To all whom it may concern:

Be it known that we, FREDERICK KNOWLSON and JOHN HUBER STEVENSON, respectively, a subject of the King of Great Britain, and a citizen of the United States, residents of Ann Arbor, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Door-Fastening Mechanism, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to door fastening mechanism particularly adapted for swinging doors and is shown in connection with such a door. The mechanism is of such a character as to be automatically operable to releasably hold the door at a determined open position. The device is inexpensive and of simple, sturdy construction. When the door has been opened to the determined position, the device automatically operates to releasably retain the door at such open position against accidental closing produced by a jar, shock, gust of wind, or other external cause. When the door is to be closed, it is first opened slightly beyond the position at which it is held by the fastening mechanism and this movement releases the fastening mechanism to permit the closing of the door.

The above and other objects and advantages of our invention together with the details of construction will more fully appear from the following description, accompanying drawing and appended claims.

In the drawings:

Fig. 1 is a fragmentary perspective of our invention in connection with a swinging door.

Fig. 2 is a fragmentary elevation of the locking mechanism at the initial engagement of the bumper spring.

Fig. 3 is a fragmentary elevation of the same locking mechanism in place to hold the door in the open position.

Fig. 4 is a fragmentary elevation of the same portion of the locking mechanism moved into position to permit the closing of the door.

Fig. 5 is a fragmentary enlarged perspective of one end of the channel bar.

Fig. 6 is a longitudinal sectional view taken through the fragment of the bar shown in Fig. 5.

Our invention is shown in conjunction with a swinging door 10, which door is hinged in a door frame 12. The hinges are not shown in the drawing. We provide a channel bar 14 which is loosely pivoted at one end to the door. There is a bracket 16 having spaced apart ears 18 between which the bar is pivoted by a pin 20 so as to have a free swinging movement in a horizontal plane, and the connection is sufficiently loose to permit slight swinging movement in a vertical plane.

We provide a catch which is secured to the door frame. This comprises a plate 22 which may be screwed to the top of the frame by screws 24 and to which plate is swiveled a yoke 26 by means of a pivot pin 28. The two sides of this yoke are cut away to permit the bar 14 to travel freely therethrough as shown in the several figures of the drawing.

The bar beyond the yoke is provided with a coil spring 28. To hold the spring securely in place and to permit of the easy assembly and disassembly of the mechanism, we provide a stop plate 30 adapted to surround the bar. Lugs or portions 32 are puched out from the sides and the top of the bar as appears in Figs. 2, 3, and 6. Plate 30 abuts these lugs 32 and is held securely on the bar.

After the plate has been placed upon the bar, portions 34 are struck up from the sides of the bar and the top on the opposite side of the plate and spaced therefrom. The coil spring 28 is then moved over the portions 34 so as to abut closely against the plate 30. The spring thereby is held securely in position upon the free end of the bar beyond the catch 26.

We provide a dog 36 pivoted within the channel of the bar at 38 to hang normally downwardly as shown in Fig. 4. This dog is capable of swinging in either direction from its pivot point. The dog is provided with a projecting part 38 on one side adapted to engage the catch as shown in Fig. 3.

When the door is opened the bar 14 travels through the yoke 26 of the catch until the dog 36 strikes against the side of the catch farthest removed from the spring 28 as shown in Fig. 2, which occurs at substantially the same instant as the spring 28 bumps against the opposite side of the yoke.

The
further movement of the door is against the tension of the spring and continues until the projecting part 38 of the dog drops below the aperture through the yoke 26 as appears in Fig. 3, and the door is then held in the open position. The tension of the spring is such that the door is locked in such open position against any accidental movement which might produce closing of the door.

When it is desired to close the door, it is first fully opened a sufficient distance to trip the dog. After the dog has been tripped, the bar will travel freely through the yoke in the opposite direction.

What we claim is:

1. In a door fastening device, in combination with a door frame and a door hinged therein, a catch secured to the door frame, a channel bar pivoted at one end to the door, said bar mounted to travel over said catch in the opening and closing of the door, a dog pivoted within the channel of said bar to hang normally downwardly to be engaged by the catch as the door travels thereover and adapted to be raised up within the channel of the bar to permit the bar to travel over the catch, said dog having a projecting part adapted to engage said catch to prevent the closing of the door, a coil spring encircling the free end of the bar beyond the catch, a stop plate surrounding the bar beyond the spring, said spring adapted to engage the catch upon the travel of the bar thereover prior to the engagement of the catch by said part on the dog, said spring adapted to yield under pressure to permit the bar to be moved over the catch for said part of the dog to engage therewith and adapted to hold the same in engagement with the catch, said spring adapted to yield to permit the bar to be moved over the catch to trip the dog, said bar having portions struck up from the side walls thereof beyond said stop plate to hold the stop plate in position, said bar having portions struck up from the side walls thereof on the opposite side of the stop plate and over which the spring may be removably threaded into abutting engagement with the stop plate to secure the spring in place.

In testimony whereof, we sign this specification.

FREDERICK KNOWLSON.

JOHN HUBER STEVENSON.