June 23, 1925. 1,543,505

C. H. MIDDLETON ET AL

GREASE GUN

Filed May 23, 1921

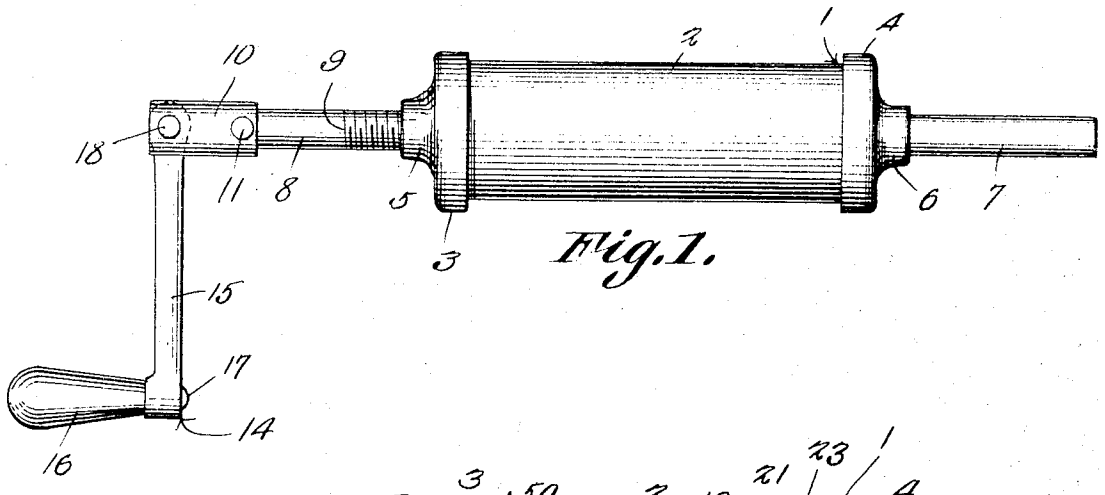


Fig. 1.

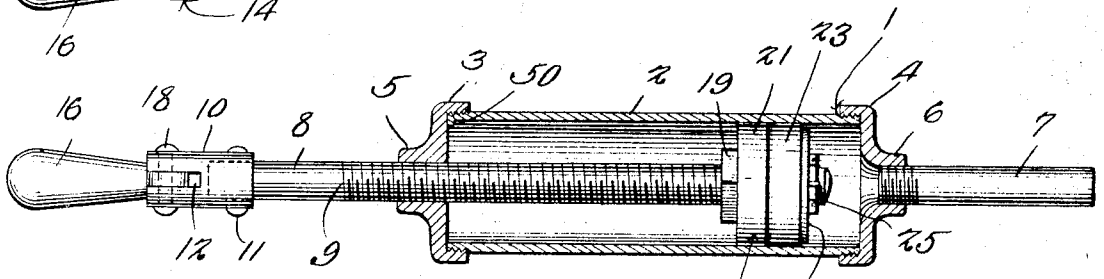


Fig. 2.

Fig. 3.

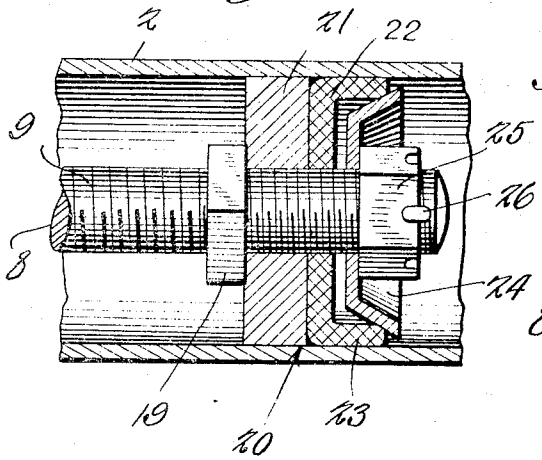
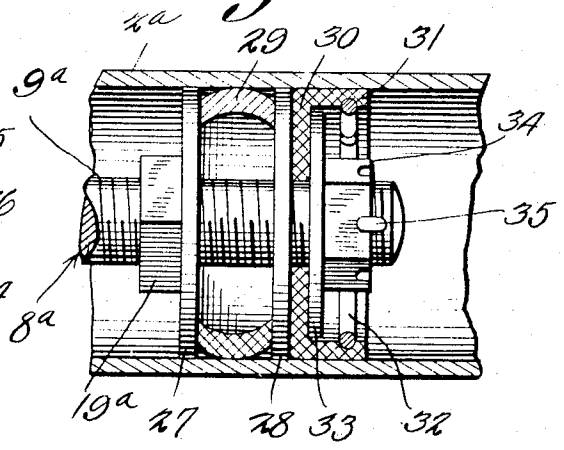


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES H. MIDDLETON AND HARRY A. SELSER, OF CAMDEN, NEW JERSEY.

GREASE GUN.

Application filed May 23, 1921. Serial No. 471,670.

To all whom it may concern:

Be it known that we, CHARLES H. MIDDLETON and HARRY A. SELSER, citizens of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented a new and useful Grease Gun, of which the following is a specification.

The object of this invention is the provision of a piston of new and improved form.

In the accompanying drawings:—

Figure 1 shows in side elevation, a grease gun wherein the invention is used; Figure 2 is a longitudinal section wherein parts appear in section; Figure 3 is a sectional view showng one form of piston; Figure 4 is a sectional detail illustrating a modified form of piston.

The grease gun shown in Figures 1, 2 and 3, includes a barrel 1 comprising a body 2, a rear cap 3 threaded on the body, and a front cap 4 threaded on the body, the rear cap having a neck 5, and the front cap having a neck 6. A nozzle 7 of any desired form is threaded into or secured otherwise to, the neck 6 of the front cap 4.

A plunger 8 is threaded at 9 into the rear cap 3 and the neck 5 thereof. A socket 10 is mounted on the rear end of the plunger 8 and is held thereto by a securing element 11, the socket having a longitudinal slot 12. The numeral 14 designates, generally, a handle including an arm 15 and a grip 16 at right angles to the arm, the grip being attached to the arm by a securing member 17. One end of the arm 15 is received in the slot 12 of the socket 10 and is connected to the socket by a pivot element 18, the construction being such that the arm 15 may be disposed at adjusted angles with respect to the plunger 8. Within the body 2 of the barrel 1, the plunger rod 8 carries an abutment 19, which may be in the form of a nut, threaded for adjustment on the socket.

The piston portion of the gun may be constructed in various ways without departing from the spirit of the invention. As shown in Figure 3, the piston 20 includes a body 21 threaded on the plunger 8 and held against rotation by the abutment 19, the abutment serving as a lock nut. A packing disk 22 is mounted on the plunger 8 and engages the body 21 of the piston, the packing disk having a forwardly presented flange 23, cooperating with the body 2 of the barrel 1. The packing disk may be made out of any suitable material, such, for instance, as leather. A frusto-conical expander 24 is carried by the plunger 8 and engages the flange 23 of the packing disk 22 to force the flange against the body 2 of the barrel. A castle nut 25 is threaded on the plunger 8 and engages the expander 24 to advance the expander with respect to the flange 23 of the disk 22, the castle nut being held in place by a cotter pin 26 mounted in the plunger 8. The body 2 of the barrel 1 may be provided in its interior with a projection 50 adapted to cooperate with the piston 20 in a way which will be described hereinafter.

The particular way in which the gun is to be manipulated will depend upon the taste and desires of the user upon the consistency of the grease, and upon other conditions. It may be desirable to remove the rear cap 3 and to remove the front cap 4, under which circumstances, the plunger 8 and the piston 20 may be drawn backward rapidly, the grease being sucked into the forward end of the body 2 by the piston 20. Then, the caps 3 and 4 may be replaced and the grease may be fed outwardly through the nozzle 7 slowly, by rotating the plunger 8 through the instrumentality of the handle 14, the plunger and the piston 20 advancing, because the plunger is threaded at 9 into the neck 5 of the cap 3. It is clear that, if desired, backward movement of the plunger 8 to suck in the grease, may be brought about by rotating the plunger, rather than by removing the rear cap 3, if desired. Further, the front cap 4 may or may not be removed, depending upon the consistency of the grease. If, as is usually the case, a heavy dope is employed, the nozzle and the cap 4 will be removed. When the plunger 8 is rotated by the handle 14, the arm 15 of the handle may stand at right angles to the plunger, as shown in Figure 1, or the arm may be brought more or less into alinement with the plunger, depending upon the amount of space in which the operator has to work.

In the form shown in Figure 4, parts hereinbefore described have been designated by numerals previously used, with the suffix "a". A disk 27 is mounted on the plunger 8^a and engages the abutment nut 19^a. A disk 28, spaced from the disk 27, is mounted on the plunger 8^a. A compressible, resil-

ient, outwardly convexed packing ring 29 is located between the disks 27 and 28 and engages the inner wall of the body 2^a of the barrel. A packing disk 30 is located on the plunger 8^a and engages the disk 28, the packing disk having a forwardly extended flange 31 bearing against the inner surface of the body 2^a of the barrel. A split expansion ring 32 is located within the flange 31 and tends to press the same outwardly against the body 2 of the barrel. The packing disk 30 is engaged by a retaining plate 33 carried by the plunger 8^a and engaged by a castle nut 34 threaded on the plunger and held thereon by a cotter pin 35.

By advancing the castle nut 34, the disk 28 will be advanced toward the disk 27, the packing ring 29 will be bowed outwardly, and a tight contact between the packing ring and the barrel 2^a will result. The castle nut 34, coacting with the retaining plate 33, serves to bind the packing disk 30 against the disk 28.

Reverting to Figure 2, it will be understood that if the cap 3 is removed, and if the piston 20 is drawn backwardly, the projection 50, cooperating with the body 21 of the piston, will prevent the piston from being withdrawn from the body 2 of the barrel.

I claim:—

In a piston, a plunger; an abutment on the plunger; disks mounted on the plunger, one disk engaging the abutment; an outwardly bowed packing ring located between the disks; and means for advancing the other disk.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

CHARLES H. MIDDLETON.
HARRY A. SELSER.

Witnesses:
WM. A. CHAMBERLIN,
JOHN A. WERNER.