

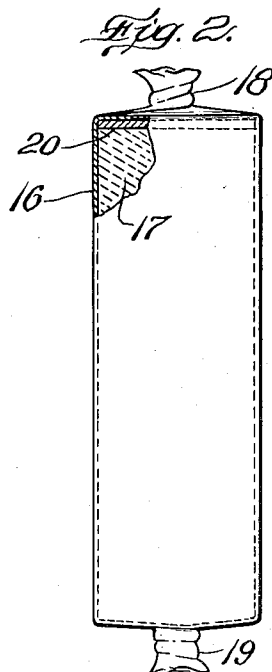
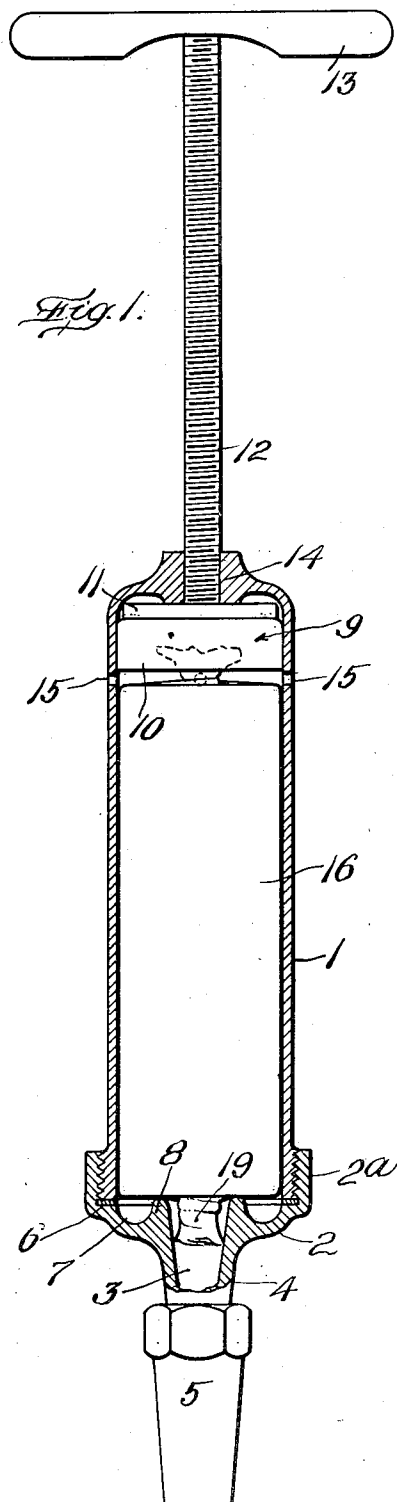
July 3, 1934.

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1,965,271

GREASE GUN AND THE LIKE

Filed March 17, 1930



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UNITED STATES PATENT OFFICE

1,965,271

GREASE GUN AND THE LIKE

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Application March 17, 1930, Serial No. 436,484

1 Claim. (Cl. 221—47.3)

My invention relates to instruments of that class commonly called "guns" which are employed for distributing or dispensing paste-like material such as lubricating grease and it has for its object to provide an improved instrument of the class indicated.

It is also an object of this invention to provide a gun of the class indicated especially adapted for use in connection with the package or cartridge shown and described in my U. S. Patent No. 1,849,391 dated Mar. 15, 1932.

To these ends I have provided a gun of the class indicated having the peculiar features of construction and mode of operation set forth in the following description, the several novel features of the invention being particularly pointed out and defined separately in the claim at the close thereof.

In the accompanying drawing:

Figure 1 is a side elevation, partly in central longitudinal section, of a grease gun constructed in accordance with my invention.

Figure 2 is a side elevation, partly broken away and in section, of a grease cartridge or package for use in connection with the gun illustrated in Figure 1.

Figure 3 is a side elevation of the tubular wrapper or envelope forming part of the cartridge shown in Figure 2.

Grease guns as heretofore constructed have included a cylinder provided at its forward end with an outlet or delivery nozzle through which the contents of the gun was discharged by means of a piston arranged within the cylinder and provided with a threaded stem extending through a threaded aperture provided in a removable cap constituting the opposite or rear end of the gun.

In loading a gun constructed as just described the cap and piston were removed and then the grease was crowded into the cylinder either by hand, or by means of a small trowel. This loading operation was tedious and difficult, mainly because of the fact that air trapped within the cylinder while the latter was being loaded would interfere with the loading operation.

One feature of my invention consists in providing the delivery or forward end of the cylinder 1, instead of the rear end as has heretofore been the case, with a removable cap 2 having a delivery outlet opening or port 3. This port 3 extends through an exteriorly threaded nipple 4 upon which is fitted the usual interiorly threaded valve delivery nozzle 5. The cap 2 is made with a skirt 2^a that is internally threaded to engage threads provided upon the exterior of cylinder 1

adjacent the delivery end thereof, and a compressible gasket 6 may be provided between the end of the cylinder and cap 2 to seal the joint between the two.

It is also a feature of my invention that the cap 2 is formed upon its interior with an annular channel or dike 7 surrounding the inlet end of the delivery port 3 thereby providing an annular re-entrant flange or lip 8 immediately adjacent said inlet end.

Within the cylinder 1 is arranged a piston 9 of usual construction and said piston may, as is usually the case, include a leather cup 10 confined between two washers, one of which is shown at 11, said washers being rotatably affixed to the inner end of a threaded stem or rod 12 that is provided at its outer end with a handle 13.

The threaded stem 12 extends through, and is in engagement with, a threaded aperture 14 provided at the upper end of cylinder 1. It will therefore be clear that by rotating stem 12 in a right hand direction, the piston 9 can be forced toward the delivery port 3 without rotation of said piston 9.

When the piston 9 is at the limit of its movement away from the delivery port 3 it is just beyond one or more vent openings 15 provided through the side wall of cylinder 1, and as soon as piston 9 is started from its fully retracted position toward the delivery port 3 these vent ports 15 are closed, but they are only closed while the piston is passing said ports. As soon as the piston passes below the ports 15, the chamber behind the piston 9 is vented so that air from the outside atmosphere can flow in through the ports 15 as said chamber is enlarged by reason of the forward movement of the piston. Thus less power is required to eject grease from my improved gun than has heretofore been the case.

Although the above described gun is especially designed for use in connection with the cartridge illustrated in Figs. 2 and 3, or others of that type, it may nevertheless be loaded in the old fashion way by crowding grease into the cylinder 1 at the lower end thereof, after removal of the cap 2, and it will be clear that when loaded in this old fashion way the air trapped within the cylinder by the grease as the latter is crowded into the same will be free to escape through the vent openings 15 as the grease is crowded into the forward end of the cylinder. Or the grease may be crowded into the forward end of the cylinder as the piston 9 is retracted, or moved inward from said forward end.

The cartridge illustrated in Figs. 2 and 3 in-

cludes a tubular wrapper or envelope 16 made from thin collapsible imperforate and flexible sheet material such, for example as tin foil, within which is confined a body of grease 17 that is held within said wrapper or envelope 16 by twisting the opposite end portions of the tubular wrapper, as at 18 and 19.

At one end of the body of grease 17 I may arrange a disc 20 of stiff sheet material, such as cardboard, which serves as a reinforcement for that end of the package.

Fig. 3 shows the wrapper 16 before it is filled with grease.

In loading the gun illustrated in Fig. 1, the cap 2 is removed from the forward end of cylinder 1 and then the cartridge shown in Fig. 2 is inserted endwise into the cylinder with its reinforced end foremost after which the cap 2 is screwed back into position on the cylinder with the twisted end 19 occupying the delivery port 3.

When the piston 9 is forced toward the delivery port 3 after inserting the cartridge as above described, the pressure to which the body of grease 17 is subjected serves to hold the tubular wrapper or envelope 16 distended and at the same time the forward annular corner of the package is forced down into the channel 7 while the forward movement of the grease forcibly unwinds the twisted portion 19 and lays the same against the wall surrounding port 3. Thus the pressure of the piston acts through the grease to open the lower end of the package and to force the grease out through the delivery port 3.

As the piston moves toward the cap 3 the material of the wrapper 16 accumulates and piles up within the channel 7 thereby preventing movement of the lower end of the wrapper down through the delivery port 13.

When the piston has reached the limit of its

movement toward cap 2 practically all of the grease will have been expelled from the wrapper 16 and the latter may be readily removed from cylinder 1 simply by removing the cap 2 and picking or shaking out the collapsed and empty wrapper.

What I claim is:

A grease gun comprising a cylinder having a rear end wall made with a threaded aperture, said cylinder being of uniform diameter throughout its length and adapted to receive within it an elongate cylindrical cartridge comprising a body of grease and a tubular collapsible envelope therefor of thin flexible sheet material that is closed at its opposite ends, one of said ends being adapted to be opened by pressure from within said envelope; a piston slidably fitted within said cylinder made with a threaded stem extending through and engaging the threads of said aperture, said stem being provided at its outer end with a handle by means of which it is rotated thereby to move said piston longitudinally within said cylinder; a cap removably fastened to the forward end of said cylinder made with a centrally disposed outlet port having its inner end portion enlarged to receive within it a portion of said envelope when the latter is opened, the inner side of said cap being made with a circular pocket surrounding said outlet and communicating with the outlet end of the interior of said cylinder, said pocket being provided to receive said envelope when the latter is collapsed by said piston and the latter is at the limit of its grease-ejecting movement, and said pocket and piston co-operating to effect the opening of said cartridge without puncturing the latter when said piston is started on its movement toward said outlet.

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