

B. F. FOSS.
SAFETY DOOR BOLT.
APPLICATION FILED FEB. 5, 1912.

1,038,111.

Patented Sept. 10, 1912.

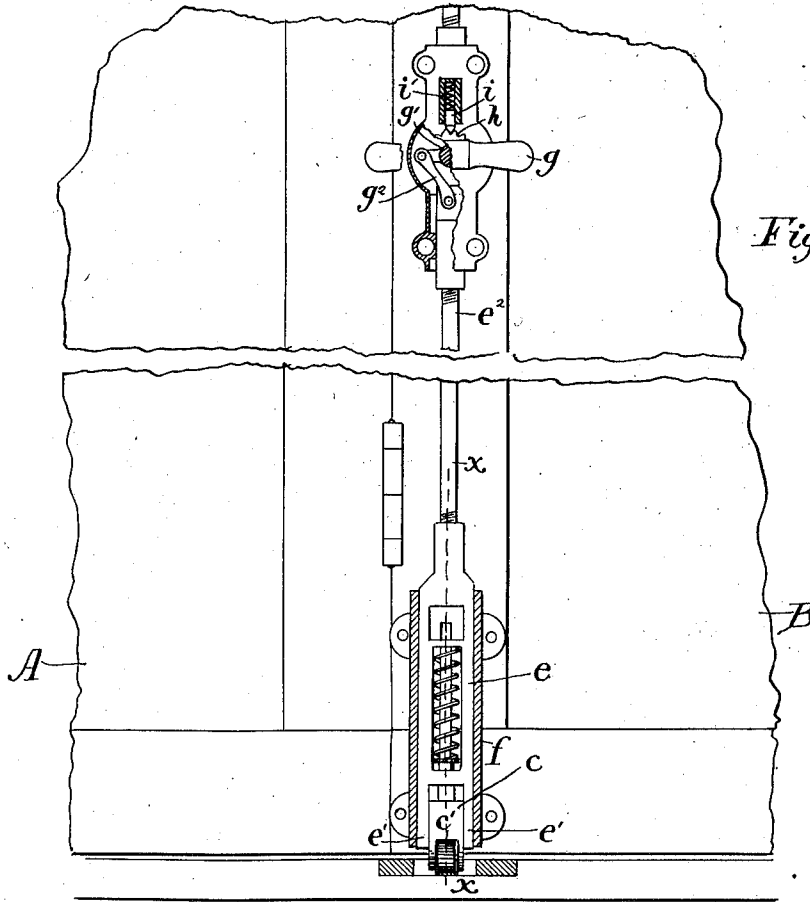


Fig. 1.

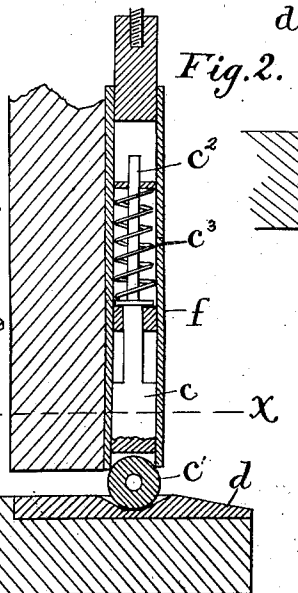


Fig. 2.

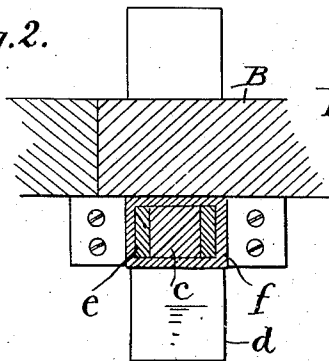


Fig. 3.

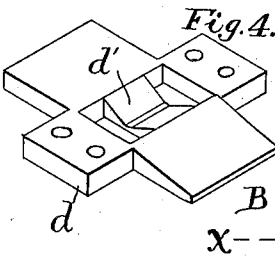


Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

BENJAMIN F. FOSS, OF PORTLAND, MAINE.

SAFETY DOOR-BOLT.

1,038,111.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, BENJAMIN F. FOSS, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Safety Door-Bolts, of which the following is a specification.

My invention relates to a safety door bolt of that class in which the bolt is designed to hold the door closed under normal conditions but adapted to give way and open under any unusual pressure exerted from the inside. These bolts are adapted to be used on school houses, theaters, factories, etc., where panics are liable to occur and where in case of panic, the door should yield when pressed against by a crowd from the inside.

The object of my invention is to provide a door bolt which will be simple in construction and in which the door will be normally held against any ordinary force tending to open it while being capable of yielding in the case of a heavy pressure from the inside. In carrying out this object I provide a spring actuated bolt having on its end an antifriction roll which engages a striker with an inclined surface within its recess whereby the roll will engage and disengage the striker without the exertion of excessive force. This auxiliary bolt is carried by a positively actuated locking bolt by which the door may be held securely.

My invention may best be understood by reference to the accompanying drawing, in which—

Figure 1 is a front elevation of a portion of a double door with my safety bolt applied, a portion being in section, Fig. 2 is a section on the line *x x* of Fig. 1, Fig. 3 is a section on line *x x* of Fig. 2, and Fig. 4 is a perspective view of the striker.

In the drawing, A and B represent two doors hinged together to form a double door of ordinary construction. As here shown, my bolt is applied to the lower end of this door B and it consists of a spring pressed bolt *c* having journaled in the lower end thereof an antifriction roll *c'* adapted to engage the recess of the striker *d* and engaging therein with an inclined surface to facilitate the lifting of the spring pressed bolt when the door is forced open. The striker *d* has the usual recess which is here shown as being

spanned by a centrally disposed bridge *d'* leaving a clear space on each side. The bridge *d'* is shown as having two inclined surfaces so that the bolt may roll out of the recess in either direction by the application of sufficient force.

The bolt *c* is carried by the positively actuated bolt *e* which is centrally recessed to contain the bolt *c*, the lower end being bifurcated. The two sections *e' e'* of the bifurcated end of the bolt *e* when forced downward are adapted to straddle the bridge and enter the recesses on each side of the bridge positively locking the door in place. The bolt *c* has a spindle *c²* which extends upward in the bolt *e* and it is forced normally downward by a spring *c³*. The bolt *e* is contained in the usual casing *f* by which it is secured to the door B.

The bolt *e* is worked in any suitable manner by a handle at the center of the door or otherwise. As here shown, I provide a handle *g* which turns a hub *g'* and the hub is in turn connected by the usual link *g²* with the spindle *e²* of the bolt *e*. Means are provided for holding the handle in a normal position against any accidental displacement. For this purpose I secure to the hub *g'* a notched wheel *h* engaged by a bolt *i* held in a casing *i'* and forced into the notches of the wheel by a spring *i²*. The bolt *i* and the notches are rounded so that the handle may be turned by the application of a certain amount of force but it is liable to be accidentally displaced.

In practical operation the bolt *e* is withdrawn from the striker during the time when the building is occupied and the safety appliance is needed. When so withdrawn the action of the roll pressed into its recess by the spring *c³* holds the door closed against the action of the wind or any ordinary effort to open it but a considerable force exerted from the inside will push it open. When it is desired to positively lock the door the handle *g* is turned forcing the bolt *e* downward into the recesses of the striker. By shortening or lengthening the spindle *e²* the tension on the roll may be made as light or as heavy as desired.

If desired an antifriction end may be applied to the lower end of the bolt otherwise than as herein shown, the object being to so

construct the spring pressed bolt that it will slide readily over the inclined surface of the striker.

It will be evident that my safety bolt may be applied to either a double or single door.

I claim:—

1. In a safety door bolt, the combination of a striker having a recess spanned by a bridge with an inclined bearing surface, a positively actuated bolt adapted to engage said recess at one side of said bridge, a spring actuated bolt carried by said positively actuated bolt and provided at its end with an antifriction roll adapted to bear on said bridge.

2. In a safety door bolt, the combination of a striker having a recess spanned centrally by a bridge having an inclined surface, a positively actuated bolt having a bifurcated end adapted to engage the recess at

each side of the bridge, a spring actuated bolt carried by said positively actuated bolt and longitudinally movable in said bifurcated end, said spring actuated bolt being provided with an antifriction roll adapted to bear on said bridge.

3. In a safety door bolt, the combination of a striker having a recess spanned by a bridge with an inclined bearing surface, a positively actuated bolt adapted to engage said recess at one side of said bridge, a spring actuated bolt carried by said positively actuated bolt and provided with an antifriction lower end adapted to bear on said bridge.

In testimony whereof I have affixed my signature, in presence of two witnesses.

BENJAMIN F. FOSS.

Witnesses:

S. W. BATES,

C. B. CREIGHTON.