April 27, 1954 J. P. LEONE ET AL 2,676,341

FOLDING SIDE-GUARD FOR HOSPITAL AND OTHER BEDS

Filed May 19, 1953

2 Sheets-Sheet 1

FIG. 1

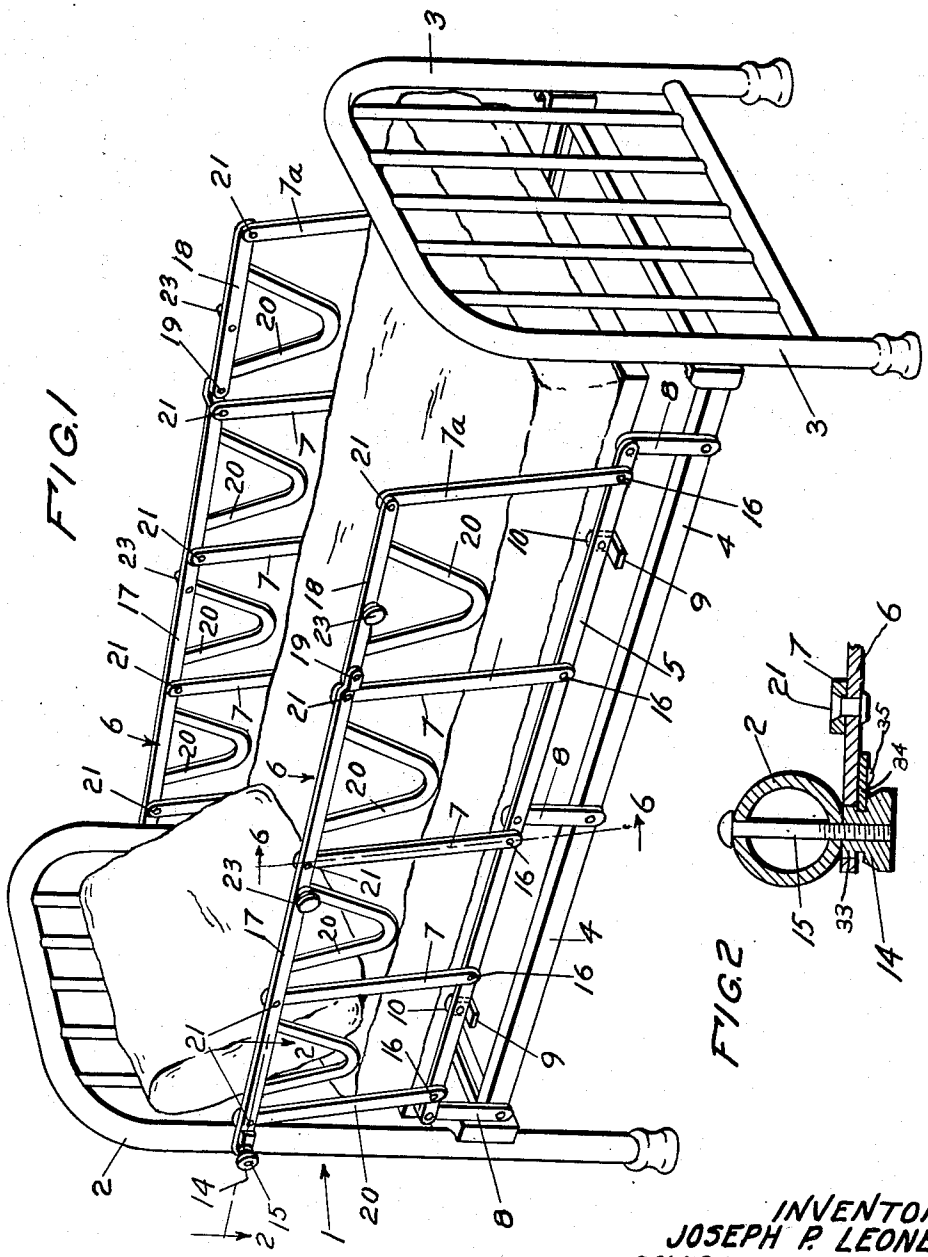


FIG. 2

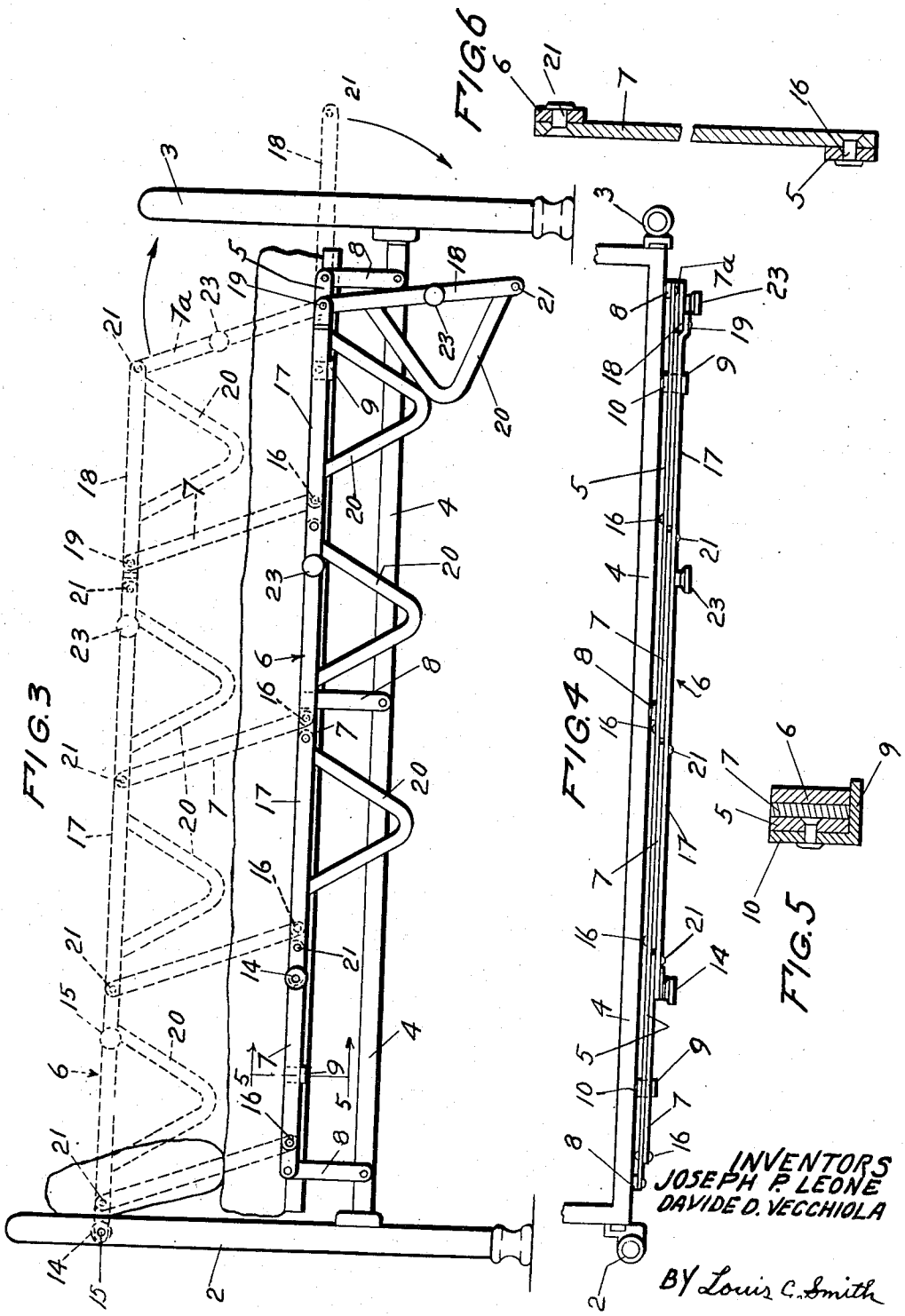
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FOLDING SIDE GUARD FOR HOSPITAL AND OTHER BEDS

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5 Claims. (Cl. 5—331)

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This invention relates to a folding side-guard designed especially for use in connection with hospital beds to prevent a patient from rolling or falling off from the bed.

An object of the invention is to provide a folding guard which is simple in construction and which when folded will not interfere in any way with the normal use of the bed.

In the drawings wherein we have illustrated a selected embodiment of the invention:

Fig. 1 is a perspective view of a hospital bed equipped with our new folding side-guards and showing the guards in raised operative position.

Fig. 2 is an enlarged section on the line 2—2, Fig. 1.

Fig. 3 is a side view of a bed equipped with our folding guard, the full lines illustrating the guard in its folded position and the dotted lines illustrating the guard in its raised operative position.

Fig. 4 is a fragmentary plan view showing the side-guard in its folded position.

Fig. 5 is an enlarged section on the line 5—5, Fig. 3.

Fig. 6 is an enlarged section on the line 6—6 Fig. 1.

In the drawings, 1 indicates a hospital bed which has the usual head frame 2 and foot frame 3 and at each side a side member 4 which extends from the head frame 2 to the foot frame 3.

Our improved side-guard presents a bottom rail 5 which is shown as extending substantially the full length of the bed and is stationarily mounted on the side member 4, and a top rail 6 which also is shown as extending substantially the full length of the bed, said rails being pivotally connected by means of connecting members 7 which are pivoted at their lower ends to the bottom rail 5 as indicated at 16 and at their upper ends to the top rail 6 as indicated at 21. The members 7 are all of the same length and because of their pivotal connections they permit the top rail 6 to be moved from its operative position down into a folded position lying adjacent and parallel to the bottom rail. The folding motion of the top rail 6 may be either in a direction toward the head of the bed or toward the foot of the bed. In the construction herein shown the folding movement is toward the foot of the bed.

While any suitable means may be employed for attaching the ends of the bottom rail 5 to the side member 4, a simple attaching means is herein shown comprising support members 8 which are rigidly secured at their lower ends to the side member 4 and at their upper ends to the bottom rail 5, thereby holding said rail in fixed position.

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It will be noted that the support members 8 are secured at their lower ends to the outside face of the side member 4 and at their upper ends to the inside face of the bottom rail 5.

With this construction, the bottom rail of the side-guard will be located in a vertical plane outside of and spaced slightly from the side member 4 and the mattress frame which supports the usual mattress. The support members 8 have a proper length to support the bottom rail 5 at about a level of the mattress frame.

The lower ends of the connecting members 7 overlie and are pivoted to the outer face of the bottom rail 5, while the upper ends of said connecting members overlie and are pivoted to the inner face of the top rail 6. Hence, when the side-guard is folded the top rail will occupy a position parallel to and in the same horizontal plane as the bottom rail 5 but will be spaced therefrom, as shown in Fig. 4, and the connecting members 7 will all lie parallel to the folded top and bottom rails and will be located between said rails. In its folded condition the entire side-guard thus occupies a very small space and is located below the mattress, and therefore, will not interfere in any way with the normal use of the bed.

The bottom rail 5 is provided at its lower edge with outwardly directed lips 9 which form rests or supports for the top rail 6 when it is in its folded position, and which also function as stops to limit the folding movement thereof. These lips may be provided for by securing angle brackets 10 to the bottom rail with the horizontal leg of the bracket projecting beyond said rail and thus providing the supporting lip 9.

The top rail 6 is held in its raised or operative position by detachably connecting it to the head frame 2. As herein shown, the head frame carries a transversely extending screw-threaded bolt 15 and the end of the top rail has a clamping nut 14 rotatively mounted thereon which is adapted to be screw-threaded onto said bolt thereby detachably securing the top rail to the bed frame. The nut 14 has a hub portion 33 which extends through an opening in the top rail 6, and said nut is retained in position by a retaining plate 34 which is secured to the top rail by a screw 35 and the end of which is received in a groove with which the nut is provided. The nut is, therefore, always attached to the top rail, thus eliminating any danger that it might become lost.

The folding of the side-guard involves unscrewing the clamping nut 14 thereby disengaging the top rail 6 from the bolt 15, and then swinging

the connecting members 7 about their pivotal connections 16 with the bottom rail, thereby moving the top rail 6 down into its folded position against the lips 9. When the top rail is brought into this folded position one of the end connecting members and the corresponding end portion of the top rail will project beyond the end of the bed, thereby presenting a hazard. If the top rail is mounted to be folded toward the head end of the bed, the head end of the folded rail will project beyond the head frame of the bed, while if said top rail is mounted to be folded toward the foot of the bed, as shown in the drawings, the foot connecting member 7a and the foot end of said folded top rail will project beyond the foot frame of the bed, as shown in dotted lines in Fig. 3.

If allowed to remain in this position the projecting end of the top rail and the connecting member 7a would present a hazard, as stated above, and, therefore, we have provided a construction by which such projecting end and the folded end connecting member 7a may be folded downwardly into a vertical position as shown in Fig. 3.

For this purpose the top rail 6 is made in two sections, a long main section 17 and a short end section 18, the section 18 being at the foot end of the top rail and having a length equal to that of the connecting member 7a. The short foot end section 18 of the top rail is pivoted to the section 17, as shown at 19, and as stated above the length of the end section 18 is such that when the side-guard is folded the pivot 19 by which the end section 18 is connected to the main section 17 will be brought into axial alinement with the pivotal connection 16 by which the end connecting member 7a is pivoted to the bottom rail 5. When the bottom rail has been swung into its folded position, the end section 18 together with the connecting member 7a can be swung downwardly into the full line position, Fig. 3, because of the axial alinement of the two pivot points 19 and 16. Hence, although the top rail has a length substantially equal to that of the bed, yet when the side-guard is folded the foot end section 18 of the top rail as well as the folded connecting member 7a will be located in its depending vertical position shown in Fig. 3 and will thus be entirely out of the way.

If desired, the top rail may carry auxiliary guard members 20 which are secured to the under side of the top rail and which occupy the spaces between the connecting members 7 when the side-guard is in its raised operative position. Since the auxiliary guards 20 are in the same vertical plane as the top rail 6, they do not interfere with the folding operation.

The top rail 6 is provided with projections or knobs 23 which the attendant may grasp when swinging the top rail 6 from its open or operative position shown in Fig. 1 into its folded position shown in full lines, Fig. 3, thereby avoiding the danger of pinching her fingers between the top rail and the connecting member 7 as the side-guard approaches its folded position. These knobs are also helpful in swinging the side-guard from its folded to its open position.

It will be understood that a side-guard embodying our invention may be used on both sides of a bed, as shown in Fig. 1, or on only one side, provided the bed is placed against a wall.

In the device illustrated in the drawings, the side-guard is divided by the connecting members 7, 7a into four divisions, but it may be constructed to present a less number of divisions if desired.

We claim:

1. A folding side-guard for a bed, said side-guard comprising a bottom rail having a length substantially the same as that of the bed, means for fixedly attaching said bottom rail to the bed frame at approximately the level of mattress frame, a top rail having substantially the same length as the bottom rail, a plurality of connecting members of equal length pivotally connected at their lower ends to the bottom rail, and also pivotally connected at their upper ends to the top rail, whereby the top rail may be moved from a raised operative position above the bottom rail into a lowered folded position along side said bottom rail, said top rail presenting a long main section and a shorter end section pivotally connected together, said shorter end section having a length equal to that of the connecting members, whereby when the top rail is folded the pivotal connection between the two sections thereof comes into axial alinement with the pivotal connection between the end connecting member and the bottom rail, thereby permitting said end section and the end connecting member to swing as a unit about the alined axes into a vertical position depending from the bottom rail.

2. A side-guard for beds as defined in claim 1 in which the lower ends of the connecting members are pivoted to and overlie the outer face of the bottom rail, and the upper ends of said connecting members are pivoted to and overlie the inner face of the top rail, whereby when the side-guard is folded the top rail is in the same horizontal plane as and outside the bottom rail and the connecting members are parallel to the top and bottom rails and lie therebetween.

3. A folding side-guard for beds as set forth in claim 1 in which the means for attaching the bottom rail to the bed frame comprises a plurality of rigid support members each rigidly connected at its lower end to the bed frame and at its upper end to the bottom rail, said support member being of a length to hold the bottom rail at approximately the level of the mattress frame.

4. A folding side-guard for beds as defined in claim 1 in which the bottom rail has stops projecting therefrom which limit the folding movement of the main section of the top rail and serve to support it in its folded condition.

5. A folding side-guard for beds as defined in claim 1 in which the top rail is provided with knobs which may be grasped by an attendant when swinging the top rail from its open operative position to its folded position.

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