F. KNOWLSON AND J. H. STEVENSON.

DOOR FASTENER.

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1,370,976. Patented Mar. 8, 1921.

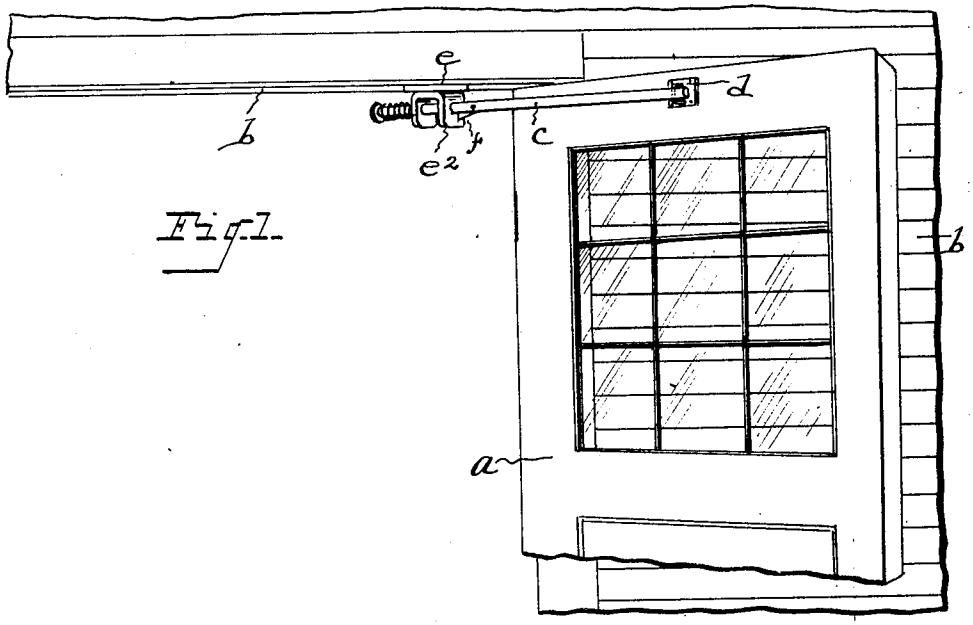


Fig. 1.

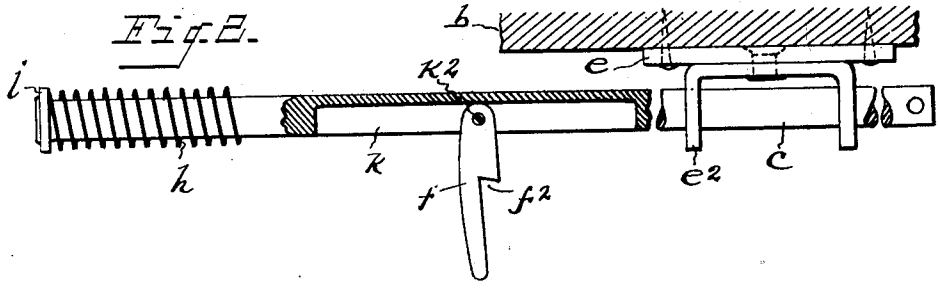


Fig. 2.

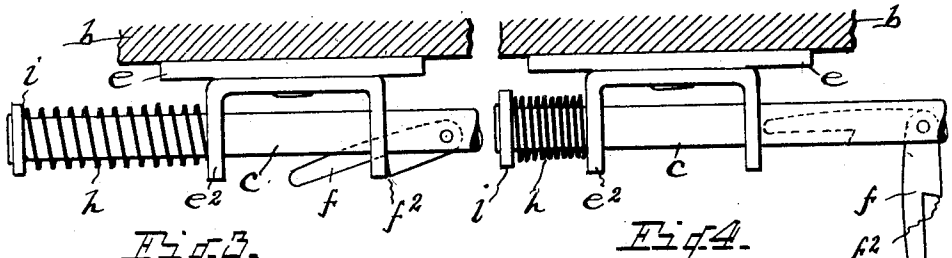


Fig. 3.

Fig. 4.

Inventor

Frederick Knowlson.

John Huber Stevenson.

By Ralzmond A. Parker

Attorney

UNITED STATES PATENT OFFICE.

FREDERICK KNOWLSON AND JOHN HUBER STEVENSON, OF ANN ARBOR, MICHIGAN.

DOOR-FASTENER.

1,370,976. Specification of Letters Patent. Patented Mar. 8, 1921.

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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, each residing at Ann Arbor, county of Washtenaw, State of Michigan, have invented a certain new and useful Improvement in Door-Fasteners, 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 fasteners adapted for use with swinging doors and so constructed that the door will be held in an open position against the application of any external force, such as a sudden thrust or jar, or a gust of wind tending to close the door, but which mechanism will be released to permit the closing of the door merely by opening the door slightly beyond the point at which it is held open. Means are provided to prevent the door being accidentally opened beyond such point and inadvertently closed.

In the drawings,—

Figure 1 is a perspective showing my device secured to a swinging door.

Fig. 2 is an elevation of our device partly broken away.

Fig. 3 is a detail elevation showing the device locked in position.

Fig. 4 is a detail elevation showing the device in unlocked position.

Our door fastening mechanism is adapted for operation with a swinging door and the door is indicated in the drawing as *a* and the door frame, within which the door is pivoted, is indicated as *b*.

Our device comprises a latch bar *c* pivoted at one end to the door. The latch bar is here shown as pivoted to the door by means of a yoke member *d* secured to the door, as shown, which method of pivoting will not only permit a free swinging movement of the latch bar in either direction in a horizontal plane, but will also permit of limited vertical movement of the bar to give the same the necessary operative play in the opening and closing of the door.

Depending from the top frame is a pivotally-mounted swivel or catch member which consists of a plate *e* secured to the frame to which is swiveled the catch e^2. This catch is provided with an opening through which the latch bar passes and within which it is permitted sliding movement when the door is opened and closed.

Pivoted to the latch bar is a swinging dog *f* adapted when free to hang down below the bar, as shown in Fig. 2, in the path of the catch e^2, when the latch bar is drawn over such catch. This dog is pivoted to the bar so as to swing freely in either direction up alongside of the bar out of the way of the catch so as to permit the latch bar to pass over or through such catch. This dog is here shown as pivoted in a slot *k* in the bar by means of a pin k^2 and adapted to swing up within the slot so as to permit free movement of the bar when the dog is engaged by the catch.

When the door is closed, or until it has been opened sufficiently for the dog to be engaged by the catch, the dog hangs in the position shown in Fig. 2. As the door is opened the bar passes through the provided opening in the catch, the catch turning upon its pivot to permit the free movement of the latch bar therethrough. As the notched side of the dog is brought against the catch the dog is moved backwardly and upwardly until the projection f^2 passes the catch when the dog falls by its own weight, as shown in Fig. 3, the notch or projection f^2 engaging with the catch to prevent the closing of the door.

When it is desired to close the door, the door is opened still farther until the dog is tripped or released by the catch which permits the dog to fall, as shown in Fig. 4, and then the door may be easily closed, the catch riding over the smooth side of the dog, elevating the same upwardly and forwardly out of the way and within the provided slot in the bar, permitting the free passage of the bar over the catch.

To prevent a sudden jar or gust of wind from accidentally closing the door, a spring *h* is provided surrounding the bar near its outer end and adapted to be compressed between the shoulder *i* at the extremity of the bar and the catch e^2 when the door is opened. When the bar is moved along sufficient distance over the catch for the catch to engage the swinging door, the spring member *h* is brought against the opposite side of the catch and further movement of the bar is against the tension of the spring so that it requires a distinct force to open the door

beyond the point at which the catch is engaged with the dog. Therefore an accidental thrust or a gust of wind would not have the effect of opening the door sufficiently to permit the same to be closed.

What we claim is:

1. In combination with a swinging door and the frame within which the same is hinged, a bar pivoted at one end to the door, a catch secured to the frame and over which the bar is adapted to slide in the opening and closing of the door, a dog pivoted to such bar adapted to swing downwardly therefrom so as to be engaged by such catch as the bar slides thereover and pivoted to such bar in such manner as to be elevated up out of the way alongside of the bar when engaged by the catch permitting the bar to pass freely over the catch, a projection on one side of the dog adapted to engage the catch so as to prevent the closing of the door.

2. In a door fastener, in combination with a swinging door and the frame within which the same is hinged, a latch bar pivoted at one end to the door, a catch secured to the frame, such bar engaged by such catch so as to slide thereover in the opening and closing of the door, a swinging dog pivoted to the bar so as to be engaged by such catch when the bar slides over the catch, said dog pivoted to swing up alongside the bar to permit the sliding of the bar freely over the catch when the bar is drawn over the catch in the opening and closing of the door, a stop on one side of such dog adapted to engage such catch to resist the closing of the door when it is attempted to move the side of the dog over the catch in the closing of the door which moves over the catch in the opening of the door.

3. In combination with a swinging door and the frame upon which the same is hinged a bar pivoted at one end to the door, a catch secured to the door frame engaging with such bar in such a manner that the bar slides thereover in the opening and closing of the door, a dog pivoted to such bar in such a manner as to be in the path of the catch in the movement of the bar over the catch and adapted to be swung out of the way by engagement with such catch to permit the bar to pass thereover, said dog so formed that when it is swung to one side in the opening of the door at a certain point in its movement over the catch it engages therewith to prevent the closing of the door.

4. In combination with a swinging door and the frame within which the same is hinged, a latch bar pivotally secured at one end to the door, a catch swiveled to the frame and adapted to support the latch bar so the same will slide thereover in the opening and closing of the door, a dog pivoted to the latch bar near the outer end, so as to swing outwardly and upwardly when the dog is engaged by the catch in the opening of the door as the bar is passed over such catch, said dog adapted to engage said catch at a certain point in its movement thereover so as to prevent the closing of the door, a spring carried by such latch bar adapted to yieldingly resist further opening of the door beyond the point at which the catch has engaged with the dog, such dog so formed that it will ride back over the catch swinging in the opposite direction in the closing of the door after the door has been opened sufficiently to permit the catch to trip the dog.

5. In combination with a swinging door and the frame within which the same is hinged, a latch bar pivotally secured at one end to the door, a catch carried by the door frame through which the latch bar is adapted to slide in the opening and closing of the door, a swinging dog carried by such latch bar near its outer end adapted to engage such catch to prevent the closing of the door, such dog adapted to pass freely over the catch in the closing of the door after the door has once been opened sufficiently for the catch to trip the dog, means for yieldingly resisting the movement of the latch bar over the catch beyond the point at which the dog carried by the latch bar is engaged by the catch.

In testimony whereof, we sign this specification.

FREDERICK KNOWLSON.
JOHN HUBER STEVENSON.