

[54] AUTOMOBILE IGNITION LOCK

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[51] Int. Cl. **H01h 27/00**

[58] Field of Search 123/179 A, 179 BG, 179 G;
200/44, 61.66; 307/9 R, 10 R, 10 AT; 70/387, 239,
241, 243

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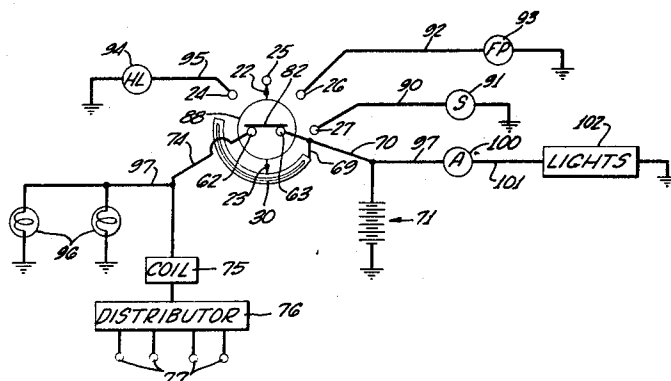
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[57] ABSTRACT

A lock comprising a rotatable, key-turned cylinder having a split pin on its axis, one end of which is exposed at the keyhole. The two halves of the pin are electrically insulated from one another, and one-half is connected to the battery. The other half is connected to the ignition coil, and when the key is telescoped over the split pin, it closes the circuit to the coil. A rotatable switch on the cylinder selectively closes the circuit to either solenoid-actuated hood latches, electrical fuel pump, or starter relay, according to the angular position of the key. Inserting key in lock closes circuit to the ignition coil, and turning key actuates starter relay, fuel pump, or hood latches, as desired. Pick-proof lock has oppositely facing hooks on the outer edges of alternate lock tumblers, which engage lips on the tumbler cavity when torque is applied to cylinder, to prevent tumblers from being pulled down out of cavity. Key in lock also closes circuit to telltale lights visible from outside of car, notifying police so that citation can be issued for leaving car with keys in ignition lock.

8 Claims, 8 Drawing Figures



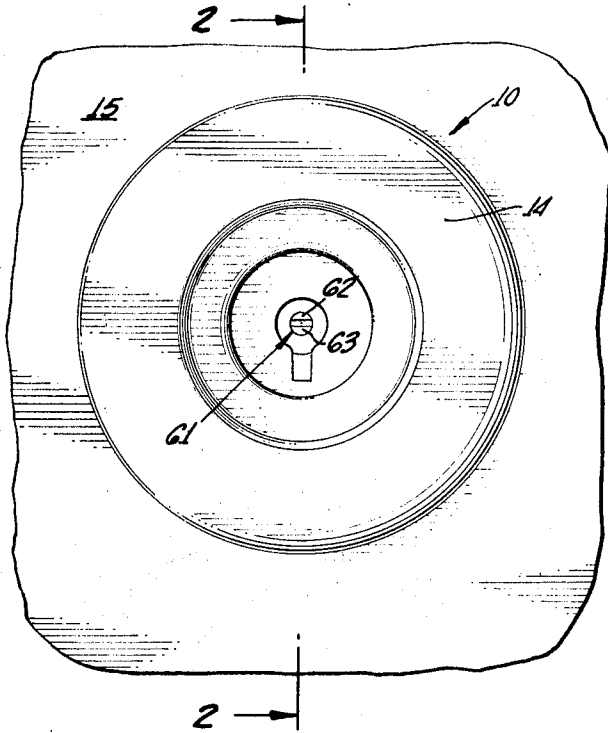


FIG. 1

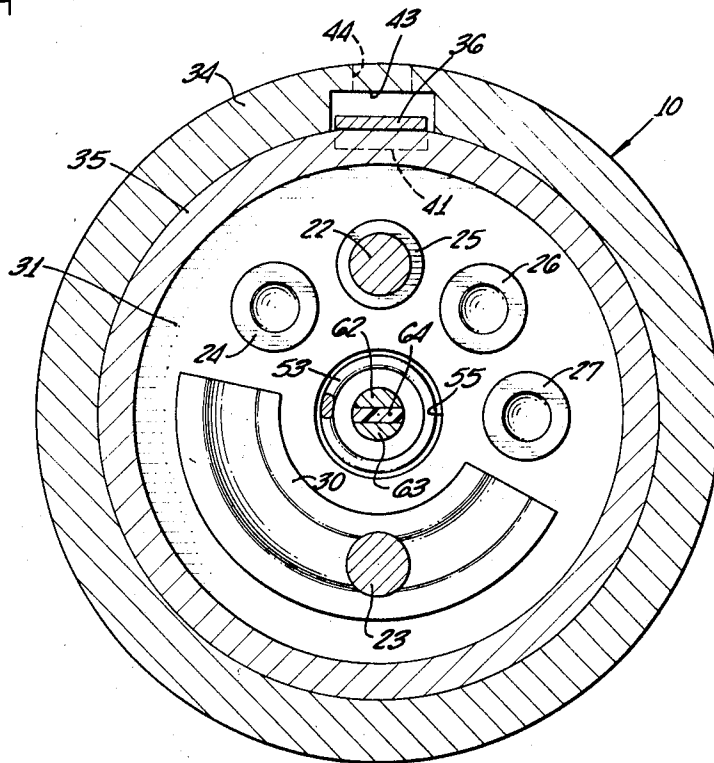


FIG. 3

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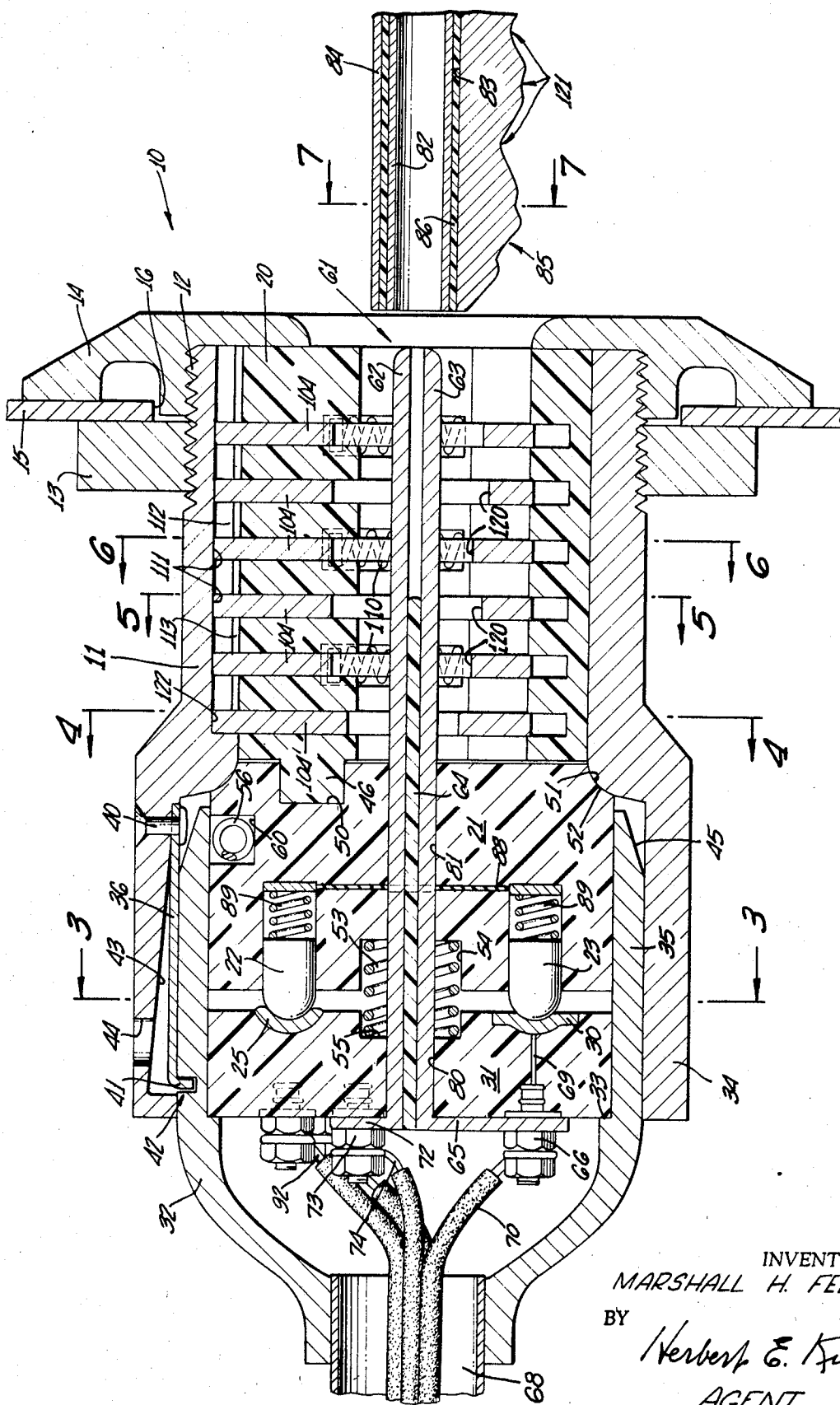
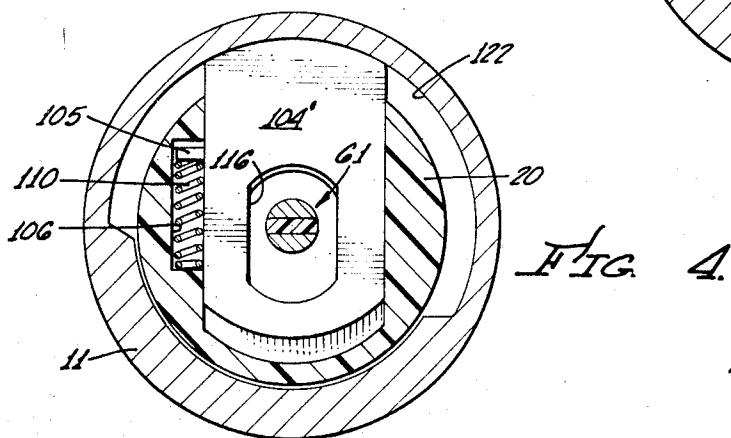
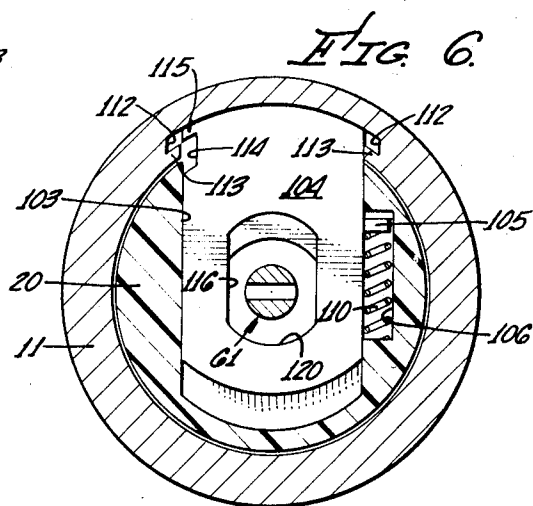
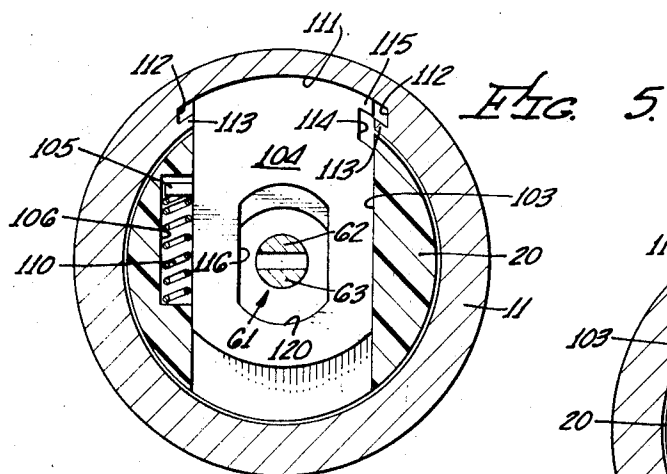
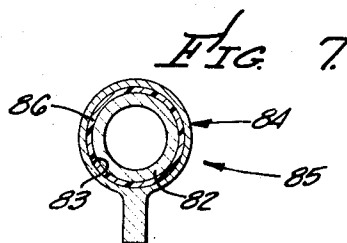
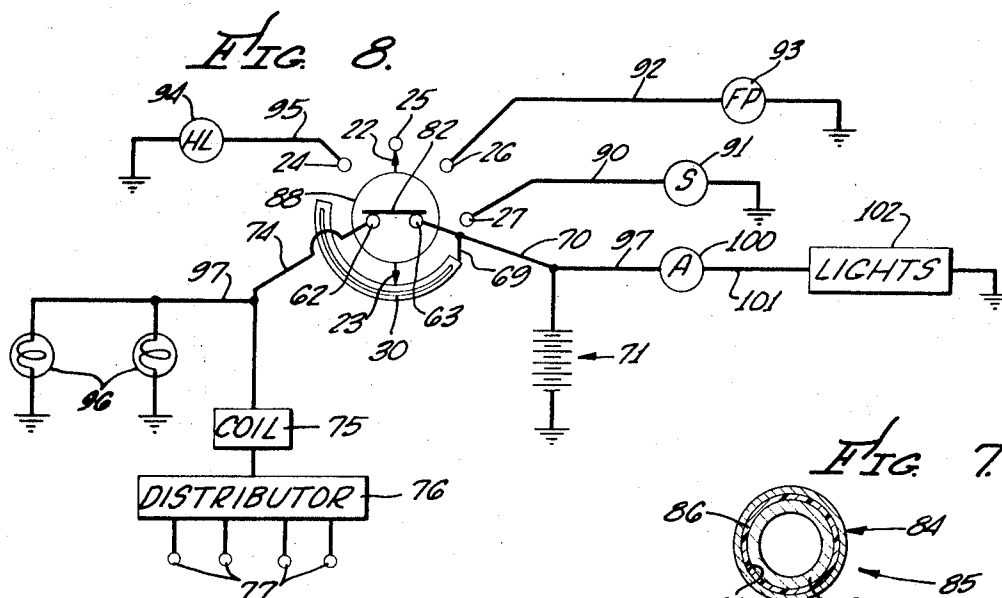


FIG. 2.

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AUTOMOBILE IGNITION LOCK

BACKGROUND OF THE INVENTION

The present invention pertains generally to ignition locks for vehicles such as automobiles, boats and the like, and more specifically to that class of locks embodying a rotatable lock cylinder which is prevented from turning, when the key is removed, by a plurality of spring-pressed tumblers that seat in a tumbler cavity in the stationary lock housing, and in which electrical circuits to various components of the vehicle are closed when the key is inserted into the lock and turned to one or another selected position.

There have been many prior attempts to devise a theft-proof ignition lock, in an effort to stem the rising tide of automobile and other vehicle thefts, but most of these have been unsuccessful for one reason or another. One big difficulty with most prior ignition locks is that they can be circumvented by "hot-wiring" the ignition system. This is done by raising the engine hood and connecting a wire directly across from the battery to the coil, thereby bypassing the ignition lock. Another wire is then momentarily connected between the battery terminal and the starter relay to operate the starter, and once the engine is running, the car can be driven away by the thief without further difficulty.

Other so-called "theft-proof" ignition locks that are considerably more sophisticated than the conventional ignition lock have had the serious disadvantage of being quite costly and, in many cases, requiring extensive structural modification of the automobile. In such cases, it is impractical to replace an existing conventional ignition lock with the new lock, owing to the complications of installation. This is a serious disadvantage since there are millions of already existing automobiles for which there is a need for an effective, inexpensive, theft-proof ignition lock that can be installed in place of the lock that came with the car.

Another disadvantage of the conventional key-operated ignition locks is that they can easily be picked by a professional lock-picker. This is often done by inserting a slender lock-picking tool into the keyhole and pulling the tumblers down out of the tumbler cavity one at a time, while exerting a constant torque on the lock cylinder so that the picked tumblers are pressed against the side of the housing and held by friction against reseating themselves in the cavity when released by the tool. Any key-operated lock that can easily be picked in the manner described above is totally ineffective against professional car thieves, and its only value as a theft-deterrent is against juveniles or other amateurs.

Still a further disadvantage of prior key-operated ignition locks is that there is no way of preventing careless or irresponsible motorists from leaving their unattended cars with the keys in the ignition lock. As a result, all that a car thief has to do is to enter the car and drive it away. There is no effective way of enforcing prohibitions against leaving the keys in a parked car, since it is difficult for a passing policeman to observe whether or not the key has been left in the lock of any unattended car. One of the best ways of greatly reducing the number of car thefts is to force all motorists to remove the key from the car when leaving it unattended. This can be done by providing legal penalties for leaving the key in a parked car, and then providing means for advertising to the police at large when an unattended car has the key in its ignition lock, so that a citation can be issued. Prior to the present invention, there has never been an automobile ignition lock that, in effect, forces the motorist to remove his key from the lock by making the detection of such condition so easy that no motorist would willingly risk the consequences.

SUMMARY OF THE INVENTION

The primary object of the present invention is to provide a new and improved ignition lock for automotive vehicles, or the like, which is virtually theft-proof. The term "virtually theft-proof" is used advisedly, since it is doubtful that a key-operated lock can ever be designed which cannot eventually

be picked by an experienced and determined lock-picker, given sufficient time. However, for all practical purposes, it can be considered that an ignition lock is theft-proof if the time required to pick the lock or otherwise circumvent it is more than a half hour or so. The present invention fits well within this category.

Another object of the invention is to provide a car locking arrangement which cannot be circumvented by "hot-wiring" the ignition system without a key for the lock, inasmuch as the engine hood is locked down by solenoid-actuated hood latches and the latter can only be raised by turning the key to the "hood-release" position.

Another object of the invention is to provide an ignition lock in which the circuit to the ignition system is completed by merely inserting the key in the lock, and in which the operation of the car is sustained by turning the key to a position that closes the circuit to an electric fuel pump. Thus, without the key to turn the lock cylinder to the "fuel pump" position, the engine will run for only a few seconds, until the carburetor float chamber is emptied. One advantage of having the ignition system energized by inserting the key in the lock is that it is necessary to remove the key from the lock in order to stop the engine, and this prevents the owner from inadvertently leaving the car with the key still in the lock, which is an important factor in most car thefts. Thus, the present invention reduces the likelihood of the owner leaving the keys in the lock, as this would necessitate reinserting the key in the lock after first withdrawing the key to shut off the engine.

Another object of the invention is to provide an automobile ignition lock in which insertion of the key into the lock causes a telltale light to be turned on, said light being clearly visible from outside the car so that it will attract the attention of any police officer within sight of the car to the fact that the key has been left in the lock, and a citation should be issued. This feature of the invention has the desirable effect of conditioning the motorist to remove the key whenever he leaves his car unattended because of the almost inevitable consequence of getting a citation if there is a police officer in the vicinity. As a result, the most common and difficult-to-combat cause of car thefts is virtually eliminated.

A further object of the invention is to provide a key-operated lock in which means is provided for preventing the tumblers from being pulled down out of the tumbler cavity one at a time with a lock-picking tool while a constant torque is exerted on the lock cylinder in one direction so as to hold the tumblers against the side of the housing, and thereby prevent them from slipping back into the tumbler cavity when released by the tool. This desirable feature is obtained by providing oppositely facing hooks on the outer edges of alternate tumblers, said hooks being engageable with lips on the sides of the tumbler cavity when a torque is applied in that direction on the lock cylinder so as to take up all of the clearance between the cylinder, tumblers, and housing. Thus, every other tumbler will catch its hook on the corresponding lip and thereby prevent the tumblers from being retracted from the cavity, regardless of which direction torque is applied to the cylinder.

Still another object of the invention is to provide an ignition lock of the class described, and having all of the characteristics mentioned above, which, at the same time, is simple an inexpensive to manufacture and install, and also is capable of being used on virtually any automobile in operation at this time.

These and other objects and advantages of the invention will become apparent to those skilled in the art from the following detailed description of the preferred embodiment thereof, with reference to the accompanying drawings.

DESCRIPTION OF THE DRAWINGS:

FIG. 1 is a front elevational view of an ignition lock embodying the principles of the invention;

FIG. 2 is an enlarged sectional view through the lock, taken at 2—2 in FIG. 1;

FIG. 3 is a transverse sectional view, taken at 3—3 in FIG. 2;

FIG. 4 is a transverse sectional view through the lock cylinder, taken at 4—4 in FIG. 2;

FIG. 5 is a sectional view taken at 5—5 in FIG. 2;

FIG. 6 is a sectional view taken at 6—6 in FIG. 2;

FIG. 7 is a transverse sectional view taken at 7—7 in FIG. 2; and

FIG. 8 is a schematic circuit diagram, showing the electrical connections.

DESCRIPTION OF THE PREFERRED EMBODIMENT:

In the drawings, the present ignition lock is designated in its entirety by the reference numeral 10, and includes a generally cylindrical housing 11, having external threads 12 at one end, upon which are screwed a nut 13 and annular faceplate 14. The lock is mounted on a dash panel 15, with only the faceplate 14 visible from the driver's side. The remainder of the lock extends through an aperture 16 in the dash panel, and is secured to the dash panel by clamping the latter between the faceplate 14 and nut 13.

Rotatably mounted within the housing 11 is a lock cylinder 20 and a rotatable switch body 21, which are arranged end-to-end and coaxial with respect to one another. Mounted on the back side of the switch body 21 on diametrically opposite sides of the axis of rotation are two spring-loaded contacts 22 and 23; the former being adapted to selectively engage one or another of four angularly spaced, stationary contacts 24, 25, 26 and 27, and the latter wiping on an arcuate distributor plate 30. Contacts 24, 25, 26, 27 and distributor plate 30 are mounted on the adjacent face of a stationary switch body member 31, which seats within a socket 32 and abuts against an annular shoulder 33 within the socket.

Housing 12 has a cylindrical sleeve-like end portion 34 of enlarged diameter, which telescopes over the cylindrical skirt 35 of socket 32, and is locked against being removed endwise therefrom by a spring finger 36, which is fastened at one end by a rivet 40 to the inside of member 34. At its other end, spring finger 36 is bent sharply inwardly to form a hook 41, which seats in a narrow, transverse slot 42 formed in the outer surface of socket member 32, as best shown in FIG. 2. Formed in the sleeve-like end portion 34 directly under spring finger 36 is a recess 43, which tapers in depth from the rivet end of the spring finger to the hook end thereof, so that the free end of the spring finger can be drawn up into the recess to retract the hook 41 from slot 42. To permit doing this, there is a hole 44 extending through end portion 34 from the bottom of recess 43, and a slender hooklike tool (not shown) can be inserted through this hole to engage the spring finger 36 and lift the free end thereof, so as to raise hook 31 out of the slot 42. This permits separating the housing 11 from the socket 32 if that should ever be necessary. To facilitate inserting the socket 32 into the end member 34, skirt 35 is chamfered at 45, forming a tapered lead portion.

As mentioned earlier, lock cylinder 20 and rotatable switch body 21 are axially aligned, and are interlocked to rotate as one. To this end, lock cylinder 20 has an axially projecting knob 46 protruding from its back end at a distance spaced radially outward from the axis of rotation and this knob is seated within a correspondingly shaped cavity 50 in the adjacent end of switch body 21. Thus, when the lock cylinder 20 is turned by the key, switch body 21 turns with it.

Switch body 21 has a rounded, concave, annular bearing surface 51 at one end thereof, which seats against a correspondingly rounded, convex annular mating surface 52 on housing 11, to provide an end-thrust bearing for the member 21. Member 21 is yieldingly pressed against the bearing surface 52 by a compression coil spring 53 located on the axis of rotation, one end of said spring being seated within a circular cavity 54 in the end of body member 21 and the other end being seated in a circular cavity 55 in the adjacent face of stationary member 31. The spring 56 takes up all of the endwise clearance between the several parts, and eliminates any feeling of looseness when the key is inserted in the lock.

A compression coil spring 56 (see FIG. 2) is seated within a circumferential slot 60 that is formed in the outer surface of switch body 21, and one end of the spring is engaged by an abutment on the switch body 21, while the other end thereof is engageable by an abutment on cylindrical skirt 35 when the lock cylinder is turned to the extreme end of its angular travel in the clockwise direction, so that when the switch is momentarily turned to the "starter" position, the spring 56 is compressed. When the key is released, spring 56 returns the lock cylinder to the normal running position for the engine, which in the case of the present invention causes a circuit to be closed to the electric fuel pump, as will be explained more fully presently. The length of the circumferential slot 60 is such that there is lost-motion between switch body 21 and skirt 35 while movable contact 22 is being shifted between stationary contacts 24 and 26, and it is only when contact 22 is moved from 26 to 27 that spring 56 is engaged and compressed.

Fixed to the back side of stationary switch body member 31 and extending forwardly therefrom along the central axis of the lock to the entrance of the keyhole, is a split pin 61 of electrically conductive metal, such as copper or brass, the two halves 62 and 63 of which are separated for a substantial portion of their length by a layer of insulation material 64. The switch body member 31 is, of course, made of electrically non-conductive material such as plastic or ceramic, so that there is no electrical path from 62 to 63 through the switch body. Projecting radially from the back end of pin half 63 is a flange 65, which lies flat against the back side of member 31 and at its outer end has a terminal fitting to which an electric wire 70 is connected. Wire 70 goes to the battery 71 through an armored conduit 68, which is inserted into an opening in the rear end of socket 32 and fixedly attached thereto. Conduit 68 extends from the ignition switch to the firewall of the automobile, and provides a protective enclosure for all of the electrical wires, so that said wires cannot be tampered with by an automobile thief. Terminal 66 is also connected to the arcuate distributor plate 30 by a conductor 69, as seen in FIG. 2.

Pin half 62 also has a radial flange 72 that extends in the direction opposite to flange 65, and at its outer end is a terminal fitting 73, to which a wire 74 is connected. Wire 74 also passes through the armored conduit 68, and is connected to the ignition coil 75 which is connected, in turn, to the distributor 76 and spark plugs 77, as shown in FIG. 8.

Split pin 61 is located on the axis of the lock housing 11 and extends forwardly through aligned openings 80 and 81 in members 31 and 21, respectively, and thence through the hollow center of the lock cylinder 20. The split pin 61 is adapted to be received within a conductive, tubular sleeve 82 of copper or brass contained within a cylindrical bore 83 in the barrel portion 84 of a key 85. Sleeve 82 is insulated from the rest of the key by a surrounding sleeve 86 of insulating material, as shown in FIGS. 2 and 7, and when the key is inserted over the split pin 61, the two halves 62 and 63 are electrically connected by the conductive sleeve 82, so that the key, in effect, functions as a switch. In the schematic diagram of FIG. 8, the tubular sleeve 82 of the key is represented by a flat bar bridging the two pin halves 62 and 63.

From the foregoing, it will be apparent that merely inserting the key in the lock has the effect of turning on the ignition. To start the engine, it is necessary to turn the key in the clockwise direction to the extreme position, which shifts the movable contact 22 over to stationary contact 27, at the same time compressing spring 56, as described earlier.

Contact 27 is connected by a wire 90 to the starter relay switch 91, and when the switch is momentarily turned to the "starter" position, this causes the starting motor to be energized, which starts the engine. When the key 85 is released, spring 56 returns the switch body 21 about 45° in the counter-clockwise direction, moving contact 22 back to stationary contact 26. Contact 26 is connected by wire 92 to the electric fuel pump 93, as shown in FIG. 8, and this causes the fuel pump to operate as long as the switch remains in this normal operating position, to keep the engine running. As a matter of

fact, the engine will run for several seconds on the fuel that is normally contained within the carburetor float chamber at any given time, enabling the switch to be moved from one position to the other without causing the engine to stop as soon as contact 22 is moved off of contact 26.

As mentioned earlier, one of the advantages of the invention is that the hood cannot be raised to "hot-wire" the ignition system. This is accomplished by providing a solenoid-actuated hood latch 94 (FIG. 8) which locks the engine hood down so that it cannot be raised by a car thief. The solenoid-actuated hood latch 94 is connected by a wire 95 to a stationary contact 24, and when the car owner wishes to release the engine hood to that a service man can raise it to check the oil or perform other functions on the engine, switch body 21 is turned by the key 85 to the extreme counterclockwise position, placing contact 22 on contact 24. This closes the circuit to hood latch 25, and causes the latch to release the hood. If it is desired to restart the engine while the hood is raised, the key 85 is merely turned over to the starter position again and then released to the running position, with contact 22 resting on contact 26.

It should be noted at this point that the two movable contacts 22 and 23 are electrically connected by a conductor 88 and springs 89, said springs being the ones that urge the movable contacts 22, 23 against their respective stationary contact points on member 31. Since the arcuate distributor plate 30 is connected directly to the battery 71 through conductor 69 and wire 70, and movable contact 23 wipes on plate 30 for all positions of the switch, it follows that contact 22 is also energized and sends electricity to whichever contact it touches.

Stationary contact 25 is a "dead" contact, and its only purpose is to provide a spring-detent action to hold the switch body 21 in the inoperative, or "off" position. Each of the stationary contacts 24, 25, 26, 27 is slightly dished, as best shown in FIG. 2, and the movable contacts 22 and 23 are somewhat bullet-shaped, with round noses that seat in the shallow depressions formed in the centers of the stationary contacts. As the switch body 21 is rotated, the nose of contact 22 rides up over the raised edge of one of the contacts 24, 25, 26, 27, and then drops into its central depression. Further rotation of the switch body causes the contact member 22 to ride up over the elevated edge of the stationary contact, which is yieldingly opposed by spring 89. Thus, a certain amount of work is required to rotate the switch body 21 to move the contact 22 off of any of the stationary contacts, and the neutral, or "off" position (contact 25) is nothing more than a detent to hold the switch body 21 in that selected position.

One or more warning, or telltale lights 96 is provided on the outside of the automobile, where prominently visible, to warn the driver of the car if he has inadvertently left his key in the ignition lock. The lights 96 are connected by a wire 97 to wire 74, and anytime the key is left in the lock, thereby closing the circuit to the coil 75, current is also sent to the warning lights 96, causing them to light up.

The lights 96 also serve another important function, and that is to attract the attention of any police officer in the vicinity to the fact that the keys have been left in the ignition lock of a parked automobile, and therefore a citation should be issued. The effect of this is to condition the motorist to a state of awareness that failure to remove the key from his parked car will almost inevitably result in a citation and payment of a fine. This is somewhat analogous to the use of an "expired" flag on a parking meter, which announces to all who pass by that the car is illegally parked and should receive a parking ticket. No motorist in his right mind would deliberately leave his car in a metered parking zone without putting a coin in the meter so as to pull the flag down out of sight, and by the same token, no motorist would leave the keys in his parked car if this results in lighting up the telltale lights 96, thereby inviting any passing police officer to issue a citation. As a result of being thus conditioned to remove the keys from the ignition lock each and every time that he leaves his parked car, the motorist eliminates one of the most common

contributory factors leading to car theft, particularly by juveniles and other impulsive car thieves who steel the car primarily for a joy ride, or to remove it to a safe place for stripping.

To complete the circuit shown in FIG. 8, battery 71 is also connected by a wire 97 to the ammeter 100; and another wire 101 goes to the lights 102, with their associated switches.

The theft-proof tumbler system of the lock will now be described. As best shown in FIG. 2, the lock cylinder 20 is made up in laminations which cooperate to form a plurality of narrow, axially spaced slots 103. Slots 103 have parallel sides and are open at the top end of the lock cylinder. Slidably disposed within slots 103 are tumblers 104, the first five of which (counting from the keyhole end of the lock) serve to lock the cylinder against turning until the proper key is inserted, while the innermost tumbler 104' serves as a retainer and limit stop, to limit rotation of the cylinder.

The locking tumblers are best shown in FIGS. 5 and 6. Alternate tumblers have projections 105 protruding laterally from opposite side edges thereof into cavities 106 in the lock cylinder 20. A compression spring 110 bears upwardly against the underside of projection 105, and the opposite end of the spring is seated on the bottom end of the cavity. Spring 110 urges the tumbler 104 upwardly, so that its upper end is normally seated in a tumbler cavity 111 formed in the side of housing 11. Cavity 111 is just wide enough to receive the end of tumbler 104, but at each end of the cavity there is a recess 112 forming an inwardly projecting lip 113. On the side edge of the tumbler 104 opposite the projection 105 is a notch 114, which forms an outwardly facing hook 115.

Each of the tumblers 104 has a vertically elongated opening 116 at its center, and the split pin 61 passes through this opening. The width of the opening 116 is slightly larger than the outside diameter of the barrel portion 84 of the key, so that the key can be inserted in the lock. The bottom edge 120 of the opening 116 is engageable by the cam lobes 121 of the key when the latter is inserted into the keyhole, and the tumblers are pulled downwardly in their slots by varying distances, depending upon the heights of the cam lobes. Since all of the tumblers have their top ends seated in the cavity 111, and the lock cylinder cannot be turned until all of them have been retracted from the cavity, the distance of the bottom edge 120 from the center of the pin 61 must be such that a cam lobe 121 of predetermined height will pull the tumbler down the exact amount required to clear the cavity 111.

The novel feature of the tumbler arrangement in the present invention is the provision of the oppositely facing hooks 115 on alternate tumblers, and associated lips 113 on the housing, which make it virtually impossible to pick the lock by pulling the tumblers down out of the cavity 111 with a lock-picking tool while exerting a torque on the lock cylinder 20 so as to press the edges of the tumblers against the housing. If the lock picker attempts to do this, those tumblers whose hooks 115 face in the direction of the torque applied to cylinder 20 will catch on the lips 113, and be prevented from moving downwardly. Thus, a car thief finds it impossible to pull all of the tumblers down while holding a clockwise or a counterclockwise torque on the lock cylinder, since every other tumbler will catch its hook 115 on the lip 113.

The end tumbler 104' (FIG. 4) is similar to the others, except that it is not engaged by a cam lobe on the key, and therefore it is not drawn downwardly when the key is inserted into the lock. Moreover, the top end of tumbler 104' is seated in a circumferentially extending, arcuate slot 122, which extends for a sufficient distance in each direction to allow the contact 22 to reach each end of the end contacts 24 and 27. The top end of tumbler 104' thus slides along the circumferential length of slot 122, and therefore does not act to prevent rotation of the cylinder, as do the other tumblers 104. Instead, tumbler 104' remains seated in its slot 122 at all times, and holds the lock cylinder against endwise movement with respect to the housing 11. Tumbler 104' also limits rotation of the cylinder in each direction, as the tumbler engages the ends of the slot 122 at each extreme position.

The operation of my lock is believed to be clear from the foregoing description. While I have shown and described in considerable detail what I believe to be the preferred embodiment of my invention, it will be obvious to those skilled in the art that there are other ways of accomplishing the same results, and therefore the invention is not limited to such details, but may take widely different forms within the scope of the claims.

I claim:

1. For use with an automotive vehicle having a battery, an ignition system, a starter, and an electric fuel pump, a key-operated ignition lock comprising:

a stationary lock body;

a cylinder lock rotatably disposed within said body;

means telescopically engageable by a key when the latter is inserted in the lock, said means comprising a first member connected to said battery, and a second member connected to said ignition system, said ignition system being energized by said battery when said key is inserted in the lock;

a rotatable switch body connected to said lock cylinder to be rotated thereby, said rotatable switch body having a movable contact member connected to said battery;

a first stationary contact on said lock body engageable by said movable contact when said cylinder lock is turned to a first position, said first stationary contact being connected to said starter to energize the same; and

a second stationary contact on said lock body engageable by said movable contact when said cylinder lock is turned to a second position, said second stationary contact being connected to said electric fuel pump to energize the same.

2. An ignition lock as in claim 1, wherein said automotive vehicle has a solenoid-actuated hood latch, and said lock has a third stationary contact on said lock engageable by said movable contact when said cylinder lock is turned to a third position, said third stationary contact being connected to said solenoid-actuated hood latch to energize the same so as to release the latch when the lock cylinder is turned to said third position.

3. An ignition lock as in claim 1, wherein said means telescopically engageable by the key comprises a split pin of electrically conductive material extending longitudinally through the lock on the axis of rotation of said cylinder, the two halves of said pin being insulated from one another, and one of said halves being connected to said battery;

the other of said halves of said pin being connected to said ignition system;

said key including a barrel portion having a central bore; and

an electrically conductive sleeve contained within said bore and electrically insulated therefrom, said sleeve forming an electrical connection between said pin halves when the key is inserted into the lock, thereby establishing the circuit from said battery to said ignition system.

4. An ignition lock as in claim 2, wherein said means telescopically engageable by the key comprises a split pin of electrically conductive material extending longitudinally through the lock on the axis of rotation of said cylinder, the two halves of said pin being insulated from one another, and one of said halves being connected to said battery;

the other of said pin halves being connected to said ignition system;

said key including a barrel portion having a central bore;

an electrically conductive sleeve contained within said bore and electrically insulated therefrom, said sleeve forming

an electrical connection between said pin halves when the key is inserted into the lock, thereby establishing a circuit from said battery to said ignition system;

said rotatable switch body having a pair of movable contact members, one of which is selectively movable to said first, second and third stationary contacts; and

the other of said movable contact members being electrically connected to said first movable contact member, and wiping on a distributor plate that is connected to said battery.

5. An ignition lock as in claim 1, wherein said automotive vehicle has at least one telltale light mounted thereon at a prominently visible location, said telltale light being electrically connected to said means telescopically engageable by the key, whereby the light is caused to light up when the key is inserted in the lock, so as to call attention of any nearby police officer to the fact that the key has been left in the ignition lock of a parked car, for which a citation may be issued. other

6. An ignition lock as in claim 4, wherein said automotive vehicle has at least one telltale light mounted thereon at a prominently visible location, said light being electrically connected to said other pin half, whereby the light is caused to light up whenever the key is inserted in the lock;

said cylinder having a plurality of spring-pressed tumblers slidably mounted therein for movement in the radial direction;

each of said tumblers having one end that projects radially from said cylinder and seats within a tumbler cavity in said lock body, thereby locking the cylinder against rotation with respect to the lock body; and

means on said tumblers engageable with companionate means on said lock body when said cylinder has a torque exerted thereon in one direction, whereby said tumblers are prevented from being withdrawn from said tumbler cavity by means of a lock-picking tool.

7. An ignition lock as in claim 1, wherein said cylinder has a plurality of spring-pressed tumblers slidably mounted therein for movement in a plane passing radially through the axis of rotation of the cylinder;

each of said tumblers having an end that projects radially from said cylinder and seats within a tumbler cavity in said lock body, thereby locking said cylinder against rotation with respect to the lock body; and

means on said tumblers engageable with companionate means on said lock body when said cylinder has a torque exerted thereon in one direction, whereby said tumblers are prevented from being withdrawn from said tumbler cavity by means of a lock-picking tool.

8. An ignition lock as in claim 1, wherein said cylinder has a plurality of spring-pressed tumblers slidably mounted therein for movement in a radial direction;

each of said tumblers having one end that projects radially from said cylinder and seats within a tumbler cavity in said lock body, thereby locking said cylinder against rotation with respect to the lock body;

alternate tumblers having oppositely facing hooks on said one end;

said lock body having lips at opposite ends of said tumbler cavity, the lip on one end of said cavity being engageable by the hooks on one set of tumblers, and the lip on the other end of said cavity being engageable by the hooks on the other set of tumblers, whereby when said lock cylinder has a torque exerted thereon in either direction, one of said sets of tumblers engages its hooks on the corresponding lip, thereby preventing those tumblers from being withdrawn from said cavity.

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