Nov. 24, 1925. 1,563,070

H. L. BRANDAU

CLAMPING DEVICE FOR COMBINATION STORM AND SCREEN DOORS

Filed April 30, 1925

Fig. 1.

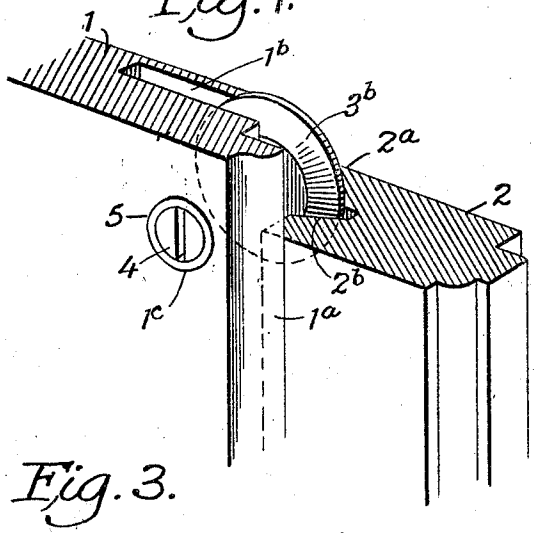


Fig. 2.

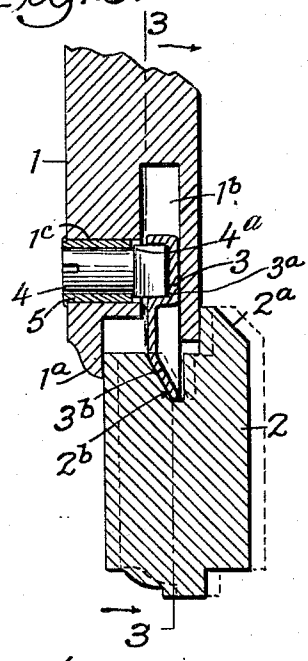


Fig. 3.

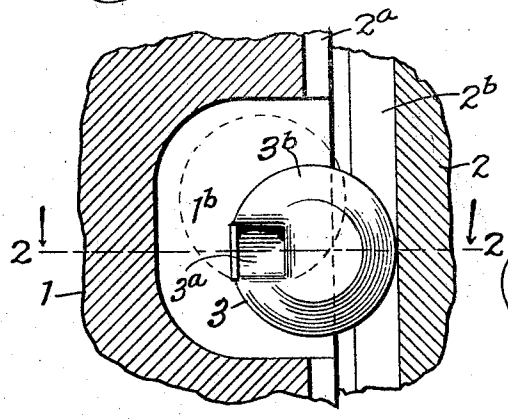


Fig. 4.

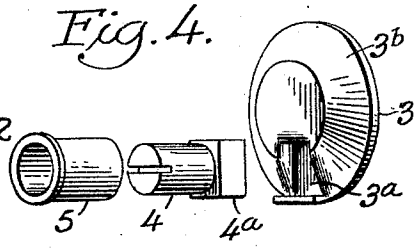


Fig. 5.

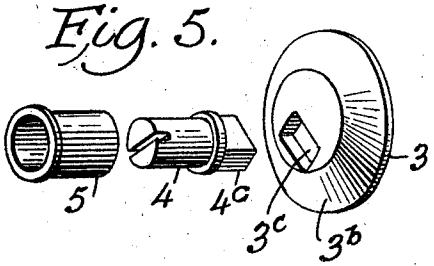
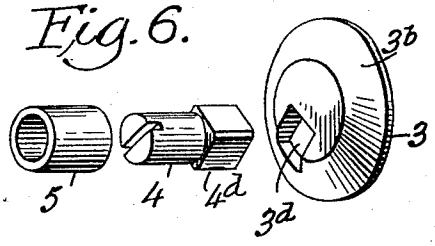


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CLAMPING DEVICE FOR COMBINATION STORM AND SCREEN DOORS.

Application filed April 30, 1925. Serial No. 27,011.

To all whom it may concern:

Be it known that I, HAROLD L. BRANDAU, a citizen of the United States, residing at Muscatine, in the county of Muscatine and State of Iowa, have invented certain new and useful Improvements in Clamping Devices for Combination Storm and Screen Doors; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a novel clamping device particularly designed for use in so called combination storm and screen doors which are provided with removable interchangeable panels, usually a glazed panel to be used in cold weather and a screen panel to be used in warm weather; thus making the door convertible and usable either as a storm door or a screen door.

The object of the invention is to provide a very simple and efficient clamping means readily applicable to the door frame whereby the removable panel can be quickly and firmly clamped in position or readily removed, thus permitting the glazed panel to be substituted for the screen panel, or vice versa, without the aid of a skilled mechanic.

In the accompanying drawings I have illustrated some practical embodiments of the invention and will describe the same with reference thereto, and the claims summarize the essentials of the invention and novel features of construction and combinations of parts for which protection is desired.

I have shown only part of the door and part of the panel, these being of well known construction it is not necessary to show the entire door or panel.

In the drawings:

Figure 1 is a perspective view of one of the novel clamping devices used to fasten a removable panel in a door.

Figure 2 is a sectional view on the line 2—2, Fig. 3.

Figure 3 is a sectional view on line 3—3, Fig. 2, illustrating the operation of the device.

Figure 4 is a perspective view of the several parts of the clamping device shown in Figures 1 to 3, detached.

Figure 5 is a similar view of a slightly modified construction of clamping device.

Figure 6 is a similar view of another slightly modified construction of the clamping device.

The door may be of any suitable size and is provided with an opening of any desired size or shape for a glazed or screen panel of suitable size and shape. A part of the door around the panel opening is shown at 1 in the drawing, and said opening is adapted to be closed by a suitable panel a part of which is shown at 2 in the drawings. The portion 1 of the door is provided with a flange 1^a projecting into the panel opening at one side thereof, and against the inner face of this one face of the panel 2 abuts, the flange 1^a overlapping the adjacent face of the panel 2. Said panel 2 is provided with a flange 2^a on its outer edge which overlaps the adjacent face of the door 1 opposite the flange 1^a, as shown in Figure 2. Preferably the panel 2 has a groove 2^b in its outer edge adjacent the flange 2^a, the side of this groove 2^b next to flange 1^a being preferably beveled or inclined toward the flange 1^a as shown in Figure 2.

The portion 1 of the door is provided at various points adjacent the flange 1^a with slots 1^b in which are placed clamping members 3 which are preferably disk-shaped and preferably made of stamped metal, but may be cast. These clamping members have their outer peripheries preferably beveled as at 3^b to engage the beveled side of the groove 2^b to receive the panel in position in the door.

The disk 3^b as shown in Figs. 1 to 4 has an angular recess 3^a in its face located eccentrically thereof and this recess is engaged by the inner correspondingly shaped end 4^a of a rotatable stud 4, which is neatly fitted in a bore 1^c extending through one side of the door 1 into the slot 1^b and adjacent the flange 1^a.

The outer end of the stud 4 may be provided with a slot, or socket, or otherwise

shaped, to enable it to be rotated by an actuating implement, such as a screw driver or wrench.

The slot 1^b is deep enough to practically admit the entire member 3 therein, as indicated in dotted lines in Figure 3, but preferably the slot is so narrow that axial movement of the member 3 in the slot is prevented. The member 3 can thus be confined in the slot by the loose engagement of the angular head 4^a of the stud 4 with the recess 3^a and when so engaged the disk can not fall out of the slot, but it may be rotated orbitally by turning the stud 4.

Preferably stud 4 is surrounded by a sleeve 5 which is pressed into said bore and forms a bearing for the stud and prevents it wearing the wood of the door. The stud 4 can not be drawn outward through the bushing because the inner end or head 4^a of the stud is slightly larger in diameter than the bushing as shown.

The outer end of the stud preferably comes flush with the outer end of the bushing 5, which is preferably flush with the surface of the door.

By turning the stud 4 the disk 3 can be turned to the position indicated in dotted lines in Fig. 3, in which position it will be wholly within the socket or slot 1^b, and hence disengaged from the groove 2^b and when the clamping members are in such position the panel 2 can be readily removed from or replaced in the door. When the panel is properly placed in the door the disk 3 can be rotated into engagement with the groove 2^b, by properly turning the stud 4, and the beveled edge 3^b of the disk 3 will engage the beveled side of the groove 2^b and clamp the panel 2 tightly against the flange 1^a of the door, the flat side of the disk 3 bearing against the side wall of the slot 1^b opposite the bore 1^c.

In the modification shown in Figure 5 the construction is practically the same as that shown in Figure 4, except that the disk 3 is provided with a non-circular slot 3^c, and the stud 4 is provided on its inner end with a correspondingly shaped head 4^c adapted to engage slot 3^c so as to cause the disk to turn with the stud in the manner above described.

In the modification shown in Figure 6 the disk 3 has a rectangular opening or recess 3^d and the stud 4 has a correspondingly shaped head 4^d on its inner end to engage this recess.

In each construction the parts operate exactly alike, but for simplicity and economy I at present consider the form shown in Figures 1 to 4 preferable.

In assembling the device the disk 3 is inserted in the slot 1^b with its opening or socket registering with the bore 1^c, then stud 4 is entered into bore 1^c until the inner end of the stud is properly engaged with the recess or slot in the disk. When so engaged the bushing 5 is inserted into the bore 1^c around the stud, whereby the disk will be securely confined in the slot, but can be turned with the stud, and operated as shown and described.

I claim:

1. Means for securing a panel having a groove in its edge, in a door having a slot adapted to register with the groove in the panel when the latter is in place; said means comprising a beveled edge member adapted to be inserted in the slot and in one position to have its beveled edge engage the groove in the panel and clamp the latter in position; a rotatable stud extending into the slot and detachably engaging the disk, and whereby the latter is retained in place in the slot and also may be rotated to cause its beveled portion to engage or disengage the groove in the panel; and means to retain the stud in place.

2. In combination with a door having an opening and a slot at the edge of the opening; and a removable panel having a groove in its edge adapted to register with the slot in the door when the panel is in place; of a rotatable disk like member in said slot having an eccentrically located recess and a beveled edge adapted in one position to engage the groove in the panel and bind the same in place in the door, and in another position to permit the panel to be removed, with a rotatable stud projecting into the slot and having its inner end engaged with the recess in the disk; said disk being held against axial movement by the walls of the slot and being retained in the slot by its engagement with said stud.

3. Means for securing a door panel having a groove in its edge, in an opening in a door, said door having a slot at the edge of the opening adapted to register with the groove in the panel when the latter is in place; said means comprising a circular disk having a beveled edge and adapted to be inserted in said slot adapted in one position to engage the groove in the panel and bind the panel in the frame, and in another position to permit the panel to be removed; said disk also having an eccentrically located recess; a rotatable stud mounted in the door and projecting into the slot and having its inner end loosely engaged in the recess in the disk; said disk being held against axial movement by the walls of the slot and being retained in the slot by its engagement with said stud; and a bushing for holding the stud in place.

4. A clamping device for the purpose specified, comprising a disk like member having an eccentrically located recess or slot; a rotatable stud having its end detachably engaged with the recess in the disk, whereby the latter is retained in place, and

may also be rotated; and a bushing for said stud whereby it may be retained in place.

5. A clamping device for the purpose specified, comprising a disk like member having a beveled edge and an eccentrically located recess or slot; a rotatable stud adapted to having its end detachably engaged with the disk, whereby the disk may be rotated and also retained in place and a bushing for said stud whereby it may be retained in place when the parts are in operative position.

In testimony that I claim the foregoing as my own I affix my signature.

HAROLD L. BRANDAU.