

July 1, 1952

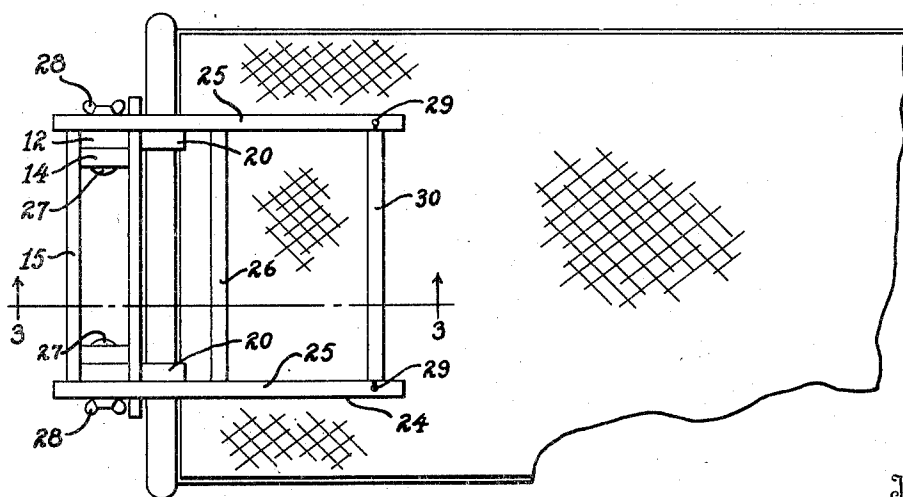
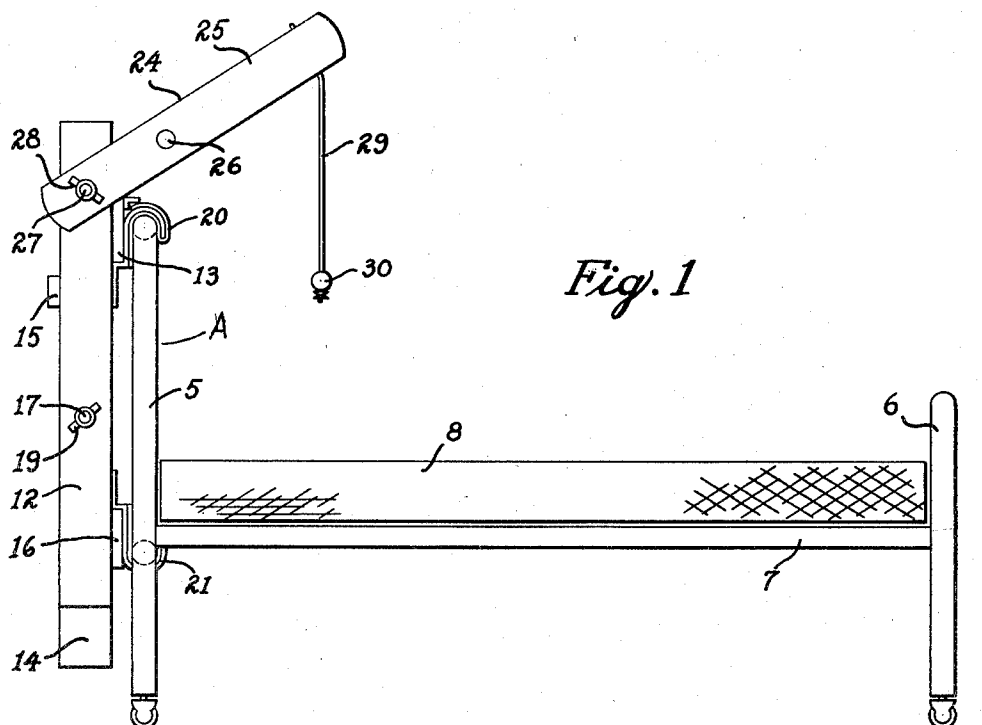
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2,601,686

BED ATTACHMENT

Filed May 5, 1945

4 Sheets-Sheet 1



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Filed May 5, 1945

4 Sheets-Sheet 2

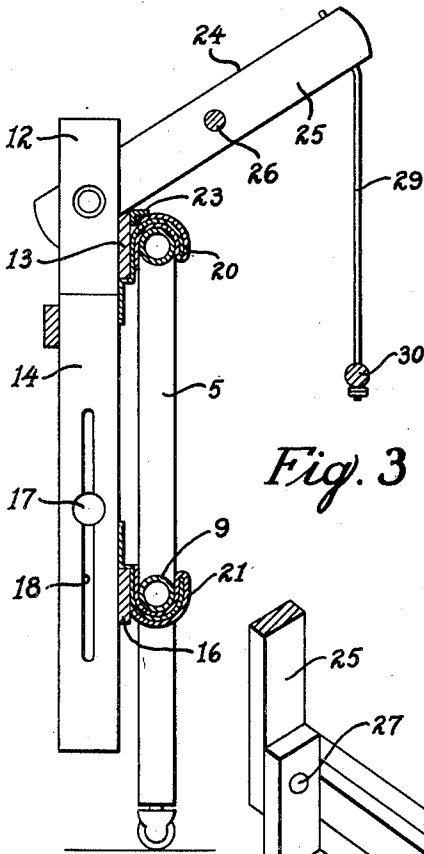


Fig. 3

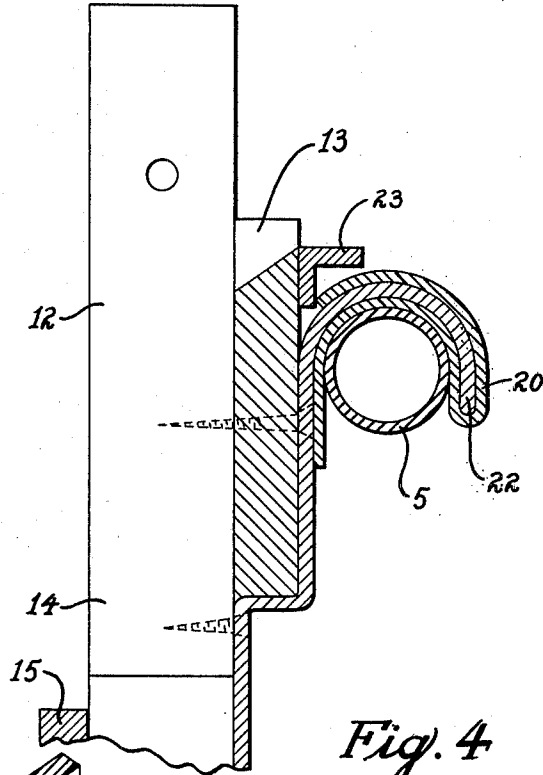


Fig. 4

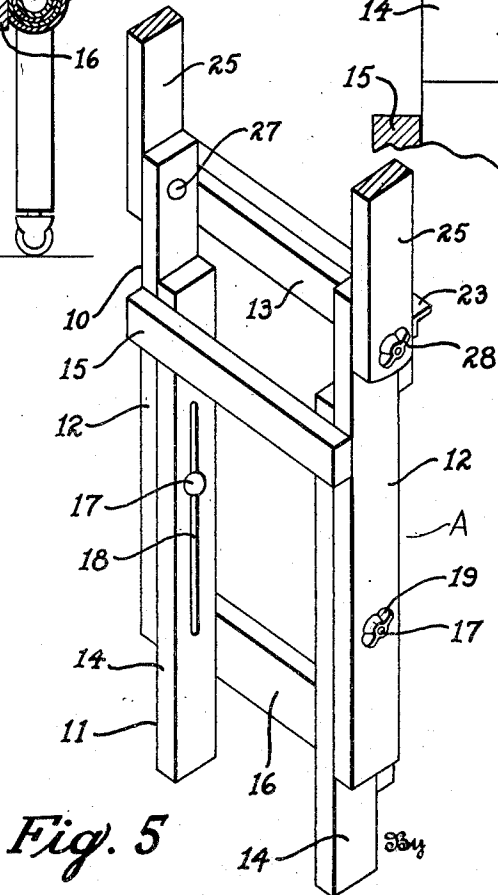


Fig. 5

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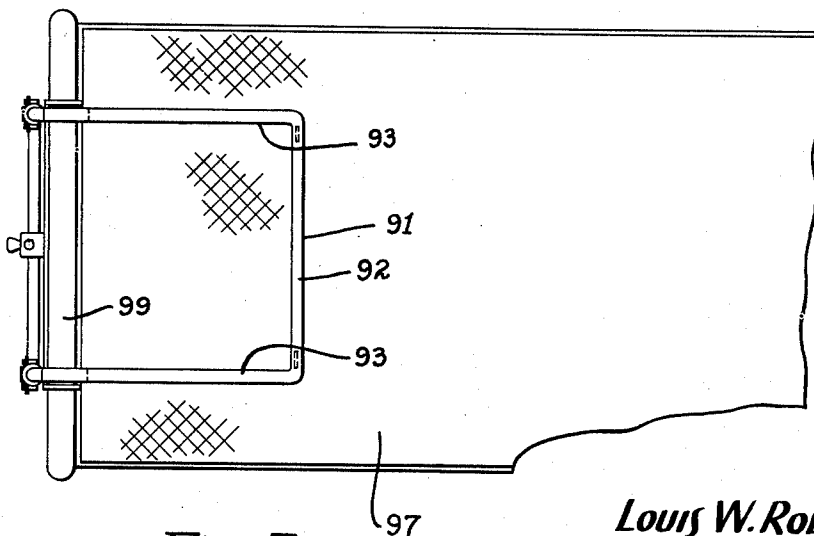
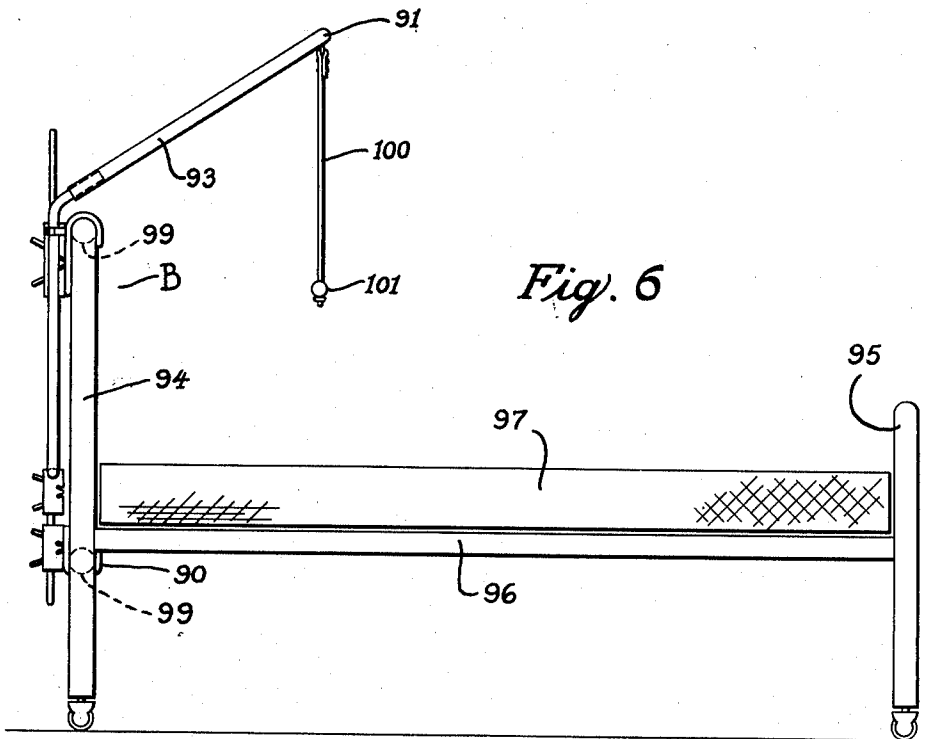
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4 Sheets-Sheet 3



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4 Sheets-Sheet 4

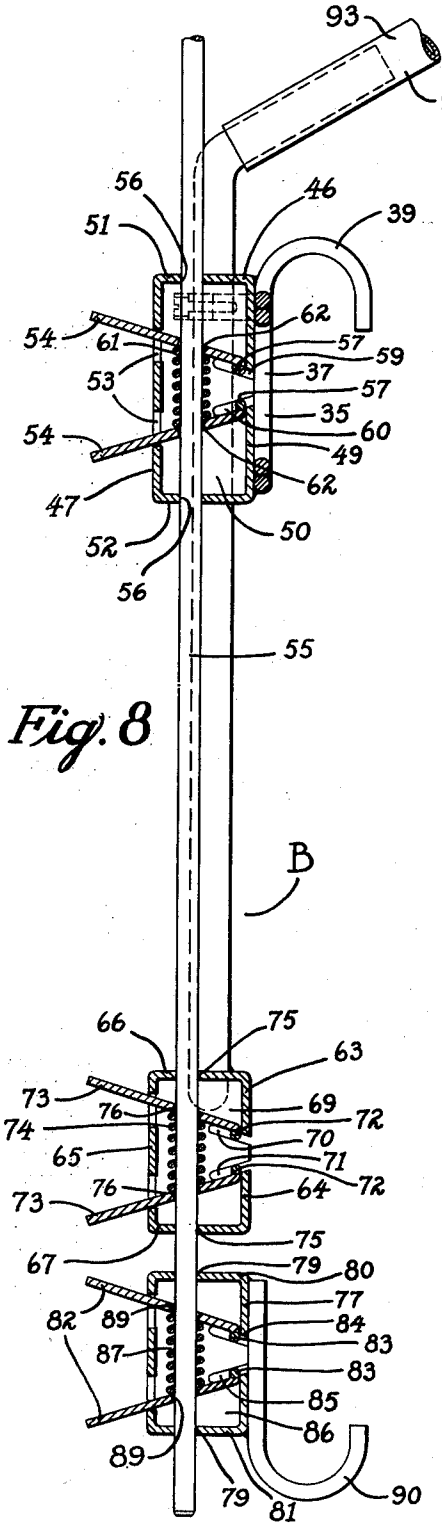


Fig. 8

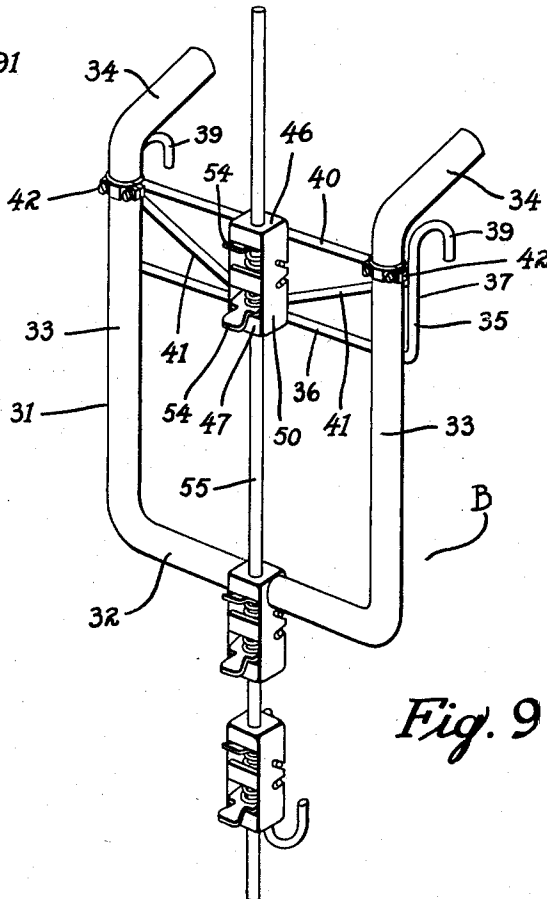


Fig. 9

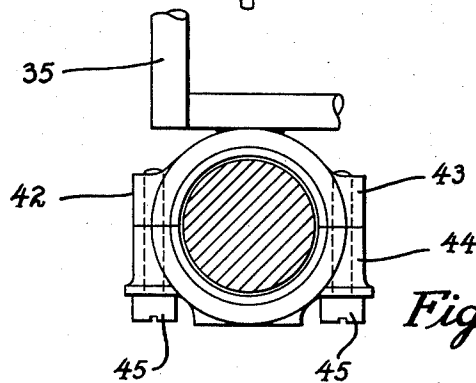


Fig. 10

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UNITED STATES PATENT OFFICE

2,601,686

BED ATTACHMENT

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Application May 5, 1945, Serial No. 592,224

9 Claims. (Cl. 5—317)

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My invention relates to a bed attachment, and has more particular reference to an apparatus to be used on hospital beds to provide means whereby patients occupying the beds may raise themselves from the bed.

The principal object of the present invention is to provide an attachment which may be secured to the head end of the bed and which may extend over a portion of the bed to support a depending bar. This bar may be grasped by the patient occupying the bed and used to assist the patient in pulling himself upwardly. Such an apparatus is not only useful for its exercise value, but also greatly facilitates the operation of placing a bed pan under the patient.

A feature of the present invention lies in the provision of a mounting frame which is adjustable to fit various beds. A pair of permanently mounted hooks extend over the upper edge of the bed to support the weight of the patient and the frame, and an adjustably mounted opposed hook is provided for engaging a lower cross member of the bed.

A further feature of the present invention lies in the provision of a mounting frame and suspension frame of some substantial width. By forming the mounting frame relatively wide it may be easily attached to the bed so that it can not swing or tilt when the weight of the patient is exerted thereupon. This feature is important, as the strain upon the suspension frame is not always equalized on both sides of the frame.

A further feature of the present invention lies in the provision of a mounting frame and suspension frame of substantial width designed for attachment to the end of a bed and in the provision of a bar suspended from two spaced points on this frame. By providing a mounting frame of substantial width a bar similar to a trapeze bar or rope swing may be suspended from two points of the suspension frame. This two point suspension prevents undue twisting of the suspended bar. This arrangement also tends to equalize the strain upon the frame.

This application is a continuation-in-part of my previously filed application Serial No. 515,155, filed December 21, 1943, which has been abandoned.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claims.

In the drawings forming a part of my specification:

Figure 1 is a side elevational view of a bed

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equipped with an attachment constructed in accordance with the present invention.

Figure 2 is a top plan view thereof.

Figure 3 is a vertical section on the line 3—3 of Figure 2.

Figure 4 is an enlarged fragmentary section more clearly showing details of construction revealed in Figure 3.

Figure 5 is a fragmentary perspective view of the attachment showing the construction of the mounting frame, the suspension frame being broken away.

Figure 6 is a side elevational view of a bed showing attached thereto a modified form of construction.

Figure 7 is a top plan view of a portion of the bed showing the attachment in place thereupon.

Figure 8 is a vertical section through the mounting frame showing the construction thereof.

Figure 9 is a perspective view of the mounting frame.

Figure 10 is a transverse sectional view through a fragmentary portion of the mounting frame.

Referring in detail to Figures 1 through 5 of the drawings, the present device A is shown attached to a hospital bed having a head member 5 and a foot member 6 connected by side rails 7. A mattress 8 is placed on the bed, and the head member 5 includes a transverse, horizontal bar 9 disposed at an elevation above the lower ends of the legs of said head member, as shown in Figure 3.

The present attachment includes a mounting frame which is adjustable in length and includes slidably telescoped sections 10 and 11. The section 10 comprises spaced side rails 12 rigidly connected near their upper ends by a cross bar 13 disposed at the inner side of the frame. The frame section 11 also consists of spaced side rails 14 rigidly connected near their upper ends by a cross bar 15 arranged at the outer side of the frame and near their lower ends by a cross bar 16 located at the inner side of the frame. The side rails 14 of the lower frame section 11 flatly engage the inner faces of the side rails 12 of the upper frame section 10, and the rails 12 of section 10 carry bolts 17 which project through longitudinally elongated slots 18 in the rails 14 of section 11. Wing nuts 19 are threaded on the bolts 17 and are adapted to be tightened to secure the frame sections 10 and 11 in relatively longitudinally adjusted positions. It will thus be seen that the frame sections 10 and 11 are slidably telescoped, and that the mounting

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frame composed of these sections is adjustable in length. The ends of the cross bar 13 carry inwardly projecting, downwardly facing hooks 20, while the cross bar 16 carries inwardly projecting, upwardly facing hooks 21 at its ends. Thus, by lengthening the mounting frame, the hooks 20 may be disposed over the top of the head member 5 of the bed and the hooks 21 may be disposed below the cross bar 9 of said head member, so that when the mounting frame is subsequently shortened, the hooks 20 and 21 will be brought into engagement, respectively, with the top of the head member 5 and with the cross bar 9 to rigidly secure the mounting frame upon the head member 5 upon tightening the nuts 19. Hooks 20 and 21 preferably have resilient or soft coverings 22 to prevent marring of the parts of the head member 5 engaged thereby. Also, the cross bar 13 is preferably reinforced near its upper edge by means of a length of angle iron 23 extending from end to end of the cross bar 13 and suitably secured to the latter directly above the hooks 20.

Hinged to the upper end of the mounting frame is a suspension frame 24 including spaced side rails 25 rigidly connected by a cross bar 26 and having their lower ends disposed against the outer sides of the rails 12 of the upper mounting frame section 10. Bolts 27 pass through the adjacent ends of rails 12 and 25 and have wing nuts 28 threaded thereon to provide friction hinges between the mounting frame and the suspension frame. By loosening wing nuts 28, the suspension frame may be disposed in a vertical, out-of-the-way position when the device is not in use, being secured in this position by tightening the nuts 28. However, the suspension frame will be swung inwardly at an angle to the mounting frame so as to extend across and slightly beyond the head member 5 of the bed when the device is required for use, as shown in Figures 1 to 3, inclusive. At this time, the side rails 25 may rest upon the cross bar 13, and nuts 28 may be tightened. Suspended from the upper or free ends of the rails 25 of the suspension frame, by means of flexible members or ropes 29, is a horizontal bar 30. The ropes 29 are attached at corresponding ends to the free ends of rails 25 and at their other ends to the ends of the horizontal bar 30. Thus, when the suspension frame 24 is operatively disposed at an angle to the mounting frame, as shown in Figures 1 and 3, the bar 30 is suspended near the head end of the bed in position to be conveniently grasped by the patient lying in the bed. Accordingly, the patient may utilize this bar 30 by pulling thereon, to aid such patient in raising himself for any reason desired, such as to facilitate placing of a bed pan under the patient.

It will be seen that the attachment is simple, durable, and compact, and the device may be conveniently and expeditiously applied to a bed for use. The attachment furnishes a valuable aid to patients who find it difficult to raise themselves in a bed, and the construction provides for ready positioning of the suspension frame in an out-of-the-way vertical position when the device is not required for use.

In Figures 6 through 10 of the drawings I disclose a modified form of bed attachment indicated in general by the letter B. This attachment differs from the previously described attachment in that it is mainly formed of metal tubing, metal bars and the like. The general operation of the apparatus is very similar to the attachment A, which has been above described.

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The attachment B includes a U-shaped frame 31 having a transversely extending cross member 32 and a pair of upwardly projecting parallel side members 33. These side members 33 terminate in forwardly inclined parallel ends 34 which incline forwardly and upwardly when the attachment is mounted on the head end of a bed.

A cross frame 35 is adjustably connected to the side members 33. This cross frame includes a bottom cross member 36 which is bent vertically at each end thereof to form vertically extending parallel side members 37. The side members 37 terminate in hook ends 39 designed to engage over the upper edge of the head of a bed. A second cross member 40, parallel to the lower cross member 36 connects the vertical frame members 37 at a point adjacent the hook ends. Inclined brace bars 41 may connect the cross members 36 and 40 so as to brace the same.

As best illustrated in Figure 10 of the drawings, a collar assembly 42 is attached to each end of the cross frame 35. The collar assembly 42 comprises a split collar including semi-cylindrical clamping portions 43 and 44 which may be clamped together by clamping bolts 45. The collar portions 43 are secured to the cross frame 35 by welding or any other suitable means.

Attached centrally to the cross frame, I provide a hollow box-like enclosure 46 best illustrated in Figures 8 and 9 of the drawings. This enclosure includes a front wall 47, a parallel rear wall 49 and side walls 50. The enclosure is completed by a top 51 and a bottom 52. Slots 53 are provided in the front wall 47 through which the pivoted clamping arms 54 are designed to hold a vertically extending rod 55 in adjusted position relative to the frame 35.

The top 51 and the bottom 52 of the enclosure 46 are provided with aligned apertures 56 through which the rod 55 may extend. The clamping arms 54 are provided with transverse pivots 57 at their innermost extremities, which are supported in inclined slots 59 and 60 in the side walls 50 of the enclosure 46. The slot 59 extends in diverging relation to the slot 60 as will be noted from Figure 8 of the drawings. A spring 61 is positioned encircling the rod 55 between the clamping arms 54 normally urging these clamping arms apart.

When the clamping arms 54 are pivoted together by squeezing the exposed ends of the arms together in a manner to compress the spring 61, the apertures 62 in the arms 54 through which the rod 55 extends move into aligned relation, permitting the rod 55 to slide vertically relative to the enclosure 46. When squeezing pressure upon the arms 54 is released these arms are forced apart by the spring 61 and the apertures 62 bend against the rod 55 holding the rod locked relative to the enclosure.

A similar clamping apparatus is provided on the lower cross member 32 of the mounting frame 31. The enclosure 63 is secured to the cross member 32 and includes a rear wall 64, a front wall 65, top and bottom walls 66 and 67, respectively, and side walls 69. Diverging slots 70 and 71 are provided in the side walls 69 to receive the pivots 72 mounted upon one end of each of the clamping arms 73. The clamping arms 73 are normally held spaced by means of a spring 74 encircling the rod 55 between the arms 73.

The clamping arms 73 project from the enclosure so that the spaced ends may be grasped and squeezed together. Aligned apertures 75 are provided in the upper and lower ends 66 and 67

of the enclosure and apertures 76 are likewise provided in the arms 73 through which the rod 55 may extend. As the arms 73 swing apart they create a binding action against the rod 55 holding the rod from slidable movement relative to the enclosure 63.

A similar clamping device is mounted upon the rod 55 beneath the enclosure 63. This last mentioned clamping device includes an enclosure 77 comprising a box-shaped body having apertures 79 in the upper and lower ends 80 and 81 thereof. Clamping arms 82 are provided with pivots 83 slidable in diverging slots 84 and 85 in the side walls 86 of the enclosure. A spring 87 encircles the rod 55 between the arms 82 to urge the arms 82 normally apart. Apertures 89 in the arms 82 bind against the rod 55 in normal spread position of the arms locking the rod 55 from movement relative to the enclosure 77.

An inverted hook 90 is mounted upon the enclosure 77 so as to oppose the hooks 39 on the cross frame 35. The hook 90 is designed to engage beneath a lower cross member on the head of the bed and acts in combination with the hooks 39 to hold the frame in proper position upon the bed.

As best illustrated in Figures 6, 7, and 8 of the drawings, a U-shaped suspending frame 91 is supported by the upper included ends 34 of the U-shaped frame 31. The suspending frame 91 includes a cross member 92 and parallel side members 93 connected thereto. The frame 91 is either formed of hollow tubing or is provided with hollow end sockets to receive the forwardly inclined frame ends 34. Thus in assembled position the suspending frame 91 extends forwardly and upwardly from the head of the bed so that the cross member 91 is positioned in spaced relation to the head end of the bed.

The bed illustrated may be of any suitable type, the one shown including a metal head member 94, a foot member 95 and connecting side rails 96 designed to support a spring and mattress such as 97. The head end 94 is provided with a pair of laterally extending cross members such as 99 in parallel horizontal relation. The hooks 39 hook over the upper of these transverse connecting members while the hook 90 is designed to hook beneath the lower of these cross members 99, as indicated in Figure 6.

As also illustrated in Figure 6 of the drawings a pair of flexible straps or ropes 100 depend from opposite sides of the cross member 92 of the suspending frame 91. These straps or ropes 100 support a transversely extending bar 101 similar to the bar 30 previously described. The operation of the bed attachment B is similar to that previously described. The hooks 39 are hooked over the upper cross member 99 and the hook 90 is hooked beneath the lower cross member 99 of the head of the bed. In attaching the hooks it is necessary first to adjust the cross frame 35 at the proper point on the U-shaped mounting frame 31, to properly adjust the height of the rod 55 relative to this mounting frame and then to adjust the hook 90 into engagement with the lowermost cross member 99.

When the mounting frame has been attached the suspension frame 91 may be attached to the upper end of the mounting frame by receiving the inclined frame ends 34 in the socketed ends of the frame 91. The cross bar 101 is then suspended above the patient, but within easy reach. By engaging the cross bar 101 the patient may raise himself up from the surface of the bed.

This action provides a means of allowing the patient to exercise and at the same time greatly facilitates certain necessary operations, such as the placing of a bed pan beneath the patient.

In accordance with the patent statutes, I have described the principles of construction and operation of my bed attachment, and while I have endeavored to set forth the best embodiments thereof, I desire to have it understood that obvious changes may be made within the scope of the following claims without departing from the spirit of my invention.

I claim:

1. A bed attachment to aid a patient in raising himself while lying in bed, comprising a mounting frame adjustable in length and including telescopically associated upper and lower sections each including spaced side rails and a cross bar rigidly connecting said side rails, downwardly facing hooks carried by the cross bar of the upper section and engageable with the top of the head member of a bed, upwardly facing hooks carried by the cross bar of the lower section and engageable with a lower cross bar of the head member of the bed, a rectangular suspension frame having spaced side rails adjustably hinged at corresponding ends to the upper ends of the side rails of the upper section of the mounting frame for vertical swinging movement and positionable to extend across the head member of the bed at an obtuse angle to the mounting frame, and a horizontal bar flexibly suspended from the free ends of the side rails of the suspension frame in position to be grasped by the patient occupying the bed.

2. A bed attachment to aid a patient in raising himself while lying in bed, comprising a mounting frame adjustable in length and including telescopically associated upper and lower sections each including spaced side rails and a cross bar rigidly connecting said side rails, downwardly facing hooks carried by the cross bar of the upper section and engageable with the top of the head member of a bed, upwardly facing hooks carried by the cross bar of the lower section and engageable with a lower cross bar of the head member of the bed, a rectangular suspension frame having spaced side rails adjustably hinged at corresponding ends to the upper ends of the side rails of the upper section of the mounting frame for vertical swinging movement and positionable to extend across the head member of the bed at an obtuse angle to the mounting frame, and a horizontal bar flexibly suspended from the free ends of the side rails of the suspension frame in position to be grasped by the patient occupying the bed, said suspension frame being positionable to rest upon the cross bar of the upper section of the mounting frame when said suspension frame is disposed at said obtuse angle relative to the mounting frame.

3. A bed attachment comprising a frame, means on said frame engageable with the end of a bed to support said frame on said bed end, a pair of frame members pivotally secured to the upper end of said frame along a substantially horizontal pivot, means connecting the upper extremities of said frame members, and a flexible support depending from the upper extremity of each of said frame members and a cross bar connecting the lower ends of the flexible supports.

4. A bed attachment comprising a frame including a pair of spaced side members connected together, a cross frame slidably supported on

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said first named frame, a pair of downwardly facing hook means supported by said cross frame and designed to engage over the end of a bed, a rod vertically adjustable relative to said frame and cross frame, and hook means supported by said rod engageable with the lower edge of the bed end.

5. A bed attachment for use on a bed end, the attachment including a frame including spaced vertical members connected together, a cross frame adjustably secured to said first named frame, a rod adjustably supported by said frame and cross frame, a pair of spaced downwardly facing hook means on said cross frame designed to engage over an upper cross member of the bed end, an upwardly facing hook engageable with a lower cross member of the bed end, and a suspension frame supported by said first named frame and extending at an angle relative to the plane of said vertical members.

6. A bed attachment comprising a first frame including a pair of spaced side members connected together, a cross frame secured to said first frame, a pair of spaced downwardly facing hook means on said cross frame, a vertically extending rod adjustably supported by said frame and cross frame, an upwardly facing hook means supported by said rod means.

7. A bed attachment for use in combination with a bed end, the attachment comprising a first frame, a pair of spaced downwardly facing hook means supported by said first frame to engage over the head end of a bed, a rod adjustably supported by said first frame, hook means supported by said rod and designed to engage beneath a lower cross member of the bed end, and a U-shaped frame portion on said frame extending at an angle relative to the general plane of said first frame.

8. A bed attachment including a frame, means on said frame engageable with a bed end to support said frame, a cross member on said frame near the upper extremity thereof, a pair of frame members pivotally secured to said frame along a substantially horizontal pivot and adapted

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to be forwardly and upwardly inclined, said frame members being engageable with said cross member in one extreme position, and adapted to be supported in forwardly and upwardly inclined position thereby.

9. A bed attachment including a frame, a pair of spaced hook means on said frame and engageable with the end of a bed to secure the frame in upright position to the bed end, a member relatively vertically slidable on said frame, hook means oppositely directed relative to said first named hook means on said member, means for clamping said member in adjusted position on said frame, said frame including a frame portion connected to the remainder of the frame and extending angularly with respect thereto to incline upwardly and forwardly therefrom when the frame is attached to the bed, said frame portion including a pair of generally parallel supports and a cross connecting member therebetween, a pair of spaced flexible members depending in spaced relation from the upper extremity of said frame portion, and a cross bar connecting said flexible members.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
431,206	Gloy	July 1, 1890
730,253	Gorham	June 9, 1903
826,978	Whittington	July 24, 1906
1,255,636	Rasch	Feb. 5, 1918
1,840,170	Neils	Jan. 5, 1932
1,984,821	Boruff	Dec. 18, 1934
2,057,811	Armstrong	Oct. 20, 1936
2,230,620	Leiter	Feb. 4, 1941

FOREIGN PATENTS

Number	Country	Date
374,598	Great Britain	June 16, 1932