July 24, 1934. R. TARRANT 1,967,790

DOOR STOP AND ALARM

Original Filed Sept. 8, 1930 2 Sheets-Sheet 1

Fig. 1.

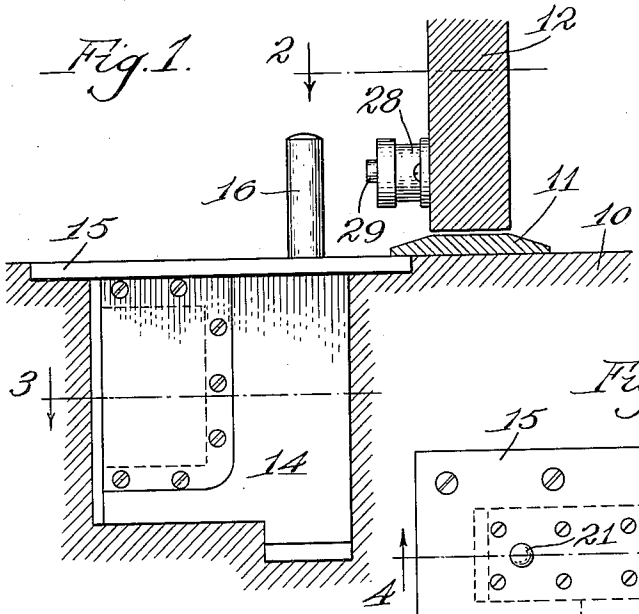


Fig. 2.

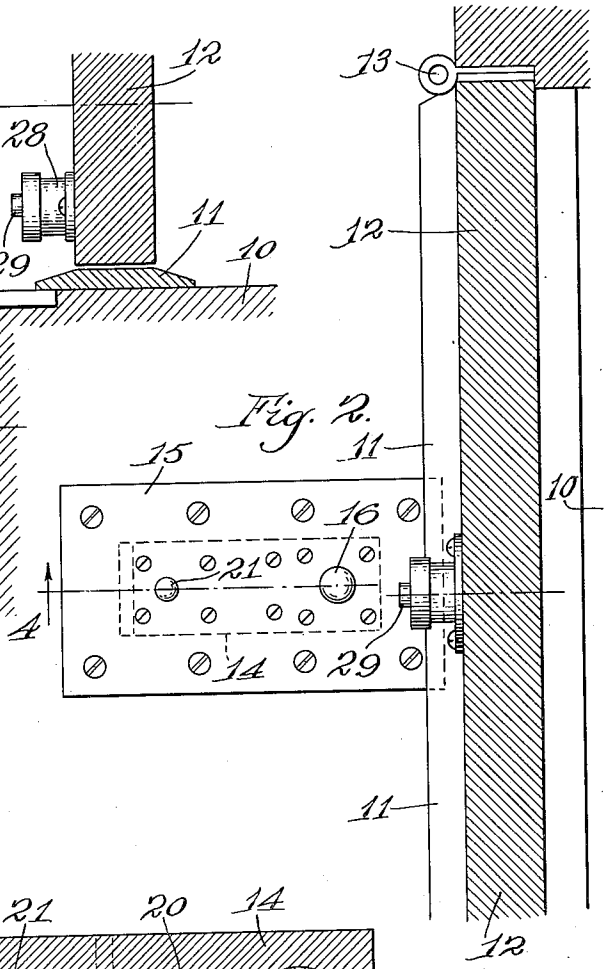
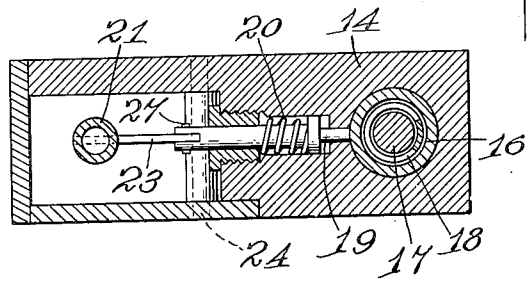


Fig. 3.



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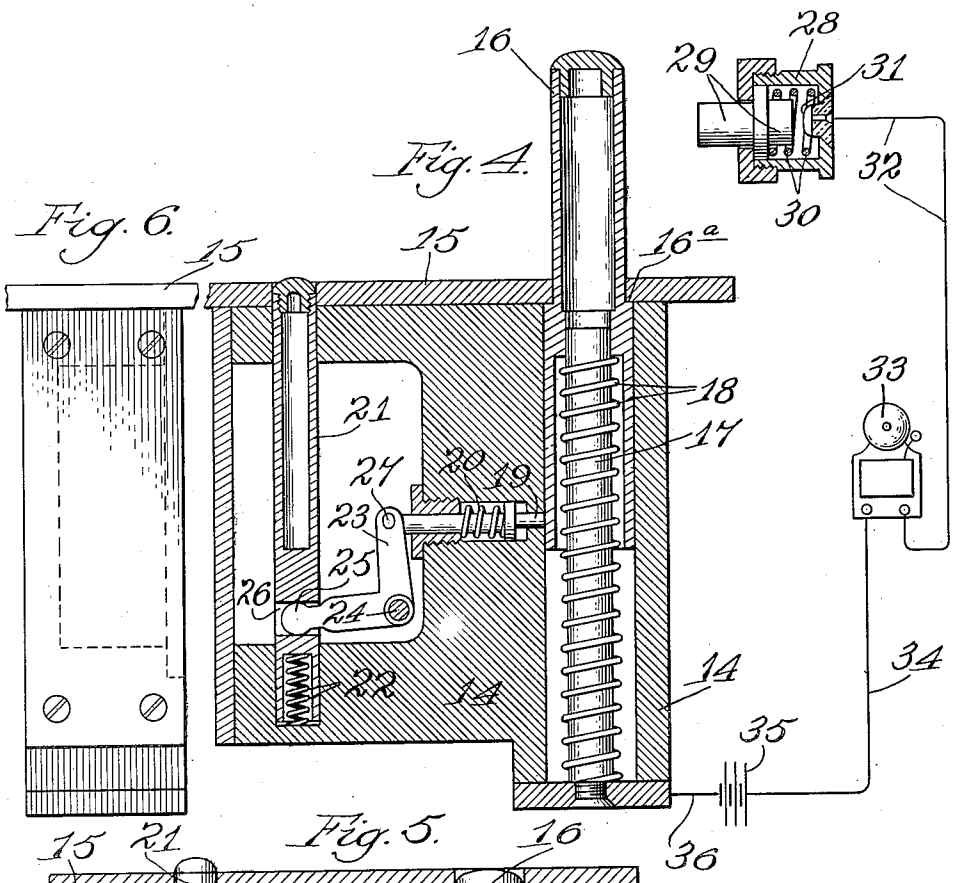


Fig. 4.

Fig. 6.

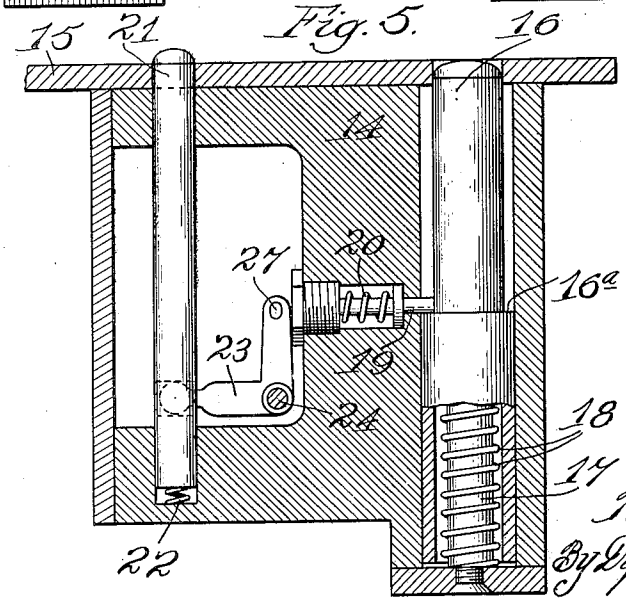


Fig. 5.

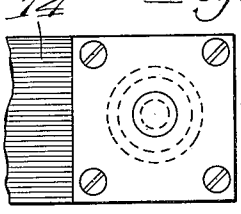


Fig. 7.

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UNITED STATES PATENT OFFICE

1,967,790

DOOR STOP AND ALARM

Robert Tarrant, Chicago, Ill.

Original application September 8, 1930, Serial No. 480,580. Divided and this application October 3, 1931, Serial No. 566,751

2 Claims. (Cl. 177—314)

This invention relates to improvements in door-stops and alarms, and, more especially, such mechanism adapted for use in connection with swinging doors.

This is a divisional application of my application, Serial No. 480,580, filed September 8, 1930.

Among the features of my invention is the provision of such mechanism adapted to take the place of the well-known chain-lock which permits a door to open merely a short distance for conversation purposes and prevents passage of a person therethrough. Such chain-locks are unsatisfactory, difficult to adjust, and frequently not secure. Another feature of my invention is the provision of mechanism which will serve all the purposes of the chain-lock and more. My improved device is not conspicuous, easily operated, and secure.

Another feature of my invention is the provision of a door-stop that can be operated by the foot, thus leaving the hands free for other uses. I have also provided in connection with the door-stop mechanism for sounding an alarm when the stop is in use.

Other features and advantages of my invention will appear more fully as I proceed with my specification.

In that form of device embodying the features of my invention shown in the accompanying drawings—

Figure 1 is a view in side elevation; Fig. 2 is a view taken as indicated by the line 2 of Fig. 1; Fig. 3 is a view taken as indicated by the line 3 of Fig. 1; Fig. 4 is a view on an enlarged scale taken as indicated by the line 4 of Fig. 2; Fig. 5 is a view similar to Fig. 4 showing the bolt in its retracted position; Fig. 6 is a view in end elevation; and Fig. 7 is a fragmentary bottom plan view of the portion of the door-stop under the bolt.

As shown in the drawings, 10 may indicate a floor; 11, the usual threshold; and 12, a swinging door hinged at 13.

The stop-mechanism includes a stop housing 14 adapted to be countersunk in the floor and provided with a floor plate 15. Numeral 16 indicates a vertically movable bolt in the form of a tube or sleeve slidable on the guide post 17 and yieldingly projected or pushed upwardly by the spiral compression spring 18. The bolt 16 is provided with a shoulder 16a adapted to engage the floor plate 15 to limit the upward movement of the bolt to the position shown in Fig. 4.

Releasable means are provided for holding the bolt down or in its retracted position, as shown in Fig. 5. Such means include a horizontally movable latch pin 19 yieldingly pressed to the right (as viewed in Fig. 5) by the compression spring 20. When this latch is in the position shown in Fig. 5, the end of the pin 19 lies above the shoulder 16a, thus holding the bolt 16 in its retracted position. The latch pin 19 is adapted to be withdrawn by downward pressure of the foot of the operator on the floor pin or trigger 21. This pin is slidably mounted in the casing 14 and yieldingly pressed upwardly by a compression spring 22. A connection between the pin 21 and the latch 19 is effected by means of the bell-crank 23 pivoted at 24, said bell-crank being provided with a ball 25 on its lower arm lying in a suitable socket 26 in the pin 21. The upper end of the other arm of the bell-crank is pivotally connected to the latch pin 19, as indicated by 27.

It will be seen that downward pressure of the pedal or trigger 21 by means of the foot will retract the latch pin 19, thus releasing its inner end from the shoulder 16a, permitting the spring 18 to project the bolt 16 upwardly into locking position where it will be engaged by the door to prevent opening of the same.

I also provide mechanism for operating an alarm when the bolt 16 is in operative position. Such mechanism includes a contact carried by the door adapted to strike the bolt 16 to close the electric circuit to sound a suitable alarm. For example, as shown, the circuit breaker may include a cylindrical casing 28 suitably secured to the door and provided with a pin 29 yieldingly pressed outwardly by the spring 30. The casing 28 is suitably located on the door so that the pin 29 will engage the bolt 16 when the same is in locking position. The casing 28 contains, back of the pin 29, an insulated contact 31 connected by means of a wire 32 to any suitable alarm, for example, an electric bell 33. The electric circuit also includes a wire 34 leading from the alarm to a suitable source of electrical energy 35 and another wire 36 leading from such source to the metal casing 14 of the door-stop.

In the operation of the device, if the bolt 16 is up and the door is opened, the pin 29 will engage the bolt and be forced inwardly until it is pressed against the contact 31, thus completing the electric circuit and ringing the alarm 33.

It is to be understood that the door-stop may be suitably located with respect to the door, and its path in order to limit the opening of the door as desired.

The bolt 16 is released or pressed into inoperative position by merely pressing the same downwardly with the foot until the latch 19 engages

the shoulder 16a. This is a great improvement over the old chain-locks which frequently are difficult to release.

It is to be noted that the alarm 33 will not be sounded unless the door is pressed against the bolt with sufficient force to move the pin 29 inwardly against the resistance of the spring 30 until it engages the contact 31. The spring 30 may be made sufficiently stiff so that the alarm will not sound unless undue pressure is exerted against the door.

While I have shown and described certain embodiments of my invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as disclosed in the appended claims, in which it is my intention to claim all novelty inherent in my invention as broadly as possible, in view of the prior art.

What I regard as new, and desire to secure by Letters Patent, is:

1. In combination: a floor having mounted thereon a spring-projected door-stop and a latch-device for latching the door-stop in retracted position, said latch-device having a depressible actuating member normally accessible above the floor; a swinging door in the path of which said door-stop is located when in projected position; an electric alarm circuit in which said door-stop is included; and spring-held circuit-closer means mounted on said door and adapted to engage and to co-act with said door-stop as a door bumper and to effect closing of said circuit only when subjected to pressure and contact with the door stop.

2. In combination: a movable door; a retractable door-stop adapted to project into the path of said door; a door bumper mounted on the door to contact the projected door-stop, said door bumper comprising a base member and a yieldingly projected electrical conductor adapted to be depressed by engagement with the door-stop into contact with said base member; and an electric alarm circuit including said door-stop, door-bumper, and base member.

ROBERT TARRANT.