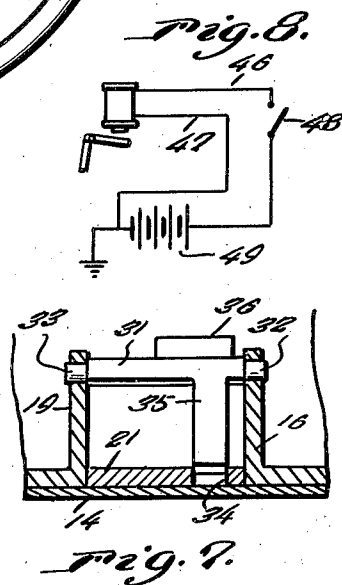
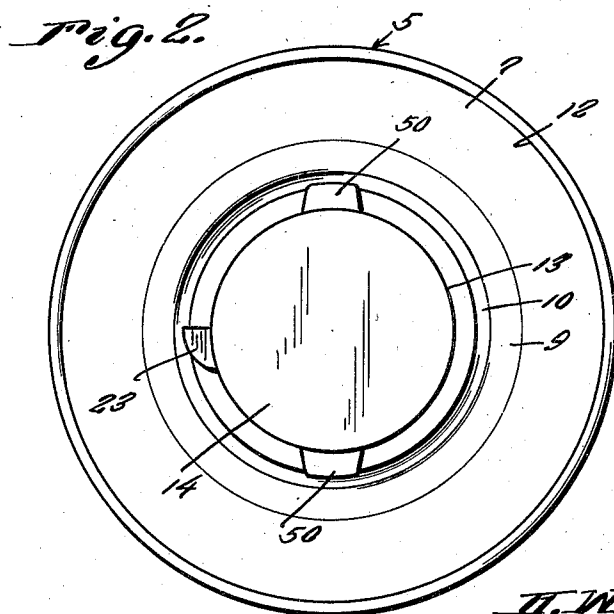
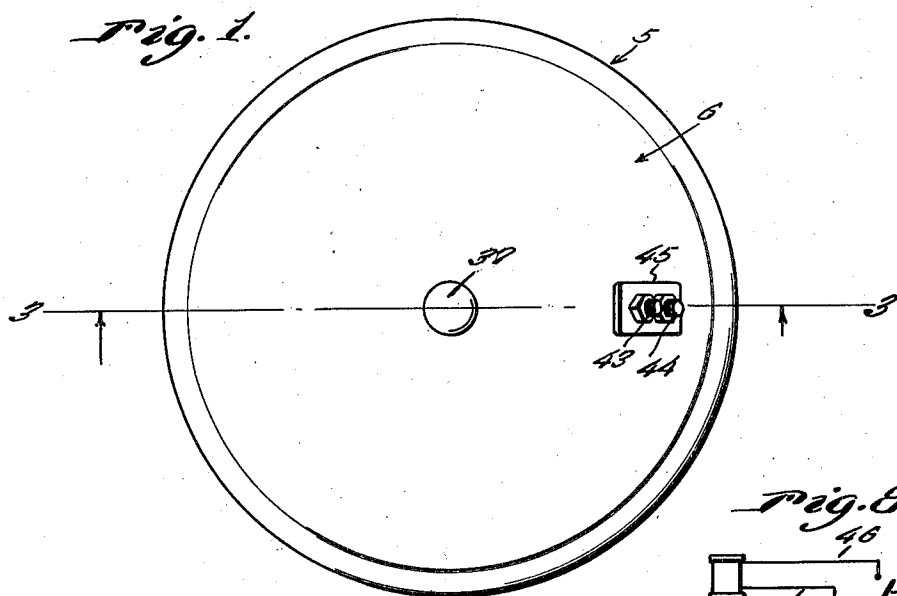


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H. W. BURTON
GAS TANK LOCKING CAP
Filed March 19, 1936

2,125,012

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

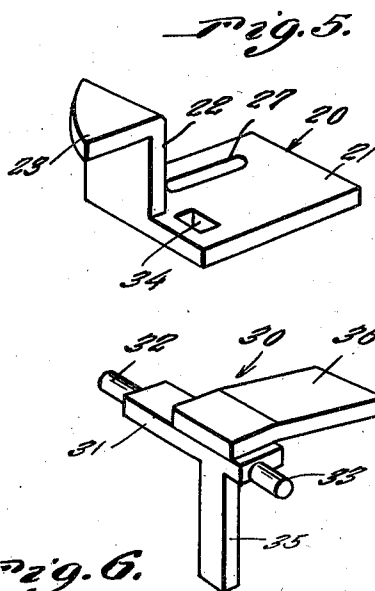
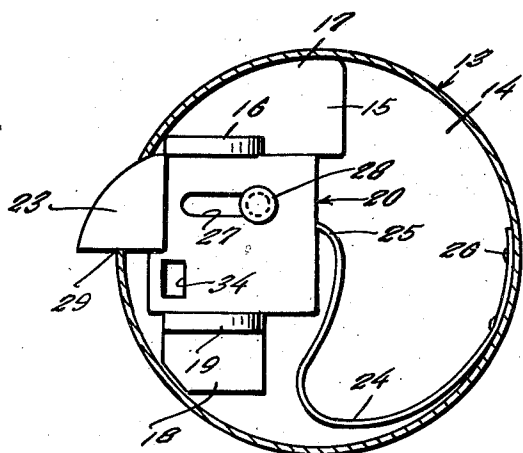
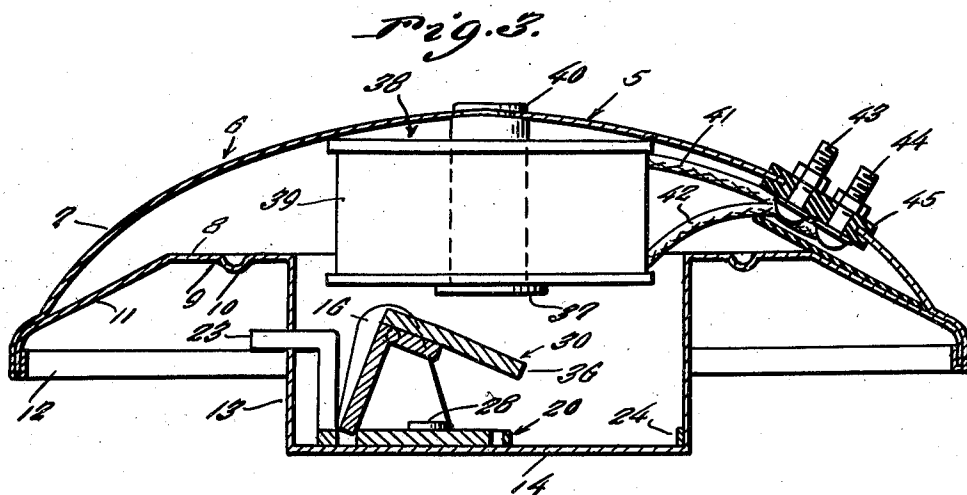


Fig. 6.

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UNITED STATES PATENT OFFICE

2,125,012

GAS TANK LOCKING CAP

Herbert W. Burton, Dayton, Ohio

Application March 19, 1936, Serial No. 69,726

3 Claims. (Cl. 292—144)

My invention relates generally to a locking gas tank cap which has electro-magnetically opened spring-pressed locking means, and an important object of my invention is to provide a simple, practical, and inexpensive arrangement of this character.

Another important object of my invention is to provide a theft-proof arrangement of the character indicated which involves few and simple parts which are not subject to much wear, and which operate positively and accurately, without being required to be expensively formed.

Other important objects of my invention will be apparent from a reading of the following description in connection with the drawings, wherein for purposes of illustration I have shown a preferred embodiment of my invention.

In the drawings:—

Figure 1 is a top plan view of the embodiment.

Figure 2 is a bottom plan view thereof.

Figure 3 is a transverse vertical sectional view taken through Figure 1 approximately on the line 3—3 and looking upwardly in the direction of the arrows.

Figure 4 is a horizontal sectional view taken through Figure 3 and showing the latch in top plan with the latch trip removed.

Figure 5 is a perspective view of the latch.

Figure 6 is a perspective view of the latch trip.

Figure 7 is a transverse vertical sectional view taken through Figure 3 at right angles thereto and disclosing in detail the mounting of the latch trip.

Figure 8 is a diagrammatic illustration of an electrical circuit for controlling release of the latch.

Referring in detail to the drawings, the numeral 5 generally designates the embodiment which is composed of a hollow ornamental cap 6 which is of sufficient diameter to overhang the edges of the gas tank filling neck (not shown), and which is composed of the upper shell 7 and the lower shell 8 which is spaced from the upper shell. The upper shell 7 is concavo-convex in form while the lower shell 8 has an annular portion 9 which is crimped for reinforcement as indicated by the numeral 10 and has declining from its radially outward edge the portion 11 which is fixed in a beaded portion 12 of the radially outward edge of the upper shell 7.

From the radially inward edge of the annulus

9 depends the casing 13 which is cylindrical in form and has a closed bottom 14.

Secured to the bottom 14 is the large L-shaped bracket 15 which has the standard 16, and the foot portion 17 which is segmental in cross section to fit the contour of the wall of the casing 13, and chordally spaced from the bracket 15 is the smaller bracket 18 which is generally rectangular in form and has the standard 19 opposed to the standard 16.

Between the facing edges of the base portions of the described brackets the latch which is generally designated 20 slides and is confined. The latch 20 is composed of the generally rectangular plate 21 which has at one edge the riser 22 from whose upper end extends laterally outwardly the segmental shaped latch tongue 23 which is adapted to engage under the lip of the gas tank filling neck (not shown) of conventional type. The locking tongue 23 extends under the said portion of the gas tank filling neck only when the latch is in the radially outward extended position which is normally produced by the spring 24 which has its free end 25 engaging the radially inward edge of the plate 21 and has its opposite end fastened as indicated by the numeral 26 to the side wall of the casing 13.

The latch plate 21 has the elongated slot 27 which is located approximately at right angles to the latch tongue 23 for slidably receiving the retaining rivet or bolt 28 which is anchored in the bottom 14 of the casing and has a head which retains the plate 21 slidably on the bottom 14. The latch tongue 23 operates through an opening 29 in the side wall of the casing 13. The usual bayonets are designated 50.

The latch trip is generally designated 30 and is composed of the axle portion 31 which has pintles 32 and 33 projecting from its opposite ends and journaled in the upper part of the brackets 15 and 18 in such a position that the axis of the pintles is displaced toward the right in Figure 3 from the slot 34 in the plate 21 of the latch when the latch is in the normal projected position, as also is illustrated in Figure 3.

The axle portion 31 of the latch trip has the finger 35 depending therefrom and engaging loosely in the slot 34 of the latch; and approximately right angularly disposed with respect to the finger 37 is the magnetically permeable bar or armature 36 which is fastened to the top of the axle portion 31 and extends into the magnetic sphere of the core 37 of the electro-magnet which is generally designated 38 and which com-

prises the electro-magnetic winding 39 surrounding the core 37 and the attachment 40 of the core to the outer shell 7 of the cap 6; so that the core is in a vertical centralized position and the magnet depends partly into the upper end of the casing 13 as clearly shown in Figure 3, directly above the latch trip 30.

The necessary wires 41 and 42 lead from opposite ends of the magnetic coil to insulated binding posts 43 and 44 which are mounted through the outer shell 7 by means of suitable insulating formation 45. The binding posts 43 and 44 are arranged for connection to suitable energizing conductors 46 and 47 in one of which is interposed a suitable switch 48, and these conductors are connected to opposite sides of an energizing battery 49. It is obvious that when the switch 48 is closed or the equivalent thereof is closed so as to close the energizing circuit, the magnetized core 37 will attract the armature 36 in an upward movement which will cause the finger 35 to pull the latch 20 in a right hand direction in Figure 3 against the pressure of the spring 24 and thereby retract the latch tongue 23 from locking engagement with the flange on the interior of the gas tank filling neck, so as to enable removing the gas tank cap in the usual manner. Immediately upon breaking the energizing circuit, the spring 24 will push the latch to locking position again.

Although I have shown and described herein a preferred embodiment of my invention, it is to be definitely understood that I do not desire to limit the application of the invention thereto, and any change or changes may be made in the materials, and in the structure and arrangement of the parts, within the spirit of the invention and the scope of the subjoined claims.

What is claimed is:—

1. A locking gas tank filling neck cap, said cap comprising a hollow shell having a portion for insertion into the filling neck, a bottom substantially closing the lower end of said portion of the shell, a latch slidably mounted on the said bottom for sliding parallel to said bottom and

having a tongue arranged to extend radially through an opening formed in the side wall of the said portion of the shell to engage the gas tank filling neck to lock the cap in place, a spring engaging said latch in a manner normally to keep the same extended, a support on said bottom, a latch trip pivotally mounted on the said support and having an arm operatively engageable with said latch and a magnetically permeable armature arm, an electro-magnet mounted on a wall of said casing opposite said bottom, said electro-magnet being in effective relation to said armature arm.

2. An electro-magnetic gas tank locking cap, said cap comprising a shell, an electro-magnet mounted on a wall of said shell and projecting therefrom toward an opposite wall of said shell, a latch slidably mounted on said shell for movement in a plane approximately at right angles to the axis of said electro-magnet, said latch having a tongue operatively extensible through an opening formed in a wall of said shell, spring means normally urging said latch into operative position, a support mounted on said opposite wall of the shell, said support having pivot bearing means on an axis substantially parallel to said opposite wall, and a latch trip having pivot means engaged with said pivot bearing means, said latch trip having a magnetizable arm located within the effective magnetic sphere of said electro-magnet, said latch trip further having a second arm operatively engaging said latch for retracting the latch upon energization of said electro-magnet.

3. An electro-magnetic gas tank locking cap comprising a hollow shell, an electro-magnet mounted on one wall of the shell, a spring pressed latch mounted on an opposite wall of the shell, said latch having a latch tongue, spring means normally extending said tongue outwardly from a wall and having a portion operatively engaged with said latch and having a magnetically permeable armature located within the magnetic sphere of said electro-magnet.

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