Nov. 24, 1931. M. B. LINTON 1,833,528

GREASE GUN

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Fig. 1.

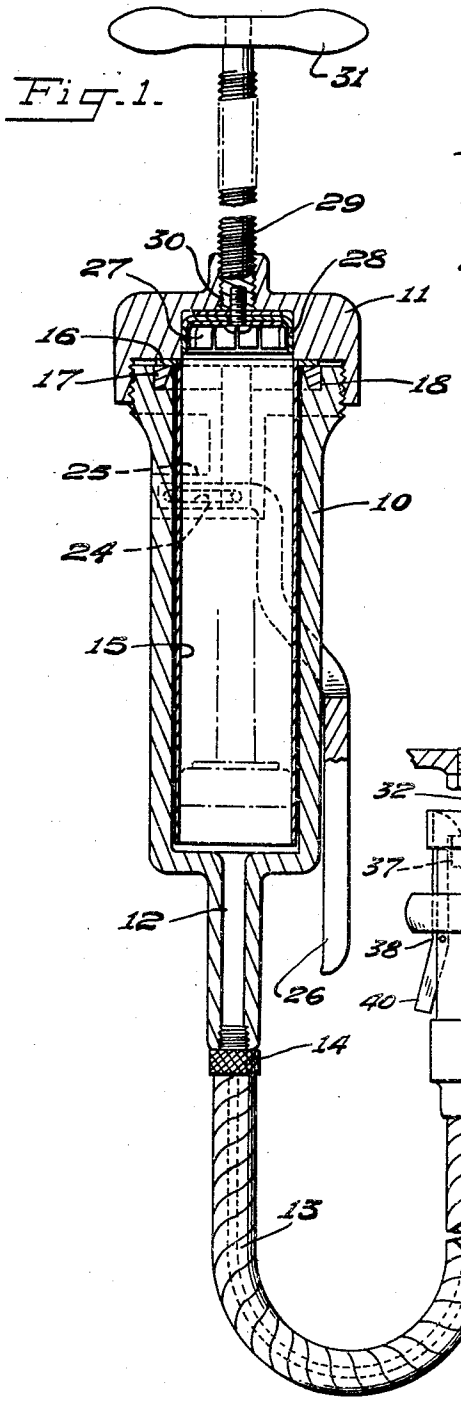


Fig. 2.

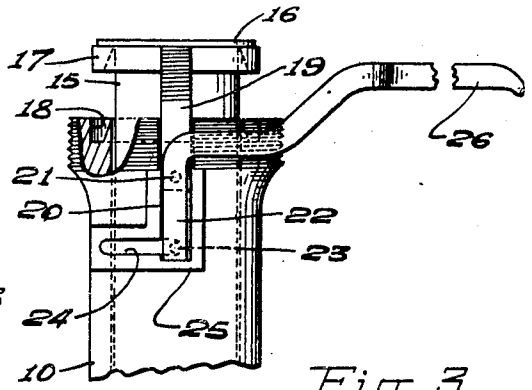


Fig. 3.

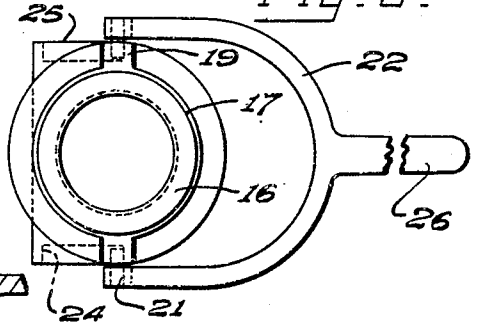
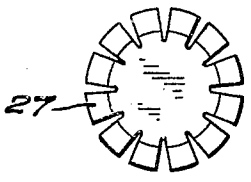


Fig. 4.



Fig. 5.



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Fig. 6.

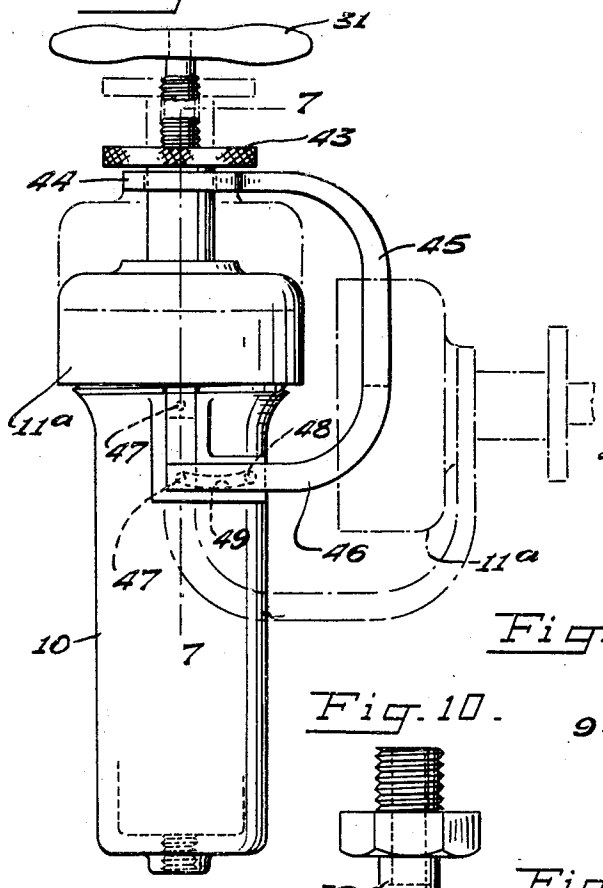


Fig. 7.

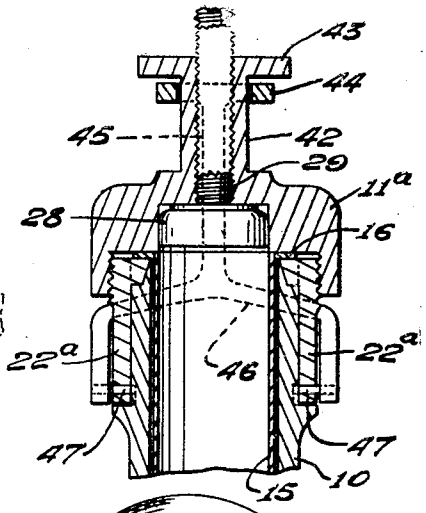


Fig. 8.

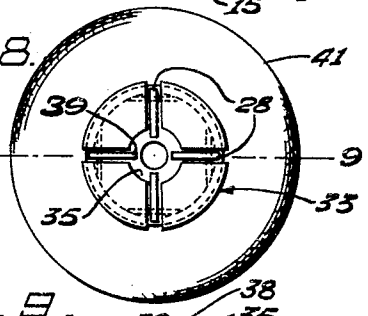


Fig. 10.

Fig. 9.

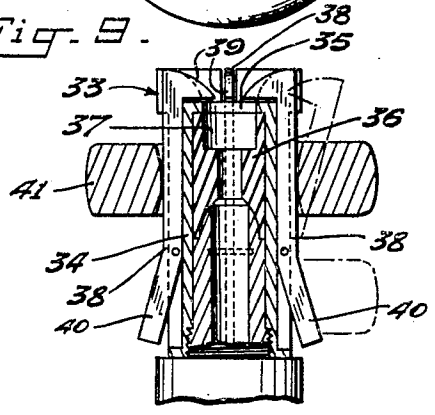


Fig. 12.

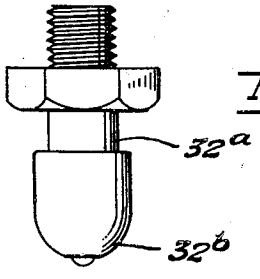
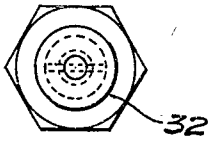


Fig. 11.



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UNITED STATES PATENT OFFICE

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GREASE GUN

Application filed December 2, 1927, Serial No. 237,263. Renewed April 28, 1931.

This invention relates to improvements in grease guns and has for its primary object to provide a gun which may be quickly and easily loaded and without the usual disagreeable spreading of grease upon the hands and clothing of the user.

Another object of the invention is the provision of a grease cartridge for use in filling the gun, and from which the grease may be discharged, means being provided for ejecting the empty shell or container of the cartridge to permit of reloading.

Another object of the invention is the provision of a gun and a cartridge therefor, wherein the cartridge may be inserted within the gun in partly open condition, and remain in such condition until fully inserted, the act of positioning the cartridge also serving to completely open said cartridge ready for use.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:—

Figure 1 is a sectional view of the invention.

Figure 2 is a fragmentary elevation partly in section showing the position of the parts when ejecting an empty container or shell.

Figure 3 is a plan view of the subject matter illustrated in Figure 2.

Figure 4 is an edge view of the expanding element of the grease ejector.

Figure 5 is a plan view of the same.

Figure 6 is an elevation showing a modified form of the invention.

Figure 7 is a sectional view taken substantially on the line 7—7 of Figure 6.

Figure 8 is an end view of the nozzle.

Figure 9 is a sectional view on the line 9—9 of Figure 8.

Figure 10 is an elevation of a cup or union for use in connection with the gun.

Figure 11 is an end view of the same.

Figure 12 is a view of a slightly modified form of union.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates the barrel of the gun which may be of any suitable size or material and which is open at one end and normally closed by threadedly mounted cap 11. The opposite end of the barrel is provided with a discharge nipple 12 for connection with a suitable pipe or hose 13, the latter carrying a coupling 14 for this purpose. This coupling member has a removable engagement with the nipple 12 so as to permit the nipple to be cleaned.

The gun is adapted for use with a grease cartridge and this cartridge is designed to fit within the barrel 10 and forms the subject matter of a copending application. The barrel 10 is interiorly tapered from the top to the bottom, and the cartridge whose shell or casing is indicated at 15, is likewise tapered. This acts to quickly free the cartridge shell from the walls of the gun barrel when the shell is moved outward. When in use, the cartridge is open at both ends and its outer end is provided with an annular flange 16 which extends over an ejector ring 17, the latter being normally seated within an annular recess 18 provided around the open end of the barrel 10. The inner periphery of the ring 17 and the adjacent wall of the recess 18 are beveled as shown in Figure 1 of the drawings so as to permit of the ring being readily lifted from the recess. The ring 17 is carried by arms 19 which extend longitudinally of the barrel and operate in guide grooves 20 upon opposite sides of the barrel.

Pivotally secured to the arms 19 as shown at 21 are the arms of a yoke 22. The extremities of these arms carry inwardly extending pins 23 which operate in grooves 24 upon opposite sides of the barrel. The barrel is further provided with a substantially L-shaped recess 25 for the accommodation of the ends of the arms 22.

Normally, the arms lie within the transverse portion of the recess 25 as shown by the dotted lines in Figure 1. In this position, the ejector ring 17 is seated within the recess 18, and the flange 16 of the cartridge shell rests upon this ring. The cap 11 bears upon the flange 16 and this flange acts to provide a

packing between the cap and the adjacent end of the barrel 10.

After the gun has been emptied in a manner to be later explained, and it is desired to refill the gun, the cap 11 is removed. The yoke 22 is then swung upward, the pins 23 riding along the groove 24 and the ejector ring 17 being forced upward through the pivotal connection between the yoke 22 and the arms 19. For convenience in operating the yoke the latter is provided with a handle 26. Upward movement of the ring 17 will move the shell 15 outward and as this shell has been freed of the walls of the barrel 10, it may be readily removed. The ring may then be returned to its normal position and a fresh cartridge inserted.

In order to eject the grease, there is provided a grease ejector. This ejector comprises an expansible metallic member 27 which is substantially cup shaped and which is covered by a leather 28. A compressor or plunger is thus provided which is carried at the inner end of a threaded stem 29. This stem has a threaded engagement with the cap as shown at 30 and carries at its outer end an operating handle 31. By rotating the stem 29, the ejector will be moved longitudinally of the gun barrel and due to its resilient quality will snugly engage the barrel throughout its length.

The gun is designed for lubricating various mechanisms, for example, the moving parts of an automobile. The hose 13 may be attached to the part to be lubricated in various ways. For example, the part to be lubricated may be equipped with a union 32 to which the hose may be attached by a coupling or nozzle such as is indicated at 33. This coupling or nozzle is shown as comprising a tubular member 34 having an opening 35 to receive the outer end of the union, while located within this tubular member adjacent the opening is a rubber or other compressible sleeve 36. The sleeve is provided with a recess 37 to receive the head of the union 32 and the said head compresses the sleeve so as to provide a tight fit. In order to hold the parts in connected relation, the coupling carries a plurality of pivotally mounted arms 38 which have hooks 39 at their outer ends to engage over the head of the union. The opposite ends of the arms 38 are offset as shown at 40 and movable upon these arms is a ring 41. This ring will serve to hold the hooks engaged over the head of the union when in the position shown in Figure 9 of the drawings, or when moved to the dotted line position, the hooked ends of the arms will be moved outward so as to release the union.

In Figure 12 a slightly different form of union is indicated at 32*a*. This union is substantially the same as that shown in Figure 10 except that its outer end 32*b* is rounded, instead of being flat as is the form shown in Figure 10. Of course, the nozzle which is illustrated in Figure 9 of the drawings will have its recess 37 shaped to receive the head of this union.

In Figures 6 and 7, there is illustrated a slightly different form of the invention in which the cap 11*a* has extending therefrom a sleeve or neck 42. This sleeve or neck carries at its outer end a flange or collar 43 and slidable upon this sleeve or neck is a ring 44. Extending from the ring 44 is a substantially U-shaped arm 45 whose other end is provided with a yoke 46. The arms of this yoke extend upon opposite sides of the barrel 10 of the gun and have their extremities pivotally connected as shown at 47 with the arms 22*a* of the cartridge shell ejecting ring. The arms 46 also carry inwardly extending pins 48 which operate in grooves 49 provided in the barrel 10.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as properly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. In combination with a grease gun having a barrel open at one end and having a discharge outlet at the other end, a cap for closing the open end of the container, a plunger carried by said cap and slidable in the cartridge to displace the grease therefrom, a loading cartridge including a tubular member adapted to be inserted within the barrel, a projection at one end of the tubular member and adapted to extend over the end of the barrel, an extracting means carried by the barrel and located beneath the projection of the tubular member to move said tubular member outward when the extracting means is moved, said cap comprising means for retaining said container and extracting means in position, and means carried by the barrel of the grease gun for manually operating said extracting device.

2. In combination with a container open at one end and having a discharge outlet at the other end, a cap for closing the open end of the container, a loading cartridge including a tubular member adapted to be inserted within the container, a flange at one end of the tubular member and adapted to extend over the end of the container, an ejector ring carried by the container and located beneath the tubular member to move said tubular member outward when the ejector ring is actuated, arms carried by the ring, a lever having a pivotal connection with the arms, means providing a sliding pivotal connection between the lever and container, and a cap for the container.

3. In combination with a container open at one end and having a discharge outlet

at the other end, the inner walls of said container tapering from the open toward the other end of said container, a loading cartridge including a tapered tubular member adapted to fit within the container, a cap for closing the open end of the container, a resilient expansible ejecting member adapted to operate within the container to eject the contents of the cartridge, and means to operate the ejecting member.

4. In a grease gun, a barrel having an open end, a cap detachably mounted on said barrel, a plunger carried by said cap, a tubular grease cartridge adapted to be inserted into said barrel and to receive said plunger, means for extracting said cartridge, said extracting means comprising a slidable member carried by said barrel, and a pivoted member also carried by said barrel and adapted to operate such slidable member.

5. In a grease gun, a barrel, a grease cartridge adapted to be inserted in said barrel, a cap for said barrel, a plunger carried by said cap, said plunger being adapted to be moved into said cartridge to discharge the grease therefrom without substantially distorting the same, and means carried by said grease gun separate and distinct from the plunger for extracting said cartridge.

6. In a grease gun, a barrel, a grease cartridge adapted to be inserted in said barrel, a cap for said barrel, a plunger carried by said cap, said cartridge being cylindrical and having an open end into which the plunger is adapted to enter to discharge the grease therefrom, said plunger being adapted to be moved into said cartridge to discharge the grease therefrom without substantially distorting the same and means carried by said gun for extracting said cartridge.

7. In a grease gun, a barrel, a tubular grease cartridge adapted to fit into said barrel, a cap for said barrel, a plunger carried by said cap and adapted to discharge the grease from the cartridge without substantially distorting the tubular walls of the same, a projection near the outer end of said cartridge, and extracting means carried by the barrel of said grease gun and adapted to extract said cartridge by engaging said projection, and a longitudinally slidable member carried by said barrel for transmitting force to said extracting means.

8. In a grease gun, a barrel, a grease cartridge adapted to be inserted into said barrel, and means for extracting said cartridge, a forked handle for operating said extracting means, inwardly extending projections mounted in the forks of said handle, and grooves carried by said barrel for receiving and guiding said projections.

9. In a grease gun, a barrel, a tubular container adapted to be inserted in said barrel, an annular projection near the outer end of said container, said container being open at one end, a plunger carried by said gun for entering the open end of said container to displace the grease therefrom, a longitudinally movable extracting means carried by said gun for engaging said annular projection to displace the cartridge, and manual controlled means for operating said member.

In testimony whereof I affix my signature.

MERWYN B. LINTON.