Aug. 5, 1941. W. E. BARRETT 2,251,865

HINGE

Filed Oct. 18, 1940

Fig. 1.

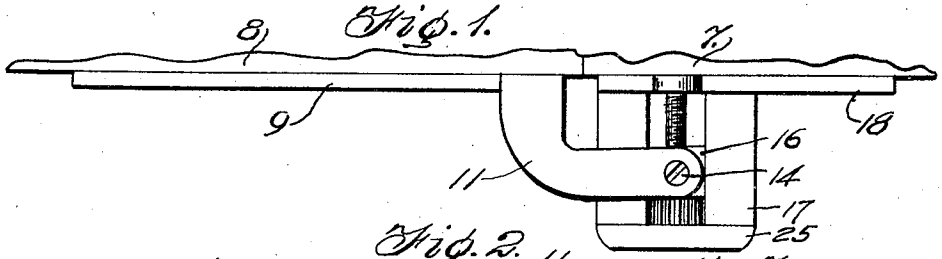


Fig. 2.

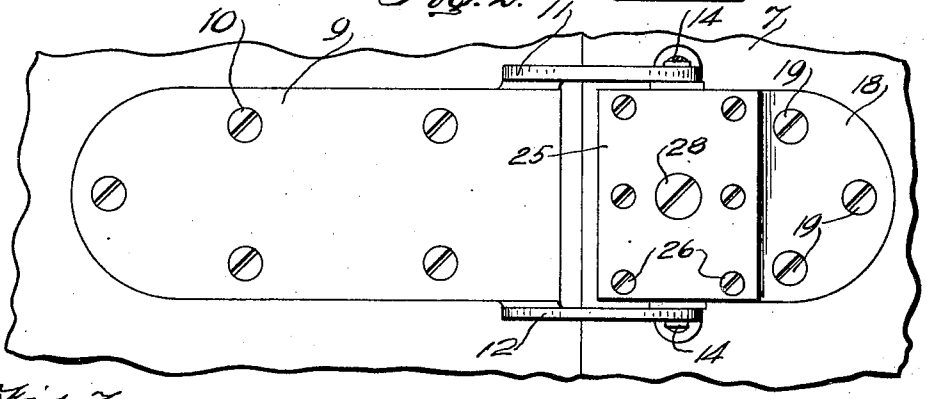


Fig. 3.

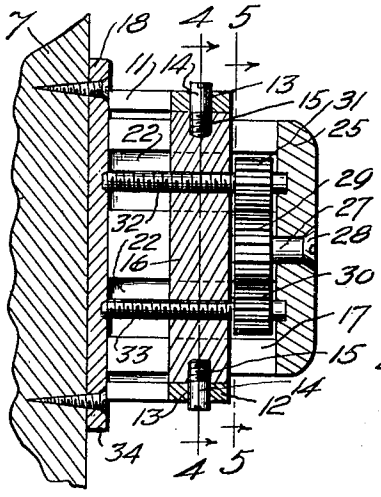


Fig. 4.

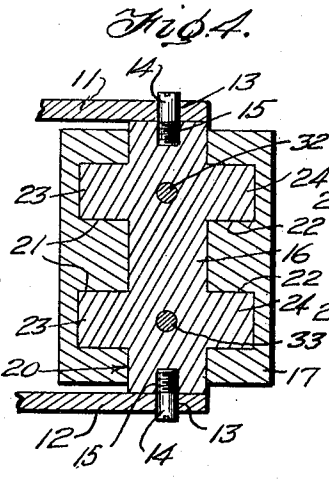
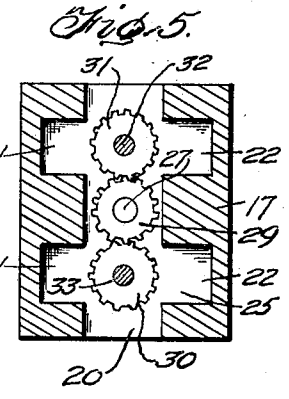


Fig. 5.



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Patented Aug. 5, 1941 2,251,865

UNITED STATES PATENT OFFICE

2,251,865

HINGE

William E. Barrett, San Antonio, Tex.

Application October 18, 1940, Serial No. 361,792

3 Claims. (Cl. 16—131)

This invention relates to hinges of utility in connection with practically any type of swinging door such as is employed in houses, office buildings, passenger or battleships, submarines, all types of refrigerator doors and automobiles, or in connection with doors where it is beneficial to have them air-tight or water-tight.

An object of the invention is to provide a hinge whereby the door hanging may be expeditiously adjusted to adapt the door for use in association with packing between the door and its frame so that practically any desired pressure may be maintained from time to time as the packing becomes worn or compressed.

It is furthermore an object to provide a hinge, one member of which is attached to a door, the said member having arms oscillatable on pintle members having a mounting adjustable with relation to a stationary member and with relation to which the door oscillates.

It is furthermore an object of this invention to provide means for adjusting the pintle mounting and for guiding the said pintle mounting in the stationary member.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereiafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawing forming part of this application, wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a top plan view of a fragment of a door frame, a door and a hinge embodying the invention;

Figure 2 illustrates a view in elevation thereof;

Figure 3 illustrates a sectional view of a fragment of the hinge and its mounting;

Figure 4 illustrates a sectional view of the hinge mounting on the line 4—4 of Fig. 3; and

Figure 5 illustrates a sectional view of the hinge mounting on the line 5—5 of Fig. 3.

In the drawing 7 denotes a fragment of a door frame, 8 a fragment of a door to which the hinge is shown applied. A plate 9 may be secured to the door in any appropriate manner as by fastenings 10 such as screws, and the said plate has spaced arms 11 and 12 which are preferably integral with the edges of the plate 9 as shown in Fig. 2. The arms are angular and the outer end of each arm has an aperture 13 to receive a pintle 14 and, in the embodiment of the invention shown, each pintle has its inner end threaded to engage threaded recesses 15 in the ends of a block 16 which is adjustable in a housing 17, the said housing having a flange 18 of any appropriate shape secured to the door frame 7 by fastenings such as screws 19. The housing has a main recess or channel 20 and lateral channels or recesses such as 21 and 22, preferably arranged in pairs. The walls of the channel 20 and the lateral channels or recesses 21 and 22 act as guides for a block which is adjustable in them and prevent the block from sidewise motion. The block 16 is slidable in the main channel 20 and it is provided with lugs or extensions 23 and 24 which fit in the lateral recesses 21 and 22, respectively and engage the walls of the channel and recesses so that when the parts are assembled as shown in Fig. 4 the block 16 is guided and prevented from moving laterally to any appreciable extent.

A face plate or cover 25 is secured to the housing by fastenings 26, such as screws or the like, and a stud or shaft 27 is rotatable in the face plate and it projects therethrough and may be provided with a slotted head 28 to be engaged by a screw driver or the like, for turning the said shaft. The inner end of the shaft carries a gear wheel or pinion 29 which rotates with it and the said gear wheel 29 meshes with pinions 30 and 31 secured to screws 32 and 33, respectively, which screws are threaded through the block 16 and have their ends journaled in the face plate 25 and in the base 34 of the housing. It is obvious that when the shaft 27 is turned, it will rotate the screws through the gearing heretofore described and that according to the direction of rotation the block is moved in the housing to adjust the pintles 13 with relation to the door, effecting an adjustment to compensate for the different changing conditions heretofore mentioned.

The housing and all of the parts of the adjustable hinge are of rugged construction and will withstand wear incident to the use of the hinge which has been found efficient and satisfactory in use as well as comparatively inexpensive to manufacture and maintain.

It is believed that a resume or description of the relation of parts and operation will be unnecessary for an understanding of the invention by one skilled in the art, since the functions of the several elements have been given in connection with a description of the said elements.

I claim:

1. In a hinge for connecting a door to a door frame, a housing secured to the outer face of the door frame and extending away from said

frame at an angle thereto, said housing having a channel extending therethrough in a direction at a substantial angle to the plane of the door frame, a pintle block disposed in said channel and movable toward and away from said door frame within said channel, a plate secured to said door and having a pair of spaced arms extending over the ends of the housing and its channel, pintles connecting said arms to the ends of the pintle block, a screw shaft journaled in the channel and extending through the block in a direction at a substantial angle with respect to the plane of the door frame, said screw shaft having a threaded engagement with said block, and means to rotate the screw shaft to move the pintle block toward and away from said door frame within the confines of the housing channel.

2. In a hinge for connecting a door to a door frame, a housing secured to the door frame, said housing having a channel extending therethrough in a direction at a substantial angle to the plane of the door frame, a pintle block disposed in said channel and movable toward and from the door frame within said channel, a plate secured to said door and having a pair of spaced arms extending over the ends of the housing and its channel, pintles connecting said spaced arms with the ends of the pintle block, a pair of spaced screw shafts journaled in the housing and extending through the channel and pintle block in a direction at a substantial angle with respect to the plane of the door frame, said screw shafts threadedly engaging said pintle block, and means operable from the exterior of said housing and engaging said screw shafts interiorly of the housing channel to rotate said screw shafts in unison to move the pintle block toward and away from said door frame within the confines of said housing channel.

3. In a hinge for connecting a door to a door frame, a housing secured to the door frame, said housing having a channel extending therethrough in a direction at a substantial angle to the plane of the door frame, a pintle block disposed in said channel and movable toward and from the door frame within said channel, a plate secured to said door and having a pair of spaced arms extending over the ends of the housing and its channel, pintles connecting said spaced arms with the ends of the pintle block, a pair of spaced screw shafts journaled in the housing and extending through the channel and pintle block in a direction at a substantial angle with respect to the plane of the door frame, said screw shafts threadedly engaging said pintle block, and means operable from the exterior of said housing and engaging said screw shafts interiorly of the housing channel to rotate said screw shafts in unison to move the pintle block toward and away from said door frame within the confines of said housing channel, a large portion of the surface of the pintle block being disposed in engagement with the walls of said channel whereby the pintle block is firmly guided through the housing channel and maintained in a position parallel to the plane of the door frame.

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