April 27, 1965

F. R. NORTON

RAIL ASSEMBLY

3,179,957

Filed July 19, 1963

2 Sheets-Sheet 1

Fig-1

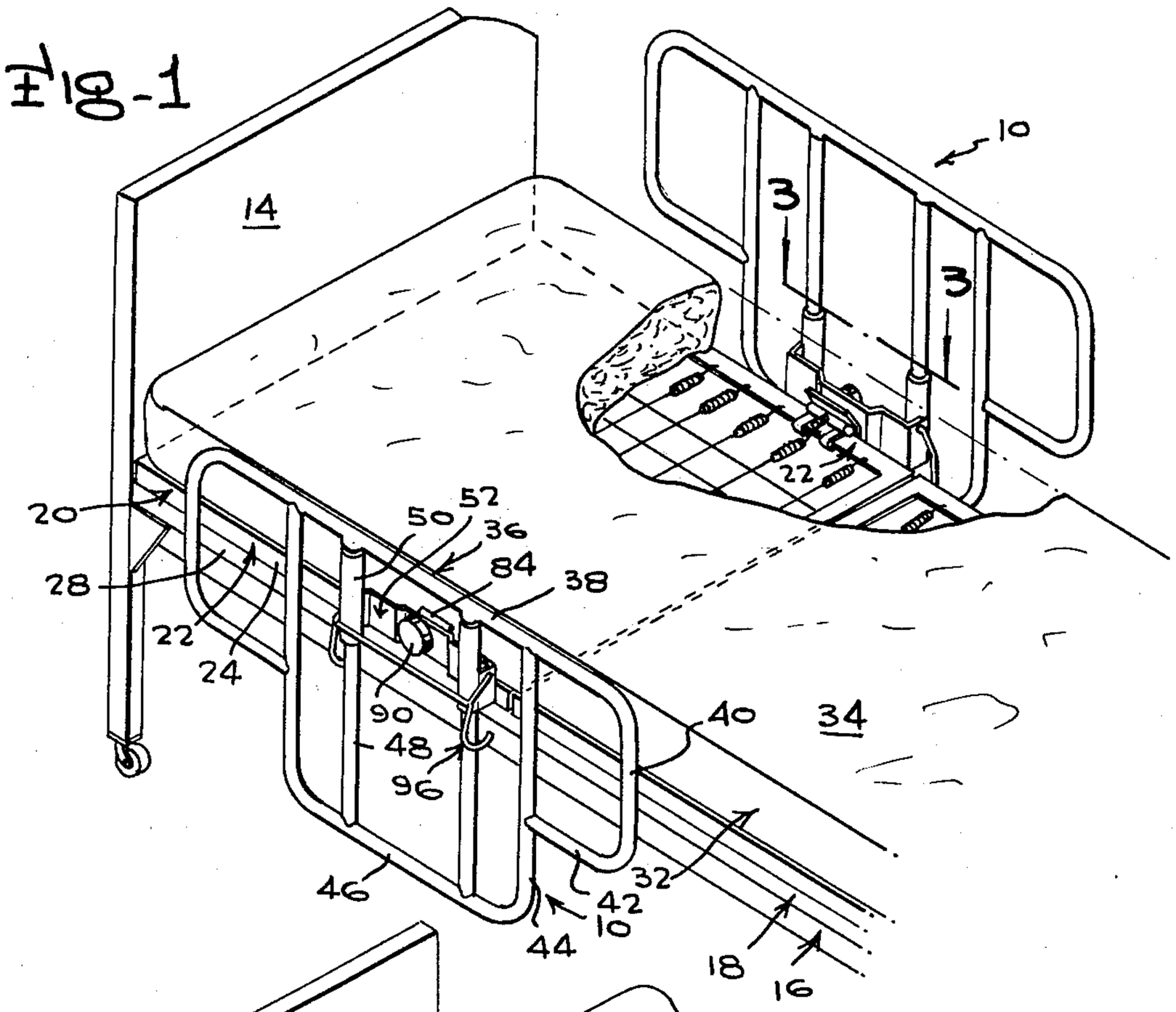

Fig-2

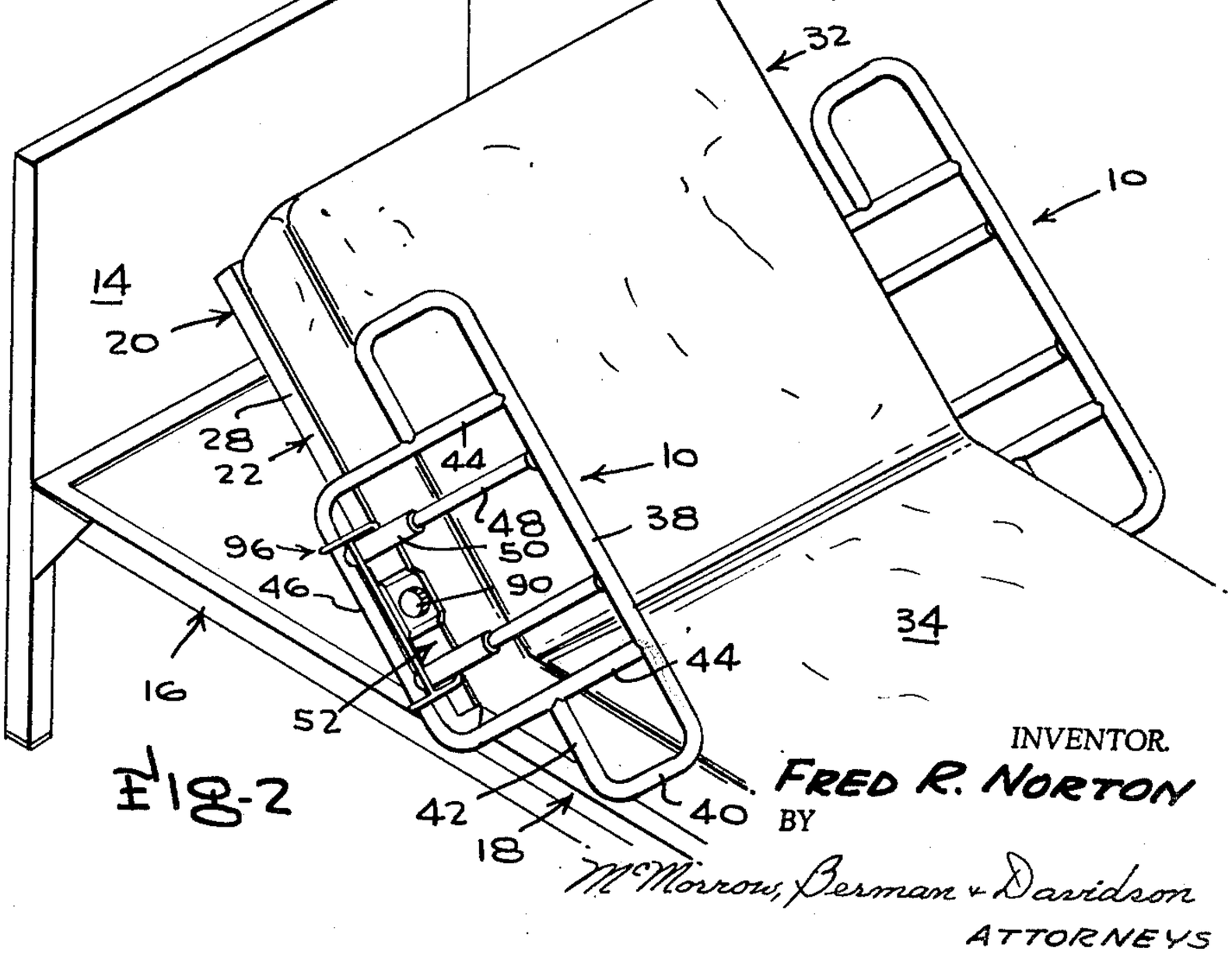

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Fig-3

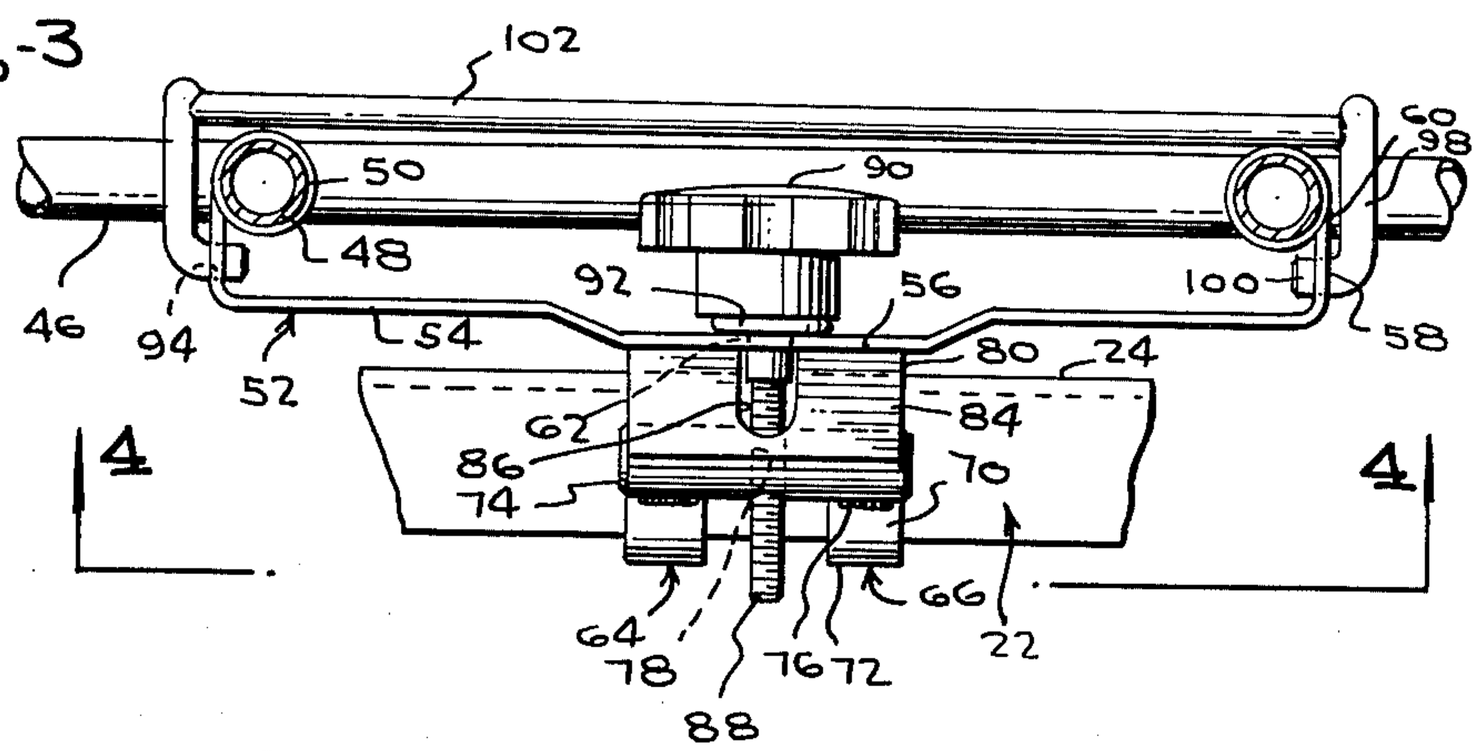


Fig-4

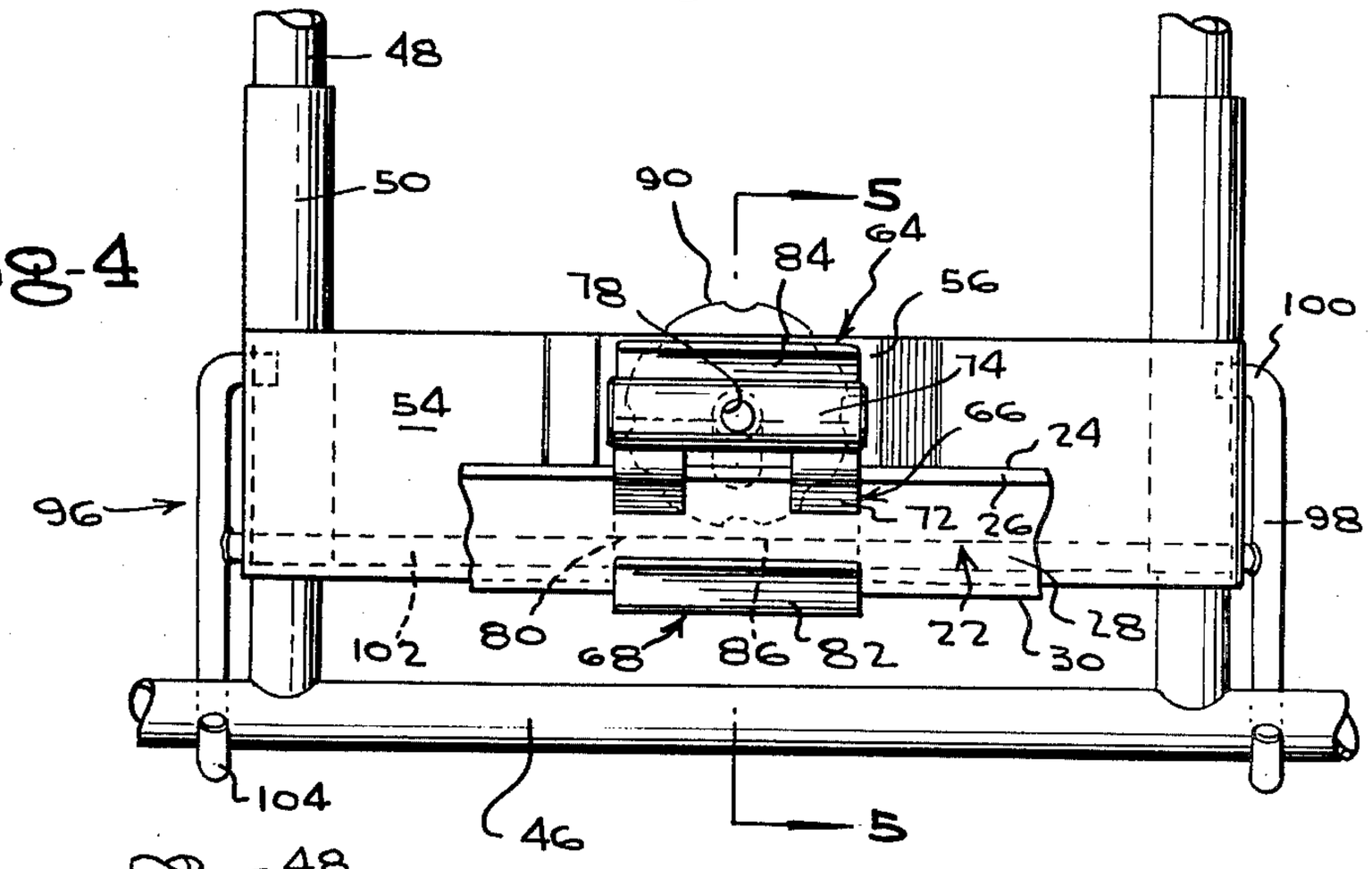
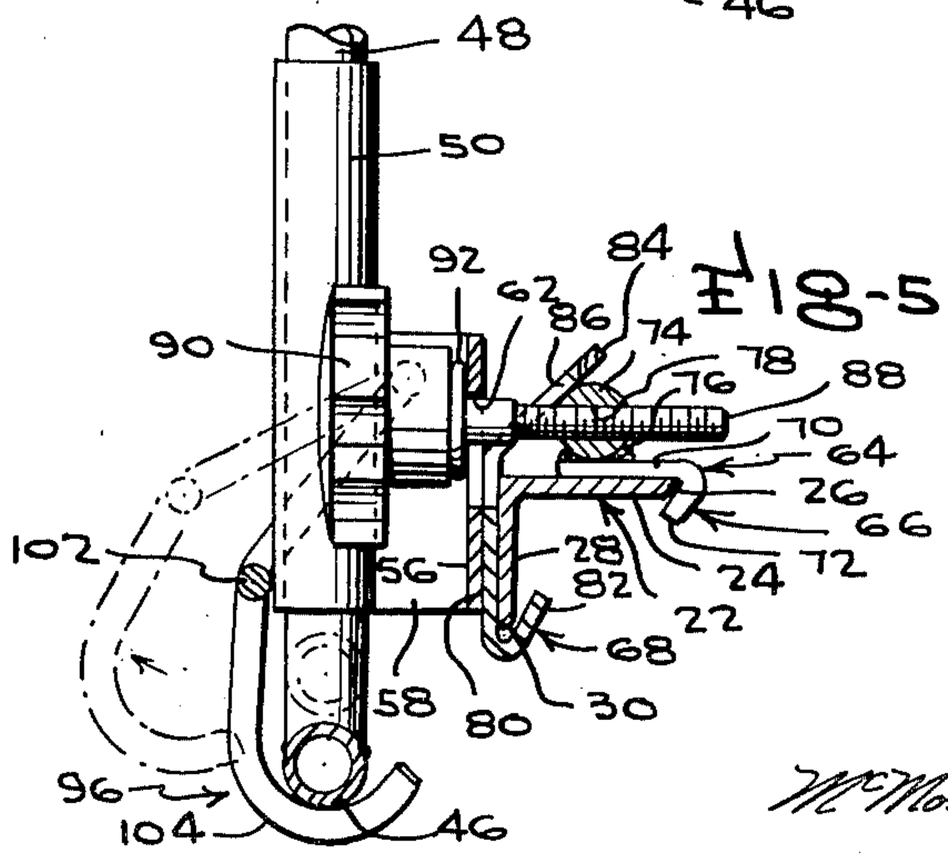


Fig-5



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3,179,957
Patented Apr. 27, 1965

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RAIL ASSEMBLY

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Filed July 19, 1963, Ser. No. 296,298
3 Claims. (Cl. 5—331)

This invention relates to a rail assembly of new and novel arrangement, incorporating features permitting longitudinal and vertical adjustments, and providing for mounting on a bed frame or the like at desired locations.

The invention comprises a rail assembly particularly adapted for use in association with a bed or the like having a side frame, the rail assembly being adapted for raising and lowering with respect to the frame, and being longitudinally adjustable on the frame. An important object of the present invention is, therefore, the provision of a side rail assembly which is attachable to a bed having a side frame, and which is longitudinally adjustable along the frame and movable to at least two vertical positions.

Another important objective of the invention resides in the provision of a rail assembly for attachment to a bed having a tiltable section, the rail assembly being carried by the frame of said section, whereby it remains in an operative, effective position when the section is tilted.

A further object is to provide a rail assembly attachment adapted for use with existing bed frames, and one which may be applied to the frame without special tools or modifications of the frame.

Another object of significance is to supply a novel trip lever assembly, functioning to maintain the rail portion of the assembly in an elevated position automatically on contact, and being releasable by a non-complex, one hand operation.

Yet another object is to provide a locking clamp means permitting adjustable attachment of cylindrical elements to angle bars or the like.

Other and further objects and advantages of the present invention will become apparent to those skilled in the art from a consideration of the following specification when read in conjunction with the annexed drawings, in which:

FIGURE 1 is a perspective view of a portion of a bed, partially broken away at one side, showing a pair of rail assemblies constructed and assembled in accordance with the teachings of this invention in place thereon;

FIGURE 2 is a perspective view showing the rail assemblies elevated and a section of the bed tilted;

FIGURE 3 is an enlarged, detail sectional view, taken substantially on the section line 3—3 of FIGURE 1, looking in the direction of the arrows;

FIGURE 4 is an elevational view of the clamp means of this invention as seen from the line 4—4 of FIGURE 3, looking in the direction of the arrows; and

FIGURE 5 is a detail, vertical section along the line 5—5 of FIGURE 4, looking in the direction of the arrows.

The rail assembly of this invention, as shown throughout the several views, is generally designated by reference numeral 10. One environment of use in which particular utility is present is in combination with a hospital bed 12, or the like, having a headboard assembly 14 and a rectangular underframe 16. Supported on the underframe 16 in any suitable manner is a spring frame 18 which includes a tiltable section 20 to which the rail assembly 10, or two of such assemblies as shown, may be applied. The section 20 includes side frame members 22 of inverted L-form, including a top member 24 having an inner end edge 26 and a side member 28 having a lower

end edge 30. The bed further includes a mattress 32 having an upper surface 34.

The assembly 10 includes an open frame rail structure 36 including a horizontally arranged top rail 38 bent downwardly at its ends to form vertical end rails 40 in turn inwardly curved to provide intermediate rails 42. A U-shaped interior rail, including uprights 44 secured to the top rail and intermediate rails as shown, and having a bight or bottom rail 46 which is of greater depth than the end rails 40. In the area between the uprights 44 a pair of spaced apart side rails 48 extend between the bottom rail 46 and top rail 38. Each of the rails is preferably of tubular, metallic construction, but may be of such construction as is suitable to the intended usage.

A pair of tubular sleeves 50 is supplied, and one of the sleeves is slidably journalled on each of the side rails 48. A plate 52 extends between and connects the sleeves 50, the plate being of generaly U-shape viewed from the top and having a substantially rectangular bight portion 54 with an inwardly bent or pressed central section 56, and having generally perpendicular side arms 58 of rectangular form, secured to the sleeves 50 as by welds 60. The central section 56 of the plate 52 has a vertically elongated aperture 62 formed therein, the purpose of which appears below.

For securing the assembly 10 to the side frames 22, a clamping jaw arrangement 64 is provided comprising an upper jaw 66 and a lower jaw 68. The upper jaw 66 includes a pair of spaced apart horizontal portions 70 (best seen in FIGURES 3 and 5), the ends of which have rebent lips 72 thereon and forming hooks. A substantially cylindrical rod 74 extends between the portions 70, being secured thereto by welds 76, and has an internally threaded bore 78 formed therein adapted foı alignment with the aperture 62 of the plate 52. The portion 70 bears against the top member 24 of the side frame 22 and the lips 72 extend about the end edge 26 thereof. The lower jaw 68 of the jaw arrangement 64 comprises a vertically disposed, substantially rectangular jaw back member 80 having a lip 82 at its lower side and forming a hook and having an upwardly extending, angular member 84 at its upper side. As seen in the drawing, a vertically elongated opening 86 is formed in the jaw 68 extending into the back 80 and angular member 84—the opening 86 being aligned with the aperture 62 and bore 78. The jaw 68 bears against the frame side member 28 with the lip 82 extended about the end edge 30 thereof.

A threaded stud 88 having handle means 90 is provided, the stud extending through the aperture 62, the opening 86, and being received in the bore 78. The handle means includes an enlarged portion 92 of a size such that it will not fit through the aperture 62. Therefore, upon tightening of the stud 88 in the bore 78, the jaws 68 and 66 are tightly clamped about the side frame 22.

A pair of horizontally aligned openings 94 are formed in the plate side arms 58 to support a trip lever assembly 96. The assembly 96 includes a pair of leg members 98 having inwardly turned end portions 100 pivotally secured in the openings 94. An elongated, horizontal handle member 102 extends between and connects the legs 98, and inwardly angled hook members 104 extend from each leg. The hook members 104 are adapted to engage the bottom rail 46 when the assembly 10 is elevated as shown in FIGURES 2, 4 and 5. The arrangement of the lever is such that it gravitates toward the full line position of FIGURE 5, and hence, when the rail structure 36 is raised, the lever engages the bottom rail 46 on contact by reason of being displaced by its upward movement and returning to the normal position.

Release of the lever, by manual outward pressure on the handle **102** which may be by a one-hand operation, causes the structure **36** to be released and to return to the down or non-use position. In such position, the device is conveniently out of the way, the top rail **38** being in about the plane of the mattress upper surface **34**.

Having described and illustrated this invention in some detail, it is to be understood that this description and illustration is offered merely by way of example, and that the invention is to be limited in scope only by the appended claims.

I claim:

1. The combination with a longitudinal side frame member of a bed frame, said member having a horizontal leg and a vertical leg depending from the horizontal leg, of a rail assembly comprising an open frame structure including a horizontal top rail, a bottom rail parallel to and spaced from said top rail, a pair of spaced-apart side rails disposed between and extending from the top to the bottom rail, a sleeve slidably journaled on each of said side rails, a plate extending between and connecting said sleeves together, a clamping jaw arrangement including an upper jaw embracingly engaging said horizontal leg and a lower jaw embracingly engaging said vertical leg and operatively connected to said plate, and a trip lever assembly having a hook engaging said bottom rail, said lever assembly being connected to said plate for swinging movement of said hook from its position engaging said bottom rail to a position in which said hook is out of engagement with said bottom rail.

2. The combination according to claim 1 wherein each of said jaws is in the form of a hook.

3. The combination according to claim 1 which includes in addition handle means operatively connected to said jaws for releasably securing said jaws.

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