Jan. 7, 1930. J. WALTER ET AL 1,742,455

ADJUSTABLE DOOR HINGE

Filed April 4, 1929

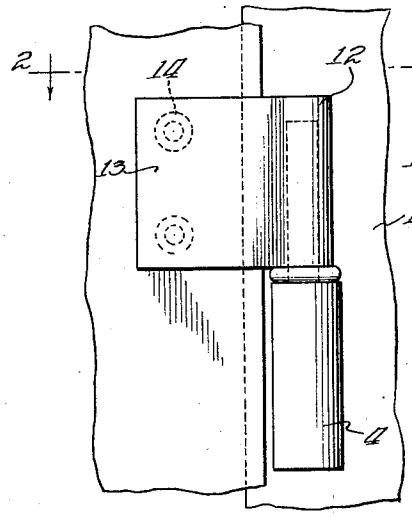


Fig. 1.

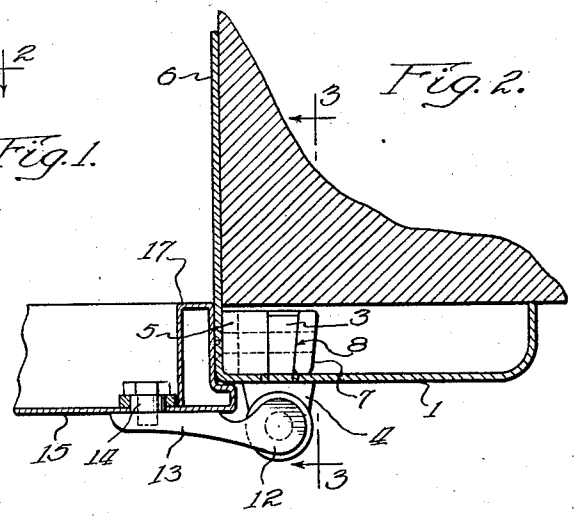


Fig. 2.

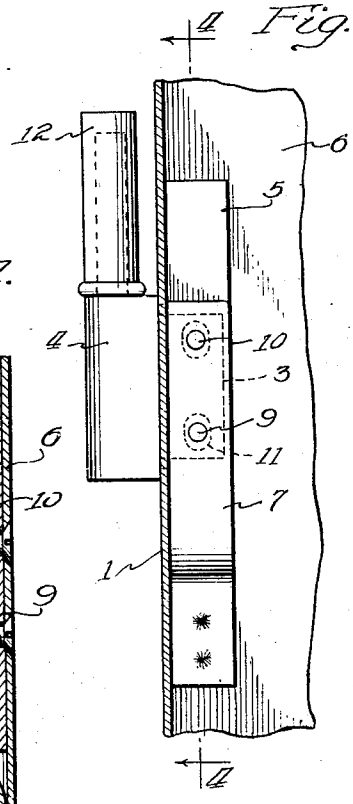


Fig. 3.

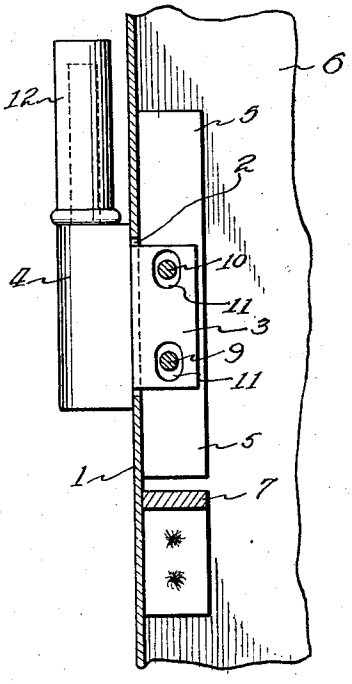


Fig. 5.

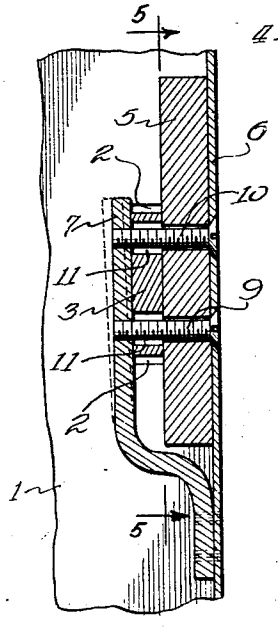


Fig. 4.

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UNITED STATES PATENT OFFICE

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ADJUSTABLE DOOR HINGE

Application filed April 4, 1929. Serial No. 352,457.

This invention relates to an improved adjustable door hinge and mounting therefor.

The main objects of our invention are to provide an improved hinge and hinge mounting structure for metal doorframe; to provide improved means for mounting a door on a doorframe so that it may be adjusted vertically for properly positioning its top and bottom edges relative to the head and sill respectively of a doorframe and adjusted horizontally for positioning the surface of the door adjacent the surfaces of the front sides of the frame; to provide an improved adjustable hinge for allowing a door to be tilted and fixed in a tilted position to avoid binding between the edges of the door and the doorframe, and to provide an improved mounting for door hinges whereby the hinges may be adjustably positioned while the door is supported thereon.

In general our improved hinge comprises a lower hinge element having an attaching lug and a pintle thereon and an upper hinge element having a socket therein for receiving the pintle. The lug extends through an elongated slot in a metal doorframe and into a space between a block secured to the edge of the frame and a bracket secured to the same edge thereof. Screws for adjustably clamping the lug between the block and bracket extend through apertures in the edge of the door frame and through enlarged apertures in the lug and are threaded in apertures in the bracket. The upper hinge element is rigidly attached to a door.

In the accompanying drawings we have shown a specific embodiment of our invention, in which:

Figure 1 is a fragmentary elevation of a door and doorframe including an elevation of our improved hinge.

Fig. 2 is a fragmentary horizontal section taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary vertical section taken on the line 3—3 of Fig. 2.

Fig. 4 is a vertical section taken on the line 4—4 of Fig. 3.

Fig. 5 is a vertical section taken on the line 5—5 of Fig. 4.

In the form shown in the drawings the front wall 1 of a side of a doorframe is provided with a slot 2 for receiving a lug 3 of a lower hinge element 4. The lug 3 extends through the slot 2 into a space between a block 5, rigidly secured by spot welding or other suitable means to the edge wall 6 of the doorframe, and a bracket 7 secured to the edge wall 6.

The bracket 7 as shown in Fig. 4 comprises an offset portion which extends substantially parallel to the block 5 along one edge of the slot 2. The outer side of the block 5 is adjacent the other side of the slot 2. The lug 3 has an inclined surface 8 adjacent the bracket 7 and the bracket 7 is sufficiently yieldable to conform to the inclination of the surface 8 of the lug when it is in various positions.

Screws 9 and 10 extend through apertures in the edge wall 6, in the block 5 and through enlarged apertures 11 in the lug 2, and into threaded apertures in the bracket 7. The apertures in the edge wall 6 are counterbored for receiving the heads of the screws. The lower hinge element 4 is provided with a pintle upon which an upper hinge element 12 is journaled.

The upper hinge element 12 has a flange 13 provided with internally threaded bosses 14 which are extended through apertures in the door 15. The upper hinge element 12 is rigidly secured to the door by screws 16 threaded in the bosses 14 and having heads which bear against the washers 16′ between the screw heads and the inner surface of the door. The door is provided with a rectangular bead 17 which reinforces it.

Our improved hinge may be adjusted vertically in the slot 2 which is longer than the stud 3 and may be secured in an adjusted position by tightening the screws 16, thereby causing the lug to be clamped between the block 5 and the bracket 7. This adjustment of the hinge allows the top and bottom door to be properly positioned vertically with respect to the sill and head of the frame, and it may be made after the door frame is assembled and installed, and while the door is mounted thereon. The hinge may also be moved outwardly or inwardly relative to the

side of the door-frame for positioning the inner surface of the door adjacent the outer surface of the front wall 1 of the door frame.

The inclined surface of the lug 3 prevents the hinge from being extended outwardly by the weight of the door when the screws 9 and 10 are tightened.

Our improved hinge may also be positioned at an angle to the vertical surface of the side of the door-frame by tilting the lower hinge element. This action causes one end of the lug 3 to extend further into the restricted passage between the block and the bracket than the other end. By tightening up that screw of the bracket which is at the end of the lug extending further into the passage, and subsequently tightening the other screw, the bracket may be caused to conform to the position of the inclined surface of the lug thereby firmly clamping the lower hinge element in inclined position. By means of a slight angular adjustment of the hinge, it is possible to swing either the top or bottom edge of a door away from the head or sill respectively of a frame, and prevent binding of the door.

Although but one specific embodiment of my invention is herein shown and described, it will be understood that details of the construction may be altered or omitted without departing from the spirit of this invention, as defined by the following claims:

We claim:

1. In a doorframe comprising a side member having an elongated slot therein, a block secured to the edge of said side member adjacent one side of said slot, a bracket secured to said edge having an offset portion extending in spaced relation to said block and adjacent the other side of said slot, a hinge element comprising a projection extending through said slot, and between said block and bracket, an inclined surface on the side of said projection adjacent said bracket, and screws extending through apertures in said block and lug and into threaded apertures in said bracket for clamping the latter against the inclined surface of said projection to retain said hinge element in an adjusted position, said screws being externally accessible at the edge of said doorframe.

2. Means for adjustably mounting a door on a doorframe comprising a hinge element, a lug on said hinge element having an inclined surface and having spaced apertures therein, clamping means on said door frame comprising a yieldable bracket for engaging the inclined surface of said lug adapted to conform to the position thereof for adjustably retaining said hinge element at an inclination to the doorframe, spaced screws extending through the apertures of said lug and threaded in said bracket, the apertures of said lug being larger than the diameter of said screws for allowing vertical and outward movement of said hinge element relative to said doorframe, a pintle on said hinge element, and a second hinge element journaled on said pintle for supporting the door.

Signed at Hammond this 1st day of April, 1929.

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