Nov. 25, 1930. R. G. JEFFERY 1,783,150

FASTENER FOR DOOR PANELS

Filed March 1, 1930

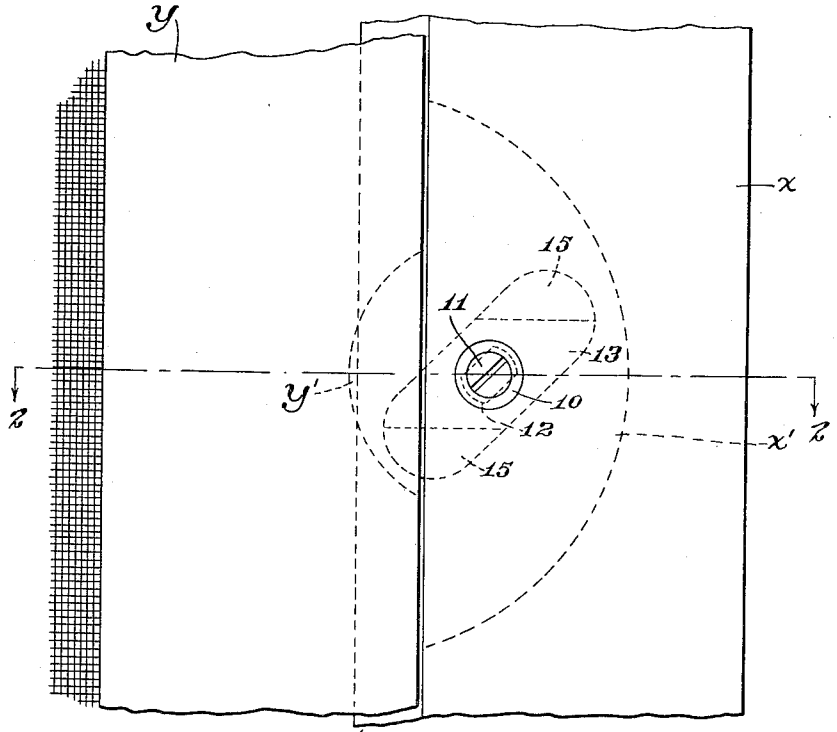


Fig. 1.

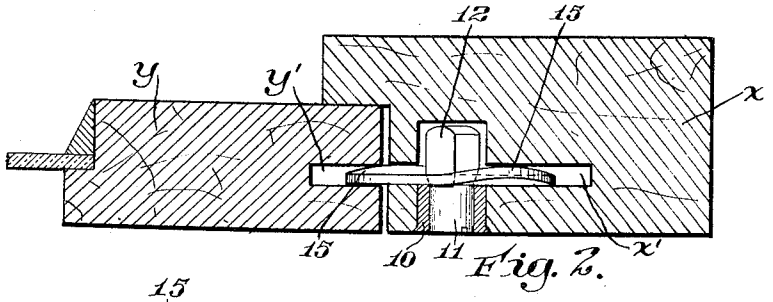


Fig. 2.

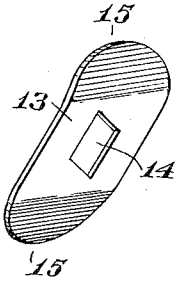
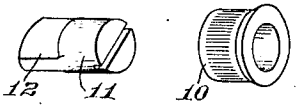


Fig. 3.



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Patented Nov. 25, 1930 1,783,150

UNITED STATES PATENT OFFICE

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FASTENER FOR DOOR PANELS

Application filed March 1, 1930. Serial No. 432,440.

This invention relates to means for facilitating the mounting of interchangeable panel members in frames, and has particular reference to fasteners for holding either a glass frame or a screen in a door frame to enable one to be substituted for the other according to weather or season conditions.

Devices for this purpose have been in use for many years, but so far as I am aware such former devices either fail to adequately prevent rattling, or are not easy to manipulate.

The object of my invention is to provide fasteners for such purposes as mentioned, which fasteners have a cam-binding action on both of the members which are engaged thereby, to effectively prevent rattling and maintain their holding positions.

Another object of my invention is to provide panel fasteners which, although exactly alike, act in the same way whether at one side or the other of the panel member and the frame in which it is mounted.

With the above objects in view, my invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings:—

Figure 1 is an elevation of a portion of a door frame and panel frame connected by one of my fasteners.

Figure 2 represents a section on line 2—2 of Figure 1.

Figure 3 illustrates, in perspective, the three members of one of my improved fasteners, said three members being separated from each other.

Similar reference characters designate similar parts in all of the figures.

A portion of the right-hand member of a door frame is illustrated at X and having a seat (Fig. 2) for the panel frame member Y. Recesses X′, Y′ are provided in the frame members X, Y, in such locations that said recesses will be sufficiently opposite each other when the parts are assembled as illustrated, to permit the operation of the blade as presently described.

In the door frame member X a round hole is formed, said hole traversing the recess X′ but not extending entirely through said member X, and mounted in and securely held in the mouth of said hole is a bushing 10 external knurled or otherwise roughened so that said bushing will not be liable to rotate in its mounting.

Rotatable in the bushing 10 is a stud 11 having a flattened inner portion 12 and having its outer end provided with a groove to be engaged by a suitable tool such as a screw driver.

The important feature of my invention is the plate or blade 13 and its formation whereby, when actuated as presently described, its opposite ends act as cams in the recesses X′, Y′. Said blade, at its mid-length, has a hole 14 shaped to substantially fit and preferably somewhat loosely, the inner portion 12 of the rotatable stud 11. The ends of the blade are twisted or bent in opposite directions to have cam surfaces 15.

When a panel frame Y, having either wire mesh as illustrated in Figure 1, or a glass pane as illustrated in Figure 2, is to be mounted in the door frame, the stud is first turned so that the blade 13 will be substantially vertical in the recess X′. Of course a similar fastener at the opposite or left side of the door frame will be similarly turned. Then, after mounting the panel against the seat of the door frame, the studs are rotated to the right, as a screw would be operated. By comparing Figures 1 and 2, it will be understood that upon first turning the blade 13 from a vertical position toward the position indicated by the dotted lines in Figure 1, a straight or un-bent edge of the blade will readily enter the recess Y′ of the panel member, and then, as the blade is turned further, a cam surface 15 will enter the recess and bear against the inner wall of the recess and press the panel member firmly against the seat of the door frame. At the same time, the other cam surface 15 bears against the wall of the recess X′ of the door frame so that the friction of both cam surfaces 15 against the recess walls ensures retention of the fastener in the position to which it is rotated to clamp the panel member in operative position. Preferably the blades 13 are made of a sufficiently resil-

ient metal so that the opposite ends thereof act somewhat as springs in their action of holding the removable panel seated.

It will be readily understood that a fastener at the other or left-hand side of the door frame will act in the same way as described, by a turning to the right as a screw is operated, but instead of the clamping action being effected by the lower cam end as illustrated in Figure 1, it will be by the entrance of the upper cam end of the blade which will then enter a panel frame recess that will be at the right instead of the left as in Figure 1. The fact that the cam portions of the blade are the result of bending the blade on inclined lines as illustrated by the transverse lines dotted in Figure 1, and that the ends of the blade are rounded, facilitates the equal utility of the duplicate fasteners whether employed at the right or left of a door frame. The twisting of the two ends of the blade in opposite directions, as illustrated, is essential to such equal utilizations.

Having now described my invention, I claim:—

1. A fastener for engaging recesses in frame members, said fastener comprising a bushing, a stud mounted in said bushing and having a non-circular portion, and an elongated blade having its central portion mounted on the non-circular portion of the stud, the ends of the blade being twisted in opposite directions out of its plane.

2. A fastener for engaging recesses in frame members, said fastener comprising a bushing, a stud mounted in said bushing and having a flattened portion, and an elongated blade mounted on the flattened portion of the stud, the ends of the blade being twisted in opposite directions out of its plane.

In testimony whereof I have affixed my signature.

RUPERT G. JEFFERY.