

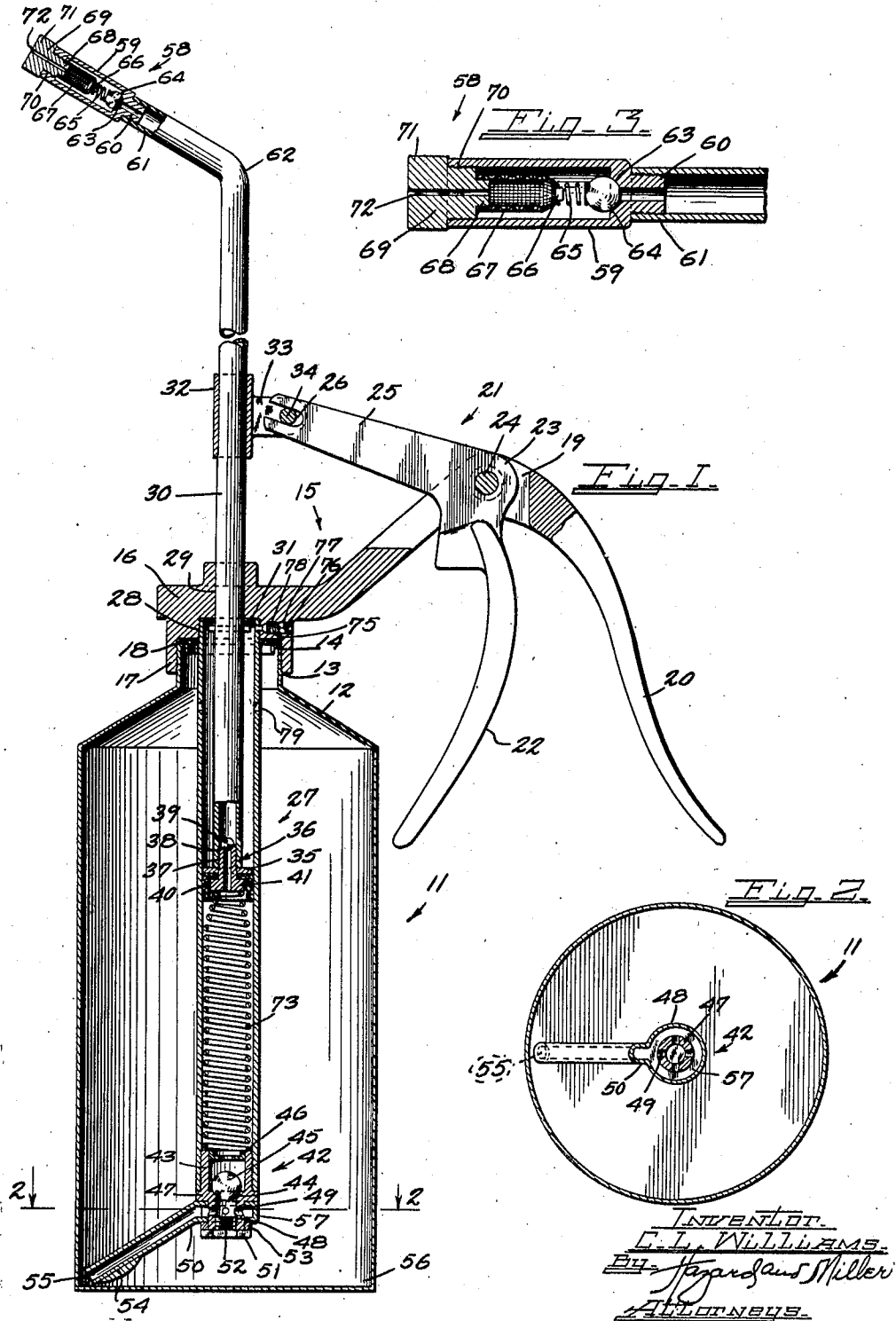
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C. L. WILLIAMS

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OIL CAN

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CHARLES L. WILLIAMS, OF ALHAMBRA, CALIFORNIA, ASSIGNOR TO CHARLES HAAS, OF
SAN GABRIEL, CALIFORNIA

OIL CAN

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My invention relates to a spray type of oil can for projecting thin oil under pressure, and has been particularly designed for the purpose of hand spraying vehicle springs.

An object and feature of my invention is the provision of an oil can in which by the manipulation of one hand the oil may be pumped under considerable pressure from the can to an elongated stem and discharged through a nozzle in the form of a spray.

In this type of device another feature is using a spring for returning the pump portion of the device to its upward position after each stroke, the action of the spring sucking oil into the pump portion of the can.

Another detailed feature is to have the pump device actuated by a single hand grip device, this being somewhat in the form of a pistol grip so that a pull on the fingers actuates a lever for operating the pump.

Another feature of my invention is that the stem or plunger of the pump is made tubular and reciprocates with the pump in actuation by the finger operated lever, and the oil pumped and projected flows through the tubular plunger.

Another feature of my invention relates to the manner of installing the pump in an oil can, the whole pump construction being suspended from the neck of a can.

A further feature of my invention relates to a swivel intake to the pump, this being rotatable on the lower end of the pump barrel to draw the oil from the lowest part of the can should the can be tilted to one side.

Still another feature relates to a check valve on the outlet to prevent oil from being drawn back into the oil can through the discharge nozzle, and also to prevent outflow of oil under a small pressure, but operating to discharge oil under the pressure of pumping by manipulation of the hand. The nozzle, in addition, is provided with a screen for screening the oil before spraying.

My invention is illustrated in connection with the accompanying drawing, in which:

Fig. 1 is a vertical section through an oil can and the pump barrel with the tubular plunger shown in elevation;

Fig. 2 is a horizontal section on the line

2—2 of Fig. 1 in the direction of the arrows, illustrating the swivel intake;

Fig. 3 is an enlarged sectional view of the discharge nozzle and check valve.

In the illustrations 11 designates an oil can having a tapered top 12 with a threaded neck 13, this neck having a shoulder 14 at the top.

The hand support structure 15 employs a hub 16 which has a threaded socket 17 threaded on the neck of the can, there being a packing ring 18 at the base of the socket forming an oil-tight joint at the shoulder 14. The hand grip device has a slot 19 there-through and a downturned pistol grip handle 20. A pump lever 21 has a finger grip end 22, a knuckle 23 pivoted to the handle at 24, this pivot being in the slot 19 and having an operating lever end 25 with a longitudinal slot 26.

A pump barrel 27 is formed tubular and is secured in the reduced socket or recess 28 of the hub 16, this having a tight attachment. The hub is provided with an opening 29, through which extends and operates by reciprocating motion the tubular pump plunger 30, there being a leakproof packing 31 surrounding the plunger. A collar 32 is secured to the plunger and has an offset arm 33 with a pin 34 engaging in the slot 26. Therefore, on operating the finger end 25 of the pump lever 21, the tubular plunger is reciprocated. The lower end of the plunger has a washer 35 bearing thereagainst. A perforated plug 36 extends through the washer and is screw threaded at 37 to the inside of the plunger. This has a valve seat 38 with a ball check valve 39 thereon. A leather cup 40 bears against the washer 35 and surrounds the perforated plug 36, being held in place by the head 41 of such plug.

The bottom of the barrel is provided with a check valve 42, this having an interior sleeve 43 threaded in the lower end of the barrel 27. There is a seat 44 on which bears the ball 45 of the check valve. A perforated disk 46 retains the ball in place. A shoulder 47 connected to the sleeve bears against the lower end of the pump barrel.

The swivel intake has a tubular nipple 48

extending below the shouldered section of the sleeve 43. This is provided with a series of radial ports 49, and a swivel tube 50 surrounds the nipple, being retained in place by the head 51 of a plug 52 threaded in the lower end of the nipple, there being a washer 53 or the like intermediate the head. The swivel has a weighted end 54 and an intake opening 55 which is adapted to be positioned adjacent the corner 56 at the bottom of a can. The tube 50 has a section 57 circular in cross section surrounding the nipple.

The outlet nozzle 58 is provided with a tubular valve tube 59 with a reduced tubular threaded plug 60 threaded in the end portion 61 of the tubular pump plunger, this plunger having a lateral bend as indicated at 62. A valve seat 63 receives the ball 64 of the check valve, this being held in place by a spring 65 which bears on the end 66 of a foraminated tube 67. This tube is secured to the small inner end 68 of a closure plug 69, which plug has a threaded section 70 threaded on the inside of the valve tube 59. The plug has a head 71, and the duct 72 through the plug forms a discharge orifice for the nozzle. By this construction the oil is filtered by the screen 67, inflow of oil is prevented by the ball valve 64 and if there is a slight pressure inside the can it is insufficient to force oil out past this ball, but when the pumping operation takes place the oil may be readily forced past the valve.

In the operation of the device, after the can has been filled with oil and the hub 16 of the handle structure 15 secured thereto, the oil is pumped by holding the pistol grip end 20 in the palm of the hand and operating the finger end 22 of the pumping lever 21. This gives a movement downwardly of the pump plunger 30, which plunger is forced upwardly by the compression spring 73 bearing on the sleeve 43 and the head 41 of the plug 36. On the downward pressure, oil which is past the check valve 45 flows up through the check valve 39, and when the tubular plunger becomes filled this is ejected through the orifice of the nozzle, opening the check valve 64. When the fingers are released, the spring 50 forces the stem upwardly with the plunger, and on account of the valves 39 and 64 seating, oil is sucked upwardly through the lower check valves 45. The intake tube 50 may swivel on the lower end of the pump barrel in order to draw oil from the lowest portion of the oil can when tilted.

The perforated plug 36 on the end of the tubular plunger 30 with the leather cup 40 may be considered as the piston of the pump, and the valve 39 carried thereby as a traveling valve in distinction from the standing or foot valve 45.

An important feature of my invention in the manipulation and use is that on the grip of the hand when the finger grip is operated

the piston is forced downwardly and positively ejects the oil. Therefore, the pressure at which this oil is ejected is governed by the pressure exerted by the hand, and a person may control this to spray the oil either a short or comparatively long distance, depending, of course, on the viscosity of the oil. The spring 73 is relied upon to force the piston upwardly and to suck the oil from the can or oil container into the pump barrel.

An air vent duct 75 is formed in the socket 17. This has a valve therein formed by a perforated plug 76 forming a valve seat with a ball 77 seated thereon pressed in place by a spring 78. There is a perforation through the pump barrel to align with this duct, and air vents 79 in the upper part of the pump barrel allow passage of air in and out of the pump barrel. The air vent allows entrance of air into the oil can as oil is pumped out.

Various changes may be made in the details of construction without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. In an oil can, a handle structure having a hub formed integral therewith, a pump barrel connected to the hub, the hub having means adapted for connection to the neck of an oil can, a standing valve at the bottom of the barrel, a piston slidable in the barrel and having a moving valve and a tubular plunger connected thereto, said plunger being guided in and reciprocating in said hub, a lever pivotally connected to the handle and having a finger grip end for operating, the opposite end being connected to said plunger, and a spring between the bottom of the pump barrel and the piston, a nipple extending downwardly from the end of the pump barrel and forming a seat for the standing valve, said nipple having radial perforations, an intake tube swivelly connected to said nipple, and a plug threaded in the nipple having a head retaining such tube in position.

2. In an oil can, a handle having a hub section with a pump barrel rigidly connected thereto, said hub having means for attachment to the neck of an oil can, a tubular plunger reciprocating through the hub and having a piston operating in the barrel, a spring in the barrel engaging said piston, an operating lever pivotally connected to the handle having a finger grip end for operation, and the opposite end being connected to the plunger, the discharge end of the plunger having a check valve with a valve housing having a seat with a ball bearing thereon, a plug having a duct at the end of the housing, said duct forming an orifice, a screen connected to the plug, and a spring between the screen and the ball.

3. In an oil can as claimed in claim 2, the lower end of the pump barrel having a sleeve

fitted therein, said sleeve having a seat with a ball therein forming a standing valve, a nipple extending downwardly from the seat and having radial perforations, an intake tube swivelly mounted on the nipple, a plug on the end of the nipple having means to retain said tube in position.

4. In an oil can, a handle having a hub section with a pump barrel rigidly connected thereto, said hub having means for attachment to the neck of an oil can, a tubular plunger reciprocating through the hub and having a piston operating in the barrel, a spring in the barrel engaging said piston, an operating lever pivotally connected to the handle having a finger grip end for operation and the opposite end being connected to the plunger, the lower end of the pump barrel having a sleeve fitted therein, said sleeve having a seat with a ball therein forming a standing valve, a nipple extending downwardly from the seat and having radial perforations, an intake tube swivelly mounted on the nipple, a plug on the end of the nipple having means to retain said tube in position.

5. In an oil can having a pump barrel, the end of the pump barrel having a sleeve fitted therein, said sleeve having a seat with a ball therein forming a standing valve, a nipple extending downwardly from the seat and having radial perforations, an intake tube swivelly mounted on the nipple, and a plug on the end of the nipple having means to retain said tube in position.

6. In an oil can having a pump barrel with a standing valve therein, a nipple extending downwardly from the end of the pump barrel and forming a seat for the standing valve, said nipple having radial perforations, an intake tube swivelly connected to said nipple, and a plug threaded in the nipple having a head retaining such tube in position.

7. In an oil can having a pump, a tubular discharge plunger, the discharge end of the plunger having a check valve with a valve housing having a seat with a ball bearing thereon, a plug having a duct at the end of the housing, said duct forming an orifice, a screen connected to the plug, and a spring between the screen and the ball.

In testimony whereof I have signed my name to this specification.

CHARLES L. WILLIAMS.

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