W. A. ROBERTSON.

DOOR.

APPLICATION FILED JUNE 7, 1918.

1,310,840. Patented July 22, 1919.

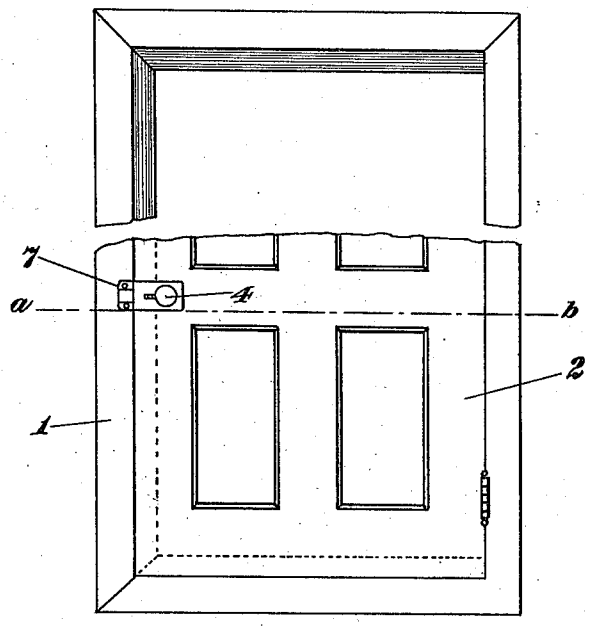


Fig. 1

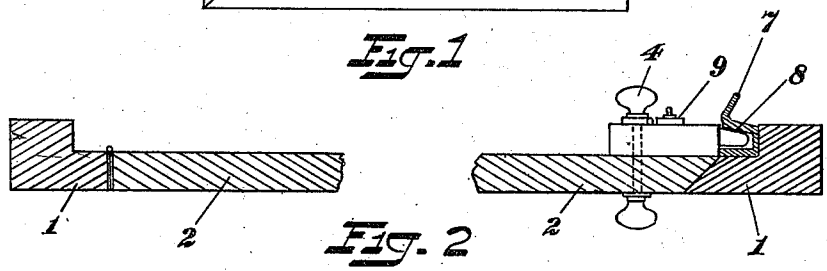


Fig. 2

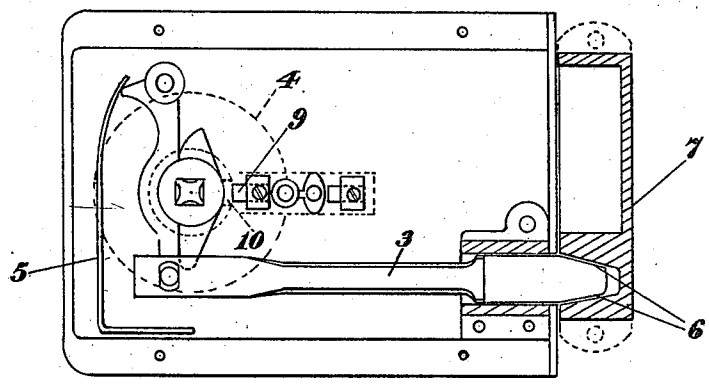


Fig. 3

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UNITED STATES PATENT OFFICE.

WILLIAM AFFLECK ROBERTSON, OF GLASGOW, SCOTLAND, ASSIGNOR OF ONE-HALF TO WILLIAM HENDERSON, OF TORONTO, ONTARIO, CANADA.

DOOR.

1,310,840. Specification of Letters Patent. Patented July 22, 1919.

Application filed June 7, 1918. Serial No. 238,802.

To all whom it may concern:

Be it known that I, WILLIAM AFFLECK ROBERTSON, of the city of Glasgow, Scotland, have invented certain new and useful Improvements in Doors, of which the following is a specification.

This invention relates particularly to doors intended for use on board ship or on railway trains, and my object is to devise a door which may be securely locked under normal conditions and which will automatically open if the door frame become warped or distorted as is liable to happen if an accident occurs.

I attain my object by means of the constructions hereinafter described and illustrated in the accompanying drawings in which—

Figure 1 is a front elevation, partly broken away, of a door constructed in accordance with my invention;

Fig. 2 a cross section on the line *a*—*b* in Fig. 1 on a larger scale and partly broken away; and

Fig. 3 an elevation of the lock and keeper, partly in section.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

The door frame 1 has certain of its edges inwardly beveled. It is essential that at least one side and one end should be beveled, and preferably three, viz. the top and bottom and the side at which the door opens. The door 2 has its edges shaped to fit the door frame. The result of this construction is that in the event of the door frame being distorted from the rectangular form, as is very liable to occur in case of accident, this distortion of the frame, instead of jamming the door, acts in such a manner as to force the door open.

As the door must be provided with a lock, and as all ordinary locks prevent the proper operation of the device, I use in connection with the door a lock and keeper substantially as shown. The bolt 3 of the lock is provided with the usual mechanism whereby it may be operated from the handle 4. The bolt is normally projected by means of a spring 5.

The end of the bolt is formed with beveled upper and lower surfaces 6, and this end fits into the keeper 7, which is of a socket shape to receive the end of the bolt. From this construction it follows that if the lock and keeper be displaced longitudinally of the door frame, the bolt will be forced in and the door permitted to open. The bolt must of course engage the keeper so that pressure against the door will not cause the bolt to retract, but it is preferable to slightly bevel or round off the keeper engaging frame 8 of the bolt, so that after the bolt has been partly forced back by the longitudinal movement referred to, pressure against the door to open it will aid the further retraction of the bolt.

It is necessary, of course, to have the lock arranged so that when desired the bolt is not operable by the handles 4. I show for this purpose a slide 9 movable to engage a notch 10 formed in a collar on the inner handle. It will be understood, of course, that any lock with a spring pressed bolt would answer the purpose of my invention provided the bolt end and keeper are constructed substantially as described.

What I claim as my invention is:—

1. The combination with a door frame provided with beveled edges at least at one side and one end, of a door having the edges of its sides and ends shaped to fit the door frame; and a spring pressed bolt and a keeper secured to the door and frame at the beveled sides of the latter adapted to disengage on the occurrence of longitudinal displacement of the parts to which they are connected and to resist disengaging pressure normal to the door's surface.

2. A door and lock as set forth in claim 1 in which the keeper is formed as a socket into which the bolt end projects, the upper and lower sides of the whole of the bolt within the keeper end being beveled.

3. A door and lock as set forth in claims 1 and 2 in which the keeper engaging face of the bolt is also slightly beveled or rounded off.

Signed at Glasgow, Scotland.

WILLIAM AFFLECK ROBERTSON.

Witness:

WILLIAM DUNCAN HOUSTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."