March 17, 1931. J. H. SHAW 1,796,307

SPRING STRIKE FOR DOORLOCKS

Filed Feb. 14, 1928

Fig. 1.

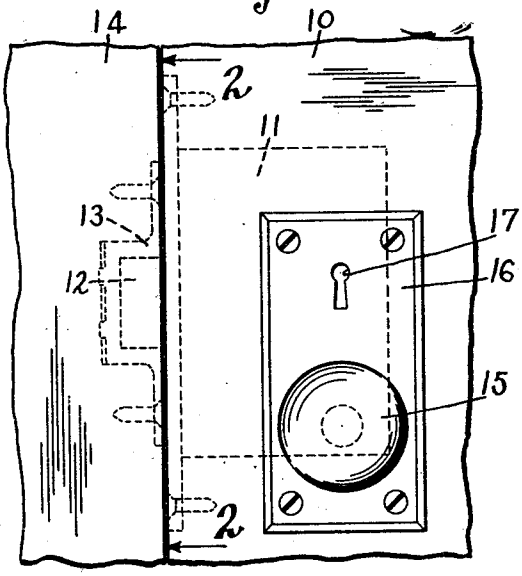


Fig. 2.

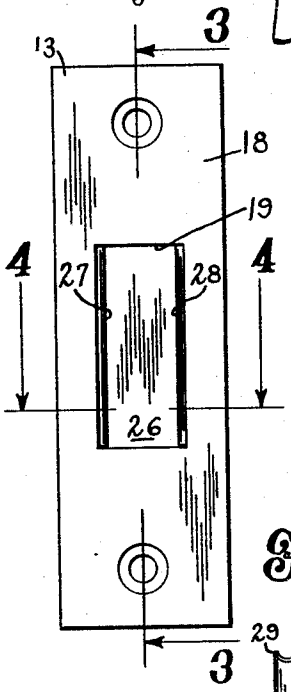


Fig. 3.

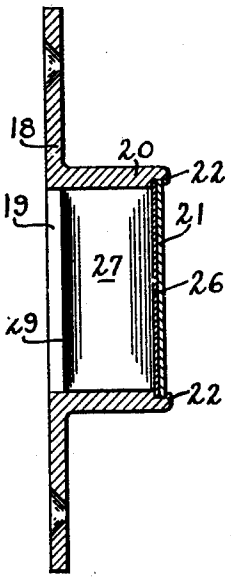


Fig. 4.

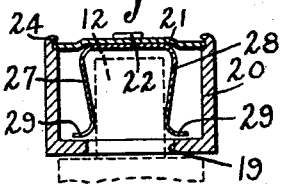


Fig. 5.

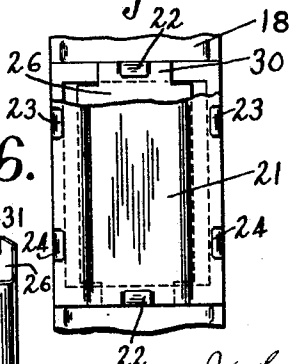
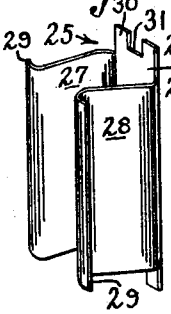


Fig. 6.



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UNITED STATES PATENT OFFICE

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SPRING STRIKE FOR DOORLOCKS

Application filed February 14, 1928. Serial No. 254,253.

This invention relates to door locks, and more particularly to and means for preventing rattling of the door bolt against the edges of the lock strike opening and for holding the door against movement when it is closed and the bolt protracted. Specifically, my improved structure comprises means for resiliently and frictionally engaging the protracted end of the bolt so that the latter will not be allowed to rattle within the strike opening, and moreover, by reason of the fact that the bolt is firmly engaged, the door itself will be prevented from rattling against the jamb.

It quite often occurs that when doors are closed they rattle more or less, due to the clearance which ordinarily must be provided between the lock bolt and the strike opening into which the bolt extends. This rattling noise is, of course, objectionable, and this is especially true in doors for hospitals or the like where extreme quiet is desirable. The strike opening cannot ordinarily be made to exactly fit the door bolt, due to the fact that the bolt could not be readily protracted on account of friction and also due to the fact that upon any slight settling of the door or door frame, the bolt would soon get out of line with the strike opening. It is, therefore, usually expedient to provide an opening in the strike plate which will permit of a certain amount of clearance around the bolt.

It has been proposed to eliminate the rattling of the bolt in the strike by providing the strike opening with tapered converging walls, so that when the bolt is protracted it will enter only a certain distance into the strike and there engage the tapered walls so as to fit tightly against them. This construction, however, has the disadvantage of not permitting the bolt to be fully protracted and as the bolt is usually not arranged to be positively held in a partially protracted position, the door cannot be locked and moreover, the bolt often works loose in the strike and in such case objectionable noise ensues.

One object of my invention, therefore, is to provide means on the door jamb for positively gripping the bolt when protracted, so that the bolt will be securely held against rattling.

Another object of the invention is the provision of means upon the door jamb to frictionally engage the protracted end of the bolt to hold the door and the bolt against rattling movements.

More specifically an object of the invention is to provide a spring strike for door lock bolts, such that the protracted end of the bolt will be frictionally engaged by a spring pressed member, and securely held in position in the strike.

A still further object of the invention is the provision of a door strike, provided with a spring pressed bolt engaging member, which engages the bolt and holds it securely against movement when protracted, and at the same time will allow the bolt to be fully protracted so that it may be locked in this position.

Still another object of the invention is the provision in a door strike of a resilient bolt receiving member mounted within the strike opening to frictionally engage the sides of the bolt and hold the latter against movement.

To these and other ends, the invention consists in the novel features and combinations of parts to be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a fragmentary front elevational view of a door and door casing having mounted thereon a lock and lock strike embodying my invention;

Fig. 2 is a front elevational view of the door strike member;

Fig. 3 is a sectional view on line 3—3 of Fig. 2;

Fig. 4 is a sectional view on line 4—4 of Fig. 2;

Fig. 5 is a rear view of the bolt receiving portion of the strike, some parts being broken away for the sake of clearness;

Fig. 6 is a perspective view of the resilient bolt engaging member.

To illustrate a preferred embodiment of my invention, I have shown in a fragmentary way, a portion of a door 10, in which is mounted a lock 11, having a bolt 12 cooperating with a strike 13, mounted in the door

jamb or casing 14. The door lock may be of any conventional form, and may be provided with a knob 15, mounted on an escutcheon 16, provided with a key-hole 17, through which a key may be inserted to control the bolt 12. As the lock and bolt operating mechanism form no part of the invention, they may be of any preferred form and are not shown in detail herein.

The strike 13 comprises a front strike plate 18, which faces the door opening and is provided with a bolt opening 19. As shown in Figs. 3 and 4, a housing 20 is provided on the back of the strike plate 18, which surrounds the opening 19 and into which housing the bolt 12 enters when protracted. This housing is enclosed on four sides, the front, of course, being left open to permit the bolt to be protracted through the opening 19 and the back of the housing being covered by a plate 21. For this purpose, the rear edges of the walls of the housing 20 are provided with a number of upstanding ears, two of such ears 22 being provided at the upper and lower sides of the housing, while on each of the lateral edges of the housing two ears 23 and 24 are formed.

The plate 21 is made of the proper size to cover the rear face of the housing 20, and may at its edges be provided with slight recesses or notches, not shown, to receive the ears 22, 23 and 24, which are then, when the cover is in place, bent inwardly over the cover to secure it to the housing.

In order that the bolt may be gripped and held against rattling when protracted into the strike opening, I have provided a bolt receiving member 25, shown in Fig. 6. According to the preferred embodiment illustrated, this member is of U-shaped cross section and comprises a back or base portion 26 and lateral leg portions 27 and 28. The leg portions are preferably resilient so that they may be sprung apart laterally to some extent, and then tend, by their inherent resiliency, to return to their normal positions. These portions of the bolt receiving member, as shown in Fig. 4, converge from the base portion 26 toward their free ends and are then flared outwardly, as shown at 29, so that the bolt may be properly guided between them. In this instance, the flaring is accomplished by turning the free edges of the parts 27 and 28 outwardly in a lateral direction.

The resilient portions 27 and 28 of the bolt receiving member are preferably, as shown in Figs. 2 and 6, of substantially the same height as the bolt opening, so as to grip the bolt throughout its length or height. The base portion 26 is extended at both ends beyond the side portions 27 and 28 to provide projecting ears or tabs 30, in the edges of which are provided notches or recesses 31. While only the upper ear and notch 31 are shown plainly in Fig. 6, it will be understood that the lower edge of the member 26 is similarly provided with these features.

Before the cover 21 is placed upon the housing 20, the bolt receiving member 25 is placed therein, with the ears 22 received within the notches 31, so that this member will be effectively held in place when the cover is placed upon the housing, and all of the ears 22, 23 and 24 are bent inwardly over the cover.

It will be obvious from the foregoing description that when the bolt 12 is thrown, it will contact with the flared ends 29 of the bolt gripping members 27 and 28, and spread these members to an extent sufficient to permit the protraction of the bolt to continue until the latter is fully thrown. The inherent resilience of the members 27 and 28 will cause them to effectively grip the bolt throughout its length and prevent any rattling of the bolt or of the door. It will also be observed that while the bolt will be held against rattling, its complete protraction is not interfered with, so that my invention may be used with a door lock of ordinary construction, and in fact, may be applied to doors upon which the usual locks are already mounted. As the members 27 and 28 are of substantially the same length as the strike opening, they will, of course, always grip the bolt along its full length whenever it is received within the opening. It will also be obvious that my improved strike member is of very simple construction and economical to manufacture, and that by reason of the fact that the bolt is frictionally held against movement, the door itself will be firmly held from rattling against the jamb.

While I have shown and described a preferred embodiment of my invention, it is understood that it is not to be limited to all of the details shown, but is capable of modification and variation within the spirit of the invention and within the scope of the appended claims.

What I claim is:

1. A door strike having a strike opening and a bolt receiving housing, a bolt gripping member secured to the housing and having resilient bolt gripping portions adapted to lie at opposite sides of the opening to receive the bolt therebetween, said resilient bolt gripping portions comprising a pair of spring arms extending towards one another and towards said opening, the spring arms adjacent their free ends being spaced apart a less distance than the width of said opening.

2. A strike plate having a bolt opening, and a bolt receiving member mounted on said plate rearwardly of the opening, said member being U-shaped in cross section and having resilient side portions opening toward the bolt opening to receive the bolt therebetween.

3. A strike plate having a bolt opening, and a bolt receiving member mounted on said plate

rearwardly of the opening, said member being U-shaped in cross section and having resilient side portions opening toward the bolt opening to receive the bolt therebetween, said side portions flaring outwardly adjacent their free ends.

4. A door strike having a bolt opening, and a bolt receiving housing opposite the opening, a removable cover for the rear end of the housing, a U-shaped bolt receiving member having its base secured between the cover and the housing and having its legs extending toward the bolt opening at opposite sides thereof, and resiliently urged inwardly to contact with the sides of a bolt protracted through the opening.

5. A lock strike member provided with a hollow box-like body, said hollow body being provided with a strike opening and a resilient bolt gripping member mounted on the interior of the member opposite the strike opening, said bolt gripping member having spaced parts extending towards the opening and adapted to grip therebetween a bolt protracted through said opening, and laterally extending means on the bolt gripping member for attaching the latter to the box-like body.

6. A door strike having a strike opening and a hollow box-like part, a substantially U-shaped bolt engaging member mounted in said strike and provided with resilient legs extending towards said opening and adapted to engage a bolt entering the opening to hold the bolt against movement, said bolt engaging member being provided with laterally extending tabs adapted to be received in openings in the rear end of the hollow box-like part, and a plate mounted on said part and securing said tabs in said opening.

7. A lock strike member having a hollow body open at its ends, a resilient bolt gripping member seated in one of the open ends and having spaced resilient bolt gripping parts extending toward the other end, and means cooperating with the body to hold the bolt gripping member against movement.

8. A lock strike member having a hollow body open at its ends, a resilient bolt gripping member seated in one of the open ends and having spaced resilient bolt gripping parts extending toward the other end, and means closing the first of the openings and cooperating with the body to hold the bolt gripping member against movement.

In witness whereof, I have hereunto set my hand this 20th day of January, 1928.

JOHN H. SHAW.