July 13, 1954 E. F. OKERLUND ET AL 2,683,279

ADJUSTABLE AND REVERSIBLE HINGE

Filed Nov. 7, 1951

Fig. 1.

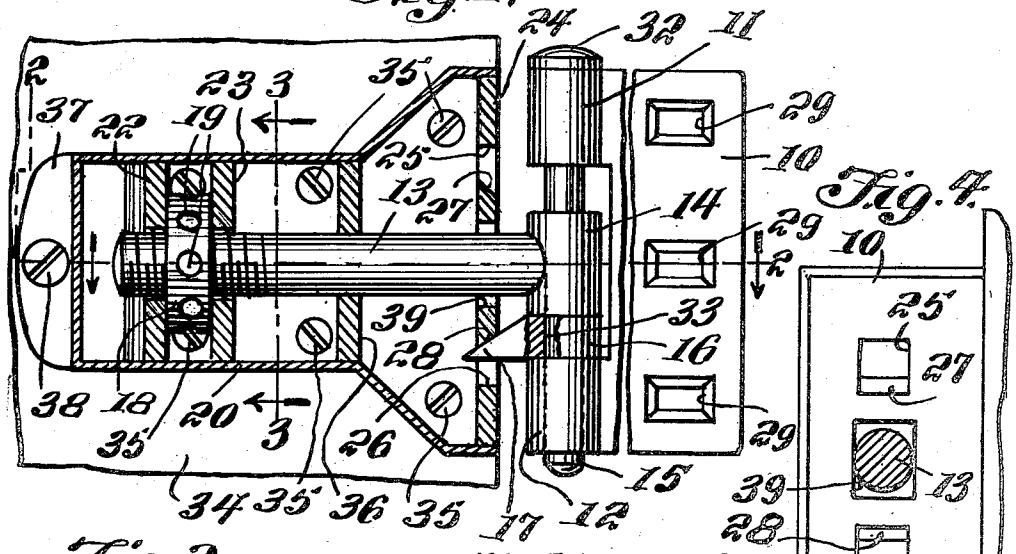


Fig. 4.

Fig. 2.

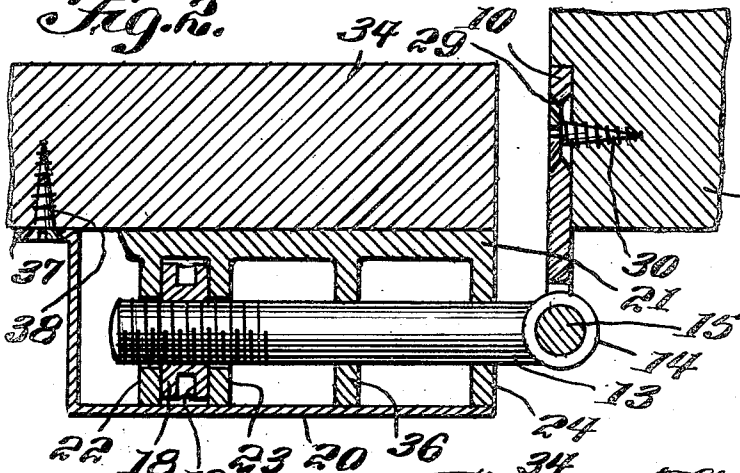


Fig. 6.

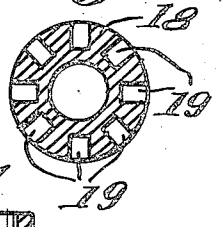


Fig. 3.

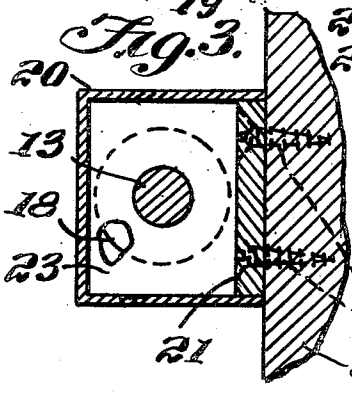


Fig. 5

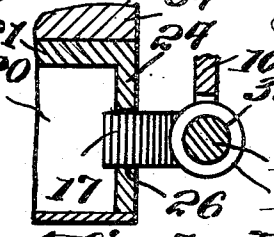
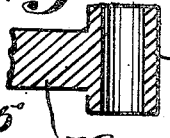


Fig. 7.



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ADJUSTABLE AND REVERSIBLE HINGE

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3 Claims. (Cl. 16—129)

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This invention relates to hinges for doors particularly of the type used in residences, apartments and the like, and in particular a hinge having a hinge plate adapted to be mounted on a door jamb or frame, a small casing adapted to be mounted on a door and having a bolt adjustably held therein with the bolt having an extended tubular head positioned to receive a hinge pin of the hinge plate, and a cam also positioned on the hinge pin and having a beveled surface positioned to extend into openings in the casing of the door whereby rotation of a nut in the casing and threaded on the bolt in one direction draws the door toward the hinge plate with the door riding upwardly on the beveled surface of the cam.

The purpose of this invention is to provide an adjustable door hinge in which a door is adjusted vertically and horizontally with the same adjusting means.

Various attempts have been made to obtain adjustments between the plates of a door hinge particularly in frame construction where settling of a building causes a door to rub or bind on one corner and although different types of hinges have been provided for this purpose it is difficult to provide an adjustable hinge in which the appearance thereof is not objectionable. With this thought in mind this invention contemplates an adjustable hinge having a conventional hinge plate with elongated bolt holes therein and having a hinge pin extended therethrough, a small casing having a bolt with a tubular head mounted on the hinge pin and in which the parts may readily be shifted to positions on the opposite side of the center for reversing the hinge.

The object of this invention is, therefore, to provide means for forming an adjustable and reversible hinge whereby the parts may readily be mounted on a door and jamb in place of a conventional hinge.

Another object of the invention is to provide an adjustable door hinge in which the parts are readily adjustable so that the hinge may be used on either side of the door.

A further object of the invention is to provide an adjustable reversible hinge which is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a hinge plate having elongated screw or bolt holes therein with hubs at the ends, a hinge pin extended through the hubs of the hinge plate, a bolt having a tubular head positioned on the hinge pin with the pin extended through the head, a cam having a beveled surface also positioned on the hinge pin

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and a small casing having extended sections at one end and openings having beveled surfaces therein positioned to coact with the beveled surface of the cam and having means for mounting the bolt whereby rotation of a nut thereon adjusts the position of the tubular head in relation to the end of the casing.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is an elevational view showing the improved hinge with the hinge plate, pin, cam and bolt shown in elevation, and with the casing in which the bolt is mounted shown in section.

Figure 2 is a sectional plan through the improved hinge taken on line 2—2 of Figure 1 and showing the hinge turned through an angle of 90 degrees.

Figure 3 is a sectional view of the hinge taken on line 3—3 of Figure 1.

Figure 4 is an elevational view looking toward the end of the casing adjacent the hinge plate and showing the bolt of the casing in section.

Figure 5 is a detail showing parts of the casing, hinge pin and hinge plate with the parts shown in section and showing a cam on the hinge pin extended through an opening in the end of the casing.

Figure 6 is a detail showing a cross section through the adjusting nut that is threaded on the bolt of the hinge.

Figure 7 is a vertical section through the head of the bolt which is extended from the casing.

Referring now to the drawings wherein like reference characters denote corresponding parts the improved adjustable and reversible hinge of this invention includes a hinge plate 10 having hubs 11 and 12 thereon, a bolt 13 having a tubular head 14 through which a hinge pin 15 extends, a cam 16 having a beveled surface 17, and adjusting nut 18 having spaced openings 19 therein and a casing 20 having a base 21 with webs 22 and 23 between which the nut 18 is positioned, and also having an end wall 24 with notches 25 and 26 therein into which the end of the cam 16 extends with a beveled surface 17 of the cam alternately engaging beveled surfaces 27 and 28 in the inner ends of the notches 25 and 26.

The hinge plate 10 is provided with elongated screw openings 29 through which screws 30 extend for attaching the hinge plate to a door jamb, as indicated by the numeral 31 and, as illustrated in Figure 2, the openings 29 are provided with beveled surfaces in both sides of the hinge plate.

The hinge pin 15 is provided with a head 32 and with the parts assembled the pin extends through

the tubular head 14 of the bolt 13 and also through the opening 33 in the cam 16.

The base 21 of the casing is adapted to be attached to a door 34 with screws 35, and with the parts positioned as illustrated in Figure 1, the bolt 15 extends through the webs 22 and 23 and also through a guide web 36 which is spaced from the end wall 24 of the base.

The casing or cover 20 is positioned over the base and the outer end of the casing is provided with a flange 37 by which the casing is held in position by screws 38.

With the parts arranged in this manner the hinge is readily mounted on a door with the hinge plate 10 secured to the jamb and the casing 20, with the bolt 13 therein, mounted on the door and upon rotation of the nut 18, which is threaded on the bolt 13 and positioned between the webs 22 and 23, the door is moved toward the hinge plate or away from the plate, and in either movement the door rides on the beveled surface 17 of the cam 16 moving the door upwardly as it is drawn toward the hinge plate and downwardly as it moves away from the hinge plate.

In order to use the hinge on the opposite side of the door it is only necessary to reverse the position of the cam 16, placing the cam at the opposite end of the head 14, and also reversing the position of the casing 20 with the bolt 13 which extends through an opening 39 in the end wall 24 of the base thereof, and with the parts reversed, or turned over, the hinge is placed on the opposite side of the door.

It will be understood that modifications may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A hinge having a hinge plate with hubs on one edge, a hinge pin mounted in the hubs on the edge of the hinge plate, a casing having spaced notches therein adapted to be mounted on a door, portions of the casing located at one of the ends of the notches being beveled a bolt having a tubular head mounted in the casing with the head extended therefrom and located with the head positioned to receive the hinge pin, and a cam having a hub with a beveled surface extended therefrom also mounted on said hinge pin and positioned to engage the beveled surface of the casing at the end of one of said notches means for horizontally adjusting the casing in relation to the cam, whereby the cam coacts with the casing for adjusting the casing vertically in relation to the hinge plate.

2. A hinge as described in claim 1, wherein the casing and bolt are symmetrical so that the positions of the casing, bolt and cam are reversible whereby the hinge is adapted for use on either side of a door.

3. A door hinge as described in claim 1, wherein the casing includes a base having an end plate in which said notches are located and in which an opening through which the bolt extends is provided between the notches, and in which the casing is also provided with spaced webs between which a nut having spaced openings in the peripheral surface, and which is threaded on the bolt, is positioned.

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