oil is dispensed from the can under pressure in such a manner that the can can be held with the spout pointing upwardly and due to the pressure on the oil it will be dispensed upwardly from the spout.

Another object of the invention is to provide a pressure oil can which is relatively simply constructed and wherein the parts are so related that they can be easily assembled with a minimum of labor.

Another object of the invention is to provide a pressure oil can construction wherein the dispensing mechanism can be applied to can mouths having internal or external threads and wherein the adaptation of the pressure unit to one form of can mouth or the other can be accomplished by the simple substitution of one small part for another.

A further object of the invention is to provide improved means for inserting and retaining the dispensing spout in position relative to the pressure mechanism.

Still another object of the invention is to provide improved plunger construction to assist in building up pressures to force oil outwardly through the spout.

These and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawing, wherein like reference characters refer to the same parts throughout the views, and, in which:

Fig. 1 is a side elevation partly in section and partly broken away showing an embodiment of my invention;

Fig. 2 is a vertical sectional view through the finger contacting flange associated with the pumping unit;

Fig. 3 is a side elevation partly in section of another embodiment of my invention; and

Fig. 4 is an enlarged fragmentary view of the upper portion of the plunger shown in Fig. 3.

In Fig. 1 there is shown a can body 5 of conventional structure. This body has an open mouth at its upper end defined by a threaded flange or neck portion 6. This flange has a rolled bead 7 at its edge.

Threadedly secured to the threaded can mouth flange 6 is an apertured cap 8 whose downwardly extending threaded flange 9 lies externally of the can mouth flange 6. Lying beneath the cap 8 and between the cap and rolled edge 7 of the can mouth is a ring 10 which has a downwardly extending internally threaded flange or collar 11 as is clearly shown. Suitable packing 12 is provided between the ring 10 and the bead 7 on the can mouth. Threaded into the collar 11 is the upper end of a cylinder 13 which extends downwardly from the can mouth into the interior of the body of the can 5. This cylinder has a plurality of apertures 14 formed in its side wall intermediate the ends of the cylinder, and above the apertures 14 is a second series of apertures 15 which are also formed in the cylinder wall for a purpose to be described later.

Slidably mounted in the cylinder 13 and extending upwardly through the open upper end of the cylinder is a hollow plunger element 16 which in its upper portion is of materially less diameter than the inside diameter of the cylinder 13. The upper and intermediate portions of plunger 16 are adapted to pass through the apertured cap 8, and packing 17 is provided to prevent leakage past the exterior of the plunger through the aperture in said cap. The lower end of the plunger is of greater diameter, as shown by the portion indicated generally at 18, and it is this enlarged lower plunger portion which slidably fits the interior of the cylinder 16. The upper end of plunger 16 is open with an internally extending flange 19 defining the opening. Extending into the upper plunger opening is a plurality of spring metal tongues 20 which are formed on a radial finger contacting flange 21. The flange 21 is secured to the upper end of the plunger by pressing the spring tongues 20 into the plunger opening until small projections 22 on the spring tongues snap past the flange 19 on the upper end of said plunger. This finger contacting flange can be removed from the plunger when desired, but it is relatively firmly retained in position due to the action of the tongues and the small projections 22.

Extending upwardly through the open upper end of plunger 16 is a spout 23 whose lower end is enlarged as shown to provide a shoulder which contacts the packing 24 and the lower ends of the spring tongues 20 to prevent the spout from being drawn entirely through the plunger in an upward direction. A compression spring 25 is mounted between the closed bottom of cylinder 13 and the inner shoulder formed at the lower end of the spout 23. This spring has sufficient strength to normally maintain the spout in position with respect to the plunger 16 and also to normally maintain the plunger in the upper position illustrated.

With the parts disassembled the cap 8 is first slipped over the smaller upper end of plunger 16 and the finger contacting flange 21 is connected to the plunger by pressing the spring tongues 20 inwardly past the flange 19 on the plunger. The spout is then inserted by passing its small end upwardly through the plunger until the enlarged lower end of the spout contacts the packing 19 and the prongs or tongues 20. The spring 25 is positioned with its upper end seated in the en-

larged lower end of the spout 23 and the cylinder 13 is then slipped over the lower end of spring 25 and threadedly secured to the threaded portion 11 of the ring 10. This entire unit is then connected to the can body by threadedly engaging the cap 8 to the can mouth.

The cylinder 13 can be loaded with oil if the normal level in the can is below the cylinder inlet openings 13 by tilting or inverting the can for an instant. The can can then be returned to an upright position and as pressure is applied to the finger contacting flange 21 the plunger 16 will move downwardly in the cylinder, and after the plunger has closed the cylinder openings 14 the enlarged lower end of the plunger will displace oil upwardly through the plunger and through the spout 23. Downward movement of the plunger 16 would tend to cause a partial vacuum between the cap 8 and enlarged lower plunger portion except for the provision of the openings 15 in the upper portion of the cylinder. In addition the openings 15 provide means for admitting oil at each stroke of the plunger to improve the seal between the sliding plunger and the wall of the cylinder 13.

In Fig. 3 there is shown a can body 26 which has an open mouth defined by an internally threaded portion 27. A cap 28 has secured thereto on its under side a flanged ring 29 and the downwardly depending flange on said ring is threaded internally and externally. The externally threaded portion is adapted to screw into the internally threaded can mouth 27 and the internally threaded portion of the flange ring 29 is adapted to threadedly engage and support a cylinder 13*a* constructed in the same manner as cylinder 13 in Fig. 1. This cylinder is provided with oil inlet openings 14*a* and pressure relieving openings 15*a*. Slidably mounted in the cylinder 13*a* is a plunger 30 whose lower end is constructed in the same manner as the enlarged lower end 18 on the plunger 16 in Fig. 1. The upper end of plunger 30, however, is constructed differently from that shown in the first described embodiment. Said upper end, as best shown in Fig. 4, has an inwardly extending shoulder 31 and rising upwardly from the shoulder is a plurality of arcuate spring tongues 32 which present convex surfaces on their outer sides. The spout 23*a* is adapted to be inserted upwardly through the plunger 30 in the manner of the spout 23 and the enlarged lower end of said spout bears against a packing ring 33 which lies beneath the shoulder 31 formed on the plunger. A spring 25*a* normally urges the spout 23*a* upwardly with respect to the plunger 30 and also maintains said plunger in an upper position relative to the cylinder 13*a*. An apertured flange 34 is slipped over the spout 23*a* and the opening in said flange is of such size that it can be forced down over the spring tongues 32 on the plunger with a snap action and will rest upon the outer portion of the shoulder 31 on said plunger.

It will be seen that in the structure shown in Fig. 3 the general assembly procedure is the same as in the case of the embodiment first described, and when assembled the pumping action of the can is the same as in the first embodiment.

It is possible to interchange the pumping or pressure unit in either form of the device with can mouths which have internal or external threads. To adapt the structure of Fig. 1 to an internally threaded can mouth it is necessary only to replace the apertured cap 8 with the apertured cap 28 shown in Fig. 3, and conversely the cap 8 can be incorporated with the pumping unit shown in Fig. 3 so that either internally or externally threaded can mouths can be utilized. The entire structure is relatively simple and the few moving parts are so related that there is substantially no possibility of the parts getting out of order, and due to the extreme ease of assembly the device can be produced at a relatively low cost. It will be seen that means is provided for properly sealing relatively movable parts to prevent leakage and the can can be easily manipulated with one hand to provide an extremely convenient pressure oiling device.

It will, of course, be understood that various changes may be made in the form, arrangements, details and proportions of the various parts without departing from the scope of my invention.

What is claimed is:

1. A pressure oil can comprising a can body having a mouth, a cylinder supported in said mouth, a plunger having an upper end and being slidable in said cylinder and having an aperture axially therethrough, a spout extending upwardly through said plunger and having an enlarged lower end, said plunger at its upper end including a flange extending upwardly around said spout, and an apertured finger engaging flange fitted around the upwardly extending flange on the end of said plunger.

2. The structure in claim 1 and the upwardly extending flange at the upper end of said plunger comprising a plurality of resilient elements yieldably gripping said finger engaging flange through the aperture in said last mentioned flange.

3. A pressure oil can comprising, a can body having a mouth, a cylinder supported in said mouth, a hollow plunger slidable in said cylinder and having an open upper end, a spout extending upwardly through the open upper end of said plunger, and spout retaining means comprising a resilient element engaging said spout and yieldably maintaining said spout in position relative to the open upper end of said plunger.

4. A pressure oil can comprising, a can body having a mouth, a cylinder supported in said mouth, a plunger slidable in said cylinder, means for normally urging said plunger upwardly in said cylinder, a finger engaging flange connected to said plunger to permit pressing of the flange and plunger downwardly relative to said cylinder, a spout extending upwardly through said plunger, and said finger engaging flange having a portion extending into said plunger between the upper end of said plunger and a lower portion of said spout.

5. The structure in claim 4 and said finger engaging flange including a collar-like portion made up of a plurality of resilient elements extending into said plunger, said resilient elements being yieldably pressed radially outwardly to provide for detachable engagement with said plunger.

6. A pressure oil can comprising, a can body having a mouth, a cylinder supported in said mouth, a plunger slidable in said cylinder, means for normally urging said plunger upwardly in said cylinder, a finger engaging flange associated with said plunger to permit pressing of the flange and plunger downwardly relative to said cylinder, a spout, and portions of said finger engaging flange, spout, and plunger lying in concentric relationship and in frictional engagement.

CHESTER A. ANDERSON.