Jan. 7, 1930. A. E. WESTWOOD 1,742,676

OIL CAN

Filed July 3, 1926

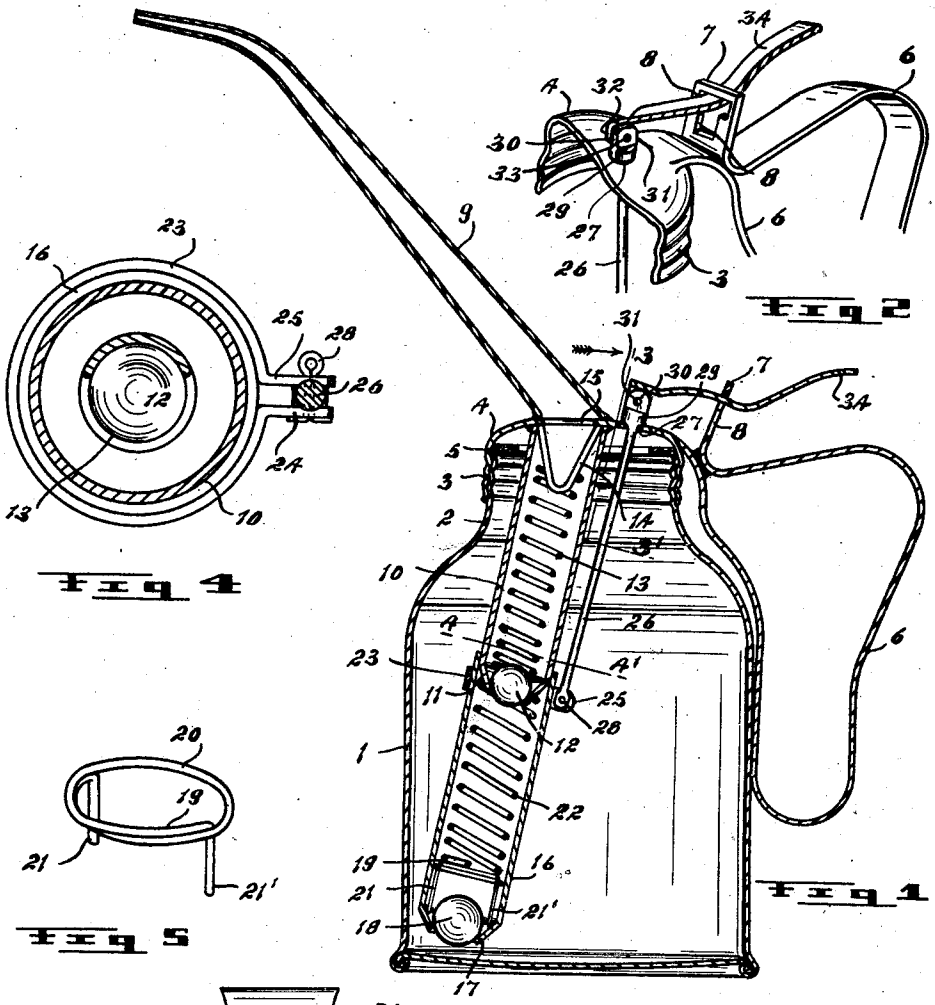


Fig 1

Fig 2

Fig 4

Fig 5

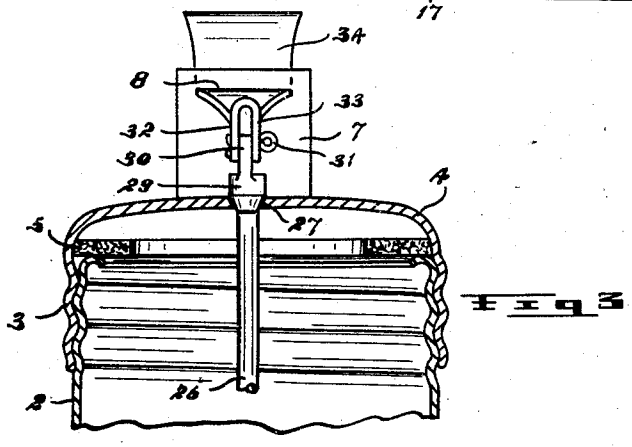


Fig 3

Inventor

A. E. Westwood

BY

Patented Jan. 7, 1930 1,742,676

UNITED STATES PATENT OFFICE

AUBREY E. WESTWOOD, OF WINNIPEG, MANITOBA, CANADA

OIL CAN

Application filed July 3, 1926, Serial No. 120,444, and in Canada February 1, 1926.

The invention relates to improvements in oil cans and an object of the invention is to provide an oil can having an oil pumping attachment which permits of the oil being readily discharged from the can in a stream or a drop at a time as desired and to design the pumping attachment so that it can be manufactured economically and marketed at a reasonable price and such that the complete pumping attachment can be removed as a unit with the cap from the can body.

A further object of the invention is to provide a can of the above type having an obliquely extending discharge spout associated with an inclined interior pump, such arrangement permitting of the effective use of the can in a substantially horizontal position.

A further object of the invention is to provide a can with a finger grip and a thumb lever, the lever controlling the action of the pump.

A further object of the invention is to construct the upper part of the device so that there is no possibility of oil leaking when the can is not in use.

With the above more important objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter more particularly described, reference being had to the accompanying drawing, in which:—

Fig. 1 is a vertical sectional view centrally through the oil can, certain parts being shown in side elevation.

Fig. 2 is a perspective view of the upper part of the cam.

Fig. 3 is an enlarged detailed vertical sectional view at 3—3′ Figure 1.

Fig. 4 is an enlarged detailed horizontal view at 4—4′ Figure 1.

Fig. 5 is a perspective view of the expansion ring employed in the cylinder.

In the drawing like characters of reference indicate corresponding parts in the several figures.

The can structure includes a cam body 1 of the conventional type which is provided with an exteriorly screw threaded entrance neck 2 which is adapted to receive the interiorly screw threaded flange 3 of a cap or cover 4. A gasket or washer 5 is inserted within the cap and seats tightly against the upper end of the neck and provides an oil tight joint.

To the cover or cap I secure permanently a handle 6 which extends to the side of the can body in the form of a downwardly extending loop which is adapted to receive the fingers of the operator. It is here to be noted that the handle is shaped to provide a convenient grip for the fingers and that it is entirely free of the can body so that it in no way interferes with the screwing on or off of the cover. In fact, the handle, being formed integrally with the cap, forms a grip facilitating in removing or applying the cap on the body.

A lug 7 is formed also integral with the handle adjacent the cap and extends upwardly in an outwardly inclining position. The lug is provided with a T-shaped slot 8 for a purpose later described. The cap carries also a discharging spout 9 which is tapered towards its free end throughout its entire length, the spout having the large end thereof brazed or otherwise permanently fastened centrally to the cap and opening therethrough and the smaller end bent at an obtuse angle to the body thereof. It will be also observed that the body of the spout extends obliquely, that is, at an angle of approximately forty-five degrees to the vertical and further, it will be noted that the spout is contained in the plane of the handle and has the discharging or small end thereof remote from the handle.

The cap also carries a hollow piston 10 which has the upper end brazed or otherwise permanently secured to the inner side of the cap and in direct communication with the lower end of the spout. The piston is of uniform diameter throughout its length and takes an inclined position within the can body, the inclination being such that when the can is tilted to swing the spout downwardly, the piston is extending towards the then lower corner or edge of the can. The lower end of the piston is contracted to provide an annular flange forming a valve seat

11 on which a ball valve 12 rests. A coiled spring 13 is contained within the cylinder and has the lower end thereof resting on the ball and the upper end thereof engaging with a U-shaped spring wire 14, the extending ends of which contact with a slight internal flange 15 provided. According to the above construction, it will be obvious that the ball will unseat against the pressure of the spring.

A movable cylinder 16 is slidably mounted on the piston and is provided at its lower end with an internal flange forming a valve seat 17 for a lower ball valve 18. The latter ball valve is prevented from raising above a predetermined distance by any suitable means such as a predetermined length of spring wire 19 bent to provide an expansion ring 20 having downwardly extending legs 21 and 21'. The ring is inserted through the upper end of the cylinder and pushed downwardly into place over the inserted ball, the friction of the ring holding it in place and the legs spanning the ball and preventing the ring from jamming against the ball.

The centre of the ring is of such a size that the ball cannot escape upwardly therethrough. The ring forms a seat for a further coiled spring 22 inserted within the cylinder and the upper end of the spring engages with the lower end of the inserted piston. A strap 23 is secured permanently to the upper end of the cylinder and terminates in a pair of outwardly extending lugs 24 and 25. An operating rod 26 passes slidably through a hole 27 provided in the cap in a location between the base of the spout and the lug 7. The lower end of the rod passes between the lugs 24—25 and is fastened to the same by a pin or split key 28.

It will be observed that the upper end of the rod is provided with a frusto-conical shaped or plug like head 29 and that the hole 27 aforesaid is tapered to receive the head. The length of the rod is such that when the parts are assembled, the tapering head thereof is held tightly seated in the opening by the action of the spring within the cylinder and it will, of course, be understood that at this time the upper end of the cylinder encloses the lower end of the piston.

The upper end of the rod terminates in an eye 30 and this eye receives a pin such as a split key 31 which attaches it to a pair of opposing lugs 32 and 33 formed at the inner end of a thumb lever 34. The thumb lever has the outer end thereof overlying the finger grip and the body part thereof extending through the horizontal portion of the T-shaped slot 8. In other words, the lever rocks in the slot. The vertical portion of the slot is provided so that the lever can be put in place by passing the lug carrying end thereof through the vertical portion of the T-shaped slot, it being observed that the body part of the lever is wider than the said vertical portion of the T-shaped slot.

I wish it to be particularly noted that the cap carries all the fittings so that when the cap is unscrewed, all the working parts lift with it and leave the can body.

The parts appear normally in the position shown in Figure 1 of the drawing where it will be observed that the outer end of the thumb lever is up, the cylinder is down and the ball valves are seated. When it is desired to discharge oil from the can, one inserts his fingers in the finger grip and places his thumb on the outer end of the thumb lever and presses downwardly on the lever. This causes the up shifting of the rod and the consequent up drawing of the movable cylinder. Upon the thumb pressure being then released from the lever, the lower spring forces the cylinder down with the result that oil is passed into the lower end of the cylinder, the valve 18 unseating. In the subsequent down pressing of the thumb lever, the cylinder rises and the lower ball valve remains closed with the result that the oil entrapped in the lower end of the cylinder is forced up past the upper ball valve 12 and into the piston. The action of depressing and releasing the thumb lever is continued in this manner and obviously the hollow piston and the spout will quickly become filled with oil. At this time, the device is what might be called charged with the result that thereafter, the down pressing of the thumb lever will discharge the oil from the small end of the spout.

The amount of oil discharged can be governed to a nicety by depressing the thumb lever a greater or less amount. Obviously if the thumb lever is quickly depressed to the full extent, the spout will discharge a stream of oil for a considerable distance. On the other hand, if the thumb grip is depressed slowly and a small amount, one can cause the oil to be expelled in drops.

It is to be noted that the whole structure is designed so that it is extremely compact, such that all the working parts can be readily assembled or taken apart and such that the device can be relied upon in its action. Further the oblique position of the spout permits of a vertical discharge of oil from the discharging end thereof when the can body is turned to a position slightly inclined to the horizontal.

I might also point out that the discharge of the oil is controlled by thumb pressure and not by a spring action so that one has positive control of the discharge. In this connection, I might mention that I am aware of pump attachments wherein the oil is discharging under the action of a pressure spring which cannot be properly controlled.

It is also a well known fact that due to capillary action, oil has a tendency to seep out and leak through any openings which may appear in the cap and on this account

instead of simply passing the rod slidably through an opening in the cap which would permit of leakage, I have added the tapering head engaging with the tapering wall of the opening and by so doing positively prevent any leakage at this point, and in this connection, it is to be noted that the head is normally held tightly seated by the action of the spring in the cylinder.

What I claim as my invention is:—

1. The combination with a can body and a cover demountably carried thereby, of a spout permanently secured to the cover, a hollow piston secured to the cover and extending angularly downwardly therefrom and having the upper end thereof in communication with the spout, a movable cylinder operable on the said piston, normally closed valves for the hollow piston and the movable cylinder, a spring within the cylinder and normally pressing the same downwardly, an operating rod having the lower end thereof detachably fastened to the cylinder and passing upwardly through the cover and provided with a cone-shaped head normally held seated by the action of the spring in a cone-shaped opening provided in the cover, a handle permanently secured to the cover and provided with an upstanding lug and a thumb lever pivotally mounted in the lug and having the upper end overlying the handle and the inner end pivotally attached to the upper end of the rod.

2. In an oil can, the combination with a can body, a cover therefor, a spout carried by the cover and a pumping mechanism carried by the cover, contained within the can body and communicating with the spout, of a pumping rod detachably connected to the pumping mechanism and passing upwardly through an opening provided in the cover and having the upper end thereof carrying a head normally seated on the cover, a spring acting to hold the head of the rod so seated and a thumb lever carried by the cover and connected to the rod and adapted when depressed to raise the rod to effect the up stroke of the pumping mechanism, the down stroke being caused by the spring.

3. In an oil can, the combination with a cover, a reciprocating pumping mechanism carried by the cover and having an up and down stroke and a spring effecting the down stroke, of a pump rod attached to the pumping mechanism and extending upwardly through a tapered opening in the cover, means for raising the pump rod to effect the up stroke of the pumping mechanism and a tapered head carried by the rod and seating in the opening in the cover, said head being held seated under pressure by the action of the spring aforesaid.

Signed at Winnipeg this 17th day of June 1926.

AUBREY E. WESTWOOD.