ADJUSTABLE CORNER BRACE ASSEMBLY

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Field of Search 5/203, 200 R, 282 R, 287, 5/288, 345 WB; 297/452; 403/40; 312/263; 52/753 R

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ABSTRACT

By anchoring eye bolts in adjacent frame members of a frame assembly and interconnecting these eye bolts by means of a turnbuckle, a simple, inexpensive, extremely effective corner brace assembly is provided. By merely rotationally adjusting the turnbuckle, the adjacent frame members are drawn tightly together and are firmly held in any desired position. In the preferred construction, the eye bolts are positioned in a hole on the inside surface of the frame members and are anchored in this hole by means of an elongated pin, passing through another hole arranged substantially perpendicularly to the eye bolt hole and having its entry portal at the bottom of the frame member. In this way, all visible surfaces of the frame members are free from unsightly holes, presenting an aesthetically pleasing, smooth surface.

4 Claims, 3 Drawing Figures
ADJUSTABLE CORNER BRACE ASSEMBLY

This invention relates to corner brace assemblies, and more particularly to such assemblies for use with conventional and waterbed frame systems.

SUMMARY OF THE INVENTION

Most prior art bed frames incorporate rigidly interconnected frame members, many of which employ bolts means passing through the outer, exposed, viewable surfaces of the frame members. This presents an extremely unsightly appearance to the bed frame assembly, with holes and bolt heads readily viewable at each corner of the bed frame. In an attempt to eliminate such constructions, many complicated systems have been developed which employ cables running throughout the entire interior surface of the frame assembly secured at various points along the interior peripheral surface thereof. Such bracing systems have employed a single turnbuckle in combination with an array of expensive hardware disposed throughout the interior peripheral surface. This type of system, which is disclosed in U.S. Pat. No. 1,730,442, functions as a single unitary brace assembly for the entire frame system. Consequently, any failure in the brace assembly causes a failure of the frame system.

Therefore, it is a principal object of this invention to provide a corner brace assembly rapidly installable in each corner of a frame system and easily adjustable.

Another object of this invention is to provide the corner brace assembly described above which is inexpensive, easily installable, and is totally independent of the remaining corners of the frame system.

Another object of this invention is to provide a corner brace assembly as described above which is completely assembled using interior and unviewable surfaces of the bed frame members, thereby providing a smooth, unbroken exterior surface to the bed frame.

Other and more specific objects of the invention will in part be obvious and will in part appear hereinafter.

The corner brace assembly of this invention employs at least two eye bolts, each of which are securely anchored to adjacent frame members near the corner of the frame. The eye bolts are interconnected by means of a single turnbuckle. Rotational adjustment of the turnbuckle draws the frame members together until the desired angular relationship is achieved, securely and firmly bracing and maintaining the frame members in the desired configuration. In the preferred embodiment, each frame member incorporates a hole on the interior surface thereof for receiving the eye bolt, and also incorporates another hole substantially perpendicular to the first hole and passing through the first hole, for accommodating an elongated pin which passes through the eye of the eye bolt, anchoring the eye bolt in position. The entrance portal to the elongated hole for the pin is on the bottom surface of the frame member, thereby assuring that neither the pin hole nor the eye bolt hole is exposed to view. Furthermore, in the preferred construction, two pairs of corner brace assemblies are employed to assure the strong, rigid construction desired.

The corner brace assembly is rapidly and easily installed by merely inserting the elongated pin in its receiving hole, passing the pin through the eye of the eye bolt, and maintaining it in this hidden position while performing the exact same operation on the adjacent frame member. Once the two eye bolts have been anchored in their desired position, the turnbuckle is attached to the other ends of the eye bolts and rotationally adjusted until the desired angular arrangement of the frame members is securely and firmly established.

In order to assure that the rotational adjustment of the turnbuckle provides the desired securement of the frame members, one eye bolt incorporates left-handed threads, while the other eye bolt incorporates right-handed threads. In this way, advance of the eye bolts towards each other upon rotation of the turnbuckle is provided. Furthermore, each corner brace assembly is completely independent from the remaining corners. Consequently, any failure in one corner of the frame system will not result in the total collapse of the braced frame system. Also, the brace assembly of this invention provides greater versatility and flexibility than could be achieved with the prior art system.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

THE DRAWINGS

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description, taken in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a typical bed frame system incorporating the corner brace assembly of this invention;

FIG. 2 is a greatly enlarged perspective view of one corner of the frame system of FIG. 1, showing in greater detail the corner brace assembly of this invention; and

FIG. 3 is a cross-sectional side-elevation view taken along line 3—3 of FIG. 2, showing the secure anchored arrangement of the corner brace assembly of this invention to the frame member.

DETAILED DESCRIPTION

In FIG. 1, corner brace assembly 20 of this invention is shown securely mounted in place on a typical bed frame system 22. Frame system 22 incorporates frame members 24, 26, 28, and 30. By referring to FIG. 1, it becomes readily apparent that by employing corner brace assembly 20 of this invention, the exposed, outer, viewable surfaces of frame system 22 contains no unsightly holes, filler, glue marks, dowels, or covering plugs. Instead, a clean, smooth, aesthetically-pleasing outer peripheral surface is obtained.

By referring to FIGS. 2 and 3, the construction and installation of corner brace assembly 20 of this invention can best be understood. Corner brace assembly 20 comprises anchoring pins 32 and 34, eye bolts 36 and 38, and turnbuckles 40. In the preferred embodiment shown in FIG. 2, eye bolts 36 incorporate left-handed threads for threaded engagement with turnbuckle 40, while eye bolts 38 incorporate right-handed threads for threaded engagement with turnbuckle 40. Furthermore, in this embodiment, two pair of eye bolt and turnbuckle units are employed in order to assure a securely-braced corner arrangement. Frame member 24 is provided with holes 42, drilled through its interior surface, and a third hole 44 drilled through the bottom surface of frame member 24, sub-
stantially perpendicular to holes 42 and passing therethrough. Similarly, frame member 26 incorporates holes 46 on its inside surface, and hole 48 drilled through its bottom surface, substantially perpendicular to holes 46 and passing therethrough.

In order to install the corner brace assembly of this invention, eye bolts 36 are positioned in holes 42, and pin 32 is extended into hole 44, capturing the eye of eye bolts 36 and thereby anchoring eye bolts 36 within holes 44. Similarly, eye bolts 48 are positioned in holes 46, and pin 34 is extended through hole 48, capturing the eye of eye bolts 48, thereby anchoring eye bolts 48 in holes 46. Frame members 24 and 26 are then positioned in the relative angular arrangement desired, and turnbuckle 40 is rotated until frame members 24 and 26 are tightly secured in the desired angular arrangement. Similar corner brace assemblies can then be installed at each corner formed by the remaining adjacent frame members until the entire frame system has been tightly and securely mounted together.

The corner brace assembly of this invention provides an extremely inexpensive, readily-installable brace assembly for the frame system, which assures a strong, rigid interconnection between frame members. Furthermore, the adjustability of the corner brace assembly provides assurance that the desired angular arrangement of the frame members can be precisely achieved and then maintained. Also, each corner is independently securely braced and is not dependent upon the remaining corners in order to gain its strength. In this way, the possible failure of a single corner will not result in the total collapse of the frame system.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An adjustable corner brace assembly for interconnecting adjacent abutting frame members of a frame system, comprising:

   A. a plurality of frame members incorporating eye bolt anchoring recesses near the ends of said adjacent, abutting frame members on the inside surface thereof;

   B. eye bolt means pivotally mounted in the recesses of said frame members extending therefrom towards said adjacent frame members;

   C. anchoring means pivotally securing said eye bolt means in the recesses of said frame members; and

   D. turnbuckle means interconnecting said eye bolt means forming a unitary structure therewith; whereby rotational adjustment of said turnbuckle means tightly secures and maintains said frame members in their desired angular arrangement securely holding said frame member in abutting relationship with the adjacent frame member, without any outwardly visible deformities in said frame members.

2. The adjustable corner brace assembly defined in claim 1, wherein said frame member is further defined as incorporating two substantially perpendicular intersecting holes and said anchoring means comprises elongated pins adapted for positioning in one of said holes, capturing the eye of said eye bolt means.

3. The adjustable corner brace assembly defined in claim 1, wherein said eye bolt means is further defined as incorporating at least two eye bolts, at least one of which incorporates left-handed threads, while at least another of which incorporates right-handed threads.

4. A corner brace assembly, for maintaining two adjacent frame members of a frame system in secure abutting relationship, comprising:

   A. a frame system incorporating a plurality of frame members, each of said frame members comprising:

      a. eye bolt receiving recesses on the inside surface of said frame members, and

      b. anchoring means receiving slots extending across said recesses;

   B. eye bolt means positioned within the receiving recess of one frame member, extending toward said adjacent frame member;

   C. anchoring means positioned within said receiving slots and extending through said eye bolt means, pivotably securing said eye bolt means to said frame member; and

   D. turnbuckle means interconnecting adjacent eye bolt means, forming an adjustable unitary structure therewith, whereby the abutting edges of two adjacent frame members are securely held together by merely tightening said turnbuckle, without any externally visible deformities in said frame members.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,879,774 Dated April 29, 1975

[Signature]

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 1, line 67, "hidden" should be deleted.

Signed and Sealed this twenty-second Day of July 1975

[Seal]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks