June 9, 1925. 1,540,978

O. E. BARTHEL

GREASE CUP

Filed Feb. 7. 1920

Fig. 1.

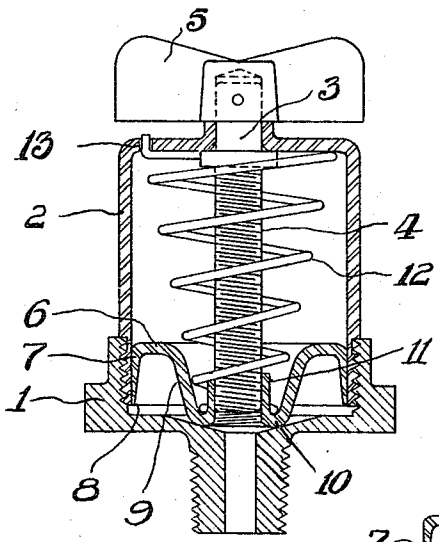
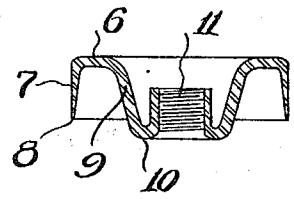


Fig. 2.



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By

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UNITED STATES PATENT OFFICE.

OLIVER E. BARTHEL, OF DETROIT, MICHIGAN.

GREASE CUP.

Application filed February 7, 1920. Serial No. 356,944.

To all whom it may concern:

Be it known that I, OLIVER E. BARTHEL, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Grease Cups, of which the following is a specification, reference being had therein to the accompanying drawings.

In my pending application Serial No. 347,745, filed Dec. 27, 1919, on certain improvements in grease cups, there is disclosed a cup having a novel piston for forcibly and intermittently feeding a lubricant to a bearing or some structural part requiring lubrication. The base of the cup is constructed to provide a stop for the piston, so that feather or knife edges thereof cannot be injured. Instead of providing a special piston stop and casting the piston, I now form a piston from sheet metal cut, pressed and stamped so as to afford feather edges and a central stop portion. Such a piston can be made cheaper than a cast piston and possesses other advantages over my prior invention.

In my prior grease cup there was a tendency of the piston to produce a vacuum in the receptacle or container which caused the piston to bind against its screw or feeding device. In the present construction, it is practically impossible for a vacuum to be produced in the receptacle or container, and the vent to the atmosphere serves as an anchor for a spring forming part of the grease cup.

The present improvements will be hereinafter more fully considered and then claimed, and reference will now be had to the drawing, wherein

Figure 1 is a vertical sectional view of a grease cup in accordance with this invention, and

Fig. 2 is a similar view of a detached piston.

The grease cup comprises a base 1 and detachably connected thereto is an inverted cup shaped receptacle or container 2.

Rotatable in the top of the container 2 is the shank 3 of a screw 4, and said screw shank is provided with a handle 5.

Reciprocable within the container 2 is a piston 6 having a cylindrical wall 7 terminating in an annular feather or knife edge 8, and the central portion of said piston is provided with a depression 9 providing a stop 10 and a concentric interiorly screw-threaded sleeve 11. The depression 9 is of greater depth than the annular wall 7 so that the stop 10 will be in a plane below the plane of the feather edge 8 and thus impinge against the base 1 before the feather edge of the piston can contact therewith consequently there is no danger of the packing or sealing edges of the piston being injured during adjustment thereof. The sleeve 11 is of less depth than the depression 9, and receives the screw 4 so that the piston may be reciprocated by manual rotation of the screw 4.

Encircling the screw 4 is a helical spring 12 which has its large convolution bearing against the top of the container 2 and loosely anchored in an opening or vent 13 in the top of the container. This opening or vent establishes communication between the upper portion of the container 2 and the atmosphere, and prevents a partial vacuum in the container 2 when the piston is shifted towards the base 1 to expel the grease or lubricant on the outer side of the piston.

The small or inner convolution of the spring 12 is frictionally fitted in the depression 9 about the sleeve 11. With the spring constantly exerting a tension on the piston, the threads of the sleeve 11 will bind against the threads of the screw 4 so that the piston may be adjusted by rotating the screw.

What I claim is:—

1. In grease cup formations, wherein the lubricant is forcibly expelled by the travel of a piston axially of the cup, and wherein the piston movements are provided by rotation of a threaded member, a sheet metal piston having a cross-sectional contour such as to provide an annular depression facing the lubricant within the cup, the outer wall of the depression having an external diameter to fit the cup barrel with the length of such wall sufficient to provide an extended contact with such barrel, the inner wall having a length in the general direction of piston axis greater than the depth of the depression, said inner wall being spaced from the threaded member and having a third wall internal of such depression inner wall, said third wall being internally threaded to fit and travel on the threaded member during rotation of the latter, said walls being of integral formation.

2. A piston structure for grease cup for-

mations, said structure being of sheet metal and adapted to operatively co-operate with a threaded member of the grease cup to provide lubricant-expelling activity within the cup, said structure having a cross-sectional contour such as to provide an annular depression within the piston, the side walls of the depression being of extended length in the general direction of the piston axis and integral with a connecting wall forming the bottom of the depression, the bottom wall extending substantially perpendicular to the piston axis with the inner side wall of the depression of greater length in the general direction of piston axis than the outer side wall of the depression, said depression being adapted to face the lubricant in the grease cup assembly.

In testimony whereof I affix my signature in the presence of two witnesses.

OLIVER E. BARTHEL.

Witnesses:

KARL H. BUTLER,

CHAS. W. STAUFFIGER.