

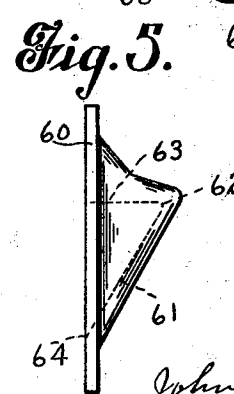
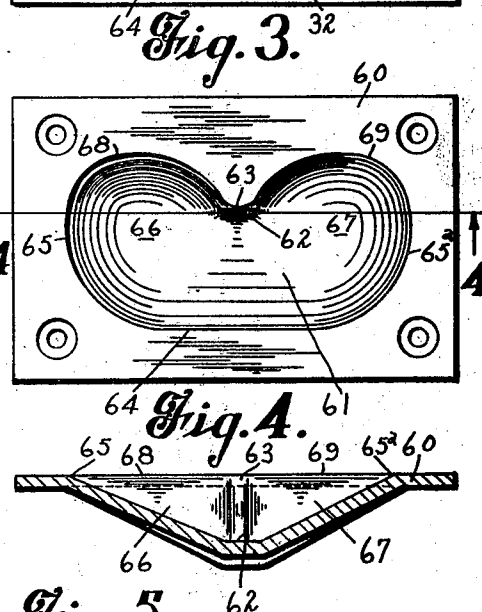
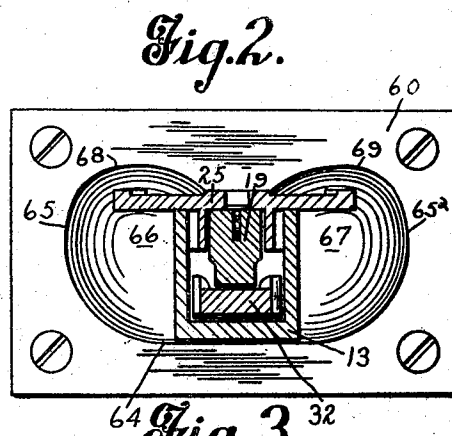
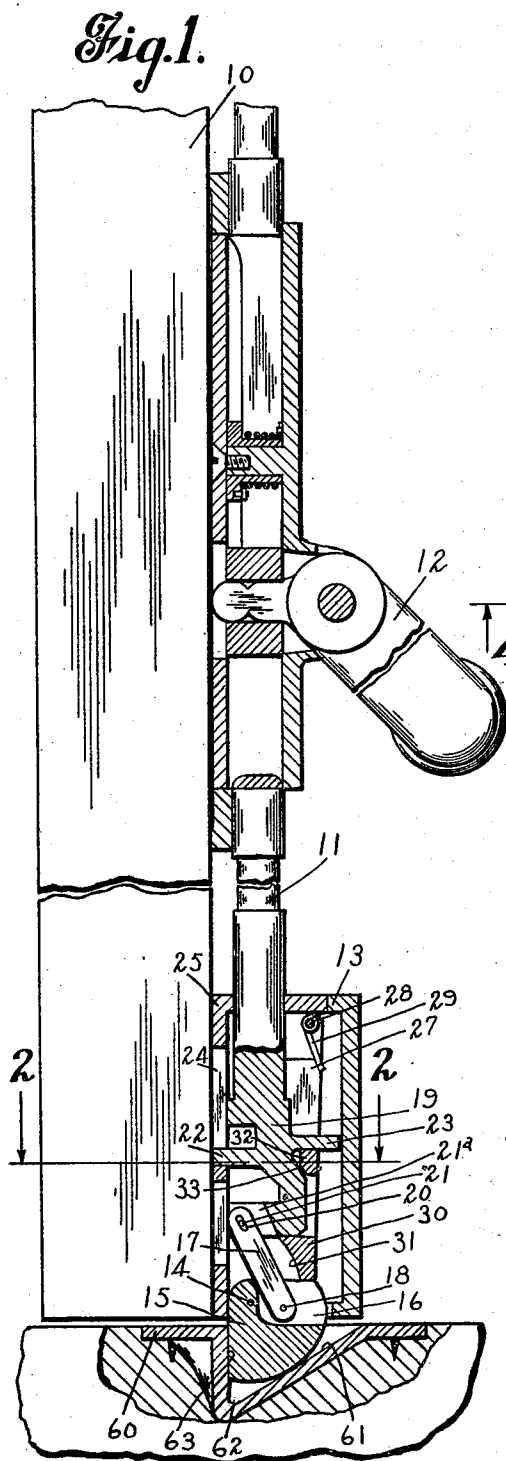
April 26, 1927.

1,626,432

J. H. SHAW

STRIKE PLATE

Original Filed Aug. 29, 1923



Inventor

John H. Shaw

By Henry E. Rockwell
Attorney

UNITED STATES PATENT OFFICE.

JOHN H. SHAW, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO SARGENT & COMPANY,
OF NEW HAVEN, CONNECTICUT.

STRIKE PLATE.

Original application filed August 29, 1923, Serial No. 659,956. Divided and this application filed April 8, 1926. Serial No. 100,543.

This invention relates to strike plates, and more particularly to a strike plate designed to be placed in the threshold or floor below the door, in connection with which it is to be used, to receive a lock bolt which is adapted to be projected downwardly from the door. While the plate is shown in connection with an emergency exit lock having a pivoted bolt designed to roll or swing pivotally to protracted position, it will be understood that it may be used with other types of locks as well, including those having the ordinary reciprocable dead bolt, although in some aspects of the invention it is particularly useful in connection with a bolt of the type shown, designed to swing or roll to retracted or protracted positions. The present application is a division of my prior application, Serial No. 659,956, filed August 29, 1923.

In connection with strike plates which are mounted in the threshold or floor below the door, trouble is often experienced in that the strike plate opening is apt to become filled or clogged with dirt or foreign matter to such an extent that the protraction of the bolt is interfered with. The ordinary strike plates of this character are provided with a relatively small opening, usually substantially the size of the bolt itself, and not only is it difficult to clean the dirt from such openings but also, due to the relatively tight fit of the bolt therein, the collection of a small amount of dirt is sufficient to interfere with the operation of the bolt.

So-called emergency exit bar locks are generally of somewhat massive character, and are designed with a view to ornamental effect so as to enhance rather than detract from the appearance of the door upon which they are mounted. It is also contemplated in connection with this invention to provide a strike plate which will harmonize with door fittings of this character, in that it will be massive and ornamental in appearance.

One object of my invention, therefore, is to provide a strike plate which will be self-cleaning in character in that any dirt which collects in the strike opening will be pushed to one side when the bolt is protracted.

Another object of my invention is to provide a strike plate having a relatively large opening to receive the bolt, and a shoulder projecting into this opening to serve as a

bolt keeper so that the bolt opening may be readily cleaned and any dirt that collects therein will assume a position which does not interfere with the action of the bolt.

Another object of my invention is to provide a strike plate with a relatively large opening which extends on three sides of the keeper member, which in the instance shown, comprises a shoulder projecting into the strike opening, the strike opening itself being considerably larger than the bolt with which the keeper is designed to cooperate.

A still further object of my invention is the provision of a door strike or keeper of such a structure that the likelihood of an accumulation of dirt in the strike plate opening will be minimized.

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

In the accompanying drawings:

Fig. 1 is a sectional view of a lock and strike plate, illustrating a preferred embodiment of my invention;

Fig. 2 is a sectional view on line 2—2 of Fig. 1;

Fig. 3 is a top plan view of the strike plate;

Fig. 4 is a sectional view on line 4—4 of Fig. 3;

Fig. 5 is a side elevational view of the strike plate.

In Fig. 1 of the drawings I have shown a door at 10, having mounted thereon a bolt structure comprising a vertically reciprocable rod 11 designed to be operated by an emergency bar 12, as more fully shown and described in my co-pending application referred to, of which this application is a division.

At the lower edge of the door is a bolt case 13 to the lower edge of which is pivoted at 14 a bolt 15. This bolt is adapted to have a pivotal or rotary movement, and is provided with a recess 16 in which is received the end of a link 17, pivoted to the bolt at 18. At its other end, the link is connected to a bolt operating member or slide 19 secured to the lower end of the reciprocable rod 11. This connection comprises a slot 20 in the link 17, in which is received a pin 21 secured to the member 19 within a recess 21^a so that a certain amount of lost

motion will be permitted between these parts. The slide 19 is suitably guided in the case by means of oppositely projecting lugs 22 and 23, the latter being adapted to engage the under surface of the cover of the case, while the former operates in a slot 24 in the base-plate 25 of the casing.

Above the bolt operating mechanism just described, a detent or dogging stirrup 27 is pivoted to the case upon the pin 28, and a spring 29 upon this pin acts against the dogging member to tend to hold it in a depressed position, as shown in Fig. 1. This stirrup member is provided at its lower end with a cross piece 30, adapted to engage behind the bolt 15 to dog it in protracted position. It will be apparent that otherwise the bolt could be swung to retracted position merely by an opening pressure applied to the door. The member 30 may be provided with a beveled edge, as shown at 31, so that it will ride easily over the bolt 15 when once its edge has been moved outwardly to clear the rear edge of the bolt. The dogging member 27 is provided with a second cross-bar or member 32 intermediate its length, which is adapted to rest upon a beveled shoulder 33 provided upon a portion of the bolt operating member 19.

It will be observed that when the operating rod 11 is drawn upwardly the shoulder 33, by engagement with the cross member 32 will cause the stirrup 27 to be raised until its lower edge has cleared the rear edge of the bolt 15. Due to the lost motion connection between the member 19 and the link 17, provided by the elongated slot 20, and pin 21, this movement of the stirrup will be effected prior to the beginning of the retraction of the bolt by the link which latter movement takes place upon a continued movement of the rod 11. It will, of course, be apparent that as soon as the edge of the member 30 has cleared the bolt, the latter will be free to be swung to retracted position by pressure against the strike or keeper, so that in practice, the bolt may be retracted in this way instead of by a continued movement of the rod 11.

Secured in the threshold or floor below the lower edge of the door to cooperate with the bolt 15 is a strike plate 60 of novel construction, provided with a recess 61. This recess is relatively deep at a point designated by the numeral 62, where it is provided with an abrupt vertically disposed shoulder 63 to act as a keeper member to cooperate with the bolt to hold the door closed. From the point 62 the bottom of the strike plate opening slopes upwardly toward the rear edge 64 of the opening, and also in a lateral direction toward the sides 65 and 65^a. The front edge of the opening 61 is not parallel with the front edge of the strike plate, as the shoulder 63 projects inwardly beyond the

adjacent edges of the keeper opening to provide the two lobes 66 and 67, the edges 68 and 69 of which extend forwardly beyond the keeper or shoulder 63 on either side thereof. The resulting conformation provides that the deepest part of the strike opening is at the shoulder 63, and the bottom of the opening which extends on three sides of this shoulder or keeper has a somewhat gradual slope upwardly from this point toward the edges of the opening in all directions away from this shoulder. As a result, when the door is closed and the bolt 15 is protracted, the bolt enters the strike opening with a rotary or gouging motion which serves to push any accumulated dirt from in front of the keeper shoulder 63 outwardly into the lobes 66 and 67. As the bottom of the recess slopes upwardly all about the circumference of these lobes, the dirt is crowded or pushed out of the strike opening and does not remain compacted against the keeper 63 in the path of the bolt. The projection of the keeper 63 into the strike opening beyond the front edges 68 and 69 thereof, permits the dirt or dust accumulated in the keeper opening to be pushed outwardly and forwardly at a point adjacent the keeper 63 and tends to prevent its accumulation in front of the keeper.

In any event, the strike plate with its enlarged strike opening and projecting keeper member or shoulder is very readily cleaned with a broom or the like, and moreover, is quite ornamental in appearance so that it will harmonize with door fittings of massive character and may be advantageously used with locks having bolts other than the type shown. The keeper opening being large and having a gradual slope upwardly in all directions from the bottom of the projecting keeper member may be cleaned out more readily than the ordinary rectangular strike plate opening, which is comparatively inaccessible to a brush or broom.

While I have shown and described a preferred embodiment of my invention, it is understood that it is not limited to all 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 strike plate having a strike opening therein constituted by an upwardly facing recess, said recess having a closed periphery whereby it is entirely surrounded by a part of the body of the plate, and an abutment projecting into the said recess from one edge thereof, the latter extending on three sides of the abutment.

2. A strike plate provided with an abutment and an opening in front thereof, said opening being enlarged to extend laterally beyond the abutment, and the bottom of the

opening sloping downwardly toward the abutment.

3. A strike plate for door locks comprising a body portion lying in a horizontal plane, said body portion being provided with an upwardly opening recess, the periphery of said recess being spaced at every point from the edge of the body portion whereby it is entirely surrounded by the body portion of the plate, and an abutment projecting into said recess from one edge thereof to cooperate with a lock bolt.

4. A strike plate for door locks comprising a body portion lying in a horizontal plane, said body portion being provided with an upwardly opening recess, the periphery of said recess being spaced at every point from the edge of the body portion whereby it is entirely surrounded by the body portion of the plate, and an abutment extending into the recess from one edge thereof at a point intermediate the width of

the recess so that the latter extends rearwardly and laterally of said abutment.

5. A strike plate having a bolt opening therein, and a keeper shoulder projecting thereinto from the rear edge of said opening at a point intermediate the width thereof so that the opening extends rearwardly and laterally of said shoulder, and said opening being V-shaped in longitudinal and transverse cross-section.

6. A strike plate having a bolt opening therein, and a keeper shoulder projecting thereinto from the rear edge of said opening at a point intermediate the width thereof so that the opening extends rearwardly and laterally of said shoulder, and the bottom of said opening extending upwardly in three directions from the foot of the shoulder.

In witness whereof, I have hereunto set my hand this 1st day of April, 1926.

JOHN H. SHAW.