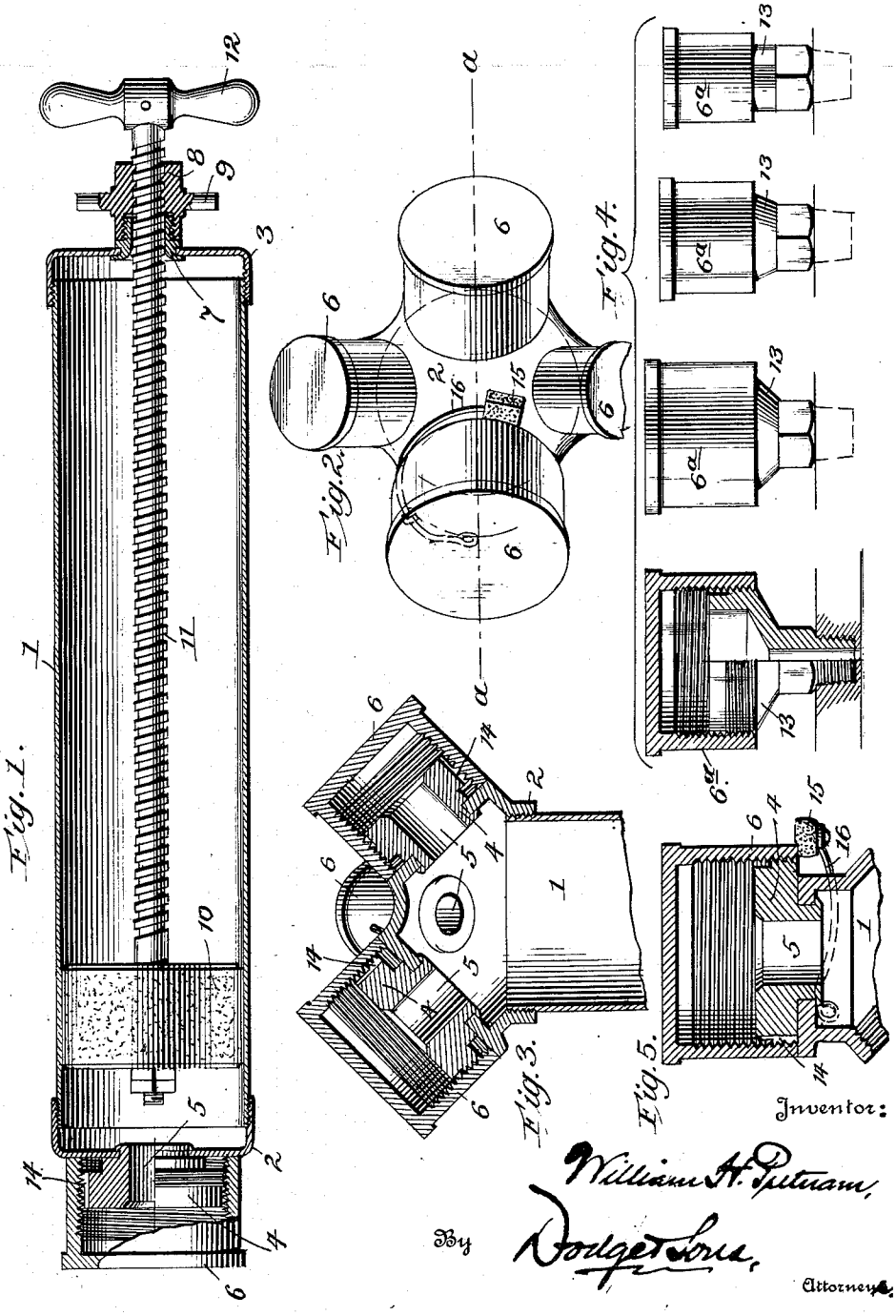
W. H. PUTNAM.

GREASE GUN.

APPLICATION FILED OCT. 5, 1917.

1,262,980. Patented Apr. 16, 1918.



UNITED STATES PATENT OFFICE.

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GREASE-GUN.

1,262,980. Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed October 5, 1917. Serial No. 194,945.

To all whom it may concern:

Be it known that I, WILLIAM H. PUTNAM, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Grease-Guns, of which the following is a specification.

This invention pertains to "grease guns" for charging grease cups employed for the lubrication of journals and bearings, and consists in providing the gun with a head or boss, one or more, at the discharge end, having an outlet opening, and adapted to receive the cap member or members of a grease cup or cups; and in providing a plurality of cap members for each such head or boss so that each outlet may be closed by its appropriate cap, and such cap filled and held ready for instant removal and substitution for a like empty cap from the journal or bearing on which it is to be used.

The invention further consists in constructing a yielding or spring-pressed wiper which bears against and removes from the annular end or edge of the cap, any grease, dirt or dust that may adhere thereto, the wiper moving back as the cap is applied; and following the cap as it is removed, so that dust and grit is kept from entering the cap or cup, and soiling of the hands is prevented.

The novel construction in its preferred form is illustrated in the accompanying drawings, wherein:

Figure 1 is a longitudinal section through the body of the gun, the piston and its rod, a portion of a discharge head or boss and its cup being shown in full lines;

Fig. 2, an end view of the gun showing a plurality of caps applied to a like plurality of discharge heads or bosses.

Fig. 3, a section on the line *a*—*a* of Fig. 2;

Fig. 4, a view showing a set of grease cups with cap members corresponding to the cap members of Fig. 2, one of said cups being shown partly in section; and

Fig. 5, a sectional view showing the yielding or spring-pressed wiper, which is also shown in Fig. 2.

In the use of grease guns as heretofore constructed, certain difficulties or inconveniences have been experienced, among which may be noticed that of preventing escape of the contents when not in use, through the unsealed discharge opening, particularly when a relatively thin and fluid lubricant is employed, or when the thicker lubricant becomes softened and fluent owing to temperature conditions. Again it is difficult to deliver to grease cups through the use of grease guns of ordinary construction, the precise quantity required to fill the cup, yet prevent overcharging the same, and it is practically impossible to charge such cups without greatly soiling the hands and often leaving lubricant on the exterior of the cup and gun.

So, too, it is desirable to remove from the open annular end or edge of the cap or cup any adhering dust or grit and grease, in order to prevent introduction of grit into the cap or cup when removing and replacing it.

The construction here shown, and which will now be explained with the aid of the drawings, overcomes the difficulties and attains the ends noted.

1 indicates a hollow cylindrical shell or body provided with end caps 2 and 3, which may be screwed upon or otherwise secured to the body 1. The cap 2 at the discharge end is provided with a head or boss 4 having a discharge opening 5, preferably concentric with the head, said boss being peripherally threaded or otherwise fashioned to receive a cap or cover 6, or a plurality of such caps or covers. In Fig. 1 a single cap is shown, while in Figs. 2 and 3 a plurality of such caps is illustrated. The cap 6, or each cap if a plurality be provided, is made of the same form and dimensions as a cap 6^a of a grease cup of standard or predetermined size, and each head or boss 4 is externally threaded or otherwise fashioned, to receive and fit the internal thread of the respective caps 6 and 6^a. In practice a screw thread of a suitable number of turns is preferably employed as the means of connection between the head or boss 4 and the cap 6, but any usual means of connecting the cap member or grease cup with its base 13 may be employed for connecting the cap 6 with said head or boss 4, the essential point being that the connecting means for the gun and the grease cup be alike.

The rear end-cap 3 of the grease gun is provided with a centrally perforated nipple 7, externally threaded to receive a nut 8

which may be provided with projecting studs 9 as a convenient means of turning said nut to screw it on or off the nipple 7. 10 indicates a piston of any suitable or usual construction, closely fitting the bore of the shell or body 1, and provided with an axial rod or stem 11, threaded to fit the nut 8. This rod 11 is provided with a cross-handle 12 or other convenient hand-hold, for turning it or moving it longitudinally as required.

The grease gun may be filled in different ways, as by retracting the piston 10 either by first detaching the nut 8 and drawing the piston directly back, or by a rotation of the rod or stem 11 with the nut 8 screwed to its seat on the nipple 7, the head or boss 4 being immersed in the lubricant; or the end-cap 2 may be unscrewed and the piston having been retracted, the lubricant may be introduced into its open forward end by a paddle or like implement, after which the cap 2 may be replaced.

The gun having been duly supplied with lubricant and the cap or caps 6 screwed to place with their open ends abutting against the end-cap 2, and thereby determining accurately their respective positions and the amount of space between the closed end of the cap 6 and the head or boss 4, the piston 10 is advanced sufficiently to force into the cap or caps 6 a full charge of lubricant. When a grease cup becomes empty or its supply is depleted, a cap 6 corresponding to the cap member 6^a of the empty or partially empty cup, is unscrewed from the grease gun, the cap 6^a is unscrewed from its base 13, and the two are exchanged, the filled cup containing the precise quantity necessary to fill the space between its closed end and the base 13 when the cap is screwed to its proper initial adjustment on said base.

This result is insured by so proportioning the head or boss 4 of the grease gun as to leave between it and the closed end of the cap 6, a space exactly equal to that between the closed base of the cap 6^a and its base 13, less a slight allowance for a small central mound of lubricant which stands above the top line of the base 13 of the grease cup when the cap member 6^a is removed. By this provision a full supply of lubricant for each cup is insured, and an over-supply which would either prevent the proper initial adjustment of the cup, or necessitate an undue discharge of lubricant therefrom in making the initial adjustment of the cap member upon its base 13, is prevented.

A vent 14 is provided, preferably in the form of a notch or groove in the periphery of the head or boss 4, to permit escape of air when filling the cap 6.

The minor details of construction, such as the manner of forming or attaching the head or boss 4 and the nipple 7, the construction of the piston, and the manner of making up the body and applying the heads of the grease gun may obviously be varied at will, or in other words, any usual construction may be employed. The nipple and threaded piston rod are common features and are not in themselves claimed by me.

In order to wipe off or remove any dust or grit and grease that may adhere to the annular edge or end of the cap 6, I may provide a wiper 15 of felt or other suitable material, carried by a spring arm 16, attached to the fore end of the grease gun, and thus adapted to move back as the cap or cup is screwed to place, or to follow said cap or cup as it is unscrewed. By reason of its resting upon the annular end surface of the cup while the latter is rotated, the wiper will remove all adhering matters therefrom and preclude the carrying of dust, grit or the like into the cap, where, mingling with the grease, it would be delivered to the bearings or journals to which the lubricant is supplied, and would cause serious wear and injury.

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

1. A grease gun comprising, in combination, a hollow cylindrical body provided at one end with a head or boss having a discharge opening; a cap applied to said head or boss and adapted to serve as the cap member of a grease cup; and means for ejecting the contents of said grease gun body and delivering the same into the interior of the cap member.

2. In combination with a grease gun having a discharge head or boss, a plurality of caps interchangeably attachable to and detachable from said head or boss, each capable of use as the cap member of a grease cup.

3. A grease gun provided at its discharge end with a plurality of heads or bosses each having a discharge opening, and each adapted to receive a cap or cover capable of use as the cap member of a grease cup.

4. A grease gun provided at its discharge end with a plurality of heads or bosses each having a discharge opening; a cap for each such head or boss adapted to be used interchangeably with the cap member of a grease cup; and means for effecting connection of the caps with their bosses and with the bases of grease cups, interchangeably.

5. A grease gun comprising a tubular body having a head or boss at one end provided with a discharge outlet; and a cap detachably applied to said head or boss and adapted to serve as the cap member of a grease cup, one of said parts being provided with a vent to permit escape of air when the cap is being filled with lubricant.

6. A grease gun provided at its discharge end with a plurality of heads or bosses each adapted to receive and fit a grease cup.

7. In combination with a grease gun having a discharge opening, and a cap for covering the same, adapted to be used also as the cap member of a grease cup, a wiper arranged to bear against the annular end or edge of said cup, and a yielding support for said wiper, whereby it is adapted to recede as the cap is moved into position on the grease gun, and to follow and maintain contact with said cap as the same is removed.

In testimony whereof I have signed my name to this specification.

WILLIAM H. PUTNAM.