Oct. 7, 1930. F. KUSTERLE 1,777,886

SIDE RAIL LOCK FOR HOSPITAL BEDSTEADS AND THE LIKE

Filed Aug. 8, 1928

Fig. 1

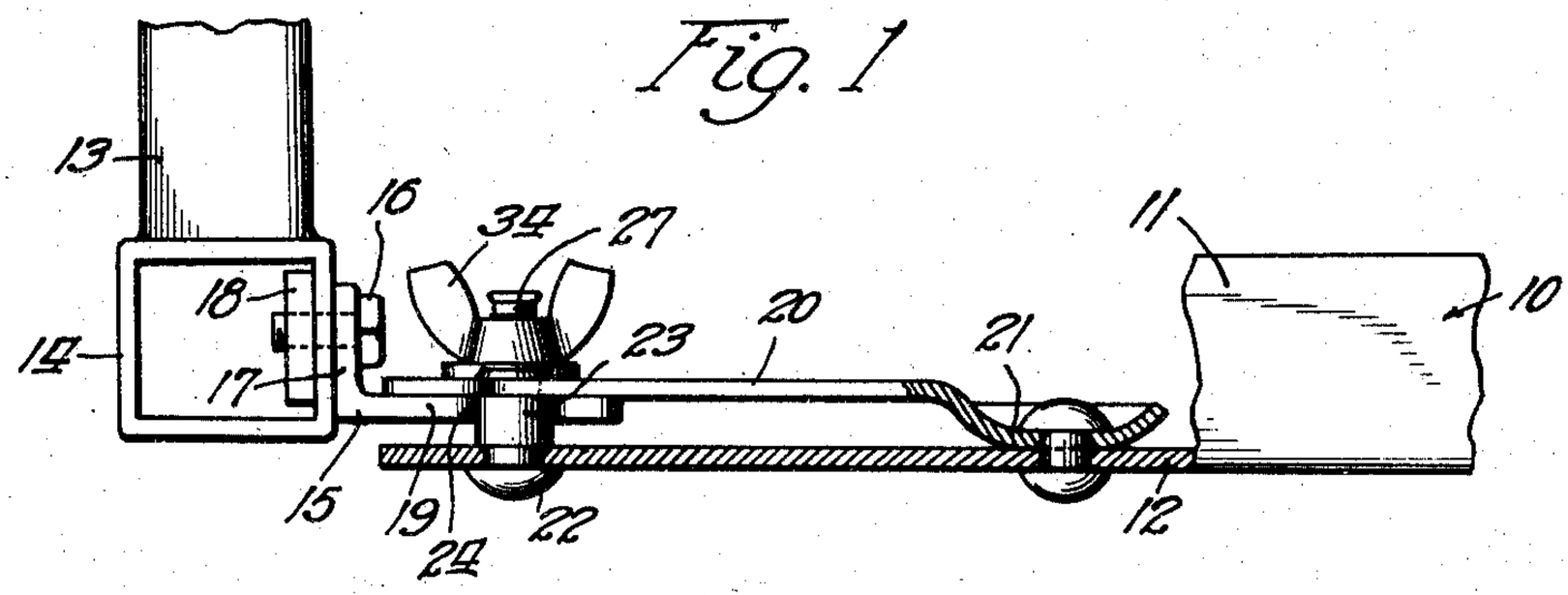

Fig. 2

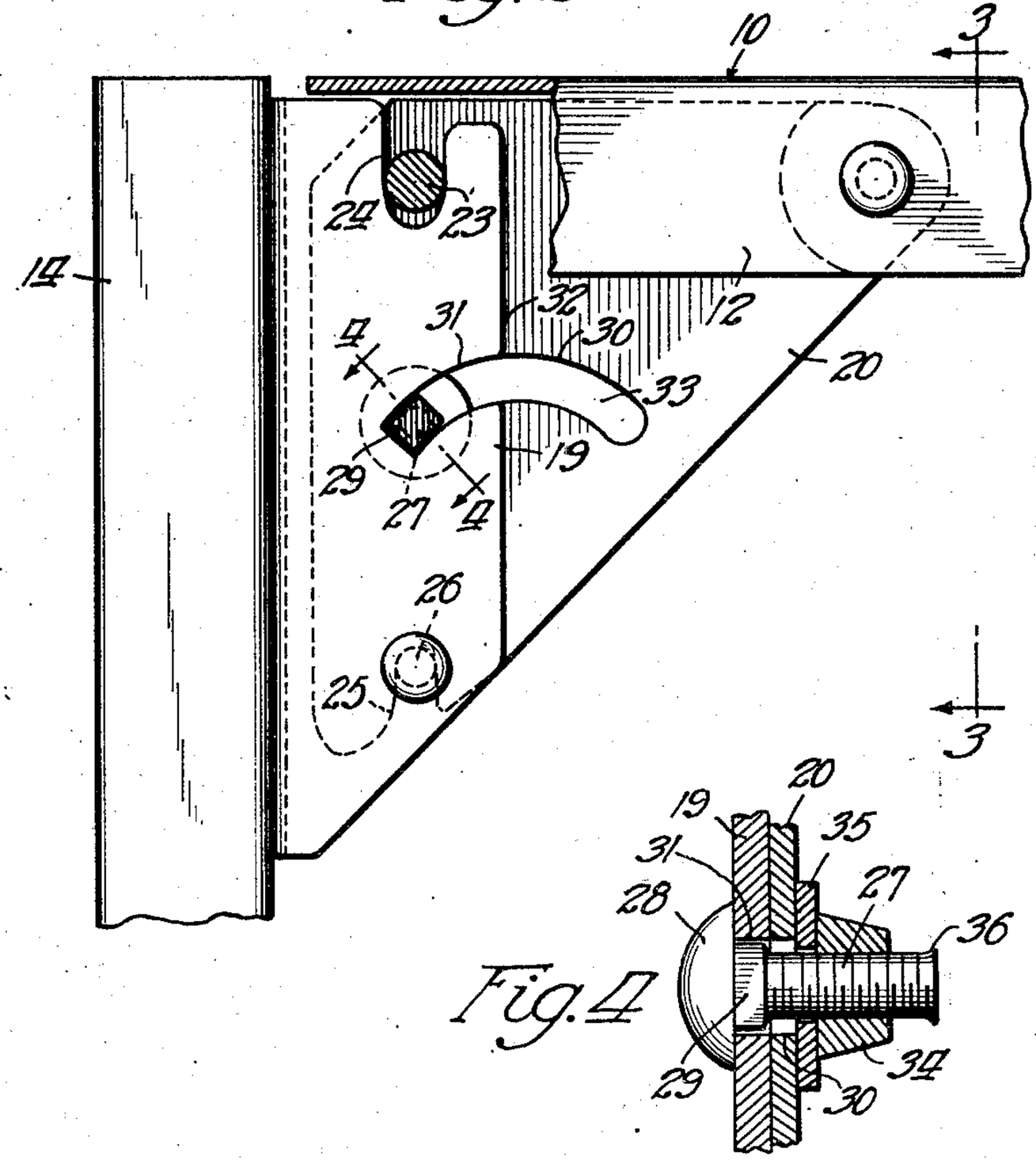

Fig. 3

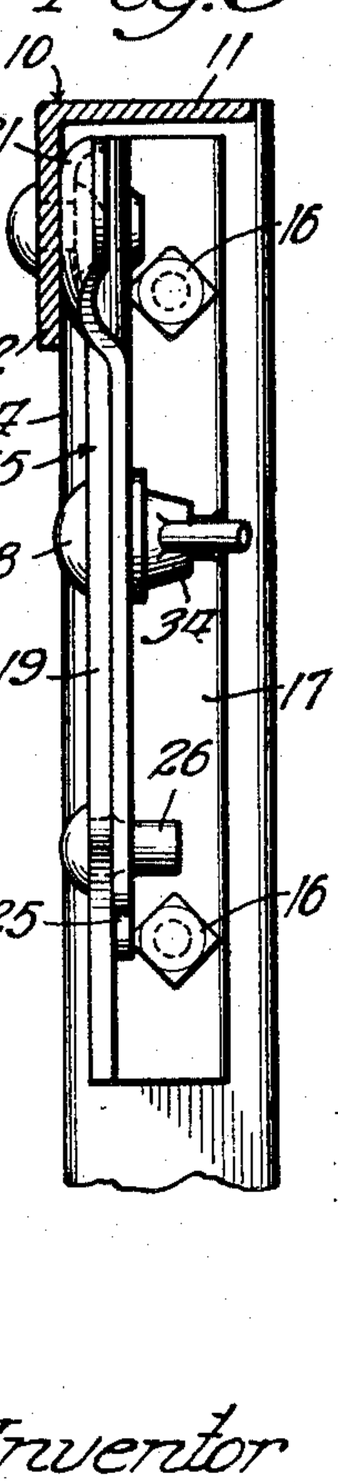

Fig. 4

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SIDE RAIL LOCK FOR HOSPITAL BEDSTEADS AND THE LIKE

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This invention relates to side rail locks for hospital bedsteads and for other bedsteads particularly intended for use in institutions where the bedsteads are subjected to strains which ordinary bedsteads are not expected to withstand.

The principal object of the invention is to provide an improved form of side-rail lock for bedsteads, which will render the same exceptionally rigid so that the bedstead will withstand such moving and handling to which it is subjected in a hospital or other institution.

Another object of the invention is to provide an improved form of side-rail lock which will be effective to prevent the side rail of the bedstead from accidentally becoming disconnected from the main or end frame of the bedstead; to provide locking means for preventing such accidental separation which, when properly adjusted, will not hinder assembling or disassembling of the bedstead; to provide an improved form of lock which will be simple in construction and cheap to manufacture, and, in general, to provide an improved form of side-rail lock of the class described.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawing in which I have illustrated a side rail lock embodying a selected form of the invention.

In the drawing:

Fig. 1 is a plan, and Fig. 2 is a side elevation, certain parts being broken away in these figures to more clearly illustrate the construction, and

Figs. 3 and 4 are sections on the lines 3—3 and 4—4 respectively of Fig. 2.

Referring now to the drawings, I have illustrated a side rail 10, of angle iron construction which includes a horizontal flange 11 and a vertical flange 12, and a main frame member 13, which includes a corner post 14, the said side rail and main frame being connected together by a lock embodying one form of my invention.

For connecting the side rail 10 and end frame 13, I provide a bracket 15 which is secured to the corner post 14 by means of one or more bolts 16, which extend through one leg 17 of the bracket 15, through the adjacent wall of the corner post and threadedly engage an elongated nut member 18 disposed inside of the post. The nut member 18 is preferably in the form of a strap having a pair of threaded apertures to receive the spaced bolts 16 shown clearly in Fig. 3. The bracket 15 also includes a flange portion 19 which extends laterally outwardly from the corner post 14.

A bracket engaging plate 20, in the present instance triangular in form, is secured to the vertical flange 12 of the angle iron side rail 10, one point of attachment being at the outer end of the plate as shown at 21 where the plate is offset and riveted to the vertical flange 12 so that the same is held in spaced relation to the main body of the bracket engaging plate 20. At its inner end, the vertical flange 12 is secured to the bracket engaging plate 20 by means of a rivet 22 which is provided with an intermediate shoulder or enlargement 23, which serves to space the flange and plate apart adjacent their inner ends.

The bracket engaging plate 20 and bracket flange 19 are connected by suitable means, which in the present instance, includes a pair of vertically spaced pin and slot connections, one of which connections is effected by means of a vertically extending slot 24 in the upper end of the bracket flange 19, which slot is adapted to receive the enlarged rivet shank or portion 23 as clearly shown in Figs. 1 and 2. The other connection between the plate 20 and bracket 15 includes a slot 25 in the lower inner end of the plate 20 which is adapted to fit over and be seated on a pin 26 which

is secured to and carried by the flange 19 of the bracket 15. It will be noted that the slots 24 and 25 are both open ended so that the connecting of the plate 20 and bracket 15 may be effected by relatively vertical movement between the said parts. It will of course be understood that in usual practice, the side rail 10 with its bracket engaging plate 20, will be lowered relative to the frame portion 13 until the pin 23 and slot 25 engage the slot 24 and pin 26 respectively, the flange 19 of the bracket being disposed between the plate 20 and vertical flange 12 of the side rail.

The vertically spaced pin and slot connections above described, are effective to prevent endwise movement of the side rail from the main frame part 14, and each of the connections is effective to prevent vertical pivotal movement of the side rail about the other connection as a pivot. For preventing lateral, horizontal shifting of the side rail relative to the main frame, I provide a clamping device which I will now describe.

A clamping bolt 27 provided with an enlarged head 28 and a squared shank portion 29 is disposed in a slot 30 provided in the bracket engaging plate 20. The slot 30 is preferably curved or arcuate as shown in Fig. 2 so that its opposite end portions are offset or curved downwardly for a purpose which will presently appear. The flange 19 of the bracket 15 is provided with a slot 31, opening at one end at the outer edge 32 of the said flange. A portion of the slot 30 registers with the slot 31 when the parts are assembled so that the bolt 27 may be slid from inoperative position in the outer end 33 of the slot 30 to operative position in the registering slot portions as shown in Fig. 2. A wing nut 34 is provided on the bolt 27 whereby the flange 19 may be tightly clamped against the plate 20, a washer 35 being preferably interposed between the wing nut and inside of the plate 20. The squared portion 29 of the bolt 27 fits fairly closely in the slot 31 of the bracket flange 19 so that the bolt is prevented from turning when the wing nut 34 is turned to effect the said clamping action. The outer end of the bolt is preferably upset or headed over, as indicated at 36 to prevent the nut from being removed from the bolt and possibly lost.

It will be noted that the slots 30 and 31 extend crosswise of the substantially vertical direction of movement which is necessary for assembling or effecting the above described pin and slot connections between the side rail and main frame part. Hence, it will be understood that the clamping bolt is carried in inoperative position in the outer end portion 33 of the slot 30 when the parts are being connected. After the pin and slot connections are completed, the bolt may be moved into the registering slot portions and the wing nut tightened to clamp the parts tightly together so that lateral shifting movement between the parts is effectively prevented. The downwardly offset or inclined arrangement of the registering slot portions serves to retain the clamping bolt in operative position even though the nut 34 may become loosened or in the event that the clamping nut is not tightened sufficiently to lock the bolt in its operative position. The bolt thus retained in operative position is of course effective to prevent relative vertical movement of the side rail and main frame so that the parts are not apt to be accidentally disconnected. The downwardly offset or inclined arrangement of the outer end portion 33 of the slot 30 serves to retain the clamping bolt in inoperative position when the parts are being assembled so that the bolt does not interfere with or hinder the assembling operation.

I am aware that changes in the form, construction and arrangement of parts may be made without departing from the spirit of the invention, the scope of which should be determined by reference to the following claims, which should be construed as broadly as possible consistent with the state of the art.

I claim as my invention:

1. In a bedstead, the combination of a main frame member, a side rail, means for detachably securing said side rail to said main frame member, comprising a bracket secured to said main frame and having a vertically disposed open ended slot and a second open ended slot extending crosswise of the length of said vertically disposed slot, a bracket plate secured to said side rail, provided with a stud adapted to enter said vertically disposed slot, and having an elongated slot, a part of which registers with said crosswise extending slot and another part of which extends outwardly beyond the outer edge of said bracket when said parts are assembled, a clamping device carried by said plate and movable in the slot therein, said clamping device being adapted to be moved to the outer portion of the slot in said plate to permit engagement of said stud in said vertically disposed slot and thereafter to be moved into the registering portions of said slots to clamp said bracket and plate together.

2. In a bedstead, the combination of a main frame member, a side rail, means for detachably securing said side rail to said main frame member, comprising a bracket carried by said main frame member, a bracket engaging plate carried by said side rail, a pair of vertically spaced interlocking connections between said bracket and plate, serving to prevent endwise movement of said side rail relative to said frame, each of said connections being effective to prevent vertical pivotal movement of said side rail about the other connection as a pivot, and clamping

means carried by one of said interlocking parts for releasably locking the same together against relative vertical and relative lateral horizontal movement.

3. In a bedstead, the combination of a main frame member, a side rail, means for detachably securing said side rail to said main frame member, comprising a bracket carried by said main frame member, a bracket engaging plate carried by said side rail, a pair of vertically spaced interlocking connections between said bracket and plate, said connections being adapted to be effected by relative, substantially vertical movement between said bracket and plate, and a clamping device for locking said parts in interlocking engagement, said bracket having a crosswise extending slot opening at the outer edge of the bracket, said plate having a slot, partly registering with the slot in said bracket and partly extending outwardly beyond said outer edge when said parts are assembled, said clamping device being positioned in said slot and movable therein from operative position in the registering portions of said slots to inoperative position in the outer end of the slot in said plate, thereby to facilitate assembling or disassembling of said parts.

4. In a bedstead, the combination of a main frame member, a side rail, means for detachably securing said side rail to said main frame member, comprising a bracket carried by said main frame member, a bracket engaging plate carried by said side rail, a pair of vertically spaced interlocking connections between said bracket and plate, said connections being adapted to be effected by relative substantially vertical movement between said bracket and plate, and a clamping device for locking said parts in interlocking engagement, said bracket having a crosswise extending slot opening at the outer edge of the bracket, said plate having a slot, partly registering with the slot in said bracket and partly extending outwardly beyond said outer edge when said parts are assembled, said clamping device being positioned in said plate slot and movable therein from operative position in the registering portions of said plate to inoperative position in the outer end of the slot in said plate, the outer end portion of the slot in said plate being offset downwardly so as to be effective to temporarily retain said clamping device out of operative position in the slot, thereby to facilitate assembling of said parts.

5. In a bedstead, the combination of a main frame member, a side rail, means for detachably securing said side rail to said main frame member, comprising a bracket carried by said main frame member, a bracket engaging plate carried by said side rail, a pair of vertically spaced pin and slot connections between said bracket and plate, said connections being engageable or disengageable by relative vertical movement between said bracket and plate, a bolt and wing nut for clamping said bracket and plate in assembled relation, said bracket being provided with a crosswise extending slot opening at the outer edge of the bracket, said plate being provided with an elongated slot, partly registering with the slot in said bracket and partly extending outwardly beyond the outer edge of said bracket when said parts are assembled, said bolt being positioned in said elongated slot, movable therein from inoperative position in the outer portion to operative position in the registering portion of said slot and provided with a shank having flat side portions fitting in the slot in said bracket so as to prevent rotation of the bolt therein, thereby to facilitate turning of said wing nut relative to the bolt for effecting clamping of said parts in assembled relation, the outer end portion of the slot in said plate being offset downwardly so as to be effective to temporarily retain the clamping bolt out of operative position in the slot, thereby to facilitate assembling or disassembling of said parts.

6. In a bedstead, the combination of a main frame member, an angle iron side rail, means for detachably securing said side rail to said main frame member comprising a bracket secured to said main frame member, a bracket engaging plate secured to the vertical flange of said side rail in spaced relation thereto so as to permit said bracket to fit between said plate and said vertical flange, a pair of vertically spaced pin and slot connections between said plate and bracket, engageable by substantially vertical movement of said plate relative to said bracket, a locking bolt for locking said plate and bracket in assembled relation, said bracket having an open ended slot extending crosswise of the directions of relative movement necessary for connecting said plate and bracket, said plate having an elongated slot therein, partly registering with said crosswise extending slot and partly extending beyond the outer edge of said bracket, said elongated slot serving to movably receive said bolt whereby the latter is adapted to be moved from inoperative position in the outer end of said slot to operative position in the registering slot portions after said bracket and plate are connected.

7. In a bedstead, the combination of a main frame member, a side rail, means for detachably securing said side rail to said main frame comprising a pair of brackets secured respectively to said main frame and side rail, said brackets having a connection adapted to be engaged or disengaged by moving one part relative to the other in one direction, said brackets having face to face engagement and being provided with slots extending transversely of the direction of said engaging or disengaging movement, the slot in one of said

parts being open-ended, and the slot in the other being closed and having a part registering with said open-ended slot and a part extending outwardly beyond the open end of said open-ended slot when the brackets are engaged, and a clamping device movable in said closed slot from one end thereof to the other, said clamping device being adapted to fit in the registering portions of said slots and to engage the opposite sides of said brackets to clamp the same together and to be released and shifted to the outer end of said closed slot to permit disengagement of said main frame and side rail.

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