Aug. 2, 1938. H. D. GEYER 2,125,779

AUTOMOBILE DOOR LOCK BOLT

Filed May 15, 1936

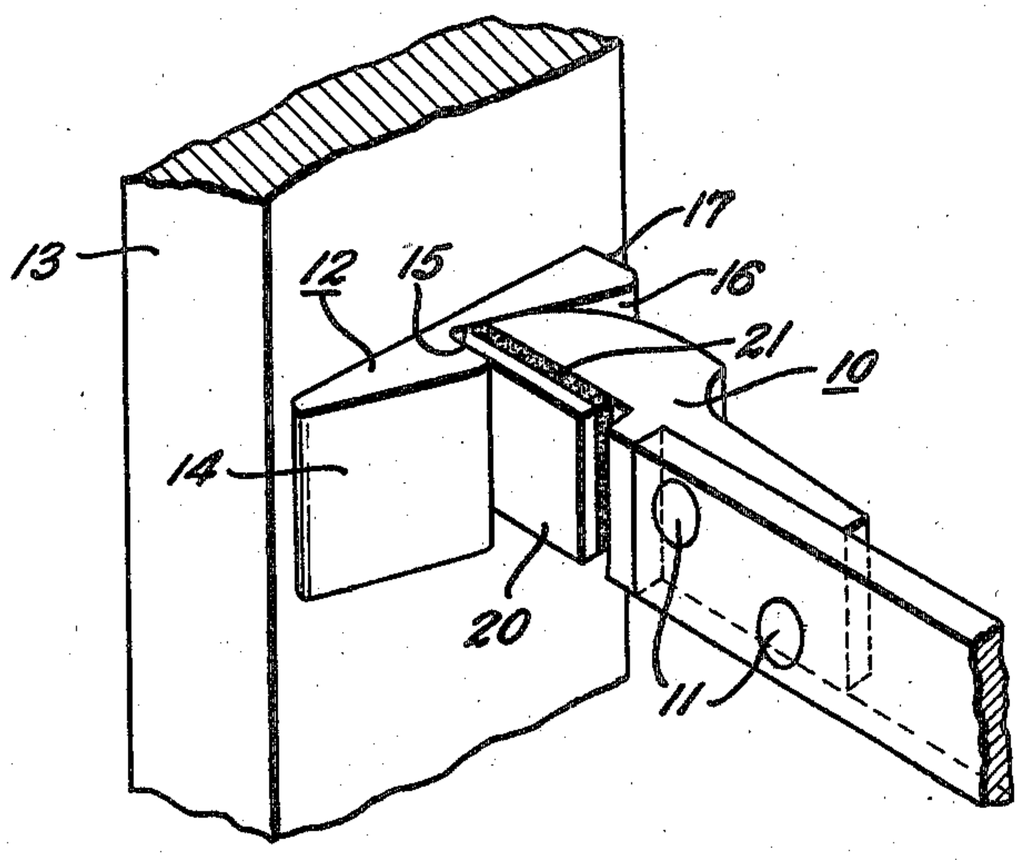

Fig. 1.

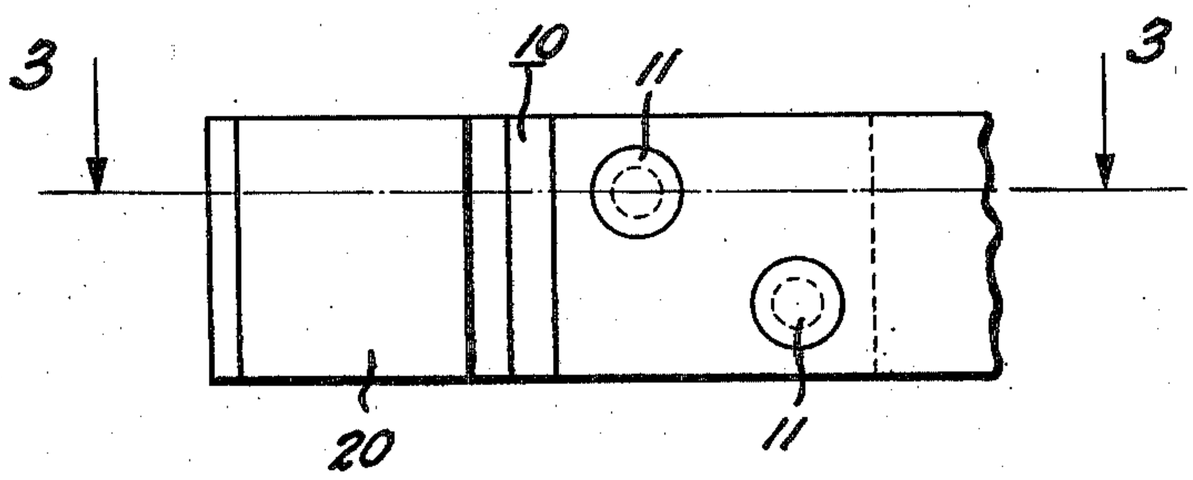

Fig. 2.

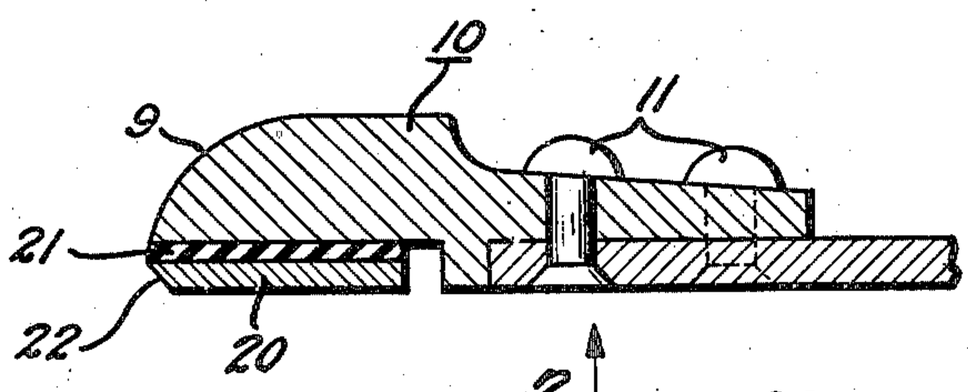

Fig. 3.

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AUTOMOBILE DOOR LOCK-BOLT

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2 Claims. (Cl. 292—2)

This invention relates to automobile door locks and the like, wherein there is a great tendency for the lock-bolt to slide upon or move relative to its retaining keeper due to vibrations or movement of the door relative to its door jamb with a consequent squeaking.

An object of this invention is to provide a very simple and efficient lock-bolt and keeper construction which will greatly reduce or entirely eliminate squeaking or rattling between the bolt and keeper.

A more specific object is to provide a lock-bolt having a metal-isolated relation with its keeper by means of a soft resilient rubber cushion mounted on said bolt, whereby relative motion between the bolt and its keeper will be taken by distortion of the rubber cushion rather than by a slipping of one metal part upon another.

Further objects and advantages of the present invention will be apparent from the following description, reference being had to the accompanying drawing wherein a preferred embodiment of the present invention is clearly shown.

In the drawing:

Fig. 1 is a perspective view of a lock-bolt and keeper arrangement made according to this invention. The bolt is shown retained in the first or safety notch of the keeper. Other portions of the door-lock and the door are not shown for the sake of clearness.

Fig. 2 is a view of the face of the bolt taken in the direction of arrow 2 of Fig. 3.

Fig. 3 is a section on line 3—3 of Fig. 2 and illustrates the small metal-isolated contact plate fixed to the bolt by the soft resilient rubber cushion.

Similar reference characters refer to similar parts thruout the several views.

The lock-bolt 10 is shown as being made of two parts riveted together by rivets 11, however any well-known integral form of lock-bolt may be used. This bolt 10 is normally urged by a lock-spring toward the keeper 12, as is well-known in automobile door locks. The remaining parts of the lock and handle for manually retracting the bolt 10 from its keeper 12 are not shown, since these parts are all well known and their specific form forms no part of this invention. The essential parts of this invention are clearer illustrated by omitting such other portions of the lock.

The keeper 12 is fixed to the door post 13 and is of well-known form, having an inclined surface 14 terminating in the safety shoulder 15, and a second inclined surface 16 terminating in the abrupt shoulder 17 behind which the bolt 10 is retained when the door is fully closed.

The novel feature of this invention is the construction of the projecting end of bolt 10 which engages the keeper 12. The shoulder-contacting face of bolt 10 is provided with a metal contact-plate 20 which is strongly fixed to bolt 10 proper by an isolating thin soft rubber layer 21 bonded by vulcanization in situ to both the plate 20 and the bolt proper 10. By this means contact plate 20 is strongly held against being torn loose from bolt 10 but at the same time plate 20 has a small cushioning movement relative to bolt 10 in any direction. Preferably the tip end of plate 20 is bevelled back as shown at 22 so that the keeper shoulders 15 and 17 will more readily slide over the end surface of plate 20 and thus have a minimum tendency to force the plate 20 away from the bolt 10 or tear the rubber cushion 21 loose from either of the metal parts to which it is bonded.

In operation, the curved end 9 of bolt 10 rides upon the inclined surfaces 14 and 16 of keeper 12 when the door is forced shut, all in the normal well-known manner. Now when the door is fully closed the end of bolt 10 snaps behind the second shoulder 17 on keeper 12 and thus the door is retained fully closed. In this position of the parts, only the contact plate 20 is in engagement with keeper 12, and hence the bolt 10 and all other parts of the lock are resiliently isolated from keeper 12 by the soft rubber cushion 21. If the door has a small movement in any direction in its own plane relative to the door post 13, the bolt 10 will move therewith while the contact plate 20 will remain stationary relative to keeper 12 due to the relatively easy shearing distortion of the soft rubber cushion 21. It is thus seen that squeaks and consequent wear will be avoided since there will be no sliding of metal parts upon each other at this point.

Furthermore the direct pressure of the closed door upon keeper 12 will be taken in a cushioned manner by a direct compression of the rubber cushion 21, as will be obvious. This substantially eliminates possibility of any rattling at the door lock from any to and fro open and shut movement of the door. Thus all relative motion between the door and door post 13 due to vibrations or weaving of the vehicle body will be taken by an internal distortion in the rubber cushion 21.

While the embodiment of the present invention as herein disclosed, constitutes a preferred form,

it is to be understood that other forms might be adopted, all coming within the scope of the claims which follow.

What is claimed is as follows:

1. A reciprocatable lock-bolt having a separate metal contact plate yieldably mounted on its outer end portion, said metal contact plate being adapted to engage a relatively stationary keeper, and a resilient non-metallic cushion isolating said contact plate from the main body of said bolt.

2. A reciprocatable lock-bolt having a separate relatively small keeper-contacting rigid contact plate resiliently mounted on its outer end portion, and a resilient non-metallic cushion isolating said contact plate from the main body of said bolt.

HARVEY D. GEYER.