Feb. 5, 1929. 1,701,302

C. A. GRIFFITH

SAFETY DOOR BOLT

Filed Nov. 15, 1926

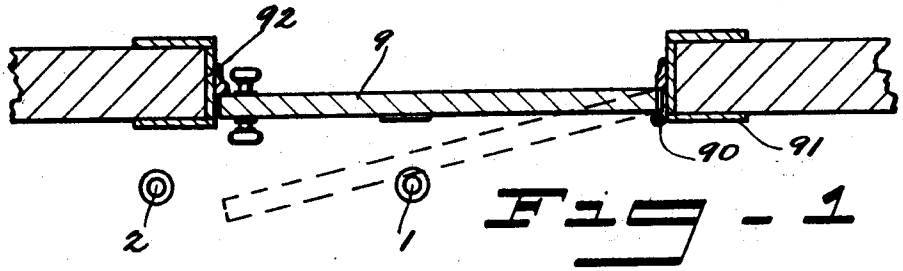
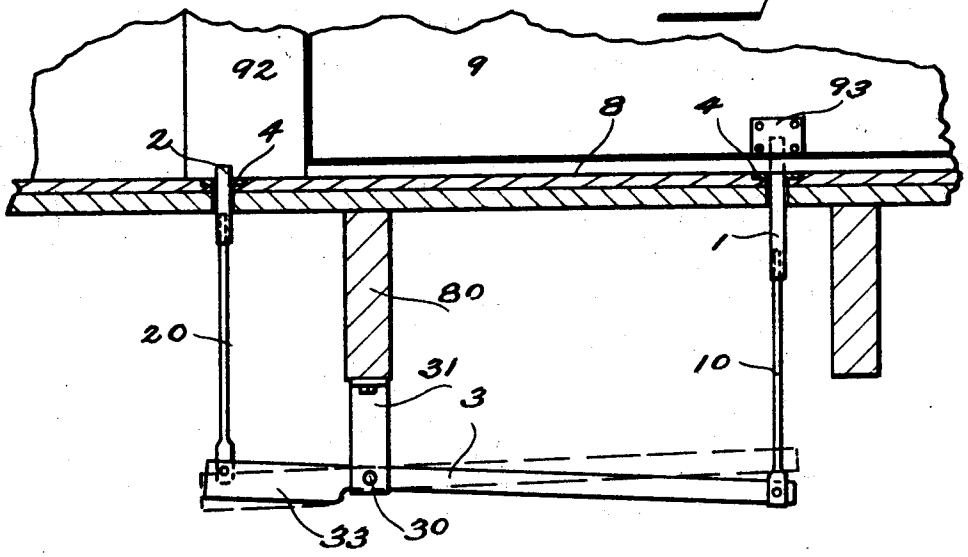


Fig - 1

Fig - 2



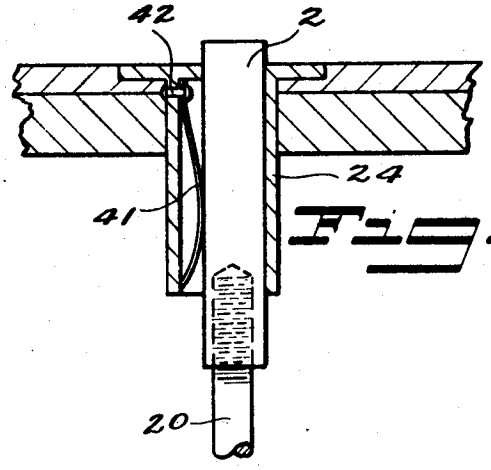


Fig - 3

Inventor

Charles A. Griffith

By H.L. & C.L. Reynolds

Attorneys

Patented Feb. 5, 1929. 1,701,302

UNITED STATES PATENT OFFICE.

CHARLES A. GRIFFITH, OF SEATTLE, WASHINGTON.

SAFETY DOOR BOLT.

Application filed November 15, 1926. Serial No. 148,456.

My invention relates to an improvement in safety door bolts of the type which permit a door to be slightly opened, sufficient to observe who may be outside, but not sufficient to permit the entrance of a person.

To this end it is designed to prevent forcible entrance of anyone whom it is desired to exclude, and to be so constructed and so located that it is altogether unobtrusive, so that it may be conveniently operated by one in the act of opening a door, yet out of the way for ordinary use, and one which will act positively and quickly to stop the door, yet which may be released as quickly and simply; also, to provide such a stop which automatically maintains itself in locking position so long as no positive action is taken to retract it.

Another object is the provision of such a device which will be simple and yet strong, and which can be so located that it cannot be subjected to tampering.

My invention comprises the novel parts and the novel combination and arrangement thereof as shown in the accompanying drawings, described in this specification, and as defined in the claims terminating the same; and it comprises further the novel arrangement of such a device relative to the door and other parts of the building, all as will be brought out hereinafter.

In the accompanying drawings I have shown my device in forms which are now preferred by me, and arranged as I deem it most suited to the end in view.

Figure 1 is a section on a horizontal plane through the door, its frame and the adjoining walls, showing the location of my device within the floor and relative to the door and its frame;

Figure 2 is a section on a vertical plane through the frame and joists, showing my device in side elevation;

Figure 3 is a section through a modified construction of a detail of my device.

It is an important object to provide a bolt which cannot mar the beauty of a doorway and which is inconspicuous, and which can therefore be employed without showing obviously to a caller that it is being used, and which can yet stop the door effectively and prevent the intrusion of one whose presence is not desired. To that end I locate my device within or beneath the floor of a house, adjacent the door which is to be stopped, and adjacent its frame. The door 9, as illustrated best in Figure 1, is hinged at 90 to one side 91 of the frame, and its swinging edge rests normally against a stop carried by the opposite side 92 of the frame. It is necessary to permit the swinging edge of the door to open partially to observe who may be calling and to determine whether or not it is desirable to admit the caller, and yet it is not desirable to allow the door to swing far enough to admit a caller if it is determined that his presence is undesirable. I, therefore, provide a stop 1, formed as a strong steel rod, which normally lies flush with the floor 8 of the building but which is projectable vertically into the path of the door. A striker plate may be employed to co-operate with the stop 1 and to prevent its marring the door. This stop 1 should be located far enough inward from the swinging edge of the door that it may not be readily reached by one who desires to gain entrance, and at such a position that it will permit the door to open only sufficiently for one inside to see who the visitor may be and to learn his business.

To operate the stop 1, which, as has been stated, is normally flush with the floor 8, I provide a plunger or button 2, which normally projects above the surface of the floor 8, and which is located adjacent the side 92 of the door frame, that is, close to the frame, where it is out of the way and yet in position to be stepped upon by one answering the door. This button 2 is connected to the stop 1 by suitable means, as, for example, the links 20 and 10 connecting the button 2 and stop 1, respectively, to opposite ends of a lever 3. This lever is pivoted at 30 upon a bracket 31, which may be supported upon the joists 80 of the building, and I prefer that the arms of the lever be of unequal length but of substantially the same weight, or at least so proportioned that the entire apparatus tends to balance. To this end I have shown its short arm weighted, as indicated at 33; and the link 20 connected with the button 2 is pivoted to this short end 33, while the link 10 connecting with the stop 1 is pivoted to the long end of the lever 3.

It will be evident now that merely by stepping upon the button 2, placing the foot as would be natural in opening the door, a person may raise the stop 1 far enough to effectually stop the door 9, and so long as the stop 1 remains projected, the door may not be swung open further. If it is desired to admit the visitor, it is only necessary to step back of the door slightly and to depress the

stop 1, whereupon the door is free to swing open.

It will thus be seen that it is desirable to provide some means of maintaining the stop 1 raised, even though pressure is removed from the button 2. To this end, I may provide felt washers 4 surrounding either the stop 1 or the button 2, or both. This or any equivalent friction means applied to either of these members, or applied to any part of the connection between them, will serve to maintain the bolt 1 raised until it is positively depressed. I have shown in Figure 3 an equivalent means as, for example, the spring 41 secured at one end 42 within a ferrule 24 surrounding the plunger 2 and bearing against this plunger to hold it frictionally in any selected position. It will be clear that the same means might be applied to the stop 1.

In order to permit adjustment of the normal height either of the plunger 2 or the stop 1, I may thread the link 20, or its equivalent link 10, within the corresponding member, the plunger 2, or the stop 1, as is indicated in Figure 3.

There is thus provided a device which is simple to install, which is inconspicuous, and which is yet thoroughly effective under all conditions to prevent the entrance of one whose presence is not desired, and which can be intantly operated to admit one whom it is desired to admit.

What I claim as my invention is:

1. A safety door bolt comprising a stop and a plunger adapted to be set into and to project from the floor, means connected to each of said plunger and stop to project one as the other is depressed, and tending to maintain the one balanced against the other, and frictional means for retaining either said plunger or said stop projected above the floor.

2. A safety door bolt comprising a stop and a plunger adapted to be set into and to project from the floor, a lever connecting said plunger and stop and pivoted between its ends, and so balanced as to tend to remain in a netural position, and frictional means for retaining said stop projected above or depressed below the floor.

3. A safety door bolt comprising a stop and a plunger adapted to be set into and project from the floor, and a lever connecting said plunger and stop, and pivoted between its ends, the arms of the lever being unequal, and the longer arm connecting with the stop, whereby the stop is materially projected by a lesser depression of the plunger, and means for substantially equalizing the moments of the two lever arms and associated parts, whereby the mechanism will tend to remain in a selected position.

4. A safety door bolt as in claim 3, together with frictional means for maintaining it in a selected position.

5. A safety door bolt comprising a stop and a plunger adapted to be set into and to project from the floor, means connecting said plunger and stop to project one as the other is depressed, and means for adjusting the top of said members relative to their connecting means and relative to the floor level.

6. In combination with a door frame, a door hingedly supported therein by one edge, and a floor, a safety bolt for said door comprising a stop projectable upwards from the floor within the path of swing of said door, to intercept said door and prevent its swinging open sufficient to permit entrance, an operating means for said stop located adjacent the door frame at the swinging side of the door, and operative connections between said means and the stop.

Signed at Seattle, King County, Washington, this 10th day of November, 1926.

CHARLES A. GRIFFITH.