Nov. 7, 1939. L. R. RHEIN 2,178,919

STRIKER

Filed May 26, 1938 2 Sheets-Sheet 1

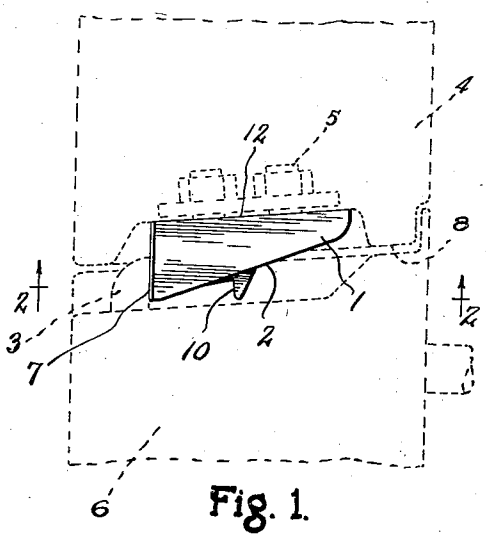

Fig. 1.

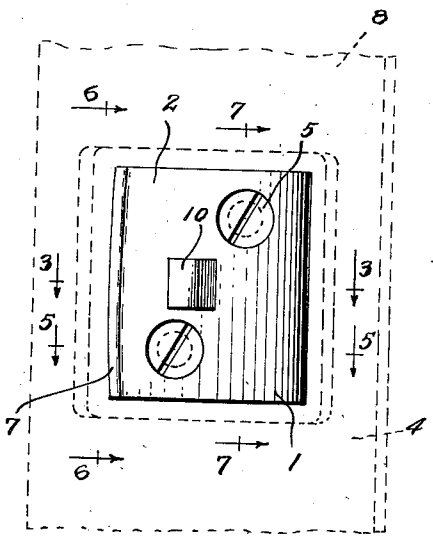

Fig. 2.

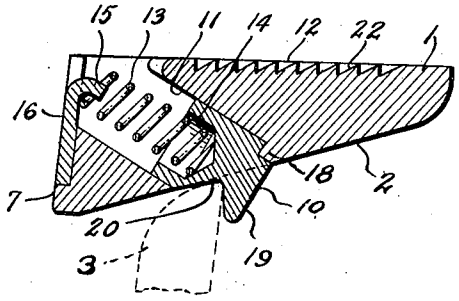

Fig. 3.

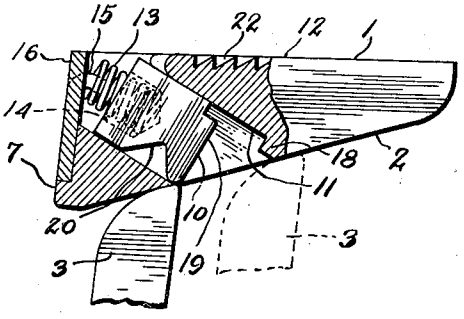

Fig. 4.

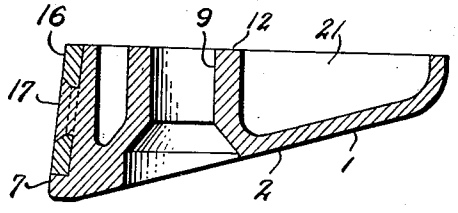

Fig. 5.

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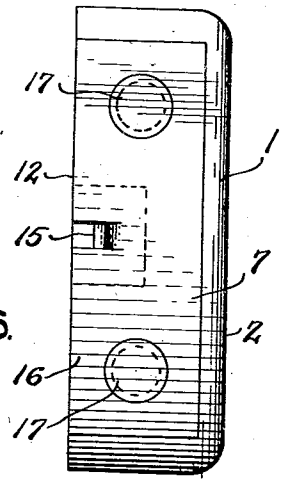


Fig. 6.

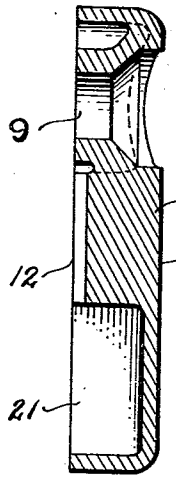


Fig. 7.

Fig. 9.

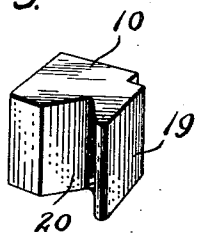
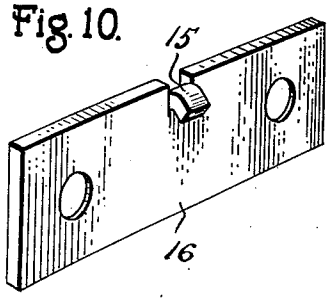


Fig. 10.



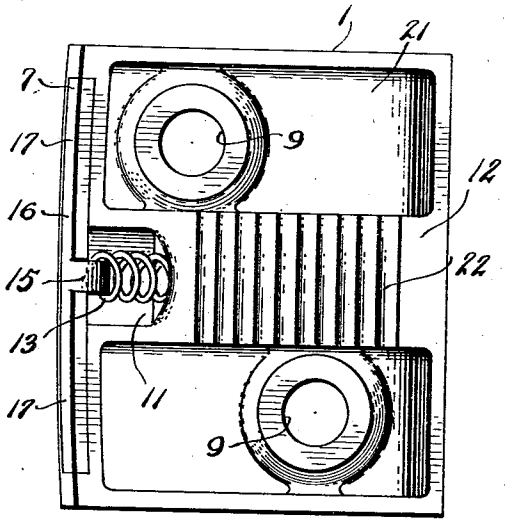


Fig. 8.

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UNITED STATES PATENT OFFICE

2,178,919

STRIKER

Lloyd R. Rhein, Pleasant Ridge, Mich., assignor to Ternstedt Manufacturing Company, Detroit, Mich., a corporation of Michigan

Application May 26, 1938, Serial No. 210,260

7 Claims. (Cl. 292—340)

This invention relates to a striker for an automobile door latch bolt having a safety catch.

It is the object of this invention to produce a striker plate having a reciprocable safety catch which is simple in structure and therefore cheaper to manufacture than those heretofore known.

A striker plate with a reciprocating safety catch is not broadly new, see the British patent to Kaye, No. 10,522 of May 29, 1893. The Kaye type of reciprocable safety catch reciprocates at right angles to the face of the door jamb, that is, substantially in the plane of reciprocation of the latch bolt. The Kaye type of safety catch is unsatisfactory because it requires that the door jamb be recessed to accommodate the safety catch.

It is an object of this invention to obviate this disadvantage. This is accomplished by housing the safety catch for reciprocation entirely within the striker plate.

It is also an object of this invention to produce a striker with a reciprocable safety catch which operates more easily than the Kaye type of safety catch. This object is achieved by housing the safety catch for reciprocation within the striker plate at an acute angle to the face of the door jamb.

In the drawings:

Fig. 1 is a plan view of the striker plate with a dotted line showing of the door jamb to which the striker plate is secured and of the door fully closed and latched.

Fig. 2 is a front elevation of the striker plate along the line 2—2 of Fig. 1.

Figs. 3, 5, 6 and 7 are sections along the lines 3—3, 5—5, 6—6 and 7—7 of Fig. 2.

Fig. 4 is a horizontal sectional view similar to Fig. 3 but showing the safety catch fully retracted by the latch bolt.

Fig. 8 is an elevation of the striker showing the base face.

Fig. 9 is a detail of the safety catch.

Fig. 10 is a detail of the back plate.

Referring to the drawings there is shown a striker plate 1 which is preferably a die-casting. The striker plate 1 is provided with the inclined outer face 2 up which the latch bolt 3 rides in the closing of the door. The striker is secured to the jamb face 8 of the body pillar 4 by the bolts 5 which pass through the openings 9 in the striker.

As shown in Fig. 1 the latch bolt 3, which is the conventional spring projected sliding bolt, is carried by the door 6 and engages behind the shoulder 7 of the striker 1 when the door is closed.

The striker 1 is provided with a safety catch in the form of a plunger 10. The plunger 10 may be made from any suitable material such as steel. The plunger 10 is slidably mounted and guided for rectilinearly reciprocating movement in the opening 11 in the striker 1. Since the plunger 10 as well as the opening 11 are square in cross section, the plunger reciprocates in the opening 11 without turning. The opening 11 is positioned at an acute angle to the jamb face 8 of the door. In other words, the longitudinal axis of the opening 11 makes an acute angle with the base face 12 of the striker. The base face 12 of the die-cast plate 1 is recessed as at 21 to save metal and is serrated as at 22 for better securement to the door jamb. The plunger 10 is backed up by the coil spring 13, one end of which is seated in the opening 14 in the plunger 10 and the other end of which fits over the lug 15 of the plate 16. The plate 16 is secured by the rivets 17 to the back face of the striker and retains the coil spring 13 and plunger 10 within the opening 11 of the striker. Rivets 17 are cast as an integral part of the plate 1.

From the above it will be seen that the striker 1 serves as a complete housing for the plunger safety catch 10 which reciprocates entirely within the striker housing. Therefore when the striker is assembled to the jamb face of the door there is no need for cutting into or recessing the door jamb to accommodate the plunger 10. Further it will be seen that since the plunger reciprocates in the opening 11, which makes an acute angle with the jamb face of the body pillar, that the latch bolt 3 in the closing of the door exerts the major component of its force directly along the longitudinal axis of the coil spring 13 which facilitates door closing.

The striker 1 is provided with a shoulder 18 which serves as a stop for retaining the plunger 10 within the opening 11 and for limiting its projection beyond the inclined face 2 of the striker. The plunger 10 is provided with an inclined face 19 and a notch 20 for interengagement with the bolt 3.

In the closing of the door the latch bolt 3, as indicated in Fig. 4, is retracted by riding up the inclined face 2 of the striker. As the latch bolt reaches the safety catch 10, the safety catch is retracted or forced back in its opening 11 by the bolt to the position shown in Fig. 4 until the bolt rides by the safety catch whereupon the safety catch is projected by the spring 13 and interengages the bolt as shown in Fig. 3.

In the opening of the door the bolt 3, of course,

is retracted sufficiently far so that it clears the projected safety catch 10.

I claim:

1. A striker for a latch bolt comprising a plate having a base face and a face at an acute angle thereto along which the bolt rides in the closing of the door, and a safety catch in the form of a plunger mounted for reciprocation within the striker with its axis positioned at an acute angle to said base face and with the inner end of the plunger disposed toward the closing direction of the door, said safety catch when fully projected extending beyond the bolt contacting face of the striker in the pathway of the latch bolt whereby in the closing of the door the latch bolt rides over and depresses the plunger until the bolt clears the plunger whereupon the plunger is free to project behind and interengage the bolt.

2. A striker for a latch bolt comprising a plate having a base face and a face along which the bolt rides in the closing of the door, a safety catch in the form of a spring projected plunger, a guideway for the said plunger in the form of an opening in the said plate positioned at an acute angle to the base face of the plate, the said spring projected plunger being mounted for reciprocation within the said opening, and a stop for limiting the projection of the plunger beyond the bolt contacting face of the striker, the said plunger when fully projected extending beyond the face of the striker in the pathway of the bolt whereby in the closing of the door the major component of the force of the latch bolt is exerted along the path of travel of the plunger to depress the same until the bolt clears the plunger whereupon the plunger is projected behind and is free to interengage the bolt.

3. A striker for a latch bolt comprising a plate having a base face and a face at an acute angle thereto along which the bolt rides in the closing of the door, a safety catch in the form of a plunger, a spring for projecting the said plunger, an opening extending inwardly from the bolt contacting face of the striker with its axis positioned at an acute angle to the base face of the striker and with the inner end of the opening disposed toward the closing direction of the door and serving as a rectilinear guideway for the plunger, and means for retaining the plunger and spring within the said inclined opening, said safety catch when fully projected extending beyond the bolt contacting face of the striker in the pathway of the latch bolt whereby in the closing of the door the latch bolt rides over and depresses the plunger until the bolt clears the plunger whereupon the plunger is free to project behind and interengage the bolt.

4. A striker for a latch bolt comprising a plate having a base face and a face at an acute angle thereto along which the bolt rides in the closing of the door, a safety catch in the form of a plunger, a spring for projecting the said plunger, an opening extending inwardly from the bolt contacting face of the striker with its axis positioned at an acute angle to the base face of the striker and with the inner end of the opening disposed toward the closing direction of the door and serving as a rectilinear guideway for the plunger, and a plate secured to the back face of the striker for retaining the plunger and spring within the said inclined opening, said safety catch when fully projected extending beyond the bolt contacting face of the striker in the pathway of the latch bolt whereby in the closing of the door the latch bolt rides over and depresses the plunger until the bolt clears the plunger whereupon the plunger is free to project behind and interengage the bolt.

5. A striker for a latch bolt comprising a plate having a base face and a face at an acute angle thereto along which the bolt rides in the closing of the door, a safety catch in the form of a plunger, a coil spring for projecting the said plunger, an opening extending inwardly from the bolt contacting face of the striker with its axis positioned at an acute angle to the base face of the striker and with the inner end of the opening disposed toward the closing direction of the door and serving as a rectilinear guideway for the plunger, and a recess in the inner end of said plunger and a plate for closing the inner end of said inclined opening, the said plate having a lug over which one end of the coil spring is fitted, the other end of the coil spring being seated in the said plunger whereby the said plate serves to retain the plunger and spring within the inclined opening, said safety catch when fully projected extending beyond the bolt contacting face of the striker in the pathway of the latch bolt whereby in the closing of the door the latch bolt rides over and depresses the plunger until the bolt clears the plunger whereupon the plunger is free to project behind and interengage the bolt.

6. A striker for a latch bolt comprising a plate having a base face and a face at an acute angle thereto along which the bolt rides in the closing of the door, a safety catch in the form of a plunger mounted for reciprocation entirely within the striker with its axis positioned at an acute angle to said base face and with the inner end of the plunger disposed toward the closing direction of the door, said safety catch when fully projected having a portion extending beyond the bolt contacting face of the striker in the pathway of the latch bolt whereby in the closing of the door the latch bolt rides over and depresses the plunger until the bolt clears the plunger whereupon the projecting portion of the plunger is free to project behind and interengage the bolt.

7. A striker for a latch bolt comprising a plate having a base face and a face at an acute angle thereto along which the bolt rides in the closing of the door, a safety catch in the form of a plunger, a spring for projecting the plunger, an opening in the plate extending inwardly from the bolt contacting face of the striker with its axis positioned at an acute angle to the base face of the striker and with the inner end of the opening disposed toward the closing direction of the door and serving as a rectilinear guideway for the said plunger, and means for retaining the spring and plunger in the said opening between the base face and the bolt contacting face of the striker whereby in the closing of the door as the latch bolt rides over and depresses and then releases the plunger, the plunger is free to reciprocate in the said opening only between the base face and the bolt contacting face of the striker.

LLOYD R. RHEIN.