O. C. RIXSON.

BUTT HINGE.

APPLICATION FILED SEPT. 30, 1915.

1,175,560. Patented Mar. 14, 1916.

Fig. 1.

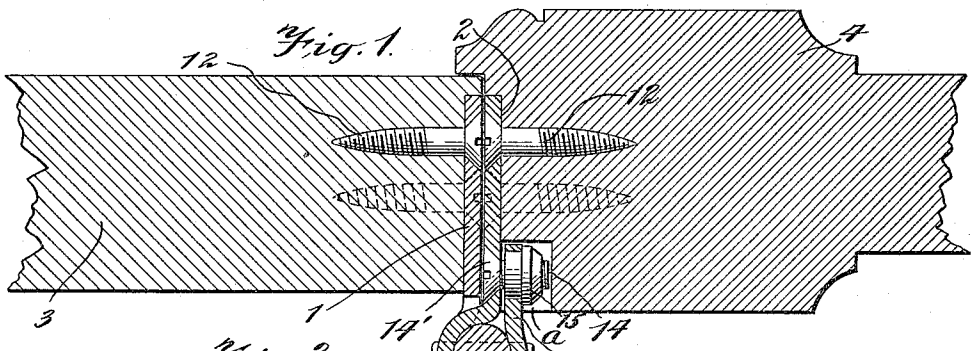


Fig. 2.

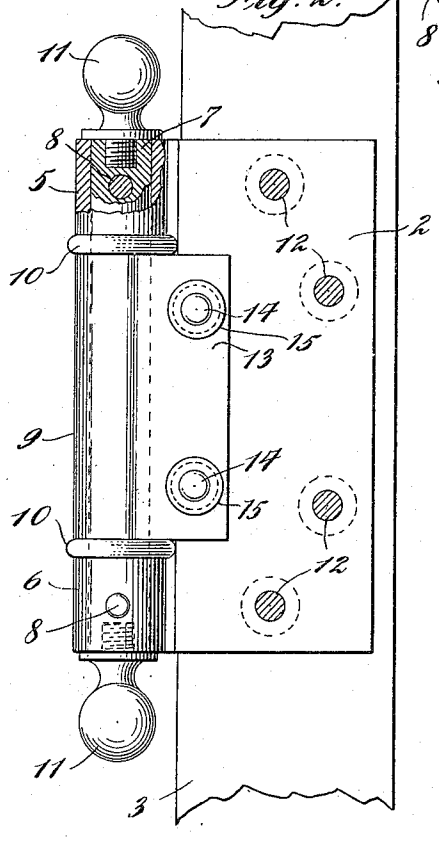
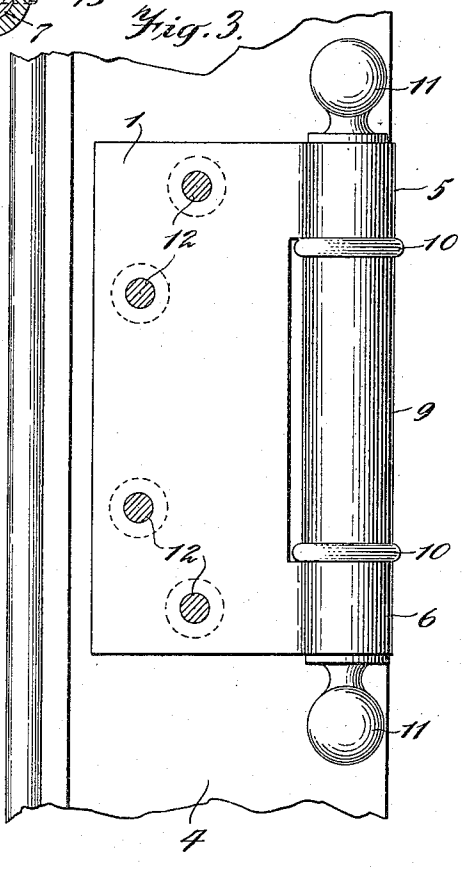


Fig. 3.



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BUTT-HINGE.

1,175,560. Specification of Letters Patent. Patented Mar. 14, 1916.

Application filed September 30, 1915. Serial No. 53,359.

To all whom it may concern:

Be it known that I, OSCAR C. RIXSON, a citizen of the United States, residing at New Rochelle, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Butt-Hinges, of which the following is a full, clear, and exact description.

This invention relates to hinges and more specifically to butt-hinges adapted for use with casements or with doors of various kinds, such as house doors, automobile doors and the like.

The object of this invention is to provide a butt-hinge which will hold a door or casement in any position in which it is placed; that is, instead of the door swinging loosely on its hinge as is the usual practice, the hinge is so constructed that considerable power is required to move the door from one position to another. A hinge of this character is particularly applicable for use with casements which swing inwardly, since the window may be opened to any desired extent and held there without requiring a sliding rod and post as is now frequently used for this purpose. It is also applicable to a bedroom door which it is frequently desired to leave in a partially opened position without danger of the door swinging entirely open and exposing the occupant to view. Numerous other constructions with which a hinge of this character may be used will be apparent and will not be enumerated in detail.

The invention consists of a hinge having one leaf which carries a pintle and the other an adjustable knuckle which surrounds the pintle together with means for adjusting the frictional engagement of the knuckle with the pintle; for by regulating the friction between these two parts, the door or casement will only be moved when a force of a determined magnitude is applied to it.

More specifically, the invention contemplates a construction of this character which is adapted for use with butt-hinges where it is necessary that the adjustable knuckle and the means for adjusting the same be so arranged that they will not interfere with the proper opening and closing of the door or casement.

My invention therefore comprises a leaf having a knuckle which forms a partially closed eye around the pintle together with means which passes from the front face of the leaf at which point it is adjusted through the free end of the eye to draw the eye more or less closely around the pintle and thereby regulate the frictional engagement between these parts. The means employed for adjusting the eye is such that it does not prevent the two leaves of the hinge from coming into abutting relation as is essential with a butt-hinge.

In the accompanying drawings, I have illustrated one embodiment of the invention and have shown the same associated with a door of the usual construction, and Figure 1 shows in transverse section the hinge secured to the door and jamb, the portions of the door and jamb adjacent the hinge alone being shown; Fig. 2 shows the hinge in elevation as it appears when viewed from the right of Fig. 1, the jamb of the door being removed to more clearly show the construction; and Fig. 3 is a similar view of the hinge as it appears when viewed from the left of Fig. 1, the door being removed to show the hinge in full.

As is the usual construction, the butt-hinge disclosed comprises two leaves which are designated 1 and 2; the leaf 1 is inset into the edge of a door 3 and the leaf 2 into the face of a jamb 4 of the door frame. Instead of a door and jamb, the parts 3 and 4 may be a casement sash and a window frame, respectively, or any other parts to which a swinging closure is secured by a hinge. In the specific embodiment of the invention shown the leaf 1 which is secured to the edge of the door has formed integral therewith knuckles 5 and 6 which form closed eyes and receive a pintle 7 which is held against longitudinal displacement and also against rotation by means of pins 8 which pass transversely through the knuckles and pintle. The knuckles 5 and 6 are positioned adjacent the top and bottom of the leaf, leaving a space between the two into which an intermediate knuckle 9 carried by the leaf 2 fits. The knuckle 9 is rotatably mounted upon the pintle 7. If desired hardened steel washers 10 may be placed between the intermediate knuckle and the end knuckles which will prevent any free play of the door in the direction of the axis of the hinge and will also take up the wear which is occasioned by the relative angular movement of the knuckles. Acorns 11 may also be provided which are threaded into each end of the pintle and serve merely

for ornamental purposes. The leaves 1 and 2 are secured to the door and jamb by screws 12 which have their heads countersunk into the leaf 2 so as not to interfere with the leaves coming into abutting relation when the door is closed as shown in Fig. 1.

The knuckle 9 instead of forming a closed eye as do the end knuckles 5 and 6, which is the usual construction, forms only a partially closed eye and the free end of the knuckle is extended to provide a flat strip or piece 13. This flat extension overlaps and is parallel to the rear face of the leaf 2; it does not, however, rest directly against the rear face of the leaf, but is separated therefrom by a small distance. The knuckle is preferably constructed from metal which is resilient. Threaded screws or bolts pass loosely through the leaf 2 from the front face and are threaded into the extension 13 so that by rotating these screws or bolts the eye formed by the knuckle 9 is opened or closed to a greater or less extent which will correspondingly vary the frictional engagement between the knuckle and the pintle which it surrounds.

In the embodiment shown instead of threading the bolts or screws 14 into the flat extension itself, hardened threaded bushings 15 are used. These bushings are driven into the openings provided for them with a force fit which prevents them from turning. The head 14′ of the bolts or screws, similar to the heads of the screws 12, are countersunk into the leaf so as not to interfere with the abutting relationship between the leaves when the door or casement is in closed position. In installing the hinge, a small recess or chamber *a* should be formed in the door jamb to receive the flat extension 13 and the end of the screws and also the bushings. This chamber may be made at the same time the recess is formed for the leaf.

The operation of the device is obvious, by merely turning the screw 14 the frictional engagement between the knuckle 9 and the pintle 7 may be varied to any desired extent so that the door may either swing loosely or only when considerable force is applied thereto. This adjustment is easily perfected since the head of the screws 14 are exposed when the door is in opened position.

Instead of placing the leaf 2 which carries the adjustable knuckle upon the face of the jamb, the same may be applied to the edge of the door. In either construction the flat extension, the bushings and ends of the screws are concealed from view so that in appearance the butt-hinge is similar to the ordinary hinge which swings loosely on its pivot.

While I have disclosed one specific embodiment of my invention, it is obvious that various modifications of the construction may be made and it is my intention that such modifications will come within the scope of the invention as set forth in the claims appended hereto.

I claim:

1. A butt-hinge for a door or casement comprising two leaves, a pintle carried by one of said leaves and non-rotative with respect thereto, a knuckle carried by the other of said leaves rotatably mounted on said pintle, said leaves having their front faces abutting each other when the hinge is in closed position, said knuckle comprising a partially closed eye having an extension from the free end thereof lying adjacent to the rear face of the leaf, and means positively engaging both the leaf and the extension for drawing these parts together to vary the frictional engagement between the pintle and knuckle.

2. A butt-hinge for a door or casement comprising two leaves, a pintle carried by one of said leaves and non-rotative with respect thereto, a knuckle carried by the other of said leaves rotatably mounted on said pintle, said knuckle comprising a partially closed eye surrounding the pintle, an extension from the free end of the eye lying adjacent to the rear face of said last named leaf, and an adjustable screw threaded member positively engaging both said extension and leaf for drawing them together to vary the frictional engagement between the knuckle and the pintle.

3. A butt-hinge for a door or casement comprising two leaves, a pintle carried by one of said leaves and non-rotative with respect thereto, a knuckle carried by the other of said leaves rotatably mounted on said pintle, said knuckle comprising a partially closed eye surrounding the pintle, a flat extension from the free end of the eye lying adjacent and parallel to the rear face of the said last named leaf, and means passing through said leaf from the front face thereof engaging said flat extension to draw the same toward the leaf and thereby increase the frictional engagement between the eye and the pintle, said last named means comprising a screw having its head countersunk in the front face of said leaf and its shank threaded into said flat extension.

In witness whereof, I subscribe my signature, in the presence of two witnesses.

OSCAR C. RIXSON.

Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."