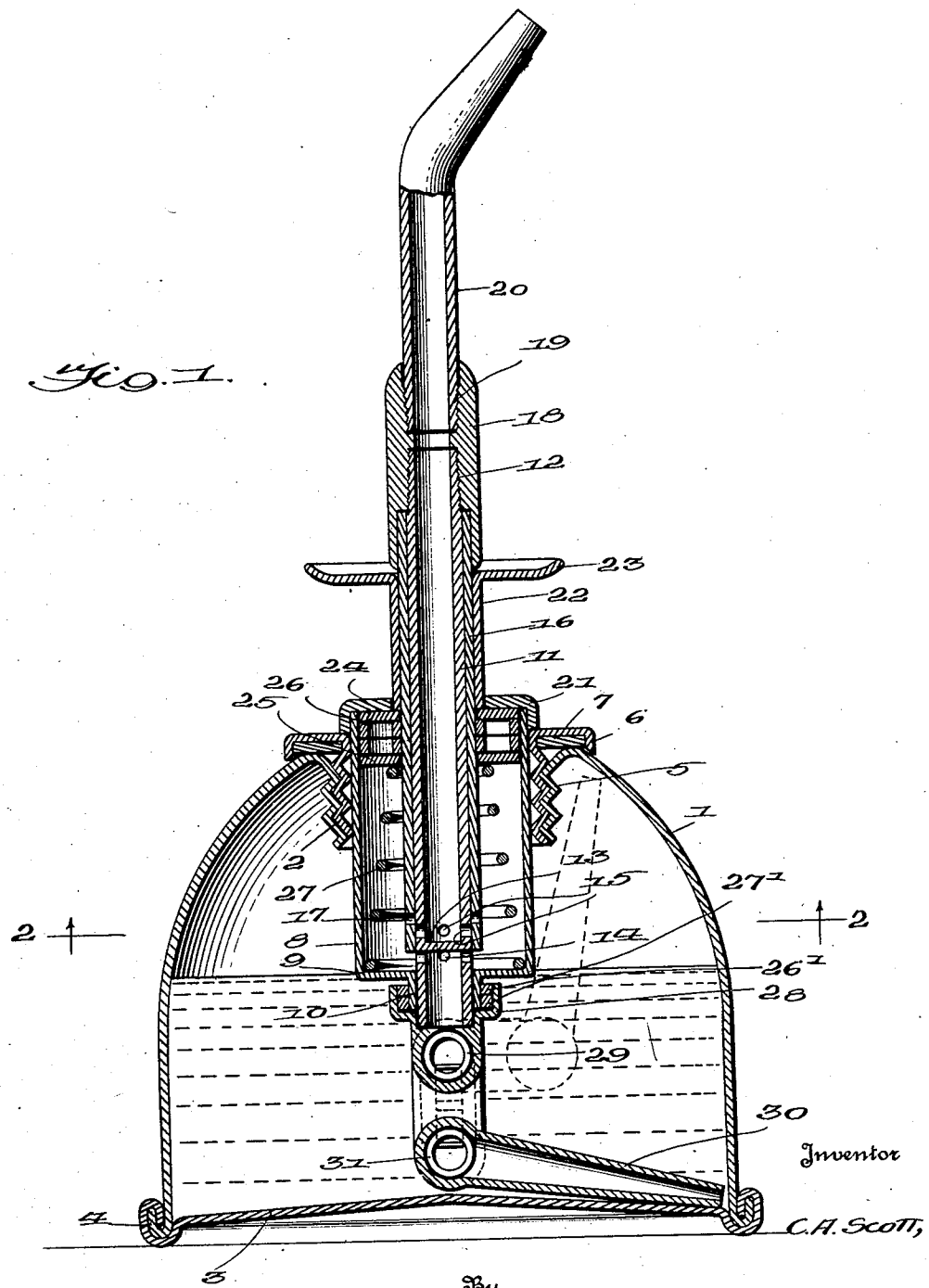
Nov. 3, 1931. C. A. SCOTT 1,830,295

FORCED FEED PUMP HAND OILER

Filed July 18, 1929 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

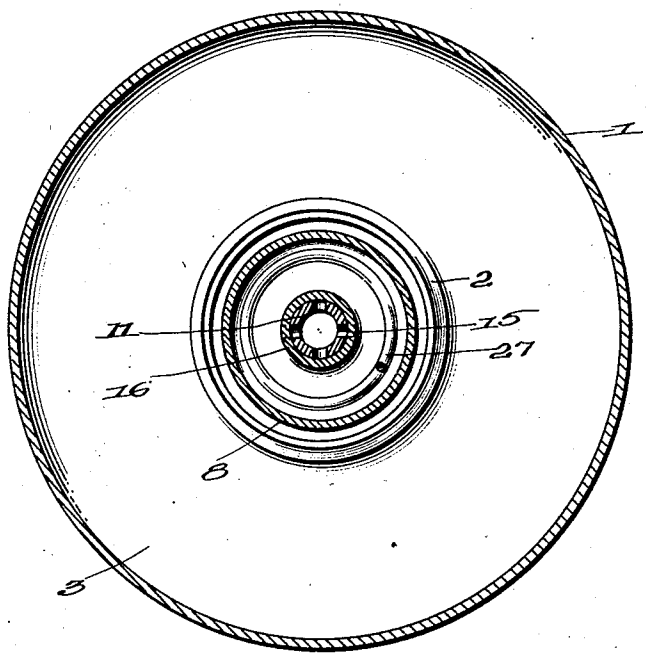


Fig. 3.

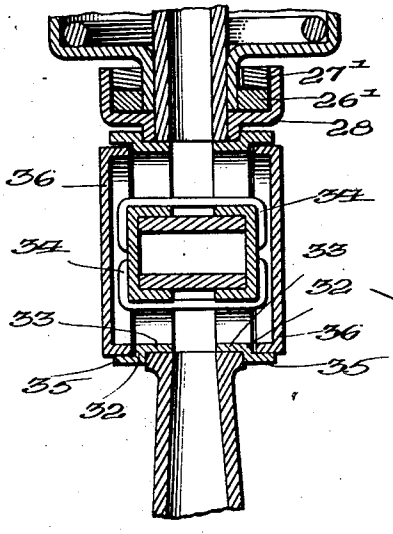
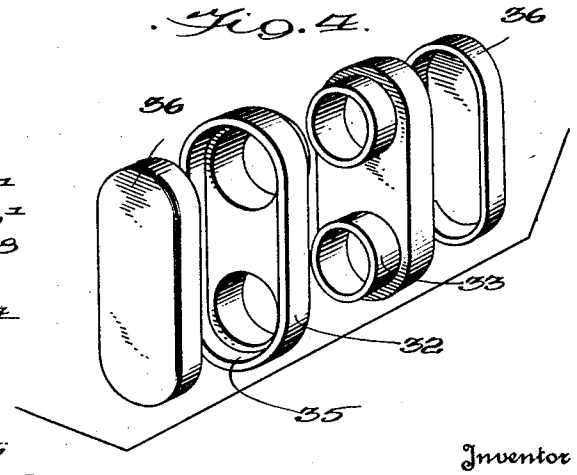


Fig. 4.



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UNITED STATES PATENT OFFICE

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FORCED FEED PUMP HAND OILER

Application filed July 18, 1929. Serial No. 379,230.

This invention relates to improvements in oil cans, and more particularly to a forced feed pump hand oiler, which will positively discharge the oil from the can regardless of the amount of oil therein, until the can is absolutely empty.

An object of the invention is to provide an improved forced feed pump hand oiler, which will be arranged to pump the lubricant from the can when held at any angle until the reservoir of the oiler is completely empty.

Another object of the invention is to provide an improved forced feed pump hand oiler which will be provided with a universally mounted lubricant inlet nozzle arranged to have its outermost end move automatically to the lowest portion in the reservoir of the container when the same is held at any angle so that the entire contents of the container may be readily and efficiently discharged.

A further object of the invention is to provide an improved forced feed pump hand oiler having an auxiliary lubricant reservoir or cylinder and a piston operable therein, to positively draw in a supply of lubricant into the cylinder on one stroke of the piston, and to positively discharge the lubricant stored in the cylinder on the reverse stroke of the piston.

A still further object of the invention is to provide an improved forced feed hand oiler having an auxiliary lubricant reservoir or cylinder and a manually operable piston therein, arranged to discharge the supply of lubricant in the cylinder when the piston is depressed within the cylinder, and resilient means for forcing the piston to its uppermost position within the cylinder to draw in a supply of lubricant to the cylinder from the main reservoir in the oiler.

Other objects will appear as the description proceeds.

In the accompanying drawings which constitute a part of my application,

Figure 1 is a vertical sectional view through my improved forced feed pump hand oiler;

Figure 2 is a transverse sectional view taken on the line 2—2 of Figure 1;

Figure 3 is a detail sectional view of the universal link connection between the inlet nozzle and the auxiliary lubricant reservoir or cylinder in the oiler, and

Figure 4 is a group perspective of the several portions of the hollow universal link connection.

Like characters of reference are used throughout the following specification and the accompanying drawings to designate corresponding parts.

In carrying out my invention, I provide a substantially semi-cylindrical lubricant storage reservoir 1 being open at its top and having a depending integrally formed threaded collar 2, and closed at its bottom by a bottom plate 3 crimped at its periphery about the flange 4 at the lower periphery of the said reservoir 1 to form a tight joint. The plate 3 is slightly conical, in that its central point is somewhat elevated above its outer edge to direct the last small amount of lubricant in the container to the lowermost point where it may be completely discharged from the oiler.

A threaded closure cap 5 is adapted to cooperate with the threaded collar 2, and to be received within the same, and is provided with an annularly formed depending rim 6, in which the sealing washer 7 is adapted to seat and also to seat upon the upper peripheral edge of the reservoir 1 to provide a tight joint.

An auxiliary lubricant cylinder 8 is suitably secured to and supported by the closure cap 5 and is provided with a bottom 9 having a centrally disposed depending collar 10, which in turn supports the lower end of the lubricant delivery tube 11. The delivery tube 11 extends a slight distance below the lower end of the collar 10, and upwardly a considerable distance above the uppermost portion of the reservoir 1, where its outer end is slightly reduced and externally threaded at 12. A plurality of ports are formed through the tube 11 on spaced levels, and are separated by a tube seal 13, and will hereafter be referred to as intake ports 14 and discharge ports 15.

A sleeve valve barrel 16 is slidably mounted about the delivery tube 11, and is provided

with a plurality of valve ports 17, which are arranged to register with the discharge ports 15 when the valve sleeve is depressed, and to provide a cut-off for said ports 15 when said sleeve is in its raised or uppermost position, as illustrated in Figure 1 of the drawings. The downward movement of the sleeve valve barrel 16 will be limited by the end of the said barrel engaging the bottom 9 of the cylinder 8. A coupling 18 is internally threaded at its opposite ends, and is adapted to be screwed onto the reduced threaded portion 12 of the delivery tube 11, and to receive the externally threaded lower end 19 of the delivery nozzle 20 of the oiler.

A retaining cap 21 is pressed on to the upper end of the cylinder 8, and is provided with a central opening through which delivery tube 11, sleeve valve barrel 16, and the piston actuating plunger tube 22 extends, and serves also as a dust cap to keep out foreign matter from the operable parts of the oiler.

The upper end of the plunger 22 is provided with an integrally formed annular finger flange 23, which contacts with the lower end of the coupling 18 when in raised position.

The piston assembly comprises an upper washer 24 and a lower washer 25 spaced from each other, and a pair of metallic snap rings 26 interposed between said washers, and said assembly being arranged between the inner wall of the cylinder 8 and the outer periphery of the sleeve valve barrel 16. A helical coil spring 27 is disposed within the cylinder 8, and seats on the bottom 9 of said cylinder and against the lower surface of the washer 25, and tends to normally raise the piston assembly in its uppermost position as illustrated in Figure 1 of the drawings.

A solid ring 26′ is pressed on to the lower end of the collar 10 of the cylinder 8 and cooperates with the solid ring 27′ pressed into the upper end of the swivel connection 28, which is in the substantial form of a T. The upper end of the swivel connection 28 comprises the swivel, while the lower end is formed with alined horizontal openings 29.

The intake spout 30 is also formed substantially in the form of a T, and has its smaller outer end terminating adjacent the lowermost portion of the container 1, so that all of the lubricant from the container may be discharged. The opposite or upper end of the spout 30, like the swivel 28, is also provided with alined horizontal openings 31.

A pair of connecting links 32 having inwardly directed spaced collars 33 and channeled bodies, are adapted to be received within the openings 29 and 31 in the swivel connection and spout, and are adapted to be held in position by the U-shape springs 34, as clearly illustrated in Figure 3 of the drawings. The links 32 are flanged at 35 at their outer side edges and are adapted to receive the hollow link caps 36, which are pressed into the flanged edges, thereby forming sealed right and left hand passages for the lubricant from the intake spout to the inner end of the discharge tube. It will therefore be seen that a flexible swivel joint will be provided between the swivel connection and spout, whereby the outer end of the spout will always seek the lowest point in the container when held in any position, thereby permitting the discharging of all of the lubricant from the said container.

From the foregoing description, it will be apparent that the mode of operation of my improved forced feed pump hand oiler will be as follows: Assuming that there is a quantity of lubricant in the container, the finger flange 23 on the plunger 22 is depressed, thereby forcing the piston assembly downward in the cylinder 8, and at the same time, due to the frictional engagement with the sleeve valve barrel, will force the same down until the valve barrel closes the intake ports in the delivery tube and alines the ports in the barrel with the discharge ports in the delivery tube, thereby forcing the lubricant in the cylinder 8 out through the delivery tube and from the end of the delivery nozzle 20. The coil spring 27 which has been contracted during the downward movement of the piston assembly will then expand and cause the valve barrel to cover the delivery ports in the delivery tube, and to open the intake ports in the delivery tube, thereby sucking in a new supply of lubricant through the intake spout, coupling and into the auxiliary storage cylinder 8, whereupon the same action may be repeated as often as desired until the lubricant has been completely exhausted from the container 1.

Many minor changes in detail of construction may be resorted to without departure from the spirit of the invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A forced feed pump hand oiler comprising a lubricant container, a threaded closure therefor, a cylinder supported by said closure, a dispensing tube carried by said cylinder, said tube having spaced inlet and discharge ports formed through its wall, a slide sleeve valve operable on said tube, manually operable means for operating said pump on its downward stroke, and resilient means for operating the pump on its upward stroke.

2. A forced feed pump hand oiler comprising a lubricant container, a threaded closure therefor, a cylinder supported by said closure, a dispensing tube carried by said cylinder, a slide sleeve valve operable about said tube, said tube being provided with a plurality of spaced radial intake and discharge ports, a piston operable between said sleeve

valve and the inner wall of said cylinder, a manually operable plunger for depressing said piston in said cylinder, and resilient means for automatically raising said piston to its uppermost position.

3. The combination as set forth in claim 2, and means for positively limiting the upward and downward movement of said piston.

4. A forced feed pump hand oiler comprising a lubricant container, a threaded closure therefor, a dispensing tube carried by said cylinder and provided with spaced intake and discharge ports, a seal in said tube intermediate said ports, a slide sleeve valve operable about said tube and provided with a plurality of radially extending ports, a lubricant intake spout swivelly connected with said cylinder, a piston operable in said cylinder, and means carried by said piston for frictionally engaging said sleeve valve for forcing the same down to register the ports in the sleeve with the discharge ports in said tube on the down stroke of said piston, and to close said discharge ports and uncover the inlet ports in the tube on the upward stroke of the piston.

5. A forced feed pump hand oiler comprising a lubricant container, a closure therefor, a cylinder carried by said closure, a manually operable forced feed pump in said cylinder, a dispensing tube carried by said cylinder, a slide sleeve valve operable about said tube, a lubricant intake spout connected with said cylinder adjacent the inner end of said dispensing tube, and a swivel connection between said nozzle and cylinder and forming a divided lubricant passage through said connection.

6. The combination as set forth in claim 5, and a swivel member secured to the lower end of said cylinder, and said link connection comprising a pair of cooperating link members having spaced alined openings and outer caps, whereby a divided channel for the passage of the lubricant will be formed.

7. The combination as set forth in claim 5, a swivel member secured to the lower end of the said cylinder, said link connection comprising a pair of cooperating link members having spaced alined openings and inwardly extending collars adapted to be received in corresponding openings formed respectively in said swivel member and said spout, cap members for said link members, and U-shape springs for holding the several portions of the link connection in assembled position.

In testimony whereof I affix my signature.

CHESTER A. SCOTT.