Dec. 21, 1937. E. W. DAVIS 2,102,837

PISTOL GRIP OIL CAN

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Fig. 1.

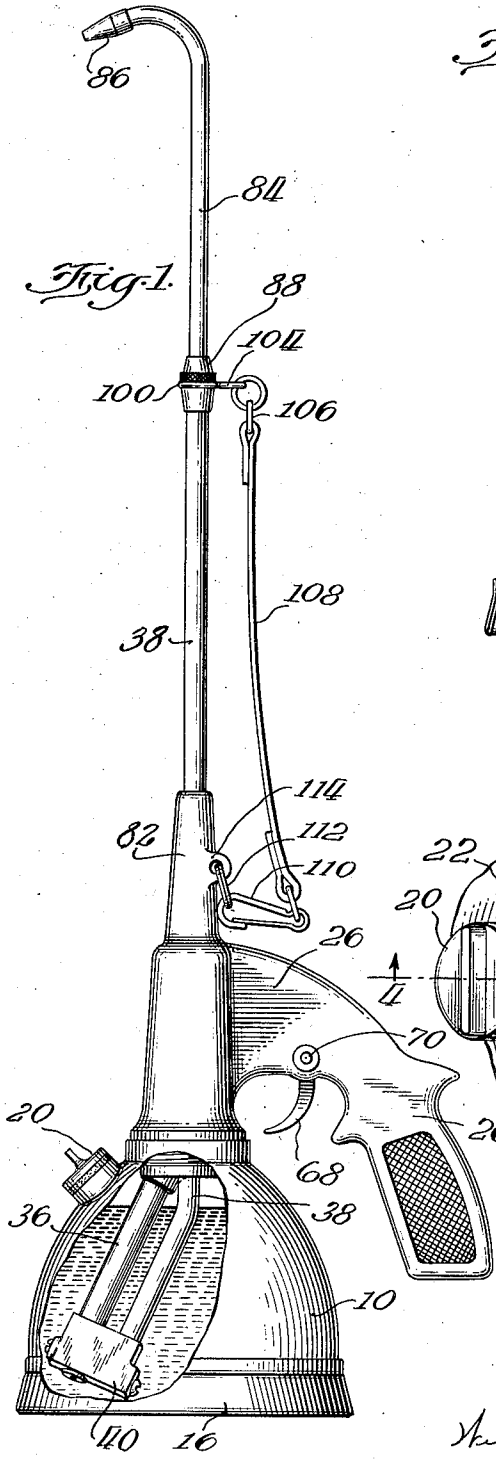



Fig. 2.

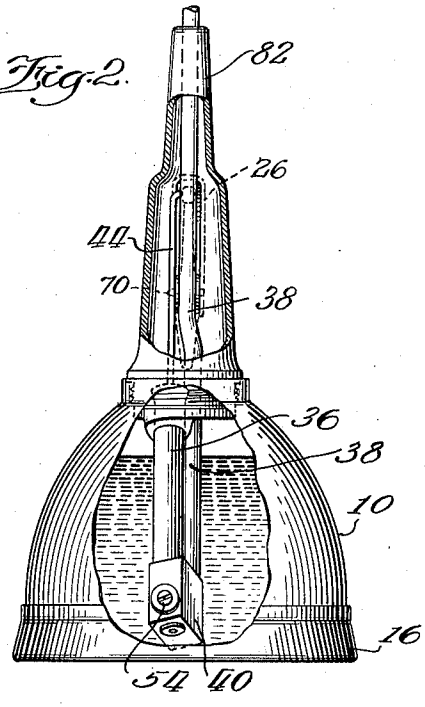
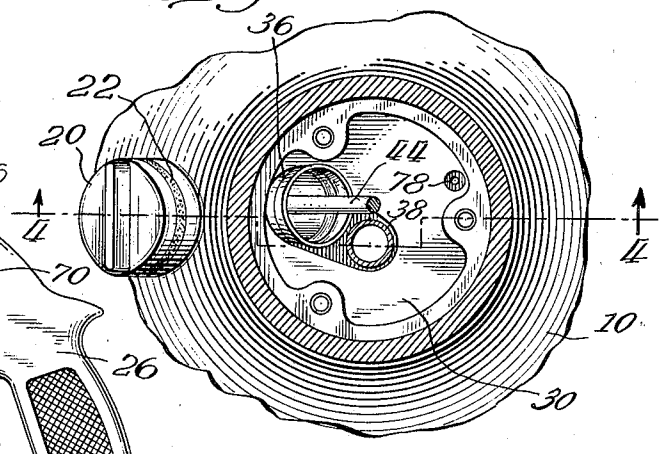



Fig. 3.




Inventor:
Ernest W. Davis
By Williams, Bradbury & McCaleb & Hinkle
Attys.

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Fig. 4.

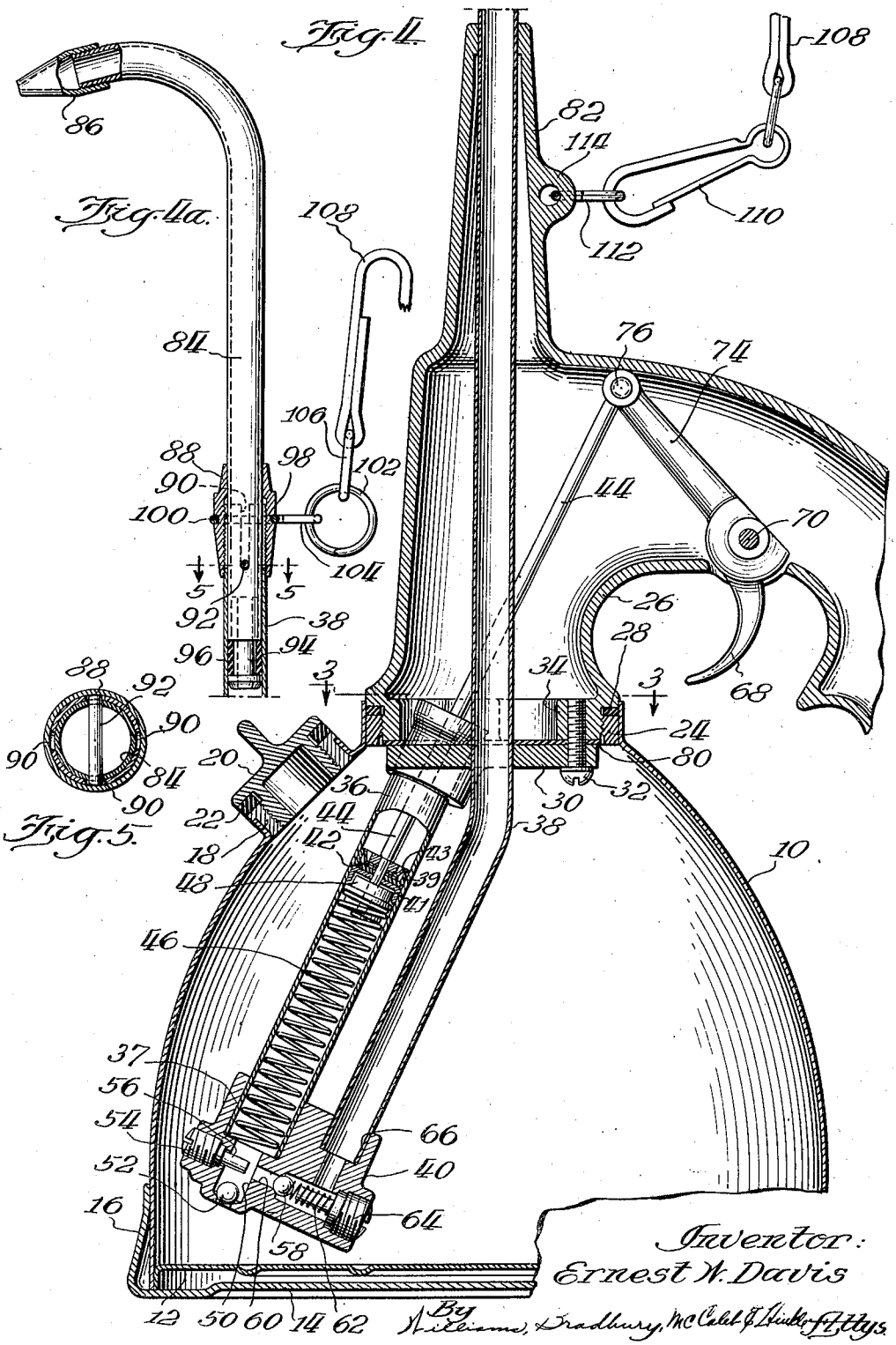



Fig. 4a.

Fig. 5.

Inventor:
Ernest W. Davis
By Williams, Bradbury, McCaleb & Hinkle Attys.

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# UNITED STATES PATENT OFFICE

2,102,837

## PISTOL GRIP OIL CAN

Ernest W. Davis, Oak Park, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Application December 2, 1935, Serial No. 52,456

8 Claims. (Cl. 221—51)

My invention relates generally to lubricating apparatus, and more particularly to improvements in pressure oil cans.

It is an object of my invention to provide an improved form of pressure oil can in which a pistol grip is employed as a handle and a trigger projecting from the handle is utilized to eject oil from the can under moderate pressure.

A further object is to provide an improved pump mechanism in which the piston moves very freely, so that the pump may be operated easily by means of a finger-pressed trigger.

A further object is to provide an improved oil can in which substantially all of the oil in the reservoir may be dispensed.

A further object is to provide an improved oil can which is simple in construction, easy to operate, and which may be economically manufactured.

Other objects will appear from the following description, reference being had to the accompanying drawings, in which:

Fig. 1 is an elevational view, a portion of the reservoir being broken away to show the pump and discharge tube in elevation;

Fig. 2 is a fragmentary sectional view of the base and reservoir of the oil can;

Fig. 3 is an enlarged horizontal sectional view taken on the line 3—3 of Fig. 4;

Figs. 4 and 4—A together constitute a vertical sectional view taken on a broken plane represented generally by the line 4—4 of Fig. 3; and

Fig. 5 is a transverse sectional view of the spout taken on the line 5—5 of Fig. 4—A.

Referring to Figs. 1 and 4, the improved oil can of my invention comprises a generally hemispherical reservoir shell 10 having a flanged bottom 12 soldered or welded thereto. A base 14 of relatively heavy gauge metal has a peripheral flange 16 which is spun inwardly against the shell 10 of the reservoir, the base and its flange serving to protect the bottom 12 and its joint with the shell 10 of the reservoir from injury. The shell 10 of the reservoir has a threaded bushing 18 pressed in a flanged aperture at the top thereof, to form a filling opening. This opening is normally closed by a threaded plug 20, a suitable gasket 22 being provided to prevent leakage of oil. An annulus 24 is secured in the opening formed at the top of the reservoir shell 10, the annulus being internally threaded to receive a pistol grip handle 26 which may be a hollow die casting. A gasket 28 is interposed between the pistol grip handle 26 and the annulus 24.

A cover plate 30 is secured to the pistol grip handle by means of screws 32 threaded in bosses 34 formed in the handle 26, the plate 30 serving as a support for the cylinder 36 of a pump and a discharge tube 38. Both the cylinder 36 and the tube 38 project through suitable holes formed in the plate 30 and are preferably secured in place by soldering. The lower end of cylinder 36 is secured in a suitable bore 37 formed in a valve block 40. The cylinder has a piston 42 freely reciprocable therein, the piston being secured to a piston rod 44 and being normally urged upwardly by a compression coil spring 46, the upper end of which abuts a cup leather former 48 constituting part of the piston 42 and the lower end of which abuts the end of the bore 37 formed in the valve block 40. The piston 42 is composed of two opposed cup leathers 39 and 41, the upper cup leather 39 being provided with a resilient spreader 43. For the purpose of reducing the friction between the piston and cylinder, the lower cup leather 41 is not provided with a spreader. The reduced friction makes possible the use of a relatively weak spring 46, which makes the pump easier to operate.

An inlet valve chamber 50 in the valve block 40 is in direct communication with the interior of the cylinder 36 and is provided with an inlet check valve 52 which is preferably operated by gravity to make it possible to use the relatively weak piston returning spring 46. A set screw 54 is provided with a projection 56 to hold the check valve 52 in a position adjacent its seat. The valve block is provided with an outlet check valve 58 which normally closes the end of an outlet passageway 60 communicating with the inlet check valve chamber 50. The valve 58 is resiliently held against its seat by a light compression spring 62 carried by a spring retainer and plug 64. The lower end of the discharge tube 38 is fitted and soldered in a bore 66 formed in the valve body 40 and communicates with the outlet check valve chamber.

The piston rod 44 is operated by means of a trigger 68 pivoted on a pin 70 which is pressed into the pistol grip handle 26, the trigger being formed integrally with an arm 74 connected to the piston rod 44 by a pivot pin 76.

To provide for clearance between the piston rod 44 and discharge tube 38, and because of the fact that the latter is preferably located near the center of the mounting plate 30, the axis of the cylinder 36 is located to the side of the axis of tube 38 (with respect to a central vertical plane passing through the center of the handle casting

26). To prevent formation of a partial vacuum within the reservoir 10 a small air vent hole 78 is provided in the plate 32 and a suitable gasket 80 is provided to prevent leakage of oil between the plate 30 and the handle casting 26. The discharge tube 38 is supported and strengthened by an upwardly extending hollow tubular portion 82 of the handle casting 26.

A spout 84, having a nozzle 86 threaded at its upper extremity, is secured to the tube 38 by a clamping sleeve nut 88 which is threaded over the upper end of the tube. The threaded portion at the upper end of the tube 38 has a pair of longitudinal slots 90 cut therein to receive the projecting ends of a pin 92 which is secured in the spout 84. The lower end of the spout 84 has a nipple 94 pressed therein, the nipple forming a support for a suitable sleeve-shaped gasket 96. When the spout 84 has been properly positioned with respect to the tube 38 the threaded sleeve nut 88, which has a slightly tapered internal thread, is screwed into the position in which it is shown in Fig. 4—A, thus pressing the slotted end portion of the tube 38 into tight frictional clamping engagement with the lower end of the spout 84. The spout 84 may thus be easily assembled to the discharge tube 86, and will be securely held in assembled position without danger of leakage of lubricant. The assembly of the discharge tube 38 in the handle casting 26 is also facilitated by providing this separable connection between this tube and the spout 84.

The clamping sleeve nut 88 has a shallow peripheral groove 98 to receive a swivel ring 100. A split key ring 102 links an eye 104 formed as part of the ring 100 with a D-ring 106 attached to the end of a strap 108, the other end of the strap being connected by means of a harness snap 110 and key ring 112 with an ear 114 formed on the upwardly projecting portion 82 of the handle casting.

When the oil can is being used the pistol grip forms a very convenient handle and in normal use the reservoir will be tilted slightly from the vertical so that the inlet opening of the pump will be in position to receive oil until all but a very small quantity has been dispensed from the reservoir. The trigger operator for the pump is located conveniently and enables the user accurately to gauge the amount of oil dispensed. The pump cylinder 36 and the valve block 40 are so positioned that they balance the handle casting with the result that, in normal use, the center of gravity of the oil can will lie beneath the upper end of the pistol grip portion of the handle. Due to this fact the oil can may be carried and used with ease.

The spout and discharge tube of the oil can are sufficiently long that oil may readily be forced into the relatively inaccessibly located oil cups and bearings. The spout and discharge tube are made separable to facilitate assembly of the device, while the sleeve nut 88 utilized to clamp these parts together forms a convenient anchorage for the carrying strap 108.

Due to the force feed construction of the oil can, the nozzle may be placed above or below the level of the reservoir without undesired flow of oil therefrom. By unscrewing the handle 26 from the reservoir 10 the valves of the pump are readily accessible for cleaning. There are relatively few moving parts in the pump mechanism so that it may be easily operated and the probability of the pump getting out of order is remote.

While I have illustrated and described a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention and I do not wish to be limited to the precise details set forth but desire to avail myself of the changes within the scope of the appended claims.

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

1. In an oil can, the combination of a reservoir, a handle secured to said reservoir, a discharge tube secured to said handle and projecting outwardly therefrom, the outer end of said tube being threaded and having longitudinal slots therein, a spout having one end telescoping within the outer end of said tube, and a clamping sleeve screwed over the end of said tube and constructed and arranged to contract the slotted end portion of said tube into clamping engagement with said spout.

2. In an oil can, the combination of a reservoir, a handle secured to said reservoir, a discharge tube secured to said handle and projecting therefrom, the outer end of said tube having longitudinal slots formed therein, a spout having one end thereof projecting into the end of said tube, means on said spout cooperating with said slots to prevent relative rotation of said spout and said tube, and a clamping member for forcing the slotted end of said tube into frictional clamping engagement with said spout.

3. An oil can comprising a reservoir, a handle secured to said reservoir, a relatively long discharge tube leading from said reservoir and extending through said handle, a spout, fastening means for securing said spout rigidly to said tube, and a flexible carrying member having one end swiveled to said fastening means and its other end secured to said handle.

4. In an oil can the combination of a reservoir, a handle casting secured to said reservoir and having a generally tubular upwardly projecting portion, a discharge tube extending from said reservoir through said projecting portion of said handle casting and supported thereby, a spout, and means for detachably securing said spout to the outer end of said discharge tube.

5. In an oil can the combination of a reservoir, handle casting secured to said reservoir and having a generally tubular upwardly projecting portion, a discharge tube extending from said reservoir through said projecting portion of said handle casting and supported thereby, a spout, a peripherally grooved sleeve for securing said spout to the outer end of said discharge tube, a swivel ring mounted in the groove of said sleeve, and a carrying strap having one end secured to said swivel ring and its other end secured to said handle casting.

6. In an oil can the combination of a reservoir having a filling opening and a threaded opening in the top thereof, a hollow pistol grip handle casting having a part screwed into said threaded opening, a closure plate secured over said part of said handle casting, a pump cylinder and a discharge tube each extending through said plate, a piston reciprocable in said cylinder, and a piston rod secured to said piston and manually reciprocable within said hollow handle casting.

7. In a pressure oil can, the combination of a reservoir having a filling opening, a pistol grip handle detachably secured to said reservoir, an open-end pump cylinder secured to said handle

and normally projecting into said reservoir at an angle to the axis thereof, a piston reciprocable in said cylinder, a piston rod secured to said piston and projecting through the open end of said cylinder, a discharge tube secured to said pumping mechanism and carried by said handle, a pump operating element pivotally mounted on said handle in the position of a trigger with respect to the pistol grip of said handle, and a pivotal connection between said element and the free end of said piston rod.

8. In a pressure oiler, the combination of a circular reservoir; a handle secured to said reservoir and having a pistol grip portion positioned at one side of the axis of said reservoir; a pump carried by said handle extending into said reservoir at an angle with respect to the axis of the latter and in substantially the same plane as said handle, a portion of said pump positioned upon the side of the reservoir axis opposite said handle; an operating mechanism for said pump including a trigger associated with said pistol grip handle, and a pump rod extending angularly with respect to the reservoir axis connected to the trigger on one side of the axis and to the pump portion on the opposite side; a discharge tube connected to receive lubricant from said pump and extending outwardly and upwardly from said reservoir on the same side of the latter to which the pistol grip handle is secured.

ERNEST W. DAVIS.