Sept. 23, 1930. E. J. MARTEL 1,776,265

AUTOMOBILE LOCK

Filed March 7, 1929 2 Sheets-Sheet 1

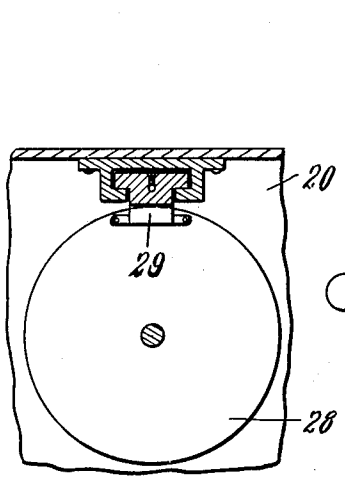


Fig. 2

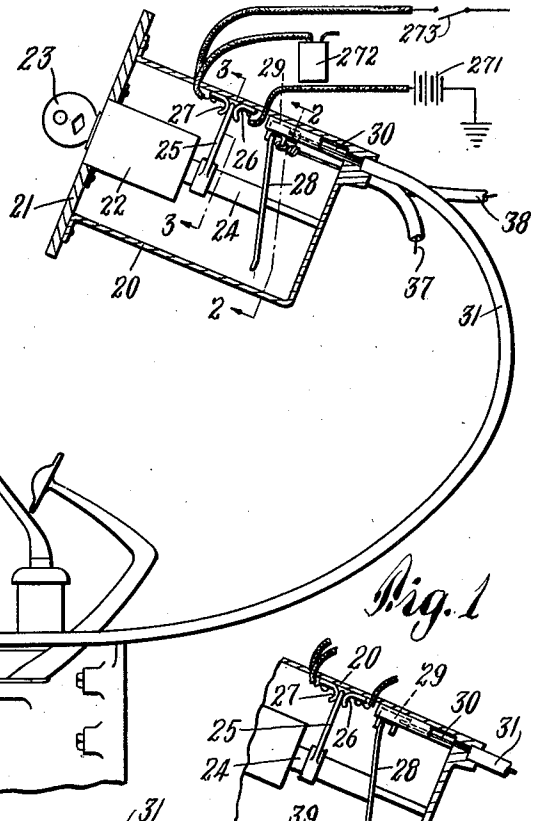


Fig. 1

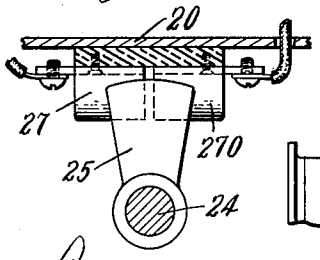


Fig. 3

Fig. 4

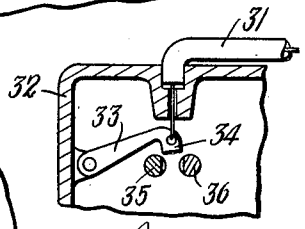


Fig. 5

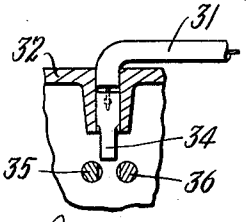


Fig. 6

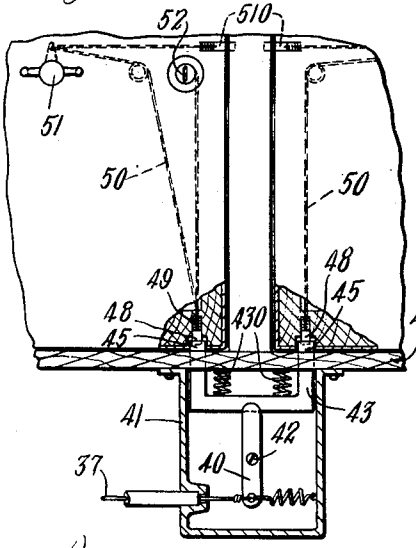


Fig. 7

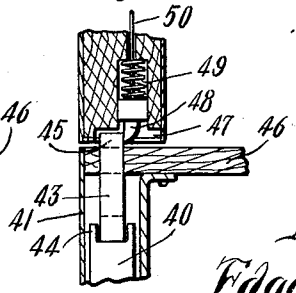


Fig. 8

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AUTOMOBILE LOCK

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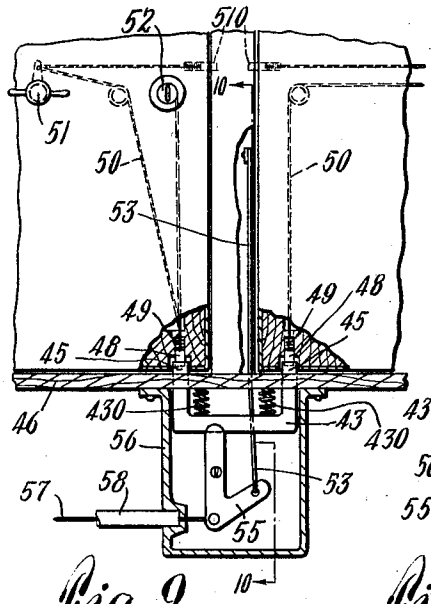


Fig. 9

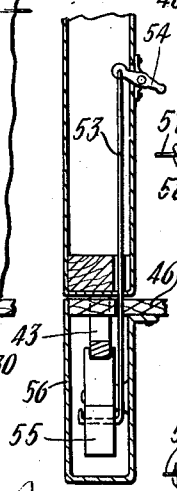


Fig. 10

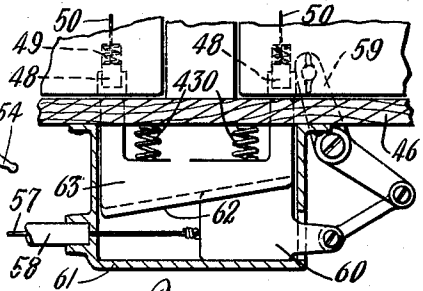


Fig. 11

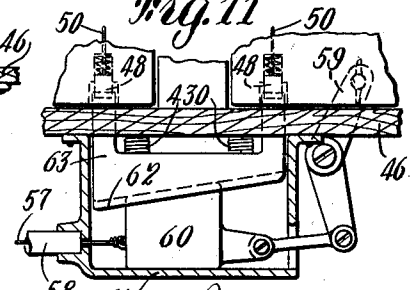


Fig. 12

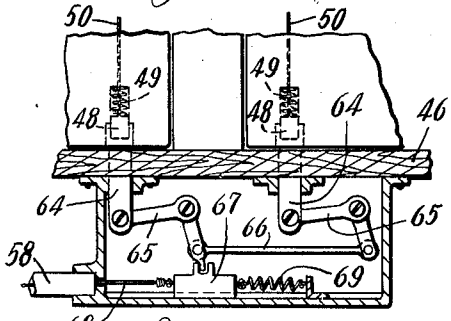


Fig. 13

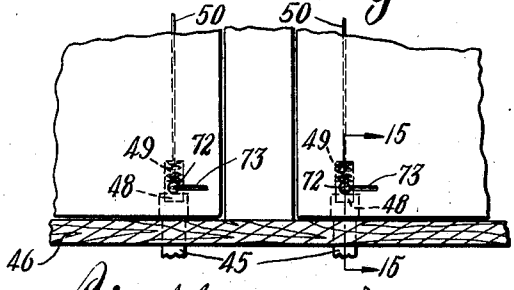


Fig. 14

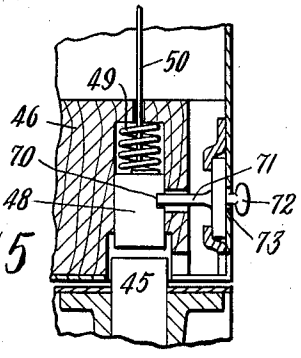


Fig. 15

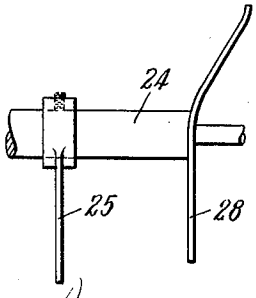


Fig. 16

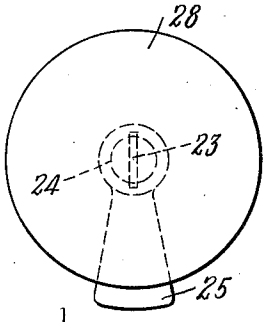


Fig. 17

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1,776,265

UNITED STATES PATENT OFFICE

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AUTOMOBILE LOCK

Application filed March 7, 1929. Serial No. 345,101.

This invention relates to mechanism for conveniently and effectively securing an automobile against the activities of thieves. As a large proportion of the pleasure automobiles now made are of the "closed car" type, it is desirable not only to lock some part of the mechanism of the car but also the doors of the car body, the latter being locked not only as additional security against theft of the car itself but also to protect robes, loose accessories, and other articles which may be left in the car. It is an object of this invention to provide apparatus by which all the locking means can be controlled by a single movement from a convenient point such for example as the dash-board of the car. By my invention a turn of a single key in a dash-board lock may secure the ignition circuit, the transmission gear and/or other portions of the mechanism, and may also set locks on the doors so that they may be opened from within but not from outside except by a suitable key. I may also provide means to render the locking mechanism for one or more of the doors inoperative, in case it is desired to lock the mechanism of the car without securing the doors. To this end I may provide latches carried by the doors adjacent to an edge thereof, as for example the bottom edge, in addition to the usual latches carried by such doors at a side edge. Each latch is preferably arranged to clear the sill of the door which carries it. When the dash-board key is turned in the lock, suitable lugs rise upwardly from the door sills into the paths of the latches so as to prevent the opening of the doors unless the latches are drawn upward to clear the lugs. A handle may be provided on the inside of each door to retract both latches on the door so as to allow the door to be opened. One or more of the doors may also be provided with means for retracting the latch by means of a key inserted through the outside of the door, or by a combination type lock accessible from outside the car, to provide access to a locked car by one having the proper key or knowledge of the combination. In addition to moving the lugs for the door latches into operative position, the dash-board lock may be made to secure the car by locking one or more of the parts of the car necessary for its operation, as for example the ignition circuit, the clutch, the transmission gearing, and the self-starter switch.

For a more complete understanding of the invention reference may be had to the disclosure thereof in the description which follows and in the drawings, of which,—

Figure 1 is an elevation, partly in section and partly diagrammatic, of a portion of apparatus embodying the invention.

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

Figure 3 is a section on the line 3—3 of Figure 1.

Figure 4 is a sectional view of a portion of Figure 1, showing a modified construction thereof.

Figure 5 is a fragmentary sectional view of the interior of the transmission case of an automobile showing the locking mechanism therein.

Figure 6 is a view similar to Figure 5 showing a modified form of construction.

Figure 7 is a side elevation of a portion of the side wall of an automobile, portions being broken away to show the working parts of a locking mechanism.

Figure 8 is a transverse section through the door sill and lower portion of a door shown in Figure 7.

Figure 9 is similar to Figure 7 but shows a modified form of the invention.

Figure 10 is a section on the line 10—10 of Figure 9.

Figure 11 is an elevation, partly in section, of a modified form of locking means.

Figure 12 is similar to Figure 11 except that the parts are in a different position of operation.

Figure 13 shows a further modification of the door locking mechanism.

Figure 14 illustrates a pair of doors with means for holding the latches in inoperative position.

Figure 15 is a section on the line 15—15 of Figure 14.

Figure 16 is an elevation of a modified

form of a portion of the mechanism shown in Figure 1.

Figure 17 is an elevation of the face of the cam plate shown in Figure 16.

In Figure 1 is illustrated a housing 20 adapted to be secured to the under side of the dash-board 21 of an automotive vehicle. The housing 20 may contain a barrel lock 22 within which are suitable tumblers which must be moved by a key 23 in order to permit rotation of the barrel inside. The lock is connected to a stem 24 on which may be mounted a switch member 25 capable of making a connection between a contact element 26 on one side and a pair of contact elements 27 and 270 on the other side. The contact element 26 may be connected to a battery 271 carried by the vehicle, the elements 27 and 270 being connected respectively to an ignition coil 272 and a self-starter switch 273. As shown in Figure 3, the switch member 25 is preferably located so that when the mechanism is in its unlocked position, the switch member is between and in contact with the points 26, 27 and 270. The use of a single switch for the ignition and self-starter circuits prevents the operator from using up his battery current in trying to start the motor when he has forgotten to turn on the ignition. On the stem 24 may also be mounted a cam plate 28, the edge of which may engage a suitable channeled slide 29 to which is attached a cable 30 extending in an armored housing 31 to some portion of the mechanism of the automobile, such as the transmission casing 32. As shown in Figures 5 and 6 a lever 33 or plunger 34 may be provided to enter suitable notches formed in the shifter rods 35 and 36 of the transmission gearing. These shifter rods may, if desired, be provided with a plurality of notches such as to permit the locking of the gears in neutral position or in forward or reverse speeds. Instead of or in addition to locking the shifter rods as shown, the invention also includes the locking of any other movable part of the machinery of the automobile which would interfere with the operation thereof.

To the slide 29 I may also attach a pair of cables 37, 38 for simultaneous actuation with the cable 30. Since in some cases it may be desired to exert a pull on the cables 37, 38 simultaneously with the push on the cable 30, I may attach the former to a separate slide 39, as illustrated in Figure 4, the slide 39 engaging the edge of the cam disk 28 at a point opposite to the point of engagement of the slide 29. The cables 37 and 38 may lead to the opposite sides of the vehicle in order to operate mechanism for securing the vehicle doors. As shown, for example, in Figures 7 and 8, the cable 37 may be attached to a lever 40 which is protected by a suitable housing 41 and is rockably mounted as at 42. The opposite end of the lever 40 is attached to engage the lower face of a plunger 43, this end of the lever 40 being provided with a pair of flanges 44 if desired to act as guides. Figures 7 and 8 illustrate the locking position of the plunger 43, this being raised against the restoring pressure of suitable springs 430 so that the upper ends 45 thereof form latches or lugs which project above the sill 46 of the doors, a recess 47 being provided in the lower portion of each door to receive the ends 45 of the plunger 43. Each door may carry a sliding latch member 48 which may be downwardly pressed as by a suitable spring 49 so that the lowermost edge of the latch is normally flush with the bottom of the door itself. Thus when the plunger 43 is moved up to locking position as shown in Figure 8, each latch of lug 45 moves into the path of a latch 48, thus preventing the outward swing of the door until either the plunger 43 or the latch 48 is retracted. Thus by a single turn of the key 23, I may not only open the ignition circuit and lock the mechanism of the motor, but may also lock any or all the doors of the vehicle. As it is ordinarily desirable to permit any of the doors to be opened from within at any time, I may attach to each latch 48 a suitable cable 50 extending to the usual door handle 51 which operates the usual door-latch 510, this cable being operatively connected to the door handle so that when the handle is turned to retract the latch 510, it will at the same time retract the extra locking latch 48.

On one or more of the doors I may provide a suitable lock mechanism 52 which is accessible from outside the car. This lock may be of the combination type or may be a key-operated lock. The former may be preferred since the latches 48 of the doors are preferably all spring latches so that it is thus possible for an operator to leave his key in the dash-board lock and thereafter to shut himself out of the vehicle by shutting the doors behind him. Unless provided with an additional key, the operator would then be unable to reenter the car. If, however, a combination lock 52 is used, such difficulty may be avoided.

If preferred, I may arrange the door locking apparatus to be moved into and out of operative position by means independent of the dash-board lock. For example in Figures 9 and 10 is illustrated an operating rod 53 which, as shown, may be mounted on the door post between two doors on one side of the vehicle, the rod being attached to a hand lever 54 conveniently located so as to enable the operator to move all the plungers 43 into operative position by a single motion of the lever 54. To this end the lower end of the rod 53 may be attached to a suitable lever 55 enclosed in a housing 56. The upper end of this lever may be swung against a plunger 43 as in the mechanism illustrated in Figure

9, the lugs 45 of the plunger cooperating as hereinbefore described with suitable latches 48. The lever 55 may be attached to a cable or rod 57 protected by suitable armor 58 and extending to a casing 56 on the opposite side of the vehicle. By means of the cable or rod 57 a similar plunger 43 may be operated on the other side of the vehicle to control the locking of the doors on that side. Instead of the lever 54 I may provide a hand operating lever 59 which, as illustrated in Figures 11 and 12, may be connected to a cam block 60 slidable within a housing 61. The lock 60 may, as shown, engage the sloping under face 62 of a plunger 63 so as to move the plunger upwardly into locking position. Figure 11 illustrates the plunger in its unlocked or inoperative position, while Figure 12 illustrates the plunger in its operative or locking position.

The particular devices illustrated in Figures 9 to 12 for moving the locking plungers may be employed in connection with the dash-board operating means as well as with the manually operated levers as shown. A further modified form of plunger-operating means is illustrated in Figure 13. As therein shown a separate plunger 64 is provided for each door, each plunger being moved as by a bell-crank 65 into and out of locking position. The bell-cranks 65 may be connected, if desired, by a link 66, the cranks being rocked as by a slide 67 which is attached to an operating cable 68, a spring 69 being supplied to return the plungers 64 to their inoperative position when the cable 68 is released.

In some instances it may be desired to render the door locking mechanism inoperative. To this end I may provide catches to hold the latches 48 retracted until the catches are released. Such mechanism is illustrated in Figures 14 and 15, wherein each of the latches 48 is notched as at 70 to receive a sliding catch 71 having a suitable operating handle 72 projecting from the inner surface of the door. The door may be slotted as at 73 to permit the slide 71 to be moved into and out of operative position. As shown in Figure 15, when the catch 71 is in the slot 70 the latch 48 is held in retracted position so that it does not engage the locking plunger 45 even when the latter is in its elevated position. The latch 48, however, may be released for operation at any time by moving the catch 71 out of the notch 70.

In order to make it possible to open the ignition circuit without necessarily locking the motive mechanism or the doors, I may modify the cam plate 28 of the dash-board so that it has an edge as illustrated in Figure 16. As therein indicated the edge for a quarter turn may be in a plane perpendicular to the axis so that when the key 23 is turned in the lock from the unlocked position, the first quarter turn merely opens the ignition circuit (and, if desired, the self-starter circuit) by swinging the contact element 25 away from the points 26, 27 and 270, the cable actuating slides, however, being stationary during this part of the operation. Further rotation of the key results in movement of the slides to lock the motive mechanism and the doors.

Having thus described an embodiment of this invention, it should be evident to those skilled in the art that various changes and modifications might be made therein without departing from its spirit or scope as defined by the appended claims.

I claim:

1. In an automobile having doors, locking mechanism comprising a latch on each of said doors, plungers adjacent to said doors movable to and from operative positions wherein said latches are normally intercepted thereby so as to prevent the opening of said doors, common means for controlling the positions of all said plungers, means operatively connecting the plungers with said control means, and separate means on each door for holding its latch in retracted position clear of the corresponding plunger.

2. In combination with a plurality of doors and door frames, a pair of interengaging latches with each door adapted when in operative position to prevent the opening of the door, one of said latches being carried by the door, the other said latch being carried by the frame, individual means for retracting the latches on the doors, and common means for simultaneously operating the latches carried by the frames.

3. In an automobile body having a door, locking mechanism comprising a latch on said door, a plunger adjacent to said door movable to and from an operative position wherein it intercepts said latch and prevents the opening of the door, means mounted on said body for controlling the position of the plunger, and means operatively connecting the plunger continuously with said control means.

4. Locking mechanism for an automobile having doors comprising a latch on each of said doors, means on the inside of each door manually actuable to retract its latch, a plunger adjacent to each door movable from normal inoperative position to an operative position in the path of its respective latch whereby the opening of the door is prevented unless the latch be retracted, means resiliently holding said plunger in inoperative position, and means actuable to move said plungers simultaneously into operative position.

In testimony whereof I have affixed my signature.

EDGAR J. MARTEL.