

March 4, 1930.

E. W. McGHAN

1,749,255

CLOSURE LOCK

Filed Oct. 13, 1928

FIG. 1.

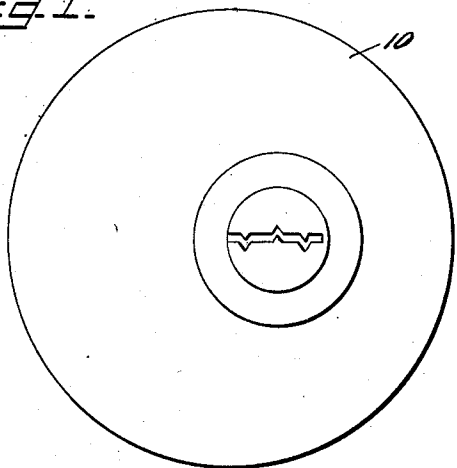


FIG. 2.

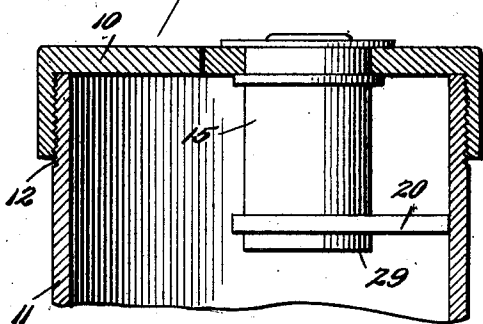


FIG. 3.

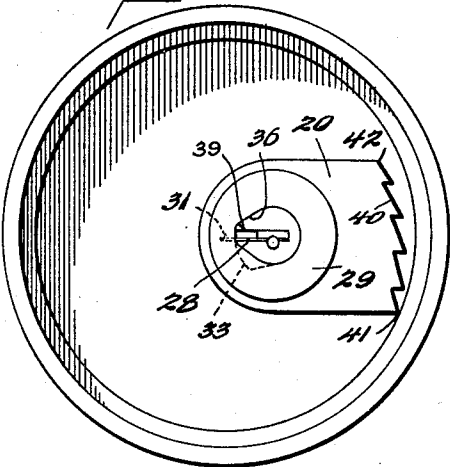


FIG. 4.

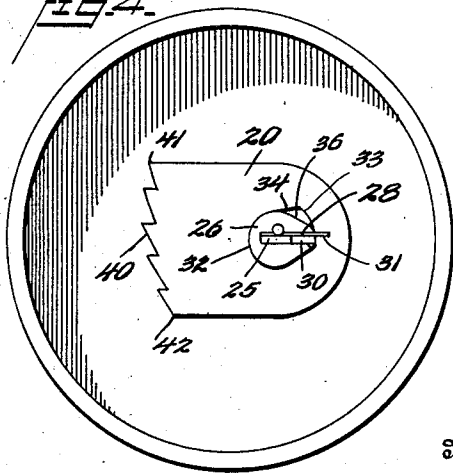
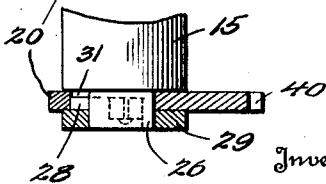


FIG. 5.



Inventor

Elmer W. McGhan

By

H. H. Snelling
Attorney

UNITED STATES PATENT OFFICE

ELMER W. MCGHAN, OF SALT LAKE CITY, UTAH

CLOSURE LOCK

Application filed October 13, 1928. Serial No. 312,348.

This invention relates to theft preventing devices and has for its particular object the provision of a simple, inexpensive means for preventing unauthorized removal of a closure 5 that is revolved to secure access to the contents of the container which it closes, whether or not the closure is actually removed from the receptacle or not.

A further and important object of the invention lies in the provision of a device which can readily be attached to the cap of a gasoline tank permitting the cap to be screwed on further after the device is placed in locking position but wedging the cap to the container 15 should an attempt be made to unscrew the cap while the lock is in operative position.

While thefts of gasoline from the tanks of automobiles are generally of small volume and usually with the thought of using the stolen fluid for a joy-ride, for example, rather than for the purpose of sale, the practice is most annoying and in total amounts to a very considerable figure. I propose to furnish a simple device which may be installed if necessary by the purchaser in the cap of his own gasoline tank but usually the locks are to be assembled in standard caps at our factory and sold as a unit. The caps naturally may either fit an automobile tank, a stationary or 30 a ground tank or any other container where a lock of the type is needed. While in practice I have not adapted my invention as yet to other uses I wish it distinctly understood that the invention is not limited by the specific showing here made but is to be considered as limited only as defined by the claims.

In the drawings:—

Figure 1 is a top plan view of a cap embodying my invention.

Figure 2 is a side elevation.

Figure 3 is a bottom plan view.

Figure 4 is a plan on a larger scale of the cam and wedge.

Figure 5 is a view showing the cam and 45 washer in section.

While the cap 10 is illustrated as being of a particular type (Studebaker) fitting a neck 11 exteriorly threaded as at 12, the invention contemplates the use of the device as well 50 with containers in which the neck is threaded

interiorly or as in the case of some automobiles not threaded at all and requiring merely a 90° turn to free it from the neck, as for example, in the Chevrolet.

The barrel 15 of the lock is offset from the center line of the cap so that the cam 20 when in unlocked position will be spaced a quite appreciable distance from the inside wall of the neck 11 but in locking position as shown in all of the figures except Figure 4 is held by 60 a spring 28 in engagement with the wall of the neck.

I have illustrated the lock as one in which the movement of the cylinder is always clockwise, the key being insertable into the lock and removable therefrom at diametrically opposite points usually called 0° and 180°. Other types of lock are, however, equally appropriate including the rather common lock in which the key is insertable only in one position and the cylinder moves forward and backward thru a given arc and in which the cam is usually spring-pressed into active locking position at all times save when the key is in the lock and held to the end of its movement. 75

Referring particularly to Figures 4 and 5, 26 is a projection from the revolving cylinder of the lock preferably integral therewith, which may be termed a shaft since it furnishes fixed support for the spring 28 and the washer 29, and limited pivotal support for the cam 20. The extended portion 26 of the lock cylinder is slotted as at 30 to provide for movement of spring 28 held in such slot by the wedge 25. The free end of spring 28 has resilient movement riding loosely in a slot 31 in the cam 20, this slot being in communication with the opening in the cam, such opening having opposed arcuate sides 32 and 33 80 joined by slightly converging straight walls which engage the sloping walls 36 of the shaft 26. A corner of the cylinder is also cut off as at 39 to allow further play.

In Figure 4 the cam is in unlocked position and the spring 28 therefore holds the cam alined with the projection 25. In this figure the serrated or roughened portion 40 of the cam can be turned to the right until the right hand straight side 34 of the cam opening en- 100

gages the straight side 36 of the shaft but cannot be turned in the opposite direction, i. e., to the left as seen in this figure. The arc of the cusps or points of the serrations of the cam is struck from a point to the right of the axis of the revolving cylinder as seen in this figure and consequently the cusp 41 is located at a greater distance from such axis than is the cusp 42, therefore the cusp 41 will engage the inside wall of the gas tank neck first and will arrest movement of the cam while permitting a further movement of the shaft. Since this figure is a bottom plan view the cam and locking cylinder move in a counter-clockwise direction. The washer 29 serves merely to prevent axial movement of the toothed cam 20.

In operation the parts will be in the position as shown in Figure 4 when the cap is unlocked. In such position the cam will be directed somewhat more than 180° away from its point of contact with the gas tank neck wall and will be spaced from the wall at its nearest point, a distance well sufficient to clear any obstruction as, for example, the inside shoulder of the neck of the tank often present. The cap, after the tank has been filled, is screwed on a short distance and then the key may be turned to move the parts to locking position. Further rotation of the cap 10 to screw it on the neck 11 will meet very slight opposition as the spring 28 will readily yield to permit the cusp or tooth point 41 to clear the neck. Should an attempt be made to move the cap in the opposite direction, however, the teeth would bite into the metal of the neck for the path of the teeth when rotated on the shaft by engagement with the wall extends beyond the confine of the inner surface. Such action would, therefore, wedge the teeth into the neck and firmly against the shaft preventing reverse rotation of the cap after a few degrees of angular movement.

What I claim is:

1. In a rotating closure lock, a locking barrel having a key controlled cylinder, a cam secured to the rotating cylinder but having relative rotation therewith, said cam having a series of teeth at its free surface, said teeth being struck on an arc having its center offset with respect to the center of the cylinder.

2. A lock for preventing reverse rotation including a lock barrel, a lock cylinder having angular movement therein, a serrated cam secured to the lock cylinder to prevent axial movement of the cam while permitting a degree of angular movement of the cam, and spring means yieldingly holding the cam in fixed angular relation to the lock cylinder.

3. In a device for preventing relative rotation, a lock having a barrel and a revolving cylinder, a shaft extending from said cylin-

der having a cylindrical surface and a plurality of plane surfaces, a cam mounted on said shaft in constant engagement with the cylindrical portion and movable on the shaft so as to engage alternately the two plane sides of the shaft.

4. The device of claim 3 in which the cam is spring-pressed into contact with one of the plane sides of the shaft.

5. The device of claim 3 in which the cam has a roughened surface one portion of which is spaced further from the axis of the cylinder than the other portions.

6. The device of claim 3 in which the cam has a roughened surface struck from a radius the center of which is offset with respect to the axis of the shaft and in which a spring means yieldingly holds the cam at one limit of its angular travel.

7. In a device for preventing theft from a container having a cap which has angular movement, a cylinder lock fast to the cap to one side of the cap axis, a cam pivoted to the cylinder of the lock so as to have limited angular play, means yieldingly holding the cam in chosen angular relation to the cylinder, said cam having a roughened surface to engage a wall of the container to prevent reverse rotation of the cap.

8. In a device for preventing theft from a gasoline tank having a neck normally closed by a cap which must be rotated to secure access to the container, a key operated revolving cylinder lock secured to the cap slightly offset from the center thereof, a serrated edge cam secured to the revolving cylinder of the lock preventing axial movement of the cam while giving it definitely limited angular movement, a spring yieldably holding the cam against angular movement with relation to the cylinder, said cam wedging the cap to the container neck upon reverse rotation of the cap while the device is locked.

9. In a device for preventing theft from a container having a screw cap, a cylinder lock secured to the cap to one side of the center of the lock, a cam pivoted to the revolving cylinder of the lock so as to have limited angular play, spring means yieldably holding the cam in definitely angular relation to the cylinder, said cam having an arcuate serrated edge engaging the container when the cap is locked of such form as to wedge the cap to the container when the cap is moved in a direction to remove the cap.

In testimony whereof I affix my signature.
ELMER W. McGHAN.