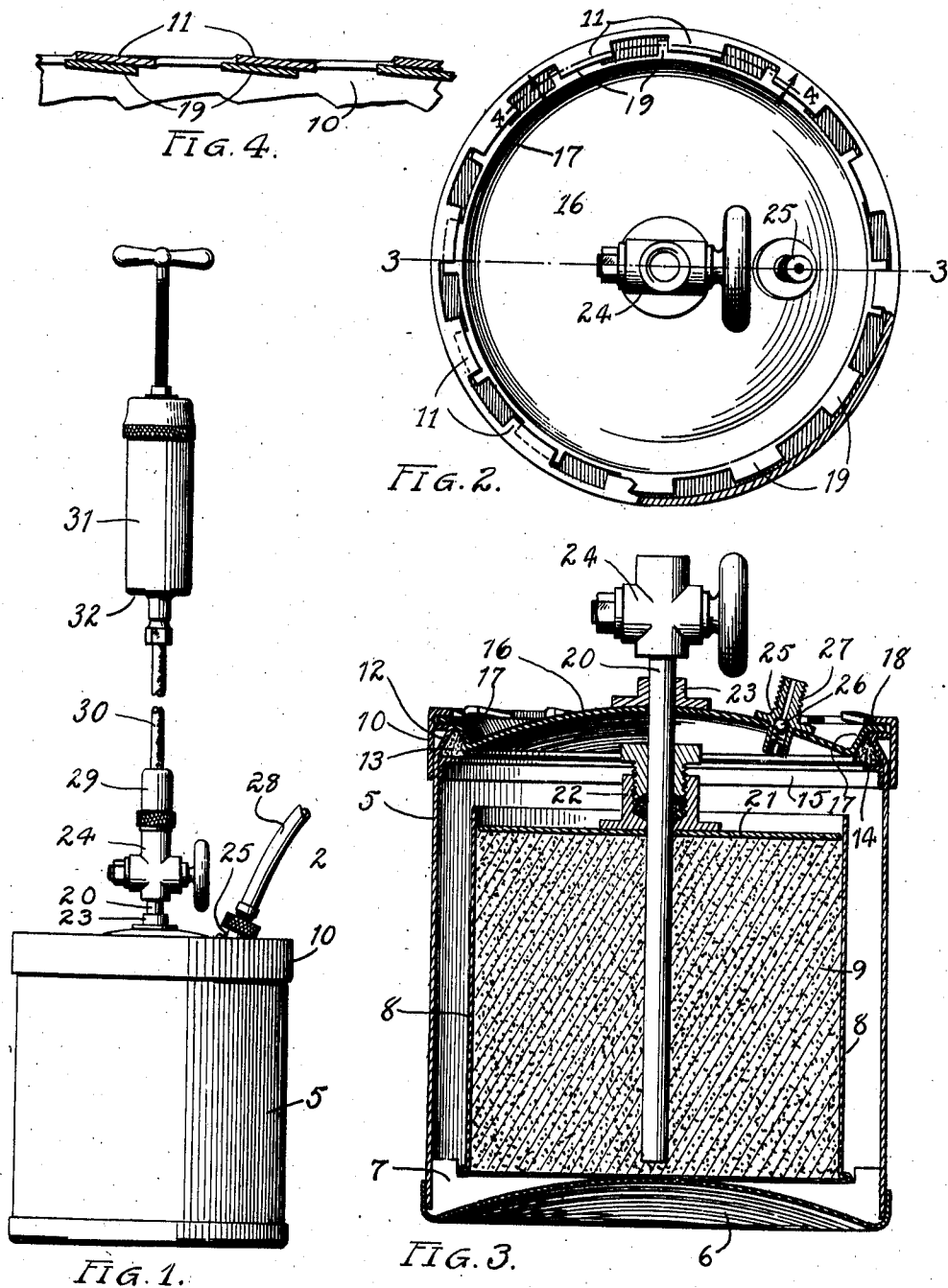


July 7, 1925.

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F. D. WINKLEY
DISPENSING APPARATUS

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UNITED STATES PATENT OFFICE.

FRANK D. WINKLEY, OF MADISON, WISCONSIN, ASSIGNOR TO THE BASSICK MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

DISPENSING APPARATUS.

Application filed January 2, 1920. Serial No. 348,923.

To all whom it may concern:

Be it known that I, FRANK D. WINKLEY, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented a certain new and useful Improvement in Dispensing Apparatus, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in dispensing apparatus and is especially concerned with the provision of new and novel means for filling grease guns and other similar dispensing devices.

The objects of my invention are:

First: To provide means whereby lubricant can be displaced directly from the can or container in which it is originally purchased into a grease gun or other dispensing device without the use of paddles, spoons and other devices ordinarily employed for filling grease guns;

Second: To provide means for filling grease guns whereby the grease gun can be completely filled with lubricant free from air pockets;

Third: To provide means for filling grease guns and similar devices with lubricant or other material of such construction that the lubricant is at all times protected from dust, dirt and other foreign substances; and

Fourth: To provide a construction of the character described, which is simple in construction, economical to manufacture, and easy to operate.

Other objects will appear as this description progresses, reference being had to the accompanying drawings, in which

Figure 1 is a side elevation of a grease gun and my improved means for filling the grease gun, portions of the apparatus being broken away;

Figure 2 is a plan view of my invention, portions thereof being broken away;

Figure 3 is a longitudinal section through my improved dispensing apparatus on line 3-3, Fig. 2; and

Figure 4 is an enlarged sectional detail of the locking cams.

Throughout the several views similar reference characters refer to similar parts.

Referring to the drawings, the reference character 5 indicates a container, which is

illustrated as being circular in cross section, but which may be of any desired configuration, and which is preferably formed of sheet metal. The bottom of the container is preferably bowed inwardly to give it sufficient strength to withstand the air pressure to which it is subjected, as will hereinafter be described, and supports a plurality of centering webs 7, which are designed to center the can 8. The can 8 is merely a can filled with lubricant 9, such as may be bought in the open market.

Secured to the upper end of the container 5 is a ring 10, the upper edge of which is flanged inwardly and serrated to provide a plurality of spaced projections 11, which will hereafter be referred to as locking cams. The upper end of the can is swaged inwardly as shown at 12 to provide a backing or seat for the ring gasket 13, which is formed of rubber or other suitable material, and which is supported by the horizontal flange 14 of the ring 15 which is soldered or otherwise secured to the inner surface of the can.

The cover or closure 16 is in general of spherical conformation to withstand the air pressure to which it is subjected, but its edge is cupped upwardly as shown at 17, for the purpose of co-acting with the gasket 13 to form an air tight closure, and is then flanged outwardly as shown at 18, and serrated to provide a plurality of teeth or projections 19, which will hereafter be referred to as locking cams 19. The locking cams 19 are of slightly less width than the spaces between the locking cams 11, so that the cover may be dropped into position by bringing the locking cams 19 into register with the spaces between the locking cams 11.

The locking cams 11 and 19 are slightly inclined to the horizontal, as shown in Figures 3 and 4, and consequently when the cover and the locking cams 19 are rotated in a clockwise direction, the portion 17 of the cover 16 will be urged against the gasket 13, thereby sealing the joint between the closure and the can.

A discharge conduit 20 extends through the central portion of the cover 16 and on both sides thereof, the inner end of the conduit 20 being of sufficient length to reach almost to the bottom of the container 5 or the can 8. Slidably mounted upon the inner end of the discharge conduit 20 is a disk

or follower 21, which fits somewhat loosely within the can 8. I preferably provide the follower 21 with a stuffing box 22 for sealing the joint between it and the discharge conduit 20. The discharge conduit 20 is rigidly secured to the cover 16 by means of a collar 23. The upper end of the discharge conduit 20 is provided with some means, such as the valve 24 for controlling the flow of lubricant from the can 8.

The container 5 is provided with a valve construction 25, preferably extending through the cover of the container, and comprising means such as the spring pressed valve 26, for preventing the escape of air from the container 5 after it has once been admitted thereto through the valve 25. The outer end of the valve 25 may be provided with screwthreads 27 or other suitable means for making connection with the flexible tube 28 leading from a tire pump or other source of air under compression.

In use the cover 16 is first removed and a can of lubricant 8, such as may be purchased in the open market, is then positioned within the container 5, so as to be held centrally by means of the centering webs 7. The follower 21 is then moved to a position near the lower end of the discharge conduit 20, and placed upon the top of the lubricant in the can 8. Pressure is then exerted upon the cover 16 to force the discharge conduit 20 into the lubricant until the cover 16 is brought into position to be locked by rotating it in a clockwise direction. After the cover is thus locked the valve 24 is manipulated to prevent the escape of lubricant through the discharge conduit 20, and air under pressure is forced into the container 5 through the valve 25.

The open side of the valve 24 is provided with internal screwthreads or other means for co-acting with similar means on the swiveled coupling member 29 on the free end of the discharge conduit 30 of the grease gun 31. At this time the grease gun 31 will be empty and its plunger will occupy a position close to the end 32. When the air pressure in the container 5 has reached the desired value the valve 24 is opened, whereupon the air in the container 5 expands, forcing the follower 21 downwardly, and the lubricant 9 out through the discharge conduit 20, the valve 24, and into the barrel of the pump 31, through the coupling 29 and discharge conduit 30. The lubricant will be forced into the grease gun as fast as the plunger therein is moved away from the end 32 of the grease gun barrel. When the gun is completely filled the valve 24 is closed and the gun detached therefrom.

It will be clear that the container 5 must be made sufficiently strong to withstand the pressure to which it is subjected. This in turn will of course depend upon the viscos-

ity of the material which is to be discharged from the can 8. For ordinary lubricants such as used on automobiles, and especially for the greases ordinarily employed for this purpose, a pressure of sixty pounds per square inch will be sufficient to discharge the lubricant from the can 8. It should be noted that one face of the gasket 13 is subjected to the air pressure in the container 5, so that in the event of poor contact between the gasket 13 and the surfaces designed to contact therewith, the pressure of the air in the container 5 will compress the gasket against its co-acting sealing surfaces, so as to form a tight joint.

It should also be noted that I have made the container 5 somewhat larger than the can 8. This is for the purpose of providing a space for storing air under pressure, so that by its mere expansion the lubricant can be discharged from the can 8 without the necessity of continuously supplying air to the container 5 under pressure.

Throughout the specification I have used terms such as "top," "bottom," "downwardly," "upwardly," etc., but it will of course be understood that these terms are not used in their absolute, but merely in their relative sense.

While I have described the details of the preferred embodiment of my invention, it is to be clearly understood that my invention is not limited to these details, but is capable of other adaptations and modifications within the scope of the appended claims. It is also to be understood that wherever in the above description and in the appended claims I use the word "lubricant," this term is merely used for convenience, and my invention is not in any sense limited to the use of my improved dispensing apparatus for dispensing lubricant. Consequently the word "lubricant" in the specification and claims is merely used to designate any material in a fluid or plastic state which might be dispensed by my apparatus.

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

1. The combination with a container having a bottom and removable closure, of means for centering a lubricant can with respect to said bottom, a gasket for sealing the joint between said container and closure, the said closure and container having co-acting cam surfaces for urging said closure into sealing relation with said gasket, a discharge conduit extending through said closure and projecting on both sides thereof, the inner end of said discharge conduit extending almost to the bottom of the container, a valve on the outer end of said conduit, means for establishing communication between said discharge conduit and the discharge outlet of a grease gun, a follower

slidably mounted on said discharge conduit for forcing lubricant from said can through said discharge conduit, and means for admitting air to and retaining it in said container under pressure.

2. The combination with a container having a bottom and removable closure, of means for centering a lubricant can with respect to said container, a gasket for sealing the joint between said container and closure, a discharge conduit extending through said closure and projecting on both sides thereof, the inner end of said discharge conduit extending almost to the bottom of said container, a valve on the outer end of said

conduit, means for establishing communication between said discharge conduit and the discharge outlet of a grease gun, a follower slidably mounted on said discharge conduit for forcing lubricant from said can through said discharge conduit, and means for admitting air to and retaining it in said container under pressure.

In witness whereof, I hereunto subscribe my name this 27th day of December, 1919.

FRANK D. WINKLEY.

Witnesses:

CHARLES N. BROWN,
ERNEST N. WARNER.