

O. A. GRAHAM.

OIL CUP.

APPLICATION FILED DEC. 31, 1910.

1,001,389.

Patented Aug. 22, 1911.

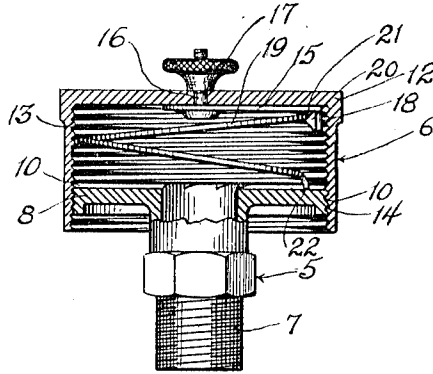


Fig. 1.

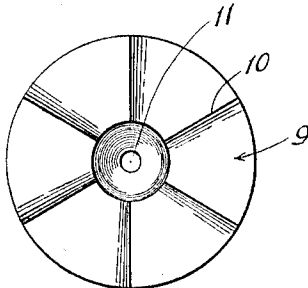


Fig. 3.

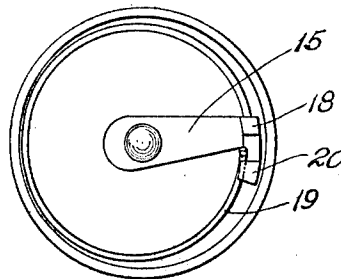


Fig. 4.

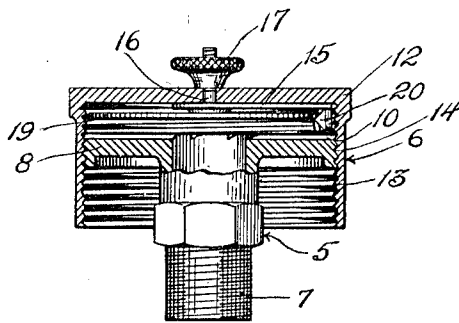


Fig. 2.

Witnesses:

Ephraim Bauning.
Mary A. Frost.

Inventor:

Orville A. Graham.

By *William V. Bauning*
Attorneys.

UNITED STATES PATENT OFFICE.

ORVILLE ALEXANDER GRAHAM, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILLIAM C. GRAHAM, OF CHICAGO, ILLINOIS.

OIL-CUP.

1,001,389.

Specification of Letters Patent.

Patented Aug. 22, 1911.

Application filed December 31, 1910. Serial No. 600,274.

To all whom it may concern:

Be it known that I, ORVILLE A. GRAHAM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Oil-Cups, of which the following is a specification.

The present invention relates to an oil cup such as is used with mechanisms generally for containing a lubricant to be fed to certain of the movable parts.

One object of the present invention is to provide a locking mechanism carried by the cup, which will permit movement of the different sections comprising the cup toward one another, but will prevent movement of said sections away from one another to disassemble the parts.

Another object of the invention is to provide means for rendering this locking mechanism ineffective if it becomes necessary.

A further object is to provide means for automatically moving the locking member out of acting position after the parts have been moved toward one another a predetermined distance. And a further object is to so arrange this locking mechanism that it will not decrease the capacity of the cup or interfere in any way with the passage of the lubricant out from the cup.

The invention further consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is an elevation showing the movable member of the cup in section, with the parts in the position they assume when initially assembled; Fig. 2, a view similar to Fig. 1, showing the movable member advanced to the point where the locking mechanism has been retracted from operative position; Fig. 3, a plan view of the upper face of the fixed section; and Fig. 4, an under face view of the movable member, showing the locking member in its retracted or non-operative position.

In the use of oil cups it has been found that the cap or movable portion which comprises the reservoir for the lubricant will oftentimes become loosened and separated from the fixed portion of the cup. This, of course, destroys all of the utility of the cup and necessitates the frequent replenishing of this portion of the device.

It is the primary object of the present in-

vention to secure the cap to the fixed portion in a manner whereby movement of the cap tending to disassemble it from such fixed position is checked; and hence the cap is locked to the fixed portion in a manner to prevent its becoming loosened and separated therefrom.

For the purpose of illustration, the device is shown employed with an oil cup consisting of a fixed portion 5 and a movable portion 6. The fixed portion consists of a stem 7 adapted to be positioned upon the machine at the point where the lubricant is to be fed onto the operative parts. The stem terminates in a head 8, which, as shown more clearly in Fig. 3, has its upper face 9 provided with a series of teeth 10, which, as shown, are in the form of ratchet teeth; and the head 8 and the stem 7 have a bore running therethrough, which is the channel through which the lubricant passes onto the portions of the machine to be lubricated. The movable section 6 is in the form of a cap 12 having a screw-threaded interior 13, which meshes with the screw-threaded exterior 14 of the head 8, and the interior of the cap 12 acts as a reservoir for the lubricant.

Lying upon the interior of the cap 12 and resting against the upper inner wall of said cap is an arm 15, which is fixedly secured to a screw-threaded stem 16 projecting outside of the cap, and upon which stem is mounted a knurled thumb-screw 17. The arm 16 terminates in a head 18, in which is secured one end of a helically coiled resilient locking member 19; and the head is further provided with a tapered lug 20, which provides a space 21 between the arm and face of said lug, which forms a pocket to receive the acting end of the locking member and maintain it out of operative position, as will be more clearly hereinafter explained.

The free end of the helically coiled resilient member 19 is bent to form a finger 22, which is adapted to travel upon the toothed surface of the head 8; and because of the resilient nature of the coiled member this finger will be constantly maintained in engagement with the teeth of the head 8. And the lodging of this finger 22 into the recesses produced by the formation of the teeth serves to lock the cap 12 against rotative movement about the head 8 in a direc-

tion tending to separate the members from one another.

In practice the device is used as follows: The fixed portion 5 is secured in position on the machine; the cap 12 is filled with lubricant and mounted thereon. After the cap has been advanced a predetermined distance upon the head 8, the finger 22 of the locking member will engage with the teeth 10 upon the outer face of the head 8; and since these teeth are in the form of a ratchet tooth, they will permit of the movement of the cap to further advance it upon the head 8, because during this movement the fingered end 22 will merely ride over the face of the teeth. But when a reverse movement is imparted to the cap, the fingered end will then strike the vertical wall of one of the ratchet teeth and a locking action will result, preventing any further movement of the cap in this direction, which is the direction tending to remove the cap from the head. By this means, after the cap has been initially positioned upon the head, a retraction therefrom is prevented by any jolt or jar or other force or strain tending to remove it from proper position upon the head. It may happen, however, that it is desirable to remove the cap before it has been advanced to its limit of movement upon the head. If this is desired, the knurled thumb-nut 17 is loosened. This permits the arm 15, together with the locking member 19, to remain fixed while the cap is being revolved, in place of the arm being carried with the cap during its revolution, as it would be under normal conditions. A revolution of the cap under these conditions, to remove the cap from the head, is possible, since the locking action caused by the striking of the finger against the face of the teeth is eliminated, so far as it tends to check the movement of the cap, the locking member remaining in fixed position and the cap revolving about it until it has been removed.

When the cap has been advanced upon the head to its limit of movement, the free end of the wire will be forced underneath the lug 18 and into the pocket 21, and when in this position the free end is locked against movement and pressure of the finger against the face of the teeth eliminated. It is understood that when the end of the locking member is forced into the pocket, the movement causing this forcing is produced by the highest surface of the tooth; and since after such insertion the locking member will not be free to move and follow along the face of the teeth and enter the depressed portions of the teeth, where the locking action occurs, the locking member will be thrown out of operative position with respect to the teeth and the cap will then be free to be revolved about the head and removed therefrom. Means are thus provided so that when the

cap has been far enough advanced to force all the lubricant from the interior of the cap, the locking member will be automatically drawn out of operative position and retraction of the cap from the head permitted, so that the supply of lubricant can be replenished.

It is desirable in some instances to give a certain movement to the cap at regular intervals, in order to feed a certain amount of lubricant upon the parts of the machine to be lubricated. In the present instance the distance which the cap is moved can be accurately determined by the click or jar produced by the passing of the finger 22 over the toothed surface of the head 8; and by determining just what amount of lubricant will be fed by the movement of the cap this distance, an accurate feeding of the lubricant can be easily accomplished.

As will be seen from a study of the drawings, the locking member will lie close to the side of the cap, thus not decreasing to any appreciable extent the capacity of the cap nor interfering in any way with the feed of the lubricant.

I claim:

1. An oil cup comprising a fixed member and a movable member, locking mechanism adapted to permit advancement of the movable member onto the fixed member and prevent retraction of the movable member from the fixed member, and means acting automatically for throwing and holding the locking mechanism from acting position, substantially as described.

2. An oil cup comprising a fixed member and a movable member, locking mechanism adapted to permit advancement of the movable member onto the fixed member and prevent retraction of the movable member from the fixed member, and means acting automatically for throwing and holding the locking mechanism out of acting position when the movable member has been advanced a predetermined distance onto the fixed member, substantially as described.

3. An oil cup comprising a fixed member and a movable member, the fixed member being provided with a toothed surface, a resilient locking member, said locking member being positioned to engage with said teeth whereby advancement of the movable member onto the fixed member is permitted and retraction of the movable member from the fixed member prevented, and means acting automatically for throwing and holding the locking member out of engagement with the movable member whereby said movable member may be revolved independent of the locking member and disassembling of the sections permitted, substantially as described.

4. An oil cup comprising a fixed member and a movable member, the fixed member

being provided with a surface formed with a toothed surface, a resilient locking member, said locking member being positioned to engage with said teeth whereby advancement of the movable member onto the fixed member is permitted and retraction of the movable member from the fixed member prevented, and means acting automatically for throwing and holding the locking member in non-operative position after the movable member has been advanced a predetermined distance, substantially as described.

5. An oil cup comprising a fixed member and a movable member, locking mechanism adapted to permit advancement of the movable member onto the fixed member and prevent retraction of the movable member from the fixed member, means for releasing the locking member, and means acting automatically for catching and holding the locking member from engaging position after the movable member has been advanced a predetermined distance onto the fixed member, substantially as described.

6. An oil cup comprising a fixed member and a movable member, said fixed member having a surface provided with a series of ratchet teeth, a helically coiled resilient locking member having one end secured to the movable member, the free end of the coiled member engaging with the teeth on the fixed member, and means acting automatically for releasing and holding said end out of engaging position substantially as described.

7. An oil cup comprising a fixed member and a movable member, said fixed member having a surface provided with a series of ratchet teeth, an arm, means for securing and releasing said arm from said movable member, a helically coiled resilient member having one end secured to said arm, the free end of the coiled member engaging with the teeth on the fixed member, substantially as described.

8. An oil cup, comprising a fixed member and a movable member, the fixed member having a surface provided with a series of ratchet teeth, an arm carried by the movable member and revoluble therewith, the helically coiled resilient member having one end attached to the arm and the other end

engaging the teeth on the fixed member, and a member on the arm cut away to provide a pocket into which the free end of the coiled member is forced after the movable member has been advanced a predetermined distance upon the fixed member, substantially as described.

9. An oil cup, comprising a fixed member and a movable member, the fixed member having a surface provided with a series of ratchet teeth, an arm carried by the movable member and revoluble therewith, the helically coiled resilient member having one end attached to the arm and the other end engaging the teeth on the fixed member, and a member in the form of a lug having a beveled upper face and a beveled lower face, and providing a pocket into which the free end of the coiled member is forced after the movable member has been advanced a predetermined distance upon the fixed member, substantially as described.

10. An oil cup comprising a fixed member and a movable member, the fixed member being provided with an undulating surface, a helically coiled resilient member attached to the movable member and having its free end in engagement with the undulating surface of the fixed member, the movable member being provided with a pocket into which the free end of the coiled member is forced after the movable member has been advanced a predetermined distance upon the fixed member, substantially as described.

11. An oil cup comprising a fixed member and a movable member, the fixed member having a surface provided with a series of teeth, an arm carried by the movable member, a helically coiled resilient member having one end attached to the arm, and its free end engaging the teeth on the fixed member, said arm being provided with a lug having a beveled upper face and a beveled lower face, and providing a pocket into which the free end of the coiled member is forced after the movable member has been advanced a predetermined distance upon the fixed member, substantially as described.

ORVILLE ALEXANDER GRAHAM.

Witnesses:

WILLIAM C. GRAHAM,

WM. P. BOND.