

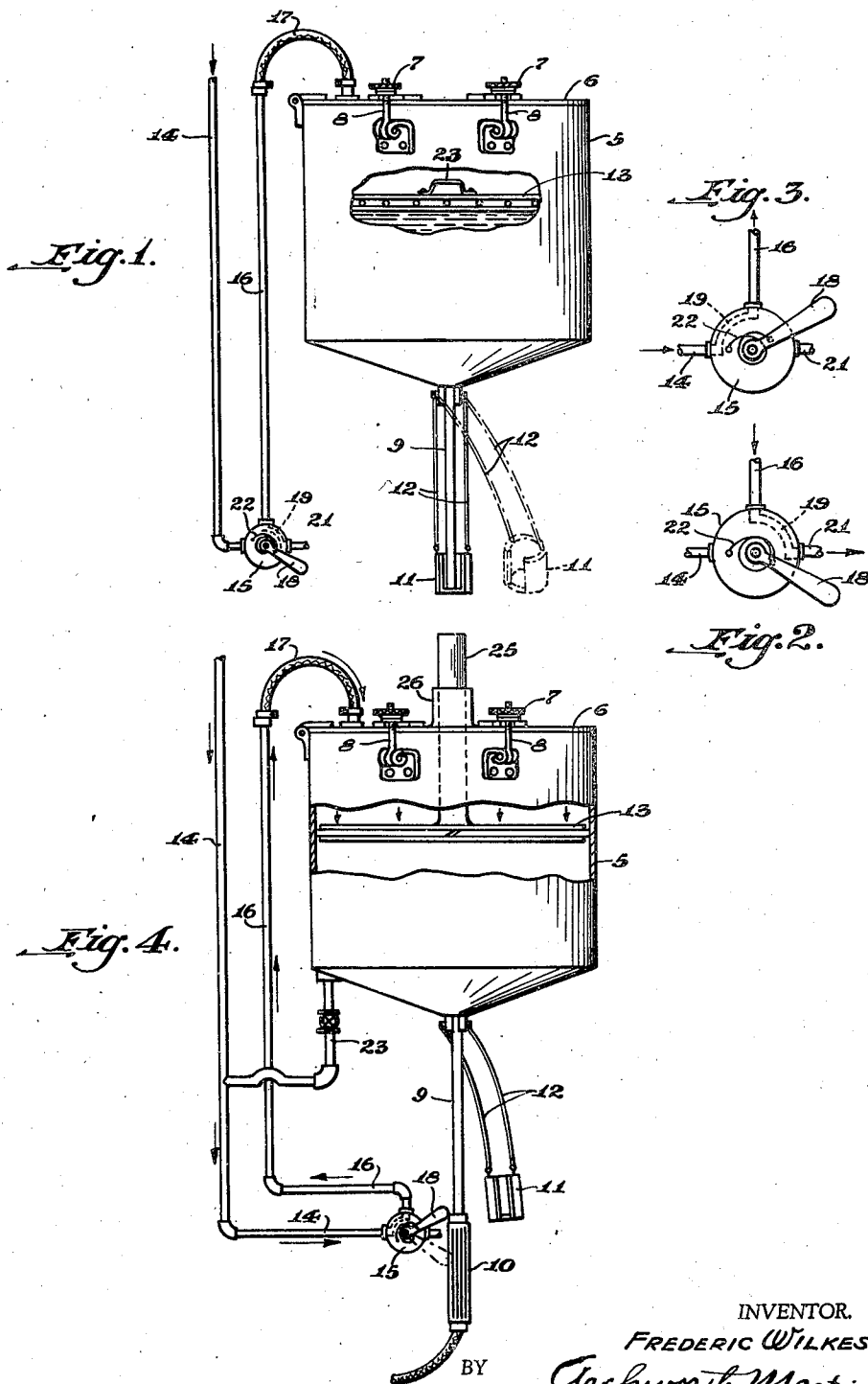
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GREASE DISPENSER

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GREASE DISPENSER

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My invention relates more particularly to dispensing devices of the reservoir type that are particularly suitable for filling grease guns such as those employed in the lubrication of automobiles and other machinery, but it will be understood that the apparatus can be employed also in dispensing other materials of a semi-liquid nature.

One object of my invention is to provide dispensing reservoirs that can be placed at locations which are convenient to where the lubricating service men are working, and which can be operated conveniently and quickly, to fill grease guns.

Another object of my invention is to provide a pressure-operated dispensing device that can be used more easily and with less waste than various other types of filling or dispensing devices that have heretofore been employed.

Some of the forms which my invention may take are shown in the accompanying drawing, wherein Figure 1 is a side view, partly in section, of a dispensing apparatus embodying my invention; Fig. 2 is an enlarged view showing the pressure control valve of Fig. 1, in position to cut off the supply of motive fluid to the grease chamber; Fig. 3 shows a valve in position to admit the motive fluid to the grease chamber, when filling a gun, and Fig. 4 shows a modification of the structure of Fig. 1.

Referring first to Figs. 1 to 3, the grease chamber or reservoir is indicated by the numeral 5. This chamber has a hinged lid or cover 6 that is releasably held in air-tight closed position by nuts 7 and eye bolts 8. The chamber 5 has a discharge nozzle or spout 9 that will suitably be approximately of the length of the longest grease gun barrels 10 that are to be filled. A cap 11 is supported by pivotally-hung spring arms 12, from the lower end of the chamber 5, to prevent grease moving out of the nozzle when a grease gun is not in place for filling, the spring arms 12 serving to hold the bottom of the cap snugly against the end of the nozzle.

A piston 13 is positioned in the chamber, for movement toward the nozzle 9 in order to extrude grease from the chamber. Air pressure for moving the piston down is supplied from a suitable source through a pressure line 14, past a valve 15, through a pipe 16, and through a flexible pipe 17, the pipe 17 communicating through the lid 6 with the interior of the chamber. When the valve handle 18 is in the position shown in Fig. 3, the valve port 19 provides communication between the pipes 14 and 16 to admit fluid pressure to the upper side of the piston.

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When it is desired to fill a grease gun, the cap 11 will be put aside as indicated by dotted lines in Fig. 1, and the barrel of the grease gun opened, the grease gun barrel then being slid upwardly upon the nozzle 9. Thereupon, the valve 15 will be moved to the position shown in Fig. 3, thereby causing grease to be extruded from the nozzle 9 into the grease gun. As the gun barrel becomes filled it will be permitted to move downwardly along the nozzle 9 and when it reaches the lower end of the nozzle the valve 15 will be released and turned by its spring 22 to the position shown in Fig. 2. At that position the port 19 will effect connection between the pipe 16 and an exhaust port 21, thereby permitting exhaust of pressure from the upper side of the piston 13, to stop further flow of the grease, the cap 11 being returned to its full line position to prevent dripping of grease.

When refilling of the chamber 5 is required the lid 6 is raised and the operator will grasp a handle 23 on the upper side of the piston to lift it from the chamber, whereupon a new supply of grease can be introduced.

In Fig. 4 I show a dispensing device similar to that of Fig. 1 but of such construction that the pressure-controlled valve is automatically operated, and means are provided for admitting fluid pressure to the underside of the piston when it is to be raised for refilling of the chamber 5. In this arrangement, pressure is admitted to and exhausted from the upper portion of the chamber by the valve 15, as in the case of Fig. 1. However, the valve is so positioned that its handle 18 will be engaged by the grease gun 10 when placing the gun barrel over the spout and the valve handle 18 thereby turned from its dotted line position of Fig. 4 to its full line position to effect a flow of grease into the gun. This movement places the valve spring 22 under tension. While the valve will be opened immediately upon the entrance of the gun upon the spout, the gun can be slid quickly upward so that it will be in its uppermost position on the spout when sufficient pressure has been built up above the piston to start the feeding of grease. It is desirable to have the nozzle 9 extending to approximately the lower end of the grease gun barrel at the beginning of a filling operation, so as to avoid entrapment of air below the grease that is introduced into the barrel.

Upon removal of the grease gun from the nozzle it will become disengaged from the handle 18, permitting the valve to be moved by its spring 22 to the position shown in Fig. 2, thus auto-

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matically effecting cut off of fluid pressure from the line 14 and exhaust of fluid pressure from the upper side of the piston.

When it becomes necessary to refill the chamber 5, air pressure will be admitted from a pipe 23 into the lower portion of the chamber and against the under side of the piston. The piston will thereby be raised to the under side of the cover, to permit opening of the cover and refilling of the reservoir. The piston has an upstanding boss or arm 25 that extends through a guide sleeve 26 that is formed on the upper side of the cover. The members 25 and 26 serve as a guide or prevent tilting of the piston, particularly when it is being raised by fluid pressure.

I claim as my invention:

1. A dispensing device for grease and the like, comprising a chamber having a discharge nozzle of a length not substantially less than the length of a grease gun barrel to be placed over the nozzle for filling, a piston in the chamber, means for supplying fluid pressure to the rear side of the piston, to move it toward the nozzle and thereby effect discharge of grease from the chamber, a valve controlling the supply of fluid pressure, means operable to open the valve through the sliding of a grease gun barrel into position over the nozzle, and means for automatically closing the valve upon removal of said barrel from the nozzle.

2. A dispensing device for grease and the like, comprising a chamber having a discharge nozzle of a length not substantially less than the length of a grease gun barrel to be placed over the nozzle for filling, a piston in the chamber, means for supplying fluid pressure to the rear side of the piston, to move it toward the nozzle and thereby effect discharge of grease from the chamber, a valve controlling the supply of fluid pressure, means operable to open the valve through the sliding of a grease gun barrel into position over the nozzle, and means for automatically closing the valve and exhausting fluid pressure from the rear side of the piston, upon removal of the barrel from the nozzle.

3. A dispensing device for grease and the like, comprising a chamber having a discharge nozzle at one end, means for supplying fluid pressure

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into the other end of the chamber, to thereby force grease through the nozzle, the nozzle being of such diameter and length that it will enter a grease gun barrel and will extend substantially the full length of a grease gun barrel that is slid into position over the same, a valve for controlling the admission of fluid pressure to the chamber, and an operating member for the valve located adjacent to the discharge end of the nozzle in position to be engaged by a grease gun barrel as the barrel approaches grease-receiving position, whereby the valve is opened to admit fluid pressure to the chamber, and means automatically returning the valve to closed position when the barrel is being removed from the nozzle.

4. A dispensing device for grease and the like, comprising a chamber having a discharge orifice in its lower end, a piston in an upper portion of the chamber, a cover hinged to the upper end of the chamber, a flexible pipe extending through the cover adjacent to its hinge connection and admitting fluid pressure to the upper side of the piston, a fluid supply line for the pipe, extending past a point that is in proximity to the said nozzle, and a valve at said point, for controlling the flow of fluid pressure through the said line, the flexible pipe serving to allow opening and closing of the cover without disconnection from the source of fluid supply.

5. A dispensing device for grease and the like, comprising a chamber having a discharge orifice in its lower end, a piston in an upper portion of the chamber, a cover hinged to the upper end of the chamber, a flexible pipe extending through the cover adjacent to its hinge connection and admitting fluid pressure to the upper side of the piston, a fluid supply line for the pipe, extending past a point that is in proximity to the said nozzle, a valve at said point, for controlling the flow of fluid pressure through the said line, a second pipe leading from said line into the lower end of the chamber to admit fluid pressure for raising the piston, and a valve for controlling flow through said second pipe, the flexible pipe serving to allow opening and closing of the cover without disconnection from the source of fluid supply.

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