

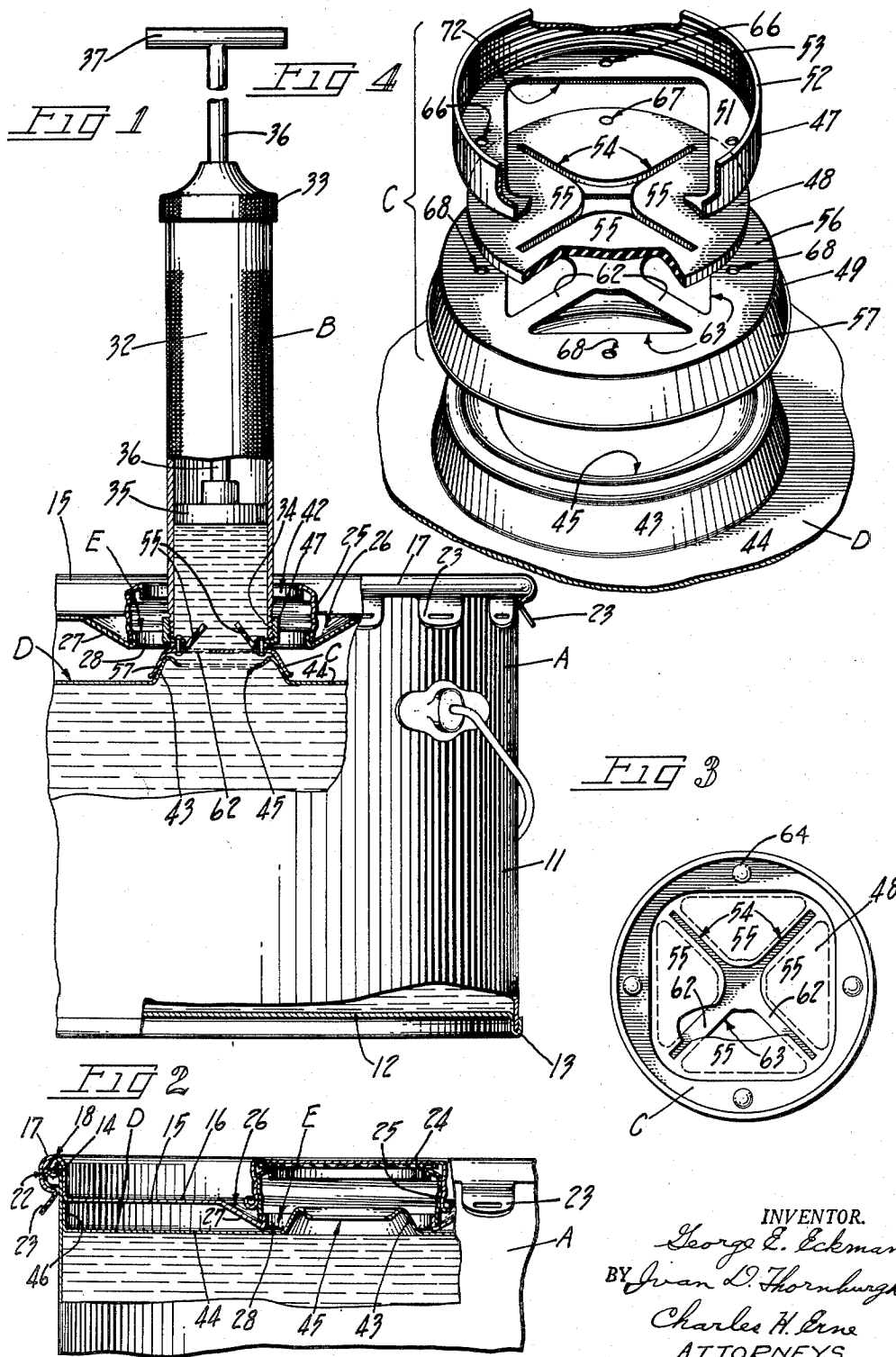
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FILLING ADAPTER FOR GREASE GUNS

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FILLING ADAPTER FOR GREASE GUNS

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This invention relates to dispensing containers for lubricating grease and the like and has particular reference to a grease dispensing combination including a grease container and a piston type grease gun and an adapter device for readily applying the gun to the container for withdrawing the grease from the container.

An object of the invention is the provision of a grease container combination including an adapter device for providing an improved connection between a grease gun and a dispensing wall of the container to withdraw grease therefrom, the filled gun with its applied adapter also serving to hold the grease within the gun during its removal from the container.

Another object is the provision of such an adapter device which is provided with a valve to permit the passage of grease into the gun from the container and which also will hold the charge of grease within the gun as the latter is removed from the container.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

Figure 1 is a part side elevation and part sectional view of a grease dispensing container combination embodying the present invention, the view showing a grease gun with an adapter device attached thereto, in filling position relative to the container, portions of the gun and container being broken away;

Fig. 2 is a vertical sectional view through a portion of the dispensing container prior to being opened;

Fig. 3 is a top plan view of an adapter device; and

Fig. 4 is an enlarged, exploded perspective detail of the various parts making up the adapter device and also showing a portion of the container, parts being broken away and some parts being shown in section.

As a preferred embodiment of the present invention, the drawings illustrate a container combination including a dispensing container A, a grease gun B and an adapter device or fitting C. The latter device provides for connection between the gun B and a movable follower plate D located within the container. The grease container A comprises a tubular body 11 having an impermeable bottom 12 secured thereto in a suitable seam 13. The upper portion of the body is of conventional form and terminates in a smooth outwardly

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bent edge curl 14 which defines the mouth of the container (Fig. 2).

After the container A is filled with grease it is closed and sealed with a conventional lug cover 15. This cover preferably is formed with a countersunk panel 16 surrounded by an inverted U-shaped circumferential section 17 enclosing an annular channel 18. A resilient sealing gasket 22 is retained in the channel space 18 and when the cover is in place (Fig. 2) on the container body, the gasket seats tightly on the body curl 14 as the section 18 fits down over the curl.

At the outer periphery of the inverted cover section 17, spaced depending lugs or tabs 23 are formed which extend down adjacent the side of the container body. These tabs are bent inwardly under the curl and thus hold the cover tightly in sealed position on the container.

The lug cover 15 is formed with a dispensing opening E which is closed when not in use by a screw cap 24 threadedly engaging a nozzle 25 mounted on the cover and surrounding the dispensing opening E. The nozzle 25 preferably is disposed in an auxiliary countersunk panel or recess 26. An annular inwardly and downwardly sloping wall 27 forms the walls for the recess and the inner edges of the sloping wall terminate in an upturned neck 28 forming the mouth of the dispensing opening and engaging inside of the nozzle 25. These parts 25, 28 may be soldered in the conventional manner.

The grease gun B may be of conventional type such as the gun disclosed in United States Patent 1,692,423, issued November 20, 1928, to A. T. Shere. Such a gun preferably includes a tubular body 32 (Fig. 1) having at one end a cover 33 and at the other end a threaded section 34 onto which is screwed the usual dispensing nozzle (not shown) of the gun. Such a gun has a piston 35 secured to a piston rod 36 which extends through the cover 33 and terminates in a handle 37.

Preparatory to filling, the screw cap 24 is removed from the nozzle 25 opening the container A. The gun B is opened by removal of its dispensing nozzle in the regular manner. It thereupon is ready for filling and according to the instant invention the adapter device C first is attached to the threaded end 34 of the gun. The gun B (Fig. 1) with its adapter device then is passed through the uncovered or exposed nozzle 25 and into engagement with the follower plate D.

A centrally disposed raised sloping wall 43 is formed on a flat panel 44 of the follower plate D and surrounds a discharge opening 45. At the outer edge of the panel wall 44 of the follower

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plate an upwardly bent circumferential flange 46 (see also Fig. 2) provides the usual sliding connection with the inner wall of the container.

The adapter device C (Fig. 4) broadly includes a socket 47, a shut-off hinge valve element or disk 48 and an inverted cup-like member 49. The socket 47 is formed with a perforate panel or annulus 51 having a right angled annular surrounding wall 52. The inner surface of the wall 52 is formed with threads 53. The shut-off valve element 48 preferably is formed from rubber-like material such as neoprene, synthetic rubber or the like which will not deteriorate rapidly when used in connection with petroleum products. A plurality of curved slits 54 cut in the valve element provide hinge elements or flaps 55. There are preferably four such hinge elements.

The cup-like member 49 comprises a flat panel 56 having a surrounding flared skirt 57 and this extends out at the same angle as the sloping wall 43 of the follower plate. The reason for this will become evident as the description proceeds. One or more bridges 62 are formed in the member 49 defining a plurality of spaced valve openings 63. In the instant device there are four such bridges separated by an equal number of valve openings.

The parts 47, 48 and 49 constituting the device C are secured together by rivets 64 (Fig. 3) which pass through holes 66, 67, 68 (Fig. 4) in each of the parts. When so assembled, as in Fig. 3, each hinge element 55 covers a corresponding valve opening 63 this being the closed position of the valve, the marginal edges of the hinge flaps then resting upon the bridges 62. The hinge valve element 48 being yieldable, the open position of the valve device C is when the hinge flaps are lifted off of the bridge members 62, as illustrated in Fig. 1.

The adapter device C may be sold as a separate unit or it may be considered as a part of either the gun B or the container A. In any event the adapter device makes possible an efficient grease dispensing combination between the gun and the grease container.

The threads 53 of the wall 52 adapt the device C for screwing onto the end of the gun B. The gun with its adapter unit then is inserted into the container, the flared skirt 57 of the part 49 fitting closely around the sloping wall 43 of the follower plate D (Fig. 1) and the gun is ready for a filling operation. Holding the gun B with one hand and grasping the handle 37 with the other, a slight pressure is exerted through the gun against the follower plate. The piston 35 then is drawn upwardly within the gun as the handle is pulled out in the regular manner. This creates a vacuum and the yielding valve is opened. Further pressure on the follower plate, assisted of course, by atmospheric pressure within the head space of the container pushes the grease up through the valve and into the gun, the yielding valve flaps assuming the position shown in Fig. 1. One stroke of the piston fills the gun to capacity.

As the gun filled with grease is lifted from the follower plate D, the valve parts of the adapter device C close. The weight of grease now applied against the hinge elements 55 keeps them pressed against the bridges 62 and holds the grease against escape.

The filled gun following a filling operation then is inverted and the adapter device C is removed or unscrewed from the gun and its reg-

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ular dispensing nozzle is attached in the usual manner. The filled gun then is ready for lubricating purposes. The container A may be closed by the screw cap 24 to seal the remaining contents for subsequent use.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. An adapter for attachment at one end to a piston type lubricating grease gun and at its opposite end being formed for removable engagement with a perforated wall of a grease container to fill the gun with grease therefrom, said adapter comprising a socket having an annular wall section and a threaded section for receiving a threaded opened end of said gun to removably attach the adapter thereto, a cup-like member carried on said socket and having a plurality of bridges defined by spaced valve openings in a panel wall thereof, said cup-like member being disposed in alignment with and secured to said annular socket wall section and having a peripheral flared extension for grease-tight engagement against a wall of the container to surround a discharge opening therein, and a disk valve of flexible material interposed between said socket and said cup-like member and having slits therein overlying said bridges to provide a plurality of hinge elements for covering the valve openings, said hinge elements being yieldable to direct grease around said bridges and through said valve slits into said gun during the filling operation and to close said valve openings between said bridges to hold grease against escape from the filled gun as the latter and said adapter are removed from said container.

2. An adapter for attachment at one end to a piston type lubricating grease gun and at its opposite end for removable engagement with a discharge opening in a wall of a grease container to fill the gun with grease, said adapter comprising a socket having an annular threaded wall for removably receiving the threaded open end of the gun, a depending outwardly flared annular skirt member on said socket for grease-tight engagement with said container wall surrounding said discharge opening, said socket and said skirt member each having a plurality of valve openings therein, and a valve disk of flexible material interposed between said socket and said annular skirt member for controlling the passage of grease into said gun during the filling operation, said valve disk being operative to close the said valve openings to hold the grease against escape from the gun when the latter and said adapter are removed from said container.

3. In a grease dispensing assembly including a grease container having an imperforate bottom, a movable follower plate overlying the grease in the container and having a grease dispensing opening therein, and a lubricating grease gun insertable within the container for receiving a supply of grease: the improvement comprising an adapter member located between said follower plate and said grease gun and engaging the plate, said member including an upper threaded cup shaped portion for removable attachment to the

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grease gun and a lower skirt portion for grease-tight engagement with the container, and a shut-off valve in said member between the said upper and lower portions thereof for allowing passage of grease into said gun during the filling operation and for holding said grease in said gun when the latter is removed from said container.

4. In a grease dispensing assembly including a grease container having an imperforate bottom and a cover provided with a centrally disposed nozzle, a movable follower plate overlying the grease in the container and having a grease dispensing opening located centrally in a raised portion thereof, and a piston type lubricating grease gun insertable through said nozzle and into the container for receiving a supply of grease therefrom: the improvement comprising an adapter device including an upper socket portion removably carried on the threaded open end of said gun and a lower cup-like member secured to said socket and having a perforated wall therebetween, the said cup-like member including a skirt portion for removable engagement with the raised portion of said follower plate while withdrawing grease from the container, and a hinged valve member overlying the perforated wall in said de-

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vice for allowing passage of grease into said gun during the filling operation and for holding said grease in said gun when the latter is removed from said container.

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