This invention relates to means for removably joining the side rails of a bed frame to the upright post members of the headboard and footboard structures thereof, and is particularly suitable for removably joining the respective side rails and post members of bed frames constructed of wood. Further, the invention relates to means for the repair of damaged or broken rail-post joints of that type generally employed in the typical wooden bed frame.

The general object of the present invention is thus to provide a practical joint means for removably securing the headboard and footboard structures of a bed frame with the connecting side rails thereof. A further object is to provide bed rail-post joint means particularly suitable for use in the construction of wooden bed frames.

A further object is to provide a substantially simple bed rail-post joint means which includes a first member and a second member attachable respectively to the bed rail and bed post and interlockingly engageable to provide a sturdy and durable joint. A further object is to provide, in the second member of the joint means of the present invention, structure that is readily applicable for the repair of broken or damaged rail-post joints in wooden bed frames.

A further object is generally to improve the design and construction of bed rail-post joints and the methods of repair thereof. The means by which the foregoing and other objects of the present invention are accomplished and the manner of their accomplishment will be readily understood from the following specification upon reference to the accompanying drawings, in which:

FIG. 1 is a fragmentary perspective view illustrating the joint means of the present invention, with the rail and post structures of the bed frame being partially shown.

FIG. 2 is a fragmentary sectional view taken substantially on a vertical plane and as on the line II—II of FIG. 3.

FIG. 3 is a sectional view taken substantially on a horizontal plane and as on the line III—III of FIG. 2.

FIG. 4 illustrates a broken rail-post joint of a typical wooden bed frame prior to the application of the second member of the joint means of the present invention and prior to the repair of the joint.

FIG. 5 is a front perspective view of the second member and a portion of the bed post, and with the several associated parts being shown separated for purposes of clarity.

FIG. 6 is a rear perspective view of the second member of the joint means.

Referring now to the drawings in which the various parts are indicated by numerals, the joint means of the present invention, indicated as at 11 in FIGS. 1, 2 and 3, includes a first member 13, and a second member 15. Joint means 11 will be described in conjunction with a typical wooden bed frame having an upright bed post 17 and a side rail 19. Further, the joint means first will be described as being applicable in the manufacture or construction of a bed frame, and secondly will be described as being applicable in the repair of a broken or damaged joint of a used bed frame.

Member 13 and side rail 19 are substantially of a construction well-known in the bed frame art, and comprise generally a flat and thin piece of plate material of generally rectangular shape and which is typically formed to provide two hook portions 21. Although some beds having wooden headboards and footboards have metal side rails, for purposes of clarity, the first member 13 of the present invention will be described as being the end member of a wooden side rail 19. First member 13 is attached to side rail 19 in a conventional manner which includes the following: Providing a shallow kerf cut 23 across the end of bed rail 19; inserting the straight edge portion 25 of member 13 into kerf cut 23; and securing member 13 to rail 19 by a pair of rivets 27 which extend through the bed rail and member 13.

Second member 15 preferably includes a body 29 and two lugs 31. Body 29 is preferably constructed of plate material, is of substantially rectangular shape, and has a slotted aperture 33 extending partially along the length of the body. Lugs 31 are preferably U-shaped and are fixedly attached to body 29 transversely across slotted aperture 33. Lugs 31 are preferably welded to body 29 and are spaced a distance commensurate with the distance between hook portions 21 of first member 13.

Second member 15 is attached to the bed post 17 and includes a front side, indicated at 35 (FIG. 5), a back side, indicated at 37 (FIG. 6). In the mounting of second member 15 to post 17, portions of the post are provided to receive lugs 31 and hook portions 21 of member 13. A longitudinal slot 39 is provided in post 17 to receive the hook portions 21 of member 13, as best seen in FIG. 2. Two horizontally disposed slots 41 extend transversely of post 17 and across longitudinal slot 39 as best seen in FIG. 5. Second member 15 is mounted to post 17 with lugs 31 respectively received in slots 41, and slotted aperture 33 aligned with and overlying longitudinal slot 39.

Four countersunk screws 43, one at each corner of body 29, preferably attach member 15 to post 17. Care should be exercised to assure that the upward extension of slotted aperture 33 of member 15 and longitudinal slot 39 of post 17 is such as to provide ready engagement or disengagement of post 17 and side rail 19. Thus, with reference to FIG. 2, it will be noted that the upward extension of the longitudinal slots should be sufficient to provide clearance for hook portions 21 to be readily engaged and disengaged from lugs 31.

From the foregoing it can be seen that the present invention provides a very practical improvement in the rail-post joint means of wooden bed frames. Referring to FIGS. 1, 2 and 3, wherein the joint means is illustrated as being joined, it will be noted that the end edge 45 of rail 19 abuttingly engages the front side 35 of second member 15 and provides a durable and sturdy joint. The joint means of the present invention also includes a desirable feature in that the rail-post joint is easily disengaged, that is, because of the metal-to-metal joint structure of joint means 11, and not the wood-to-metal joint structure of prior joint means, the first and second members of the device do not have a tendency to stick when being disengaged and are easily separable. Also, the joint of the present invention is much more substantial than previous joints which utilized pins supported directly by the wooden posts in drilled holes therein, as will be more apparent in the description to follow.

FIG. 4 illustrates a broken rail-post joint of a typical wooden bed frame of prior construction, and with the bed joint broken in a not uncommon way. Prior rail-post joints of wooden bed frames had a hook-provided rail member, as does the present invention, but included a pair of recessed or embedded pins (FIG. 4) for engagement with the hooks of the rail member. The pins 47 were usually of metal, were embedded in the bed post, and extended across the longitudinal slots therein. The holes for the reception of pins 47 were usually drilled
from one side of the bed post and from that side which was inward of the bed. Drilling and inserting the pins 47 from the inward side of a respective bed post enhanced the appearance of the bed in that the pin and hole therefor were wholly or partially hidden from view. When rail-post joints of prior bed frames were broken, the usual occurrence, as illustrated in FIG. 4, was that the pins 47 either became loose in the wood, or splintered the wood to such an extent that they fell completely out of the wood. Bed frames with joints damaged as such were often junked, even through other parts might be in good condition.

The following part of the specification describes the procedure for the application of second member 15 of the present invention and for the repair of a broken joint, as illustrated in FIG. 4. First, the splintered edges of the holes 49 of pins 47 are smoothed or cut transversely to establish grooves (as the grooves illustrated in FIG. 5). The second member 15 is then placed along post 17 with lugs 31 in the slots, and the post and second member are then attached by screws, as was previously described in the use of joint means 11 in the original construction or manufacture of a bed frame. After second member 15 has been mounted to post 17, the unsightly recesses may be plugged by inserts, as inserts 51 shown in FIGS. 3 and 5, and the post finished in a usual manner.

From the foregoing it can be readily seen that the second member of the joint means of the present invention is readily applicable for the repair of broken or damaged rail-post joints in wooden bed frames. The installation of the second member to the post of a broken bed frame joint may be quickly and easily accomplished with only simple hand tools. Moreover, the resultant joint is substantially stronger than the original joint and is durable.

Although the invention has been described and illustrated with respect to a preferred embodiment thereof, it is to be understood that it is not to be so limited since changes and modifications may be made therein which are within the full intended scope of this invention as hereinafter claimed.

I claim:

1. In a bed frame having an upright bed post and a horizontal bed rail, the joint means for removably securing the bed post at the intermediate portion thereof and an end of the bed rail, said joint means comprising a substantially flat and thin first member fixedly secured to said end of said bed rail and operably arrangable to extend substantially vertically, said first member being formed to define two downwardly opening hooks and with said hooks being disposed longitudinally outwardly and away from said bed rail, and a second member comprising a substantially thin and elongated flat unitary plate having a front side and a back side and having a slotted aperture extending longitudinally therein, said second member including two U-shaped lugs each of the lugs having the leg portions thereof fixed to said back side of said plate and the bight portion of each of said lugs extending transversely across said slotted aperture behind and in spaced relation to said second member, said second member being fixedly attached to said bed post with said back side of said plate contiguous with said post, said bed post and said bed rail being disengagably joined with said first member extending through said aperture of said second member and with said hooks of said first member interlockingly engaging respectively said lugs of said second member.

2. A joint member for use with another member having hooks thereon to provide a joint for a bed frame, said joint member comprising a substantially thin and elongated flat unitary plate having a front side and a back side and having a slotted aperture extending longitudinally therein, and a pair of U-shaped lugs each of the lugs having the leg portions thereof fixed to said back side of said plate and the bight portion of each of said lugs extending transversely across said slotted aperture behind and in spaced relation to said second member and being adapted to receive said hooks with said hooks extending through said slotted aperture.

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