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[54] **MECHANICAL FASTENER FOR FRAME OF BED**

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[52] **U.S. Cl.** **5/296,** 211/148

[51] **Int. Cl.** **A47c 19/00,** A47f 5/00

[58] **Field of Search** 248/224; 5/292, 294, 5/296, 304; 211/148, 176, 178

[56] **References Cited**

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[57] **ABSTRACT**

A great flexibility of use and reduction of inventory are made possible by the convertible bed rail connector means of the invention which allows connection of a bed rail means to a bed post means alternately by hook means or bolted means while at th same time allowing the bed rail means to either support the bed post means as would be the case in a "Hollywood" bed arrangement or will allow the bed rail means to be supported by the bed post means as is the case in a conventional bed stead arrangement. An angular bracket member is movably coupled to a bed rail means so that hook means on the bed rail means may pass through a slot in the bracket to effect hook coupling means and to be retracted to a position where the bracket may be connected to the bed post means for either supporting the bed rail means or being supported by the bed rail means.

12 Claims, 4 Drawing Figures

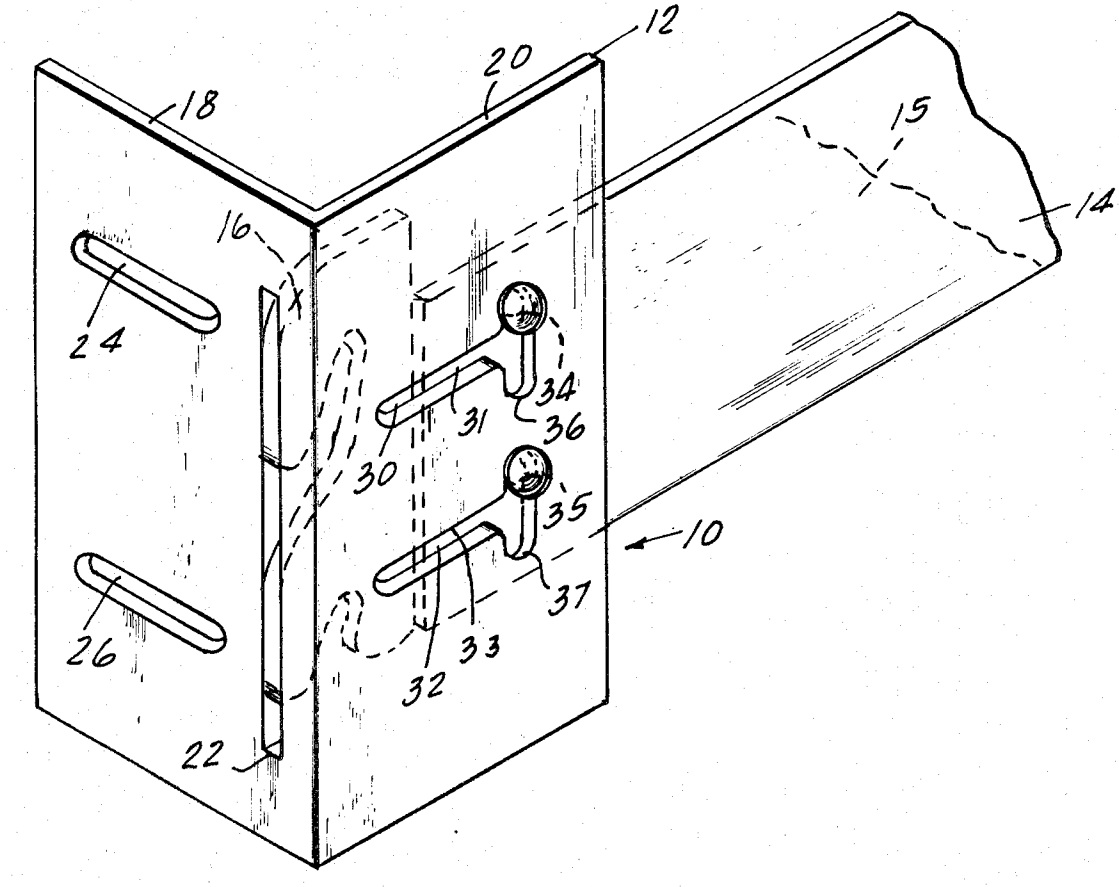


Fig. 1

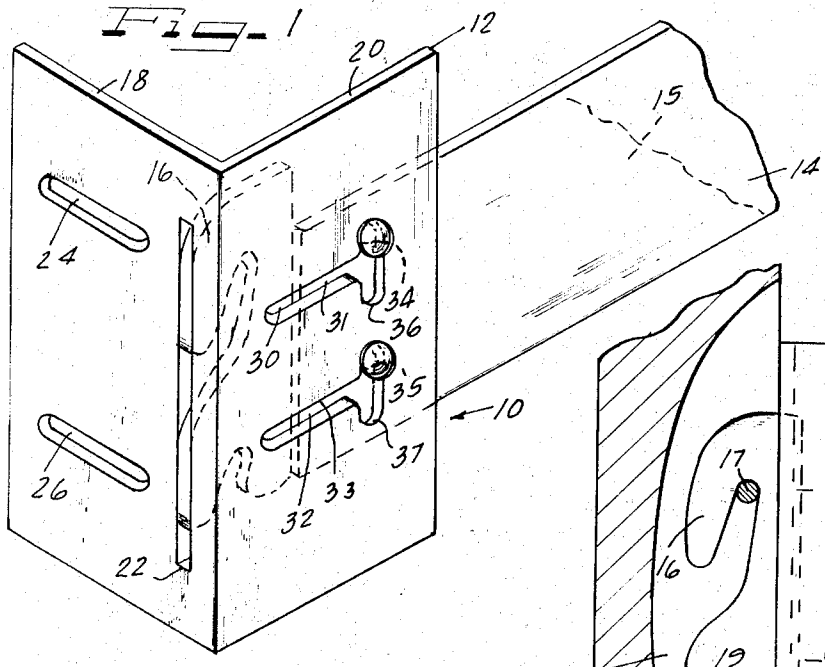
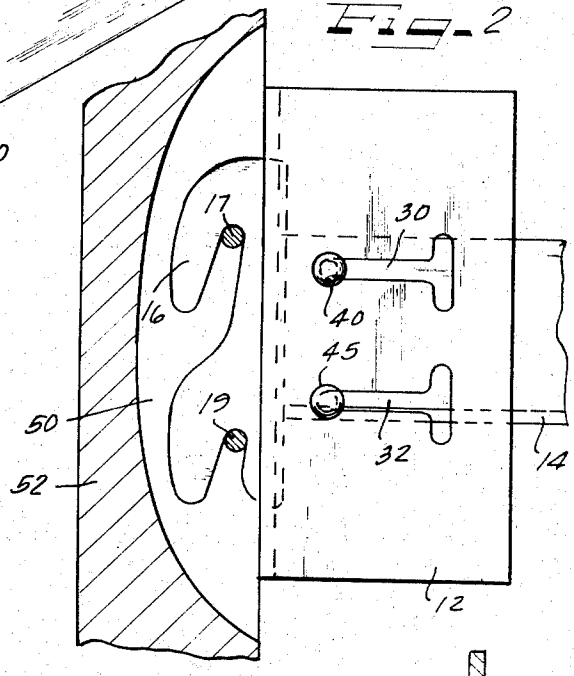


Fig. 2



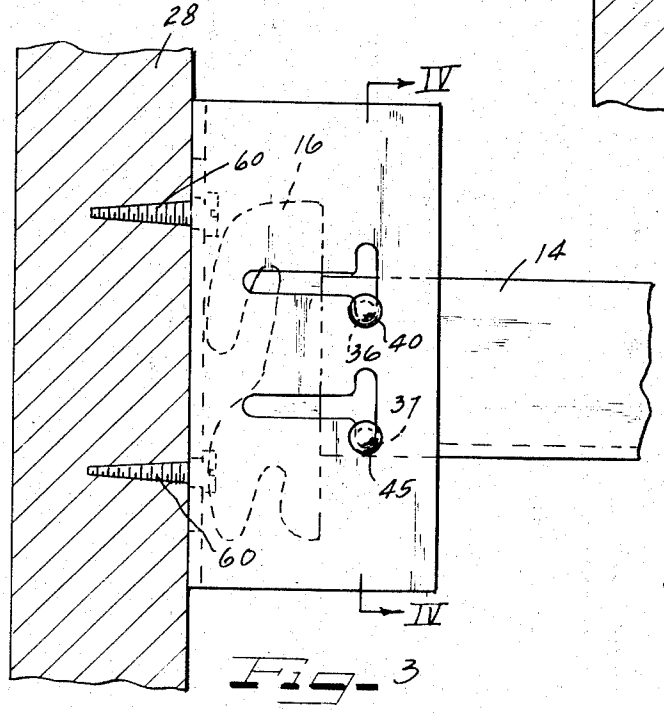


Fig. 3

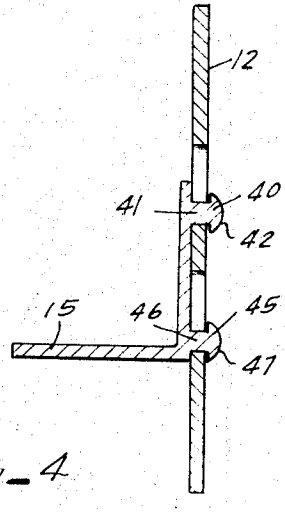


Fig. 4

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MECHANICAL FASTENER FOR FRAME OF BED

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention generally relates to a bed element construction and more particularly concerns a corner connection between a bed post means and a bed rail means.

2. Prior Art

It is well known in the prior art that bed rails supporting a mattress and/or box springs may be attached to a bed headboard ot footboard by either a "hook" type fastener or a "bolt-on" type fastener. In the case of "hook" type fasteners a pair of hooks at each end of a bed rail are received in a slot in a bed post means and slide down or are hooked over supporting pins. This latter construction is used where the bed ends are made of wood. Where metal construction is used, however, the bed rails are fastened to the bed ends by the "bolt-on" connection.

Whereas in the past bed ends connected by a pair of rails have supported the springs and mattress, it is not popular to provide a wheeled frame to support the springs and mattress and to which frame at least a headboard may be connected. It will be evident from the above numerated different types of bed connections that many different types of bed rails must be maintained in stock by manufacturers, wholesalers and retailers. Not only does the stocking of a large number of different types of bed rails to meet these various requirements require greater space on the part of those involved, but it also is expensive and greatly inconvenient.

SUMMARY OF THE INVENTION

The disadvantages of the prior art are overcome by our invention herein of a convertible bed rail connector means which allows connection of a bed rail to a bed post means by either hook means or bolted means and in the latter case allows the bed rail means to either support the bed post means or be supported by the bed post means.

In the preferred embodiment of our invention the connector means includes a bracket member and a bed rail means with the bed rail means having a hook means thereon. While the invention is described in terms of only a single connection it will be understood that this connection may be applied to both ends of the bed rail means. The side of the bracket member which is adapted to abut the bed post means has a slot therein in alignment with the hook means so that the hook means may pass into and through and out of the slot depending upon the position desired. The bracket has a mounting means for attaching the bracket to a bed post means and the bed rail means and the bracket member are held in movable relationship to each other by a coupling means which allows relative movement therebetween.

The bracket member mounting means may be of any conventional type and as shown includes at least one hole through which the bracket may be bolted or otherwise secured to the bed post means.

The coupling means which allows relative movement between the bracket member and the bed rail means includes at least one opening in a portion of the bracket member which is angularly related to the portion which abuts the bed post means. At least one headed projection which is secured to and projects from the bed rail member is received through the opening and may move therein. As set forth the bracket member may be of a generally right angular configuration with a first flange portion having the slot therein and a second flange portion having the openings therein. The openings in the second flange portion may have a generally horizontal portion with enlarged areas or portions at an inner end thereof. The horizontal portion of the opening will be of a position and of a length to allow the hook means to project through the slot means to an operative position and also to allow the hook means to be retracted to at least flush with the outer surface of the first flange portion of the bracket means. The enlarged portions may include an upper portion and a lower portion which will serve to prevent movement of the projections on the bed rail means when the bracket member is bolted to the bed end and either supports the rail members or is supported by the rail members.

From the above summary of the invention it may be seen that we have discovered a convertible bed corner connection means which will serve its purpose in all types of bed construction and hence reduce bed rail inventories. A further advantage of our invention is that when the bed rails are being shipped the hook means may be retracted and held in a retracted position by means of tape, etc. so that they will not be damaged during shipment and so that less room will be required during transit and storage.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects, features and advantages of the invention will be readily apparent from the following description of certain preferred embodiments thereof, taken in conjunction with the accompanying drawings, although variations and modifications may be effected without departing from the spirit and scope of the novel concepts of the disclosure, and in which:

FIG. 1 is a perspective view of the connector means according to our invention illustrating the condition where the hook means is retracted and the bed rail means is supporting the bracket and is locked in place in an upper enlarged portion of the openings;

FIG. 2 is a side elevational view of our invention with the hook means extended beyond the bracket member and is hooked in position in a slot; and,

FIG. 3 is a side elevational view of our invention with the hook means retracted and the bracket bolted to the bed end to support the side rail means.

FIG. 4 is a section along the line IV—IV of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1 there may be seen a convertible bed rail connector means generally indicated at **10** which includes a generally right angular bracket member **12** and a bed rail means **14**. As may be best seen in FIG. 2 the bed rail means **14** includes a hook means **16** attached to an end thereof. It will be understood that while only a single bed connector construction is disclosed that the same construction and the principles thereof may be used at two or four corners of the bed. Thus, the bed rail means **14** may include the connector means construction **10** at either end thereof. Connection of the hook means **16** to the bed rail means **14** may be in a conventional manner.

The bracket member 12 includes a first flange 18 and a second flange 20 angularly related to each other. The first flange 18 includes a slot 22 therein through which the hook means 16 may slide. In addition the first flange portion 18 of the bracket 12 may include at least over hole 24 by means of which the bracket 12 may be bolted or otherwise secured to a bed post means 28 as shown, for example, in FIG. 3. We have found it advantageous to include a second hole 26 to allow attachment of the bracket member 12 to the bed post means 28. It will be understood that the attachment of the bracket member 12 to the bed post 28 may be in any conventional manner and is not limited to the particular means shown or suggested in the drawing. The bed rail means 14 may include a lower projecting flange 15 to provide strength and to provide a support means for the springs or mattress.

The second flange 20 of the bracket member 12 includes one or more openings 30, 32 which have elongated, generally horizontally disposed portion 31, 33, respectively and which each include an upper portion 34, 35 respectively extending above the upper edge of the elongated portions 31, 33 and a lower portion 36, 37 respectively extending below the lower edge of the elongated portions 31, 33.

A pair of studs 40, 45 are attached to and project from the bed rail means 14 as shown in FIG. 4 and each have a shank portion 41, 46 respectively extending through the openings 30, 32 with an enlarged headed portion 42, 47 at the end of the shank a distance greater than the thickness of the flange 20 to allow relative movement between the bracket member 12 and the bed rail means 14 and yet prevent their disengagement from each other.

By this means it may be seen that the hooked portion 16 may be moved from a retracted position as shown in FIGS. 1 and 3 where the hook 16 does not project through the slot 22 beyond the outer edge of the flange 18 to an extended position as shown for example in FIG. 2 where it is almost fully extended through the slot 22. The openings 30, 32 will be so positioned and of such a length as to allow the studs to move so that the hook means 16 may be fully extended. In the position shown in FIG. 2 the hook means 16 engage a pair of supporting pins, 17, 19 which extend through a slot 50 in a post means 52. This represents a conventional construction wherein the post means 52 on either end of the rail means 14 supports the rail 14 and the downward pressure exerted by the weight thereon.

Where the hook means is retracted as shown, for example, in FIG. 3 the bracket member 12 may be bolted to or otherwise secured to the bed post means 28 by suitable fastening means such as shown at 60. Where the bed post means 28 engages a floor or supporting surface and supports the rail means 14 it may be seen that the studs 40, 45 are seated in the lower portions 36, 37 to prevent relative movement between the bracket member 12 and the bed rail means 14. By means of this locking effect a rigid joint is obtained by the weight of the bed springs, mattresses etc., on the bed rail means 14.

Where the bed rail means 14 is supported independently of the head board or bed post means and the bed rail means in effect support the bed post means secured to the bracket member 12 by suitable means, the weight of the bed post means will move the bracket member 12 downwardly to engage the studs 40, 45 in the upper portions 34, 35 of the openings 30, 32 and thereby securely lock the bracket 12 and attach the bed post in a supported position.

From the foregoing description of the invention it may be seen that we have invented an efficient, greatly flexible convertible bed rail connector means which overcomes the disadvantages of the prior art and is economical and simple to construct and use.

Although minor modifications might be suggested by those versed in the art, it should be understood that we wish to embody within the scope of the patent warranted hereon all such modifications as reasonably and properly come within the scope of our contribution to the art.

We claim as our invention:

1. A convertable bed rail connection means connecting a bed rail means to a bed post means by either a hook means or bolted means, said bolted means supporting said bed post means when said bed rail means is independently supported.

2. A convertible bed rail connection means according to claim 1 wherein said construction comprises a bracket member and a bed rail means, said bed rail means having a hook means thereon, said bracket member having a slot therein in alignment with said hook means so that said hook means may pass through said slot, said bracket having mounting means for attaching said bracket to a bed post means, said bed rail means and bracket members having coupling means joining said members together yet allowing relative movement therebetween.

3. A convertible bed rail connection means according to claim 2 wherein said bracket member mounting means includes at least one hole whereby said bracket may be bolted to said bed post means.

4. A convertible bed rail connection means according to claim 2 wherein said coupling means include at least one opening in a portion of said bracket member which is adjacent to said rail member, said opening receiving therethrough a headed projection which is secured to and projects from said rail member.

5. A convertible bed rail connection means according to claim 4 wherein said bracket member is of a generally right angular configuration and has a first flange portion and a second flange portion, said slot being in said first flange portion and said opening being in said second flange portion.

6. A convertible bed rail connection means according to claim 5 wherein said opening has a horizontal portion with enlarged portions, said horizontal portion being of a length to allow said hook means to be retracted through and into said slot; said enlarged portions including an upper portion above said horizontal portion and a lower portion below said horizontal portion, said upper and lower portions being positioned so that said bracket member may either support said rail member or be supported by said rail member.

7. In a bracket for a bed rail having a generally planar hook member, the combination comprising; a connector member having a relatively plane flange disposed adjacent to and parallel to said hook member, said flange having a slot therein extending in a direction generally parallel to the longitudinal direction of said rail, a projection secured to said rail and extending generally horizontally through said slot to limit relative motion between said rail and said connector member in a vertical direction, said slot being positioned on said

connector member to permit said hook member to be moved relative to said flange so that said hook member extends beyond said flange when said projection is near one end of said slot, and so that said hook member does not extend beyond said flange when said projection is near the opposite end of said slot.

8. Apparatus according to claim **7,** wherein said flange has two slots spaced apart and generally parallel to each other, and said rail has two projections, one for each of said slots.

9. Apparatus according to claim **7,** wherein said slot joins a second slot at one end of the first slot, said second slot being disposed at an angle to the first slot to limit relative motion between said rail and said connector member in said longitudinal direction when said projection is within said second slot.

10. Apparatus according to claim **9,** wherein said second slot extends downwardly from the end of the first slot.

11. Apparatus according to claim **9,** wherein said slot extends upwardly from the end of the first slot.

12. Apparatus according to claim **7,** including a second flange secured to an end of the first flange and adapted to be removably secured to a bed post means.

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