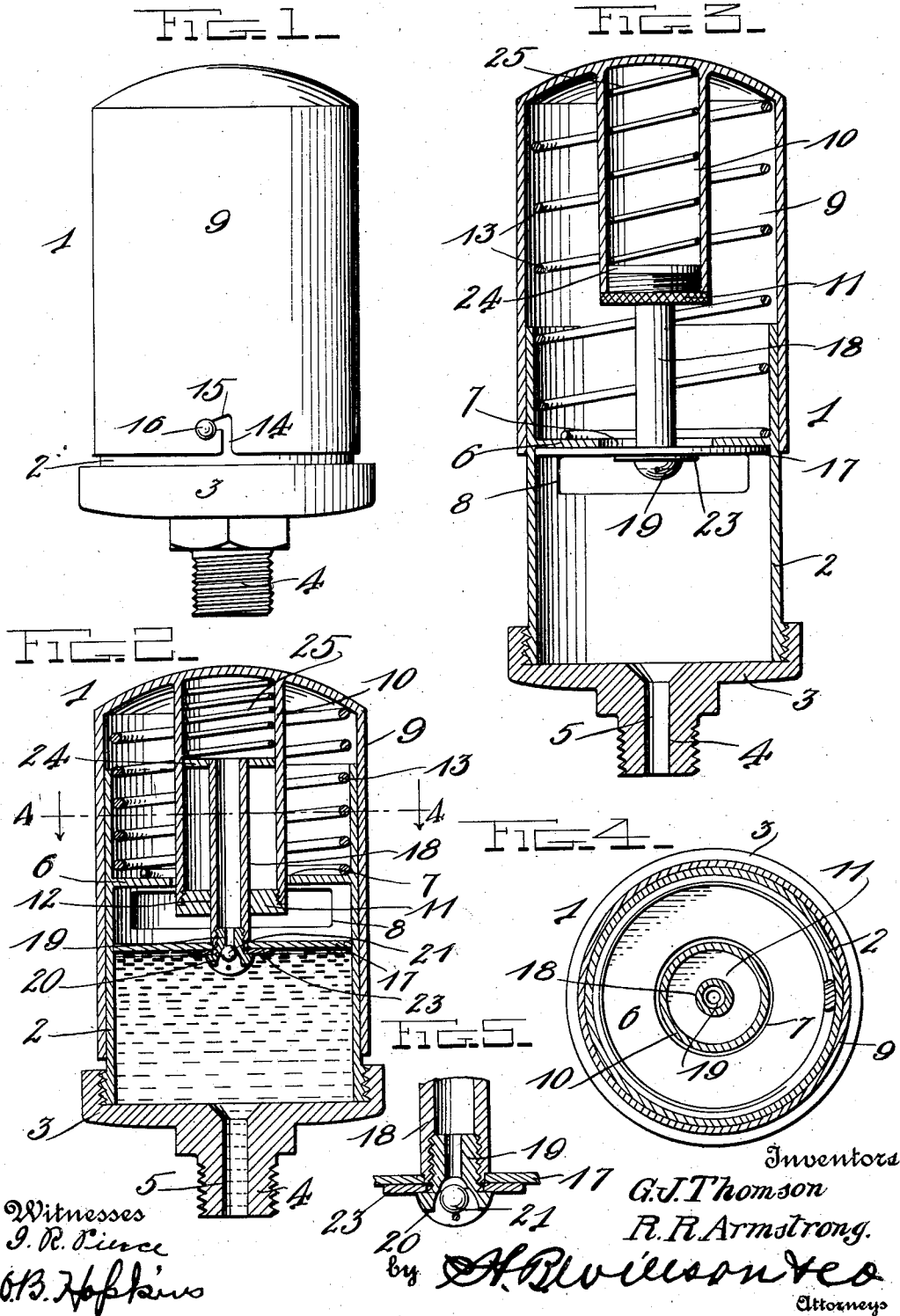


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GREASE CUP.

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UNITED STATES PATENT OFFICE.

GILBERT J. THOMSON AND RICHARD R. ARMSTRONG, OF TERRE HAUTE, INDIANA.

GREASE-CUP.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, GILBERT J. THOMSON and RICHARD R. ARMSTRONG, citizens of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Grease-Cups; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in grease cups.

One object of the invention is to provide a grease cup having an improved construction of automatic feeding mechanism whereby the grease will be uniformly applied in the proper quantities to the parts to be lubricated.

Another object is to provide a grease cup which will be simple, strong and durable in construction, efficient and economical in use and absolutely dust-proof.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a side view of our improved grease cup; Fig. 2 is a central vertical section thereof showing the position of the parts after being filled and when in use; Fig. 3 is a similar view showing the position of the parts for filling the cup; Fig. 4 is a cross sectional view on the line 4-4 of Fig. 2; Fig. 5 is an enlarged fragmentary sectional view of the lower end of the tubular plunger stem and a portion of the plunger showing the arrangement of the air valve in the lower end of the same.

Referring more particularly to the drawings, 1 denotes our improved grease cup, said cup comprising a cylindrical lower portion 2, on the lower end of which is screwed the bottom section 3 having formed thereon a centrally disposed threaded nipple 4

through which and communicating with the cup is a grease discharge port or passage 5. The inner end of the passage 5 is preferably flared as shown to facilitate the passage of the grease therethrough. In the upper portion of the body 2 of the cup is formed a transversely disposed partition 6 having a centrally disposed passage 7 the purpose of which will be hereinafter described. In one side of the body 2 of the cup is formed an elongated filling opening or slot 8 said opening being arranged immediately below the partition 6 as shown.

Slidably engaged with the body portion 2 of the cup is a cylindrical cap 9 the upper end of which is closed and has arranged thereon a depending centrally disposed cylinder 10 which projects down into the cap and is closed at its lower end by a screw plug 11 in which is formed a centrally disposed passage 12.

Arranged in the cap 9 and upper end of the cylinder 2 is a coiled spring 13 the upper end of which engages the upper end of the cap while the lower end is in engagement with the partition 6. The pressure of the spring 13 when thus arranged is exerted to force the cap upwardly on the upper end of the body 2 above the filling opening 8 whereby grease may be introduced into the cup through said opening. After the cup has been filled the cap 9 is depressed against the pressure of the spring 13 and in order to hold the cap in a depressed position, we provide a locking mechanism comprising a notch 14 formed in one side of the cap at its lower end, said notch having at its upper end an offset angular extension 15. When the cap is depressed the notch 14 is adapted to be brought into engagement with a stop pin 16 arranged in one side of the body portion 2 of the cup and when so engaged the cap is turned to engage the offset portion 15 of the notch with the pin thus locking the cap in its depressed position.

Arranged in the body portion 2 of the cup is a plunger 17, said plunger being preferably in the form of a circular plate and is

secured to the reduced lower end of a tubular plunger stem 18 which projects upwardly through the opening 7 in the partition 6 as shown. The stem 18 is secured to the plunger plate 17 by a hollow screw 19 in which is arranged a valve seat 20. With the seat 20 is adapted to be engaged a ball valve 21 the purpose of which will be hereinafter described. Between the head of the screw 19 and the lower side of the plunger 6 is arranged a washer 23. The upper end of the plunger stem 18 projects through the opening 12 in the cap 11 of the cylinder 10 and has on its upper end a piston 24 which is slidably mounted in the cylinder 10 and is adapted to be forced downwardly in said cylinder by a coiled spring 25 which is arranged in the cylinder between the piston and the upper end of the cap as shown.

In the operation of our improved grease cup the cap locking mechanism is released and the spring 13 thus permitted to raise the cap to a position for uncovering the filling opening 8. After the filling opening has thus been uncovered grease is introduced into the cup until the latter is filled even with the lower edge of the opening after which the cap is depressed against the pressure of the spring 13 and is locked in a depressed position in the manner described. In thus depressing the cap the piston projecting spring 25 will be compressed by the downward movement of the cylinder 10 which is lowered when the cap 9 is depressed. The pressure of the spring 25 when thus compressed will be exerted to force the plunger 17 downwardly onto the grease in the body portion of the cup thereby forcing the grease out through the discharge passage in the bottom of the cup and onto the parts to be lubricated. The pressure of the spring 25 on the piston 24 will be continued until all of the grease is forced from the cup after which the same is again uncovered and the cup refilled in the manner described.

By providing the tubular stem 17 and arranging the valve 21 in the hollow screw 19 the air in the upper portion of the cylinder 10 is permitted to escape thus preventing the air from compressing in the upper end of the cylinder and interfering with the depression of the cap 9.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as defined in the appended claims.

Having thus described our invention, what we claim is:

1. A grease cup comprising a body portion having in its lower end a discharge opening and in one side a filling opening, a partition arranged in said cup above said filling opening, a cap slidably engaged with said cup, a plunger arranged in the cup, and a spring projected piston connected with said plunger whereby the latter is operated to force the grease from the cup.

2. A grease cup comprising a body portion having in its lower end a discharge opening and in one side a filling opening, a partition arranged in said cup above said filling opening, a cap having a sliding engagement with said body portion, a spring arranged in said cap and adapted to retract and hold the same in a retracted position, and means to lock the cap in a depressed position, a plunger arranged in said cup, and a spring projected piston connected with said plunger whereby the latter is operated to force the grease from the cup when said cap is in a depressed position.

3. A grease cup comprising a body portion having arranged on its lower end an apertured nipple and having formed in one side a filling opening, a spring projected cap slidably mounted on said body portion and adapted to close said filling opening, a plunger arranged in the cup, a tubular plunger rod connected with said plunger, a cylinder arranged in the upper end of said cap and adapted to receive the upper end of said plunger stem, a piston secured to the upper end of said stem and having a sliding engagement with said cylinder, a spring arranged in said cylinder and adapted to engage said piston whereby the latter is operated to force said plunger downwardly onto the grease in said cup thereby expelling said grease through the apertured nipple on the lower end of the cup.

4. A grease cup comprising a body portion having in its lower end a discharge opening and in one side a feed opening, a cap having a sliding engagement with said body portion to open and close said feed opening, said cap having in its lower edge an offset locking notch, a stop pin arranged in one side of said cup and adapted to be engaged by said notch to hold the cap in a closed position, a spring to retract said cap when released from said locking mechanism, a grease expelling plunger arranged in said cup, a tubular plunger stem, a hollow screw adapted to secure said plunger to said stem, said screw having formed therein a valve seat, a check valve adapted to engage said seat, a cylinder arranged in said cap, an apertured plug adapted to close the lower end of said cylinder and to receive the upper end of said plunger stem, a piston se-

cured to the upper end of said stem and adapted to operate in said cylinder and a spring arranged in said cylinder and adapted to engage said piston whereby the latter
5 is actuated to operate said plunger thereby expelling the grease from the cup when the cap is in a depressed position.

In testimony whereof we have hereunto

set our hands in presence of two subscribing witnesses.

GILBERT J. THOMSON.
RICHARD R. ARMSTRONG.

Witnesses:

FREDERICK B. JONES,
CORNELIUS W. HOWARD.