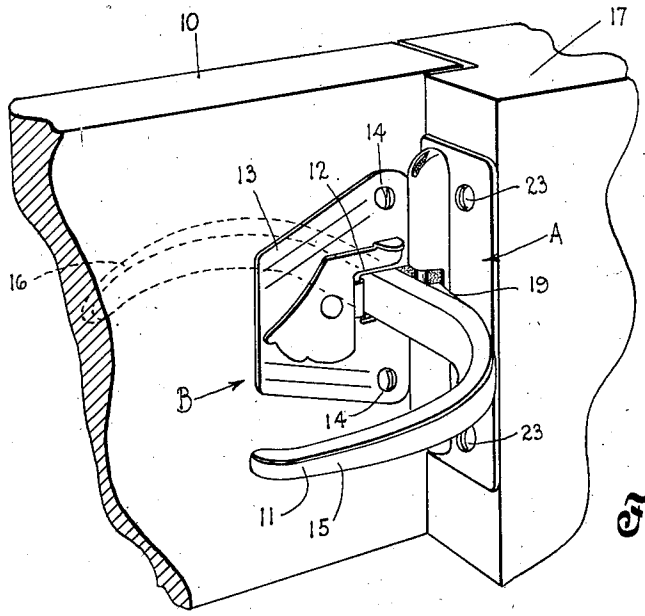
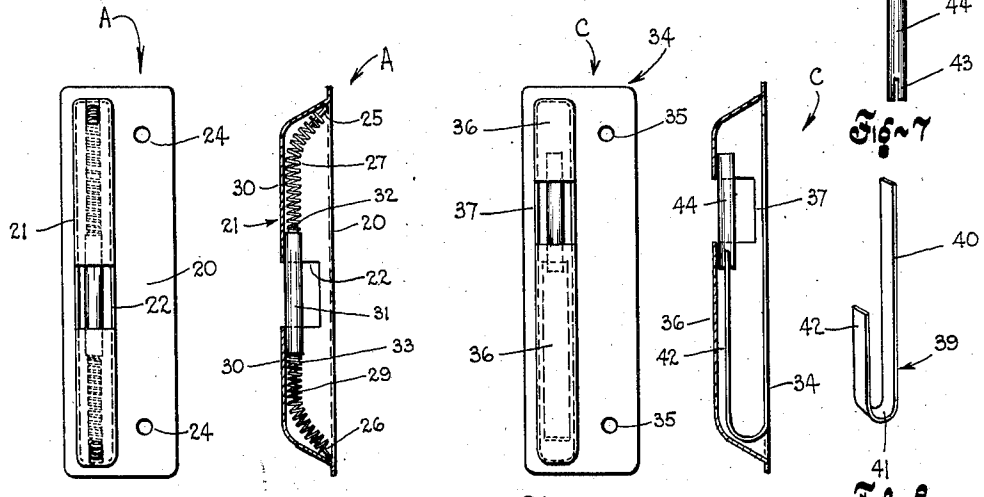
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RESILIENT STRIKE PLATE

Filed July 17, 1947



Fig~1



Fig~2 Fig~3 Fig~5 Fig~6 Fig~7 Fig~8



Fig~4

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RESILIENT STRIKE PLATE

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2 Claims. (Cl. 292—341.15)

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My invention relates to an improvement in resilient strike plate wherein it is desired to provide a strike plate which will spring inwardly when engaged by a latch to decrease the wear upon the latch.

In recent years the use of latches having a hingedly supported handle engageable from opopposite sides of the door has become increasingly popular. These latches are sometimes provided with integral latch bolts which engage resiliently over a strike plate in closed position of a door. As a result, when the door swings shut, the handle must pivot to allow the latch bolt to engage behind the keeper. This action places a strain upon the handle supporting mechanism as the door swings shut. Furthermore, as the handle is being held in the hand and the door is manually closed, the handle twists the hand or moves within the hand during the door closing operation.

It is the object of the present invention to provide a strike plate which is resiliently supported and which is engageable with the latch bolt of a door latch. As a result, the strike plate may flex inwardly as the door closes, thus reducing the strain upon the latch. Furthermore, when the strike plate is used in conjunction with a hingedly supported latch handle, the door may close without pivoting the latch handle.

A feature of the present invention lies in the provision of a strike plate including a shoulder against which the latch bolt may engage and a means for resiliently supporting this shoulder. Thus the shoulder may retract as the latch bolt travels over the same and may spring outwardly after the latch bolt has travelled thereover to hold the latch engaged.

A feature of the present invention lies in the fact that my strike plate may incllde a shoulder formed of a round bar or shaft if desired. This round bar or shaft may be retracted by the latch bolt with a minimum of friction while, at the same time, may form a firmly supported shoulder against which the latch bolt may engage when the door is closed.

A feature of the present invention lies in the provision of a resiliently supported strike plate and in the simple manner in which the strike plate is constructed. In the preferred form of my invention the strike plate is mounted in an elongated hollow casing having a notch therethrough through which the latch bolt may pass. A round shaft is urged against the outer closed side of this casing by spring means which may be compressed or flexed when inward pressure is applied to the shaft.

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These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a perspective view of my strike plate in use with a hingedly supported door latch.

Figure 2 is an elevation view of the strike plate in readiness for use.

Figure 3 is a vertical section through the strike plate showing the construction thereof.

Figure 4 is an elevation view of the bar or shaft forming the strike plate shoulder or abutment.

Figure 5 is an elevation view of a modified form of strike plate construction.

Figure 6 is a vertical sectional view through the strike plate of Figure 5.

Figure 7 is an elevation view of the strike plate bar or shaft forming the shoulder or abutment of the strike plate.

Figure 8 is a perspective view of the spring used to support the strike plate bar or shoulder.

My resilient strike plate A is adaptable for use with virtually any type of latch or latch bolt. In view of the fact that this resilient strike plate is particularly advantageous when used in conjunction with a latch of the swinging type, the strike plate is shown in Figure 1 in connection therewith. The manner in which a different type of latch bolt could be used is believed obvious from the following description.

The latch B is diagrammatically illustrated as it would appear mounted upon the door 10. The latch B includes a U-shaped handle 11 which is pivotally supported upon a frame 12. The frame 12 is provided with an escutcheon plate 13 secured to one surface of the door by screws 14 or other suitable means. The pivot connecting the handle 11 to the frame 12 is preferably arranged on a vertical axis so that the latch handle swings on an axis parallel to the axes of the hinges supporting the door 10. The door 10 may be opened by a pushing movement against the end 15 of the handle 11 shown in full lines in the drawing, or may be opened by a pulling motion upon the end 16 of the handle 11.

The strike plate A is mounted upon the door frame 17 and is engageable with a cam shaped latch bolt 19 mounted on the handle 11. When in the closed position illustrated in Figure 1, the latch 19 firmly engages against the strike plate to hold the door 10 in closed position. However, as the door 10 moves toward closed position, the cam shaped latch bolt 19 will act to retract the strike plate shoulder in a manner which will be later described in detail.

The strike plate A includes a body portion 20 in the form of a flat plate having an outwardly bulged hollow enclosure 21 thereupon. The hollow enclosure 21 is provided with a notch 22 in the outer extremity thereof through which the latch bolt 19 may extend. The hollow enclosure 21 forms a means of supporting the striker plate shoulder and the resilient supporting means therefor. Screws 23 may extend through suitable apertures 24 in the strike plate for securing the same to the door frame.

As best illustrated in Figure 3 of the drawings, a pair of tongues 25 and 26 are struck from the ends of the enclosure 21 and extend inwardly into the enclosure at an angle with the base plate 20. These tongues 25 and 26 are of proper width to extend into the ends of spiral springs 27 and 29. The tongues 25 and 26 form an anchor for the ends of the springs and direct the springs toward the outer side 30 of the enclosure 21.

The strike plate shoulder is preferably in the form of a shaft or rod 31 which may if desired be provided with reduced diameter ends 32 and 33. These reduced diameter ends 32 and 33 are inserted into the ends of the springs 27 and 29 respectively. Thus the springs 27 and 29 urge the shaft or rod 31 against the outer closed side 30 of the enclosure 21. Obviously, however, inward pressure against the rod 31 may move this rod inwardly to the level of the base plate 20.

The operation of the resilient strike plate is believed obvious from the foregoing description. If the latch bolt such as 19 moves against the rod 31 in the closing action of the door, this rod is forced inwardly toward the level of the base plate 20, allowing the latch bolt to move past the strike plate without retracting the latch bolt. As soon as the latch bolt passes the strike plate rod 31, the springs 27 and 29 urge this rod outwardly into the position shown in Figure 3, whereupon the rod engages the shoulder end of the latch bolt and holds the door firmly in closed position. Outward pressure against the door can not retract the strike plate shoulder 31.

In Figures 5 through 8 of the drawings I disclose a modified form of strike plate C. In this form of construction the body of the strike plate may be substantially similar to that previously described. The strike plate C includes a base plate 34 having apertures 35 therethrough by means of which the strike plate may be attached to the door frame. The strike plate C is likewise provided with an outwardly bulged enclosure 36 formed by pressing a portion of the plate 34 outwardly. A notch 37 is provided in the enclosure 36 near one extremity thereof.

A J-shaped spring 39 is anchored to the base plate 34 near the notched end of the enclosure, or this spring 39 may merely rest against the door frame 17 within the enclosure 36. The J-shaped spring 39 includes a long arm 40 which may rest against the outer surface of the door frame. This long arm 40 is connected by the rounded end 41 to a short arm 42. The short

arm 42 engages within the notched end 43 of a strike plate shaft or rod 44. The rod 44 is secured to the arm 42 of the spring in any suitable manner. When in place the bar 44 lies in the enclosure 36 inwardly of the notch 37 and extends above and below this notch.

When the door 10 moves toward closed position the cam surface of the latch bolt 19 strikes against the rod 44, flexing the arm 42 and allowing the rod 44 to retract toward the long arm 40 of the spring. After the latch bolt 19 passes the rod 44, the spring 39 assumes its usual position, and moves the rod 44 into the path of the shoulder side of the latch bolt. When in this position the door is prevented from moving outwardly and there is no tendency to retract the bar 44.

In accordance with the patent statutes, I have described the principles of construction and operation of my door latch, and while I have endeavored to set forth the best embodiments thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A strike plate comprising a hollow channel shaped enclosure having a notch in the base thereof and intermediate the ends thereof, a pair of ears struck from opposite ends of said enclosure, a strike plate bar bridging said notch, and spring means supported by said ears and by the ends of said bar to resiliently urge said bar forwardly into latch engaging position against the base of said enclosure.

2. A strike plate including a hollow channel shaped enclosure having a notch in the base thereof intermediate the ends thereof, a pair of ears struck from opposite ends of said enclosure, a strike plate bar bridging said notch and having projections extending from opposite ends thereof, and a pair of coil springs encircling said ears at one end thereof and said projections at the other end thereof, said springs resiliently urging said bar forwardly against the base of said enclosure.

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