

May 8, 1934.

J. A. REASONER

1,958,019

TANK CAP LOCK

Filed Nov. 1, 1932

Fig. 1.

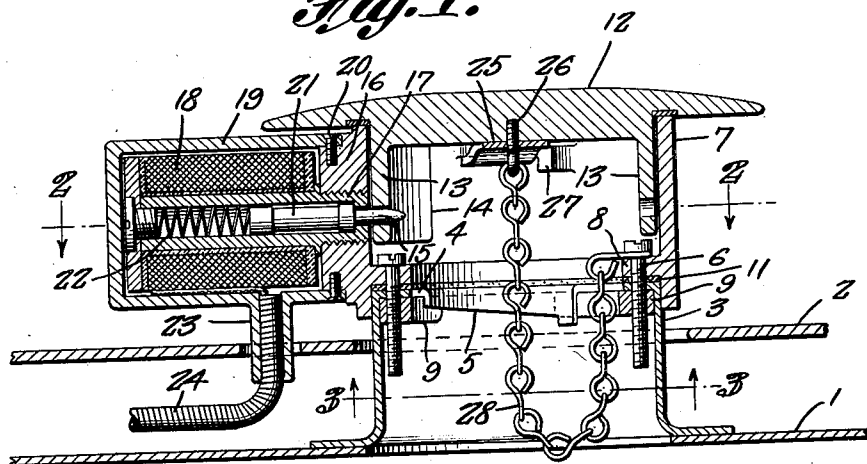


Fig. 2.

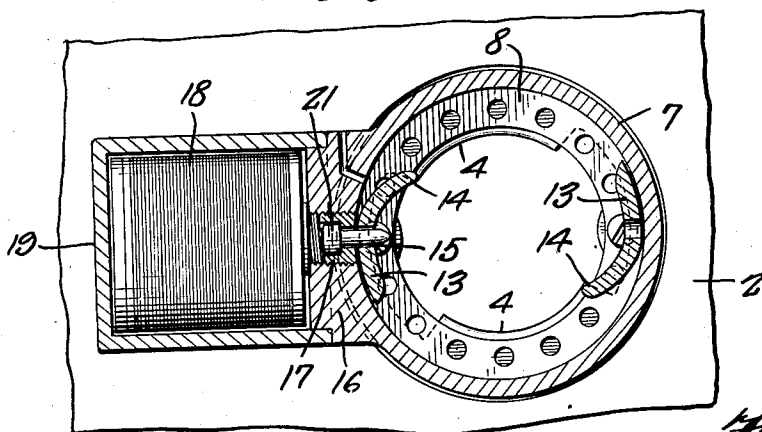


Fig. 3.

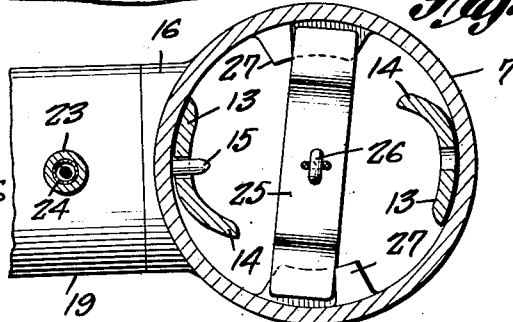
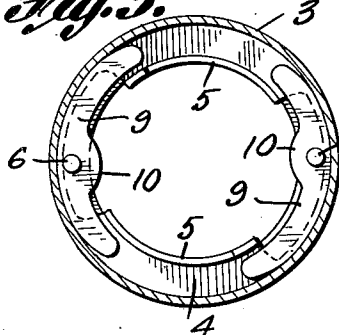


Fig. 4.

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WITNESS:

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UNITED STATES PATENT OFFICE

1,958,019

TANK CAP LOCK

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Application November 1, 1932, Serial No. 640,689

2 Claims. (Cl. 70—50)

This invention relates to tank cap locks of the character set forth in my U. S. Letters Patent granted March 8, 1932, and numbered 1,848,976 and has for the primary object, the provision of means whereby the device may be easily and quickly applied to a filling neck of a tank already in use and which will be prevented from removal as long as the filling cap is locked in tank-closing position.

Another object of this invention is the reduction of number of parts of the locking means for the cap and the manner in which it is protected to prevent unauthorized removal or tampering with.

With these and other objects in view this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawing, in which

Figure 1 is a vertical sectional view illustrating a tank cap lock constructed in accordance with my invention and applied to the neck of a tank.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view illustrating the locking of the cap in tank closing position.

Referring in detail to the drawing, the numeral 1 indicates a tank for the storage of fluid and primarily employed as a fuel source upon a motor vehicle. The tank is protected and concealed from view by the usual apron 2 apertured to permit the filling neck 3 of the tank to extend therethrough. The filling neck 3 is of the conventional type employing the usual retaining flanges 4 arranged oppositely to each other and provided with cam faces 5. To apply my invention to the filling neck 3, the flanges 4 are apertured to receive fasteners or bolts 6 forming part of the attachment.

A sleeve or housing 7 is provided with an internal flange 8 adjacent one end and is adapted to rest on the upper end of the filling neck 3 with the latter received within the sleeve or housing. The fasteners 6 are carried by the flange 8 and extend through the openings in the flanges 4 and have threaded thereto arcuately curved locking elements 9, the ends of which underlie the flanges 4, as shown in Figure 3. Enlargements 10 are formed on the locking elements 9 to prevent withdrawal of the ends of the lock-

ing elements from under the flanges 4 by rotating the sleeve or housing 7 relative to the filling neck 3. The projections or enlargements 10 form stops to engage the ends of the flanges 4, thereby preventing the withdrawal of the locking elements from under the flanges should an attempt be made by turning the sleeve or housing 7 relative to the filling neck 3. By drawing the locking elements 9 tightly against the flanges 4, the flange 8 will be forced tightly against the flanges 4 to seal the sleeve or housing to the filling neck. If desired, a suitable gasket 11 may be interposed between the flange 8 and the flanges 4.

A cap 12 is employed for closing the housing or sleeve 7 and has formed integrally therewith depending apertured ears 13 received within the housing or sleeve 7. The ears 13 are curved or offset, as shown at 14, to abut the ends of the flanges 4 so as to align the opening or aperture of one of the ears with a locking plunger 15. The plunger 15 when extending through the aperture of one of the ears, the cap 12 is then locked to the sleeve or housing 7.

An enlargement 16 is formed on the housing or sleeve 7 and is provided with a screw threaded opening to receive the attaching portion 17 of a solenoid 18. A casing 19 encloses the solenoid and is secured to the projection 16 by screws or like fasteners 20. One of the fasteners 20 is disposed adjacent the apron or shield 2 while the other fastener is overlaid by the cap 12, consequently preventing an unauthorized person from removing the casing 19 to expose the solenoid when the attachment is applied to the tank 1. The plunger 15 is formed integrally with the core 21 of the solenoid, the core being urged in one direction by a coil spring 22. The normal action of the spring 22 is to position the plunger 15 through the aperture in one of the ears 13 and when the solenoid is energized the core 21 is moved against the action of the spring, withdrawing the plunger 15 from the respective ear 13, freeing the cap so that the latter may be removed. A tubular extension 24 is formed on the casing and extends through an opening in the apron 2 for the purpose of protecting the electrical conductors 24 entering the casing 19 to the solenoid 18. The conductors 24 are connected to an electrical source and a control switch suitably located in the motor vehicle whereby the driver may at any time desired energize the solenoid 18 for releasing the cap 12 for the purpose of permitting the tank 1 to be filled with fuel or other liquid.

A retaining strip 25 is secured to the cap 12

by a fastener 26 and the ends are offset to ride under lugs 27 formed on the housing or sleeve 7 for retaining the cap in tank-closing position. When the ends of the strip 25 are in engagement with the lugs 27, one of the ears 13 is positioned so that the aperture thereof aligns with the plunger 15.

A flexible element or chain 28 has one end secured to the cap 12 by the fastener 26 and the other end attached to the housing or sleeve 7 by one of the fasteners 6 to prevent loss of the cap when the latter is removed from the housing or sleeve.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of my invention, as claimed.

Having described the invention, I claim:

1. A cap lock comprising a hollow sleeve having one end threaded for connection to a cap

support, an internal shoulder in one end of the sleeve, a solenoid supported by said sleeve, a spring pressed core in said solenoid and moved in one direction by the solenoid, a reduced extension on the core and slidable through the shoulder to engage a cap, and a closure for the solenoid, and secured to the cap support to prevent detachment of the sleeve therefrom.

2. A cap lock comprising a hollow sleeve having one end threaded for connection to a cap support, an internal shoulder formed in one end of the sleeve, a solenoid supported by said sleeve, a core slidable in said sleeve and moved in one direction by the solenoid, a spring urging the core to engage the shoulder, means to adjust the tension of the spring, a reduced extension on the core and slidable through the shoulder to engage a cap, and a closure for the solenoid and secured to the cap support to prevent detachment of the sleeve therefrom.

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25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150