

Aug. 26, 1924.

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1,506,350

ANTITHEFT DEVICE FOR AUTOMOBILES

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3 Sheets-Sheet 1

Fig. 1.

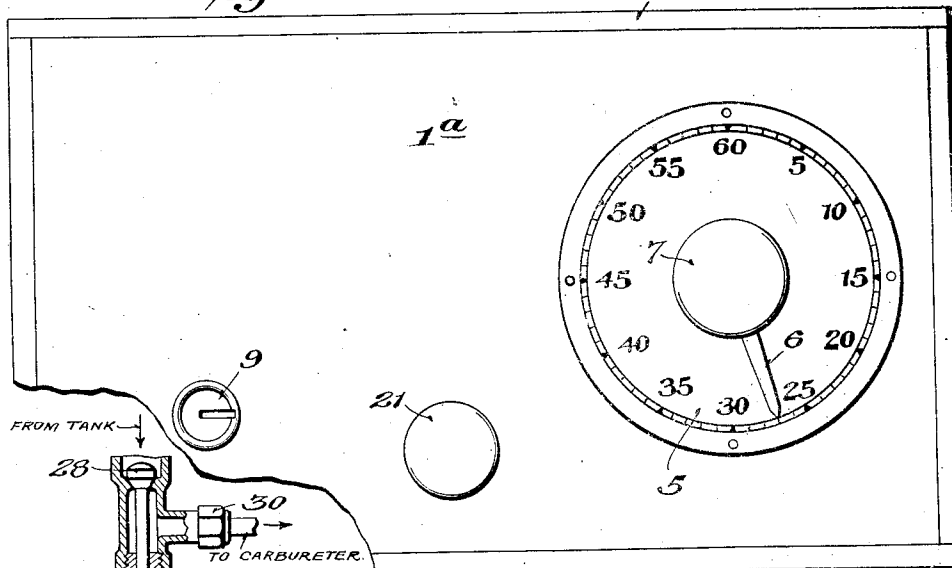
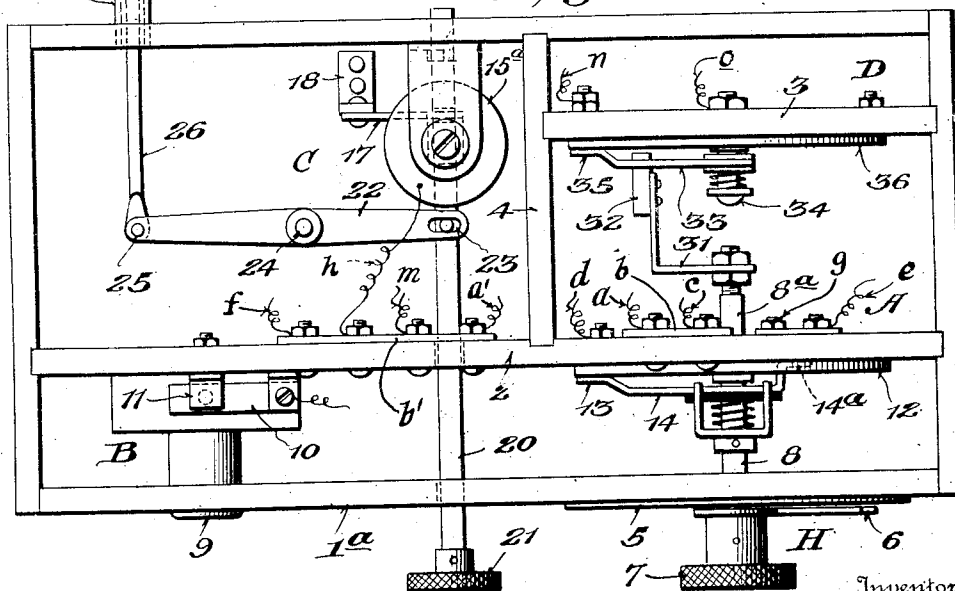


Fig. 2.



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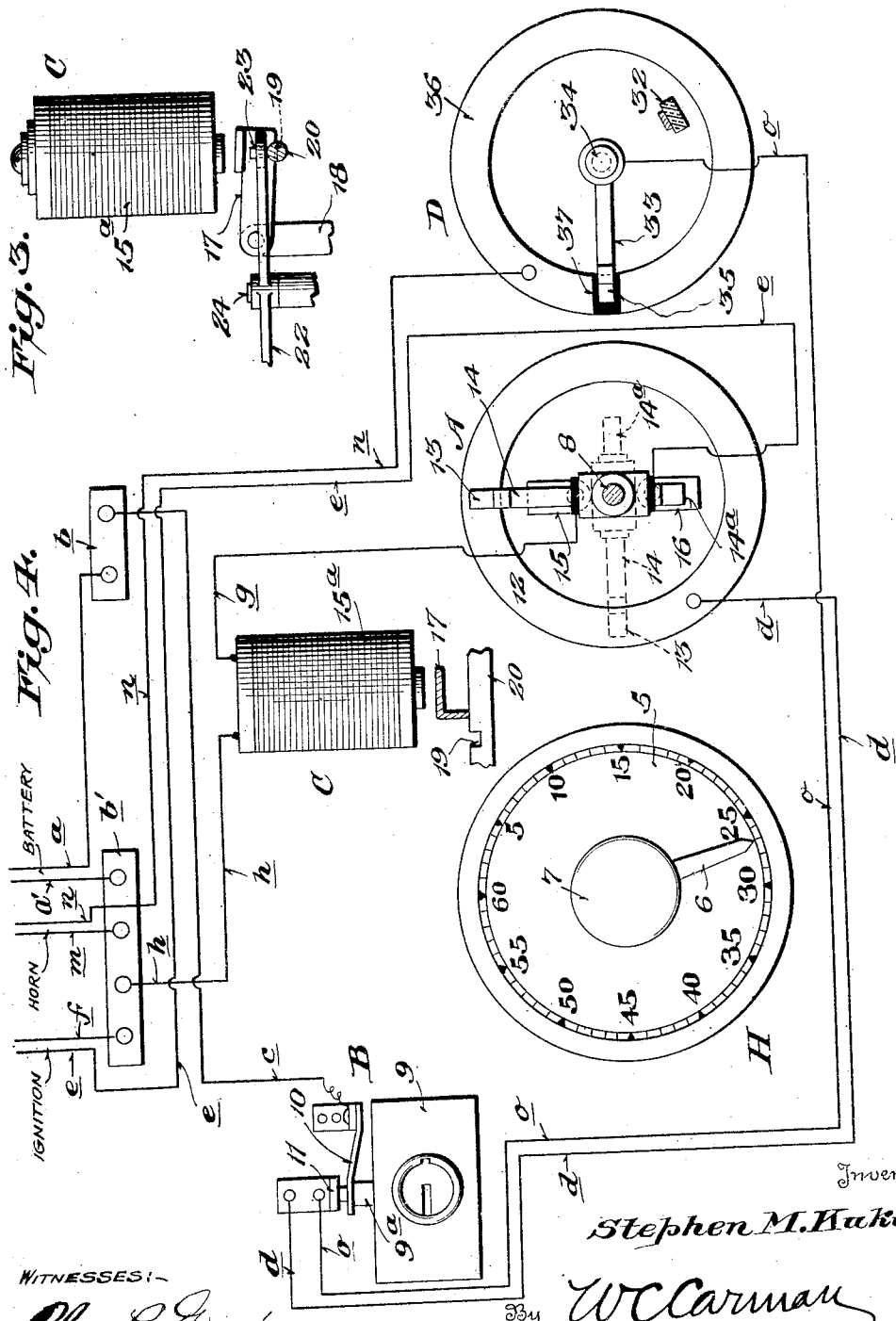
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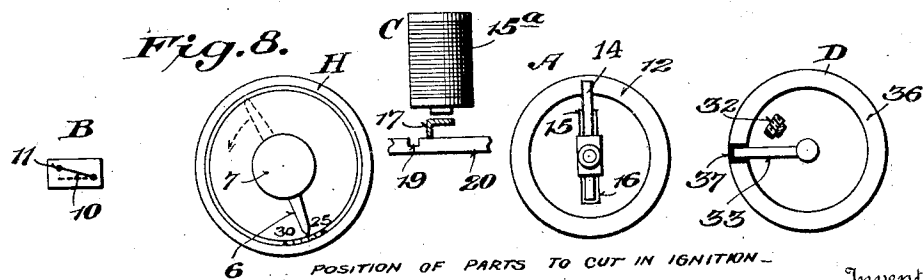
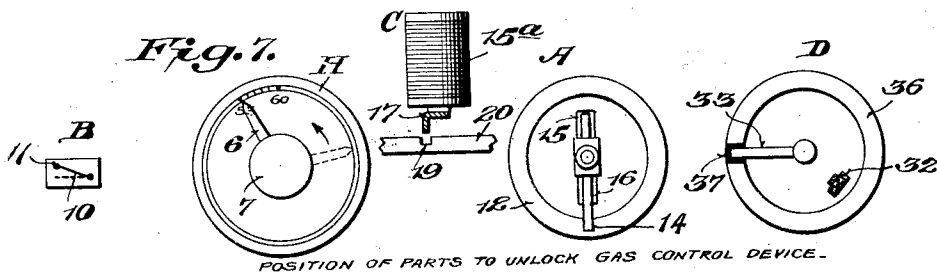
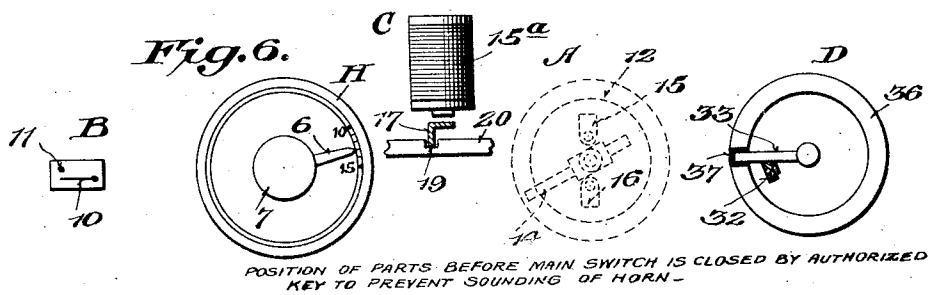
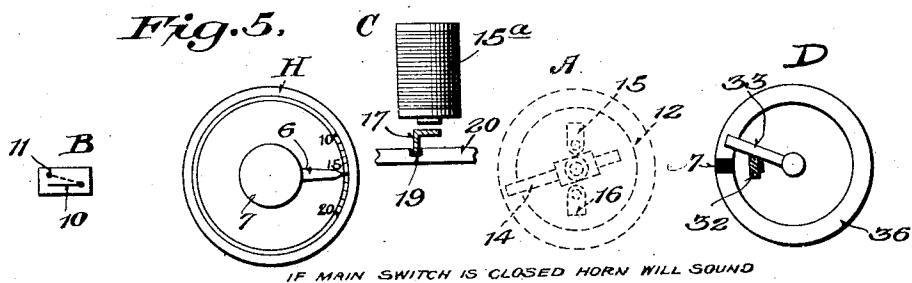
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ANTITHEFT DEVICE FOR AUTOMOBILES

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3 Sheets-Sheet 3



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## UNITED STATES PATENT OFFICE.

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## ANTITHEFT DEVICE FOR AUTOMOBILES.

Application filed August 1, 1921. Serial No. 489,034.

*To all whom it may concern:*

Be it known that I, STEPHEN M. KUKURA, citizen of the United States, residing at Struthers, in the county of Mahoning and State of Ohio, have invented certain new and useful Improvements in Antitheft Devices for Automobiles, of which the following is a specification.

This invention relates to an improvement in anti-theft devices for automobiles.

A primary object of the invention is to provide a novel device for locking the several vital parts of a motor vehicle against unauthorized use, and to that end it is proposed to provide simple and practical means for preventing the supplying of fuel to the carburetor and likewise preventing the manipulation of the ignition instrumentalities, while at the same time also providing an alarm which will automatically function if the main switch of the vehicle is tampered with.

A further object of the invention is to provide a simple, practical and reliable device that may be easily and readily manipulated by the proper parties to set the parts of the car against operation, or on the other hand release them for use.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

Figure 1 is a front elevation of my improved device.

Figure 2 is a top plan view thereof with the cover removed.

Figure 3 is a detail view of the magnetically released lock for the fuel control means.

Figure 4 is a diagram showing the circuits involved.

Figures 5 to 8 inclusive are diagrams representing successive positions of the devices for different positions of the manually operated setting unit.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

Although the invention is susceptible of embodiment in various structural forms and

is subject to a wide range of modification, a convenient and practical construction is illustrated in the accompanying drawings, and from which it will be observed that all of the various control devices may be assembled within a suitable box or casing 1 conveniently mounted on the dash of an automobile either in a concealed or exposed position as desired, and serving to house and protect the said control devices against unauthorized access.

From Figure 2 it will be observed that the interior of the box 1 may be provided with suitable supporting walls 2, 3 and 4, the first two preferably being arranged in spaced parallel relation while the latter is arranged at right angles to provide for conveniently supporting the desired instrumentalities within the casing and also bracing the walls or partitions 2 and 3.

The outer front wall 1<sup>a</sup> of the casing may be provided with a suitable selector device or manually operated unit H consisting of the dial or index member 5 adapted to operate in connection with the finger or pointer 6 upon the manipulation of the operator's knob 7. This knob is carried by one end of a main operating shaft 8 that may be manipulated to operate a combined fuel and ignition control switch A and which serves as a check upon a key controlled main switch B. This main switch B may have the key receiving end of its locking barrel 9 also exposed through the front face 1<sup>a</sup> of the casing as shown in Figure 1, and may be of any practical and well known construction but essentially includes a relatively shiftable blade 10 adapted to be moved into and out of engagement with the relatively fixed contact 11 by a shiftable member 9<sup>a</sup> of the lock thereby to open and close the circuit through the main switch when the lock 9 is manipulated by a proper key.

The combined fuel and ignition switch unit A controls the fuel supply device C and also at certain stages of its operation may open and close an electric circuit to an alarm switch D which may be connected by suitable wiring with the horn or other signal of the vehicle.

Referring now more particularly to the details of construction of the several interdependent units A, B, C and D it may be observed that the fuel and ignition control

unit A, which includes the shaft 8 previously referred to, may also include a metallic ring 12 adapted to be slidably engaged by the front end 13 of a switch blade 14 carried on the shaft 8 and having a depending contact foot 14<sup>a</sup> for successively engaging with a plurality of contacts, 15 and 16 for example, arranged within the circle described by the ring 12.

The said ring 12 and contacts 15 and 16 are mounted on the wall or partition 2 which is an insulating member and therefore conveniently provides for mounting the multiplicity of contacts in the desired arrangement and order to suit the movement of the shaft switch blade 14. The contact 15 may be termed the fuel or gas control contact while the contact 16 controls the ignition. Upon shifting the switch blade 14 to proper position it completes the circuit between ring 12 and either contact 15 or 16, thus causing the circuit to be closed to the automatic releasing device for the gas line, and also subsequently closed to the ignition system to enable the machine to operate.

The gas supply device C preferably includes in its organization a suitable magnet 15<sup>a</sup> electrically connected with the contact 15 of the switch unit A, the same being adapted to lift and release a locking detent 17 pivotally supported as at 18 on the floor of the casing whereby its relatively free or swinging end may engage with a notch 19 in a shiftable operator's rod 20 suitably guided in the casing to shift transversely thereof and provided at its front end with the operator's knob or handle 21. The shifting of the rod 20 in the direction of its axis is thereby obviously controlled by the locking detent 17. If the detent 17 is in the notch 19 the rod cannot be shifted, but when the magnet 15<sup>a</sup> is energized by the closing of the circuit thereto through the switch device A the detent will be raised, and the said rod may be moved to thereby operate the gas control connections, which in the present arrangement may consist of a lever 22 connected with the rod as at 23 and pivoted as at 24 whereby its end 25 may shift or move to control a valve stem 26 pivotally connected thereto. The said valve stem 26 operates in a casing or pipe 27 while the head 28 thereof operates in connection with a seat 29 in the fuel supply line 30 leading from the fuel tank to the carburetor. In the arrangement shown, when it is desired to close the gasoline line, the rod 20 may be pulled inwardly which will permit the detent 17 to drop by gravity into the keeper notch 19, and on the other hand when it is desired to open the gas supply line the switch device A is manipulated to energize the magnet 16 and thereby lift the detent 17 to raise it from the notch

to permit the rod 20 to be pushed outwardly, consequently opening the fuel supply line.

After the fuel supply line is opened, by the proper manipulation of the knob 7 the shaft may be rotated to place the switch blade 14 so that it will bridge the ring 12 and ignition contact 16, whereupon the car may be started.

The combined gas and ignition control device A may also be utilized to set the alarm switch D in such a position that unauthorized tampering with the main switch, for example, will cause an alarm to be given through the sounding of the horn of the vehicle, or a separate horn if desired. To that end the shaft 8 of the alarm unit D may be provided with an extension 8<sup>a</sup> and may carry an angular foot 31 having an insulating abutment part 32 for engaging with the switch blade 33 of the alarm switch. The said switch blade 33 is preferably mounted upon an axis 34 in alinement with but independent of the shaft 8, and the outer end 35 thereof engages with a contact ring 36 having an insulated portion 37 therein, whereby the horn or other alarm may be cut out when desired by an authorized party. That is to say, when the operator leaves the machine the shaft 8 may be manipulated through the handle 7 to place the blade 33 any place on the ring 36 which will enable a circuit to be closed to the horn if the main switch is closed by an unauthorized key, but to prevent such sounding of the signal when an authorized party operates the switch, the blade 33 may be placed on the insulating section 37 which will prevent the sounding of the horn, as will hereinafter more fully appear.

Referring to the wiring connections for accomplishing the desired functions of the device, reference may be made to the diagram shown in Figure 4, wherein the several parts are set to permit the circuit to be closed to the ignition system.

For normal running purposes the current may be supplied from the battery or other source of energy through the main switch B through the spark plugs and other electrical apparatus of the machine by means of wiring connections from the battery or other source of supply, through the main switch unit B and the fuel and ignition control unit A. To that end, the battery line *a* may be connected to a suitable distributing plate *b* having connected thereto the line *c* leading to the movable member 10 of the main switch unit B. When the plate 10 of the switch unit B is in contact with the fixed contact member 11 of the switch the circuit will be completed through the line *d* to the ring 12 of the combined gas and ignition control unit A, and from the said ring 12 it will be completed through the blade 14 to the contact 16 from whence it will go through

the connection *e* to the electrical translating devices of the ignition system and thence back through the wire *f* to the metal battery plate *b'* and thence to the battery through wire *a'*.

Preliminary, however, to the operation of the machine through the normal operating circuit described, it will be necessary to open the fuel supply line to the carbureter, and to that end suitable wiring connections are provided between the switch unit A and the magnet of the gas supply device C. These connections may be traced as follows:—

From the battery connection *a* to plate *b*, line *c*, closed switch parts 10 and 11, line *d*, ring 12, blade 14, contact 15, wire *g*, magnet 15<sup>a</sup> and wire *h* to battery plate *b'* and thence to the source.

In each of the foregoing operations the alarm switch D is open, since in the illustrations given it is assumed that the main switch B is operated by a key in the hands of an authorized person. As previously indicated, the first step in the proper operation of the device is the manipulation of the knob 7 to shift the blade 33 onto the insulated section 37 of the ring 36.

However, should the main switch B be closed by an unauthorized key while the blade 33 is off of the insulated section 37 and in contact with the metallic ring 36, the circuit will be completed as follows: From battery plate *b'* through connection *m* to the horn and hence from the horn through wire *n* to ring 36; from ring 36 through blade 33 to wire *o* and from thence through closed switch parts 11 and 10 to wire *c* leading to battery plate *b*.

Although the foregoing circuits are traced over a complete double wire system for the sake of clearness, it will, of course, be understood that the return to the battery in all circuits may be conveniently accomplished by utilizing the frame of the machine as the ground in the usual and well known manner.

The operation of the device is substantially as follows:—

When it is desired to park the car, the operator opens the members 10 and 11 of the main switch unit B and removes his key from the locking barrel 9, and at the same time rotates the knob 7 to any point on the dial 5 except the particular point which designates the place at which the blade 33 may be set to rest upon the insulated section 37 of ring 36 in the horn switch (see Fig. 5). In the present illustration the pointer 6 on the shaft 8 is set at "13" on the dial to place the blade 33 on the insulated section. Thus, when the operator leaves the car and opens the main switch B the shaft 8 should be rotated so that the pointer will read to any other figure than "13" on the dial thus placing the blade 33 in position to complete the circuit should the main switch B be closed

by an unauthorized key. Obviously should the main switch B be closed in the absence of the driver the horn or other audible signal of the device will sound due to the closing of the circuit through the connections heretofore described between the alarm switch device D and the main switch B.

Also upon leaving the car, and after having set the alarm switch, the operator pushes the rod 20 inwardly by means of the knob 21 thus permitting the detent 17 to drop into the notch 19 and prevent manipulation of the gas control connections.

When the authorized owner desires to start the car, he first manipulates the knob 7 in a clockwise direction, so as to bring the pointer to position "13" on the dial 5 which will set the arm 33 on the insulated portion 37 of the alarm switch and cut out the audible signal. (See Fig. 6.) He may then insert his key in the locking barrel 9 of the main switch B and cause the switch parts 10 and 11 to make contact and close the circuit from the battery to the ring 12 of the combined ignition and gas control switch A.

The next operation involves the shifting of the knob 7 in a counter-clockwise direction (see Fig. 7) from point "13" on the dial to the point "55" for example, which will shift the blade 14 of the switch unit A to bridge the ring 12 and contact 15, thereby energizing the magnet 15<sup>a</sup> and lifting the detent 17 out of the notch 19 permitting the rod 20 to be pushed inwardly to open the fuel supply line to the carbureter.

Upon further turning the knob 7 still in a counter-clockwise direction (see Fig. 8) to a position indicated by substantially the point "27" on the dial the plate 14 will be shifted to bridge the contacts 12 and 16 and thereby close the ignition circuit to permit the operation of the car.

When the circuit is completed from the switch unit A to the gas supply unit C or through the ignition contact 16, it will follow the line previously described to produce the desired results.

From the foregoing it is believed that it will be apparent that the present invention provides novel and effective means for locking or controlling the fuel supply of the motor vehicle, and also giving an adequate alarm in the event of unauthorized tampering, and while a simple and practical embodiment has been illustrated and described, it will of course be understood that changes in the form, proportions and minor details of construction can be resorted to without departing from the spirit of the invention or scope of the appended claims.

I claim:

1. An anti-theft device for motor vehicles adapted to close the fuel line, lock the ignition system, and sound an alarm device; comprising, a panel member, a key

controlled main switch accessible from the face of the panel, a knob and dial also exposed on the panel, a valve in the fuel line, a manually shiftable rod projecting through the panel and operatively connected with the valve, means for locking said rod including a rod engaging member and an electro-magnet adapted to be in circuit with said key controlled main switch, a rotary switch also included in circuit with said main switch and ignition line and controlled by said knob, and an alarm switch also included in circuit with the main switch and the alarm device, and said alarm switch being controlled by said knob.

2. An anti-theft device for motor vehicles adapted to close the fuel line, lock the ignition system and sound an alarm device comprising, a panel member, a key-controlled main switch accessible from the face of the panel, a valve in the fuel line, a manual actuator for the valve accessible at the face of the panel, a locking device for said actuator including a magnet adapted to be in circuit with the main switch, a knob and a dial exposed on the panel, a shaft for the knob, a rotary switch including an arm on the shaft and ignition and magnet-controlling contacts, and an alarm switch including a floating switch arm and an alarm contact, and means carried by the said shaft for moving said floating switch arm.

3. An anti-theft device for motor vehicles adapted to close the fuel line, and lock the ignition system and sound an alarm device comprising; a panel member, a key-controlled main switch accessible from the face of the panel, a valve in the fuel line, a manual actuator for the valve, a lock for the actuator, a magnet for controlling the lock and included in circuit with the main switch, a shaft journaled in the panel, a knob on the shaft, a rotary switch including an arm on the shaft and ignition and mag-

net-controlled contacts respectively in circuit with the magnet and ignition system of the motor vehicle, and an alarm switch consisting of a conductor ring having insulating sections, a floating switch arm pivoted at the axis of the contact ring and adapted to engage either the ring or insulated section, and an arm carried by said shaft for engaging with said switch arm.

4. An anti-theft device for motor vehicles adapted to close the fuel line, lock the ignition system and sound an alarm device comprising; a panel member, a key-controlled switch main accessible from the face of the panel, a knob and pointer, a dial for the pointer, a shaft journaled in the panel and carrying the knob and pointer, a valve in the fuel line having a stem, a manual actuator for said stem accessible from the face of the panel, a gravity lock for said manual actuator, an electro-magnet for controlling said lock and included in the circuit with the main switch, a rotary switch also in circuit with the main switch and comprising a conductor ring and magnet control and ignition contacts respectively in circuit with the main switch and with the magnet and igniton system of the vehicle, a switch arm carried by the shaft and manually engaging said ring and adapted to engage alternately with the magnet control or ignition contact, and an alarm switch comprising a conductor ring also concentric with said shaft and having an insulated section, a floating switch arm adapted to bear on said ring or insulated section, and an arm carried by said shaft for engaging with said floating switch arm.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

STEPHEN M. KUKURA.

Witnesses:

ALICE MCGINN,

JOHN A. FITHIAN.