Feb. 23, 1932. N. A. WALLEN 1,846,167

GREASE GUN

Filed March 13, 1930 3 Sheets-Sheet 1

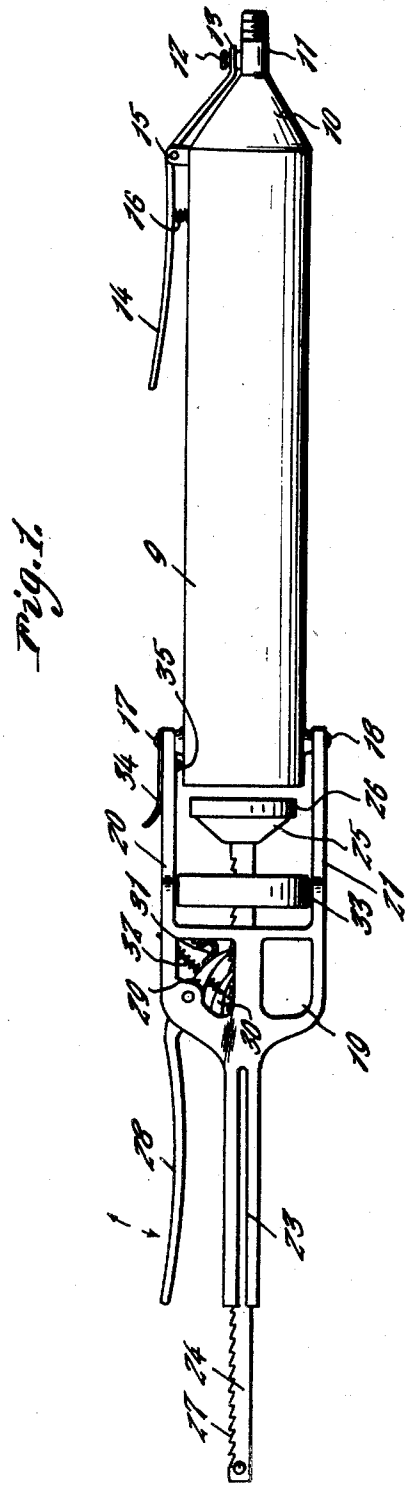


Fig. 1.

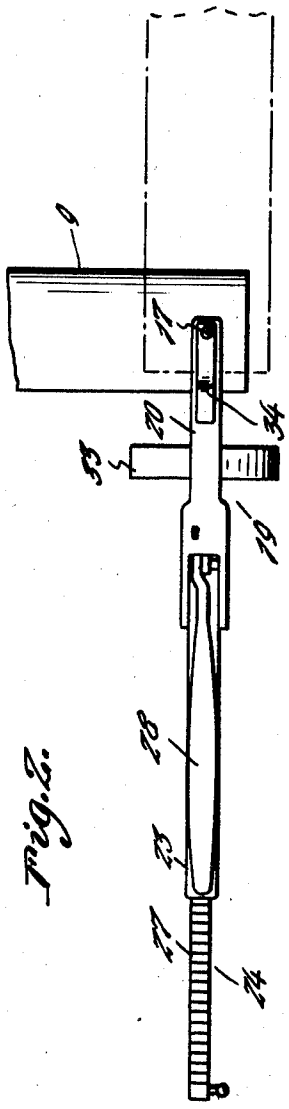


Fig. 2.

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GREASE GUN

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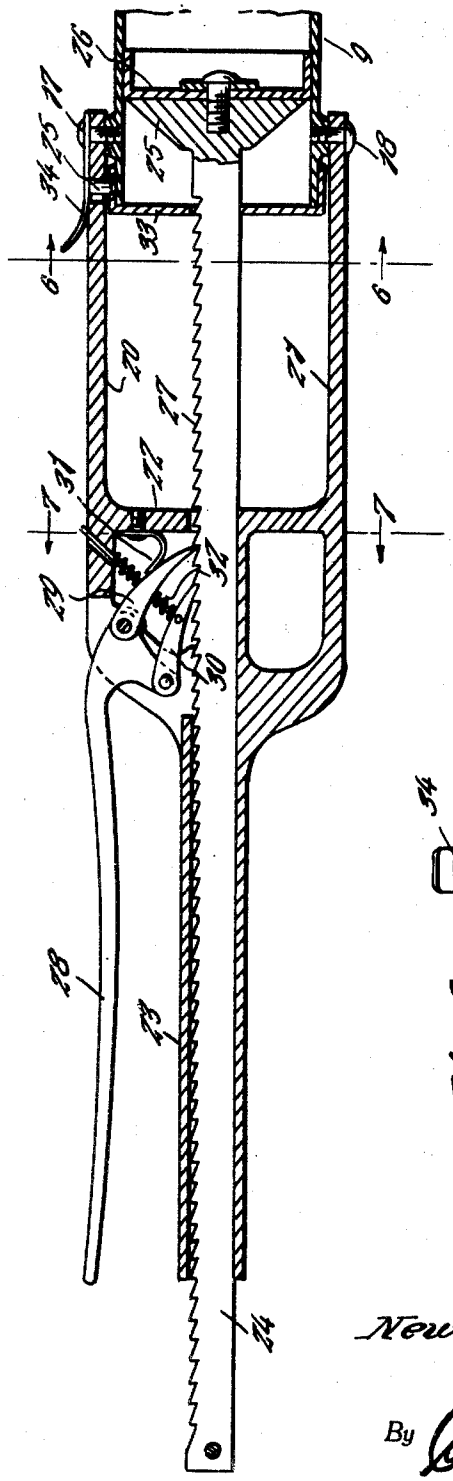


Fig. 3.

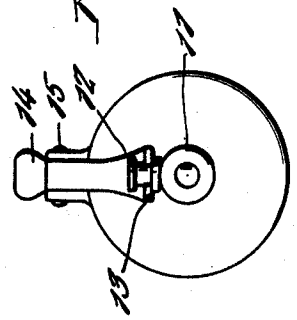


Fig. 5.

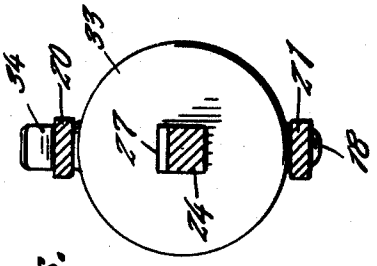


Fig. 6.

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GREASE GUN

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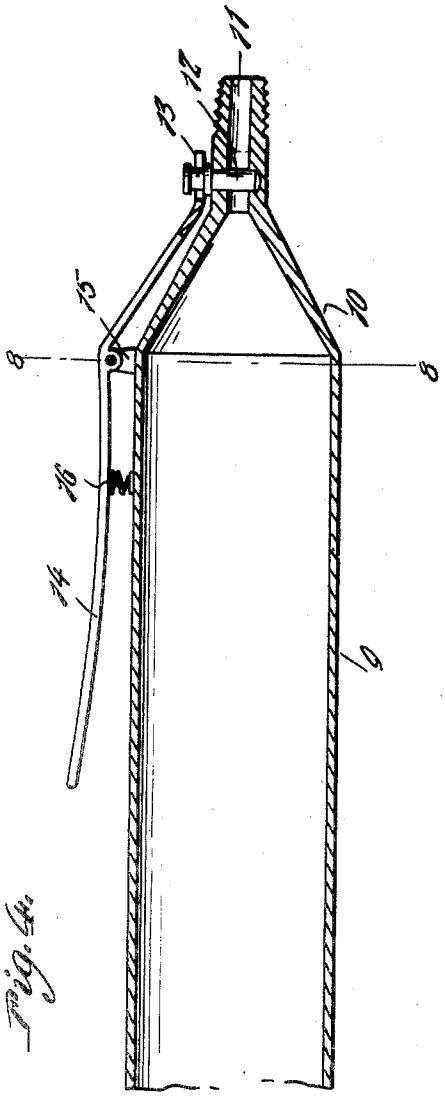
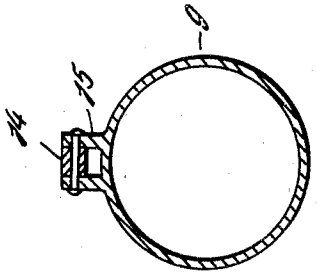



Fig. 6.

Fig. 8.



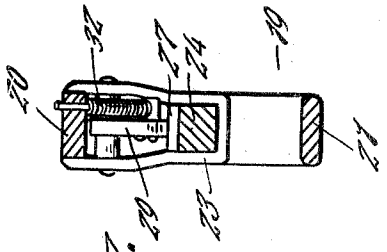




Fig. 7.

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Patented Feb. 23, 1932

1,846,167

# UNITED STATES PATENT OFFICE

NEWTON A. WALLEN, OF FREMONT, VIRGINIA

## GREASE GUN

Application filed March 13, 1930. Serial No. 435,536.

This invention relates to an improved automotive grease gun of the type used for injecting cup grease into various types of cups and receptacles provided on present-day motor vehicles, for lubricating purposes.

Broadly, the invention has reference to the type of gun, comprising an elongated barrel which functions as a cylindrical container for the grease, and which is constructed at one end to permit it to be associated with the grease cups on the vehicle. Slidable in this barrel is a piston which serves to forcibly eject the grease through the discharge end, and novel means is provided for actuating the piston.

One feature of the improvement is in the discharge end construction, which is of a tapered configuration, and equipped with a valved discharge nipple, whereby to avoid leakage and to permit the grease to be regulated and discharged according to the discretion of the user.

A further feature of the invention is a novel closing cap for the opposite end of the barrel, which cap is mounted on a pivoted frame to permit it to be entirely swung out of the way to facilitate placement of the grease within the gun.

A further feature of the invention is the pivoted frame itself, which constitutes a carrier for the piston, a carrier for the cap and complemental appurtenances, as well as a mounting for the novel manually manipulated lever actuated pawl and rack means for actuating the plunger.

The advantage of the lever operating means is to permit the gun to be manipulated with facility in places otherwise difficult of access, for instance, places where it is impossible to turn a hand crank, or similar operating device such as is used on many of the present day types of grease guns.

Other features and advantages will become more readily apparent from the following description and the accompanying drawings.

In the drawings:—

Figure 1 is a side elevational view of a grease gun constructed in accordance with the present invention, showing the closing cap in open position and the piston about ready to enter the barrel.

Fig. 2 is a top plan view showing a fragmentary portion of the barrel with the aforesaid frame swung to one side to uncover the intake end of the barrel to facilitate filling.

Fig. 3 is an enlarged fragmentary detail sectional and elevational view showing the parts and their specific association.

Fig. 4 is a view of the valved discharge end of the barrel.

Fig. 5 is an end view of the valved end observing the structure in Fig. 1 in a direction from left to right.

Figs. 6, 7 and 8 are transverse sectional views taken upon the plane of the lines 6—6; 7—7 and 8—8 of Figs. 3, 4 respectively.

The general arrangement may well be seen in Fig. 1. Here the cylindrical barrel is designated by the reference character 9 and it is open at the left hand end, the opposite end being tapered as at 10 and terminating in a reduced screw-threaded nozzle 11 which is of a construction to permit it to be placed against the intake of the grease cup on the motor vehicle. Incidentally, the threaded construction permits the use of various styles of small couplings (not shown) used for making a dependable connection with the grease cup.

This nipple-like discharge end 11 as shown better in Fig. 4, is provided with a slidable control valve 12 having a head on its exposed end with which the forked fingers 13 of an operating lever 14 are connected. This lever is pivoted on lugs 15 and maintained in a position for normally closing the valve under the action of a coiled expansion spring 16 interposed between the intermediate portion of the lever and the barrel. By pressing down on the lever with the finger, it is obvious that the valve can be lifted to open position, to allow the grease to discharge.

Pivoted as at 17 and 18 on the opposite open end of the barrel is a swingable frame generally designated by the reference character 19. This comprises upper and lower spaced parallel arms 20 and 21. There is also a cross piece 22 as seen in Fig. 3 and the reference character 23 designates a tubular

guide for the stem portion 24 of the plunger. The plunger is provided with a head 25 adapted to slide in the barrel and the head carries a packing cup 26.

One edge of the stem is provided with rack teeth 27. Pivotally mounted on said frame is the main operating lever 28, which is equipped with independently and successively operable pawls 29 and 30 respectively. These cooperate with the rack teeth 27 as clearly shown in Fig. 3. A spring 31 serves to maintain the pawl 29 in place and a suitable coiled spring 32 mounted on the frame, serves to hold the other pawl 30 in place. The spring 32 also serves to return the lever to its normal position as shown in Fig. 3.

The closing cap is designated by the reference character 33 and is constructed to fit over the intake end of the barrel. In this connection I call attention to a retaining spring 34 having a locking pin 35 for maintaining the cap in closing position.

In connection with the pivoted frame and the closing cap, this is of particular importance, in that it allows the cap to be swung to an out-of-the-way position shown in Fig. 2, to uncover the intake end of the barrel and to facilitate filling with cup grease.

At this time, the plunger is worked out of the barrel as is obvious, so that it can be swung to one side with the cap as shown in the last-named figure. Assuming that the gun is filled with grease, it is obvious that it may be forcibly ejected through the valved nipple by simply pressing the lever 28 toward the guide tube 23.

In this way, the guide tube 23 functions as a relatively stationary handle. This operation of the lever actuates the pawls alternately to move the plunger in the barrel in a step by step manner. This arrangement is positive and dependable and insures a forcible discharge of the grease and an appropriate injection into the cup or other appliance to be filled.

The grease gun of the type herein shown can be manufactured and sold for a relatively low price, as it is quite compact and convenient in construction, and otherwise simplified in the manufacture. It is sturdy, efficient, and easy to operate, and there are no complicated parts to become disarranged or get out of order.

The stem of the plunger is polygonal in cross section and slides in a correspondingly-shaped tube 23, so that the rack teeth are always in proper position for efficient manipulation of the pawls. The principal advantage of this gun is that it is possible to work the plunger properly and efficiently in limited space, and it can be operated with a single hand and thereby avoid many difficulties experienced with the present-day types of guns with which I am familiar.

As shown in Fig. 1, the tube 23 is formed in one side with a longitudinal guide slot receiving the shank of a finger-grip device 24*a*, on the stem. This arrangement is provided for returning the plunger to starting position, at which time the pawls must be disengaged as is obvious.

After carefully considering the detailed description in connection with the drawings, a clear understanding of the invention will be had. Therefore a more lengthy description is regarded as unnecessary.

The present-day grease gun comes in two parts and when the operator wishes to refill it he is forced to lay one of the parts aside so he can use both hands to refill the barrel. Therefore, in doing this, it is almost impossible for the place where the piece is laid to be absolutely free from dirt and grit and in this way he gets some of this matter mixed with the contents, whereas the gun herein described, does not come in two separable pieces and the operator holds the entire gun up, keeping it free from dirt and grit, thereby keeping the contents absolutely clean.

Minor changes in shape, size, and rearrangement of details, coming within the field of invention claimed may be resorted to in actual practice if desired.

Having thus described my invention, what I claim as new is:—

1. In a grease gun of the class described, a cylindrical grease containing barrel having valved discharge means at one end, and open at the opposite end, a handle structure embodying a substantially U-shaped frame having arms pivoted on diametrically opposite sides of the open end portion of said barrel, a plunger including a stem slidably mounted on said frame, a closing cap for said barrel mounted between said arms and having an opening at its center through which the stem of said plunger passes, said frame being swingable at right angles to said barrel to uncover the open end to facilitate filling with grease, and operating means for the plunger mounted on said frame.

2. In a grease gun of the class described, a cylindrical grease containing barrel having valved discharge means at one end, and open at the opposite end, a handle structure embodying a substantially U-shaped frame having arms pivoted on diametrically opposite sides of the open end portion of said barrel, a plunger including a stem slidably mounted on said frame, a closing cap for said barrel mounted between said arms and having an opening at its center through which the stem of said plunger passes, said frame being swingable at right angles to said barrel to uncover the open end to facilitate filling with grease, operating means for the plunger mounted in said frame, and a spring retained pin mounted on one of said arms and cooperable with said cap for holding the cap in spiral closing position.

3. In a grease gun of the class described, a grease containing barrel having valved discharge means at one end, the opposite end being open, a closing cap for said open end, a handle structure comprising a substantially U-shaped frame including spaced parallel arms pivotally connected to said barrel, a cross piece between said arms, and a tubular extension, said extension constituting a hand grip and a guide, a plunger including a head slidable in said barrel and a stem having rack teeth, said stem being slidable thru said cross piece and through said tube, a pivotally mounted operating handle on the frame arranged for cooperation with said hand grip, and alternately operable spring-pressed pawls associated with the pivoted end of said lever and cooperable with the rack teeth on said stem for actuating said plunger.

In testimony whereof I affix my signature.

NEWTON A. WALLEN.