Nov. 7, 1950 W. L. MOYER ET AL 2,529,173

HANDRAIL ATTACHMENT FOR BEDS

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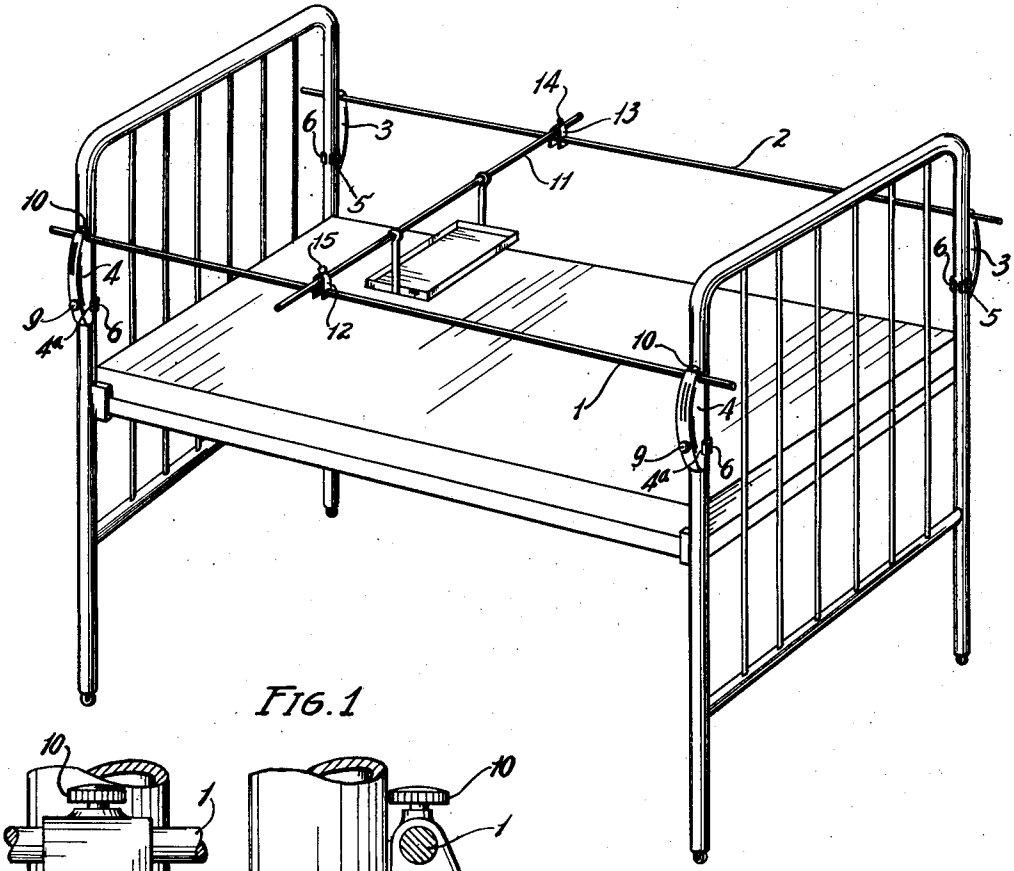


FIG. 1

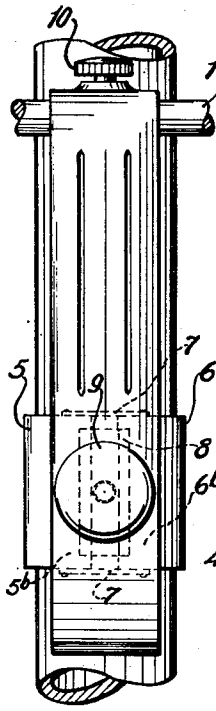


FIG. 2

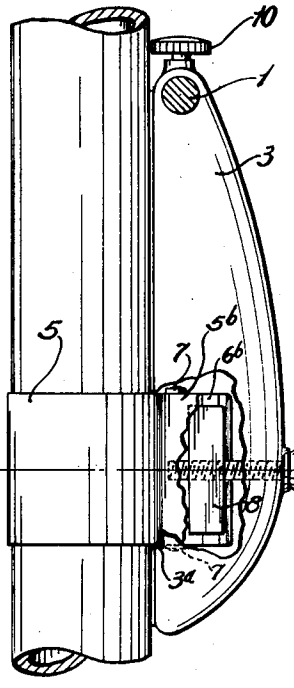


FIG. 3

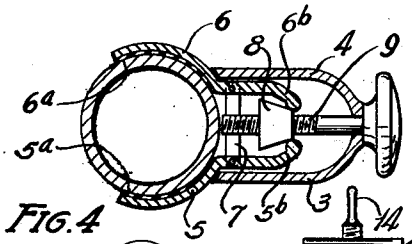


FIG. 4

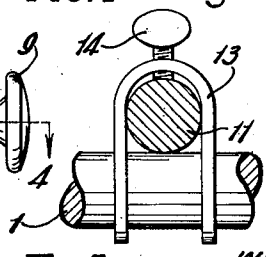


FIG. 5

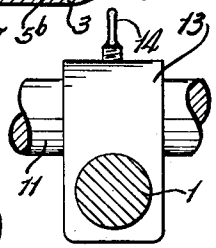


FIG. 6

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HANDRAIL ATTACHMENT FOR BEDS

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7 Claims. (Cl. 5—331)

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This invention relates to an improved assembly of hand rail for attachment to the upright posts of a bedstead, as for instance in the case of a hospital bed.

One object of our present invention is to devise a rail assembly that can be readily attached to or removed from a bedstead and is adapted to provide greater convenience and comfort for the occupant of the bed in changing his position or in exercising upon the bed or to provide increased safety and other advantages to be hereinafter more fully expained.

More specifically, the object of our invention is to provide an assembly which includes duplicate rails for attachment to the opposite sides of a bedstead so as to afford the above-noted advantages to an increased degree and so as to afford means of supporting a transversely extending means of supoprt for various appliances that may be of use to the occupant of the bed.

A further object is to devise a particular form of device for attaching the side rails to the bedstead in a comparatively simple and expeditious and yet most effective manner so as to increase the dependability of the device.

A still further object is to devise such an assembly that possesses an attractive appearance insofar as the rail-attaching means is concerned.

Other objects will appear from the following description and claims when considered together with the accompanying drawing.

Fig. 1 is a perspective view illustrating our device applied to a bedstead;

Fig. 2 is an enlarged partial view of a clamping member in side elevation;

Fig. 3 is another view of a clamping member in elevation at ninety degrees to Fig. 2;

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is an enlarged sectional view of the cross bar, with the inverted U-shaped attaching means therefor shown in side elevation; and

Fig. 6 is another enlarged view of the structure shown in Fig. 5 but at ninety degrees thereto.

It is to be understood that the present form of disclosure is merely for the purpose of illustration and that there might be devised various modifications thereof without departing from the spirit of our invention as herein set forth and claimed.

In the present form of illustration, as shown in the accompanying drawing, the duplicate side rails 1 and 2 are adapted to extend along the two sides of the bedstead and are of somewhat greater length than the distance between the posts

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of the bedstead so as to ensure effective engagement of the ends of the rails with their supporting means in cases of different lengths of beds.

All of the rail-supporting means, four being here shown, are of duplicate form and each of them comprises a housing of vertically extended substantially channel form with opposite parallel side walls 3 and 4. The post-clamping lever arms 5 and 6, in each instance, are rockably mounted upon and between the ends of the two parallel cross bars 7 within the housing and have their outer end portions extending out from beneath the notched edges of the side walls 3 and 4 for engagement with opposite sides of the upright post of the bedstead. The notches 3*a* and 4*a* will permit engagement of the edges of the walls 3 and 4 with the post of the bedstead. The outer portions of the lever arms 5 and 6 are of curved form corresponding to the curvature of the surface of the bed post and may have their inner curved surfaces faced with rubber 5*a* and 6*a* or other suitable material for increasing the frictional engagement with the post of the bedstead. The inner end portions of the lever arms 5 and 6 extend substantially parallel with the side walls 3 and 4 of the housing and have their rear end portions bent inwardly, as indicated at 5*b* and 6*b*. The arms 5 and 6 at their rear end portions are sufficiently spaced to accommodate the lesser dimension of the oblong wedge-like member 8 which has its longer sides beveled for non-rotatable engagement with the portions 5*b* and 6*b* and is thus adapted for wedge-like action thereupon and therebetween so as to rock the lever arms 5 and 6 upon their pivots in effecting operative engagement of the same with the post of the bedstead. The oblong wedge-like member 8 is in the form of a screw-threaded nut and is mounted upon the screw member 9 which, in turn, is extended freely through the rear wall of the housing so as to be rotatable therein; and the member 8 is longer than the distance between the rear end portions of the members 3 and 4 so as to prevent turning of the member 8 with the screw member 9.

By turning the member 9 in the proper direction, it will be threaded through the member 8 which will be held against rotation by virtue of its oblong form, as above described, this screw and nut action serving to effect a wedging engagement of the member 8 between the ends of the arms 5 and 6 so as to thereby rock the same about their pivots and effect clamping engagement of the curved outer portions thereof with the opposite surface portions of the bed post. At the same

time, the engagement of the head of the member 9 with the rear wall of the housing, will also serve as a means of effecting engagement of the free edge portions of the side walls 3 and 4 with the post of the bedstead so as to thereby still further afford frictional engagement of the device with the post. Thus there will be imposed opposite forces upon the portions 5b and 6b and the rear wall of the housing, that is outwardly by the wedge-like member 8 and inwardly by the head of the member 9, respectively. By turning the screw member 9 in the opposite direction, the lever arms 5 and 6 may be released from engagement with the post of the bedstead and the device may then be either raised or lowered to another position upon the post and then secured in such new position or the entire device may be removed.

The side rails 1 and 2 have their ends extending through holes in the upper end portions of the side walls 3 and 4 of their respective clamping members and are secured in such position by means of the set screws 10. By having our particular form of clamping member with its opposite parallel sides, the rail in each instance is afforded effective bearing or supporting engagement as the rail, in each instance, extends through registering holes in the side walls 3 and 4. Also, this device may be employed upon beds of different lengths by virtue of the adjustment allowed by the set screws 10.

By having the clamping member of such upright extent, as herein indicated, and with the clamping means per se located at the lower end thereof, it may be set at an extreme position at the upper part of the post of a bedstead while still being able to clamp in an effective and dependable manner. That is to say, our attaching means may have effective clamping engagement at the lower part thereof while the side rail is attached to the upper part thereof; and, as a result, the side rail may be positioned at a point corresponding at least with the very top of the bedstead.

We have provided also a transversely extending rail 11 which is adapted to be attached to the side rails 1 and 2 in any position therealong. For this purpose, the inverted U-shaped members 12 and 13 of duplicate form, each has registering holes in the lower parts of the parallel sides thereof so that the same may be placed upon the side rails 1 and 2 and moved along the same to any desired position. The transverse rail 11 extends through these companion members 12 and 13 and is secured in desired set position upon the side rails by means of the set screws 14 and 15 which force the transverse rail 11 into such binding engagement. This rail 11 may serve various purposes; as for instance it may support a tray by means of the suspension rods with hooks at the upper ends thereof for engagement over the rail 11; or, without the tray, this transverse rail may be used by the occupant of the bed as a means of exercise or for raising himself in the bed.

Other advantages will suggest themselves to those who are familiar with the art to which this invention relates.

What we claim is:

1. In an attachment for a bed, the combination of duplicate companion clamp means for engaging the upright posts of a bedstead, housing means within which said clamp means are rockably mounted for movement into and out of operative position, a rail having its end portions supportedly engaged within said housing means and adapted to extend along the bedstead and between the posts thereof, and means mounted in each of said housings in operative relation to said clamping means for effecting movement of the same into and out of engagement with the posts of the bedstead.

2. In an attachment for a bed, the combination of duplicate companion clamp means for engaging the upright posts of a bedstead, housing means within which said clamp means are rockably mounted for movement into and out of operative position, a rail having its end portions supportedly engaged within said housing means and adapted to extend along the bedstead and between the posts thereof, and screw-threaded means rotatably mounted in each of said housings in wedge-like operative relation to said clamping means for effecting movement of the same into and out of engagement with the posts of the bedstead.

3. In an attachment for a bed, the combination of duplicate companion clamp means for frictionally engaging the upright posts of a bedstead, housing means within which said clamp means are rockably mounted for movement into and out of operative position, a rail having its end portions supportedly engaged within said housing means and adapted to extend between the posts of the bedstead, vertically extending means at the top of each of said housing means for releasably securing said rail in position within said housing means, and screw-threaded means rotatably mounted in each of said housings in operative wedge-like relation to said clamping means for effecting engagement of the same simultaneously with the posts of the bedstead, said last-named means including hand - manipulated means extending laterally from the lower part of the housing for ready and effective manipulation.

4. In an attachment for a bed, the combination of duplicate companion clamping lever arms with their forward end portions adapted to engage the upright posts of a bedstead, housing means within which said lever arms are rockably mounted at points between their ends, a rail having its end portions supportedly engaged within said housing means and adapted to extend between the posts of the bedstead, and screw-threaded wedge-like means rotatably mounted within said housing for engagement with the rear ends of said lever arms for effecting engagement of the forward ends of said lever arms simultaneously with the posts of the bedstead.

5. In an attachment for a bed, a clamping means comprising a housing, a pair of duplicate companion lever arms rockably mounted within said housing upon parallel axes and having clamping portions of curved form extending out from the sides of said housing for co-operative clamping engagement of a bed post or the like therebetween, wedge-like means within said housing in operative relation with the rear ends of said lever arms for effecting rocking movement of the same and thereby effecting operative engagement of said clamping end portions thereof, and screw-threaded means rotatably mounted in the wall of said housing and extending out therefrom for manipulation of said wedge-like means.

6. In an attachment for a bed, the combination of duplicate rails adapted to extend along the opposite sides of a bedstead, duplicate housing members through which the end portions of said rails extend for support, clamping means rockably mounted within each of said housing

members and extending therefrom for supporting frictional engagement with the opposite sides of a post of a bedstead, wedge-like means mounted in each of said housing members for operating said clamping means so as to effect movement of the same into and out of engagement with the post of the bedstead, a transverse rail extending across the said side rails, inverted U-shaped yoke members provided upon said side rails and receiving the ends of said transverse rail through the channel portion thereof, and means extending through the bight of each of said yoke members for clamping the ends of said transverse rail against the side rails so as to hold the same in position.

7. In an attachment for a bed, a clamping means comprising a housing, with opposite parallel sides adapted to have their edges extend adjacent the post of a bedstead for engagement therewith, a pair of duplicate companion lever arms rockably mounted within said housing upon

parallel axes and having clamping portions of curved form extending out from the sides of said housing for co-operative clamping engagement of a bed post or the like therebetween, rearwardly operatable wedge-like means within said housing for engagement with the inside of the rear ends of said lever arms for rocking said lever arms about their pivots so as to effect clamping engagement of the forward end portions of said lever arms with the post of the bedstead, and means rotatably mounted in the rear wall of said housing for manipulation of said wedge-like means and for effecting engagement of the edges of said opposite parallel sides of said housing with the post of the bedstead so as to thereby further ensure effective and dependable engagement of said housing therewith.

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No references cited.