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COMBINED LOCK AND DOOR HANDLE

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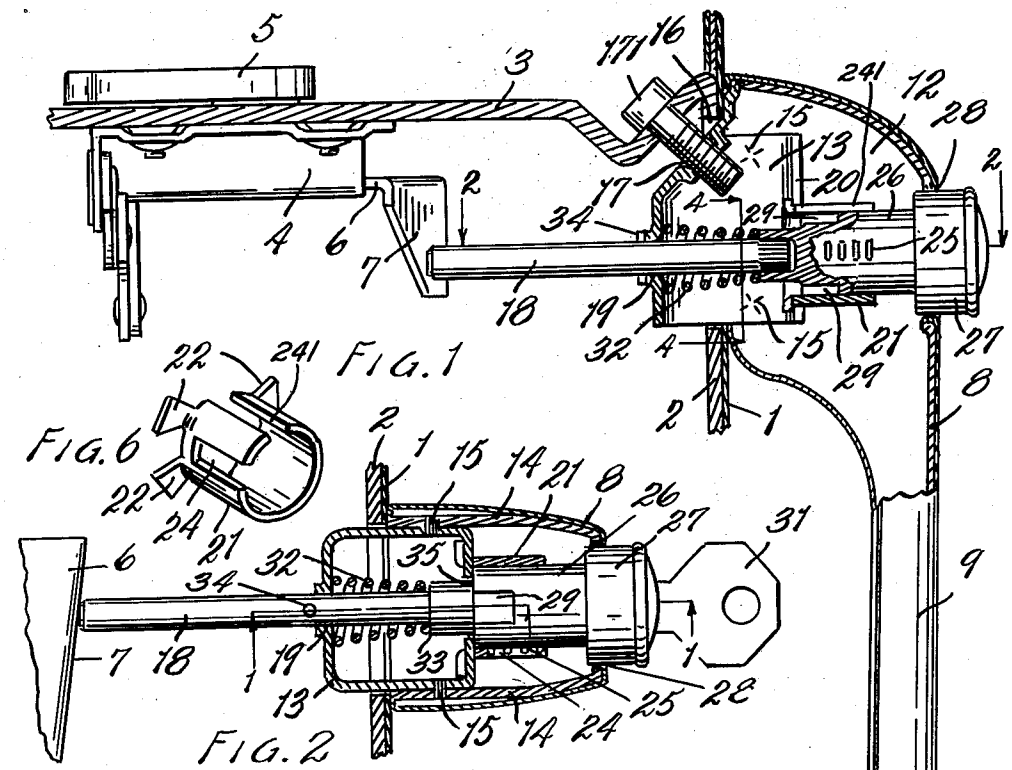


FIG. 1

FIG. 6

FIG. 2

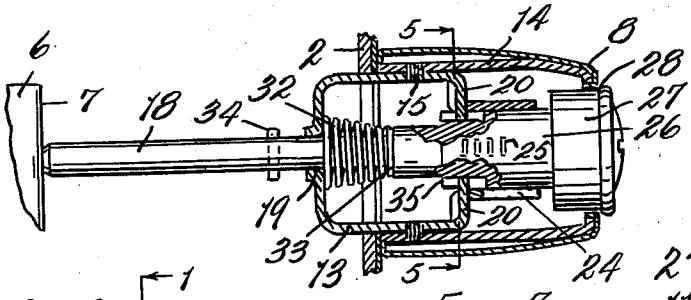


FIG. 3

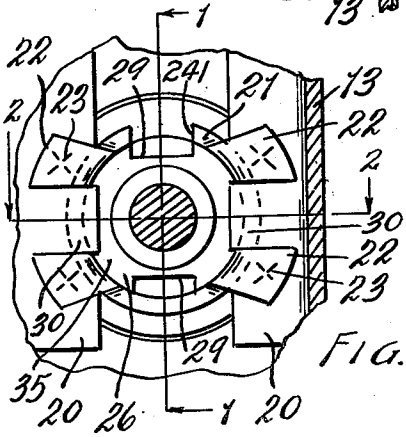


FIG. 4

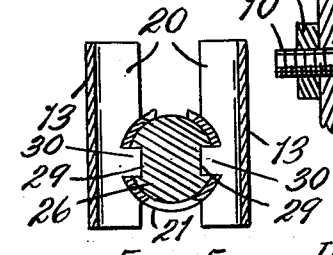


FIG. 5

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COMBINED LOCK AND DOOR HANDLE

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3 Claims. (Cl. 70—181)

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This invention relates to improvements in a combined lock and door handle.

The main objects of this invention are:

First, to provide a combined handle and door lock in which a latch may be actuated by a push button finger piece, means being provided for preventing the actuation of the finger piece and thereby preventing the releasing of the latch and in effect providing a lock therefor.

Second, to provide a door handle having a pull grip in which a latch may be released by a push button action with the hand that grasps the handle.

Third, to provide a door handle embodying these features or advantages which is attractive in appearance and easily manipulated.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary view partially in section on a line corresponding to line 1—1 of Figs. 2 and 4 of a combined handle and lock structure embodying my invention.

Fig. 2 is a fragmentary view partially in section on a line corresponding to line 2—2 of Figs. 1 and 4, the key being shown in position in the lock and with the parts in locked position.

Fig. 3 is a fragmentary sectional view corresponding to that of Fig. 2 with the parts in latch releasing position.

Fig. 4 is an enlarged fragmentary view in section on line 4—4 of Fig. 1 showing structural details.

Fig. 5 is a fragmentary view in section on a line corresponding to line 5—5 of Fig. 3.

Fig. 6 is a perspective view of the cylinder or casing of the lock barrel or body member.

In the accompanying drawing 1 represents the front panel of a door such as the door of an automobile. A reinforcing plate 2 is secured to the inner side thereof this plate having a flange 3 extending inwardly therefrom and on which the latch mechanism, designated generally by the numeral 4, is mounted. The catch or detent portion of the latch is indicated at 5. The latch is provided with a trip member 6 having a foot portion 7. The latch forms no part of my present invention and is, therefore, not described in detail herein.

The handle 8 is provided with a grip portion 9, its inner end being provided with a stud 10

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arranged through the door panel and the plate 2 and secured thereto as by the nut 11. The handle is provided with a chamber 12 and has a bracket 13 fixedly secured to the sides 14 of the handle as indicated at 15. This bracket projects through the opening 16 in the door and has a threaded opening 17 receiving the attaching screw 171 which is arranged through the flange 3 of the reinforcing plate. This screw is inclined and when tightened draws the handle down against the outer side of the door.

The actuating plunger 18 is mounted to reciprocate through the opening 19 in the inner end of the bracket to coact with the foot piece of the latch release member 6.

The bracket is provided with inwardly projecting flanges 20 on which the sleeve-like lock casing member 21 is mounted. This casing member has laterally projecting arms 22 disposed on the under side of the flanges 20 and secured thereto desirably by spot welding as indicated at 23. The casing member has a longitudinal slot 24 adapted to receive the tumblers or bolts of the lock. The casing member also has a longitudinal recess 241 extending the entire length thereof as shown in Figs. 1 and 6, which is also adapted to receive the bolts or tumblers 25 of the lock, as hereinafter described. These are conventionally illustrated at 25 and they are adapted to be projected as indicated in Fig. 2 into the slot 24. The body or barrel member 26 of the lock is mounted in the casing member for rotative and axial or longitudinal movement therein and is provided with a head 27 projecting through the opening 28 provided therefor in the handle and constituting a push button or finger piece.

This barrel or body member 26 is provided with groove-like recesses 29 adapted to be brought into alignment with the stop lugs 30 disposed in opposed relation on the bracket flanges 20. When these recesses 29 are aligned with the stop lugs the barrel may be reciprocated to latch releasing position as shown in Fig. 3.

The parts are shown in locked position in Fig. 2. The key 31 is illustrated. When in locked position they cannot be manipulated to release the latch until the tumblers or bolt elements are retracted. In Fig. 3 the parts are shown in latch releasing position in which position the lock body or barrel member has been rotated to align the recesses 29 thereof with the stop lugs 30 and to align the tumblers or bolt elements 25 with the recess 241 thereby permitting removal of the key in the unlocked position of the lock or barrel

member. The plunger is secured to the inner end of the lock body or barrel member **26**. The parts are biased to retracted position by means of the coil spring **32** seated at its inner end on the bracket with its outer end engaging the thrust shoulder **33**. The stop **34** on the plunger limits the return or retracting movement of the plunger and the lock body member. With the parts in the position shown in Figs. 1 and 3 the latch release member **6** may be actuated to releasing position by pressing upon the head **27**, which as stated constitutes a push button.

To lock the parts the head **26** is rotated to register the bolts or tumblers **21** with the keeper slot **24** and bolts or tumblers projected into the slot. In this position the shoulder **35** of the body member engages the stop lugs **30** so that the lock body member cannot be rotated or reciprocated axially or longitudinally until the lock is unlocked to permit the rotation of the body member.

I have illustrated and described my invention in a highly practical commercial embodiment thereof. The structure illustrated being primarily designed as a handle and lock for automobile doors although it would be well adapted for refrigerator doors where it is desired to lock them. I have not attempted to illustrate or describe other embodiments or adaptations of my invention which I contemplate as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a combined door handle and lock, the combination of a chambered handle having a pull grip portion, a supporting bracket mounted within the handle and having a portion projecting therefrom adapted to be disposed in an opening in a door and to receive a handle attaching element, said bracket having an opening at its inner end adapted to reciprocatingly receive an actuating plunger and having opposed inturned spaced flanges at its outer end, a cylindrical sleeve-like casing member mounted on said flanges and having outturned arms at its inner end disposed within and fixedly secured to said flanges, said flanges having opposed inwardly projecting stops on the edges thereof, said casing member having a longitudinal keeper slot therein, a lock barrel member rotatably and longitudinally adjustable in said casing member, said barrel member having longitudinal recesses in the sides thereof adapted to be aligned with said stops on said bracket permitting longitudinal adjustment of the barrel member, said barrel member having a head portion constituting a finger piece, said handle having an opening therein in which said head is disposed for longitudinal and rotary adjustment, an actuating plunger carried by said barrel member and disposed through said opening in the inner end of said bracket, a spring embracing said plunger and acting to bias it and said lock barrel member to retracted position, said barrel member having tumblers coacting with the said keeper slot of said casing member to lock the barrel member against rotative adjustment when the tumblers are projected, said plunger having a stop coacting with the bracket to limit the outward return movement of the plunger and lock barrel.

2. In a combined door handle and lock, the combination of a chambered handle having a pull grip portion, a supporting bracket mounted within the handle and having a portion projecting therefrom adapted to be disposed in an opening in a door and to receive a handle attaching element, barrel member stops on said bracket, a cylindrical sleeve-like casing member mounted on said bracket, said casing member having a keeper slot therein, a lock barrel member rotatably and longitudinally adjustable in said casing member, said barrel member having longitudinal recesses in the sides thereof adapted to be aligned with said stops on said bracket permitting longitudinal adjustment of the barrel member, said barrel member having a head portion constituting a finger piece, said handle having an opening therein in which said head is disposed for longitudinal and rotary adjustment, an actuating plunger carried by said barrel member and reciprocatingly mounted on said bracket, a spring acting to bias said plunger and said lock barrel member to retracted position, said barrel member having tumblers coacting with the said keeper slot of said casing member to lock the barrel member against rotative adjustment when the tumblers are projected.

3. In a combined door handle and lock, the combination of a chambered handle, a supporting bracket mounted within the handle, said bracket having an opening at its inner end adapted to reciprocatingly receive an actuating plunger and having opposed inturned spaced flanges at its outer end, a casing member mounted on said flanges and having outturned arms at its inner end disposed within and fixedly secured to said flanges, said flanges having a stop on one of the edges thereof, said casing member having a keeper opening therein, a lock barrel member rotatably and longitudinally adjustable in said casing member, said barrel member having a recess in the side thereof adapted to be aligned with said stop on said bracket permitting longitudinal adjustment of the body member, said barrel member having a head portion constituting a finger piece, said handle having an opening therein in which said head is disposed for longitudinal and rotary adjustment, an actuating plunger carried by said barrel member and reciprocatingly mounted on said bracket, a spring embracing said plunger and acting to bias it and said lock barrel member to retracted position, said barrel member having a bolt coacting with the said keeper of said casing member to lock the barrel member against rotative adjustment when the tumblers are projected, said plunger having a stop coacting with the bracket to limit the outward return movement of the plunger and lock barrel.

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