United States Patent [19]

Lipschutz

[11] **3,759,075**

[45] **Sept. 18, 1973**

[54] **PROTECTING DEVICE FOR AN ACCESS ORIFICE TO A TANK**

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[22] Filed: **July 13, 1971**

[21] Appl. No.: **162,080**

[30] **Foreign Application Priority Data**

July 15, 1970 France 7025920
Mar. 2, 1971 France 7107053

[52] **U.S. Cl.** **70/159,** 70/162, 70/255, 70/282, 200/61, 200/89

[51] **Int. Cl.** **B65d 55/14,** B60r 25/00

[58] **Field of Search** ..... 70/159, 160, 161, 70/162, 240, 241, 256, 257, 282, 283, DIG. 46; 292/144, 201; 200/42 R, 44

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Primary Examiner—Albert G. Craig, Jr.
Attorney—Albert C. Nolte et al.

[57] **ABSTRACT**

A protecting device for an access orifice to a fuel tank of an automotive vehicle with a heat engine, a driver's station and a power source, said device comprising a movable cover to be locked in closed position, an actuator for unlocking said cover and connected to said power source and manual means for remote-controlling said actuator, located in the driver's station and inserted between said power source and said actuator to selectively operate the latter.

14 Claims, 15 Drawing Figures

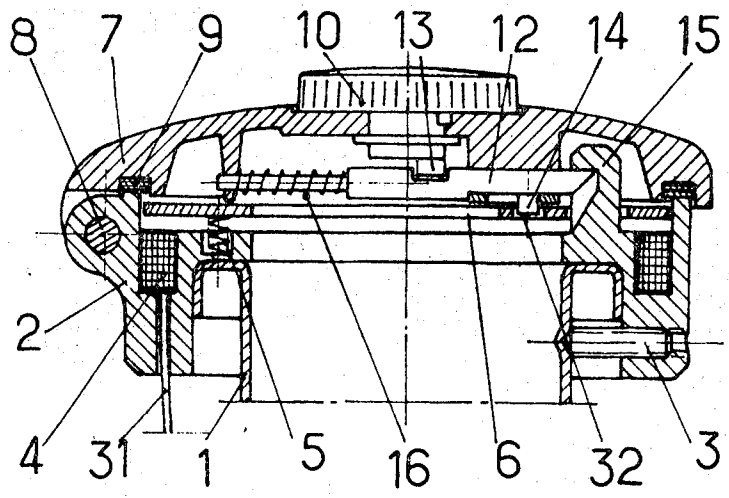


Fig.1

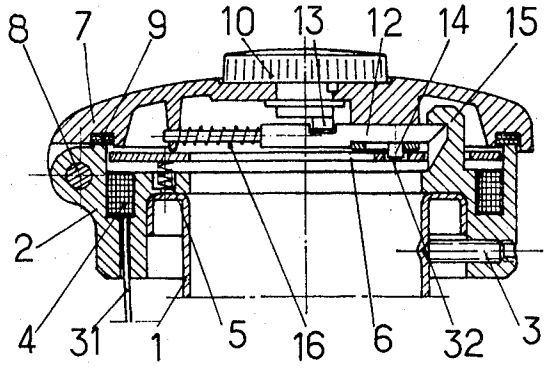


Fig.2a

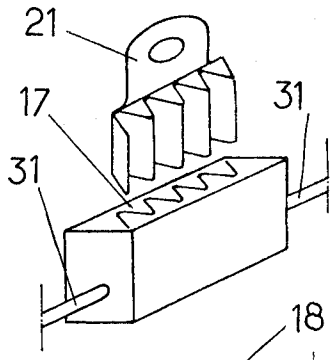


Fig.2b

Fig.3

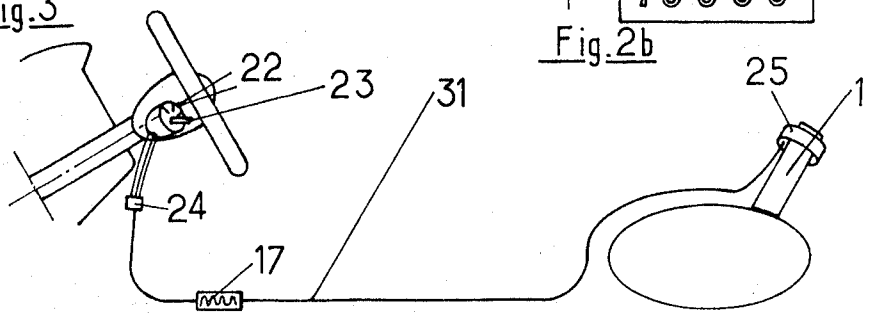


Fig.4

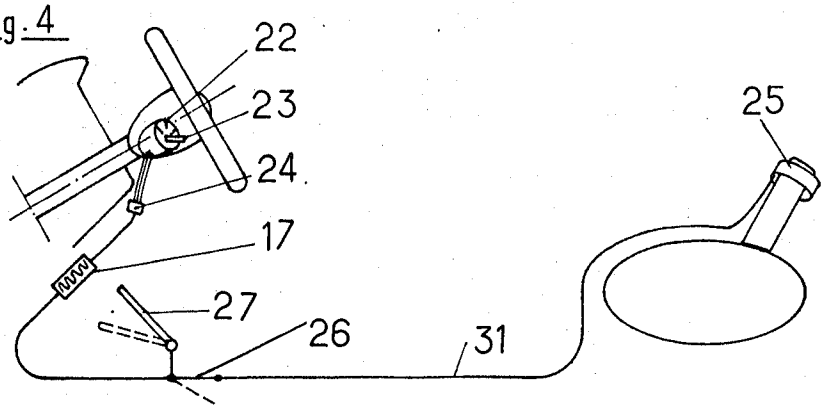


Fig.5

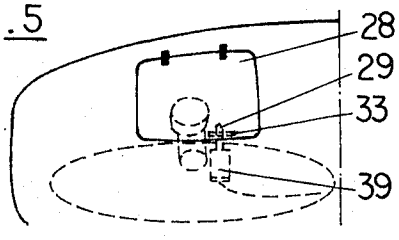
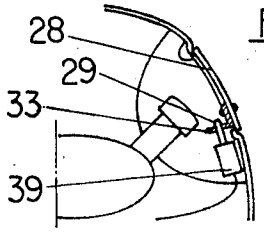


Fig.6



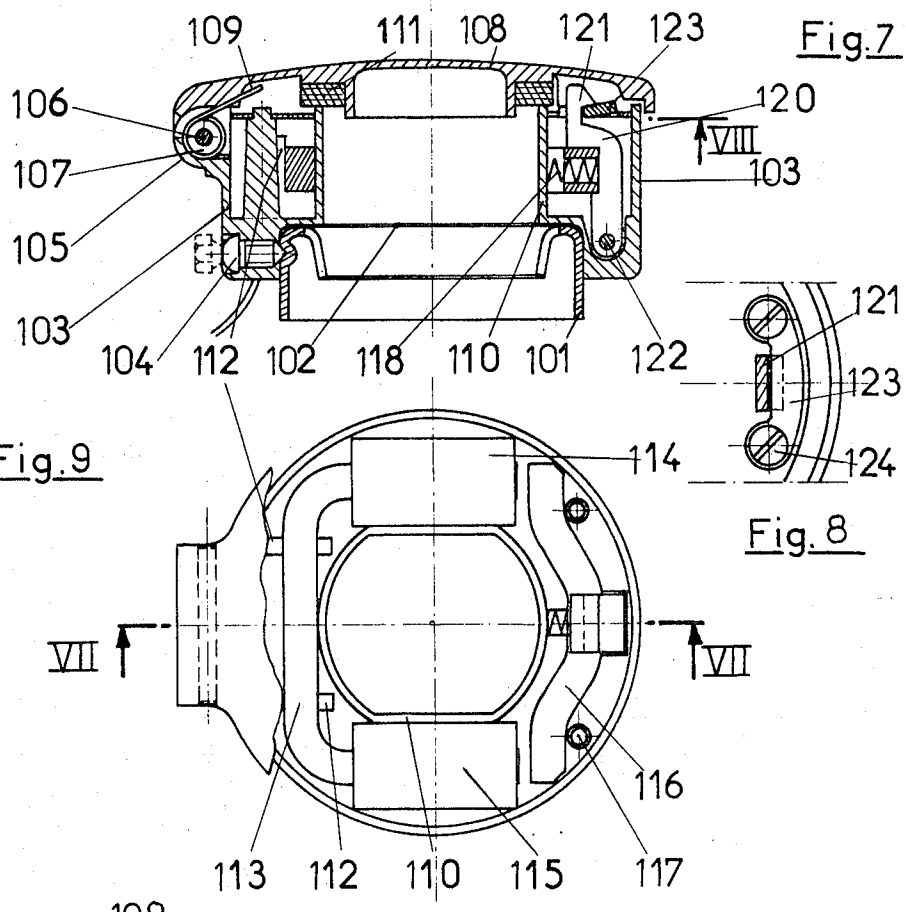


Fig.7

Fig.8

Fig.9

Fig.10

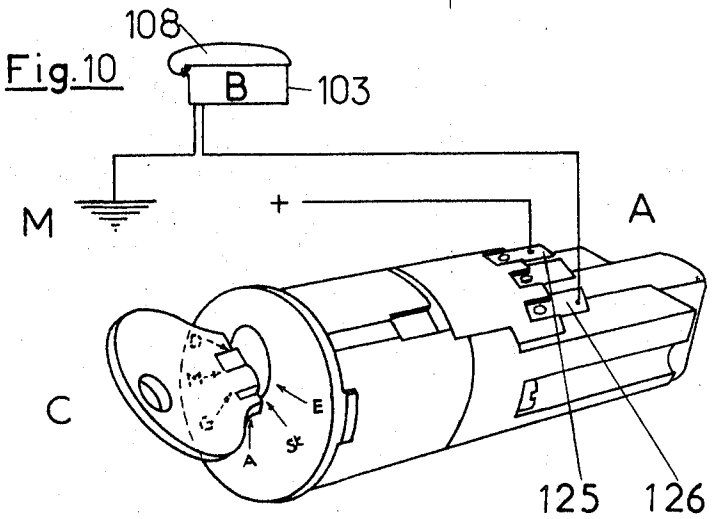


Fig.11

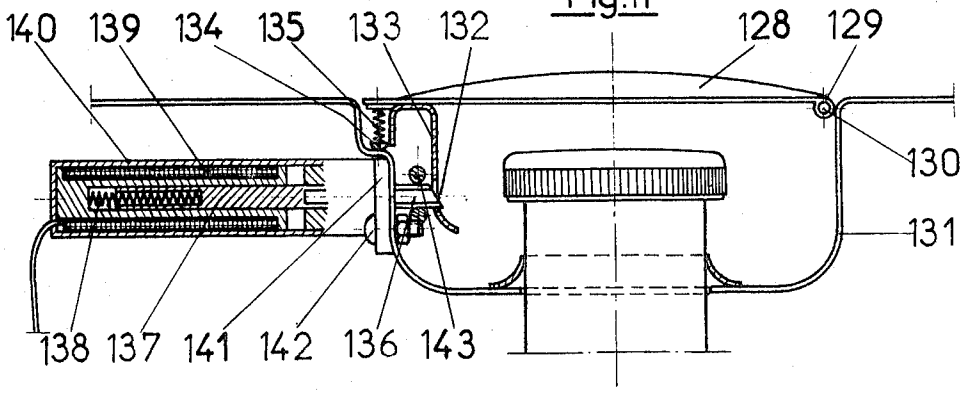


Fig.12

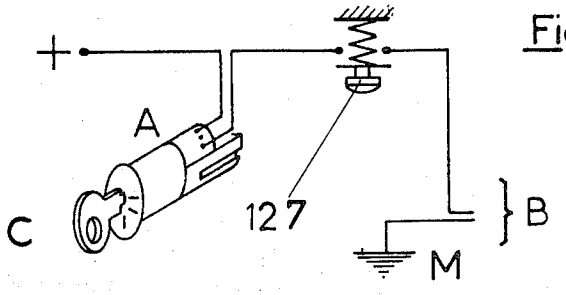


Fig.13

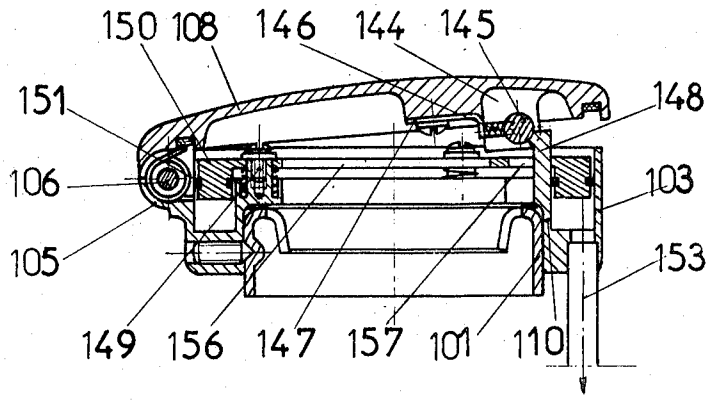
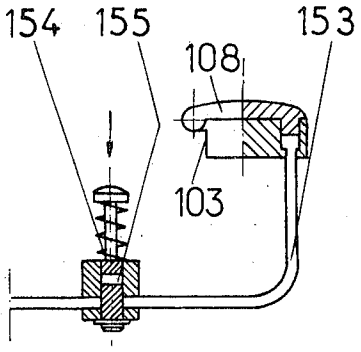


Fig.14



PROTECTING DEVICE FOR AN ACCESS ORIFICE TO A TANK

The present invention relates generally to a protecting device for an access orifice to a storage tank or like container. The stopper plugs such as for instance fuel tank filler caps of stationary or automotive vehicle heat engines are mostly provided with a key-operated safety lock protectIng the contents and in particular the fuel against any unauthorized taking thereof.

In the case of arrangements on board of automotive vehicles, the removable key, that enables one to open or to close the cap, is specifically designed to fit the lock of the cap.

As a general rule, the driver must leave his seat to open said cap to fill up or replenish the fuel.

Also the person responsible for keeping, taking care of or guarding a stationary storage tank has to move to have access to the storage tank.

The present invention brings about a significant improvement in the locking system for tank filler caps : it enables one to remote-control for example electromechanically or pneumatically the unlocking or locking of the filler cap fitting the storage tank. Thus without moving, the driver of an automotive vehicle or the agent responsible for attending, keeping or taking care of a stationary tank may enable the opening by third parties of the storage tank and to effect the closing thereof when the latter is filled up or the normal taking of fuel has been achieved.

As to the automotive vehicle provided with a heat engine with electric ignition and starter, the for example electromechanical locking or unlocking of the cap may be controlled through the position of the key in the safety lock of the electromechanical anti-theft or anti-joy ride device with which generally the car is fitted or by the positions of the ignition switch not associated with an anti-theft apparatus, which switch may be actuated either by a key or by a control knob.

The cost of such a filler cap, which removes the need for an integrated safety lock, may remain competitive in spite of the presence of the electromechanical arrangement. The aforesaid and hereinafter mentioned advantages enhance the superiority of the whole assembly.

It is indeed possible to provide among the plurality of positions of the rotor member of the anti-joy ride device or the ignition switch, one single position for the rotor of the anti-theft device or switch wherein the filler cap is unlocked, for example in the "ACCESSORIES" position provided by the manufacturer of the anti-theft devIce or any other position to be selected. Under such circumstances, all the other positions such as "STOP" and "IGNITION" leave the cap in a positive closed position : nobody may open the storage tank when the engine is running or when the vehicle is locked against motion by the anti-theft device or even when such a device is left in the "GARAGE" or "PARKING" position whether or not the key remains in the safety lock.

Accordingly one main general object of the invention is to provide a protecting device for an access orifice to a storage tank, said device comprising a movable cover adapted to be locked in the closed position and characterized in that it comprises at least one actuator for controlling the unlocking of said cover, connected through a transmission line to a power source and manual means for remote-controlling said actuator, placed at a remote location and inserted in the power transmission line to selectively operate said actuator.

The invention which in particular is directed to a remote-controlled electromechanical or pneumatic closing of the filler cap of for example a fuel storage tank of an automotive vehicle will be better understood and further objects, advantages, characterizing features and details thereof will appear more clearly as the following specification proceeds with reference to the accompanying diagrammatic drawings given by way of example only illustrating various forms of embodiment of the invention and wherein :

FIG. 1 shows a view in axial section along a meridian plane of an electromechanically locked tank filler cap according to the invention ;

FIG. 2*a* is a perspective view of an additional special cut-off device enabling the driver to keep the filler cap locked while leaving the key of the anti-theft device in the safety lock thereof;

FIG. 2*b* is a top view of the arrangement shown in FIG. 2*a* ;

FIG. 3 is a diagrammatic view showing the electrical connections between the driver's station, the special cut-off device and the tank filler cap ;

FIG. 4 shows an additional cut-off device inserted in the electric lead wire extending from the dash-board or instrument panel to the filler cap, the cut-out or switching off being operated by the accelerator pedal : it thus possible, even when the key is in the "ACCESSORIES" position, to avoid any useless heating up of the solenoid coil or winding of the electro-magnet; the opening of the tank remains impossible when the accelerator pedal is not in the "THROTTLE DOWN" position or raised position ;

FIGS. 5 and 6 illustrate a special application wherein the remote-controlled electromechanical closing device according to the invention is arranged on the access flap cover or door provided on some car bodies to give access to the conventional tank filler cap ;

FIG. 7 is a cross-section taken upon the line VII—VII of FIG. 9 through an electromagnetically operated filler cap of simpler construction than that of the embodiment of FIG. 1 :

FIG. 8 is a detailed view seen in the direction of the arrow VIII of FIG. 7, of the interlocking engagement of the filler cap in the closed position, the hooked latch being assumed to be shown in section ;

FIG. 9 is a top view of the device of FIGS. 7 and 8 assuming the cover forming the cap partially broken away ;

FIG. 10 is a first electric circuit diagram showing the connections with the drum or barrel type switch of the anti-theft device shown in a perspective view ;

FIG. 11 is an axial cross-section through an access flap cover to the tank filler cap, to which has been fitted an electro-magnetically operated locking device, sidewise and outside of the cup portion connecting the car body to the tank filler pipe ;

FIG. 12 illustrates a second electric circuit diagram for adapting the filler caps of FIGS. 1 through 4 to the case where a special position to open the tank filler cap is not provided on the switch of the anti-theft device ;

FIG. 13 is a sectional view of a device, of the kind shown on FIG. 2 but modified to replace electric power by vacuum as a prime mover for unlocking purposes ; and

FIG. 14 shows the vacuum duct of the vacuum control means with integrated push-button valve fitting the device of FIG. 13.

On FIG. 1 is shown at 1 the fuel tank filler pipe which receives a collar or ring 2 made from moulded or cast either metallic or synthetic plastic material, to be substituted for the conventional tank filler cap. Said collar 2 is held against movement by a screw 3 or any other system preventing it from being removed.

An electro-magnet solenoid coil or winding 4 is placed in a toroidal groove of suitable shape provided in the collar 2. A ring of magnetic metal 6 guided in the collar 2 rests or seats on springs 5 distributed along the periphery within cylindrical recesses ; this magnetic ring 6 is formed with an opening 32 adapted to be engaged by a finger 14 carried by a latch or lock-bolt 12 which may slide within a suitable bearing member of the cap 7. The latter, covering the collar 2, is pivotally connected about an axis or pin 8 whereby it may be opened vertically to uncover the central opening of the ring 6. On the other hand, the latch or lock bolt 12 is operated by the eccentric member 13 which is rigidly connected to an outer control knob 10.

In a groove 7 of the cap or cover is fitted a sealing gasket or packing 9 resting on the top rim or upper edge of the collar 2.

The electro-magnet 4 is electrically connected through a lead wire 31 to the switch of the anti-theft device or of the ignition-start start circuit 22-23-24 arranged under the steering wheel or on the dash-board or instrument panel.

The spring 16 surrounding the rod provided integral with and in extension of the latch 12 causes the return of the locking catch, snug or stop-pin 14 to its closed position in registering relation to the hole 32 formed in the ring 6.

The operation of the device is as follows : when the electric current, in view of the particular position imparted to the key of the anti-theft device or to the control knob of the ignition device, is allowed to flow through the winding 4 of the electro-magnet, the latter pulls the plate 6 thereby disengaging or freeing the stop-pin 14 and enabling one, by turning the knob 10, to move the lock-bolt or latch 12 to an unlocked or open position. The pull upon the ring 6 is exerted against the opposed forces of the springs 5. The cap may then be opened in the conventional way.

After the filling operation of the tank has been completed, the key of the anti-theft device is moved back to the "STOP" or "IGNITION" position, so that the pull exerted by the electro-magnet upon the plate 6 is discontinued and the springs 5 push the latter away for preparing same to receive the stop-pin into the hole 32. the spring 16 pushing the latch 12 back into the outermost extended locking position, whereby the cap is locked in the closed position.

Consequently, when the electric current is switched off in the electro-magnet 4, the tank closure cap is locked again.

The use and operation of the device 17, 18 shown on FIGS. 2*a*, 2*b* and 3 are understandable upon referring to these Figures. To both end plates of said device are connected the feed and return ends of the lead wire 31. Between these two plates is insertable an electric connector plug of suitable shape for example of saw-toothed configuration such as shown at 21 to provide or make contact therebetween. To prevent any unauthorized use of the device of FIG. 1, it is merely necessary for the user, operator or driver to withdraw the connector plug 21 and to carry it away with him like a key of special profile which may vary depending on the car.

As to the device illustrated by FIG. 4, a simple switch 26 combined with the accelerator pedal 27 effects breaking of the electric circuit when said pedal is in any position other than its highest one.

FIGS. 5 and 6 relate to a device with a combined latch and electro-magnet 39 which device is derived from or designed as that described and shown with reference to FIG. 1 for a locking system having a latch or lock-bolt 29 mounted on the stationary portion of the car body in registering relation to a bolt-clasp forming a stricking box, lock-keeper or latch-catch 33 fitting the flap cover 28. In all the devices described hereinabove, the solenoid coil or winding of the electro-magnet is connected through a lead wire 31 to the electric switch of the anti-theft device 22 and when the latter has been brought to a proper position by operation of the key thereof, to the positive pole or terminal of the storage battery or equivalent electric power source or generator.

On the other hand, the same coil has its other terminal connected to the vehicle framework acting as the earth or ground as in the case of most of the automotive operating circuits. The electric circuit is thus completed at will through operation of the key and the position of disconnecting or isolating switches which may also be provided and which are designated by the reference numerals 17 and 26 on FIGS. 3 and 4, respectively.

The alternative forms of embodiment illustrated by FIGS. 7 through 14 offer the following advantages :

1. The operation controlling the opening of the closure cover is simplified;

2. In the case of a flap cover or door giving access to the tank filler cap, it is possible to provide a standardized locking device easily adaptable to any case ;

3. A vacuum control system may be substituted for the electromagnetic actuator.

It should be pointed out that in all the embodiments disclosed herein, the operation of the apparatus is structurally combined with that of an anti-joy ride device or a key- or knob-operated switch so that only the possessor or owner of the key of the anti-joy ride device of the key-operated switch is able to unlock the tank filler cap or access flap cover and this without leaving the driver's seat.

FIG. 7 shows the end 101 of the filler pipe of a fuel tank (not shown) on which is secured a collar 103 made from cast or moulded material, fastened to the pipe by one or several point screws 104 with a sealing ring or like fluid-tight annular gasket or packing 102 being interposed therebetween. The collar 103 is formed with a clevis or like fork-shaped member 105 receiving a lug 107 integral with the cover, lid or cap 108 which is thereby pivotally connected by means of a pivot pin 106 extending through the clevis 105 and lug 107 and the ends of which are embedded, sunk or driven in flush into the clevis to render them inaccessible whereby the lid may not be broken open as in the case where the pivot axis is secured by riveting for example. A hair-pin shaped or shank-like spring 109 is mounted about the pivot axis or on the lug and bears on the collar 103 and on the cap 108, respectively, so

that its resilient reaction acts in the proper direction for biasing the cap 108 to urge it to the opening position.

Said cap or lid is provided with a sealing gasket 111 which bears adequately onto the inner sleeve portion 110 of the collar 103.

The cover 108 is provided as shown on FIG. 8 with a strip or the like 123 which may be riveted or secured by screws 124 to the inside of the cover. The strip 123 is suitably cut round a curved outline to receive the nose or like projecting catch portion 121 of a hook-like lever 120 pivotally connected at 122 to swing about a pivot pin mounted at the bottom of the collar. The lever 120 is secured to a yoke-like armature 116 made from magnetic material and the ends of which bear upon stop members 117 secured to the collar. The yoke and lever assembly 120 is urged outwards by a biasing resilient device such as a spring 118 which is seated or accommodated within a recess or like housing formed on the armature; the latter may consist of one or several parts.

In front of the ends of the yoke 116 are the poles of an U-shaped electro-magnet 113 which is energized by windings 114 and 115 through which flows an electric current upon actuation of the opening operating system and which are mounted on the legs of the U-shaped electro-magnet the central portion of which is held in a supporting bracket 112 forming in this instance a pair of bearings inside of and rigidly connected to the collar 103. A simple and detachable arrangement secures the whole assembly consisting of the electro-magnet 113 and of is coils 114 and 115 within the collar so that this electro-magnet encompasses the inner sleeve portion 110 thereby reducing the heiGht of the cap to its 'east value (see FIG. 9).

FIG. 10 shows the electrical connections between the ground or earth M formed by the framework, the coils of the filler cap B, the switch A of the anti-theft device and the positive pole or positive terminal + of the storage battery (not shown).

The connections with the switch of the anti-theft device are made with the switch blade 125 already provided on this apparatus to be connected to the positive pole and the switch blade 126 specially added for operating the opening of the tank filler cap. A determined position of the key and of the switch rotor may be selected to cause the flow of electric current controlling the opening, for example the position E beyond the "STOP" position as shown on FIG. 10 or any other position different from the conventional positions.

As described, the device operates in an easily understandable manner as follows :

The key of the anti-joy ride device being placed in the "STOP" position, the vehicle engine is at rest in compliance with official regulations for enabling the replenishment or filling up of the fuel tank. When the key is turned beyond the "STOP" position, electric current is allowed to flow through the windings 114 and 115 of the electro-magnet 113, 114, 115 which is thus energized and exerts a pull upon the ends of the armature 116 thereby causing the associated lever 120 to be moved back so that its nose 121 is disengaged from the strip 123. The cover 108 is then only subjected to the elastic reaction of the spring 109 which opens the cover to give the fuel delivery nozzle access to the tank. When closing the cover by hand upon cutting off the electric current, the hooked lever 121 retracts through the pressure exerted thereon upon engagement of a slant top portion thereof with the stationary strip 123.

FIG. 12 illustrates the case wherein it is desired for any reason to associate with the cover opening position provided for the key on the anti-theft device an additional opening control through a push-button operated switch 127 which upon merely depressing the push-button thereof causes the opening of the cover 108 : it is indeed unnecessary and it may be hazardous to let electric current constantly flow through the coils 114 and 115 during the filling up operation while a mere current pulse is sufficient to unlock the cover. In such a case however, the opening of the cover remains dependent on the driver since to previously complete the circuit loop leading from A to 127, he must turn the key to the desired position and then depress the push-button 127. Nobody else than the possessor or owner of the key may cause the opening either for filling up or for exceptional and sometimes unauthorized emptying of the fuel tank through suction.

Referring to FIG. 11 which shows the device adapted to a door or flap cover giving access to the normal filler cap of the tank, the flap cover 128 is shown to be pivotally connected at 129 about a pivot pin 130 fitting a suitable bracket welded to the car body 131. This flap cover 128 is provided with a bolt-clasp 132 formed in a welded lug 133 secured to the inside of said flap cover. Moreover a spring-loaded abutment member 134 is mounted on a pin and subjected to the action of a spring 135, its stroke being limited.

Under the action of the spring 135 and without any other retaining means, the flap cover 128 opens automatically. To cause the locking thereof in the closed position, a lock-bolt or latch 136, the end of which is cut slantwise of splayed to form a skew or bevelled tip, engages the bolt clasp 132 while being guided between two rolls 143 under the action of a spring 138 accommodated within a recess of an electro-magnet armature with a plunger core 137 integral with the lock-bolt 136. The plunger core 137 is subject against the force of the spring 138 to the magnetizing action of an electro-magnet 139 the coil of which is energized by an electric current caused to flow at the driver's will.

The electro-magnet is housed within a sheath or casing 140 the flange or seating portion of which may be secured by one or several mounting bolts 142 to the wall of the cap 131 after having been suitably bored to enable such a fastening and the reciprocating passage of the lock-bolt 136. It is thus seen that the assembly is easily adaptable to any vehicle having a flap cover giving access to the fuel tank.

The electrical connections with the anti-theft device A and with the push-button operated switch 127 of FIG. 12 are unchanged.

The operation of this device is substantially the same as that of the apparatus previously described : the triggered flow of electric current through the electro-magnet 139 causes the plunger core 137 to be pulled againSt the force of the spring 138 and therefore the lock-bolt 136 to move backwards or retract thereby disengaging the bolt-clasp 132 and enabling the opening of the flap cover 128 under the action of the spring 135.

The closing of the flap cover is obtained, the electric current being switched off, by a simple pressure exerted thereon and the lock-bolt 136 due to its slantwise cut end retracts under the reaction of the upper edge of the bolt-clasp 132 and projects again under the ac-

tion of the spring 138 when the flap cover 128 is kept closed thereby causing the flap cover to be locked.

FIGS. 13 and 14 relate to the case of a pneumatic system operated through vacuum, with a filler cap of the same kind as that which has been described hereinabove. These Figures show a flap cover 108 still pivotally connected at 105 and 106 to a collar 103 adaptable to the upper filler pipe 101 of a fuel tank (not shown) and connected to a duct 153 leading to the intake manifold of the engine or to any other vacuum source of the vehicle.

This collar receives a ring 150 made from metal or plastics material and provided with two inner and outer sealing rings 151, respectively, to achieve a good fluid-tightness between said ring and the outer wall of the collar 103 and the inner wall 110 thereof. The ring 150 is subjected to the combined actions of at least three spring-loaded abutment assemblies 149 destributed over the periphery of the collar so as to resiliently cause a well balanced raising or upward motion of the ring 150 which is however limited by the lengths of the guide pins or screws fitting the assemblies 149.

The ring 150 the upper portion of which is reduced in thickness is formed in said portion with a hole forming a bolt-clasp 157. In registering relationship therewith inside of the cover 108 and on a support 144 integral therewith is located a locking member consisting of a ball 145 loaded by a spring 146; a roller or the like may be substituted for said ball. The inner wall of the collar 110 is formed with an upright post or pillar 148 provided with an inner stationary nose with a slantwise cut top surface on which the ball 145 may rest in the unlocked opened position and under which nose the ball 145 may be jammed provided it is maintained by the presence of the edge of the bolt-clasp 157.

The operation is the following : when the cover is closed, the ball 145 is held under the nose 148 and bears against the bolt-clasp 157 formed in the ring 150. Once a vacuum is caused to be admitted in the annular depression chamber accommodating the ring 150 and provided in the collar 103, the ring 150 moves downwards against the force of the springs 149 and releases or frees the ball which passes above the nose 148 when a pull is exerted by hand on the cover for opening same so that the latter is thereby unlocked.

When use is made of a pneumatic depression transmitted through a duct 153 to the depression chamber formed in the collar, a pushbutton operated valve 154 inserted into said duct is provided with a passageway 155 normally raised in the closed position under the action of its return spring and which when the pushbutton is depressed by the driver's hand is moved to come on a level in flush relationship with the tubular passage of the duct to establish a communication therebetween, whereby the cover is unlocked or opened.

It is to be understood that the present invention should not be construed as being limited to the forms of embodiments disclosed herein as many modifications and changes may be resorted to by those which are skilled in the art without departing from the gist and scope of the invention as defined in the appended claims.

What is claimed is:

1. A protecting device for an access orifice to a tank, said orifice comprising :

a movable cover adapted to be locked in the locked position;

locking means for said cover ;

at least one controller means for controlling the unlocking of said cover ;

resilient return means for returning said locking means into the locking position ;

a power source connected through a transmission line to said actuator ;

manual means for remote controlling said controller provided at a distant location and inserted into said power transmission line ;

a stationary structure surrounding said access orifice to which said movable cover is pivotally connected to and wherein said controller is mounted,

said locking means comprising a movable lock-bolt and a bolt-clasp adapted to cooperate with one another ;

said controller holding said lock-bolt in the locking position in its normal de-energized rest position,

wherein said controller is mounted in said stationary structure surrounding completely said access orifice and comprises a movable element surrounding at least partially said access orifice and being linearly moved in said stationary structure, in the direction of the lines of the field of force produced by said controller.

2. A device according to claim 1 with said controller means comprising electromagnet control means consisting of an electro-magnet with an energized solenoid coil connected to said power transmission line to said power transmission source, and of a movable magnetic armature, said solenoid coil bding adapted to exert a pull upon said magnetic armature when being energized.

3. A device according to claim 2 for an automotive vehicle powered by a heat engine with electric ignition and start circuits, fed by an electric supply source and operated through an ignition and start switch and with an electromechanical anti-theft apparatus with a safety lock operated by a removable key, said distant location for remote controlling said controller being the drivers station of said vehicle, the manual remote control means comprising an electric cut-out switch integrated to said ignition and start switch, wherein said electric cut-out switch consists of a contactor integrated into said anti-theft apparatus and adapted to be closed in one specific angular position of said key.

4. A device according to claim 3, wherein the key of said anti-theft apparatus is adapted to be moved successively to the "STOP", "PARKING", "RUNNING", "START" and "ACCESSORIES CONTROL" positions, respectively and wherein said specific angular position of said key is the "ACCESSORIES CONTROL" position in which all the other electric circuits of the automotive vehicles are cut off.

5. A device according to claim 3, for an automotive vehicle comprising an accelerator pedal and wherein one additional cut-out switch comprises means for interlocking the control of said switch with the relative position of said pedal, so that said switch is closed only in the inoperative rest position of said pedal.

6. A device according to claim 2, with a pivoting cover forming a flap cover pivotally connected to a stationary structure surrounding said access orifice and subjected at least in the closed position to the action of at least one biasing spring tending to open said flap cover, wherein said electro-magnet comprises a winding surrounding said access orifice substantially coaxi-

ally and housed in a stationary support surrounding said orifice whereas said movable armature consists of an annular disk substantially parallel to said orifice and displaceable in axial translation and the central opening of which is in registering relation to said orifice, said disk being mounted on said support and subjected to the permanent action of at least one biasing spring urging said disk to move away from said electro-magnet ; and said lock-bolt is slidably mounted transversely with its return spring in said flap cover so as to co-operate with an aforesaid bolt-clasp carried by said support, said lock-bolt comprising a transversaly projecting pin adapted to engage in the locking position of said lock-bolt a corresponding hole of said disk in the rest position of the latter ; said flap cover comprising means for manually operating said lock-bolt to move it to the unlocking position.

7. A device according to claim 6, comprising a filler pipe the free end of which forms said access orifice and wherein said support is a collar mounted on said pipe end and to which is pivotally connected said flap cover forming a filler cap adapted to tightly fit said collar in its closed position whereas said bolt-clasp consists of a retaining abutment integral with said collar and formed with a nose adapted to be caught and engaged by said lock-bolt ; said lock-bolt being formed with an active slantwise cut guide surface for sliding engagement with said bolt-clasp to assist said lock-bolt in snapping into said bolt-clasp upon manual closing of said flap cover.

8. A device according to claim 6, wherein said means for manually operating said lock-bolt consists of an eccentric finger integral with an outer rotary knob mounted on said cover and co-operating with said lock-bolt.

9. A device according to claim 2, with a swinging cover forming a flap cover pivotally connected to a stationary structure surrounding said access orifice and subjected at least in the closed position to the action of at least one biasing spring urging said flap cover to the open position and wherein said electro-magnet comprises a stationary U-shaped armature encompassing said orifice and both legs of which carry each one an energizing coil, said electro-magnet being accommodated in a stationary support surrounding said access orifice whereas said movable armature consists of a yoke-like strip transversely integral with said lock-bolt, said lock-bolt consisting of a hooked lever forming a spring-loaded latch pivotally connected to said stationary support and adapted to co-operate with a bolt-clasp consisting of a catch integral with said flap cover.

10. A device according to claim 9, for a tank comprising a filler pipe the free end of which forms said access orifice and wherein said support is a collar mounted on said pipe end and to which is pivotally connected said flap cover forming a filler cap adapted to tightly fit said collar in the closed position thereof whereas the hook portion of said hooked lever comprises a nose formed with a slantwise cut outer guide surface for sliding engagement with said catch so as to promote automatic snapping engagement of said lever with said catch upon manual closing of said flap cover.

11. A device according to claim 1, wherein said controller comprises a vacuum chamber communicating through a duct with a vacuum source and one wall of which is formed of said movable element slidably mounted in sealing relationship within said chamber ; said remote-control means consisting of at least one manually operable cut-out valve inserted in series in said duct.

12. A device according to claim 11, wherein said vacuum chamber is of annular shape and provided in a stationary structure coaxially surrounding said access orifice and said movable element is a ring-shaped disk the central opening of which substantially corresponds to said access orifice and which is formed with a hole forming a catch for said lock-bolt, whereas said lock-bolt consists of a spring-loaded rolling member adapted to be jammed between said hole and a retaining nose-like catch integral with said stationary structure in the closed position of said cover, said catch comprising an outer sloping guide surface for sliding engagement with said rolling member to assist the latter in snapping into its operative locking position.

13. A device according to claim 12, for a tank provided with a filler pipe the free end of which forms said access orifice and wherein said stationary structure consists of a mouth-piece forming a collar fitted and secured onto said pipe end and to which is pivotally connected said cover forming a flap cover adapted to tightly fit said collar in its closed position, said disk being urged towards said cover by a plurality of springs mounted in said collar and the strokes of which are limited by corresponding stop members associated therewith.

14. A device according to claim 11, wherein said valve is a slide valve operable by a spring-loaded push-button resiliently urged towards the cut-off position.

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