Feb. 21, 1950 R. F. ZAROBAN 2,498,228

HAND PUMP OILER

Filed Oct. 17, 1945

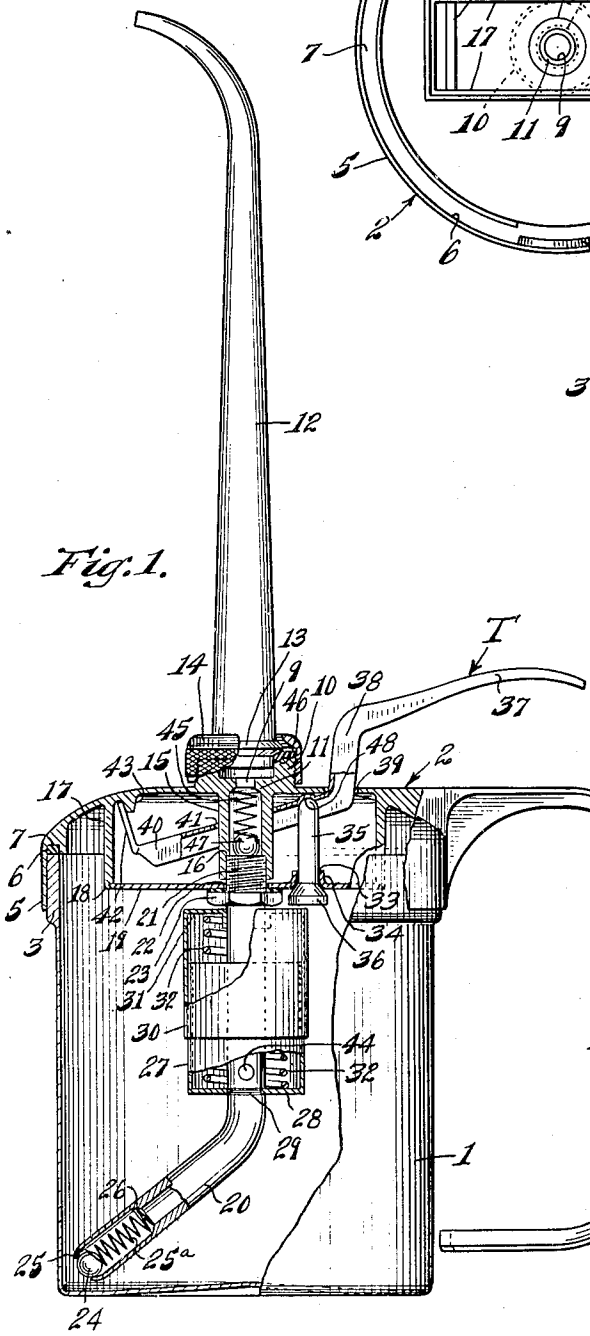


Fig. 1.

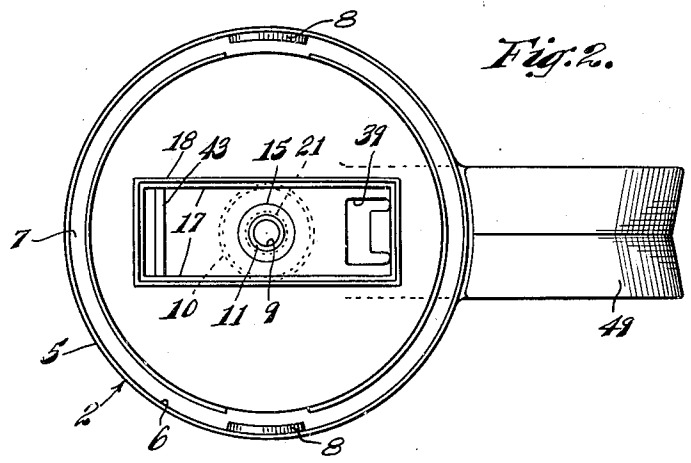


Fig. 2.

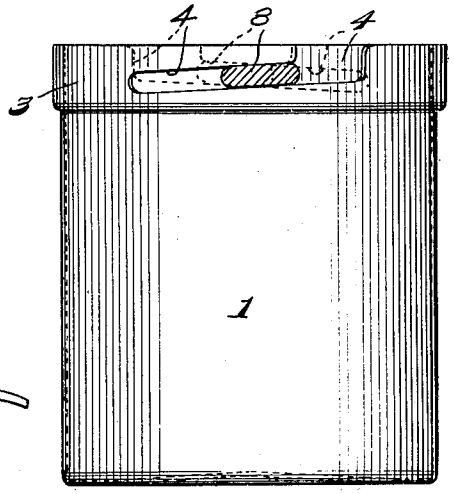


Fig. 3.

INVENTOR.
Richard F. Zaroban.
BY Bair & Freeman
Atty's.

Patented Feb. 21, 1950

2,498,228

UNITED STATES PATENT OFFICE

2,498,228

HAND PUMP OILER

Richard F. Zaroban, Hastings, Nebr., assignor to Dutton-Lainson Co., Hastings, Nebr., a corporation of Nebraska

Application October 17, 1945, Serial No. 622,713

7 Claims. (Cl. 222—341)

1

My invention relates to a hand pump oiler of simple and inexpensive construction.

Particularly it is my purpose to provide a hand pump oiler having parts so constructed that they may be made and assembled at a minimum of expense.

One object is to provide a hand oiler including a container and a cover detachably mounted on the container, and a spout detachably mounted on the cover, with the parts so arranged that no gasket is required at the spout connection.

Another object is to provide an oil-tight connection between the cover and container.

Particularly it is one of my objects to provide such a hand pump oiled in which all pump parts are mounted detachably on the cover. In this connection it is my purpose to provide a construction in which there are no soldered or welded parts, and in which the parts are simple to make and can be quickly assembled at low cost, with a simple wrench.

With these and other objects in view, my invention consists in the construction, arrangement and combination of the various parts of my device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in the claims and illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation of a hand pump oiler embodying my invention, parts being broken away and parts being shown in section.

Figure 2 is an inverted plan view of the cover.

Figure 3 is a side elevation of the container illustrating the bayonet joint arrangement.

My hand pump oiler has a container 1 and a cover 2 which are preferably die-cast. The container 1 is of the same diameter from top to bottom which permits quick and easy filling from any type of oil container, as well as easy cleaning.

The container 1 has a thickened upper rim as indicated at 3, provided on its outside with bayonet joint slots 4, one of which is illustrated in Figure 3.

The cover 2 has an annular down-turned flange 5 provided on the inside at the upper part of the flange with an annular groove 6 in which is seated a gasket 7, which rests on the top of the container in the assembled oiler. The cover 2 has on the inside of the flange 5 a pair of lugs 8, elongated circumferentially of the flange and slightly inclined from the horizontal to properly cooperate with the slots 4 for tightening the cover on the container.

In the top of the cover is a hole 9 to communicate with the spout hereinafter described. Surrounding the hole 9 and spaced therefrom, and extending upwardly, is an annular externally threaded flange 10, the inner upper edge of which forms an inclined shoulder as at 46.

2

A spout 12 has formed above its bottom on its outside a rounded annular shoulder 13 to fit against the shoulder 46. The spout 12 is detachably locked in place by an internally-threaded lock nut 14.

I have shown a conventional gasket between the rounded shoulder 13 and the inclined shoulder 46. But this gasket may be omitted and one of the advantages of my oiler is that the spout may then be connected to the cover by an oil-tight gasket-less joint formed between the parts 13 and 46.

Extended downwardly from around the hole 9 on the inside of the cover, is a tubular member 15. The passage through the tubular member 15 is slightly enlarged at the lower end thereof to provide a shoulder 16, and the portion below the shoulder 16 is threaded to connect with the oiler tube hereinafter mentioned.

Extending downwardly from the inside of the cover 2 is a flange 17 forming a box-like member, with a rabbeted lower edge 18 to snugly receive the bottom cover member 19. The tubular member 15 extends substantially to the cover plate 19.

I shall now describe the pump mechanism. An oil tube 20 has an externally threaded upper end 21 adapted to extend through a hole 22 in the cover plate 19 and to be screwed into the lower part of the tubular member 15. On the threaded portion of the tube 20 is a lock nut 23. Received in the lower end of the tube 20 is a ball check valve 24, held against exit from the tube by the inturned lower end 25 of the tube. The valve 24 is held normally seated by coil spring 25a which abuts at its upper end against an annular shoulder 26 in the tube 20.

Mounted on tube 20 is a hollow piston 27, open at its upper end and formed with a bottom 28 at its lower end. The tube 20 has a groove 29 into which the metal of the bottom 28 is staked, for permanently mounting the piston 27 on the tube 20. A cylinder 30, open at its lower end, is slidably telescoped over the piston 27. The top 31 of the cylinder 30 snugly fits around the tube 20. On the inside of the piston 27 and cylinder 30 is a coil spring 32 tending to move the cylinder away from the piston.

In the cover plate 19 is another hole 33 around which is formed a tubular portion 34 to serve as a guide for a cylinder operating plunger 35,

which is extended through the hole 33 from below, and has on its lower end a head 36 which rests on the top of the cylinder 30.

A trigger T has a handle portion 37 from which a portion 38 projects downwardly through a slot 39 in the cover 2, inwardly with relation to the flange 17.

From the portion 38 extends a portion 40. Portions 37, 38 and 40 are preferably channel-shaped in cross section. The portion 40 has a hole 41 to loosely receive the tubular member 15. At the inner free end of the trigger T is an upwardly projecting finger 42, having pivotal engagement with the underside of the cover between the part of the flange 17 and a lug 43.

In assembling the parts, the spring 25a may be placed in the tube 20 and the ball valve 24 may be inserted in the lower end of the tube, after which the lower end is bent inwardly as at 25 for holding the valve and spring in place.

The piston 27 is mounted on the tube 20 by a staking operation. The tube 20 has one or more holes 44, above the bottom of the piston 27. The spring 32 is then placed in the piston 27 after which the cylinder 30 is slipped over the upper end of the tube 20 and telescoped over the spring 32 and the piston 27. It is held in place by the lock nut 23.

With the cover 2 inverted, the trigger T is then assembled in position on the cover 2 and held temporarily. The pin 35 is slipped through the hole 33 in the bottom cover member 19, which is then slipped over the upper end of the tube 20.

The coil spring 45 is slipped into the tubular member 15 which has a shoulder 11 at its upper end. A valve 47 is put in place and the upper end of the tube 20 is then screwed into the extension 15. The lock nut 23 may be adjusted for locking the parts together. The upper end of the pin 35 cooperates with an indentation 48 in the portion 40 of the trigger.

The pump mechanism is thus wholly assembled on the cover 2. The spout 12 may be then seated in place and locked by means of the lock nut 14. The cover, with its entire assembly, may then be mounted on the container 1 by the bayonet joint arrangement.

When it is desired to use the hand pump oiler, the cover is removed, the container is filled with oil and the cover replaced. Thereupon, the hand grasping the handle 49 on the cover 2 will be in such position that the thumb can be used for depressing the handle portion 37 of the trigger T. This will depress the plunger 35 causing its head to force the cylinder 30 downwardly against the tension of the spring 32. Until a charge of oil is in the piston and cylinder, this first part of the operation merely drives air out through the spout. When the handle 37 is allowed to move upwardly by reason of the operation of the spring 32, oil will be drawn into the piston and on the next depression of the handle 37, oil can be forced out of the spout.

It will be obvious that many changes may be made in the details of the arrangement of the parts of my hand pump oiler without departing from the scope thereof, and it is my intention to cover by my claims any ordinary modifications which may be within their scope and the scope of my invention.

I claim as my invention:

1. In a hand pump oiler, a straight side container, a cover therefor, having an annular flange and having a handle, said cover and container having cooperating bayonet joint parts, said cover having a groove, a gasket in the groove, said container having a gasket engaging face, a spout detachably mounted on the cover, said cover and spout having cooperating joints forming inclined and rounded shoulders, said cover having on its underside a flange forming a box-like member, a cover plate for cooperating with the box-like member, a tubular member extending downwardly from the cover, adapted to communicate with the spout, an oil tube, extending from near the bottom of the container, and projected through said cover plate and detachably connected to the tubular member, a hollow piston, surrounding and communicating with the oil tube, having a bottom fixed to the oil tube, a cylinder, telescoped with the piston, having a top slidable on the oil tube, spring-closed check valves in the oil tube and tubular member, a trigger mounted on the cover for pivotal movement, having a portion pivotally engaging the cover on its underside, a slotted portion receiving the tubular member, and a portion projecting through the cover to be engaged by the operator, a plunger slidable in the cover plate between the trigger and the cylinder, and a spring in the piston and cylinder tending to move them apart.

2. In a hand pump oiler, a container, a cover therefor, said cover and container having cooperating parts for locking them together, a spout on the cover, said cover having on its underside a box-like member, a cover plate for cooperating with the box-like member, a tubular member, extending downwardly from the cover, adapted to communicate with the spout, an oil tube, extending from near the bottom of the container, and projected through said cover plate and detachably connected to the tubular member, a hollow piston, surrounding and communicating with the oil tube, having a bottom fixed to the oil tube, a cylinder, telescoped with the piston, having a top slidable on the oil tube, spring closed check valves in the oil tube and tubular member, a trigger mounted on the cover for pivotal movement, having a portion pivotally engaging the cover on its underside, and a portion projecting through the cover to be engaged by the operator, a plunger slidable in the cover plate, between the trigger and the cylinder, a spring in the piston and cylinder tending to move them apart.

3. In a hand pump oiler, a container, a cover therefor, said cover and container having cooperating parts for locking them together, a spout on the cover, said cover having on its underside a box-like member, a cover plate for cooperating with the box-like member, a tubular member, extending downwardly from the cover, adapted to communicate with the spout, an oil tube, extending from near the bottom of the container, and projected through said cover plate and detachably connected to the tubular member by a threaded connection, a hollow piston, surrounding, communicating with and fixed to the oil tube, a cylinder, telescoped with the piston, having a top slidable on the oil tube, spring-closed check valves in the oil tube and tubular member, means carried by the cover for manually operating the piston, and a spring in the piston and cylinder, tending to move them apart.

4. In a hand pump oiler, a container, a cover having an aperture therein, a tubular member surrounding said aperture and extending upwardly therefrom, a spout secured in said tubular member in communication with said aperture, a tubular member surrounding and extending

downwardly from said aperture, an oil tube extending from adjacent the bottom of the container and detachably connected to said downwardly extending tubular member, said oil tube being supported and carried by said downwardly extending tubular member, a hollow piston, surrounding and communicating with the oil tube, having a bottom fixed to the oil tube, a cylinder, telescoped with the piston, having a top slidable on the oil tube, a trigger mounted on the cover for pivotal movement, means interposed between the trigger and the cylinder for actuating the cylinder from the trigger, and means for biasing the cylinder against trigger action.

5. In a hand pump oiler, a container, a cover having an aperture therein, a tubular member surrounding said aperture and extending upwardly therefrom, a spout secured in said tubular member in communication with said aperture, a tubular member surrounding and extending downwardly from said aperture, an oil tube extending from adjacent the bottom of the container and detachably connected to said downwardly extending tubular member, said oil tube being supported and carried by said downwardly extending tubular member, a hollow piston, surrounding and communicating with the oil tube, having a bottom fixed to the oil tube, a cylinder, telescoped with the piston, having a top slidable on the oil tube, a trigger mounted on the cover for pivotal movement, means interposed between the trigger and the cylinder for actuating the cylinder from the trigger, and means for biasing the cylinder against trigger action.

6. In a hand pump oiler, a container, a cover having an aperture therein, a tubular member surrounding said aperture and extending upwardly therefrom, a spout secured in said tubular member in communication with said aperture,

a tubular member surrounding and extending downwardly from said aperture, an oil tube extending from adjacent the bottom of the container and detachably connected to said downwardly extending tubular member, said oil tube being supported and carried by said downwardly extending tubular member, a hollow piston surrounding, fixed to, and communicating with said oil tube, a closed end cylinder telescoped over said piston, said piston and cylinder being supported and carried by said oil tube, and a trigger on said cover for actuating said cylinder.

7. In a hand pump oiler, a container, a cover having an aperture therein, a tubular member surrounding said aperture and extending upwardly therefrom, a spout secured in said tubular member in communication with said aperture, a tubular member surrounding and extending downwardly from said aperture, an oil tube extending from adjacent the bottom of the container and detachably connected to said downwardly extending tubular member, said oil tube being supported and carried by said downwardly extending tubular member, oil pump means surrounding, fixed to, and communicating with said oil tube, said oil pump means being supported and carried by said oil tube, and means on said cover for actuating said oil pump means.

RICHARD F. ZAROBAN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,571,676	Lidseen	Feb. 2, 1926
1,707,084	Jaden	Mar. 26, 1929