Nov. 15, 1932. R. MARPLE 1,887,655

DOORLOCK OPERATOR

Filed March 14, 1930

Fig. 1

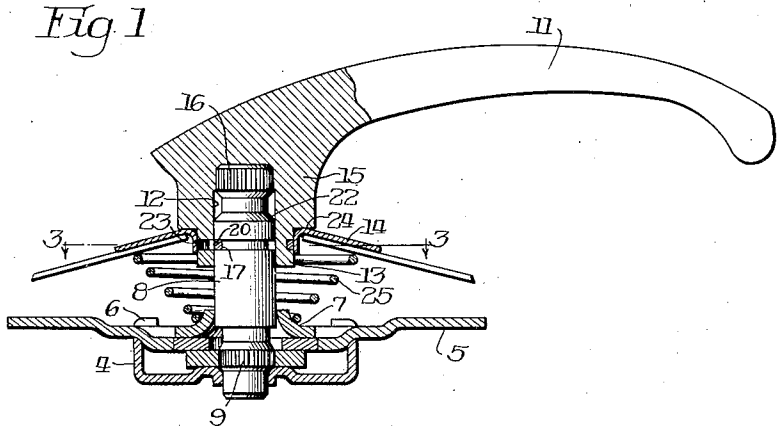


Fig. 2

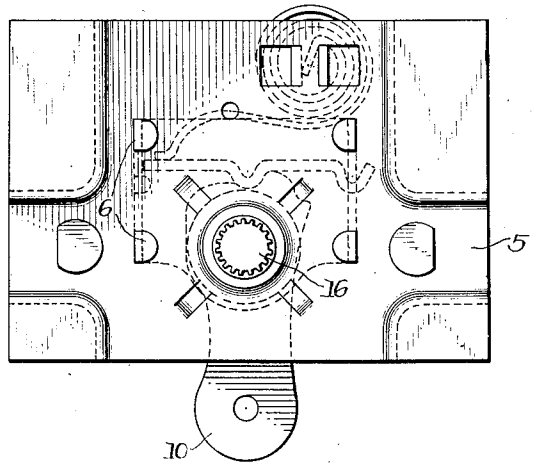
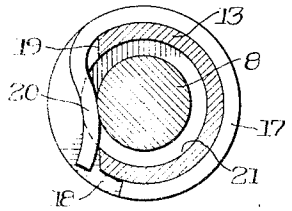


Fig. 3



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UNITED STATES PATENT OFFICE

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DOORLOCK OPERATOR

Application filed March 14, 1930. Serial No. 435,684.

This invention relates to an operator for automobile door latches and the like, and has reference more particularly to the mounting of a handle for the inside operator of an automobile door latch.

In the manufacture of automobile bodies, the speed and ease with which the door and window operating fixtures are attached and their simple and rugged construction are important features.

It is the object of this invention to provide an improved fixture of this character which is simple in construction and which may be rigidly assembled without the aid of tools by mere relative longitudinal movement of the members comprising the fixture.

For purposes of illustration I have herein shown my invention as applied to an inside door lock operating means of the type in which the handle is mounted upon an operator spaced some distance from the latch mechanism proper. The operator is mounted in the body of the door in a position to permit of convenient operation by a passenger and serves both as a lock operator and a door pull.

Fig. 1 of the drawing is a broken sectional view taken in the plane of the operator shaft.

Fig. 2 is an elevational view of the operator with the handle removed.

Fig. 3 is a transverse sectional view taken in the plane of line 3—3 of Fig. 1.

The common practice in the manufacture of automobile bodies is to conceal the mechanism of the operator within the chamber formed by the opposing side walls of the door to which the fixture is to be attached. To secure the mechanism to one side wall of the door, a casing 4 containing the operating mechanism is permanently attached to a plate 5 in any desired manner such as turned over lugs 6. The plate 5 has the face opposite the casing designed to fit flush with the wall of the door and is attached thereto by bolts or similar means.

Projecting from the casing and through a bearing member 7 in the plate is a stub shaft 8 terminating at the end within the casing in a serrated head 9 which is connected to an arm 10 to be linked with the door lock proper. The stub shaft is of sufficient length to extend well through an opening cut into the inner wall of the door to provide for the attachment of a handle 11.

In order to provide for the quick and easy attachment of the handle to the projecting end of the stub shaft, I construct the handle to form a socket or recess 12 adapted to receive the end of the shaft 8 in a non-rotatable relationship; and I provide the annular wall 13 of the recess with a spring detent which is adapted, as an incident to the movement of the handle axially of the shaft, to snap into interengaging relation with the latter, so that the handle is positively held against withdrawal from the shaft axially thereof. Also I provide an escutcheon plate 14 yieldably pressed against the handle to retain the spring detent in operative position.

Referring now to Figs. 1 and 3, the recess 12 is formed in the inner end portion 15 of the handle which is suitably proportioned for this purpose. This recess is adapted to receive the projecting end of the stub shaft, and in order to prevent relative rotational movement between the handle and the shaft, the latter is formed in the present instance with a serrated head 16, the inner end portion of the recess or socket 12 being correspondingly serrated to receive the head. The head is formed by turning a portion of the shaft, spaced a suitable distance from the end thereof, to a reduced diameter.

The spring detent is in the form of a split ring 17 entered in an arcuate groove 18 formed in the annular wall of the recess near the inner end of the handle portion 15. The ends of this groove terminate in a segmental slot 19 cut through said annular wall 13, and one end 20 of the ring is bent radially inwardly to form the detent proper which is entered through said slot so that it may project transversely into the recess. To receive this detent the stub shaft is provided with an annular groove 21 so positioned that when the handle is pressed home on the shaft, the detent will snap into the groove. Preferably the ring is rectangular with the groove correspondingly shaped so that when the detent is entered in the groove the handle is

positively held against longitudinal movement on the shaft.

Prior to the assembling operation, the spring is placed upon the handle portion with the detent entered through the slot 19, and in order to permit the detent to be moved past the portion of reduced diameter separating the serrated head from the shaft the walls thereof are beveled as indicated at 22.

In order that the escutcheon plate 14 may serve to retain the spring detent in its groove 18 of the handle portion 15, the central aperture of the plate is defined by an inturned flange 23 which is normally held in position in overlying relation to the detent ring. For this purpose the handle portion 15 is provided with an annular inwardly facing shoulder 24 against which the plate is held by a coiled expansion spring 25 loosely encircling the stud shaft and acting between the plate 5 on the one hand and the escutcheon plate 14 on the other. It will be observed that by depressing the escutcheon plate against the action of the spring 25 the spring detent may be exposed to permit of the insertion of a suitable tool for the purpose of forcing the detent out of its groove in the shaft in the act of removing the handle from the shaft.

I claim as my invention:

The combination of a door lock operator comprising, a shaft having an annular groove, a handle non-rotatably mounted on said shaft, an annular wall projecting inwardly from said handle beyond said annular groove with a shoulder formed between said annular wall and said handle and an external circumferential groove communicating over a portion of the circumference with said groove on the shaft when the handle is in position thereon, a detent in said outer groove projecting into said groove in the shaft, an escutcheon plate having an inturned flange slidable over said annular wall, and a coiled spring bearing against said escutcheon plate to yieldably hold said plate against said shoulder with said flange in position over said detent.

In testimony whereof, I have hereunto affixed my signature.

ROLLO MARPLE.