June 10, 1930. H. J. MURPHY 1,763,062

LUBRICATING APPARATUS

Filed Feb. 11, 1925

Fig. 1.

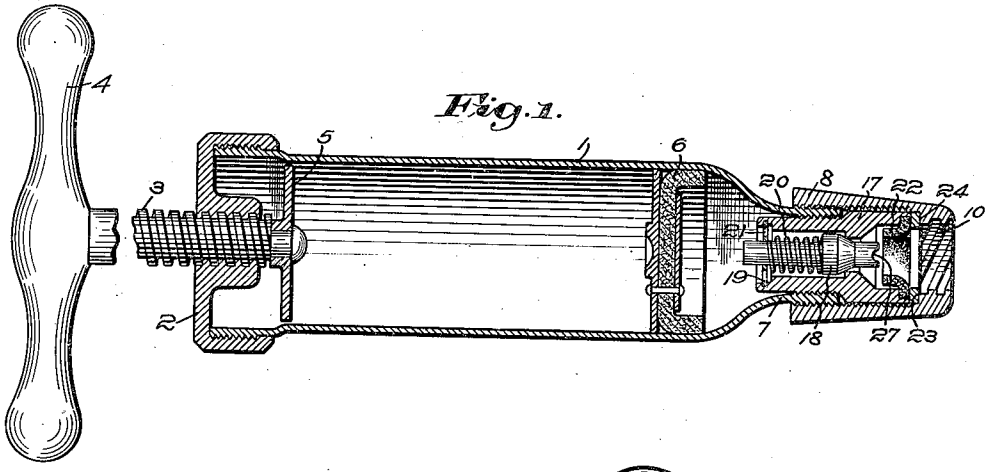


Fig. 2.

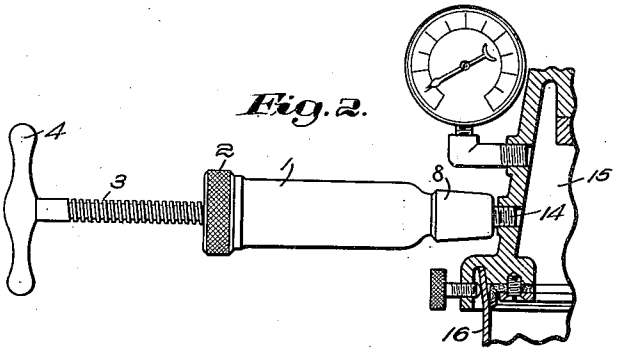


Fig. 3.

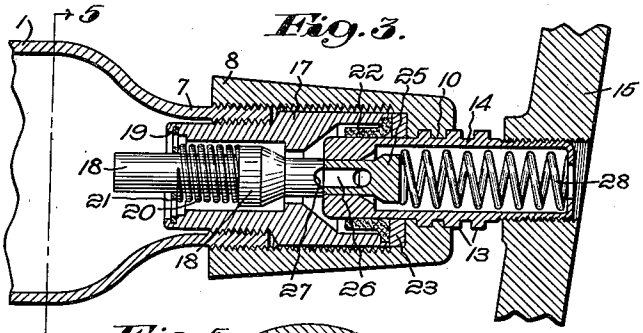


Fig. 4.

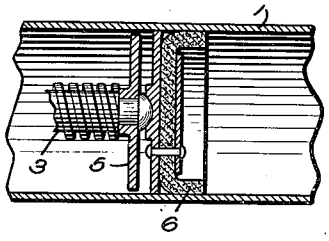
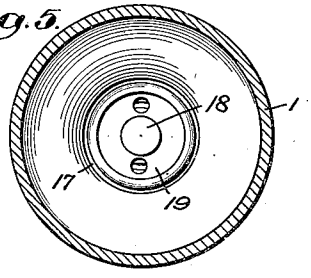


Fig. 5.



Inventor:
Howard J. Murphy.
by Emery Booth Janney & Varney
Attys

Patented June 10, 1930 1,763,062

UNITED STATES PATENT OFFICE

HOWARD J. MURPHY, OF READING, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO ALEMITE CORPORATION, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE

LUBRICATING APPARATUS

Application filed February 11, 1925. Serial No. 8,587.

This invention aims to provide improvements in lubricating apparatus.

In the drawings, which illustrate a preferred embodiment of my invention:—

Figure 1 is a section of a preferred form of lubricant-expelling gun, being partly in elevation;

Fig. 2 includes a reduced side elevation of the gun, as it appears when connected to a device for filling the gun through the nozzle, only a part of which is shown in cross-section;

Fig. 3 is an enlarged section of the discharge end of the gun shown fully engaged with the nipple through which the barrel of the gun is filled;

Fig. 4 is a fragmentary section of the barrel of the gun showing the piston being pushed forward by the stem; and

Fig. 5 is a section on the line 5—5 of Fig. 3, showing the perforations through which the lubricant passes to the nozzle.

Referring to the drawings, I have shown a simplified form of lubricant-expelling gun which may be easily assembled and disassembled and which may be filled with lubricant through the nozzle, without disassembling any of the parts.

The apparatus for filling the gun illustrated in the drawings may be the same as that more fully illustrated and described in my co-pending application Serial No. 8,584, filed herewith.

The preferred form of lubricant-expelling gun includes the usual form of barrel 1 having a rear head 2 into which is threaded a stem 3 having, outside the barrel, a handle 4 for feeding the stem relative to the head 2. Within the barrel, the stem carries a disk 5 which provides a guide for the stem. The plunger 6, which is of the usual form, is separate from the stem. Thus the stem is only used to move the plunger 6 toward the discharge end of the gun to feed the lubricant thereto (Fig. 4).

The discharge end of the barrel 1 is drawn out to a reduced portion 7, which is threaded internally and externally for engagement with the parts of the nozzle. A nozzle sleeve 8 is secured to the external threads as illustrated in Figs. 1 and 3, and presents female coupling threads 10 for coupling engagement with male threads of the lubricant-receiving nipple (not shown) and male threads 13 on the nipple 14 located on the head 15 of the supply tank 16 (Figs. 2 and 3).

A closure valve unit comprising a valve seat part 17, a valve 18, a disk 19 and spring 20, is threaded into the reduced end portion 7. The threads for the valve part may be eliminated, if desirable. This valve unit is completely assembled before assembly with the rest of the gun, the disk forming a seat for one end of the spring 20 and being provided with holes or perforations 21 through which the lubricant may pass.

The usual hat-shaped sealing washer 22 and centering part 23 are held between the outer end of the valve unit and a shoulder 24 back of the female threads 10, as illustrated in Figs. 1 and 3. If for any reason, the valve fails to work, the valve unit may be disassembled from the reduced end portion by first removing the nozzle sleeve 8. The valve unit may then be repaired or a new one inserted in its place, all of which can be effected very easily and quickly without the aid of a skillful mechanic.

Assuming the gun barrel 1 to be empty, as illustrated in Fig. 1, the method of refilling is as follows. First, the stem may be retracted by spinning the handle 4 in a clockwise direction. This may be accomplished by hand or by the use of the device illustrated and described in the above-mentioned application. The relation of parts of the gun will then be as illustrated in Fig. 1. Next, grasp the barrel 1 and engage the nozzle over the end of the nipple 14 presented by the supply tank as shown in Fig. 2. Further turning of the barrel will engage the coupling threads 10 and 13, thereby drawing the gun toward the nipple 14, which engages the end of the closure valve 18 and moves it way from its seat. Before full coupling engagement has been accomplished, the valve 25 in the nipple 14 will be opened and lubricant may then flow through the passage 26 in the end of the valve 25 through the slot 27 in the end

of the valve 18 past the valve seat and through the perforations 21 (Fig. 5) in the disk 19 to the barrel 1. The pressure of the lubricant acts against the plunger 6 to move it toward the rear end of the barrel, thereby permitting the barrel to fill with lubricant. The air in the barrel 1 behind the plunger may be forced out through the threads on the stem with very little resistance, thereby requiring less pressure on the lubricant than when the air has to be forced by the plunger before the barrel may be filled as is the case when the plunger is secured to the stem.

The spring 28, which normally closes the valve 25, is stronger than the spring 20, thus permitting the valve 18 to open before the valve 25 opens, and conversely closing the valve 25 to cut off the supply of lubricant before the closure valve 18 closes.

While I have shown and described a preferred embodiment of my invention, it will be understood that changes involving omission, substitution, alteration and reversal of parts, and even changes in the mode of operation, may be made without departing from the scope of my invention, which is best defined in the appended claims.

Claims.

1. A lubricant-expelling device comprising, in combination, a supply barrel presenting a reduced front end portion, a nozzle sleeve secured to said reduced end portion, said nozzle sleeve having means for making a quick detachable connection with a lubricant receiving nipple and a closure valve unit enclosed by said reduced end portion and said sleeve, said valve unit removable completely assembled from said reduced end portion pursuant to the removal of said nozzle sleeve.

2. A lubricant-expelling device comprising, in combination, a supply barrel presenting an integral reduced front end portion, a nozzle sleeve having means for making a quick detachable connection with a lubricant receiving nipple and secured externally to said reduced end portion and an inwardly opening closure valve unit comprising a valve seat part, a disk secured to one end of said valve seat part and a spring interposed between said disk and said valve normally to close said valve against its seat, said valve unit secured to said reduced end portion and removable therefrom pursuant to the removal of said nozzle sleeve from said reduced end portion.

3. A lubricant-expelling device comprising, in combination, a lubricant supply barrel having at one end thereof a reduced end portion interiorly and exteriorly threaded, a coupling sleeve presenting internal threads engaging the external threads of said reduced end portion, and a completely assembled closure valve unit presenting exterior threads engaging the interior threads of said reduced end portion, said valve unit being protected by said sleeve.

4. A closure valve unit for lubricant-expelling apparatus comprising, in combination, a valve seat part, an inwardly opening valve held against said seat by a spring, and a perforated disk rigidly secured to one end of said valve seat part to provide a seat for one end of the spring, and to hold said spring and valve in assembled relation with said valve seat part in such manner that the valve unit cannot be tampered with.

5. Lubricating apparatus comprising, in combination, a lubricant compressor having a barrel, an imperforate leather sealing plunger reciprocable in said barrel, a metal disc secured at one surface of said plunger having a ball socket formed therein, and a screw handle for advancing said plunger having a ball formed on the end thereof frictionally to engage the socket in the metal disc, said handle being retractable independently of said plunger at all times.

6. Lubricating apparatus comprising, in combination, a lubricant compressor having a barrel with one end adapted to permit ingress and egress of lubricant, an imperforate leather sealing plunger reciprocable in said barrel, a metal disc secured thereto having a spherical depression therein, and a handle provided with a ball on one end frictionally to engage the spherical depression in the metal disc to control the advance of the plunger thereby to cause the egress of lubricant, said plunger being adapted to be automatically moved to the rear of said barrel by the ingress of lubricant when said handle is in a retracted position.

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

HOWARD J. MURPHY.