April 3, 1928. 1,664,681

H. W. HANCOCK

DOOR LATCH

Filed April 27. 1927

Fig. 1.

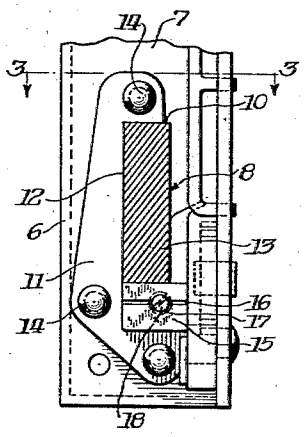


Fig. 2.

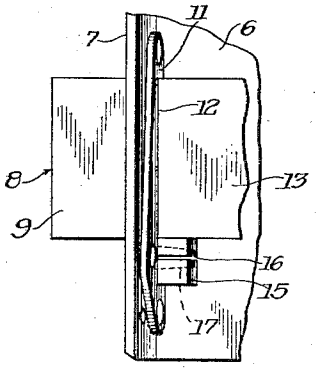


Fig. 3.

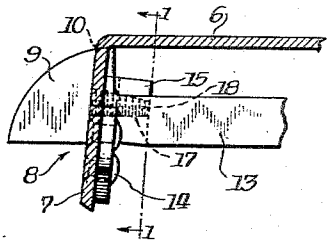


Fig. 4

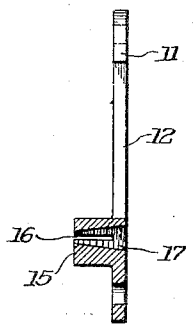
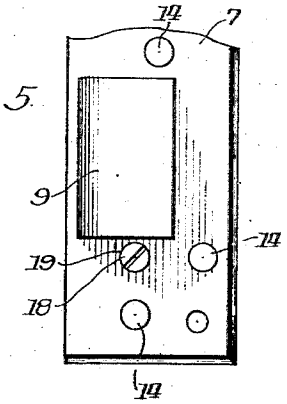


Fig. 5.



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UNITED STATES PATENT OFFICE.

HARRY W. HANCOCK, OF JACKSON, MICHIGAN.

DOOR LATCH

Application filed April 27, 1927. Serial No. 186,889.

The invention relates generally to door latches and is directed more particularly to an improvement in automobile door latches.

Considerable effort has been expended in this art to provide a means which would eliminate the tendency of the latch bolts to rattle due to looseness or play. One commonly used method has been to construct the various parts of the latch with great accuracy so that very little play or looseness of the latch bolt is permitted. This method, however, is disadvantageous since the cost of manufacture is increased and in a comparatively short time the constant wear has destroyed the accurate adjustment.

One object of this invention is to provide a new and improved construction for latches which may be readily adjusted to take up the looseness between relatively moving parts.

Another object of the invention is to provide an improved means adapted to permit various parts of the latch to be manufactured and assembled with a comparatively large amount of looseness or play and to compensate for such looseness after assembly.

Still another object is to provide means of this character which is readily accessible for adjustment after the assembly has been mounted in operative position.

Other objects and advantages will become apparent from the following description and in the accompanying drawings in which—

Figure 1 is a fragmentary interior elevation of a door latch assembly taken on the line 1—1 of Fig. 3.

Fig. 2 is a fragmentary perspective view of the invention.

Fig. 3 is a fragmentary plan view of the interior of the latch assembly taken on the line 3—3 of Fig. 1.

Fig. 4 is a side view partially in section of the wear plate.

Fig. 5 is an end view of the latch.

Although the invention is susceptible of various modifications and alternative constructions, I have shown and herein described in detail the preferred embodiment but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

I have shown the invention as being embodied in an automobile door latch assembly of the usual construction. In the present instance a side wall 6 and a face plate 7 comprise a part of the assembly casing, which encloses suitable mechanism (not shown) for operating a retractable latch bolt 8. The head 9 of the latch bolt extends through a suitable aperture 10 in the face plate 7 for engagement in the customary manner with a keeper. It will at once be apparent that an exceedingly accurate construction and fitting of the bolt in the aperture in the face plate is necessary to prevent transverse movement of the bolt therein and that as the latch is used considerable looseness will be developed due to wear of the bolt and face plate.

In attaining the objects of my invention I have provided a means which is mounted in a latch assembly in guiding relation with the retractable latch bolt, which means includes a part adjustably movable perpendicularly to the axis of reciprocation of the bolt to maintain a proper guiding relation therefor.

In the present instance this means comprises a substantially flat plate 11 having a recess 12 at one side of substantially the width and depth of the shank 13 adjacent the head 9 of the bolt. The plate 11 is adapted to be secured to the inner side of the face plate 7 in any suitable manner, as by the rivets 14, with the recess 12 in registration with the bolt aperture 10 in the face plate.

The adjustment by which the vertical dimension of the recess may be varied comprises a split boss 15 positioned adjacent one edge of the recess 12 and in this embodiment made rigid with the plate 11. A cut 16 in the boss, which provides the split boss, extends substantially therethrough parallel to the adjacent edge of the recess 12 and divides the boss into two irregularly sized sections, the smaller of which is adjacent the edge of the recess.

By this arrangement of a split boss adjacent the recess it will be seen that any means wedged between the split sections of the boss will move the smaller of the sections into or out of the recess to vary the width thereof. To this end I have herein shown a tapered bore 17 extending through the plate 11 and between the split sections of the boss with the axis of the bore formed on the cut 16.

The tapered bore is tapped to receive a kerfed conical screw 18 through the plate 11 which, when screwed into the boss, acts as the necessary wedge to spread the sections of the boss apart. As shown in Fig. 5, an aperture 19 is provided in the face plate 7 of the latch assembly casing, which opening registers with the tapered bore 17 when the take-up plate is properly mounted on the face plate. This permits the engagement of a screw driver or like tool with the conical screw 18 to make adjustments.

In operation the take-up plate 11 is assembled as described with the recess 12 in the take-up plate embracing three sides of the latch bolt shank 13. In this position the small section of the split boss 15 abuts one edge of the shank and with the opposite edge of the recess 12 provides a guide through which the latch bolt 8 reciprocates. After assembly the smaller section of the boss is removed by means of the wedging action of the conical screw 18 in the tapered bore 17, to eleminate any play of the bolt resulting from inaccuracy in the manufacture of the parts. Due to the accessibility of the adjusting screw 18 through the opening in the face plate 7, subsequent adjustment to take up the looseness caused by wear of the parts may be readily made from time to time.

From the foregoing description it will be apparent that I have provided a simple latch take-up plate which is readily and easily adjustable to eliminate the rattling caused by looseness and play between the latch bolt and its associated parts, whether, due to inaccurate manufacture or to wear; which adjustment, moreover, may be quickly made from the exterior of the latch assembly.

I claim as my invention:

1. In combination with a door latch having a casing and a latch bolt withdrawably extending therethrough, a take-up plate having a recess therein secured to the said casing with said recess embracing said bolt, a split boss carried by said casing to abut one edge of said bolt, said boss having a tapered bore therein formed on the plane of said split, and adjustable wedging means engaged in said tapered bore for moving one part of said boss to engage said bolt, said casing having an opening therein in registry with said wedging means to permit access thereto from the exterior of said casing.

2. A latch having, in combination, a casing, a latch bolt projecting therethrough, a take-up plate secured to said casing, a two-part split boss carried by said plate so that one of said parts abuts the bolt, and means engaging said boss between said two parts for moving said part adjacent the bolt toward said bolt.

3. A take-up plate for a latch having a casing and a latch bolt extending therethrough, comprising a plate secured to said casing, a projection carried by said plate in abutting relation with said bolt, and means engaging said projection for moving said projection toward said bolt.

4. A latch having, in combination, a casing, a bolt extending therethrough, guide means mounted on said casing adjacent said bolt arranged to be moved transversely of said bolt to eliminate looseness between said bolt and said casing, and means engaging said guide means for effecting said movement.

5. A latch having, in combination, a casing, a bolt extending therethrough, and means mounted on said casing adjacent said bolt arranged to be moved transversely of said bolt to eliminate looseness between said bolt and said casing.

6. A latch having, in combination, a casing, a bolt extending therethrough, a boss secured to the inner side of said casing adjacent said bolt having a cut therein paralleling the adjacent side of said bolt and dividing said boss into two unequal portions, said casing and boss being provided with a tapered bore in the plane of said cut, and means engaging said tapered bore adjustable to separate the portions of said boss and move one of said portions toward said bolt.

7. A latch wear plate having, in combination, a plate having a latch bolt receiving recess therein adapted to be mounted in a latch assembly with said bolt in said recess, a projection carried by said plate to extend along said bolt and arranged to be moved inwardly of said recess to engage said bolt, and means engaging said projection adapted to effect such movement.

In testimony whereof, I have hereunto affixed my signature.

HARRY W. HANCOCK.