

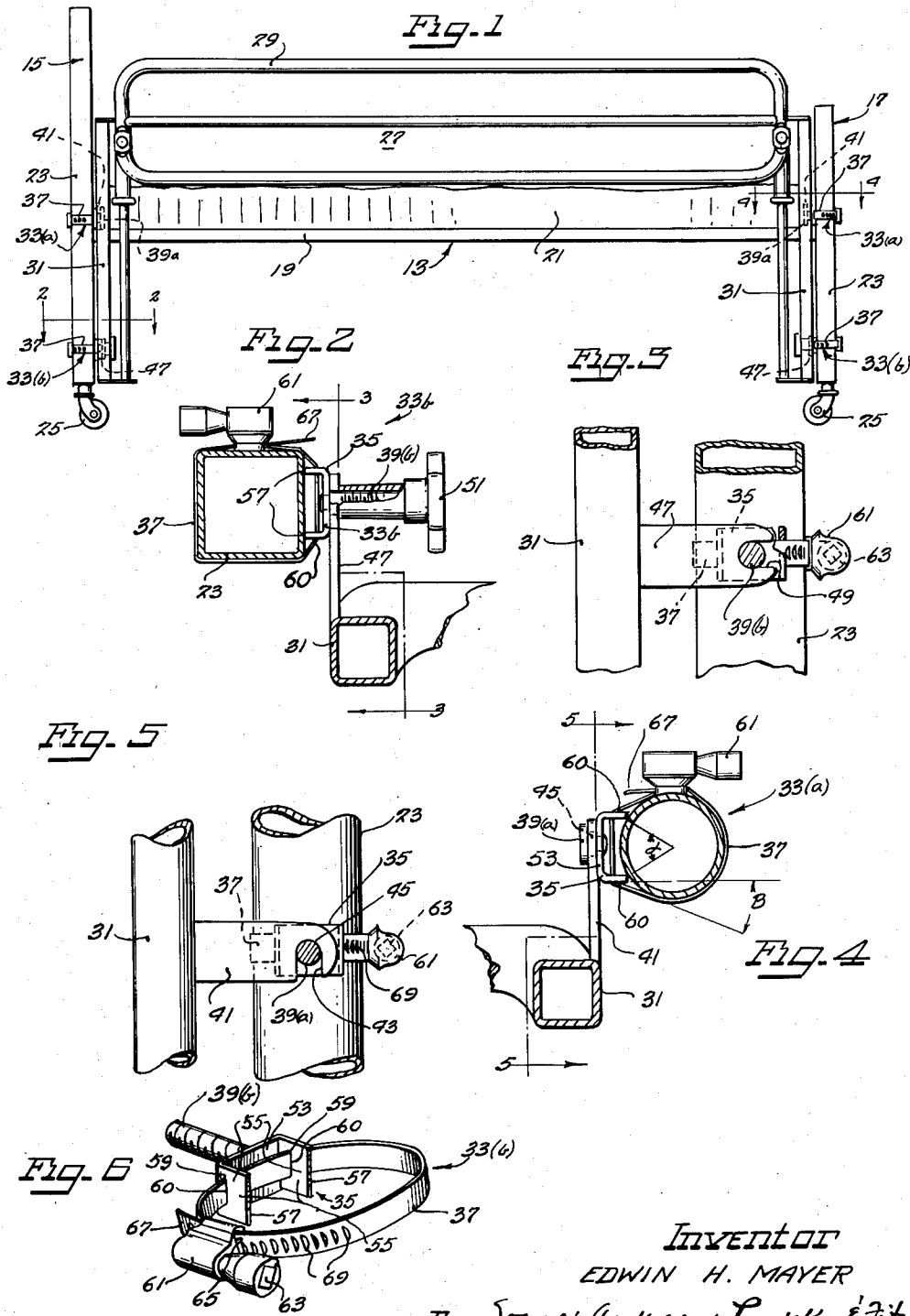
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SAFETY SIDE MOUNTING KIT

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SAFETY SIDE MOUNTING KIT

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1 Claim. (Cl. 5—331)

This invention relates generally to the mounting of auxiliary attachments for hospital beds, and more particularly to a removable mounting clamp for detachably securing a safety side or the like to a bed frame.

Many hospital beds constructed in the past have included as part of the bed frame, suitable arrangements for detachably mounting a safety side. However, other beds have been manufactured without such arrangements and are often employed where the care and treatment of patients dictates the use of a safety side. There thus arises the problem of mounting the safety side or of transferring the patient to a bed incorporating a suitable mounting arrangement. The invention disclosed herein has for its principal object the elimination of this problem by the provision of a mounting kit comprising several mounting clamps which facilitate simple and quick attachment of a safety side to the frame of a bed.

A further object of the invention is the provision of a detachable mounting clamp for fixedly supporting auxiliary attachments to a hospital bed frame.

Other objects and advantages of the invention will become apparent from the following description and the accompanying drawings in which:

FIGURE 1 is a side elevational view of a hospital bed carrying a safety side which is mounted on the bed frame by means of several mounting clamps constructed and employed in accordance with this invention;

FIGURE 2 is an enlarged sectional view taken as if along line 2—2 of FIGURE 1 and showing the lower mounting clamp used for attaching the safety side to the bed frame, the mounting clamp being illustrated in connection with a bedpost of generally rectangular cross section;

FIGURE 3 is a fragmentary sectional view taken along line 3—3 of FIGURE 2;

FIGURE 4 is an enlarged sectional view taken as if along line 4—4 of FIGURE 1 and showing the upper mounting clamp used for attaching the safety side to the bed frame, the mounting clamp being illustrated in conjunction with a bedpost of a generally circular cross section;

FIGURE 5 is a fragmentary sectional view taken along line 5—5 of FIGURE 4; and

FIGURE 6 is a perspective-view of the mounting clamp shown in FIGURE 2.

A typical hospital bed, shown generally in FIGURE 1, comprises a frame structure 13 including head-end and foot-end frames 15 and 17, which support a spring frame 19 carrying a mattress 21. End frames of usual construction generally include corner posts 23 which are spaced laterally from the other vertically extending or "filler" components of the end frame panels. The corner posts 23 can be of generally rectangular or generally circular cross section and are usually fitted with casters 25 to facilitate movement of the bed.

One type of safety side 27 employed with hospital beds includes a side guard 29 carried on a pair of spaced vertical supports or mounting bars 31, one at each end of the bed. The attachment thereof to a hospital bed not specifically designed therefor is accomplished in accordance with the invention by a series of four mounting clamps 33 which constitute a mounting kit for interconnecting the vertical supports 31 to the corner posts 23 of the end frames of the bed.

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Each of the mounting clamps comprises a bracket 35 adapted to be abutted against one of the corner posts, a corner post-encircling strap 37 which is engaged with the bracket 35 and can be tightened to firmly fix the bracket on the corner post, and a mounting stud 39 extending from the bracket.

More particularly, interconnection between the mounting clamps 33 and the safety side 27 is facilitated by providing each of the vertical supports 31 with an upper lug 41 having a downwardly open notch 43 which, as seen especially in FIGURE 5, is hooked over the shank 45 of a headed mounting stud 39a on the cooperating mounting clamp 33a. At their lower ends, each of the vertical supports 31 includes a lower ear 47 having an inwardly directed side notch 49 which, as seen especially in FIGURE 3, is swung into partially encircling relation with a threaded stud 39b extending from the cooperating mounting clamp 33b, by pivoting the safety side inwardly about the upper headed studs 39a. The safety side 27 is fixed in place by tightening a hand nut 51 received on the threaded stud 39b.

Considering the construction of the mounting clamp in greater detail, the bracket 35 comprises a U-shaped saddle including a cross bar 53 and a pair of spaced legs 55 having generally parallel end-edges 57. Each leg also includes a slot or opening 59 having its side 60 closest to the end-edge in generally parallel relation thereto. The mounting stud 39 is riveted or otherwise fixed to the saddle 35 for engagement with the vertical supports of the safety side.

The strap 37 comprises a flexible metal band which is fixed at one end in a housing 61 including an adjusting screw 63 and a passage 65 receiving the other or free end 67 of the strap for meshing engagement with the adjusting screw. This engagement is facilitated, as seen best in FIGURE 6, by the inclusion in the band of a series of apertures 69 disposed transversely thereacross and in evenly spaced relationship along the length of the strap to constitute a rack engageable with the adjusting screw 63. Thus, variation in the hoop length of the strap and the establishment within the strap of the requisite degree of tension to firmly secure the mounting clamp to the corner post can be readily obtained by adjustment of the screw 63.

This arrangement of the saddle 35 and cooperating strap 37 is very effective in stabilizing the mounting clamp 33 when secured to either a generally circular or generally rectangular bedpost. More particularly, the relatively long vertical lines of contact established between the leg end-edges 57 and the corner post 23, coupled with the geometry of the horizontally-extending, corner post-encircling strap, provide effective stabilization of the mounting clamp against vertical displacement lengthwise of the bedpost, against sideward displacement, i.e., displacement around the axis of the bedpost, and against twisting around the axis of the mounting stud 39.

Considering the engagement of the disclosed mounting clamp with bedposts of generally rectangular cross section, as illustrated in FIGURES 2 and 3, the two spaced, relatively long lines of engagement between the saddle 35 and the bedpost 23, which engagement is tightly maintained by the tension in the strap 37, provided ample resistance to lengthwise movement of the mounting clamp along the bedpost. Moreover, lateral shifting of the saddle broadside across the face of the bedpost from a centered position, such as shown in FIGURE 2, is resisted by the tight engagement of the saddle legs with the bedpost and because the strap length from corner to corner of the post through the saddle is at a minimum when the bracket is so centered.

Similarly, rotation of the mounting clamps about the axis of the stud is prevented by the strap 57, because

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any such rotational movement of the saddle would displace portions of the saddle off center in opposite directions and would necessitate a stretching of the edges of the strap. Hence, any tendency on the part of the mounting bracket to rotate about a horizontal axis is effectively restrained by the resistance of the metal strap to stretching.

Considering attachment of the disclosed mounting clamp to a bedpost of circular cross section, as seen particularly in FIGURES 4 and 5, the relatively long, snug engagement between the saddle 35 and the bedpost 23 effectively prevents lengthwise slippage. Slippage of the saddle around the post is precluded by resistance to broadside movement resulting from the snug engagement of the saddle leg end-edges 57 and bedpost 23. Moreover, shifting of the saddle around the circular post would generally tend to dig the saddle end-edges into the bedpost, thereby providing a firmer seat for the mounting clamp. In this connection, it is preferred that the depth of the legs 55 be sufficient to admit within the saddle 35, a chordal segment of the bedpost defined by an included angle α of at least 60 degrees, without engagement of the bedpost with the undersurface of the cross bar 53 or the inner end of the mounting stud 39. With such an arrangement, the acute included angle β between the strap 37 and the outer surface of the saddle leg 55 becomes relatively small, thereby increasing the snugness of the fit between the saddle and the bedpost for any given tension in the strap. Rotation of the mounting clamp about a horizontal axis is precluded by the engagement between the parallel end-edges of the saddle legs and the circular contour of the bedpost.

A mounting kit including two mounting clamps with headed studs 39a for receiving the notched upper lugs 41 of a safety side, and two mounting clamps with threaded studs 39b and hand nuts 51 by means of which the lower, notched safety side ears 47 can be secured, provides an extremely easy means for adapting a wide variety of bed frame structures for use with safety sides. A typical mounting clamp can be secured to one of the corner posts after disengaging the outer end 67 of the strap 37 from the housing 61, by encircling the corner post 23 with the strap, reengaging the free strap end

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67 within the housing and in meshing engagement with the adjusting screw 63, properly locating the saddle along the corner post, and then snugging up the saddle by increasing the tension in the strap through tightening of the adjusting screw 63. After properly attaching the four mounting clamps 33, the upper lugs 41 of the safety side are hooked over the headed studs 39a, the safety side is then swung inwardly until the lower ears 47 engage the threaded studs 39b. The hand nuts 51 are then tightened to clamp the safety side to the studs and to the bed frame.

Of course, the formation of the mounting studs can be varied widely to provide means for supporting a large number of different attachments. Various features of the invention are set forth in the appended claim.

I claim:

Means for attaching the mounting bar of a side guard or other auxiliary equipment to a bedpost, said mounting bar having a pair of spaced lugs extending outwardly therefrom, each of which lugs includes an open-ended slot adjacent its outer end, said means comprising a U-shaped saddle including a pair of spaced legs joined by a cross bar, said legs having parallel end-edges adapted to be abutted against the bedpost along spaced lines of contact disposed longitudinally thereof, said legs each having a slot therein with an edge in adjacent parallel relation to said end-edge, means carried by said cross bar for supporting engaging the slot on one of said mounting bar lugs, and a flexible metal strap for encircling said bedpost in tensioned condition, the strap extending through said slots of said legs and having fixed at one end thereof means for progressively engaging and releasably gripping the other end of said strap to permit tensioning of said strap when in encircling relation to said bedpost, thereby enabling solid attachment of said saddle to said bedpost.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,059,250

October 23, 1962

Edwin H. Mayer

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 39, for "with" read -- by --; line 62, for "provided" read -- provide --; column 4, line 28, for "supporting" read -- supportingly --.

Signed and sealed this 3rd day of September 1963.

(SEAL)

Attest:

ERNEST W. SWIDER
Attesting Officer

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Commissioner of Patents