

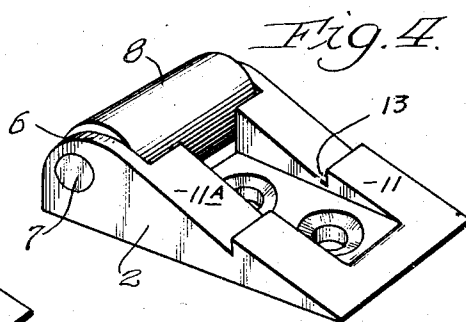
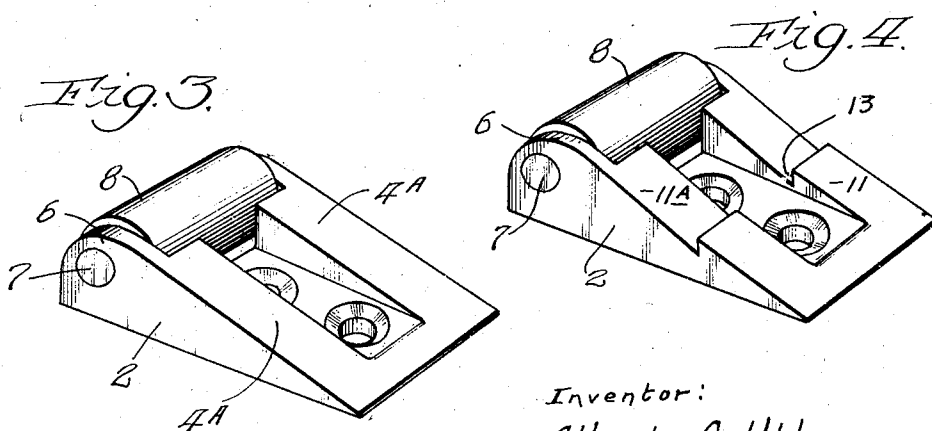
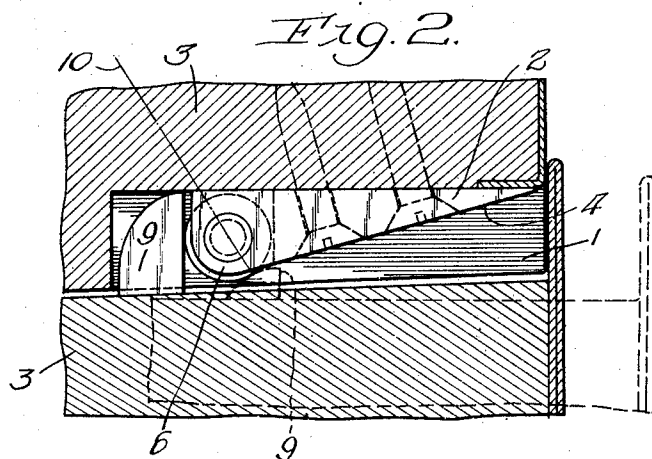
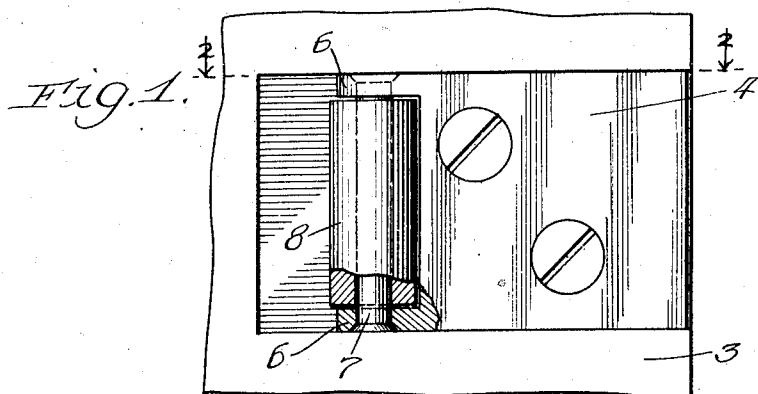
Dec. 31, 1929.

A. A. UTLEY

1,741,258

STRIKER PLATE FOR DOOR LATCHES

Original Filed Aug. 10, 1927



Inventor:
Albert A. Utley
by *Albert Scheith*
Attorney

UNITED STATES PATENT OFFICE

ALBERT A. UTLEY, OF OAK PARK, ILLINOIS, ASSIGNOR TO STANDARD PARTS CORPORATION, OF OAK PARK, ILLINOIS, A CORPORATION OF DELAWARE

STRIKER PLATE FOR DOOR LATCHES

Continuation of application Serial No. 212,080, filed August 10, 1927. This application filed November 21, 1927. Serial No. 234,665.

This application, which is a continuation of application No. 212,080, filed by me August 10, 1927, and entitled Ball-bearing door stay, relates to striker plates for door latches.

5 Generally speaking, the objects of my invention are these:

Facilitating the ready engaging of the latch-bolt with the striker member so that the latching can be effected without slamming the door or straining any parts of the door or latch; insuring a positive latching whenever the door has been moved to a predetermined extent; and providing an exceedingly simple, easily manufactured, inexpensive, durable and substantially frictionless striker-plate accomplishing these purposes.

10 With many classes of doors, the frames for the doors are apt to become more or less twisted, thereby throwing the door slightly out of alinement with its frame and correspondingly affecting the relative positions of the latch-bolt and the striker plate. As the result, the tip of the latch-bolt encounters considerable friction in moving along the face of the striker plate toward its latching position, and also encounters an undue amount of friction when the spring of the lock thereafter moves the latch-bolt outwardly, so that an apparently latched door quite often is not securely latched. This experience has grown to be so common in connection with automobile doors, that it is quite customary for their drivers or passengers to slam the doors vigorously when closing them, after which the one who closed the door tugs at the door to determine whether or not even this slamming has effected the desired latching. It is likewise quite common for such locks to require a large amount of power in the retracting of the latch-bolt, for the reason that this bolt (if it has adequately extended behind the "keeper" portion of the striker plate) frictionally engages a rigid plate over a considerable surface, so that women and even men often find an undesirable difficulty in opening such doors.

My present invention aims to overcome these and other objections to the striker plate arrangements heretofore in use. Generally speaking, my invention accomplishes these

purposes by providing a freely rotatable roller as the effective "keeper" portion of the striker plate, by providing the striker plate with a smooth and gradually sloping face which will slowly push back the latch-bolt while the door is being moved to a position in which the keeper-engaging face of the latch-bolt is almost radial of the said roller, and by mounting the roller so that it projects only slightly beyond both the said sloping face and the inner or keeper end of the said striker plate.

More particularly, my invention provides a striker plate for such purposes, comprising a wedge-shaped body having arms projecting beyond its thicker end, between which arms a suitable roller is pivoted so that its cylindrical surface projects only slightly beyond the outer flat face of the said body and beyond the free ends of the pivoting arms. Still further and also more detailed objects will appear from the following specification and from the accompanying drawings, in which

Fig. 1 is a fragmentary elevation of the inner face of the door jamb of an automobile, showing an embodiment of my invention mounted in the same, and with portions of the striker plate and roller broken away

Fig. 2 is a horizontal section through the same door jamb and the adjacent portion of the closed door, with full lines showing the latch-bolt of the lock in its latching position, and with dotted lines indicating the position of the door and latch-bolt when the tip of this bolt first engages the roller during the closing of the door.

Fig. 3 is a perspective view of another embodiment of my invention, namely one in which the striker plate is grooved on its outer face.

Fig. 4 is a perspective view of an embodiment similar to that of Fig. 3, but with the body of the striker plate formed to afford two consecutive sloping surfaces joined by a shoulder which may be engaged by the latch bolt in an intermediate position.

Referring first to Figs. 1 and 2, these show a wedge-shaped striker plate body 2 having a flat upper face which face engages therein-

ner edge of a door frame 3, and having a flat outer face 4 which slopes away from the said rear face in the direction in which the adjacent edge of the door moves during the closing of the latter. Integral with this body (which may be of brass, bronze, or the like) are a pair of arms 6, desirably adjacent to the upper and lower edges of the body. These arms are provided with alined bores, with the axis of the bores parallel to the plane of the forward face of the body, and a pin or axle 7 extends through these alined bores.

Journalled on this axle is a cylindrical roller 8 which preferably is a little shorter than the distance between the arms 5, so as to allow for ample clearance without requiring high accuracy in the manufacturing. The bore of the roller may also be a trifle larger than the diameter of the axle, and the axis of the bores 6 is spaced from the top of the thicker end of the wedge-shaped body by a distance slightly less than the radius of the roller, so that the roller projects a little beyond the common plane of the said sloping face 4 and of the outer arm faces. These outer arm faces desirably slope in continuation of the said face, and the outer arm faces are connected to the free ends of the arms by curved surfaces concentric with the said axle, but slightly smaller in diameter than the roller 8. The axis of the axle 7 is also disposed at a distance from the rear ends of the arms 5 by a distance slightly less than the diameter of the roller, so that the roller projects slightly beyond the free ends of the arms.

While the extent to which the roller thus projects beyond the body of the striker plate may be varied somewhat, I preferably proportion this so that the tip of the latch-bolt 9 will engage the roller along a line in plane 10 diametric of the axis of the axle, which plane is at an angle of at least 45 or 50 degrees with the rear face of the striker plate body. By doing this, the latch-bolt tip (if rounded in the usual manner away from the keeper-engaging face, as shown in Fig. 2) will easily ride up and over the roller without any perceptible jar from the left-hand dotted position in Fig. 2 to the one shown in full lines in the same figure. During this movement, the roller also eliminates friction between the latch-bolt and the striker plate while the spring of the lock is moving the latch-bolt into its safe latching position, or upward in Fig. 2. Consequently, my arrangement permits even a gentle closing of the door to effect a positive and secure latching, and by reducing the friction on the latch-bolt it also reduces the power required for retracting this bolt when the door is to be opened, so that my invention readily eliminates both the slamming and the tugging heretofore required in so many cases for latching and unlatching doors.

Where the latch-bolt of the door is of a considerable width, the medial portion of the sloping outer face of the striker plate body may be cut away, as shown in Fig. 3, so as to leave only two relatively narrow sloping face portions 4A, thereby reducing the friction between the striker plate body and the tip of the latch-bolt while that tip is moving in either direction along the said sloping face.

However, while I have heretofore described my invention in embodiments in which the sloping face portions are in a single plane slightly intersecting the roller, and in which the axle of the roller is formed separate from the latter, I do not wish to be limited to these or other details of the construction and arrangement thus disclosed. Changes might obviously be made without departing from the spirit of my invention or from the appended claim.

For example the outer face of the striker plate body (which is directed towards the edge of the closed door) might comprise two consecutive sloping portions 11 and 12 connected by stop shoulders 13, with each of these face portions in planes which slightly intersects the roller, thereby permitting the shoulders 13 to serve as intermediate keeper for the latch-bolt when the door is not entirely closed. However, I preferably make the sloping face portions of the striker plate body continuous, after the manner of Figs. 1, 2 and 3, since the easy guiding of the latch-bolt to a safe latching position makes the single slope types (such as those of Figs. 1 to 3) so dependable that an intermediate catching position is not needed in ordinary practice.

By way of summary, and referring to the form shown in Figures 1 and 2, as an example, it will be observed that the door latch keeper forming the subject matter of this application comprises a body 2 having an inclined surface 4, and a roller 8 journalled on the body at the raised end of the inclined surface, the roller projecting outwardly beyond the inclined surface and beyond the adjacent end surface of the body. Figure 2 shows that the inclined surface 4 is located in a plane which passes through the roller nearer to the periphery of the roller than to the axis of the roller. The space between the inclined surface 4 and the periphery of the roller 8 is so small that the latch bolt 9 can engage the said inclined surface 4, and the periphery of the roller, at the same time. As a result of this construction, the roller 8 is not subjected to severe shock due to engagement with the latch bolt 9, and a roller door latch keeper, thus, is made a practical possibility.

I claim as my invention:

In a door latch keeper, a body having an inclined surface, and a roller journalled on

the body at the raised end of the inclined surface and projecting outwardly beyond the inclined surface and beyond the adjacent end surface of the body, the inclined surface being located in a plane which passes through the roller nearer to the periphery of the roller than to the axis of the roller, the space between the inclined surface and the periphery of the roller being so small that a door latch bolt can engage the said inclined surface, and the periphery of the roller, at the same time.

Signed at Chicago, Illinois, November 18th, 1927.

ALBERT A. UTLEY.