No. 866,124. PATENTED SEPT. 17, 1907.

W. H. FOX.

DOOR STOP.

APPLICATION FILED MAR. 7, 1907.

Fig 1

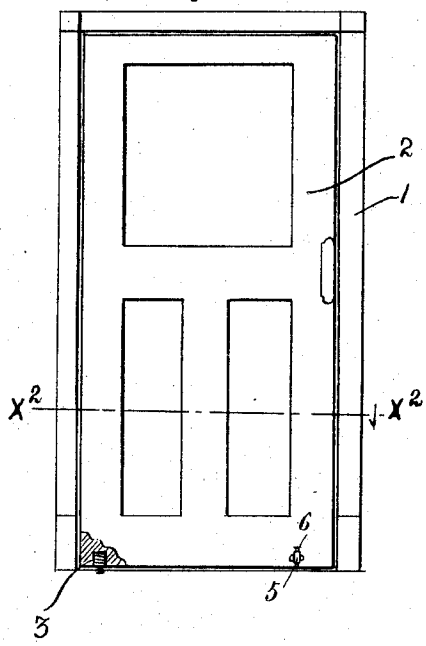


Fig. 2

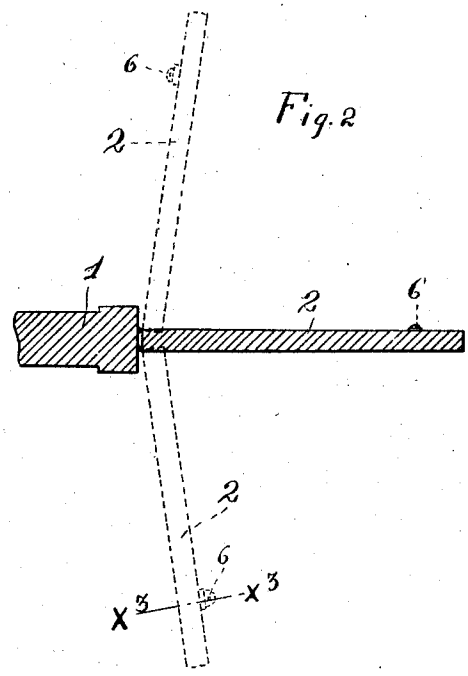


Fig. 3.

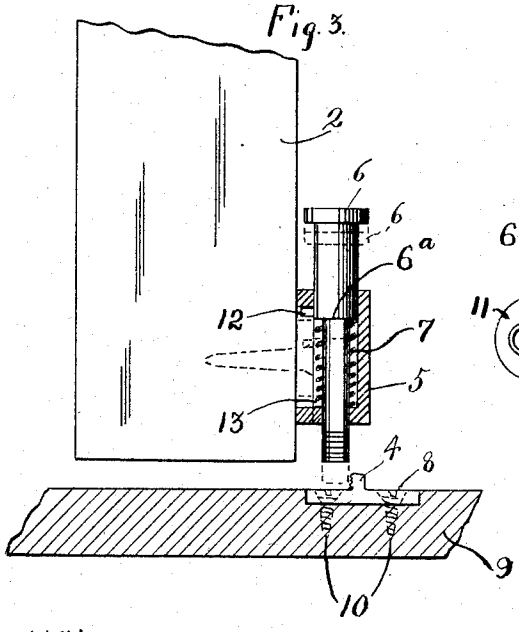


Fig. 4.

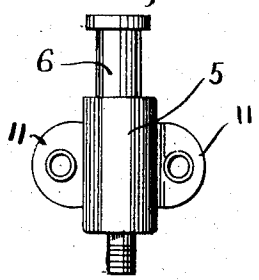


Fig. 5.

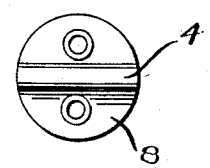
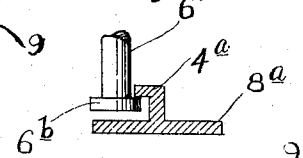


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM H. FOX, OF MINNEAPOLIS, MINNESOTA.

DOOR-STOP.

No. 866,124. Specification of Letters Patent. Patented Sept. 17, 1907.

Application filed March 7, 1907. Serial No. 361,158.

To all whom it may concern:

Be it known that I, WILLIAM H. FOX, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Door-Stops; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide a simple, efficient and inexpensive door stop adapted for general application to spring-closed doors, but especially adapted for application to pivoted double swinging doors.

To the above ends, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a view in elevation, with some parts broken away, showing a double swinging spring closed door, and illustrating the manner of applying one of my improved door stops so as to hold the door in an open position. Fig. 2 is a horizontal section taken on the line x^2 x^2 of Fig. 1. Fig. 3 is a view partly in elevation and partly in section on the line x^3 x^3 of Fig. 2, some parts being broken away, and the parts shown being on a larger scale than in said Figs. 1 and 2. Fig. 4 is a detail view in elevation, showing the plunger-equipped member of the stop. Fig. 5 is an elevation, showing the abutment or relatively fixed member of the stop, and Fig. 6, is a fragmentary view partly in elevation and partly in section, illustrating a slightly modified form of the device.

The numeral 1 indicates a door casing, and the numeral 2 a door which is pivotally connected thereto for swinging movements in either of two directions, and is arranged to be thrown to and yieldingly held in its closed position by a torsional spring device 3 of the standard or any suitable construction, such as used on doors of this character.

The stop in its preferred form is illustrated in the accompanying drawings, and as therein shown it comprises an abutment or stop 4, a casing 5 and a lock plunger 6 mounted for sliding movement in said casing and subject to a coiled spring 7. The abutment 4 may take various forms, but as shown is afforded by an upwardly projecting rib on a plate 8, which plate is secured to the floor 9, preferably by screws 10. The casing 5 is provided with perforated ears 11, through which screws are passed to secure the same to the lower portion of the door, preferably near the free edge thereof, and necessarily at a point eccentric to the axis of the hinge 3.

The spring 7 reacts against the lower flanged portion of the casing 5 and against a shoulder 6^a of the said lock plunger. The said lock plunger, as shown, is held against displacement, by a small pin 12 carried thereby and arranged to work in a groove 13. The depending end of the lock bolt 6 normally stands in such position that it will swing over the abutment or flange 4, but when pressed downward will engage with the said abutment. To increase the frictional hold between the said plunger and abutment, one or both thereof are preferably roughened or serrated.

The tension of the spring 7 should be sufficient to raise the plunger 6 into an inoperative position when it is released from the abutment, but the tension of the door closing spring should be such that the said plunger and abutment will maintain engagement with each other in spite of the tension of the spring 7. With this construction, it is therefore evident that when the door is swung to proper position, and the lock plunger 6 is held depressed and then also engaged with the said abutment under the spring of the door closing device, the door will be held in its open position by the stop device. It is also evident that all that is necessary to release the door is to move the same slightly so as to disengage the lock plunger from the abutment and thereby permit the spring 7 to throw the said plunger into its inoperative position.

In Fig. 2, two of the abutments are applied to the floor at distant points, so as to hold the door in either of its two extreme open positions. The improved stop may be applied to the door in a great many different ways, all within the scope of my invention. For instance, the so-called "abutment" might be carried by the door and the spring pressed yieldingly mounted bolt might be mounted in the floor, although such construction could not be as good an arrangement as that illustrated in the drawings. The so-called abutment may also take different forms, and may be secured to the floor in different ways. It might, for instance, be afforded by a depression made in the floor plate of the door hinge.

In the form of the device shown in Fig. 6, the lock bolt 6′ is provided with a flanged lower end 6^b that interlocks with a laterally projecting flange of the abutment 4^a, which latter is secured to a floor plate 8^a. This device has an advantage over that illustrated in the other drawings in that a slight movement of the door is possible without releasing the bolt 6′.

The term "lock bolt" is also herein used in a broad sense, to designate the relatively movable part of the door stop.

The device described is of very small cost, may be very quickly and easily applied to any door, and in practice has been found extremely convenient and satisfactory for the purposes had in view.

What I claim is:

1. The combination with a door and a spring tending to close the same, of a lock bolt and coöperating abutment,

the former of which is secured to the lower portion of the door, and the latter of which is secured to the floor, and a spring operating on said lock bolt with a force tending to raise the same into an inoperative position, the tension of said lock bolt spring being such with respect to the door spring that the said bolt is adapted to be held in engagement with said abutment by pressure of the said door spring, substantially as described.

2. The combination with a door and a spring tending to close the same, of a lock bolt and a coöperating abutment, the former of which is secured to the lower portion of said door, and the latter of which is secured to the floor, and a spring acting on said lock bolt with a force tending to raise the same into an inoperative position, the said lock bolt and abutment having interlocking stop shoulders adapted to be held into engagement by the said lock bolt spring when the said lock bolt and abutment are engaged under the tension of the door spring, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. FOX.

Witnesses:
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