Aug. 9, 1938. J. J. MUNSON 2,126,026

BOLTLESS BRACKET HINGE

Filed Sept. 24, 1937

Fig. 1.

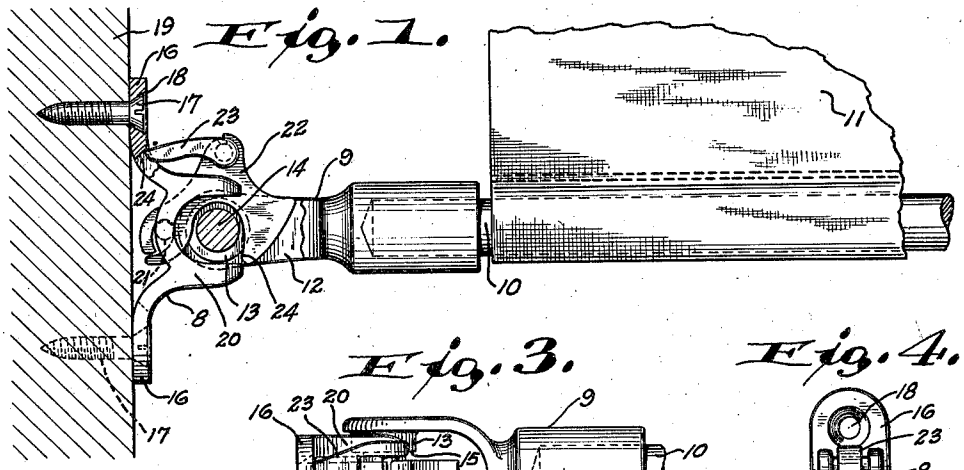


Fig. 3.

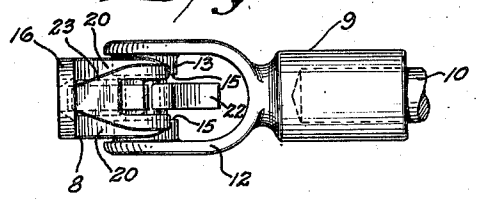


Fig. 4.

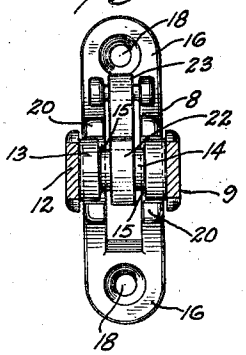


Fig. 2.

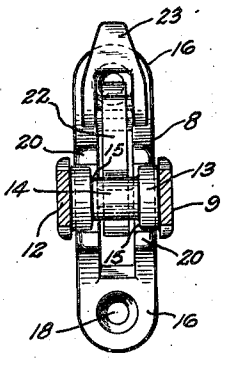


Fig. 5.

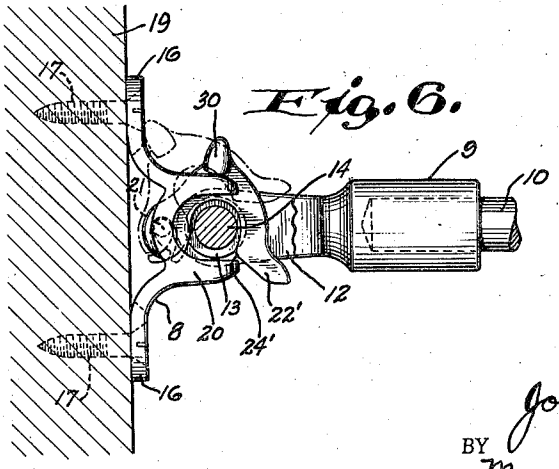


Fig. 6.

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BOLTLESS BRACKET HINGE

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7 Claims. (Cl. 156—15)

This invention relates to improvements in boltless bracket hinges, especially, although not solely, adapted for use in connection with the pivotal support of awning frames and the like.

It is customary to provide mounting hardware for awnings and the like which will permit movements of the awning frames for raising and lowering, and which will also permit removal of the awnings from the building at the end of a season. For this purpose there are interposed between the support and the inner ends of awning frame rods fixtures known as bracket hinges.

In the forms of bracket hinges in common use, each member consists of two parts; a bifurcated eared bracket which is permanently attached to the building, and an eye stub which is carried by the end of the awning frame rod. The eye stub fits between the ears of the bracket and is pivotal on a bolt threaded through said ears. In most instances when an awning is to be removed or mounted, the workman is positioned at an elevation on a ladder and is working under difficulties. With the prior type of bracket hinge described it is necessary, in order to make a connection or disconnection, that a screw driver be applied to the bolt. Due to the position of the workman this is awkward and difficult, and many times because of rust, corrosion, or stripped threads it is extremely difficult, if not impossible, to remove the hinge or pivot bolt.

Recognizing the aforementioned objections to the former types of bracket hinges, the present invention has for its object the provision of a boltless bracket hinge wherein connection and disconnection of the rod and relative to the bracket may be effected by a simple, quick manipulation without the use of tools.

Another object of the invention is to provide a boltless bracket hinge which eliminates the need of an eye stub, the same being objectionable because of the aperture there-through in which dirt, ice, and foreign matter can accumulate to prevent proper operation of the hinge.

A further object of the invention is to provide a boltless bracket hinge in which all portions of the bracket are integral, with no separate parts which require removal with the consequent danger of loss.

A further object of the invention is to provide a boltless bracket hinge which is easy of manipulation from any position, which will not be affected by weather, and which provides for a secure pivotal attachment, safe against accidental disconnection of the complementary members.

A further object of the invention is to provide a boltless bracket hinge which is of very simple construction, is easy to mount, connect, and manipulate, is inexpensive to manufacture, is strong and durable, and is well adapted for the purposes described.

With the above and other objects in view, the invention consists of the improved boltless bracket hinge, and its parts and combinations as set forth in the claims, and all equivalents thereof.

In the accompanying drawing in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a side view of the improved boltless bracket hinge shown attached to a support and carrying a frame rod, portions being broken away and in section to show details of construction;

Fig. 2 is a side view of the bracket in open position with the complementary member released and slightly removed therefrom, portions of the latter being broken away and in section.

Fig. 3 is a top view of the device;

Fig. 4 is a front view of the bracket in closed position and in engagement with the rod and member, the yoke portion of the latter being in transverse section;

Fig. 5 is a similar view only with the latch mechanism of the bracket in raised or open position; and

Fig. 6 is a side view, partly broken away and in section, of a modified form of bracket hinge.

Although the invention is shown and described herein as forming a hinge mounting for an awning frame, it should be understood that it is not the intent to thereby limit the scope of the invention, since the novel features are applicable generally to structures wherein a hinged or swivel connection between two separate elements is required.

Referring to the drawing it will appear that the bracket hinge comprises generally two complementary, separable members; a bracket 8 and a yoke member 9. The latter is illustrated as being fast on the inner end portion of a frame rod 10 to which a portion of an awning 11 is secured. The member 9 has a U-shaped frame or yoke portion 12 with the outer ends of the same connected by a bar 13 having a reduced intermediate portion 14 of circular cross-section with shoulders 15 there adjacent.

The bracket 8 has a pair of spaced-apart sup-

porting feet 16 to rest against a supporting surface, and attachment to the surface is effected by means of screws 17 extended through openings 18 in the feet, and threaded into the support 19. The body portion of the bracket is formed of a pair of laterally separated U-shaped bearing portions 20 which extend between the feet 16 and project forwardly or outwardly of the plane thereof. A pivot pin 21 is secured between the inner intermediate portions of said bearing portions 20 and the inner end of a pivotal latch 22 is movably mounted on said pin, said latch extending in the space between the portions 20. The latch 22 is so weighted and mounted that it will remain in either the "turned up" position of Fig. 2 or the "turned down" position of Fig. 1. To insure absolute retention of the latch in the latter position there is pivotally secured to its upper portion a locking arm 23. When the latch is turned down the locking arm may be thrown to the position of Figs. 1, 3, and 4, and the free end of the arm lodges against a shoulder 24 adjacent the upper foot 16. The shape of the latch 22 is clearly shown in the drawing and it will be particularly noted that its inner edge is provided with a substantially U-shaped recess 24. This recess, when the latch is turned down cooperates with the portions 20 to form a completely inclosed aperture for the reception of the intermediate bar portion 14 of the yoke member 9.

In the use of the bracket hinge illustrated in Figs. 1 to 5 inclusive, it will be described as used in connection with an awning frame, although this particular association is merely illustrative. As before mentioned the yoke element 9 is carried fast on the end of a frame rod 10. The bracket element 8 is mounted vertically against a surface of a support. In the use described the device affords means for removably, pivotally, mounting the end of the rod 10 adjacent the support. When the elements of the device are to be connected, the latch 22 is raised, as in Fig. 2, with the locking arm 23 also extending upwardly in an inoperative position. This position of the latch opens entrance to the U-shaped bearing portions 20. Then the yoke 9 is positioned so that its transverse bar is horizontal and this portion of the yoke is engaged with the members 20. Thereupon the latch is dropped so that it, and the portions of the bracket, completely surround the bar portion of the yoke. The portions 20 engage the enlarged portions of the transverse bar and the bar portion 14 is within the portion 24 of the latch. Lateral displacement is prevented by abutment of the shoulders 15 with surface portions of the latch. To releasably secure the latch in down-turned securing position, the arm 23 is thrown to the position of Fig. 1. Obviously, the yoke member and the rod and other members carried thereby may be pivotally moved relative to the support. In so doing, the bar portion of the yoke turns within the bearing portions 20 and the recess of the latch.

Disengagement of the yoke and bracket is effected in the reverse manner. The latch 22 and arm 23 are turned upwardly and then the yoke is released by pulling it forwardly, as in Fig. 2. Obviously this manipulation may be easily and quickly accomplished without the use of tools.

In Fig. 6 a slight modification of the invention is illustrated. In this form of bracket hinge all of the elements are the same as those described in connection with the principal form except the latch 22' which is of somewhat different shape, and the locking arm for the latch is dispensed with. As will be noted from Fig. 6 said latch 22' is provided with a relatively heavy head portion 30 and the contour of the inner U-recess 24' is such that a slight upward pull on the yoke will not cause it to engage the latch surface in a direction so as to cause undesired lifting of the latch. When the yoke member is to be released, the latch 22' is swung to the raised dotted line position shown.

From the foregoing description it will be seen that the invention provides a bracket hinge which eliminates the need for a bolt for connecting the complementary elements. Sections of the device may be completely separated or engaged very easily and quickly without the use of tools, and when the elements are connected they are securely held against undesired, accidental, disengagement. Also the improved boltless bracket hinge is of simple and novel construction, and is well adapted for the purposes set forth.

What is claimed as the invention is:

1. A hinge member for interposition between two relatively movable elements, comprising a bracket carried by one of the elements, and a stub carried by the other of said elements, the bracket having a bearing recess, and the stub having a transverse bar portion positionable within said recess for turning movement, and means for closing said recess and completely confining the bar portion therewithin.

2. A hinge member for interposition between two relatively movable elements, comprising a bracket carried by one of the elements, and a stub carried by the other of said elements, the bracket having a bearing recess, and the stub having a transverse bar portion positionable within said recess for turning movement, and releasable latch means for closing said recess and completely confining the bar portion therewithin.

3. A hinge member for interposition between two relatively movable elements, comprising a bracket carried by one of the elements, and a stub carried by the other of said elements, the bracket having a bearing recess, and the stub having a transverse bar portion positionable within said recess for turning movement, and gravity influenced means for closing said recess and completely confining the bar portion therewithin.

4. A hinge member for interposition between two relatively movable elements, comprising a bracket carried by one of the elements and having a socket therein, and a bifurcated member carried by the other of said elements and having a rod spanning the ends of the bifurcations, said rod being positionable within said socket for turning movement therein, and curved latch means carried by the bracket for closing said socket and confining the rod therewithin.

5. A hinge member for interposition between two relatively movable elements, comprising a bracket carried by one of the elements and having a socket therein, and a bifurcated member carried by the other of said elements and having a rod spanning the ends of the bifurcations, said rod being removably positionable within said socket for turning movement therein, and curved, gravity influenced latch means pivotally carried by the bracket for closing said socket about the rod portion.

6. A hinge member for interposition between two relatively movable elements, comprising a

bracket carried by one of the elements and having a socket therein, and a bifurcated member carried by the other of said elements and having a rod spanning the ends of the bifurcations, said rod being removably positionable within said socket for turning movement therein, latch means movably carried by the bracket for closing said socket about the rod portion, and a locking member for releasably holding the latch in socket closing position.

7. A hinge member for interposition between two relatively movable elements, comprising a bracket carried by one of the elements and having a socket therein, and a bifurcated member carried by the other of said elements and having a rod spanning the ends of the bifurcations, said rod being removably positionable within said socket for turning movement therein, latch means movably carried by the bracket for closing said socket about the rod portion, and a pivotal locking arm carried by the latch and releasably engageable with a portion of the bracket to hold the latch in socket closing position.

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