June 11, 1957 C. H. SCHAMEL 2,795,452

LOCK STRIKER ASSEMBLY

Filed July 15, 1954 2 Sheets-Sheet 1

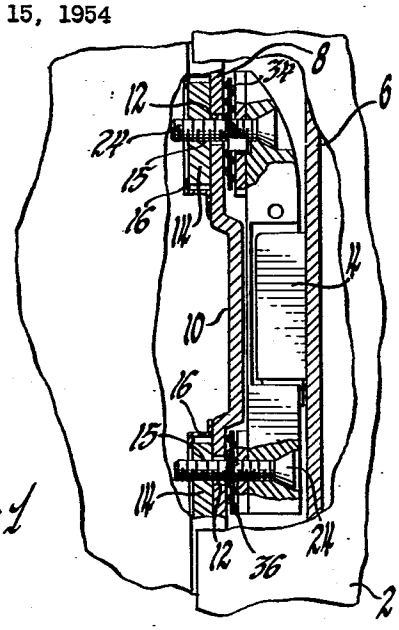


Fig. 1

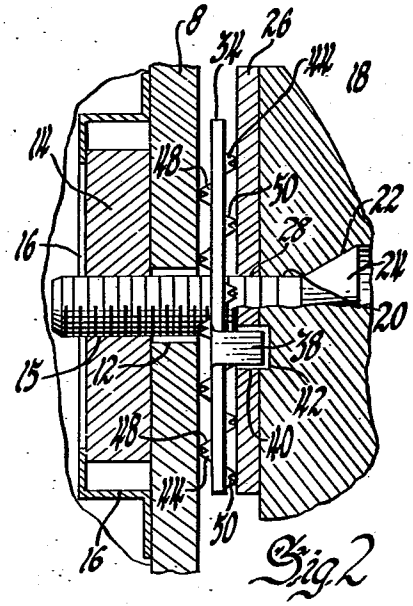


Fig. 2

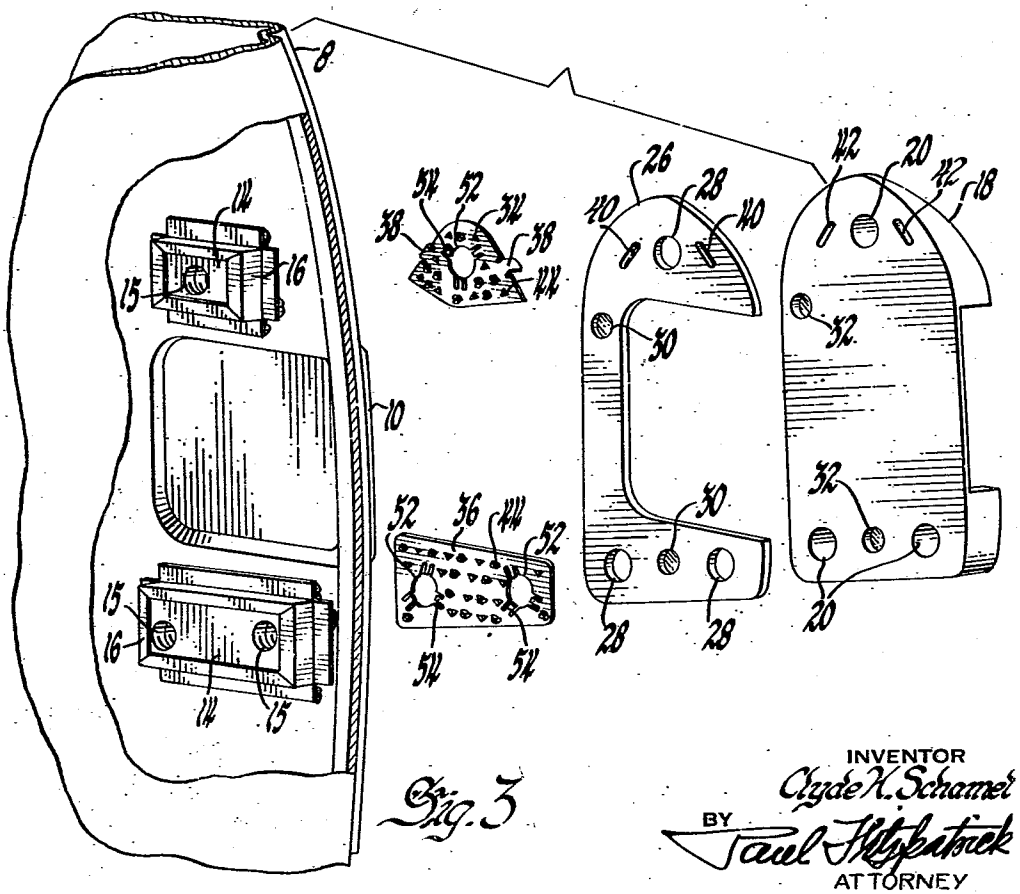


Fig. 3

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LOCK STRIKER ASSEMBLY

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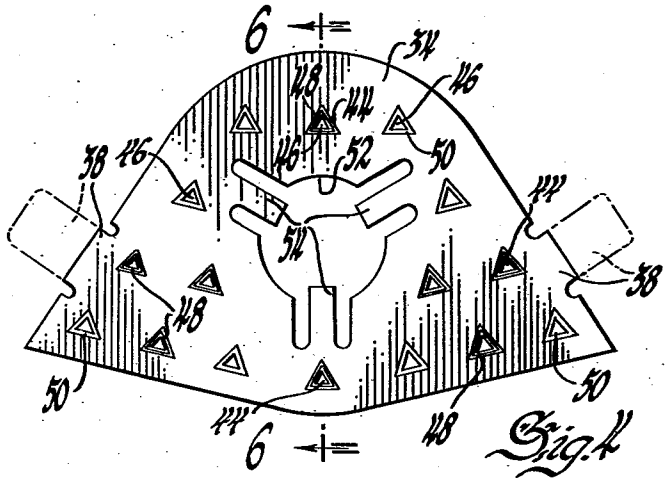


Fig. 4

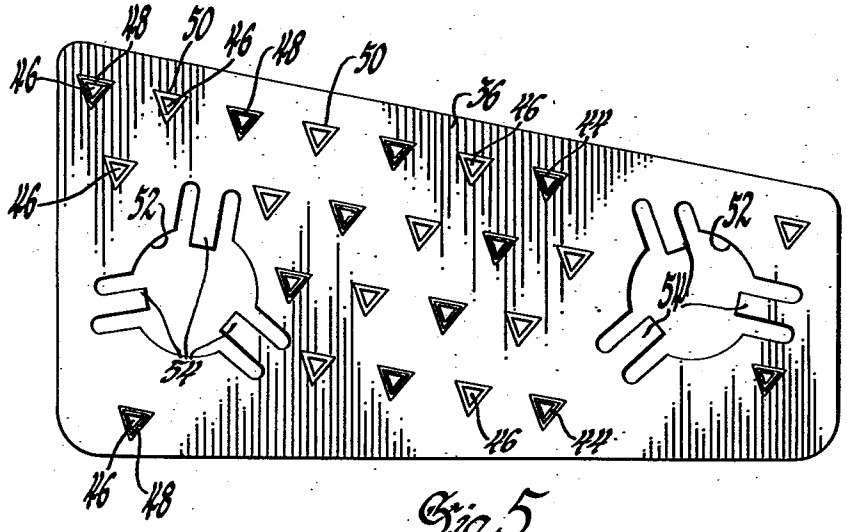


Fig. 5

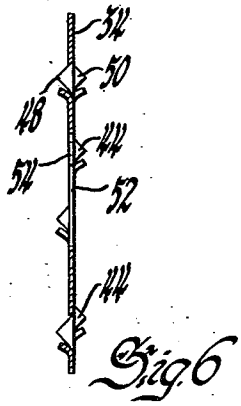


Fig. 6

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LOCK STRIKER ASSEMBLY

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5 Claims. (Cl. 292—340)

This invention relates to shims and more particularly to door lock striker retaining shims.

Various types of shims are used between the door lock striker and the door jamb in automobiles to prevent relative movement between these members. As the door is closed the lock bolt strikes the striker and is then rotated or moved to its locking position. The lock bolt strikes the striker with considerable force and tends to move the striker out of position if it is not rigidly mounted on the door jamb. Travel of the vehicle over rough roads also tends to move the striker out of position as the vehicle body is continually jolted in all directions.

In addition to the problem of rigidly mounting the striker on the door jamb to withstand the various forces tending to move the striker out of position, there is also the problem of adjustability of the striker. Each vehicle door swings about a substantially vertical axis and the lock bolt and striker must be adjusted relative to each other so that the door will open and close smoothly without being shifted upwardly or downwardly when the lock bolt enters or leaves the striker. Further adjustment of the lock bolt and striker relative to each other is required to align the vehicle door with the exterior of the body to have a continuous body contour.

An object of this invention is to provide a door lock striker retaining shim which will permit a rigid mounting of the striker on the door jamb and simple adjustability of these members relative to each other. Another object of this invention is to provide a door lock striker retaining shim having sharply pointed holding teeth which extend from the shim substantially at right angles to provide a column type holding action on the striker and door jamb. A further object of this invention is to provide a door lock striker retaining shim having groups of sharply pointed holding teeth which extend from the shim substantially at right angles. Yet another object of this invention is to provide a lock striker assembly which can be assembled as a unit before being mounted on a door jamb.

These and other objects of this invention will be readily apparent from the specification and drawings in which:

Figure 1 is a view of a door lock striker assembly mounted on a door jamb;

Figure 2 is an enlarged view of a portion of Figure 1 showing the upper shim assembly;

Figure 3 is an exploded view of the individual parts of the door lock striker assembly;

Figure 4 is an enlarged view of the upper shim;

Figure 5 is an enlarged view of the lower shim;

Figure 6 is a view on the plane indicated by line 6—6 of Figure 3.

Referring now to the drawings, a vehicle door 2 is swingably mounted on the vehicle body and a lock bolt 4 is supported on an edge 6 of the door. The door jamb 8 is offset at 10 and has a number of openings 12. A pair of nuts 14 having threaded openings 15 are mounted within cages 16 welded to the back face of the door jamb.

Nuts 14 have relatively limited movement with respect to the cages 16.

A lock striker 18 has a number of openings 20 which are countersunk at 22 for the reception of bolts 24 which mount the lock striker on the door jamb. A spacer member 26 has openings 28 corresponding to openings 20 and a number of embossed circular projections at 30 which fit into openings 32 provided on the back face of the lock striker 18 to ensure registration of the spacer member and the striker. The spacer member 26 is of generally C-shaped construction and fits around the offset portion 10 of the door jamb 8. The thickness of the spacer member 26 will vary, and the spacer member need not be used unless needed to space the striker relative to the door jamb. In certain modifications the door jamb 8 is not offset at 10 as is well known in the art.

Shims 34 and 36 are fitted between the spacer member and the door jamb, or between the lock striker and the door jamb when the spacer member is not used. Each shim is made of thin steel. Although an upper shim 34 and a lower shim 36 are shown as separate members, they may be joined by a web portion (not shown) to provide a C-shaped shim (of outline similar to spacer 26) having and upper and a lower portion. Shim 34 is provided with flange portions or tabs 38 which fit within openings 40 in spacer member 26 and openings 42 in lock striker 18 to orient the shim. Openings 40 extend through the spacer member, but openings 42 extend only partially through the lock striker, as shown in Figure 2.

Each shim is substantially similar in structure and, therefore, only shim 34 will be particularly described. The shim is stabbed in a number of spaced positions by a triangularly shaped member (not shown) to produce a number of groups of triangular teeth 44. Each group has three teeth 44 which extend substantially at right angles to the shim. Each triangular tooth will be connected at its base to an edge of the triangular opening 46 formed in the shim when the teeth are struck out. Each tooth 44 will be angular to the others around the same opening since all of the tab members are connected at their base to the sheet around the triangular shaped opening 46.

Certain of the groups of teeth will extend from one side of shim 34 and 36 and other groups will extend from the other side of shims 34 and 36. The holding power of the shims will be exerted on both the door jamb surface and the spacer member surface (or the lock striker surface if the spacer member is not used). Groups 48 of the teeth extend from the sides of the shims facing the door jamb surface, and groups 50 of the teeth extend from the sides of the shims facing the spacer member or the rear surface of the lock striker.

Each shim is provided with openings 52 for bolts 24. As only one bolt 24 extends through shim 34, tabs or flanges 38 are provided to fit within openings 40 and 42 to prevent this shim from rotating out of position as bolt 24 is tightened. Each opening 52 is provided with three tangs 54 struck out from the shims. These tangs fit between the threads of bolts 24. As the bolts are rotated to mount the lock striker assembly on the door jamb, the tangs draw the shims close to the surface of the spacer member or lock striker.

The tangs also allow the lock striker, the spacer member, the shims, and the bolts to be assembled as a unit prior to the mounting of this unit on the door jamb. The unit is assembled as follows: Extensions 30 of the spacer member 26 are fitted within openings 32, flanges or tabs 38 of shim 34 are aligned with openings 40 and 42, and shim 36 is held against the spacer member. Then bolts 24 are inserted in openings 20 and 28 and pushed inwardly until tangs 54 of the shims have entered between the threads of the bolts and shim 34 has been

drawn up on the bolt until tabs **38** partially enter openings **40**. Thus, the unit is assembled and can then be mounted on the door jamb by fitting bolts **24** in openings **12** and tightening the bolts until the unit has been drawn close to the surface of the door jamb as shown in Figures 1 and 2.

To adjust the lock striker assembly, the bolts are loosened and the lock striker is then moved to its adjusted position before the bolts are tightened. Openings **12** have a diameter greater than the threaded diameter of bolts **24** to allow adjustment of the lock striker assembly and nuts **14** with respect to the door jamb **8**.

The holding power of this door lock striker retaining shim is greater than that of the presently used abrasive shims. The shim is formed by stabbing the metal to produce sharply pointed teeth which are then hardened. The teeth extend from the shim at substantially right angles, and this column action produces a greater penetration of the surfaces of the striker or spacer member and the door jamb by the teeth. The increased holding power of the shim is due to this penetration of the metal surfaces by the hardened teeth. Only a small area of each tooth penetrates the metal surface and therefore the loading force on this area will be very high. Since all of the teeth of each group are angular with respect to each other, a force normal to one tooth tending to bend it against the shim will be resisted by the other teeth of the group since it will not be normal to them. The force will also tend to produce a greater penetration of the surfaces by these teeth.

Although a specific embodiment of this invention has been shown and described, various changes and modifications may be made within the scope and spirit of the invention without departing from it.

I claim:

1. A shim comprising a member having a plurality of groups of laterally extending teeth struck out from said member, each particular group being spaced from each other particular group with each tooth in a particular group having its base portion connected to the edge of the opening formed in the member when the particular group is struck out and being obliquely disposed with respect to the other teeth in that group whereby the teeth in a particular group are mutually cooperable with each other to resist a force normal to any tooth in the particular group tending to fold the tooth upon the member, an aperture in said member, and resilient deflectable tang means struck out of said member and extending partially across said aperture, said tang means being adapted to be engageable with an attaching member receivable in the aperture to adjustably position the shim upon the attaching member.

2. A lock striker assembly adapted to be assembled as a unit prior to the unit being mounted on a door jamb comprising a lock striker, a shim, an attaching member extending through substantially aligned apertures in said lock striker and said shim and providing the sole means for securing said lock striker and said shim on a door jamb with one face of said shim in contact with said striker and the other face of said shim in contact with said door jamb, and means on said shim detachably engageable with said attaching member to prevent withdrawal of said member after said member has been inserted through said aligned apertures, whereby said striker, shim, and attaching member may be assembled as a unit prior to the unit being mounted on the door jamb.

3. A lock striker assembly adapted to be assembled as a unit prior to the unit being mounted on a door jamb comprising a lock striker, a shim having a plurality of spaced groups of laterally extending teeth struck out of

said shim, with each group being spaced from each other group, an attaching member extending through substantially aligned apertures in said lock striker and said shim and providing the sole means for securing said striker and said shim on a door jamb with said groups of teeth in biting contact with said striker and with an opposite face of said shim in contact with said door jamb, and means on said shim detachably engageable with said attaching member to prevent withdrawal of said member after said member has been inserted through said aligned apertures, whereby said striker, shim, and attaching member may be assembled as a unit prior to the unit being mounted on the door jamb.

4. A lock striker assembly adapted to be assembled as a unit prior to the unit being mounted on a door jamb comprising a lock striker, a shim having a plurality of spaced groups of laterally extending teeth with each particular group being spaced from each other particular group, certain of said groups extending from one face of said shim and other of said groups extending from an opposite face of said shim, an attaching member extending through substantially aligned apertures in said lock striker and said shim and providing the sole means for securing said striker and said shim on a door jamb with said certain of said groups of said teeth in biting contact with said striker and said other of said groups of said teeth in biting contact with said door jamb, and means on said shim detachably engageable with said attaching member to prevent withdrawal of said member after said member has been inserted through said aligned apertures, whereby said striker, shim, and attaching member may be assembled as a unit prior to the unit being mounted on the door jamb.

5. A lock striker assembly adapted to be assembled as a unit prior to the unit being mounted on a door jamb comprising a lock striker, a shim having a plurality of spaced groups of laterally extending teeth struck out from said shim, each particular group being spaced from each other particular group and including a plurality of adjacent teeth with each tooth in a particular group being obliquely disposed with respect to the other teeth in that group whereby the teeth in a particular group are mutually cooperable with each other to resist a force normal to any tooth in the particular group tending to fold the tooth upon said member, certain of said groups extending from one face of said shim and other of said groups extending from an opposite face of said shim, an attaching member extending through substantially aligned apertures in said lock striker and said shim and providing the sole means for securing said striker and said shim on a door jamb with said certain of said groups of teeth in biting contact with said striker and said other of said groups of teeth in biting contact with said door jamb, and resilient deflectable tang means on said shim detachably engageable with said attaching member to prevent withdrawal of said member after said member has been inserted through said aligned apertures, whereby said striker, shim, and attaching member may be assembled as a unit prior to the unit being mounted on the door jamb.

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