R. T. PSIK

FUSH BUTTON DOOR LOCK

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Robert T. Psik

Attorneys
This invention relates to a push button door lock, and more particularly to a key actuated push button door lock for an automobile or other vehicle.

One feature of the invention is that it provides an improved push button door lock; another feature of the invention is that it provides a push button door lock having a push button assembly with a latch actuating projection which is rotatable between locked and unlocked terminal positions, in combination with means for blocking unlatching movement of said projection when in locked position; a further feature of the invention is that the rotatable latch actuating projection has a portion which is non-circular in transverse section, and an abutment member is provided having an aperture conforming thereto in shape and positioned to permit longitudinal movement of the projection therethrough when the projection is in unlocked position and to block such longitudinal movement when the projection is in locked position; still another feature of the invention is that the push button assembly is non-rotatably mounted in a bore of the door lock body member, said actuating projection being rotatable by means of a key operated lock in the push button assembly; yet a further feature of the invention is that the abutment member is non-rotatably mounted while the latch actuating projection is rotatable relative thereto; and yet another feature of the invention is that the latch actuating projection may be formed with opposite radically extending wings providing a shoulder at the end thereof adapted to abut said apertured member when said projection is in locked position.

Further features and advantages of the invention will be apparent from the following description and from the drawings in which:

Fig. 1 is a section through an automobile door panel having the improved door lock mounted thereon, portions of the door lock being broken away and the lock being shown in unlocked position; Fig. 2 is a view similar to Fig. 1 and partly in section, the lock being shown in locked position; Fig. 3 is a fragmentary view of the lock taken along the line 3-3 of Fig. 1; Fig. 4 is a section taken along the line 4-4 of Fig. 1; and Fig. 5 is a view similar to Fig. 4, but with the parts shown in locked position corresponding to the position of Fig. 2.

The illustrated embodiment of the invention provides an improved and simplified push button door lock including a handle member having a gripping portion adapted to be fixedly mounted on a door, and a body portion extending through the door panel and having a bore in which a push button assembly is slidably but non-rotatably mounted. The push button has a key-receiving opening at one end, and has a latch actuating projection at the other end extending longitudinally in the bore and formed with opposite radically extending wings providing a shoulder at their ends. A key operated lock is carried in the push button assembly for rotating the latch actuating projection through an arc between locked and unlocked terminal positions, and a non-rotatably mounted abutment member in the bore has an elongated aperture conforming in shape to the winged portion of said projection to permit longitudinal movement of said projection through the abutment member when the projection is rotated to its unlocked position, and to block such longitudinal movement when said projection is rotated to its locked position.

Referring now more particularly to the drawings, the outer door panel 10 of an automobile or other vehicle has the improved lock mounted thereon, machine screws 9 extending through the panel from the inside thereof and being threaded into openings in a handle member designated generally at 11 in Fig. 1 and having a gripping portion 12 and a body portion 13.

The body portion 13, which preferably is integral with the gripping portion 12, is formed with a bore 17 extending completely therethrough. A push button assembly designated generally at 20 in Figs. 1 and 2 is slidably, but non-rotatably mounted in the bore 17, the push button assembly having peripheral lugs 21 and 22 which slide in longitudinally extending notches 23 and 24 in the outer walls of said bore to prevent rotation of the push button assembly.

The push button assembly includes a finger actuated portion 25 which projects outwardly from the body 13 of the handle member and which is provided at its outer end with an opening (not shown) for receiving a key 27, which key operates a lock mounted in the push button assembly. This lock is indicated in Fig. 1 at 28 and is not shown in detail, since it is of conventional construction.

The inner portion 28a of the lock has extending therefrom a latch actuating projection 30 which has a portion spaced from its end and formed with opposite radically extending wings 30a and 30b, these wings providing a shoulder at their outer ends. The end portion 30c of the latch actuating projection 30 preferably is circular in transverse section, this portion being adapted to operate a latch releasing member 31. This member may be part of a conventional latch mechanism which is not shown.

A cup-shaped member 32 is seated on a shoulder near the end of the lock cylinder 28 and seats one end of a compression spring 34, the other end of which is seating an inverted cup-shaped abutment member 35 which has portions 35a and 35b of its periphery struck outwardly to engage in the notches 23 and 24 to hold the member 35 against rotation. A split ring 36 in a peripheral groove in the bore 17 holds the abutment member 35 and the spring 34 in position in said bore. The abutment member 35 is provided with a central aperture having a circular center portion 39 conforming generally in diameter to the end portion 30c of the latch actuating projection and having opposite grooves 37 and 38 conforming in size and shape to the wings 30a and 30b.

The latch actuating projection 30 is rotatable through an angle of 90° by means of the key operated lock 28. When in locked position (Fig. 5) the wing portions 30a and 30b extend transversely of the elongated aperture in the abutment member 35 so that inward pressure on the push button actuating portion 25 is ineffective to unlatch the door, the abutment member 35 blocking longitudinal movement of the latch actuating projection. When the key is turned to rotate the actuating projection through an angle of 90° from its locked terminal position of Fig. 5 to its unlocked terminal position of Figs. 3 and 4, the actuating projection is positioned to move perpendicularly from a position shown in broken lines in Fig. 1 when the push button portion 25 is pushed inwardly, the wings 30a and 30b passing through the elongated aperture in the abutment member 35 and the end 30c of the latch actuating projection against the latch releasing member 31. When the push button 25 is released the spring 34 retracts the parts longitudinally to the position shown in solid lines in Fig. 1.

While I have shown and described one embodiment of my invention, it is subject to many modifications.
Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

What is claimed is:

1. A push-button door lock of the character described comprising a door handle having a body portion defining a shouldered bore within said body portion having an inwardly facing opening and a smaller outwardly facing opening, a push-button assembly movably mounted within said bore and having a portion seating against said shoulder to limit outward movement of said assembly in the bore and prevent withdrawal of said assembly from outside the door, a separate latch actuating projection supported by said assembly and extending longitudinally inwardly in said bore, said projection having oppositely disposed wings providing shoulders on opposite sides of said projection, locking means in said assembly for moving said projection to various positions including a terminal unlocking position, an abutment member movably disposed within said bore, removable means within said bore to limit movement of said abutment member, means spacing said abutment member relative to said push-button assembly and seating said push-button portion on said shoulder portion, said abutment member having a central aperture conforming generally to the shape of said latch actuating projection and having oppositely disposed grooves conforming generally to the shape of said wings, said aperture and grooves permitting longitudinal movement of said latch actuating projection when said projection is moved to said terminal unlocked position and blocking longitudinal movement by abutment of said shoulders on said wings when said projection is in any other position.

2. A push-button door lock of the character described comprising a door handle having a body portion defining a shouldered bore within said body portion having an inwardly facing opening and a smaller outwardly facing opening, a push-button assembly slidably mounted within said bore and having a portion seating against said shoulder to limit outward movement of said assembly in the bore and prevent withdrawal of said assembly from outside the door, a separate latch actuating projection supported by said assembly and extending longitudinally inwardly in said bore, said projection having a portion thereof formed into oppositely disposed wings providing shoulders on opposite sides of said projection, locking means in said bore for rotating said projection through an arc between various positions including a terminal unlocked position, an abutment member slidably disposed within said bore, removable means within said bore to limit movement of said abutment member, spring means spacing said abutment member relative to said push-button assembly and seating said push-button portion on said shoulder portion, said abutment member having a central aperture and oppositely disposed grooves conforming generally to the cross-sectional shape of said latch actuating projection at said winged portion thereof, said aperture and grooves permitting longitudinal movement of said latch actuating projection when said projection is moved to said terminal unlocked position and blocking longitudinal movement by abutment of said shoulders against said abutment member when said projection is in any other position.

3. A push-button door lock of the character described comprising a door handle having a body portion defining a shouldered bore within said body portion having an inwardly facing opening and a smaller outwardly facing opening, a push-button assembly slidably mounted within said bore and having a portion seating against said shoulder to limit outward movement of said assembly in the bore and preventing withdrawal of said assembly from outside the door, a separate latch actuating projection mounted on said assembly and extending longitudinally inwardly in said bore, said projection having its inner portion formed into oppositely disposed wings providing shoulders on opposite sides of said portion, locking means in said assembly for rotating said projection through an arc to locked and unlocked terminal positions, a cup-shaped abutment member slidably disposed within said bore, readily removable means within said bore to limit movement of said abutment member, spring means normally holding said abutment member against said removable means and seating said push-button portion on said shoulder portion, said abutment member having a central aperture and oppositely disposed grooves conforming generally to the cross-sectional shape of said latch actuating projection at said winged portion thereof, said aperture and grooves permitting longitudinal movement of said latch actuating projection and said wings therethrough when said projection is rotated to said terminal unlocked position and blocking longitudinal movement by abutment of said shoulders on said wings against said abutment member when said projection is in said terminal position.

4. A push-button door lock of the character described comprising a door handle having a body portion defining a shouldered bore within said body portion having an inwardly facing opening and a smaller outwardly facing opening, a push-button assembly slidably mounted within said bore and having a portion seating against said shoulder to limit outward movement of said assembly in the bore and preventing withdrawal of said assembly from outside the door, a separate latch actuating projection mounted on said assembly and extending longitudinally inwardly in said bore, said projection having its inner portion formed into oppositely disposed wings providing shoulders on opposite sides of said projection, locking means in said assembly for rotating said projection through an arc to locked and unlocked terminal positions, a cup-shaped abutment member slidably disposed within said bore, a removable split ring seated in a groove in said bore to limit sliding movement of said abutment member, a compression spring in said bore holding said abutment member against said split ring and seating said push-button portion on said shoulder portion, said abutment member having a central aperture and oppositely disposed radial grooves around said aperture conforming generally to the cross-sectional shape of said latch actuating projection at said winged portion thereof, said aperture and grooves permitting longitudinal movement of said latch actuating projection and said wings therethrough when said projection is rotated to said terminal unlocked position and blocking longitudinal movement by abutment of said shoulders on said wings against said abutment member when said projection is in said locked position.

References Cited in the file of this patent

UNITED STATES PATENTS

962,448 Miller .......................... June 28, 1910
2,313,712 JacobI .......................... Mar. 9, 1943
2,468,644 Springer .......................... Apr. 26, 1949
2,605,630 Keller .......................... Aug. 5, 1952
2,660,046 JacobI .......................... Nov. 24, 1953