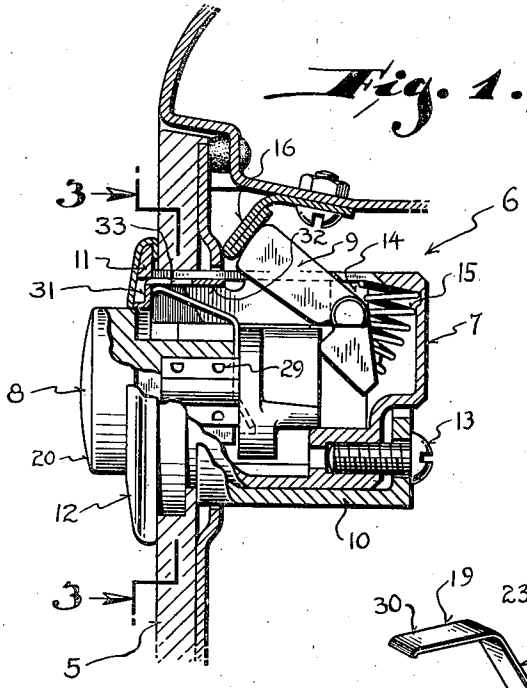
Dec. 16, 1941. E. N. JACOBI 2,266,119

COMPARTMENT DOOR LATCH

Filed July 29, 1940

Fig. 1.



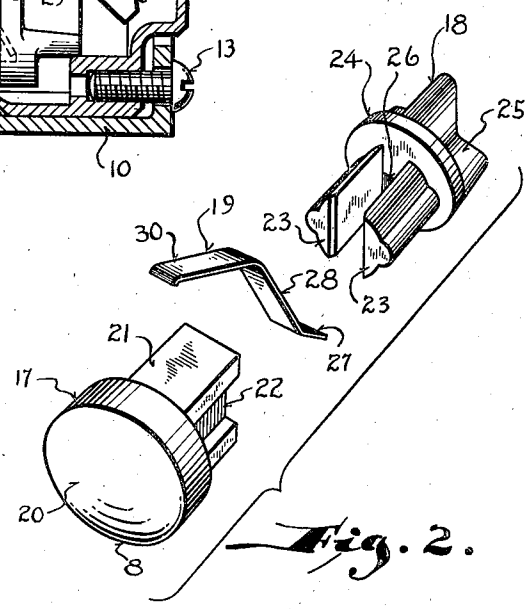


Fig. 3.

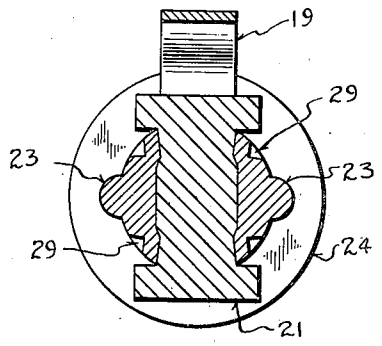


Fig. 2.

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COMPARTMENT DOOR LATCH

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Application July 29, 1940, Serial No. 348,112

9 Claims. (Cl. 292—227)

This invention relates to latch devices and refers particularly to latches of the type designed for use on glove compartment doors of automobiles and the like.

More specifically this invention is directed to the so-called push button type of latch wherein depression of a push button actuator retracts the latch proper.

Inasmuch as these latches are mounted on the instrument board panel of the automobile, it is desirable to have their push buttons match the other units on the board and the internal trimming of the car.

To this end it is an object of this invention to provide a latch device so designed and constructed that the push button actuator may be snapped into place as one of the final operations on the assembly line.

More specifically, it is an object of this invention to provide a latch device of the type described wherein the push button actuator consisting of a push button formed of plastic material and a metal pusher part by which the thrust of the button is transmitted to the latch per se, carries a spring retainer by having a part thereof confined between the metal pusher part and the plastic button, and so mounts this retainer that the mere insertion of the actuator into the bore of the latch body secures the actuator in place and utilizes the spring tension of the retainer to hold the parts against rattling.

Another object of this invention resides in the provision of means for retaining the push button actuator assembled with the body of the latch in a way enabling disassembly thereof.

Another object of this invention resides in the provision of a latch device of the character described wherein a single spring serves to retain the actuator in place in a manner permitting the same to be snapped into the bore of the latch body and also guides the actuator for longitudinal motion.

A further object of this invention resides in the provision of a push button actuator for latches of the type described which consists of a plastic button and a metal pusher formed as a simple die casting and secured to a stem on the button by staking the metal of the pusher into the soft plastic body of the button stem.

With the above and other objects in view which will appear as the description proceeds, this invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

The accompanying drawing illustrates one complete example of the physical embodiment of the invention constructed according to the best mode so far devised for the practical application of the principles thereof, and in which:

Figure 1 is a sectional view through part of an automobile glove compartment illustrating the latch device of this invention in place thereon;

Figure 2 is a perspective view of the component parts of the actuator of the latch device shown disassembled; and

Figure 3 is a cross sectional view taken through Figure 1 on the plane of the line 3—3.

Referring now particularly to the accompanying drawing in which like numerals designate like parts, the numeral 5 designates the door of an automobile glove compartment or any other enclosure.

Mounted on the door is the latch device of this invention, indicated generally by the numeral 6 and which consists of a body 7, an actuator 8, a latch 9, and a retainer 10.

The body 7 is bored for the reception of the actuator and is preferably a die casting with a flange 11 at its front end encircling the mouth of its bore. This flange is covered by a sheet metal shell 12 to insure a neat external appearance as the flange is exposed at the front face of the door.

The retainer 10 is in the form of a cup fitted over the inner end of the body and secured thereto by a clamping screw 13. Tightening the screw draws the retainer down against the back of the door to clamp the door between it and the flange 11. The latch 9 is pivotally mounted in a slot 14 in the top wall of the body. A spring 15 confined between the inner end of the latch and a spring seat formed in the body yieldingly urges the latch to an operative position engageable behind a keeper 16 upon closure of the compartment door.

Disengagement of the latch from its keeper is effected by rocking the latch on its pivotal support through the medium of the push button actuator 8.

Inasmuch as it is desirable to have the latch device or at least its push button, which is formed of a colored plastic, harmonize with the trimming of the automobile on which it is used, the attachment of the actuator is deferred until the automobile arrives at the final trimming point on the assembly line.

At this point an actuator having a push button of the proper color is snapped into place. To this end the actuator consists of a button 17 of any suitable plastic substance such as casein, a metal pusher 18 and a spring retainer 19.

The button 17 has an outer cylindrical portion 20 of a size to fit slidably in the mouth of the bore in which the actuator is received and a rearwardly projecting stem 21. The opposite sides of the stem are cut away or grooved as at 22 for the reception of two spaced arms or jaws 23 on the metal pusher 18.

The pusher 18 is preferably a die casting and besides its two arms or jaws 23 has a cylindrical midsection 24 and an inverted T-shaped inner end 25 so shaped to accommodate the internal formation of the body and actively to engage the inner end of the latch.

The cylindrical midsection 24 of the pusher member is recessed as at 26 to receive an end portion 27 on the spring retainer 19. In assembling the actuator, the spring retainer has its inner leg 28 positioned between the jaws 23 of the metal pusher with its extreme end portion 27 seated in the recess 26. The stem of the button is then slid in place and the parts secured together by staking in the edges of the jaws 23 at spaced points as at 29.

The outer end portion 30 of the spring retainer yieldingly projects laterally from the actuator at a forward angle, that is, towards the button, so that upon insertion of the actuator into the body bore the free end of the spring retainer snaps behind a shoulder 31 and against the undersurface of a wall 32 which closes the slot 14 forwardly of the latch 9.

The shoulder 31 and the wall 32 are part of a sheet metal stamping held in place by the finishing shell 12. For a more complete disclosure of this stamping reference is made to Patent No. 2,208,003, issued to Edward N. Jacobi July 16, 1940.

The wall 32, it is to be observed, has an opening 33 adjacent to the back of the flange 11 so that the actuator may be disassembled from the body providing, of course, that the latch device is not in its mounted position illustrated in Figure 1.

Attention is directed to the fact that the spring retainer not only enables the actuator to be snapped into place and thereafter holds the actuator against disassembly, but it also guides the actuator for longitudinal motion and cooperates with the spring 15 to hold the parts against rattling.

From the foregoing description taken in connection with the accompanying drawing, it will be readily apparent that this invention provides an exceptionally expedient manner of attaching the push button actuators of glove compartment door latches, and that it assures having the button of the actuator match the trimming of the automobile in which the latch is installed.

What I claim as my invention is:

1. In a latch device of the character described: a body having a bore; a latch mounted on the body and biased to an operative position; an actuator slidable in the bore and operable upon inward movement to retract the latch, said actuator comprising a push button of plastic material having an outer substantially cylindrical portion of a size to fit the mouth of the bore and an inner stem portion, a metal pusher fixed to the stem portion, and a spring retainer having a part confined between the stem and the metal pusher and having a free end portion projecting laterally from the actuator; and a shoulder on the body accessible from its bore and behind which said free end portion of the spring retainer snaps during insertion of the actuator into the body bore to thereby retain the actuator assembled with the body.

2. In a latch device of the character described: a body having a bore and a groove opening to the bore; a latch carried by the body and biased to an operative position; a shoulder at the front end of the groove near the mouth of the bore; an actuator slidable in the bore and operable to retract the latch upon depression thereof, said actuator comprising a push button of plastic material having a substantially cylindrical end portion of a size to substantially close the mouth of the bore and an inner stem portion; a metal pusher part having spaced jaws to embrace the stem portion of the push button; means for holding said push button and metal pusher part assembled; and a spring retainer having a portion thereof confined between the stem and the metal pusher part, said spring retainer having a free end portion projecting laterally from the actuator at a forward angle to snap behind the shoulder upon insertion of the actuator into the body bore.

3. As an article of manufacture, a push button type actuator for latches of automobile glove compartment doors and the like comprising: a push button of plastic material having a cylindrical front end portion and a stem projecting from the inner face thereof; a metal pusher part having spaced jaws embracing the stem and secured thereto by having portions of the jaws staked into the plastic body of the push button stem; and a spring retainer having a part confined between the stem and the metal pusher part and having an end portion projecting laterally from the stem with the free end thereof adjacent to the cylindrical front end portion of the push button.

4. In a latch of the type used on glove compartment doors of automobiles: a bored body having a shoulder near the mouth of its bore; an actuator comprising a push button of a size to substantially close the mouth of the bore and an inner latch actuating part connected with the push button; and a leaf spring carried by the actuator and projected laterally therefrom to snap behind said shoulder upon insertion of the actuator into the bore to thereby hold the actuator assembled with the body, said leaf spring having a portion clamped between the push button and the inner actuating part whereby the leaf spring is secured to the actuator.

5. In a latch device of the character described: a bored body; a latch carried by the body and biased to an operative position; means for mounting the body with the mouth of its bore exposed; means providing a shoulder inside the body and accessible from its bore; an actuator comprising a button of a size to slidably fit the mouth of the bore and an inner latch actuating portion connected with the button; and a spring retainer carried by the actuator and projecting laterally therefrom on an angle pointed toward the push button to snap behind said shoulder upon insertion of the actuator into the body bore to thereby hold the actuator assembled with the body in a position operably associated with the latch, said spring retainer having a portion clamped between the button and the inner latch actuating

portion whereby the spring retainer is secured to the actuator.

6. The combination with a latch for compartment doors and the like and wherein a depressible push button actuator member comprising an ornamental handle and a latch bolt retractor are drivingly connected for sliding motion in a body member: a spring retainer held connected with the bolt retractor by the handle and having a depressible portion engageable with a shoulder on the body member so that the spring retainer is confined between the shoulder and the bolt retractor upon assembly of the actuator member with the body member to maintain the actuator member assembled with the body member, said depressible portion of the spring retainer enabling the assembly of the push button actuator member with the rest of the structure to be deferred until the final stages of the assembly of the device with which the latch is used.

7. In a latch for compartment doors and the like the combination of a body member carrying the latch mechanism and having mounting means: an actuator member for the latch including a finished handle, a latch mechanism operating element, and actuator retaining means fastened by the handle upon the latch mechanism operating element for detachably securing the actuator member to the body member in operative relationship to the latch.

8. In a latch device of the character described: a bored body having a longitudinal groove opening to its bore and a shoulder at the end of the groove adjacent to the mouth of the bore; a latch movably mounted on the body and biased to its operative position; an actuator slidable in the bore and operable to retract the latch upon depression of the actuator, said actuator comprising a handle portion, a latch engaging portion, and a driving connection between said portions; and means for retaining the actuator assembled with the body comprising a spring retainer maintained assembled with the actuator as a consequence of the driving connection between said actuator portions and projecting laterally at a forward angle from the actuator and into the longitudinal groove, said spring retainer snapping behind the shoulder upon insertion of the actuator into the bore.

9. In a latch device of the character described: a bored body having a longitudinal groove opening to its bore and a shoulder at the end of the groove adjacent to the mouth of the bore; a latch movably mounted on the body and biased to its operative position; an actuator slidable in the bore and operable to retract the latch upon depression of the actuator, said actuator comprising a handle portion, a latch engaging portion, and a driving connection between said portions; and means for retaining the actuator assembled with the body comprising a spring retainer maintained assembled with the actuator as a consequence of the driving connection between said actuator portions and projecting laterally at a forward angle from the actuator and into the longitudinal groove, said spring retainer snapping behind the shoulder upon insertion of the actuator into the bore and the body having an aperture leading to the groove adjacent to the shoulder to enable insertion of a tool to depress the spring retainer out of engagement with the shoulder and thus permit withdrawal of the actuator.

EDWARD N. JACOBI.