Dec. 18, 1928. 1,696,137

V. COLSON

DOOR OR THE LIKE LATCHING DEVICE

Filed Nov. 14, 1925

Fig. 1.

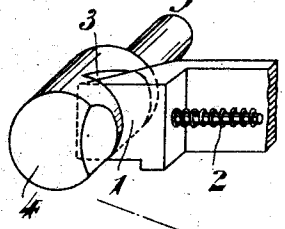



Fig. 2.

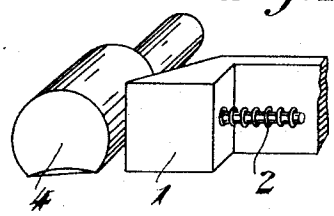



Fig. 3.

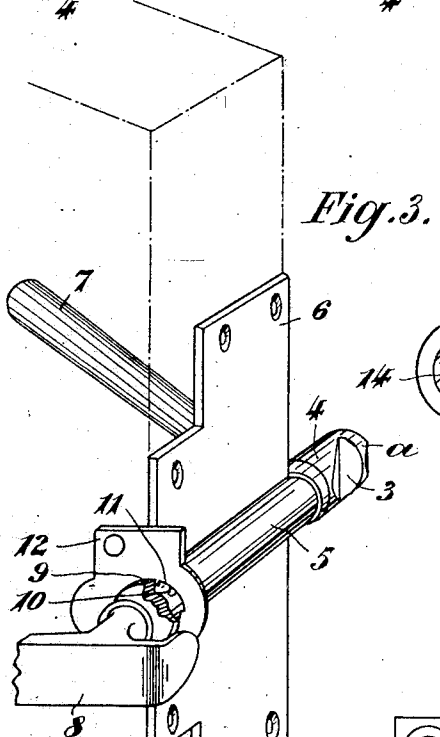
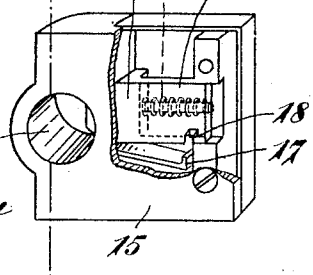



Fig. 5.



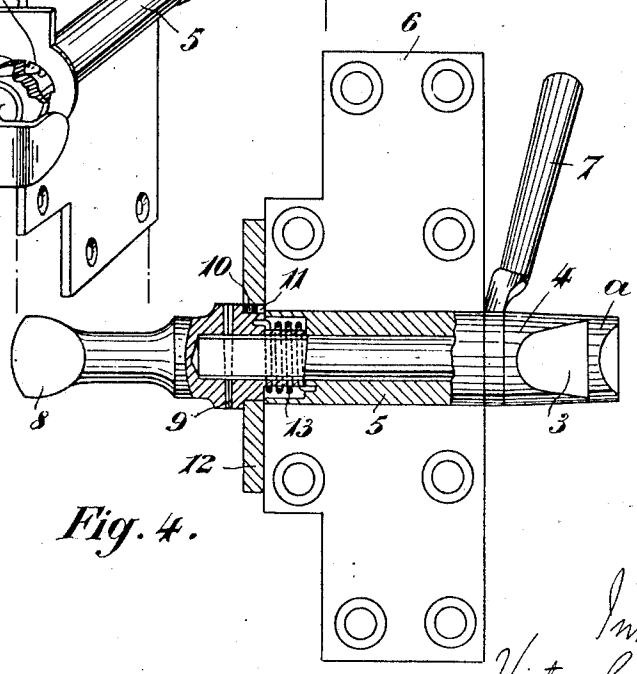




Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## DOOR OR THE LIKE LATCHING DEVICE.

Application filed November 14, 1925, Serial No. 69,106, and in Belgium November 15, 1924.

This invention relates to a device for fastening a door or the like comprising a spring actuated latch bolt and a bolt operator which, by their reciprocal engagement ensure the fastening of the door.

In fastening arrangements of this type hitherto used the movement of the latch bolt for release from the bolt operator is effected by its longitudinal displacement which is controlled by a spindle passing through the door and carrying the door handles.

These arrangements involve the disadvantage of the necessity of cutting into the jamb of the door to allow the lock to be inserted therein.

The object of this invention is to avoid this disadvantage and further to reduce the size of the device to a minimum.

For this purpose the bolt operator is formed with a ramp or suitable abutment adapted to force the latch bolt away so as to disengage it from the bolt operator on a relative angular displacement of the two members.

According to one form of construction the bolt operator comprises an angularly movable member formed with a recess in which the latch bolt normally engages and from which it is expelled on angular displacement of the locking bolt.

The said locking bolt may be formed of a cylindrical or conical member on which the handles or knobs are directly fixed.

In order to prevent the rotation of the locking bolt when undesired, it is subjected constantly to the action of a spring which tends to bring it into such a position that the above mentioned locking recess at the time of closing is brought opposite the bolt.

By this invention also the bolt operator is extended to form a male end which, on the closing of the door enters a corresponding recess. This arrangement consequently allows the fastening device to latch the door so as to prevent displacements of the latter also in its own plane.

The invention is more particularly described with reference to the accompanying drawings, in which:

Figures 1 and 2 are diagrammatic views in perspective of the latching elements in the locking and unlatching positions respectively.

Figure 3 is a perspective view of the bolt operator and its connections as attached to a door.

Figure 4 is a sectional elevation with one of the elements shown in Fig. 3 removed.

Figure 5 is a perspective view of the latch bolt and its casing or body with the latter partly broken away and in section.

As will be more particularly seen from Figs. 1 and 2, the latch bolt 1 is caused by a spring 2 to enter the recess 3 of the bolt operator 4 which is provided with an extension or cylindrical axis.

According to the position illustrated in Fig. 1, the latch bolt 1 engages in the recess 3 and in consequence the arrangement takes up its closing position by opposing the relative displacement of the bolt operator and latch bolt in the longitudinal direction of the locking bolt 4.

According to this invention these two members are unfastened by a rotation of the bolt operator 4 which, in the example shown, must be equal to about 90° to withdraw entirely the latch bolt 1 out of the recess 3.

This explains the principle of the invention, the practical construction of which (Figs. 3 and 4) comprises a bolt operator 4 which is pivotally mounted in a bearing 5 formed in a plate 6 fixed in the free edge of the door to which the latching arrangement is applied. The said bolt is thus provided with a long guide which avoids wear very efficiently.

One lever 7 controlling the bolt operator is keyed directly on the latter whilst the other lever 8 is screwed on the other threaded end and maintained by a pin 9.

The bolt operator 4 with the two operating levers 7 and 8 thus forms a unit, the angular displacement of which is limited by the displacement of a projection 10 attached to the lever 8 within a notch 11 in a washer plate 12 also fixed to the door. Normally the bolt operator 4 and the levers 7 and 8 which are attached thereto are maintained constantly in one of the extreme angular positions permitted by the action of the projection 10 by means of a helical spring 13 the ends of which are connected respectively, with the operating lever 8 and the tube 5. The angular position thus obtained is such as to bring the recess 3 of the bolt operator opposite the latch bolt 1 when the door is shut. The opening of the door is then effected by giving either of the operating levers an angular displacement involving the bolt operator 4 which produces in the manner hereinbefore explained, the pressing back of the latch bolt 1 and conse-

quently allows the disengagement of the two members.

The arrangement according to this invention prevents not only an opening of the door such as hereinbefore explained, but also opposes the displacement of the latter in its own plane. For this object the end of the bolt operator penetrates at the time of closing into a corresponding female recess 14 provided in the body 15 supporting the latch bolt 1. In order to ensure as perfect a contact as possible the male end as well as its female recess are slightly tapered. In order to simplify the mechanism that the latch bolt projects in the said recess 14 whilst the recess 3 is formed in the corresponding male end. The result is that the arrangement according to this invention secures the door in all directions.

The latch bolt 1 is arranged in the well known manner and subjected to the action of a spring 2; it may on the other hand be dogged by a spring dog 17 the end of which is adapted to engage in a notch 18 formed for this purpose in an extension 19 of the bolt.

It is evident that by the use of the fastening arrangement of this invention, the door post or upright will not be injured seeing that it is only necessary to form a small notch therein in order to locate half the tube 5 and that this part will be directly consolidated by the plate 6. The door upright may consequently be reduced to as small dimensions as may be desired.

What I claim is:

1. Door latching devices comprising a keeper for attachment to a fixed supporting element and having an opening and a latch bolt to project into one side of said opening; a plate for attachment to the free edge of a door and having a bearing, a bolt operator mounted for rotation in said bearing and provided with means to prevent longitudinal movement of said bolt operator, said bolt operator having an end projecting from one side edge of said plate, arranged to enter the opening of said keeper and having a notch for engagement by the latch bolt of said keeper, and levers for turning said bolt and arranged substantially at the opposite ends thereof.

2. Devices as claimed in claim 1 including also means for dogging said latching bolt.

In testimony whereof I affix my signature.

VICTOR COLSON.