May 31, 1927.

E. E. LYNCH

PRESSURE OPERATED GREASE DISPENSER

Filed March 29, 1926

FIG. 1.

FIG. 2.

INVENTOR.
ERNEST E. LYNCH.

ATTORNEYS.
This invention relates to grease-dispensing apparatus, and more particularly to those of a portable character and adaptable for supplying those heavy greases used in the lubrication of certain automobile parts as needed and operable through air-pressure.

As is very well-known, the usual practice is to supply garages with these heavy greases in various sized containers, from which it is applied to the parts needing it either by hand or through air-pressure directly applied to the grease body. To apply it by hand is found to be most unsatisfactory, as it is practically impossible to force the grease into out-of-the-way places, while, with compressed air in direct contact with the grease body, the air is found to pursue the course of least resistance, passing through the mass carrying but small particles of the grease with it, rather aerating the mass than dispensing it in compact form.

The primary object of my invention is the provision of a grease container and dispenser having self-contained extensible-collapsible means for carrying sufficient air-pressure to force heavy grease therefrom, through an intervening means preventing the air from coming in direct contact therewith.

A further object of the invention is the provision of a container and dispenser of grease that is of simple and inexpensive construction, of positive operation, and that embodies as an essential feature an extensible-collapsible air-chamber capable of retaining pressure indefinitely, or, at least, for such period as may be necessary to exhaust the grease supply.

Additional to the foregoing is the provision of a grease container and dispenser of the character described, provided with a measuring means adapted to indicate the amount of grease dispensed therefrom and remaining therein.

Other objects and advantages will appear as this specification progresses, and be more fully brought out in the claims hereunto appended.

In the accompanying one-sheet of drawings, forming a part of this specification and in which similar characters of reference refer to like parts, throughout:

Figure 1 is an elevation, partly in section, of a grease container and dispenser embodying the principles of my invention, in which is shown an extensible-collapsible member of bellows-like form constituting an air-chamber resting between the container cap and the piston, the piston being adapted, through the pressure exerted upon it, to bear upon the grease body, as shown, and to force a portion from the chamber upon opening the valve, there being also shown in this connection an indicating means and a pressure gauge; and

Figure 2 is an elevation illustrative of the character of the extensible-collapsible air-chamber, this chamber being shown removed from the container.

Referring with greater particularity to the drawings, in which a preferred embodiment of my invention has been illustrated. 1 indicates in a general way a cylindrical container having a bottom 2 and a flanged upper end 3, suitably constructed to contain any desired quantity of grease, ordinarily from twenty-five to fifty pounds, weights best calculated for easy and ready trans- portation, and sizes best adapted for garage convenience. The container 1 carries a smooth bore constituting the chamber 4 and is adapted to hold a quantity of grease 5, the maximum capacity at time of filling being approximately three-fourths that of the full capacity of the cylinder.

The extensible-collapsible air-chamber, or reservoir, 6 is constructed of a rubberized fabric of a character best adapted to withstand an air-pressure of approximately seventy-five pounds and is formed of a plurality of bellows-like folds 7 reinforced by a plurality of equally spaced bands or rings 8, and has at its lower end a vulcanized flange 9 and a similar flange 10 at its upper end.

The upper flange 10 of the reservoir 6 is of sufficient diameter to rest upon the flange 3 of the container and is clamped tightly thereagainst by the flanged cap-member 11 and a plurality of clamp-bolts 12 provided with wing nuts 13, the union thus secured being of a character to insure against all possibility of air-leakage between the members 6 and 11. The lower flange 9 of the member 6 is clamped to the upper face of the piston 14 by means of a ring 15 and screws 16, and this union must also be proof against air-leakage as between the member 6 and the piston 14. The piston 14 preferably consists of two discs 17 and
17' having secured therebetween a leather cup 18 adapted to fit the bore of the chamber 4 tightly, the two discs being provided with a piston rod 19 having a threaded lower end 20 extending therethrough and held in place by a nut 21 set-up snugly against the under face of the disc 17. The rod 19 extends through a stuffing-box 22 and a nut 23 formed upon the cap 11, and is provided at its upper end with a hand-grip 24, which may be used as a means whereby the container may be carried from place to place, or as a means whereby the piston 14 and air-reservoir 6 may be removed, when refilling of the container is required. The rod 19 is provided with graduations 25 adapted, in connection with the indicator 26, to indicate the amount of grease that has been dispensed from the container, or the amount still remaining therein. The cap 11 is provided with an inlet air-valve 27, similar to the auto tire-valve, through which air may be forced into the air-reservoir 6 and checked against exhaust therethrough, the cap being further provided with a gauge 28 adapted to register at all times the degree of air-pressure within the reservoir 6. The lower end of the container is provided with a grease outlet nipple 29 having a plug-cock 30 into which is screwed a discharge nipple 31, the opening of the said cock permitting grease to be discharged therethrough from the chamber 4 to the nipple 31. The container is also provided with a small check-valve 32 secured to a nipple 33 which is tapped into the container's lower end, this valve serving as a means through which "vacuum" may be "broken" in that portion of the chamber lying below the piston when at the limit of its downward movement. A small opening 34, leading from atmosphere to that portion of the chamber above the piston and without the air-reservoir, is provided as a "breather" for the partial regulation of pressure without the said reservoir.

Normally, an air-pressure of seventy-five pounds is forced into the chamber 35, as constituted of the reservoir 6, the cap 11 and the piston 14, after the container has received its full charge of grease and with the reservoir substantially collapsed. Assuming that both grease-charge and air-charge have been introduced, the normal tendency of the bellows-like reservoir to extend itself tends to force the piston 14 downwards with compressive force upon the grease-charge, which, upon the opening of the valve 30, is forced from the container, and continues to be forced until the grease-charge is exhausted or until the valve has been closed.

Having thus described my invention, I claim, and desire to secure by Letters Patent:

1. A grease-dispenser of the class described, comprising a container forming a grease chamber, a valve-controlled discharge outlet for said grease chamber, a piston mounted in said container, a cap-plate for said container, an extensible-collapsible means in the form of a bellows mounted in said container between said cap-plate and said piston and forming an air-pressure chamber therewith, said extensible-collapsible means being coactively associated with said piston and adapted to normally extend itself to force said piston away from said cap-plate, a valvular means permitting the introduction of air under pressure into said pressure chamber, a valve-controlled discharge outlet for said air-pressure chamber, and a check valve mounted in the lower end of said container to break the vacuum upon return movement of the piston.

2. The combination in a grease-dispenser of a container forming a grease chamber, a valve-controlled discharge outlet for said grease chamber, a piston mounted in said container, a cap-plate for said container, an extensible-collapsible means in the form of a bellows mounted in said container between said cap-plate and said piston and forming an air-pressure reservoir therewith, the said piston, cap-plate and collapsible means constituting elements removable as a unit, a valvular means permitting the introduction of air under pressure into said pressure reservoir, and a check valve mounted in the lower end of said container to break the vacuum upon the return movement of the piston.

In testimony whereof I have affixed my signature.

ERNEST E. LYNCH.