

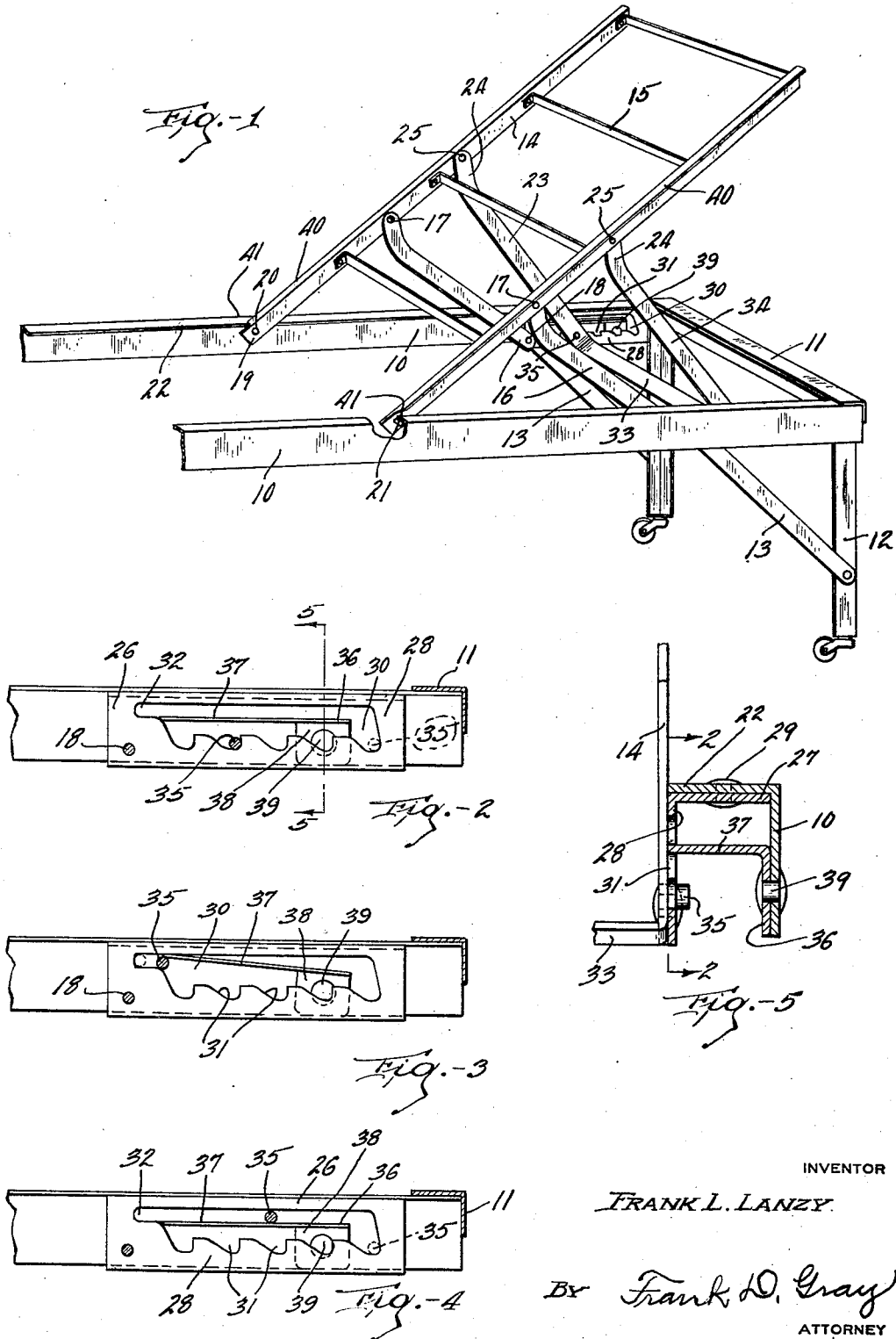
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ADJUSTABLE BACK REST FOR BEDS

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ADJUSTABLE BACK REST FOR BEDS

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This invention relates to adjustable back rests adaptable for attachment to beds, or cots, and especially serviceable for use with institutional bed frames of various sorts.

Heretofore back rests have been pivoted to metal bed frames and provided with means for folding the rest at various inclinations by seating pins in various notches of some element. A difficulty has always been experienced however, in releasing the pin from the notch, when the back rest is to be lowered into contact with the main bed frame. Usually some brace bar must be moved against a heavy strain to release the pin from the notch. My improved structure avoids this great disadvantage.

It is an object of my invention to provide a back rest attachment which shall be supported by pivoted braces which carry the pin for adjustment into various notches of a stationary ratchet bar, the latter having a movable bridge plate which upon raising the back rest will close the entrance to the notches, and thereby make positive the lowering of the rest into collapsed position upon the main frame.

My improved back rest attachment therefore makes possible the disengagement of the pin from the several notches of the ratchet bar without making necessary direct manipulation of the braces carrying the adjusting pins, such release only requiring a slight movement of the rest itself to collapse the same into contact with the main frame. Such means of operation has been found of great value and quite novel compared with the prior art.

With these and other objects in view as will be later explained, my invention consists in the structure about to be described, in the claims hereto appended and illustrated in the accompanying drawing, in which—

Figure 1 is a perspective view of the head portion of the cot frame to which my invention is attached for purposes of illustration;

Figure 2 is a detail view of the adjustment plate and related parts as shown in a vertical transverse section shown in the

plane indicated by the line 2—2 of Fig. 5; Figure 3 is a similar view, but showing the adjusting pin in a much higher position preparatory to collapse;

Figure 4 is a similar view showing the adjusting pin sliding downward over the bridge plate as the back rest is being lowered, and

Figure 5 is a transverse sectional view of the parts shown in Figs. 2 in the plane indicated by the line 5—5.

My improved attachment is shown in the drawing as applied to a metal cot frame having side angle bars 10 and connecting end bars 11, there being provided the usual pivoted leg members 12 braced by bars 13 to the side frame.

The back rest comprises side bars 14 usually of angle iron connected in parallelism by cross bars 15 whose bent ends are usually riveted to the side bars. The upper ends of the bars 14 are usually connected by a cross bar, while the lower ends may remain disconnected. The bars 14 are positively mounted in pivoted relation with the side bars 10 by pivoted braces 16 riveted to the bars 14 at the points 17 and at their lower ends pivoted to the bars 10 by pivoting such ends at 18 to a vertical wall 28 of a flanged plate 26 which is in turn riveted to the bars 10, as later explained. This mounting permits sliding of the back rest relative to the cot frame, swinging relation inclined to the cot frame, and collapse of the two parts for purposes of storage.

The lower ends 19 of the rest frame are provided with rivets 20 whose outer ends 21 extend beyond the outer surface of the angle bar of the rest, but travelling loosely beneath the upper flange 22 of the angle bars 10, and thus serve to hold the lower end of the back rest in connection with the bars 10, at the same time permitting sliding action forward and backward therealong. It will thus be seen that the pivot points 17 of the braces will rise and fall as the back rest is lifted and lowered. Above these points and spaced therefrom, a bail 23 is pivoted at its ends 24 to the bars 14 by rivets 25, whereby the bail may swing upon

the said rivets. Any means of fixing the bail in a definite position will therefore determine the inclination of the back rest upon the cot frame.

5 To adjust the bail 23 in position, the inner surface of the side bars 10 is provided near its forward end with a notched plate 26 which is L-shaped in cross section, the lip 27 being riveted to the upper flange 22
10 of the side bar 10 at 29. The plate is fixed therefore to the cot frame. The vertical wall 28 of plate 26 has an elongated slot 30 whose lower edge is provided with a series of ratchet notches 31 facing toward the foot
15 of the frame.

The upper edge of the slot is smooth and is longer than the lower, being extended beyond the length of the lower edge, providing a notch 32 or reduced slot on a higher
20 level than the notches 31. Each of the plates 26 is provided with such a notched slot 30 and a reduced slot or notch 32 adjacent the upper edge of said slot 30. For the length of the plate 26, the wall 28, together with the vertical plate of the angle
25 bar 10, forms a strong box-like structure, since the flanges 22 and 27 are riveted together, the ratchet plate being on the inner faces of the plates 26 for adjustment of the said bail 23 for holding the rest 14 in its
30 desired inclined position.

Adjacent the cross bar 33 of the bail 23, the side members 34 of the bail are provided with outwardly-extending pins 35 which
35 normally ride along over the edges of the notches 31, falling into one of the notches when released by the raising of the bars 14 carrying the bail. Within the structure formed of the parts 10 and 26 is pivoted an
40 L-like bridge member 36, as shown in the section appearing in Fig. 5, the cover member 37 of the bridge being integrally mounted upon the ear 38 which is pivoted upon a rivet 39 secured in the vertical wall
45 of the bar 10. The bridge structures are identical on the two side bars 10. The normal position of the covers 37 is that resulting from gravity and is the lowermost position in which the tip of the cover 37 rests
50 upon the slot edge above the level of the notches. This lower position of the cover therefore results in a narrow, extended space above the cover in exact alinement with the reduced slot 32.

55 The raising and lowering of the back rest 14 causes the bail pins 35 to reciprocate through the length of the slots 30, the pivoted cover 37 guiding the said pins below the cover on their movement toward the reduced slot 32, and guiding above the cover
60 on its return movement.

The outer extending flanges 40 of the angle bars 14 are shortened at their lower ends to form a shoulder 41 which rests upon
65 the side flanges 22 of the side bars 10, while

the pins 20 and 21 travel beneath the flanges 22 to definitely guide the ends 19 of the back rest as the latter is adjusted in inclination. When the upper end of the rest is raised the pins 35 carried by the bail 23 ride from
70 their position in the notch to the extreme right hand end of the slot 30, as the latter is shown in Figs. 1 to 4. As the back rest is raised, the pins 35 will travel toward the opposite end of the slot 30, falling into one
75 of the notches when the rest is released. In Figs. 1 and 2, the pin 35 is shown in full lines in one of the intermediate notches 31, thereby supporting the rest in an inclined position. In Fig. 2, the pin 35 is shown in
80 dotted lines in the right hand notch which is the position that it takes when the back rest is lowered into collapsed position with the cot frame.

In Fig. 3, the rest has been raised until
85 the pins 35 have reached the left hand notch and then lifted into position against the tip of the cover 37, being so shown in full line, after which the pin enters the reduced slot 32 as it is shown in dotted line, when the cover 37 being no longer held in raised position, drops back to the lower position
90 shown in Figs. 2 and 4. In Fig. 4, is shown the pin 35 in full lines as it appears after an operative has released the back rest and permitted the same to drop down against the cot frame, during which movement the pin 35 is travelling toward the right upon the upper surface of the cover
95 37 until it finally drops back into the right hand notch 31 as it is shown in dotted lines. This completes the cycle of the adjusting movement of the rest and the bail 23. It is to be especially noted that no direct actuation of the braces or bail is required, only
100 a lifting movement of the rest.

In operation, the back rest comprising the bars 14 and 15 is supported in its inclined position upon the pivots 17 and 25 forming the connection with the braces 16 and the
105 bail 23. The pivots 18 of the braces 16 are usually positioned in a fixed portion of the plate 26, the same being at the extreme left hand end of the plate as shown in Figs. 1 to 4, while the pins 20 and 21 and 35 move in a prescribed path. When the rest is lowered to its limit, it is intended that the flanges 40 of the rest shall lie upon the flanges 22 of the cot frame, while the pins 35 of the bail rest in the notch indicated by dotted
110 lines in Figs. 2 and 4.

As the rest is lifted, the ends 19 thereof travel beneath the flanges 22 toward the head of the top, while the pins 35 of the bail travel toward the other notches 31 and in
115 which they will rest if the bail is permitted to drop therein. During this movement, the braces 16 merely swing upon their pivots 17 and 18. The rest may be further lifted until the last notch is reached, after which
120 125 130

further lifting movement will position the pin 35 above the swinging cover 37, as above explained. The number of notches in the slot 30 may be widely varied in number, as also the slot 30 may have any desired length. The length of the rest bars 14 may be varied for different sizes of cots or bed frames or to vary the position of the pins 20 and 21 along the length of the side bars 10. It is further entirely immaterial what the character of the legs 12 may be, or what the nature of their attachment to the bed frame is. In fact, the back rest will operate in the same manner whether the bed frame is provided with legs of any kind.

It is to be understood that other changes in construction may be made as may prove expedient and fall within the scope of the appended claims.

Having described my invention, what I claim and desire to secure by Letters Patent, is:—

1. A back rest attachment for a cot frame, comprising side bars the lower ends of which are adapted to ride lengthwise and slidably on said frame, the latter including side rails formed of angle bars whose horizontal flanges are directed inwardly and the said lower ends having coacting outward flanges slightly spaced from such extreme lower end to form shoulders thereby for riding on the flanges of said rails in adjustment, mechanism for such adjustment comprising an elongated angle plate having a slotted vertical wall and an outwardly extending horizontal flange securely riveted to the flange of each said side rails and thereby forming a strong box-like structure near the upper ends of each said rails, and one edge of the wall slot having a series of ratchet notches, a cover plate pivotally mounted for movement in each said slot and extending its entire length, an adjustable bail swinging from said side bars and carrying outwardly projecting pins entering said slots and traveling slidably above or below said cover plates as the latter swings upwardly or downwardly upon its pivot, and supporting braces pivoted to the said side bars and at their opposite ends to said cot frame between the bail and the ends of the back rest.

2. A back rest attachment for a cot frame, having supporting braces pivoted to the back rest and the cot frame, the lower end of the rest slidably supported on the frame, the latter including side rails formed of angle bars having horizontal flanges, and an elongated angle plate having a slotted vertical wall and a horizontal flange secured to the flange of said side rails and the slots having a series of notches on the lower edge thereof, and a bail the upper ends of whose arms are pivoted to said attachment and the lower ends carrying outstanding pins entering any one of said notches selectively, and

cover plates pivotally mounted for movement in said slots to rise under pressure from beneath and expose the notches to release the pin therefrom, or fall to protect the notches from such entrance, the said supporting braces being intermediate the bail and the lower end of the rest.

3. A back rest attachment for a cot frame, comprising cross bars and side bars and having supporting braces pivoted to said rest and to said frame, and the cot frame including side rails formed of angle bars whose horizontal flanges are directed inwardly at the upper portion, and the attachment side bars being adapted to ride slidably upon the said flanges and the lower ends of the side bars carrying outwardly extending pins sliding beneath said flanges, ratchet mechanism comprising angle plates having vertical walls and horizontal flanges which are fixedly secured to the horizontal flanges of the rails, there being elongated slots in such vertical walls provided with a series of notches in one edge thereof, and an adjusting member swinging from said side bars and carrying outwardly projecting pins for travelling in said slots and detachably entering the said notches selectively to hold the back rest in adjusted position, the said mechanism including a pivoted member comprising a horizontal plate and a downwardly bent ear on its outer edge pivoted to the vertical wall of the side rail, serving upon lifting the back rest, for guiding the said projecting pins back past the said notches into the lowermost one of the series, to permit lowering the rest into contiguous relation with said side rails.

4. A back rest attachment for a cot frame, having supporting braces pivoted to the back rest and the cot frame, the lower end of the rest slidably supported on the frame, the latter carrying elongated box-like structures having slotted vertical walls secured to the inner surface thereof and adjacent the head end of the frame, and the said slots having a series of ratchet notches on the lower edge thereof and facing away from the said head end, and a bail pivoted to said attachment and carrying outstanding pins adapted to enter any one of said notches selectively, the said pivoted bail being mounted beyond the supporting braces, and the latter being intermediate the bail and the lower end of the rest, and cover plates pivoted for movement in said slots to normally protect said notches from entrance of said pins and upon pressure from beneath to rise and expose the said notches to release the pins therefrom, to lower the back rest in a single operation.

In witness whereof, I have hereunto set my hand this 31st day of October, 1928.