June 21, 1949. A. G. ANDERSON 2,473,696

HAND OILER

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Fig. 1

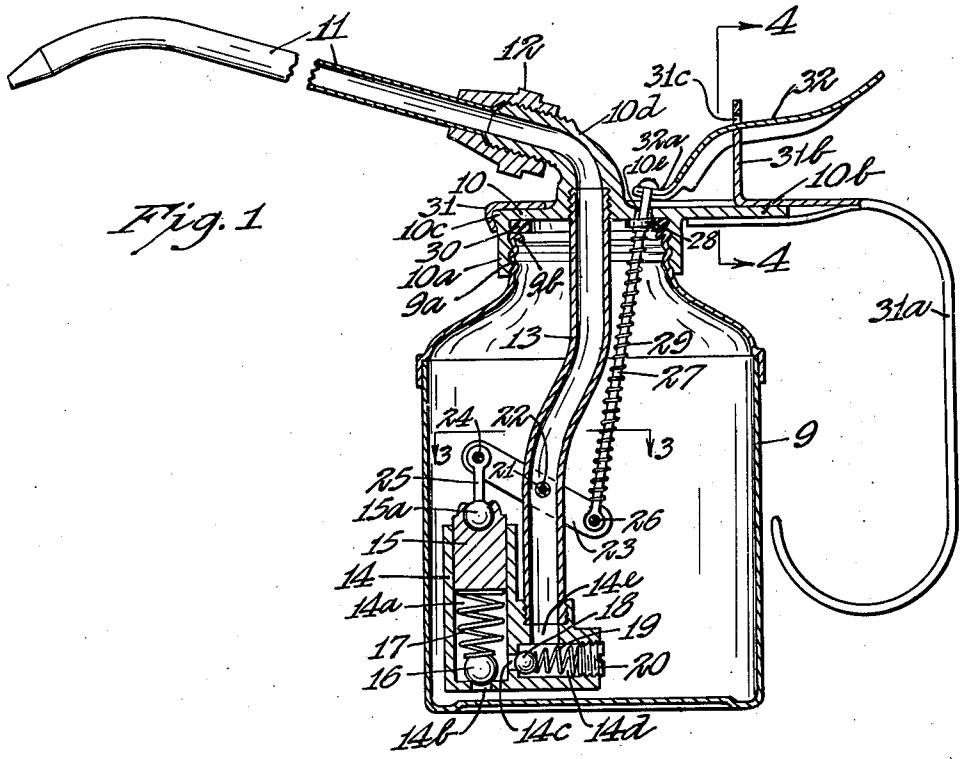


Fig. 2

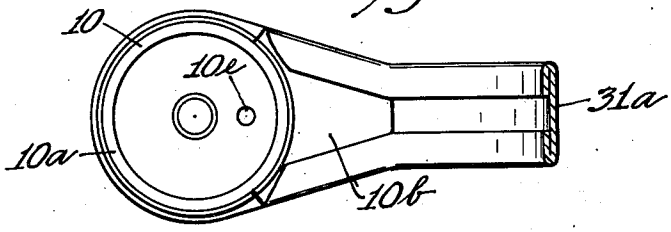


Fig. 3

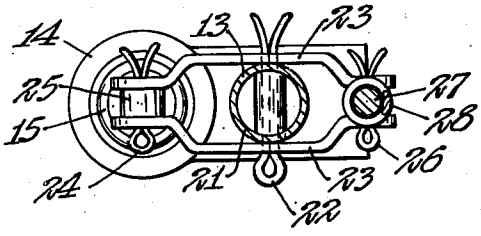
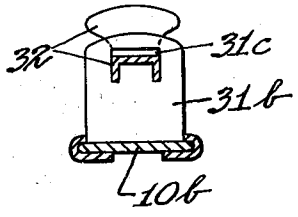


Fig. 4



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Fig. 5

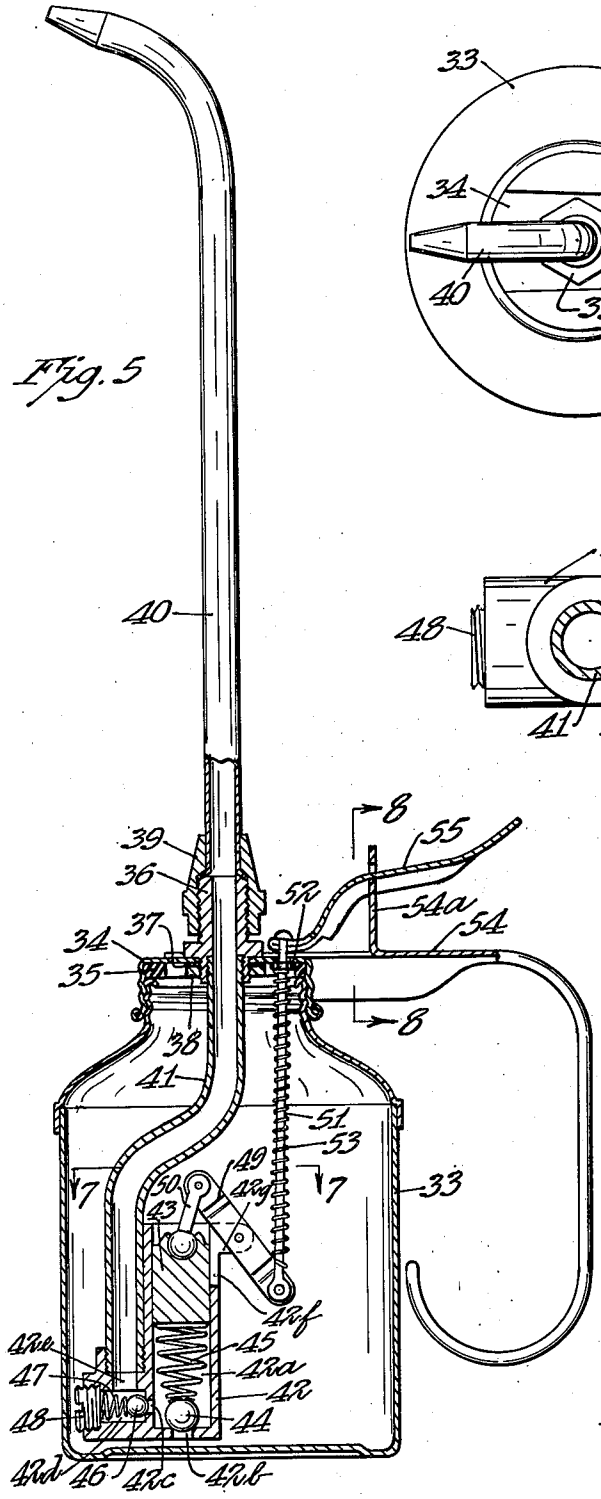


Fig. 6

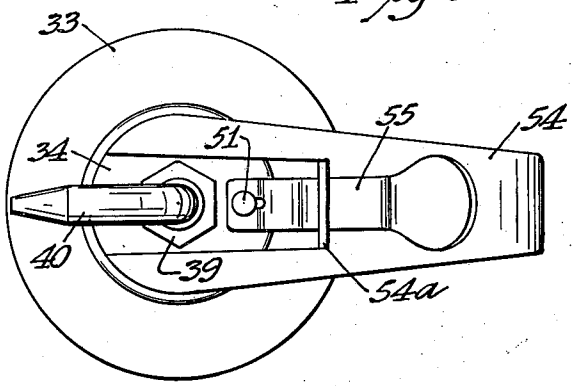


Fig. 7

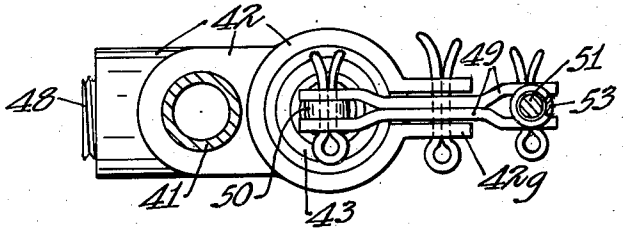
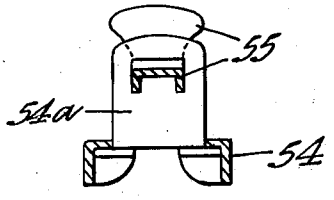


Fig. 8



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HAND OILER

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Application October 24, 1945, Serial No. 624,228

2 Claims. (Cl. 222—385)

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This invention relates to hand oilers.

It is the general object of this invention to provide a new and improved hand oiler of cheap and simple construction which can be easily assembled and will be highly efficient in operation.

The objects and advantages of this invention will more fully appear from the following description made in connection with the accompanying drawing wherein two embodiments of the invention are shown and in which;

Fig. 1 is a vertical section taken through a hand oiler embodying the invention.

Fig. 2 is a bottom view of the cap and associated parts of the oiler shown in Fig. 1, a portion of the handle being shown in horizontal cross-section.

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1, as indicated by the arrows.

Fig. 4 is a vertical section taken on the line 4—4 of Fig. 1, as indicated by the arrows.

Fig. 5 is a vertical section showing a second embodiment of the invention.

Fig. 6 is a plan view of the device shown in Fig. 5.

Fig. 7 is a horizontal section taken on the line 7—7 of Fig. 5 as indicated by the arrows; and

Fig. 8 is a vertical section taken on the line 8—8 of Fig. 5 as indicated by the arrows.

Referring first to the embodiment of the invention shown in Figures 1, 2, 3, and 4, there is provided, a container 9, having a reduced mouth at its upper end provided with external screw threads 9*a* and an inturned flange 9*b* at its top. There is also provided a cap 10, having a circular skirt portion 10*a*, provided with internal screw threads for releasably engaging the external screw threads 9*a* at the mouth of the container 9. The cap 10 has a lateral projecting portion 10*b* of flat construction, the sides of which taper toward the end of the projecting portion as best shown in Fig. 2. It should also be noted that the edges 10*c*, of the cap 10 above the skirt 10*a* project outwardly beyond the skirt for a purpose presently to appear. The cap 10 also has an upwardly extending portion 10*d*, provided with external screw threads at its outer end, whereby a spout 11 may be attached to the upwardly extending portion 10*d*, as by a suitable fitting, 12. In the form shown, the upwardly extending portion 10*d* is tilted at an acute angle relative to the body portion of the cap 10, but it will be understood that the portion 10*d* may be extended at any angle from the body portion of the cap so that a vertically extended spout, for example as shown in Fig. 5, may be applied thereto, or a spout

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disposed at any angle may be applied thereto. A passage is formed through the body of the cap 10 and through the upwardly extending portion 10*d*, whereby communication is afforded through the cap with the spout 11.

A conduit 13 is screw threaded into the lower part of the cap, the passage through the body of the cap being enlarged and tapped to receive the upper end of the conduit 13. This conduit 13 is preferably provided with a double bend as shown in Fig. 1, and runs down to a point near the bottom of the container 9, somewhat forwardly of the vertical longitudinal center line of the container.

The conduit 13 supports a pump structure within the lower part of the container 9. This structure includes a pump body 14, forming a pump cylinder 14*a* within which a pump plunger 15 works. An inlet 14*b* into the lower end of the cylinder 14*a* is provided and this inlet is controlled by a ball valve 16, spring pressed into engagement with its seat by a spring 17, reacting between the ball 16 and the lower end of the pump plunger 15. The pump body 14 is also provided with a lateral outlet 14*c* at the lower end of the pump cylinder 14*a*, and this outlet is controlled by a ball valve 18, disposed within a horizontal bore 14*d* in the pump body and pressed into engagement with its seat by a spring 19, reacting between the ball valve 18 and a screw 20 closing the end of the bore 14*d*. The lower end of the conduit 13 screws into a lateral extension of valve body 14 above the bore 14*d* and this extension is provided with a vertical bore 14*e* which affords communication between the bore 14*d* and the conduit 13.

The conduit 13 is provided with a cross bore slightly above the level of the pump cylinder 14*a*, and fitting within this cross bore is a small tube 21, which is sealed at its ends to the sides of the conduit 13 so that oil or other fluid within the container 9 cannot seep into the conduit 13 through the bore within which the tube 21 is located. A pivot pin 22 fits through the small tube 21 and acts as a pivot for a double arm lever 23. Connected at one end by a pivot 24 to the double arm lever 23 is a short pitman 25, having a ball at its lower end fitting within a ball socket 15*a* at the upper end of the plunger 15. Thus, the lower end of the pitman 25 is capable of universal movement relative to the plunger 15.

Connected by another pivot 26 to the opposite end of the double arm lever 23 is a rod 27, which projects upwardly through a small opening 10*e* in the cap 10 and this rod is provided with an enlarged head at its upper end. A wiper gasket

28 surrounds the rod 27 immediately below the opening 10e and this gasket tends to wipe the upper portion of the rod clear of oil as the rod is raised. A coil spring 29 fits around the rod 27 and reacts between the gasket 28 and the pivot pin 26. In the form of the device as shown, the three pivot pins 22, 24, and 26 are shown as being cotter keys but any type of pivot could be substituted therefor.

The cap 10 carries a gasket 30 which normally rests on the flange 9b of the container 9 so that the cap will form a tight seal with the mouth of the container.

Overlying the major portion of the cap 10 and the extension 10b thereof is a sheet 31, this sheet being apertured to receive the upwardly extending portion 10d of the cap and the edges of the sheet being crimped downwardly and portions thereof inwardly to embrace the extended rim 10c of the cap and the extension 10b thereof. The edges of the sheet 10 are bent inwardly on themselves, outwardly from the extension 10b to form a handle 31a, this handle outwardly from the extension 10b being first downturned and then reversely curved as shown in Fig. 1. The metal of the sheet 31 is cut to form a tab 31b and this tab is swung upwardly and a channel shaped slot 31c is formed therein, whereby the tab will form a fulcrum for a channel shaped trigger lever 32. This trigger lever is formed with a reverse curve as best seen in Fig. 1. The flanges at the sides of the lever are reduced in width slightly at the lower end of the lever. At this point the lever is provided with a slot 32a which receives the upper part of the rod 27 below the enlarged head thereof. The upper part of the trigger lever 32 is flattened and rounded so as to form a convenient thumb contacting portion when the whole oil can is supported from the handle 31a by one hand of the operator.

When the oil can is so held and the upper part of the trigger lever 32 is depressed by the thumb of the operator, the trigger lever 32 will have a sliding action relative to the tab 31b as the rod 27 is raised by the normally lower portion of the lever. Of course, as the rod 27 is raised against the tension of the spring 29, the lever 23 will be swung so as to depress the pitman 25, thereby depressing the pump plunger 15 and ejecting oil contained in the pump cylinder 14a through the outlet 14c, into the bore 14d and bore 14e, causing the oil to be forced upwardly through the conduit 13, passage through the cap 10 and spout 11. As the trigger lever 32 is released by the thumb of the operator the spring 29 will return the parts to the position shown in Fig. 1, thereby causing the plunger 15 to move upwardly, closing the valve 18 and opening the valve 16 and sucking a fresh supply of oil into the pump cylinder 14a.

The ball and socket joint connecting the pitman 25 with the pump plunger 15 allows for proper movement of the parts without a loose connection and the use of the small tube 21 mounted in the conduit 13 permits the lever 23 to be readily supported from the conduit 13 without seepage of oil into the conduit 13.

In practice the cap 10 will be die cast in one piece and the parts are thus very easily assembled with a minimum of labor.

Referring now to Figures 5, 6, 7 and 8 of the drawings another embodiment of the invention is shown which includes many of the features of the device illustrated in Figures 1 to 4. In the device shown in Figures 5 to 8, a container 33 is provided, having a mouth with external screw threads to which there is threadedly secured a cap 34, there being a gasket 35 interposed between the top of the container 33 and the cap. Fitting loosely through a central aperture in the cap 34 is a fitting 36, having a shoulder of polygonal shape to receive a wrench above the cap and below this shoulder the fitting 36 is reduced and screw threaded to pass through the aperture in the cap and to receive below the same a gasket 37 and nut 38. The portion of the fitting 36 below the shoulder is cut away and flattened at its sides to correspond to the shape of the aperture through the cap 34, whereby parts attached to the fitting 36 may be properly aligned relative to the spout which will be later described. Above its shoulder the fitting 36 is provided with exterior screw threads to receive another fitting 39 securing a spout 40 in position on the fitting 36. Of course, the fitting 36 is provided with a passage therethrough communicating with the spout 40. The passage in the lower part of the fitting 36 is enlarged and tapped to receive the screw threaded upper end of a conduit 41, which projects down into the container 33 and carries at its lower end a pump structure. The said pump structure includes a pump body 42 forming a pump cylinder 42a within which works a pump plunger 43. An inlet 42b is provided in the lower part of the pump cylinder 42a and this inlet is controlled by a ball valve 44, pressed into position by a coil spring 45 reacting between the ball 44 and the pump plunger 43. As in the case of the pump structure previously described, there is an outlet 42c formed in the lower part of the pump cylinder 42a and this outlet is controlled by a ball valve 46 disposed within a horizontal bore 42d in the body 42, the ball 46 being normally held into engagement with its seat by a coil spring 47, reacting between the ball 46 and a screw 48 which closes the bore 42d. The bore 42d communicates with a vertical bore 42e in the pump body 42 and the lower end of the conduit 41 is screwed into a portion of the body 42 immediately above the bore 42e, so that communication may be afforded through the bore 42e with the lower end of the conduit 41.

The body 42 is slotted at 42f near its upper end to receive a two-part lever 49 pivoted in a pair of projecting ears 42g formed on the valve body 42 at the two sides of the slot 42f. The lever 49 has at one end, the upper end of a pitman 50, pivoted thereto, the lower end of this pitman being ball shaped to fit within a socket at the upper end of the plunger 43. A rod 51 is pivoted to the other end of the lever 49 and this rod projects upwardly through a wiping gasket 52 and through an aperture in the cap 34 and is provided at its upper end with an enlarged head. A coil spring 53 surrounds the rod 51 and reacts between the gasket 52 and the pivot connecting the lower end of the rod to the lever 49.

Spot welded or otherwise secured to the top of the cap 34 is a handle member 54 and the inner end of this handle member is notched to embrace the cap 34 at two sides of the fitting 36. A tab 54a is bent upwardly from the notched portion and this tab is provided with a channel shaped slot therein, receiving trigger lever 55 of similar construction to trigger lever 32 previously described. The lower end of the trigger lever 55 is apertured to receive the upper part of the rod 51 below the enlarged head thereof. The handle member 54 is curved as shown in Fig. 5, so as to

form a proper support for the hand of the operator without permanent engagement with the side of the container 33.

The operation of the device shown in Figs. 5 to 8 will be readily understood. The construction of the cap 34 and fitting 36 together with associated parts is such that the cap 34 may be merely a stamping and the parts can be assembled readily without soldering or welding operations.

While the devices of the invention are intended primarily for use as hand oilers, it will of course be understood that the structures employed may be used in dispensing any kind of fluid, such as water, cream and all kinds of lubricants.

It will be seen that highly efficient hand oiler structures have been provided. It will of course be understood that various changes may be made in the form, details, arrangement, and proportions of the various parts without departing from the scope of the present invention which, generally stated, consists in the matter shown and described, and set forth in the appended claims.

What is claimed is:

1. A hand oiler comprising a container, a cap therefor, a pump conduit assembly including a conduit attached to said cap running through the same and extending downwardly into the container and a pump located within the container and carried by said conduit, said pump including a reciprocating piston adapted to force oil through said conduit on a down stroke of the piston, a lever located within said container and intermediately pivotally mounted on said pump conduit assembly, a pitman pivotally connected to one end of said lever and having a ball and socket connection with said piston, a rod pivotally connected to the other end of said lever and projecting upwardly through said cap, a spring urging upwardly the end of the lever to which said pitman is connected, an operating finger lever fulcrumed on said cap and connected to the upper end of said rod and a spout connected to the upper end of said conduit.

2. A hand oiler comprising a container, a cap therefor, a conduit attached to said cap running through the same and extending downwardly into a container, a pump located within the container and carried by said conduit, said pump including a reciprocating piston adapted to force oil through said conduit on the down stroke of the piston, a small tube intermediately disposed in said conduit projecting through the same and sealed at its ends to said conduit, a pivot running through said small tube, a lever intermediately mounted on said pivot, a pitman pivotally connected to one end of said lever and having a ball and socket connection with said piston, a rod pivotally connected to the other end of said lever and projecting upwardly through said cap, a spring urging upwardly the end of the lever to which said pitman is connected, an operating finger lever fulcrumed on said cap and connected to the upper end of said rod and a spout connected to the upper end of said conduit.

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