No. 843,833. PATENTED FEB. 12, 1907.

C. C. MARTENS.

GREASE CUP.

APPLICATION FILED DEC. 10, 1906.

Fig. 1.

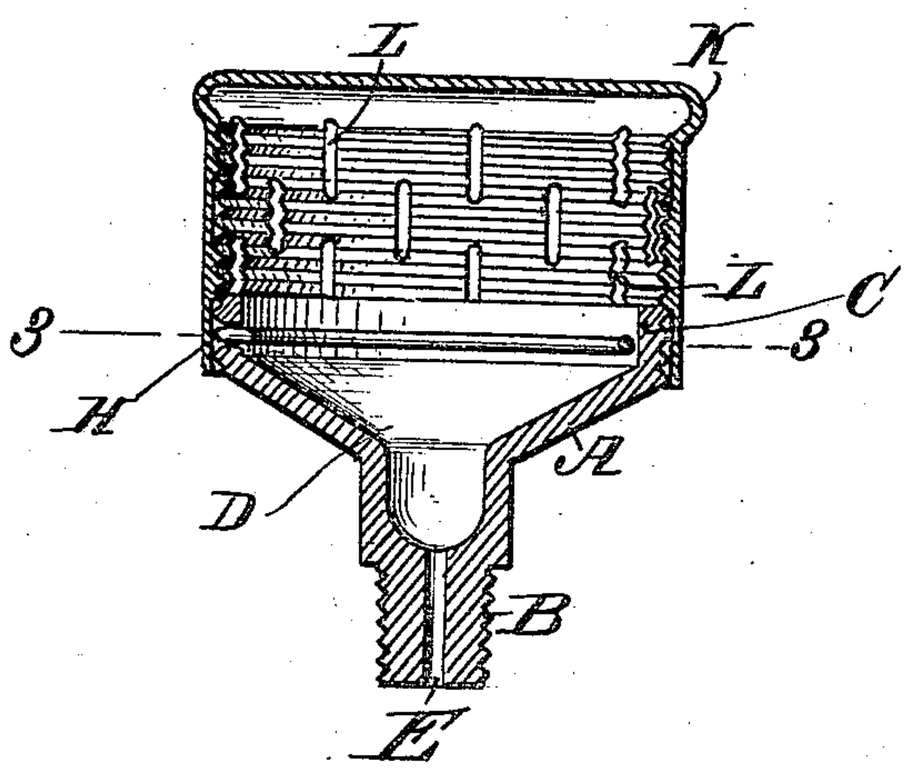


Fig. 2.

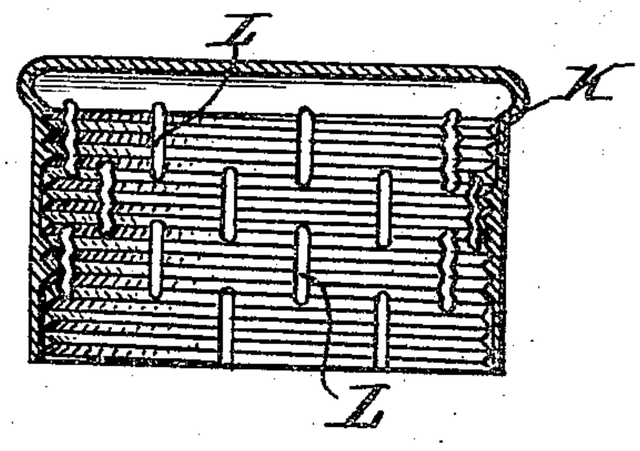


Fig. 3.

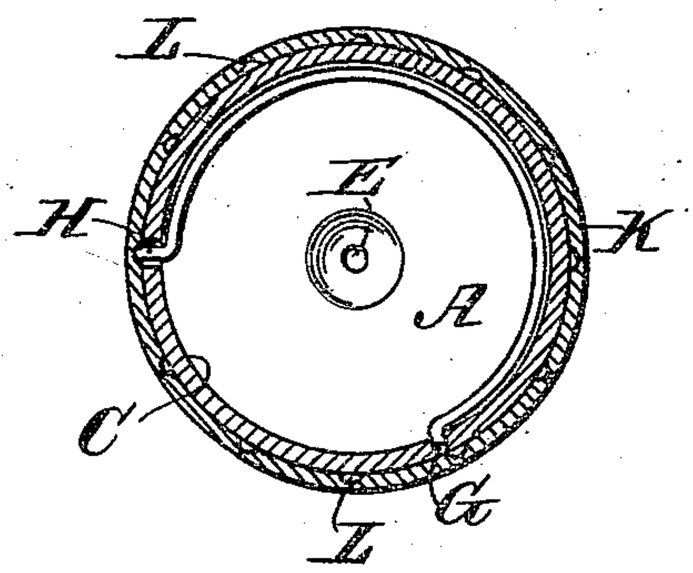
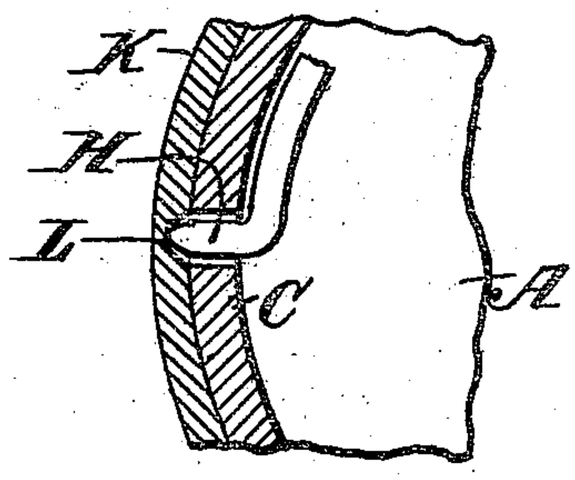


Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

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GREASE-CUP.

No. 843,833. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed December 10, 1906. Serial No. 347,159.

To all whom it may concern:

Be it known that I, CHARLES C. MARTENS, a citizen of the United States, residing in Astoria, Long Island City, county of Queens, State of New York, have invented certain new and useful Improvements in Grease-Cups, of which the following is a full and clear description.

The grease-cups to which my invention particularly refers are known as "compression" grease-cups, and consists of a stationary bottom part screwed into the part to be greased and of a top part or cap which contains the grease and which is internally threaded and screwed down by hand, as the occasion requires it, over the externally-threaded top of the bottom part, thereby compressing the grease and pressing it out through the central bore of the bottom part. When these grease-cups are applied to parts which are subject to strong vibration, it occurs frequently that the top part of the grease-cup is rattled loose, whereby the pressure on the grease is removed and the operation rendered inefficient. Frequently, also, the top is lost as a result of its working loose.

The object of my invention is to remedy these defects, a result which I attain by providing the cup with a locking device or detent arrangement which, while permitting the movement by hand of the cap upon the bottom part, will at the same time act automatically to hold and practically lock the two parts in their adjusted position so firmly as to nullify the effect of vibration. I am aware that it has before been proposed to provide a grease-cup with a device of this general kind.

My invention consists in an improved construction and arrangement of parts for this purpose which can best be explained and understood by reference to the accompanying drawings, in which—

Figure 1 is a vertical axial section of a compression grease-cup embodying my invention in its preferred form. Fig. 2 is a like section of the cover ~~or cap~~ of the cup detached. Fig. 3 is a cross-section on line 3 3, Fig. 1. Fig. 4 is a cross-section ~~on the~~ same line, but on enlarged scale, of a portion of the cup to illustrate clearly the construction ~~and mode~~ of operation of the lock or detent between the cap and base of the cup.

A is the base or stationary part of the grease-cup provided with an externally-threaded shank B, designed to be screwed into the part which is to be lubricated. The part A has an externally-threaded annular rim C and a cored-out portion D, terminating below in a small bore or axial passage E in the shank B, through which the lubricant passes out of the cup.

K is the cover or cap which holds the lubricant. This cap is threaded internally to engage the externally-threaded rim C on the base. By rotating the cap by hand it may be moved upon the threaded rim C up or down, according to the direction of rotation.

To use the cup, the cap K, being first detached from the base, is filled with grease or other lubricant and is then screwed on the rim C of the base. By rotating the cap in the proper direction it will be screwed down upon the base, thus compressing the lubricant and forcing it out through the duct E.

To neutralize or nullify the injurious effect of vibration upon the cup, I provide between the circumferential meeting faces of the cap and base of the cup an automatically-operating spring-yielding detent or lock arrangement or device which, while yielding to permit the movement by hand of the cap upon the base, will at the same time automatically operate to lock or hold together the parts in their adjusted position with sufficient firmness to prevent the cap from jarring loose or being dislodged by vibration.

The detent proper consists of a spring-yielding blunt pin H on the base, which is adapted to engage one of a number of shallow pits, depressions, or grooves L formed in the opposed face of the cap, the grooves or depressions, as seen in Fig. 4, having a V or equivalent cross-section which will give lodgment to the blunt point of the locking pin or detent, ~~but at~~ the same time will permit it to automatically recede and disengage itself therefrom when the cap is rotated by hand. The members L of the detent arrangement are in such number and so located that for any ~~material~~ fraction of a revolution of the cap one of the members L will be brought opposite to the spring-acting detent-pin H.

I prefer, as shown, to mount the pin H upon a curved spring-arm on the inner wall of the externally-screw-threaded rim C, which arm is fastened at one end to the rim,

as at G, and at its other and free end carries the detent-pin H, which passes loosely through a hole in the rim, in which it can play back and forth, and protrudes to the outside slightly beyond the thread of rim C, as more clearly shown in the enlarged section, Fig. 4.

The depressions L for receiving the point of the detent-pin H, I prefer to form as shallow grooves of V cross-section, these grooves, as shown in Figs. 1 and 2, having a length about equal to the height of the rim C and being formed in the interior face of the wall of cap K at about right angles with the thread therein. These grooves are arranged in superposed rows, the grooves in one row being disposed in staggered position relatively to the grooves in the adjoining row and the lower ends of the grooves in the row above extending down slightly below the level of the upper ends of the grooves in the row below, so that at or before the time the cap has been screwed down far enough to carry one row of grooves beyond the detent the next row of grooves will be brought into position to meet the latter. Under this arrangement it will be seen that at almost any fraction of the revolution of the cover one or the other of the grooves will be brought opposite to the point of the detent-pin H. In addition to thus serving as one member of the detent arrangement the grooves, if applied in proper numbers, as indicated, also tend to catch and bind the lubricant and to prevent its running out or exuding between the cap and base under the effects of pressure or heat as readily as it would were the grooves not present.

The length of the grooves L does not exceed the height of the screw-threaded rim C, so that as the cap is screwed down on the base by the time the lower end of any groove passes down below the rim the upper end of that groove will have passed below the top of the rim, thus closing it against the escape of the lubricant. For the same reason the grooves in one row do not communicate with the grooves in the adjoining row or rows.

The operation of the detent device will be understood without detailed explanation. The detent-pin H being spring-yielding will give way sufficiently to allow the cover to be readily rotated by hand upon the base. At a certain fraction of any revolution of the cover, depending upon the number and arrangement of the grooves L, one of these grooves will be brought opposite the detent-pin and the point of the latter will snap into it, and thus lock the cover in place until it is again turned by hand to further compress the lubricant. The spring-pin H engages the groove with force sufficient to hold the cover so that vibration cannot dislodge it nor jar it loose. The detent being practically upon the circumference of the cup is in a position where it will act with the greatest efficiency, and its location between the circumferential meeting faces of the cap and base shields it and puts it well out of the way.

While I have shown and described the preferred embodiment of my invention, I do not limit myself strictly thereto, inasmuch as obviously changes in the form of the elements and in the structural details may be made without departure from the nature and spirit of my invention.

What I claim herein as new, and desire to secure by Letters Patent, is as follows:

1. In a grease-cup, a stationary base provided with an externally-threaded rim, an internally-threaded cap screwing on said rim, a spring-acting detent-pin mounted upon the inside of the base, passing loosely through, and protruding slightly from, an opening in the rim on said base, there being depressions in the interior circumferential screw-threaded face of the cap, the arrangement being such that rotary movement of the cap upon the base will bring one or another of said depressions opposite to the point of the spring-acting detent-pin, in position to be engaged thereby, substantially as and for the purposes hereinbefore set forth.

2. In a grease-cup and in combination with the base and the cap screwing on the base, a spring-yielding detent mounted on and protruding laterally from the base and a series of superposed grooves formed in the meeting face of the cap, extending crosswise of the same and distributed in offset and staggered position thereon for operation in connection with the detent, substantially as hereinbefore set forth.

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

CHARLES C. MARTENS.

Witnesses:
L. KASSANDER,
W. L. ABATE.