

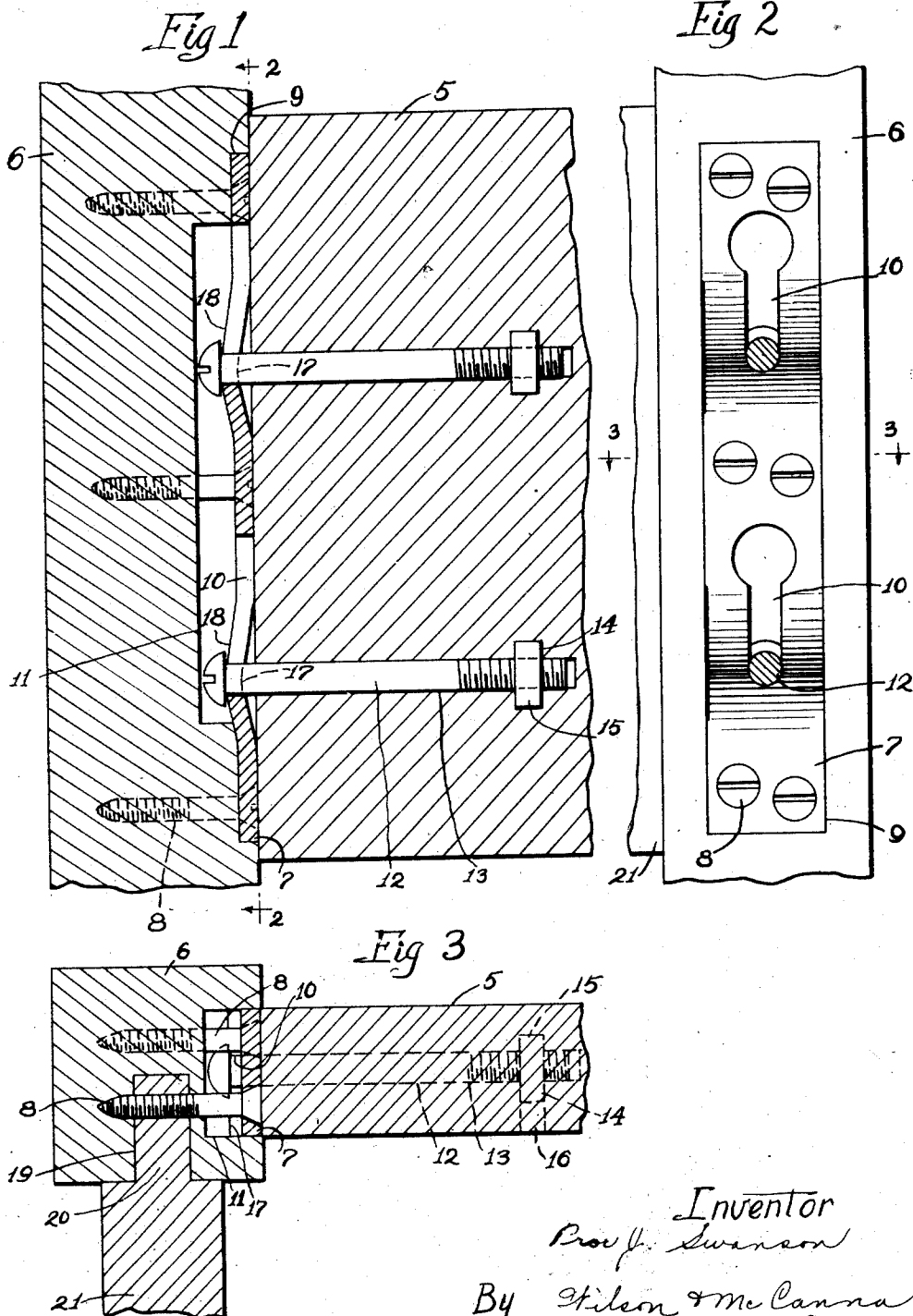
Jan. 15, 1929.

1,699,256

B. J. SWANSON

BED RAIL FASTENER

Filed April 13, 1927



Inventor
B. J. Swanson

By Stilson & McCanna
Attys

UNITED STATES PATENT OFFICE.

BROR J. SWANSON, OF ROCKFORD, ILLINOIS.

BED-RAIL FASTENER.

Application filed April 13, 1927. Serial No. 183,281.

This invention relates to furniture construction generally and has particular reference to an improved bed rail fastener, one which in contra-distinction to present types of fasteners will not weaken the post by reason of the manner of its application thereto, or impose a strain on the bed post apt to crack or break the same, but instead, actually reinforces the post, will not tend to loosen in service and cause the bed to wobble and rattle, but instead, furnishes a definite live tension to firmly bind the parts together, and is furthermore adjustable to give the desired tightness in case the parts have become worn by repeated fastening and unfastening of the bed rail, or in case the parts have not been properly fitted in the first instance.

According to the present invention, a plate is fastened to the side of the bed post against which the end of the side rail abuts, the plate being provided with two or more keyhole slots for the reception of the headed ends of bolts extending from the end of the side rail, and the plate being furthermore indented at the small ends of the slots to afford a certain resilience in the plate where the heads of the bolts will have wedging engagement as they are sunk home in the slots when the side rail is attached to the post. The fastening of the plate to the side of the post reinforces instead of weakening the same, and by reason of the fact that the plate bears the brunt of the load, there is no tendency for the post to crack or break under the strains of service as was otherwise frequently the case. The resilience in the indented portions of the plate affords sufficient yield between the parts that they may be forced into much tighter and more firm engagement than would be permitted if the parts had ordinary deadlocking engagement. The adjustability of the bolts makes possible a firm connection irrespective of whether the parts have become worn or whether there has been a slight discrepancy in the assembling at the factory, either or both of which matters were without remedy in the case of the present standard type of bed rail fasteners.

In addition to the advantages hereinbefore recited, the fastener of the present invention by reason of the manner of the application of the plate to the bed post, affords the further advantage that it serves to anchor the foot panel tenon. Furthermore, the present fastener is so applied to the bed post that there is never any difficulty arising from glue getting

into the same from the glueing of the foot panel tenon in the mortise of the bed post. This was otherwise a very serious problem with the old type of fastener where the slot in the bed post into which the plate on the side rail had to be entered to engage the lugs of the plate with the pins in the bed post was in direct communication with the mortise, and as a result, the glue frequently entered the slot and upon drying therein, closed the same and prevented the entry of the plate.

The invention is illustrated in the accompanying drawing, wherein Fig. 1 is a section through the joint between a bed post and side rail showing my improved bed rail fastener in section. Fig. 2 is a view taken on the line 2—2 of Fig. 1, looking at the outside of the keyhole plate, and Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2, showing how some of the screws fastening the keyhole plate to the bed post serve to anchor the foot panel by passing through the tenon thereof. The same reference numerals are applied to corresponding parts in the three views.

While the present invention relates to a fastener especially designed and adapted for detachably securing together a side rail to the post 6 of a bedstead, it will be obvious that the same is applicable to other uses wherever a similar type of detachable connection is desired, and as a matter of fact, the invention is not limited to furniture constructions. The fastener comprises an elongated plate 7, fastened by a plurality of screws 8 to the post 6, preferably in a recess 9 provided in the post so that the plate lies flush with the side of the post. The screws 8 it will be observed are placed in two rows on opposite sides of the middle of the post, this being found preferable for the reason that it prevents splitting of the post when the bed is moved from the foot end. A still further advantage in this arrangement of the screws lies in the fact that the post and foot panel are thereby rigidly locked together, as will presently appear. The plate has two or more keyhole slots 10 punched therein, and behind these slots the post 6 is suitably recessed as indicated at 11, to permit the entry through the slots of the heads of the bolts 12 which project from the end of the side rail 5 as shown. The bolts 12 are received in holes 13 drilled in from the end of the rail, intersecting the holes 14 opening from the inner side of the rail. Thus the bolts 12 when entered in the rail, thread into nuts 15 set in

the holes 14, the nuts being concealed by plugs 16 closing the holes 14 in a manner well known in this art. The bolts 12 are, of course, spaced apart the same distance as the keyhole slots 10 to have proper cooperation therewith, and are arranged to have the heads thereof entered through the large ends of the slots, whereupon the bolts may be sunk home into the small ends of the slots to securely join the rail to the post. In order that the joining together of the two parts may be attended with a certain amount of yield in a resilient member to firmly bind the parts together and make possible a better joint than would be permitted in the case of parts interfitted with a deadlock, I have provided the plate 7 with indentations indicated at 17 at the small ends of the keyhole slots. The indentations are transverse to the longitudinal plane of the plate and may be made by dies suitably in the same operation when the keyhole slots are punched therein. The indentations cause the small ends of the slots to be offset inwardly relative to the large ends and the sides of the slots on the inner face of the plate are inclined with respect to the plane of the rest of the plate as indicated at 18 from the large end to the small end toward but not quite all the way, of the slots, there being fairly pronounced flat peak portions for the heads of the bolts to ride onto when the bolts reach the ends of the slots. Thus when the heads of the bolts are introduced through the large ends of the slots and the rail is struck to sink the bolts home towards the small ends of the slots, the heads ride on the inclined faces 18 with wedging engagement. Obviously, the farther the bolts are sunk into the slots, the tighter the engagement of the rail with the post becomes, and provided the bolts do not extend too far from the end of the rail, the parts may be drawn together with tremendous pressure. The indented portions of the plate will obviously deflect slightly under this operation, and it is this feature which furnishes the live tension in the interlocking engagement of the parts. The fact that the material of the plate is inclined in opposite directions from the small ends of the slots at substantially the same angle to the plane of the rest of the plate definitely insures that the tension on the heads of the bolts when the latter are in position at the small ends of the slots will be absolutely parallel and substantially coincident with the longitudinal axes of the bolts; in other words, the force holding the post and rail together acts substantially at right angles to the abutting surfaces.

It will be apparent from the foregoing that the present fastener in no way results in a weakening of the bed post by reason of the manner of its application thereto, as was the case with the old type of fastener, but as a matter of fact, actually reinforces the post. The fastener affords a much tighter joint between the rail and post than was afforded by the old type, because of the fact that it has incorporated in it a member furnishing live tension to bind the parts together, as distinguished from the deadlocking engagement afforded by the old type. The adjustability of the bolts compensates for any amount of wear which may result through repeated fastening and unfastening of the bed rail, and in this way the parts may be fastened together, regardless of how long they have been in service, or even regardless of misfitting of the parts in the first instance at the factory. It never becomes necessary for the dealer to make a return shipment because parts have been improperly fitted and will not go together. The present invention permits of simple adjustment with the use of a screw driver, and of course, any one of average mechanical skill and intelligence can make the proper adjustment.

It will be further noted that the recess cut into the side of the bed post does not communicate with the mortise 19 provided in the adjacent side of the post for the reception of the tenon 20 of the foot panel 21. As a result, there will be no trouble arising from glue used in the fastening of the foot panel getting into the fastener. In the old type of fastener where the post had a slot cut into one side for the reception of the plate on the end of the side rail, the slot intersected the mortise, and as a result there was always apt to be some glue forced out of the mortise into the slot. This glue upon hardening closed the slot and it became impossible oftentimes to enter the plate therein to make connection with the pins extending crosswise of the slot. In some instances the dealer was forced to return the beds to the factory for this trivial reason, simply because the glue could not be dislodged except with special tools. I prefer to have certain of the screws 8 of the one row pass through the inner end of the tenon 20 to anchor the same. This obviates the necessity for the use of nails or other means which had to be provided otherwise for that special purpose. Where six screws are used, as indicated in Fig. 2, it will be apparent that there will be two or even three screws passing through the tenon in the manner indicated in Fig. 3, so that the foot panel is very securely anchored.

It is believed that the foregoing description conveys a clear understanding of my invention and of its objects and advantages. While the same has been illustrated and described as applied to a specific embodiment for a specific purpose, it will be understood that the invention is capable of modification, and also capable of other uses. The appended claims are therefore drawn with a view to

covering all legitimate modifications, adaptations and variations coming within the spirit and scope of the invention.

I claim:

5 1. In a furniture construction, means for detachably fastening together two members, such as a bed post and a side rail, said means comprising one or more headed studs projecting from the one member at right angles
10 to the surface thereof, and a plate fixed to and substantially flush with the surface of the other member and having a corresponding number of substantially keyhole-shaped slots therein to receive the studs, the said plate
15 being formed with indentations at the slots to provide portions arranged to yield under wedging action of the heads of the studs when the studs are sunk into place in the slots, the indentations having the greatest depth at the
20 small ends of the slots to afford maximum tension on the heads when the studs are in that position, the material of the plate being

inclined in opposite directions from said points at substantially the same angle to the plane of the rest of the plate so as to insure
25 that the tension on the heads of the studs when the latter are in position at the small ends of the slots will be in a line absolutely parallel and substantially coincident with the longitudinal axes of the studs. 30

2. A furniture construction as set forth in claim 1 wherein the studs are in the form of bolts threadedly engaged in their member to permit adjustment in the amount of extension of the heads from said member whereby to
35 vary the degree to which the indented parts of the plate are flattened in the sinking of the bolts into place in the slots and accordingly vary the tension active on the heads of the bolts when the latter are in position at the
40 small ends of the slots.

In witness of the foregoing I affix my signature.

BROR J. SWANSON.