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DETACHABLE GUARDRAIL FOR BEDS

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Fig. 8

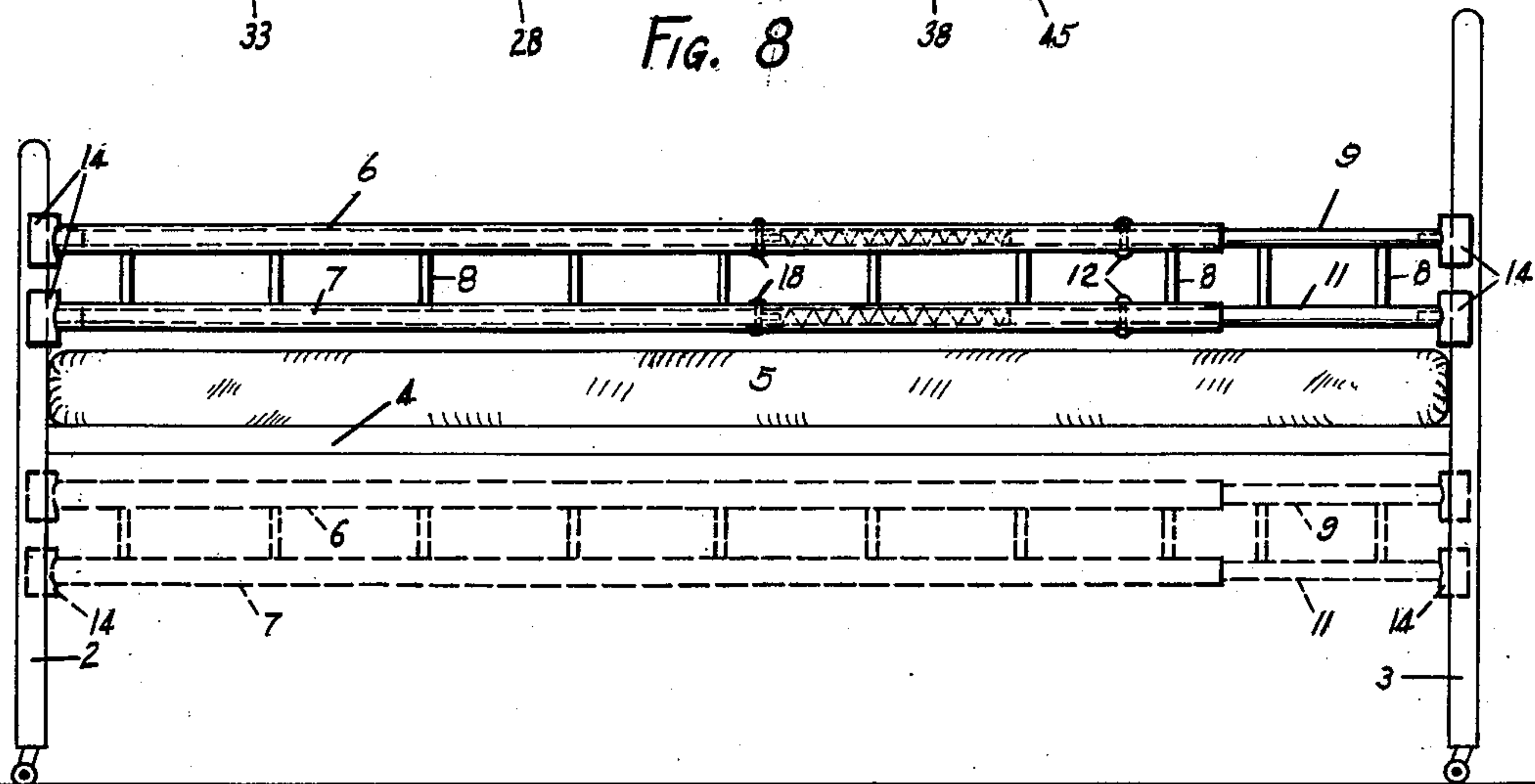


Fig. 1

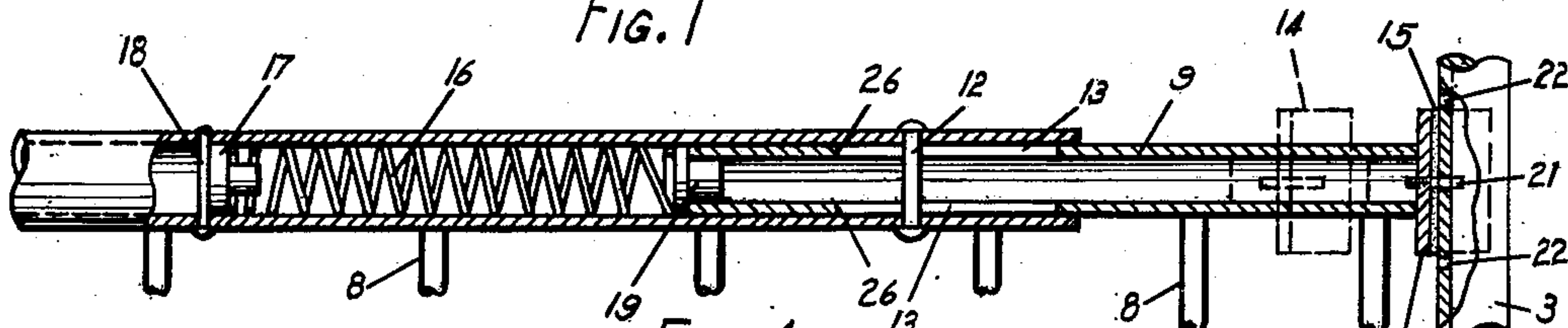


Fig. 4

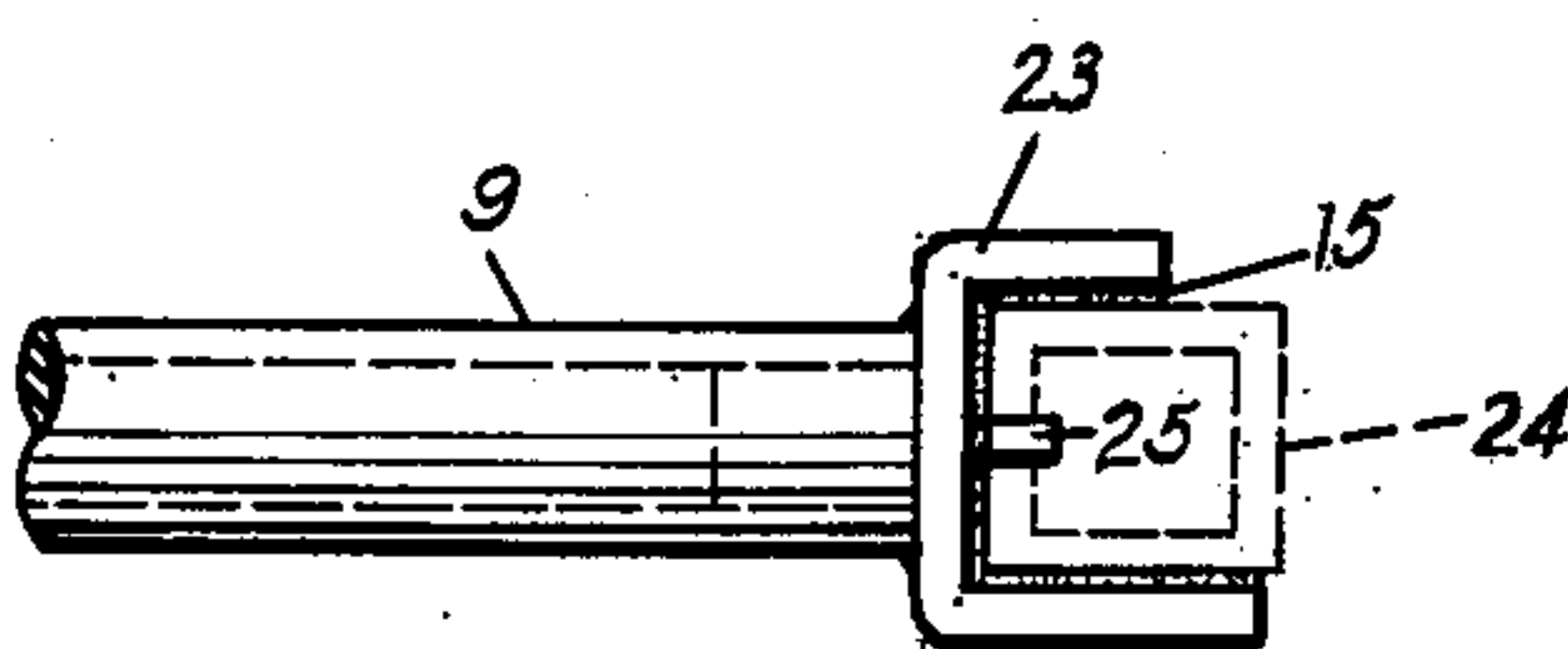


Fig. 6

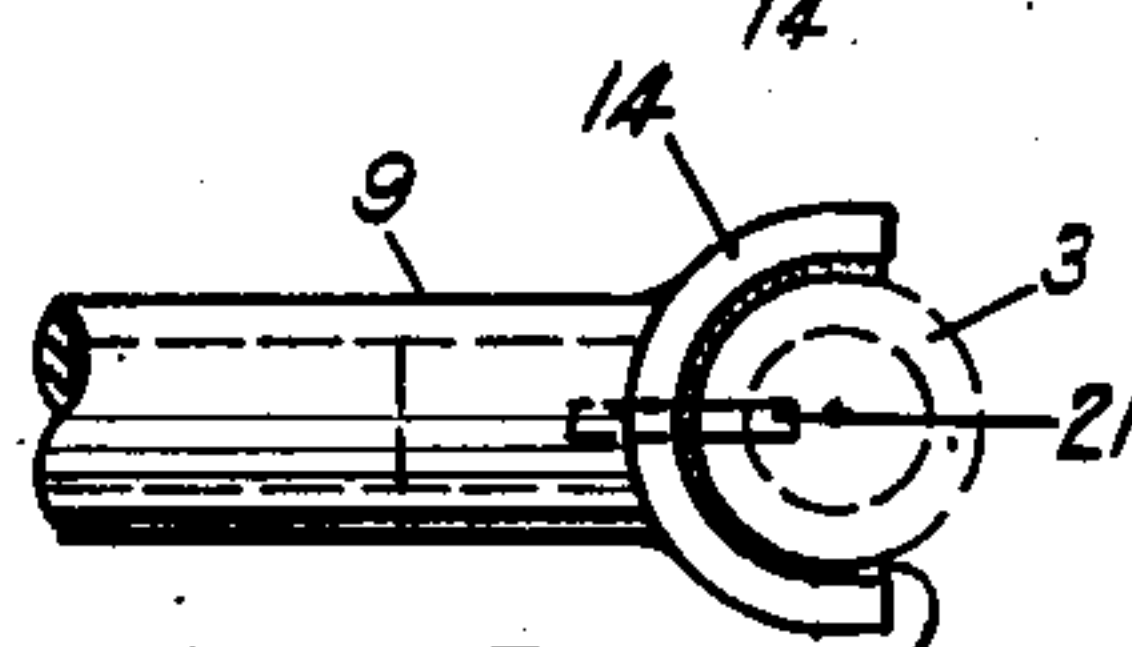


Fig. 5

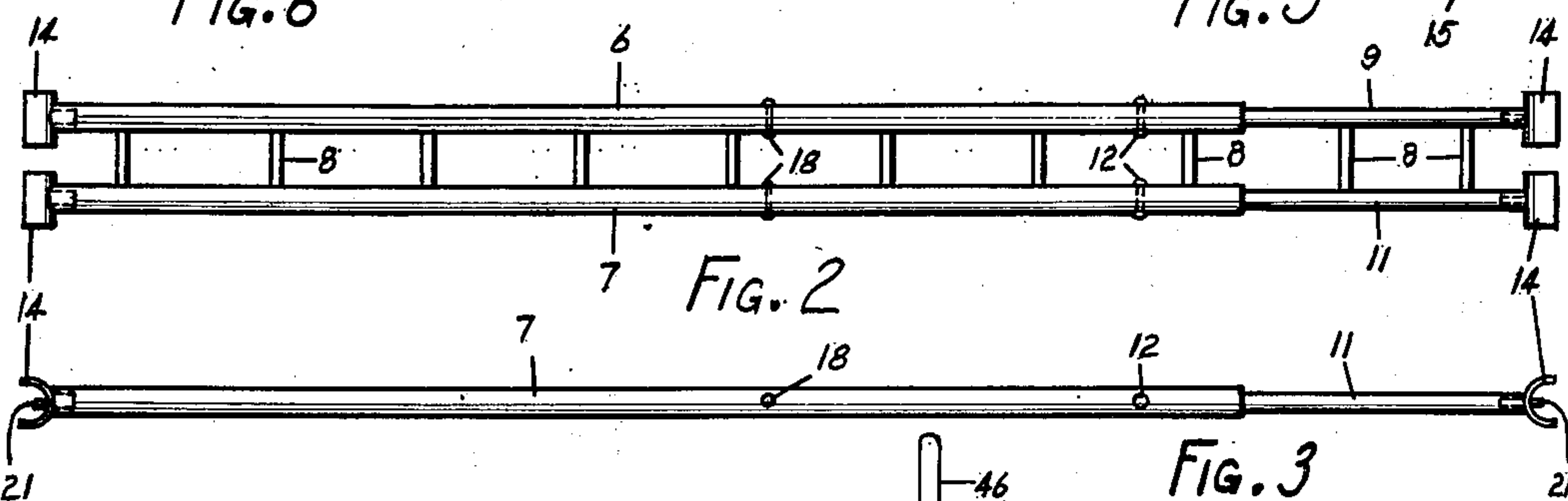


Fig. 2

Fig. 3

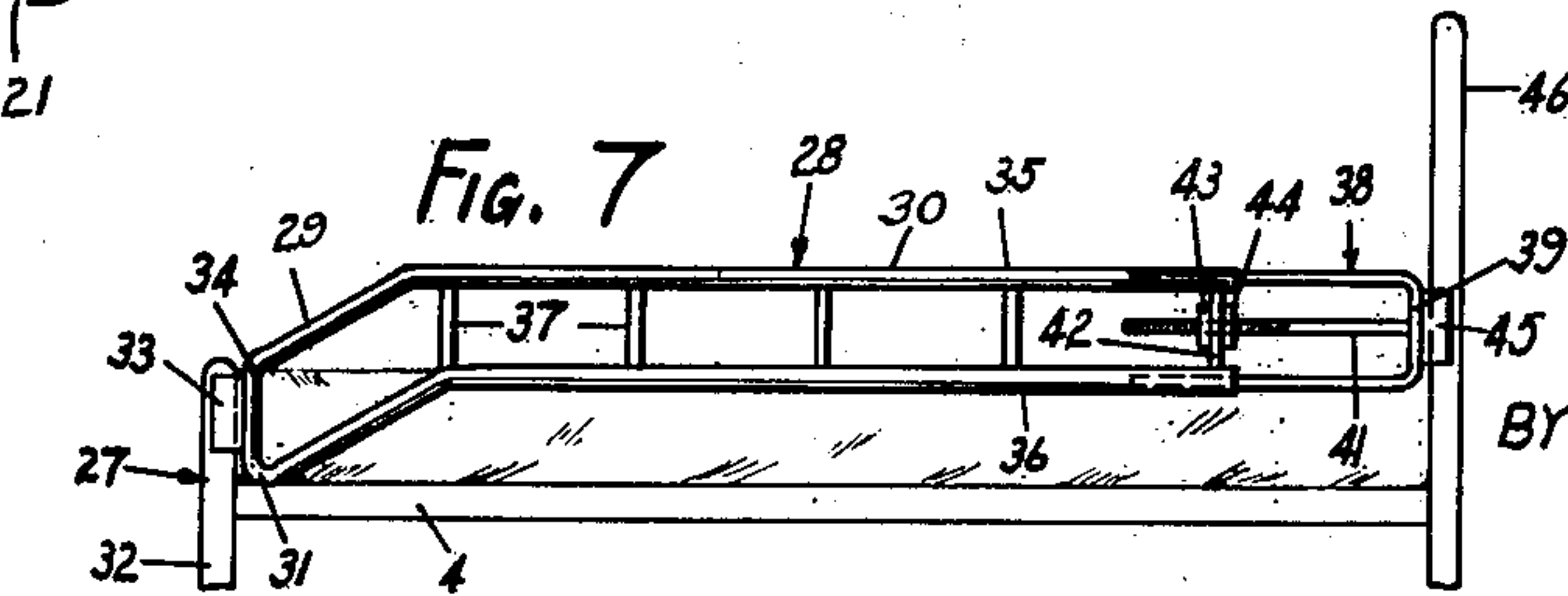


Fig. 7

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DETACHABLE GUARDRAIL FOR BEDS

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3 Claims. (Cl. 5—331)

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This invention relates to new and useful improvements in detachable guard rails for beds and more particularly to such a device adapted for use in conjunction with hospital beds, although it is to be understood that it may also be used in connection with other forms of beds.

An object of the present invention is to provide a simple and inexpensive guard rail which is so constructed that it may be readily and quickly attached to the corner posts of a conventional bed at a selected elevation without the use of tools.

A further object is to provide a guard rail comprising spaced, parallel telescoping members provided at their ends with means for engaging the corner posts of a bed with sufficient pressure to retain the guard rail in operative position thereon.

A further object is to provide a guard rail which is extremely light in weight, yet strong and durable, and which is so constructed that it may be supported upon the corner posts of a conventional bed at an elevation above the usual mattress of the bed, or, if desired, in an out of the way position below the mattress.

Other objects of the invention reside in the simple and inexpensive construction of the guard rail whereby it may be manufactured in quantity production at extremely low cost; in the unique arrangement of the spaced parallel telescoping members having means for securing them together in spaced parallel relation to provide a composite guard rail of lightweight material, whereby it may be conveniently manipulated in the operation of attaching it to a bed or removing it therefrom; and in the specific construction of the means provided at the ends of the guard rail for engaging the bed posts in a manner to prevent accidental up or down movement of the guard rail upon the bed, when once attached thereto.

Other objects of the invention will appear from the following description and the accompanying drawings and will be pointed out in the annexed claims.

In the accompanying drawings there has been disclosed a structure designed to carry out the various objects of the invention, but it is to be understood that the invention is not confined to the exact features shown, as various changes may be made within the scope of the claims which follow.

In the drawings:

Figure 1 is a side elevational view of a conventional bed showing the guard rail attached

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to the corner post thereof at one side of the bed;

Figure 2 is a view showing the guard rail removed from the bed;

Figure 3 is a top view of Figure 2;

Figure 4 is an enlarged detail sectional view of one of the tubular telescoping members of the guard rail showing the spring member provided therein for constantly urging the tubular members against the bed posts;

Figure 5 is an enlarged detail view of one end of one of the members of the guard rail;

Figure 6 is a similar view showing a guard rail adapted to be fitted to a square bed post;

Figure 7 is a view showing a guard rail of slightly different construction; and

Figure 8 is a top view of Figure 7.

In the selected embodiment of the invention herein disclosed, there is illustrated in Figure 1, for purposes of disclosure, a conventional bed comprising the usual corner posts 2 and 3 secured together in fixed relation by the usual side rails 4 which support the usual bed spring and mattress 5, as is well known.

A feature of the present invention resides in the provision of a novel guard rail adapted to be used in connection with a bed, as for example, a hospital bed, to prevent a patient or child from rolling out of the bed and onto the floor.

The guard rail herein disclosed is shown comprising upper and lower tubular members 6 and 7 secured together in vertically spaced relation by suitable upright elements 8 which may have their ends welded to the peripheries of the tubular members 6 and 7 to provide a rigid and substantial structure. The tubular members 6 and 7 and connecting members 8 are preferably constructed of seamless steel tubing whereby they are extremely light in weight, yet offer maximum strength.

Complemental tubular members 9 and 11, respectively, are telescopically fitted into the members 6 and 7 as shown in Figures 1 and 4, and are shown secured together as a unit by similar connecting members 8. Pins 12 are secured in the members 6 and 7 and traverse elongated openings or slots 13 provided in the walls of the members 9 and 11, thereby to prevent complete separation of the members 9 and 11 from their respective members 6 and 7. The outer ends of the members 9, 11, 6 and 7 each have a suitable head 14 secured thereto which preferably are semicylindrical in cross-section, as best shown in Figure 5, thereby to fit the cylindrical posts 2 and 3 of a conventional bed.

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A suitable lining 15 as, for example, felt, may be secured to the inner surfaces of the heads 14 to prevent the heads from marring the finish of the bed posts 2 and 3, when the guard rail is fitted thereto.

To retain the guard rail against accidental detachment from the bed posts, a suitable spring 16 is provided within each of the tubular members 6 and 7, each having one end seated against an abutment member 17 shown fitted into the tubular members 6 and 7 and secured against axial movement therein by suitable pins or rivets 18 secured to the walls of the tubular members 6 and 7, as will be understood by reference to Figure 4.

The opposite ends of the springs 16 are fitted against plugs 19 fitted into the adjacent ends of the relatively smaller tubular members 9 and 11, whereby said plugs provide abutments for the adjacent ends of the spring 16 in a manner similar to the abutment members 17 at the opposite ends thereof.

By this arrangement it will be noted that the springs 16 are constantly under pressure and tend to elongate the guard rail so that when the heads of the guard rail are seated against the bed posts 2 and 3 at one side of a bed, as shown in Figure 1, the guard rail may be frictionally retained on the bed posts by the action of said springs.

In some instances, however, it may be desirable to provide means for positively locking or securing the guard rail against vertical movement, once it has been fitted to the bed posts, as shown in Figure 1. To thus prevent accidental up or down movement of the guard rail upon the bed posts, one or more of the heads 14 at each end of the guard rail may be provided with an outwardly projecting element or pin 21, as best illustrated in Figures 4 and 5. These pins are adapted to be selectively received in vertically spaced apertures 22 provided in the wall of each bed post, as indicated in Figure 4. The springs 16 hold the heads 14 of the guard rail against the posts with sufficient pressure to normally retain the guard rail in adjusted position thereon. However, when the pins 21 are utilized the guard rail is positively locked against up and down movement upon the bed posts as long as the heads 14 are seated thereagainst as will be understood.

In Figure 6 there is shown a head 23 corresponding to the heads 14, but which is designed to fit a square bed post 24 as indicated by the dotted lines. The head 23 may be provided with a projection 25 corresponding to the pins 21 of the heads 14 adapted to be received in spaced apertures provided in the walls of the bed posts.

The novel guard rail herein disclosed may be constructed almost entirely of seamless tubing which has great strength and, at the same time, is extremely light in weight. Lightness is a very desirable feature in a device of this kind because it is often necessary to frequently apply the guard rails to a bed or remove them therefrom, and as this work sometimes has to be done by a nurse, it is highly desirable that the device be made extremely light and convenient to manipulate.

The tubular members 9 and 11 are so supported in their complementary tubular members 6 and 7 that when the guard rail is removed from the bed, as shown in Figure 2, the springs 16 will outwardly project the members 9 and 11 from their complementary members 6 and 7 to the position shown in Figure 2, where the ends 26 of the

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slots 13 in the members 9 and 11 may be seated against the pins 12 secured in the members 6 and 7.

The tie members 8 between the upper and lower telescoping members of the guard rail provide means for conveniently grasping the sections of the guard rail and compressing it in length, when it is desired to fit it to the bed posts at one side of a bed. It will also be noted by reference to Figure 1 that when the guard rail is no longer to be used it may be quickly removed from its aperture position shown in full lines in Figure 1, and attached to the lower portion of the bed posts below the side rails 4 of the bed. When the guard rails are thus positioned, they are out of the way and do not in any way mar the appearance of the bed nor interfere with anyone getting into or out of the bed.

In Figures 7 and 8, there is shown a guard rail adapted for use in connection with a bed in which the foot end 27 of the bedstead is relatively lower than the bed shown in Figure 1.

To accommodate such a bed, the guard rail, generally designated by the numeral 28, is shown having its foot end 29 offset in a downward direction, whereby the lowermost portion 31 of the guard rail may, in many cases, rest directly upon the side rail 4 of the bed, as shown in Figure 7. To secure the foot end of the guard rail to the corner post 32 of the bed, a suitable element or bracket 33 is shown secured to the vertical portion 34 of the foot end of the guard rail and is adapted to engage the corner post 32 of the bed in such a manner as to prevent lateral movement of the guard rail with respect to the bed post 32, when the guard rail is positioned on the bed.

The guard rail 28 illustrated in Figures 7 and 8, is shown comprising a main section 30, constructed preferably of tubular horizontal bars 35 and 36, secured together in vertically spaced relation by suitable upright spacing elements 37, similar to the elements 8 shown in Figure 1.

A U-shaped member 38, also preferably of tubular stock, has its spaced legs slidably received in the adjacent ends of the upper and lower tubular members 35 and 36 of the main guard rail section 30. The intermediate upright portion 39 of the member 38 is shown having one end of a threaded rod or stem 41 secured thereto. The threaded end portion of the rod 41 is received in a guide aperture provided in the upright tie member 42 of the main guard rail section 30, as shown in Figure 7. Suitable nuts 43 and 44 are shown received in threaded engagement with the rod 41 and serve to longitudinally move the U-shaped member 38 with respect to the members 35 and 36 of the guard rail in the operation of securing the guard rail to the bed or removing it therefrom.

A suitable U-shaped element or bracket 45, similar to the element 33, may be secured to the upright portion 39 of the U-shaped member 38 adapted to engage the corner post 46 of the bed to prevent lateral displacement of the member 38 thereon. Suitable means, not shown, may be provided, if necessary, to positively prevent up-and-down movement of the member 38 upon the bed post 46. In use, however, it has been found that the guard rail 28 may readily be secured in fixed position between the corner posts 32 and 46 of the bed by manipulation of the nuts 43 and 44 of the threaded rod 41, particularly, if the concave surfaces of the elements or brackets 33

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and 45 are lined with a suitable anti-friction material as, for example, a rubberized fabric.

In the construction shown in Figure 7, the foot end of the guard rail is shown supported against downward movement by engagement with the side rail 4 of the bed, as indicated at 31. If the guard rail is to be used in conjunction with a bed wherein the corner posts at the foot end of the bed may project very little above the side rails 4, then it may be necessary to secure the U-shaped element 33 to the portion 34 of the guard rail in laterally offset relation thereto, in which case it might be necessary to similarly laterally offset the U-shaped element 45 provided at the head end of the guard rail.

In some cases it may be found necessary to mount the guard rails upon a bed having wooden corner posts which may be either square or cylindrical in cross-section. Such wooden bed posts may require specially designed mounting brackets 33 and 45 to detachably secure the guard rails thereto, and it is to be understood that such variations in the design and construction of the mounting brackets does not depart from the scope of the invention.

The form of guard rail shown in Figures 7 and 8 distinguishes from the form shown in the previous figures in that it is not dependent upon spring tension to hold it in place upon the bed posts. The form shown in Figure 7 is secured to the bed by manipulation of the nuts 43 and 44, whereby the overall length of the guard rail may be varied to accommodate beds of different lengths, and also whereby the operation of securing the guard rail to the corner posts at one side of the bed may be quickly accomplished whereby the guard rail may become, in effect, a component part of the bed. If it is desired to remove the guard rail from the bed, such removal may be quickly accomplished by simply manipulating the nuts 43 and 44 in a direction to permit the member 38 to be slightly telescoped into the upper and lower members 35 and 36 of the guard rail. The nut 43 prevents accidental separation of the U-shaped member 38 from the guard rail when the guard rail is detached from the bed, as will be understood.

It will be apparent to those skilled in the art that I have accomplished at least the principal objects of my invention, and it will also be apparent to those skilled in the art that the embodiments herein described may be variously changed and modified, without departing from the spirit of the invention, and that the invention is capable of uses and has advantages not herein specifically described; hence, it will be ap-

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preciated that the herein disclosed embodiments are illustrative only, and that my invention is not limited thereto.

I claim as my invention:

1. A detachable guard rail for bedsteads comprising a main section composed of upper and lower tubular members secured together in vertically spaced relation, means at one end of said main section for engaging a portion of the foot end of a bedstead, a U-shaped member having its spaced legs received in telescoping engagement with the spaced members of said main section, means on said U-shaped member for engaging and retaining it in position on a corner post at the head end of the bedstead, and threaded means for varying the overall length of the guard rail, thereby to secure it in operative position between the corner posts of the bedstead.

2. A detachable guard rail for bedsteads comprising a main section composed of upper and lower tubular members secured together in vertically spaced relation, means at one end of said main section for engaging a portion of the foot end of a bedstead, a U-shaped member having its spaced legs received in telescoping engagement with the spaced members of said main section, means on said U-shaped member for engaging and retaining it in position on a corner post of the head and of a bedstead, a threaded rod secured to said U-shaped member and slidably engaged with a portion of said main guard rail section, and elements received in threaded engagement with said rod and whereby said U-shaped member may be longitudinally moved on said main guard rail section to secure the guard rail to a bedstead or remove it therefrom.

3. The apparatus of claim 1 further characterized by means carried by said U-shaped members adapted for interlocking engagement with means on the bed posts thereby to secure the guard rail against accidental downward movement on the bed posts.

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