

Feb. 15, 1927.

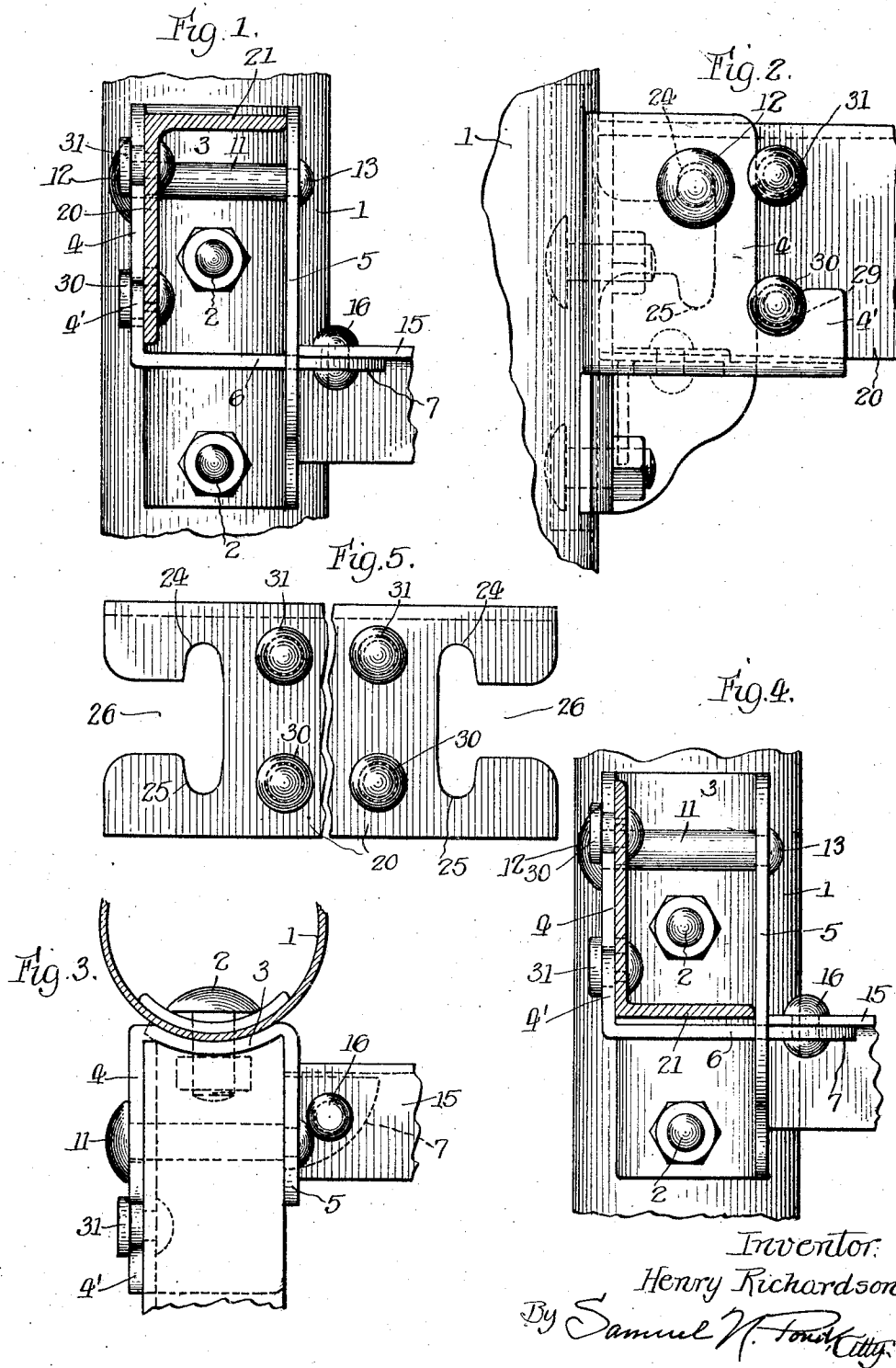
H. RICHARDSON

1,617,865

CORNER LOCK FOR BEDSTEADS

Filed June 28, 1924

2 Sheets-Sheet 1



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Fig. 6.

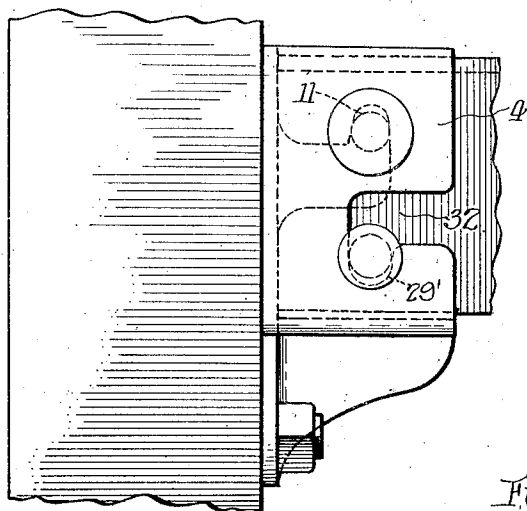


Fig. 7.

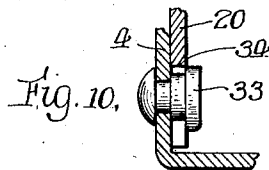
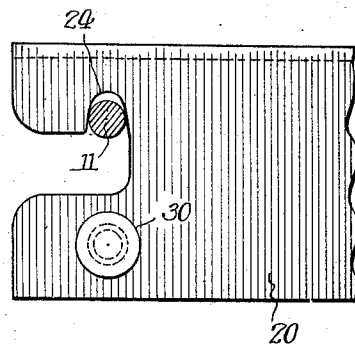


Fig. 8.

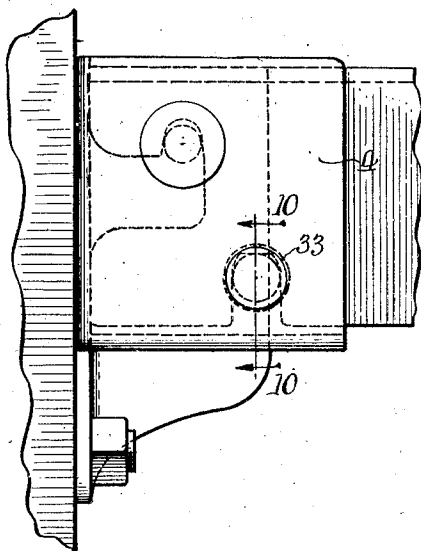
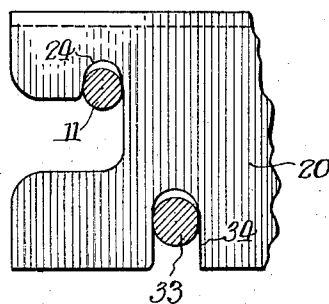


Fig. 9.



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UNITED STATES PATENT OFFICE.

HENRY RICHARDSON, OF CHICAGO, ILLINOIS.

CORNER LOCK FOR BEDSTEADS.

Application filed June 28, 1924. Serial No. 722,908.

This invention pertains to improvements in what are commonly known as corner locks for bedsteads, including the instrumentalities by which the side rails or end rails, or both, of a bedstead frame, or the side rails of a bed spring are separably united to the corner post of the bedstead frame.

In some types of corner locks the side rails are secured on or in the corner bracket by means of cams, thumb-screws, or similar clamping or fastening devices; and in other types, which are commonly known as "automatic", the side rail is secured on or in the bracket by interlocking devices which involve only a relative movement of the rail and bracket to bring the locking devices into co-operative relation.

My present invention relates to corner locks of the latter type, preferably employing a sheet-metal bracket, and has for its main object to provide a construction characterized by great simplicity, economy of manufacture, ease of manipulation, and a high degree of efficiency, and which will strongly and rigidly secure the side rail to the bracket and effectively resist any tendency of the corner posts to tip or cant under the load out of a true vertical position. Other objects of the invention are, to provide a construction employing spaced co-operating rail locking devices, which shall be located on laterally adjacent vertical members of the bracket and side rail respectively and wherein the side rail will preferably lie within the bracket, with the end of the side rail preferably contiguous to the post plate of the bracket; to provide a construction wherein it shall be practical to locate the rail locking elements which pertain to the side rail on or in an integral end portion of an ordinary angle side rail, without necessitating the addition of any specially formed side rail attachment or head piece to carry the rail locking elements; to provide an improved construction of corner lock wherein the side rail and bracket may be brought into interlocked relation by a downward movement of the side rail relatively to the bracket; and, in one form of the invention shown, to provide a construction possessing the characteristics and advantages above pointed out, and wherein also the side rail may be mounted in either upright or inverted position so as to serve either a bed spring or slats.

Other objects and attendant advantages of the invention will be apparent to persons skilled in the art as the same becomes better understood from the following detailed description, taken in connection with the accompanying drawings wherein I have shown several specific forms or embodiments of the invention, and in which—

Fig. 1 is a front elevation of my improved corner lock shown applied to a round corner post and with the side rail secured therein by my improved locking means, the side rail appearing in section;

Fig. 2 is a side elevation as viewed from the left of Fig. 1;

Fig. 3 is a top plan view of Fig. 1;

Fig. 4 is a view similar to Fig. 1, showing the inverted position of the side rail in the bracket;

Fig. 5 is an outer side elevation of the side rail broken out, and showing the locking devices on the ends thereof;

Fig. 6 is a side elevation, similar to Fig. 2, of a modification wherein the upper and lower co-operating locking devices are both located in a common vertical plane;

Fig. 7 is a side elevation of the end portion of the side rail that enters the bracket shown in Fig. 6;

Figs. 8 and 9 are views corresponding to Figs. 6 and 7, respectively, showing a slight modification involving a reversal of position of the pin and slot constituting the elements of the lower lock; and

Fig. 10 is a sectional detail on the line 10—10 of Fig. 8.

The corner bracket herein shown is structurally substantially identical, except as to the lower locking element formed therein, with a corner bracket disclosed and claimed in a former application filed by me on the 21st day of March, 1924, Serial No. 700,747. Referring first to the construction illustrated in Figs. 1 to 5 inclusive, 1 designates a round corner post to which the corner bracket is rigidly attached by bolts 2. The bracket itself may be cut and bent to shape from a single sheet metal blank, and comprises a back plate 3 which, in case of a round post, is transversely concaved to fit the latter, as shown in Fig. 3, an outer vertical side wall 4, an inner vertical side wall 5, and a bottom plate 6. The portions of the blank forming the bottom plate 6 may be severed from the back plate 3, and its severed edge is con-

caved when required to fit a convex back plate, and the bottom plate 6 is bent at a right angle to the outer side plate 4. The free edge of the bottom plate 6 is formed with a wing extension 7, the preferred form thereof being shown by dotted lines in Fig. 3. The outer and inner side walls 4 and 5 may be bent forwardly from the back plate 3, and, when so bent, the wing 7 of the bottom plate (which has been previously bent upwardly) passes through a slot in the inner side wall 5. The wing 7 and the slot through which it passes are of less width than the wall members on and in which they are respectively formed, so that portions of the wall 5 on either side of the slot abut squarely against the free edge portions of the bottom wall 6 on either side of the wing 7. In the side walls 4 and 5 are formed registering holes through which is passed a pin 11 formed with a head 12 on one end abutting against the wall 4 and at its other reduced end shouldered and riveted over the wall 5 as shown at 13. The passage of the wing 7 through the slot of the inner side wall 5 in the folding of the blank is effected by curving the outer edge of the wing on the arc of a radius having a length equal to the distance between the outer or forward end of the slot and the line of junction of the wall 5 with the back or post plate 3. The wing 7 is formed with a hole by which it is strongly secured to the horizontal limb 15 of an angle end rail by a rivet 16, the squared end of the end rail preferably abutting against the outer side of the inner side wall 5.

20 designates the vertical limb and 21 the horizontal limb of the angle side rail. The vertical wall 20 of the rail is formed with a pair of upper and lower oppositely facing notches 24 and 25 respectively which open from a central horizontal entrance slot 26 opening through the end edge of the limb 20. The outer side wall 4 of the bracket is formed with a lower extension 4' in which is formed a vertical notch 29. The vertical limb 20 of the side rail is equipped at each end with a pair (lower and upper) of headed studs 30 and 31, respectively, the stud 30 being seated in the notch 29 in the upright position of the side rail as shown in Fig. 2, and the stud 31 being similarly seated in the notch 29 in the inverted position of the side rail, as shown in Fig. 4. In both cases one of the notches 24 and 25 in the vertical limb of the side rail embraces the bonding pin 11; and it may also be noted that when the side rail is engaged in the bracket, the upper stud (31 in Fig. 2 and 30 in Fig. 4) abuts against the outer vertical edge of the side wall 4 and co-operates with the pin 11 and the lower stud to resist angular bending strains in a vertical plane and the two headed studs hold the side rail against lateral displacement from the side plate 4 in-

wardly of the latter. The end of the side rail is preferably contiguous to the back or post plate 3 of the bracket, as when so arranged assistance is given the rail-locking elements in holding the post and side rail in rigid rectangular relation.

Figs. 6 and 7 show a construction embodying the same structural principle as that underlying the construction of Figs. 1 to 5, but adapted for the use of the rail in the upright position only, and, by locating the upper and lower locking devices in a common vertical plane, making feasible the use of a somewhat shorter bracket. Here the lower locking notch 29' is continuous with the inner end of a horizontal slot 32 extending inwardly from the outer vertical edge of the outer side wall of the bracket, and lies directly beneath the bonding pin 11. The lower stud 30 on the vertical limb of the side rail passes through the entrance slot 32 as the side rail is entered into the bracket, and seats itself in the notch 29' under the same downward movement of the side rail by which the upper notch 24 is caused to straddle the pin 11.

In the modification shown in Figs. 8, 9 and 10, the relative positions of the notch 29' and stud 30 of Figs. 6 and 7 are reversed, and the outer side wall of the bracket is equipped with a lower locking stud 33 that is engaged by a vertical notch 34 opening upwardly from the lower edge of the vertical limb of the side rail under the same downward movement of the latter by which the upper notch 24 is caused to straddle the bonding pin 11. Since both notches in this construction are formed in the vertical limb of the side rail, the notches are laterally offset any distance required to avoid undue weakening of the vertical limb of the side rail, or the necessity of deepening said limb or employing an attachment member of greater depth than the side rail. The lateral offsetting of the notch 24 and the stud 30 and of the notch 25 and stud 31 in the structure illustrated in Fig. 5 is for the same purpose and serves the same result.

It will be observed that the described rail locking means provides two spaced locking devices for removably securing the side rail in the bracket under a simple relative vertical movement of the parts, and both wholly located on and formed in the contiguous vertical side walls of the bracket and side rail. In the form of the invention illustrated in Figs. 1 to 5 inclusive an integral end portion of a side rail may be thus directly interlocked with the bracket in either the upright or the inverted position of the side rail. In the form shown in Figs. 6 and 7 and in 8 to 10 inclusive, this integral end portion is adapted to directly interlock with the bracket only in the upright position of the angle bar side rail.

It will be observed that the outer and inner side walls of the bracket are spaced to such an extent that the horizontal limb of the side rail, in co-operation with the inner side wall of the bracket, serves to hold the vertical limb of the side rail against horizontal lateral separation from the outer side wall of the bracket, and by the use of the described locking devices the bracket and side rail are held against relative lengthwise movement, and the bed post is held against canting movement relatively to the side rail.

While the described features are preferably employed in connection with an integral rail end, yet it is manifest that many features may advantageously be used in connection with a side rail having an end attachment or with a bracket omitting either or both the bottom and inner side plates; and while I have shown the side rail as within the bracket, yet some of the described features may be advantageously employed in constructions where the vertical limb of the side rail is disposed outwardly of the bracket. In a co-pending application, Serial No. 700,746, filed March 21, 1924, I have shown and described rail locking elements consisting of a headed stud on the vertical limb of a bed side rail adapted to engage with a notch in the side wall of a bracket in both the upright and inverted positions of said rail. It is obvious that such a headed stud and co-operating notch may be substituted, if preferred, for the pin 11 and its co-operating slot in the side rail as shown in this application, and that other structural modifications of the rail locking elements used for the purpose or purposes shown and described herein may be made. Therefore, I do not limit this invention to the specific forms, arrangements and proportions as shown in the drawings, except to the extent called for by the claims.

By reference to the drawings, it will be observed that the walls of the notches 24 and 25 are not shown parallel, but preferably I form them slightly convergent toward the closed ends of the notches, as shown, so as to avoid the necessity of accurate machining of the notches and afford a wedging fit with the pin 11.

I claim—

1. In a corner lock for bedsteads, the combination of a bracket having a post plate formed with a straight vertical edge portion and a side wall integral with said edge portion, an angle rail having its vertical limb abutting endwise against said edge portion and engaged with the inner side of said side wall, and means for locking said limb to said bracket in either the upright or inverted position of said side rail comprising reversibly acting upper and lower pairs of inter-engaging pins and slots on said side wall and

vertical limb, co-operating with the abutment of said limb against said post plate.

2. In a corner lock for bedsteads, the combination of a bracket having a post plate and inner and outer side walls, a side rail having an end portion entered between said side walls, upper co-operating rail locking elements, consisting of a pin bonding said side walls together and a slot in said side rail, brought into locking engagement under a downward movement of the latter in both the upright and inverted positions of said side rail, and lower co-operating rail locking means on one of said side walls and said side rail co-operating with said upper rail locking elements to hold said bracket and side rail against relative angular movement in a vertical plane in both the upright and inverted positions of said side rail in said bracket, and locking said side rail against endwise withdrawal from said bracket.

3. In a corner lock for bedsteads the combination of a bracket including a post plate and a side plate, with an angle rail having a portion of its vertical limb lying inwardly of said side plate with its end abutting against one of said plates, said side rail and side plate being provided with rail locking elements consisting of a pin on one of said parts and a notch in the other of said parts adapted to be engaged by said pin, said pin and notch co-operating with said abutment to hold said bracket and side rail against relative angular movement in a vertical plane in both the upright and inverted positions of said rail, and an auxiliary rail locking element on said vertical limb of the side rail adapted to be brought into rail locking contact with the outer surface of said bracket side plate in both the upright and inverted positions of said side rail.

4. In a corner lock for bedsteads, the combination of a bracket, having a post plate secured to a bed post, a side wall and a transverse plate disposed inwardly from and integral with said side wall, an angle bar side rail having its integral vertical limb abutting against said post plate and directly locked to the inner side of said side wall by means of upper and lower pairs of rail locking devices on the said side wall and vertical limb brought into co-operative interlocking engagement under a downward movement of said side rail, and acting jointly with said abutment to hold said bed post and side rail against relative movement lengthwise of the latter and also relative angular movement in a vertical plane, and an end rail secured to said transverse plate and through the latter and said side wall opposing outward canting of the said vertical limb of the side rail when under strain.

5. In a corner lock for bedsteads, the combination of a bracket including a post plate

and a side plate, an angle rail having a portion of its vertical limb lying opposite said side plate and with its end abutting against one of said plates, and means for locking
5 said limb to said bracket in either the upright or inverted position of said side rail comprising reversibly acting upper and lower pairs of interengaged pins and slots on said side wall and vertical limb, co-operating
10 with the end abuttal of said limb.

6. In a corner lock for bedsteads, the combination of a bracket having a post plate, a side wall integral with the outer edge of said post plate and a transverse plate integral
15 with and disposed inwardly of said side wall, an angle side rail engaged in said bracket with its vertical limb disposed inwardly of the inner side of said side wall and adapted to be locked thereto, in both
20 the upright and inverted positions of said side rail, by means of upper and lower pairs of rail locking devices on said side wall and vertical limb, brought into co-operative interlocking engagement under a downward
25 movement of said side rail, and an end rail secured to said transverse plate and through the latter and said side wall opposing outward canting of the said vertical limb of the side rail when under strain.

7. In a corner lock for bedsteads, the combination of a bracket including a post plate and a side wall, an angle rail having an integral end portion thereof disposed inwardly of said side wall, and means for
30 locking said end portion to said bracket in either the upright or inverted position of said side rail comprising reversibly acting upper and lower pairs of interengaged pins and slots on said side wall and the vertical
35 limb of said end portion.

8. In a corner lock for bedsteads, the combination of a bracket having a post plate, and a side wall integral with the outer edge of said post plate and provided
45 with a pin, an angle side rail having its vertical limb locked to said bracket side wall by means comprising reversely facing slots in said vertical limb, one of said slots being brought into locking engagement with said
50 pin under a downward movement of said side rail, in both the upright and inverted positions of the latter, and auxiliary rail locking elements on said side wall and vertical limb brought into co-operative interlocking engagement under the same downward
55 movement of the side rail and holding the latter against endwise withdrawal from the said bracket, in both the upright and inverted positions of said side rail.

9. In a corner lock for bedsteads, the combination of a sheet-metal bracket hav-

ing a post plate, outer and inner side walls bonded together by means of an upper rail locking element consisting of a cross-bar, a lower rail locking element on said outer side
65 wall, and a horizontally disposed plate integral at one edge with said outer side wall and at its opposite edge secured against movement, a side rail engaged in said
70 bracket with a vertical end portion thereof lying against the inner side of said outer side wall and through the latter and said horizontally disposed plate held against outward canting when under strain, said vertical end portion being formed with an
75 upper rail locking element adapted to be brought into locking engagement with said cross-bar under a downward movement of said side rail and also provided with a lower rail locking element engaging with
80 said lower rail locking element on the outer side wall under the same downward movement of the side rail and holding the latter against endwise withdrawal from the bracket.

10. In a corner lock for bedsteads, the combination of a sheet-metal bracket having a post plate, an outer side wall, an inner side wall formed with a slot having top and bottom edges, and a horizontally disposed
90 plate inwardly bent from the said outer side wall and formed with an extension passed through and secured in said slot, an angular side rail engaged in said bracket with its vertical limb lying against
95 the inner side of said outer side wall and held against outward canting when under strain by said outer side wall and said horizontally disposed plate, and upper and lower pairs of co-operating rail locking elements on said vertical limb and outer side wall of the bracket brought into their respective locking engagement with one another under a downward movement of said side rail.

11. In a corner lock for bedsteads, the combination of a bracket including a post plate adapted to be secured to a bed post, and a side plate formed with an open top slot, an angle side rail engaged with said
100 bracket with a portion of its vertical limb lying inwardly of said side plate, headed studs on the outer side of said limb adapted to engage with said slot in a bracket side plate in the upright and inverted positions
105 of said side rail, respectively, and auxiliary co-operating rail locking elements on said limb and a bracket side plate coacting with one of said studs and said slot in both the upright and inverted positions of said side
120 rail.

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