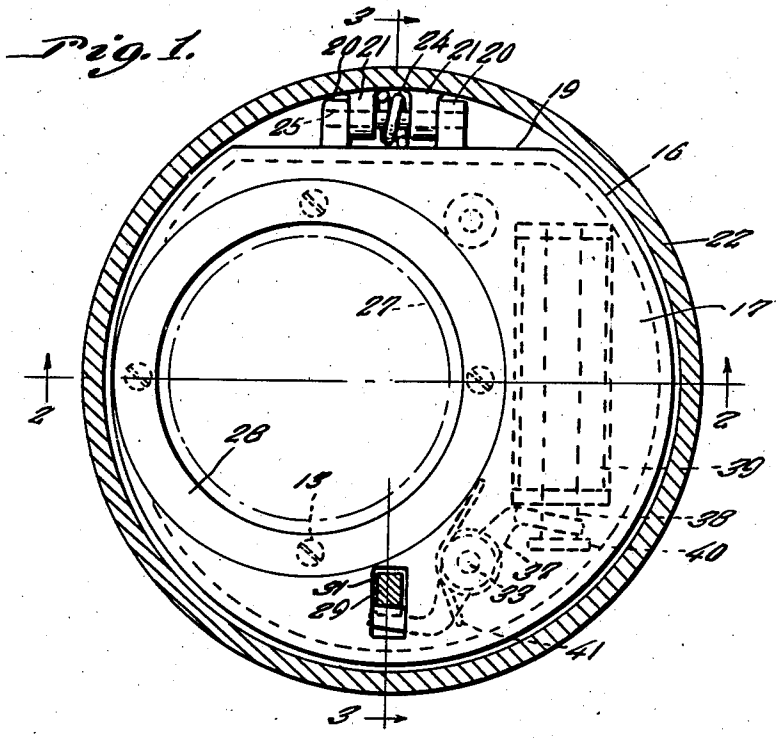
May 25, 1937. H. C. STEELE 2,081,717

TANK CLOSURE

Filed April 21, 1936 2 Sheets-Sheet 1

Fig. 1.



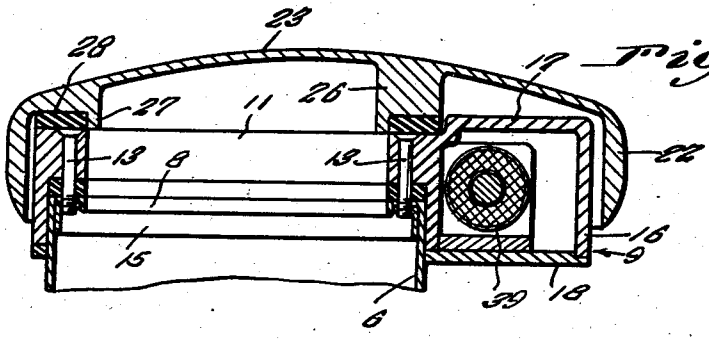
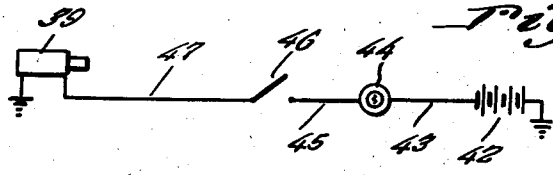


Fig. 2.

Fig. 7.



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Filed April 21, 1936 2 Sheets-Sheet 2

Fig. 3.

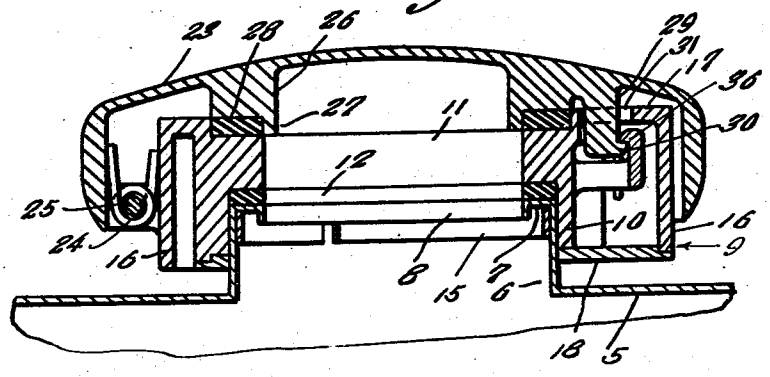


Fig. 4.

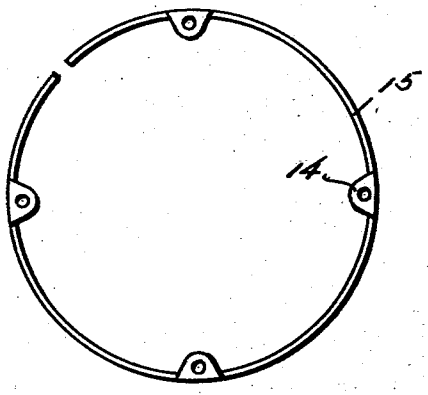
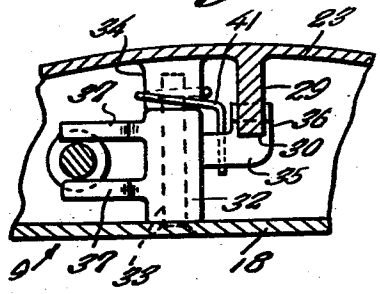


Fig. 5.



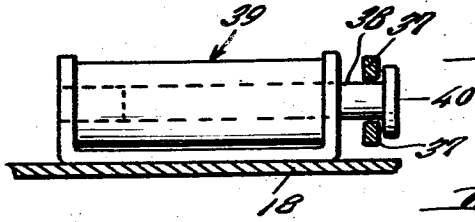


Fig. 6.

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TANK CLOSURE

Harry C. Steele, Ashland, Ky.

Application April 21, 1936, Serial No. 75,605

1 Claim. (Cl. 292—201)

The present invention relates to new and useful improvements in closures and more particularly to a tank closure.

The principal object of the present invention is to provide a tank closure such as are employed on automobile gasoline tanks, with means whereby it can be locked and unlocked from a remote control point without any inconvenience to the operator.

Another important object of the invention is to provide a tank closure equipped with spring and lock means, through the use of which, and in conjunction with electrical means, can be unlocked and automatically opened by remote control.

These and various other important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawings:—

Figure 1 represents a horizontal sectional view through the cap.

Figure 2 is a fragmentary vertical section on the line 2—2 of Figure 1.

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

Figure 4 is a plan view of the spring ring.

Figure 5 is a fragmentary vertical sectional view through the latch means of the closure.

Figure 6 is a fragmentary detailed sectional view showing the solenoid.

Figure 7 is a diagrammatic view showing the electrical connection between the electrical devices employed.

Referring to the drawings wherein like numerals designate like parts, it can be seen that numeral 5 denotes a tank, such as a gasoline tank, provided with the filler neck 6 at the top thereof.

This neck 6 is provided with an inturned flange 7 having a depending peripheral lip 8.

Numeral 9 generally refers to the control means on the neck and this includes a substantially annular shell disposed eccentrically around the neck 6 and having the inner wall 10 thereof provided with a circumferentially extending internal shoulder 11 for disposition over the flange 7 of the tank neck 6. A packing gasket 12 is interposed between the shoulder 11 and the flange 7, and bolts 13 are disposed vertically through the shoulder 11 and the flange 7 as well as the packing 12, and these bolts 13 depend downwardly through the apertured ears 14 on the spring ring 15 and are equipped with nuts if desired, or simply threaded through the ears 14.

The shell of the means 9 also includes the outer wall 16 as well as the top and bottom walls 17 and 18.

As is shown in Figure 1, a portion of the side wall 16 is cut off on the plane 19 and outwardly from this extends a pair of hinged ears 20—20 between which are disposed the ears 21—21 on the apron portion 22 of the cap 23. A spring 24 coiled on the hinge pin 25, which is disposed through the ears 20—21, has one end portion bearing against the skirt 22 of the cap and the other end portion bearing against the wall 16.

The cap 23 has a depending annular shoulder 26 which at its inner peripheral portion has a circumferentially extending and depending lip 27, which over-rides the packing gasket 28 located upon the shoulder 11. (See Figure 3.)

Numeral 29 represents an integral keeper depending from the cap 23 and provided with the lip formed head 30. This keeper 29 depends through the opening 31 in the top wall 17 of the shell 9.

The latch consists of the sleeve 32 rotatable on the upstanding pin 33 in the shell 9, this pin 33 extending from the bottom wall 18 into the boss 34 depending from the cap 23.

The sleeve 32 has an arm 35 extending laterally therefrom and provided with an upstanding lip-formed head 36 complementary to the head 30.

The sleeve 32 also has a pair of arms 37—37 in the nature of a yoke, straddling the armature 38 of the solenoid 39.

The armature 38 has a head 40 for action against the forked arms 37—37. A wire spring 41 is interposed between the boss 34 and the latch arm 35 (see Figure 5) for normally maintaining the heads 30—36 engaged.

In Figure 7, numeral 42 represents the usual battery of an automobile electrical system from which the lead 43 extends to the ignition switch 44 and from this switch the conductor 45 extends to the cap controlling switch 46 and from there by way of the conductor 47 to the electromagnet 39.

Obviously by closing the switch 46, the armature 38 is drawn in upon the energization of the solenoid 39, causing the head 40 to pull inwardly on the forked arms 37, swinging the sleeve 32, so as to disengage the head 36 from the head 30 and thus permitting the spring 24 to throw the cap 23 upwardly to an open position. Thus the cap can be disposed to open position without the driver leaving his seat, and this is very

convenient when pulling into a gasoline station, since it saves the driver the trouble of getting out of the car and opening a locked gasoline tank cap so that the station attendant can place gasoline in the tank.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

Having described the invention, what is claimed as new is:—

A lock closure for the filler necks of tanks comprising a hinged closure mounted on the neck, a housing disposed around the neck and over which the closure is disposed, an electromagnet mounted in the housing, said electromagnet being provided with a movable core provided with an outstanding shoulder at its outer end, a hook member depending from the closure into the housing, a horizontally rockable latch assembly, said latch assembly consisting of a horizontally rotatable member provided with a yoke projecting laterally therefrom and engaged with the magnet core inwardly of its shoulder, said horizontally rotatable member provided with a laterally extending arm provided with a lip at its free end for engagement with the depending hook member.

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