Nov. 17, 1942. J. R. WERNER 2,302,484

ADJUSTABLE HINGE

Filed Feb. 24, 1942

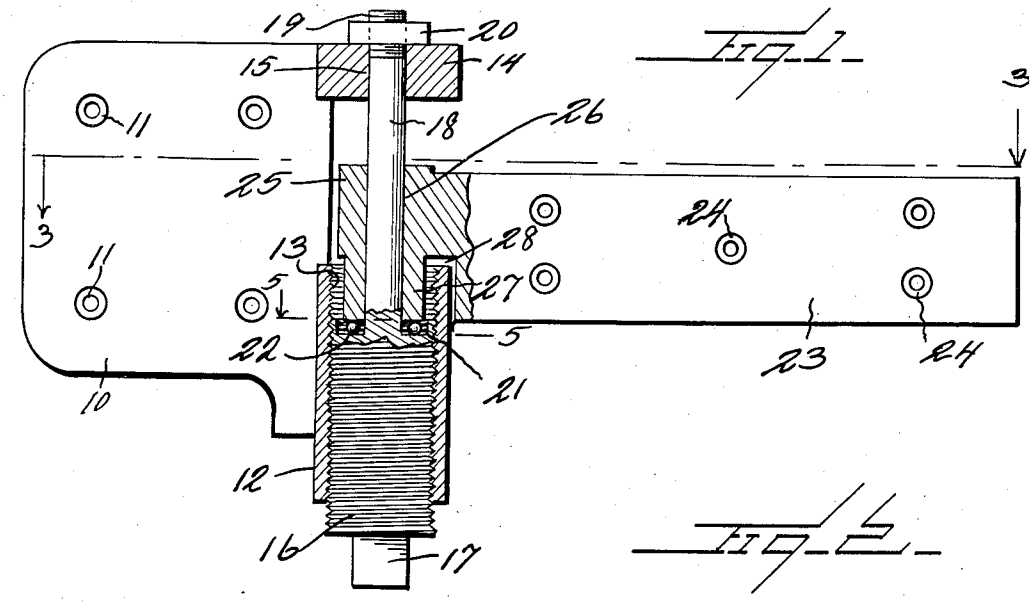


Fig. 1

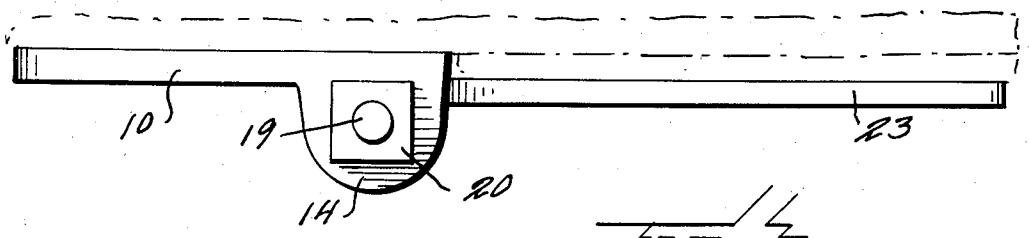


Fig. 2

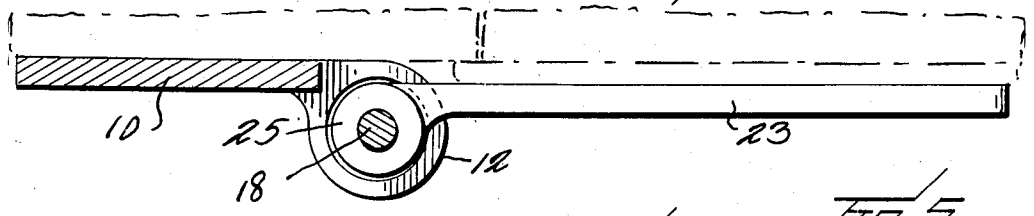


Fig. 3

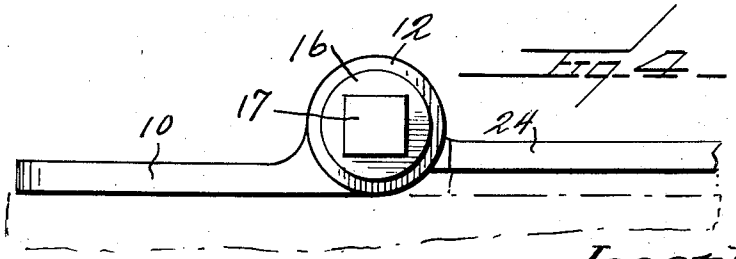


Fig. 4

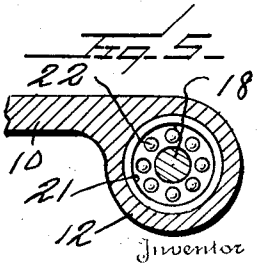


Fig. 5

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ADJUSTABLE HINGE

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Application February 24, 1942, Serial No. 432,136

2 Claims. (Cl. 16—134)

This invention relates to improvement in hinges and pertains particularly to an improved adjustable hinge designed for use in the support of heavy doors.

Heavy doors such as are used for refrigerators on meat coolers and other types of doors of heavy construction frequently sag after being hung for some time and when this occurs it is difficult to open and close the door and it then becomes necessary to take down the door and reset the hinges so that the door will be restored to its normal or former level position to swing freely into and out of the door opening.

The principal object of the present invention is to provide a hinge construction which may be used for the support of doors particularly those of heavy construction and which is so designed that if sagging of the door occurs an easily made adjustment of the hinge can be effected so as to raise or lift the door and restore it to its normal position thereby eliminating the necessity of expending time and effort in taking down the entire door and resetting the hinges to accomplish this desired result.

Another object of the invention is to provide an adjustable hinge construction in which the construction and arrangement of the parts is relatively simple so that the hinge may be easily and quickly assembled and may be manufactured without greatly increasing the cost of the hinge and in which, also, the design is such that the desired relative movement between the leaves of the hinge may be accomplished by the use only of a wrench or similar tool.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing, it being understood, however, that the invention is not to be considered as limited by the specific illustration or description but that such illustration and description constitute a preferred embodiment of the invention.

In the drawing:

Figure 1 is a view partly in elevation and partly in vertical section of a hinge constructed in accordance with the present invention.

Figure 2 is a top plan view of the hinge.

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

Figure 4 is a bottom plan view of the hinge.

Figure 5 is a sectional view on the line 5—5 of Figure 1.

Referring now more particularly to the drawing the numeral 10 generally designates one leaf of the present hinge, this leaf being designed to be secured to the side of a door frame and having suitable apertures 11 for the passage therethrough of securing screws or bolts, not shown.

The fixed leaf 10 is of substantial height as well as width, as shown, and there is fixed at the lower part of one vertical edge, a relatively long interiorly threaded sleeve 12, the screw threads of which are indicated by the numeral 13. At the top of the vertical edge to which the sleeve 12 is secured, is an ear 14 which has a pintle opening 15 therethrough which is coaxial with the sleeve 12.

Threaded into the sleeve 12 from the lower end thereof is a relatively long bolt 16, upon the lower end of which is integrally formed the polygonal head 17 while there extends from the axial center of the other end the hinge pintle 18 which, when the bolt is threaded into the sleeve, passes through and fits snugly in the opening 15 of the ear 14. The upper end of this pintle 18 is screw threaded as indicated at 19 to receive a holding or locking nut 20 which bears upon the top of the ear 14, as shown.

The inner or upper end of the nut 16 is provided with the annular recess 21 which surrounds the pintle and in this annular recess is located an annular bearing unit 22.

The numeral 23 designates the movable hinge leaf which is secured to the door, it being provided with openings 24 for the passage of securing the screws and bolts therethrough.

At one end of this leaf 23 there is formed the hub 25 having a bore 26 therethrough for the reception of the pintle 18. This hub is formed in two diameters, the lower portion, substantially half the length of the hub, being of slightly reduced diameter, as shown and indicated by the numeral 27, to extend into the upper end of the sleeve 12.

A suitable recess 28 is formed between the smaller end of the hub and the adjacent end of the hinge leaf 23 so as to permit this smaller end 27 to extend into the sleeve. The lower end of the hub portion 27 rests upon the annular bearings 22 and when the hub turns around the pintle the weight of the object to which the leaf 23 is attached is carried by the bearing unit 22 and transmitted through this to the threaded bolt 16 and to the fixed leaf.

When the hinge is applied and is functioning to support a door, and it becomes necessary to take up sag in the door, this is accomplished by applying a wrench to the polygonal head 17 of the bolt and turning the latter thus feeding the bolt upwardly in the sleeve 12 and consequently

raising the leaf **23** and the door to which it is attached. After the door has been raised to the desired elevation whereby it is restored to its previous normal position, the nut **20**, which was raised by this operation is threaded down into contact with the ear **14** so as to lock the pintle and thus the reverse rotation of the bolt **16** such as might occur from frictional engagement between the hub **25** and the pintle when the door is swung back and forth, is prevented.

What is claimed is:

1. A hinge construction comprising a fixed leaf having a vertical edge, a centrally apertured ear secured to said vertical edge at the upper end thereof, an interiorly threaded sleeve secured to said vertical edge in spaced relation with said apertured ear and coaxial with the aperture of the ear, a bolt threaded into said sleeve and having a pintle forming an integral axial extension at one end, said pintle extending through the aperture of said ear and having screw threads upon the end adjacent the ear, a securing nut threaded upon the end of the pintle to bear against the side of the ear remote from the sleeve, a movable leaf, and a bearing hub integral with and extending transversely of an end of the movable leaf, said hub having said pintle extending therethrough and having one end supported upon the adjacent end of the bolt, said hub being of reduced external diameter through a portion of its length and extending into said sleeve.

2. A hinge construction comprising a fixed leaf having a vertical edge, a centrally apertured ear secured to said vertical edge at the upper end thereof, an interiorly threaded sleeve secured to said vertical edge in spaced relation with said apertured ear and coaxial with the aperture of the ear, a bolt threaded into said sleeve and having a pintle forming an integral axial extension of one end, said pintle extending through the aperture of said ear and having screw threads upon the end adjacent the ear, a securing nut threaded upon the end of the pintle to bear against the side of the ear remote from the sleeve, a movable leaf, a bearing hub integral with and extending transversely of an end of the movable leaf, said hub having said pintle extending therethrough and having one end supported upon the adjacent end of the bolt, said hub being of reduced external diameter through a portion of its length and extending into said sleeve, and an annular bearing encircling the pintle and interposed between the hub and the adjacent end of the bolt.

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