

[54] FOOTREST STRUCTURE FOR BEDS

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[51] Int. Cl. A47c 21/00

[58] Field of Search 5/327, 327 B, 68, 99, 70, 71, 5/92, 317; 128/80

[56] References Cited

UNITED STATES PATENTS

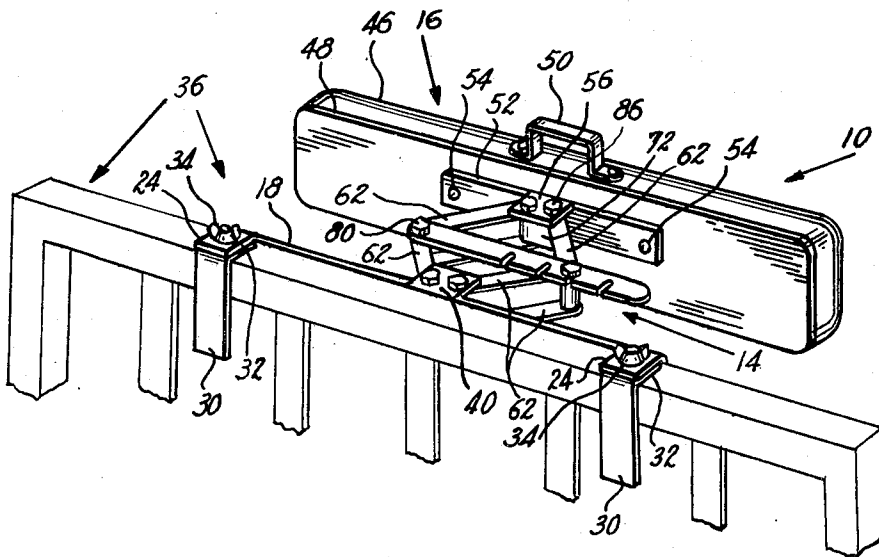
2,196,913	4/1940	Gilson.....	5/327 R
2,720,878	10/1955	Hickman.....	5/327 R

Primary Examiner—Bobby R. Gay
Assistant Examiner—Andrew M. Calvert
Attorney—Morton S. Adler

[57] ABSTRACT

A footrest structure for beds of ordinary construction to be provided as a brace or support for the feet of the bed occupant, particularly when he is in a sitting or partially sitting position. This footrest includes an adjustable mounting bracket which is attachable to footboards of varying thicknesses. A footrest cushion is attached to the mounting bracket by a scissor-type jack mechanism so that the cushion can be moved longitudinally of the bed to accommodate persons of different heights. The adjustment mechanism is provided with a suitable locking device to hold it immovable in any adjusted position.

7 Claims, 6 Drawing Figures



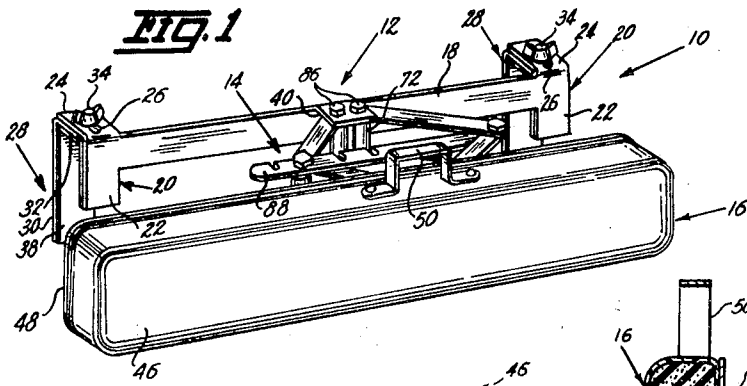


FIG. 2

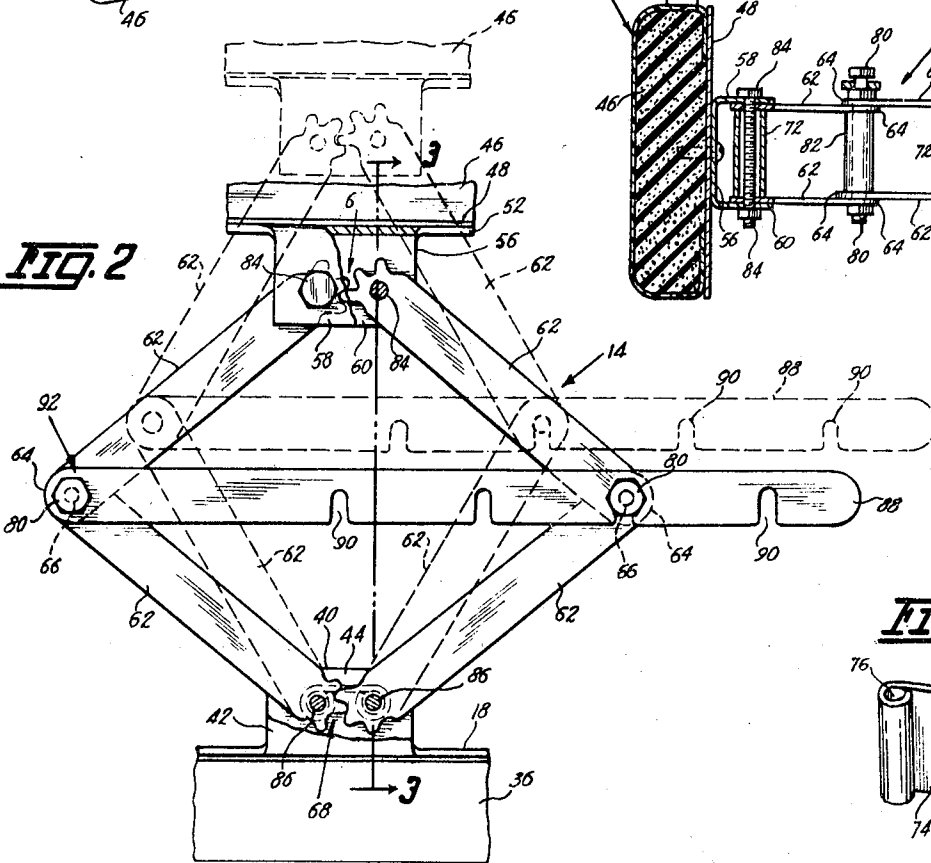


FIG. 3

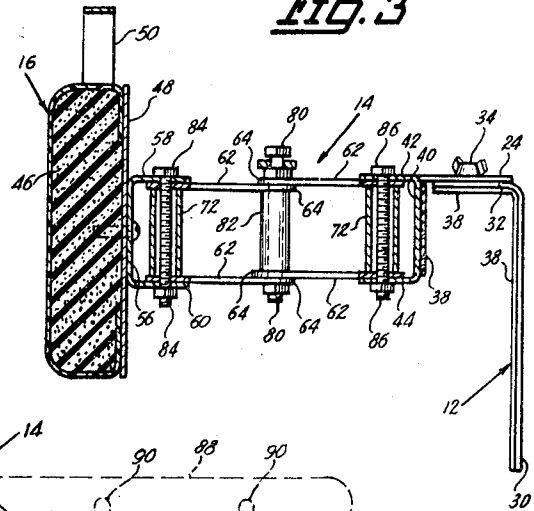


FIG. 5

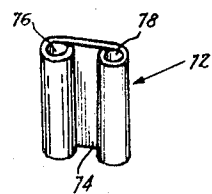


FIG. 4

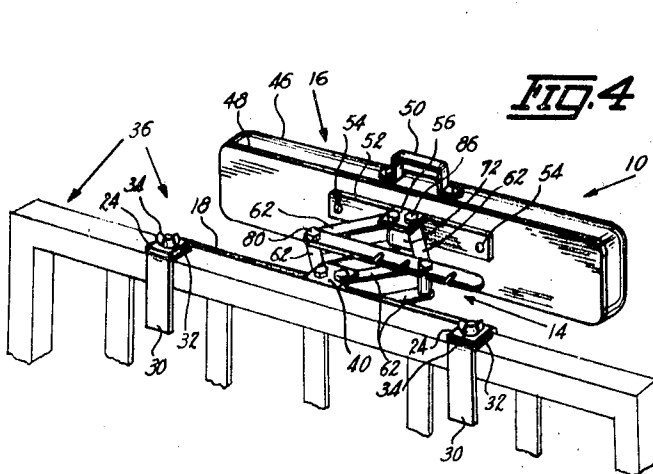
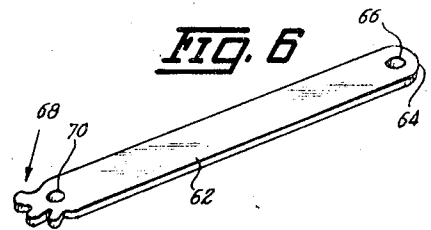


FIG. 6



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FOOTREST STRUCTURE FOR BEDS

BACKGROUND OF THE INVENTION

This invention is an improvement in footrest structures for beds and is of the type of footrest structure generally as exemplified in U.S. Pat. Nos. 667,260, 931,908, 2,196,913 and 2,720,878.

As will be apparent from the above patents identified, various forms of footrest structures for beds have been devised and one of the important objects of the present invention is to simplify the use of such a device and increase its efficiency.

More particularly, it is an object of this invention to provide an improved mounting bracket which is easily adjustable in size for being securely but detachably fixed to bed footboards of different thicknesses and to further provide a simple but efficient adjustment mechanism associated with such bracket whereby a cushioned footrest portion can be accommodated to persons of different heights.

Another object herein is to provide a footrest of the above class that can be easily and conveniently arranged relative to any given bed and easily removed, stored or transported for use on different beds when needed.

SUMMARY

This invention utilizes an elongated support member having U-shaped ends which are adjustable as to thickness so that the support can be conveniently hooked over different size footboards of beds of ordinary construction. An adjustably extensible scissor-type jack mechanism designed to extend in a plane parallel with the top surface of the bed is attached at one end to the support member and at its other end is secured to an elongated cushioned footrest to be engaged by the feet of the occupant. The extension mechanism may be selectively locked in various positions of extension to accommodate persons of different heights. The entire footrest structure is collapsible and is provided with a suitable handle. This item can be quickly and easily mounted on any particular bed and easily removed for transfer to other beds or storage.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of this new footrest structure for beds,

FIG. 2 is a top view of the extensible adjustment mechanism showing in solid and broken lines different positions of adjustment,

FIG. 3 is a cross-sectional view taken on the line 3—3 of FIG. 2,

FIG. 4 is a perspective view showing this footrest structure mounted on the footboard of a bed,

FIG. 5 is a perspective view of one of the stabilizers used for the jack arms shown in FIG. 2, and

FIG. 6 is a perspective view of one of the jack arms of the extension mechanism.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, this new footrest structure for beds is designated generally by the numeral 10 and includes a mounting support or bracket assembly 12, an extensible adjustment assembly 14 and a footrest cushion member 16. Bracket assembly 12 includes an elongated horizontal bar 18 terminating at respective opposite ends in the respective inverted L-shaped hook or bracket members 20 which include the respective vertical arm segments 22 and the top horizontal arm segments 24 with each of said segments 24 being provided with an elongated slot 26.

Respective bracket or hook members 28 for complementary association with hook members 20 are also of an inverted L-shape and include the elongated vertical arm 30 together with a relatively shorter horizontal arm 32 with each of said arms 32 being provided with a slot (not shown) for registration with slot 26. Each arm 32 of hook member 28 will be abutted to the underside of a respective arm 24 on hook 20

and the relative distance between the vertical arms 30 and 22 on the respective hooks 28 and 20 can be selectively adjusted by securing arms 32 and 24 together with a suitable wing nut 34. By this arrangement, the mounting bracket assembly can be quickly and easily adjusted and detachably arranged by merely hooking the same over the top of a footboard 36 as best seen in FIG. 4. The inner or under side of arms 30 and 32 of hooks 28 as well as the inner side of bar 18 and arms 22 of hooks 20 are provided with an appropriate felt liner 38 (FIG. 3) to avoid any scratching or marring of the footboard 36.

A channel-shaped bracket 40 is disposed centrally of bar 18 so that the respective upper and lower lips 42 and 44 project perpendicularly from bar 18 in a direction opposite to that of hook members 24 and such bracket 40 is a part of the support for assembly 14 as will appear. An elongated generally rectangular cushion member 46 is mounted to a backing plate 48 in any suitable manner and an appropriate handle member 50 is secured to the top side of member 46 as shown. A bar member 52 (FIG. 4) is secured centrally of the backing plate 48 as by screws 54 and carries a channel-shaped bracket 56 having the respective upper and lower lips 58 and 60 (FIG. 3) extending perpendicularly from plate 48 and designed to be in opposed spaced relationship to bracket 40 as the complementary support for assembly 14.

Assembly 14 comprises a two level arrangement of spaced parallel substantially like jack arms designated by the numeral 62. Each arm 62 is an elongated rigid strap or bar member as seen in FIG. 6 provided with a radius 64 at one end and an opening 66 at such end for a pivot mounting as will appear. The other end of arms 62 is provided with a toothed or gear-type perimeter 68 and an opening 70 closely adjacent said gear teeth.

A stabilizer and spacer member 72 (FIG. 5) is mounted on bracket 56 between the lips 58 and 60 and a similar stabilizer and spacer member is mounted in bracket 40 between lips 42 and 44. Member 72 comprises a vertical plate 74 having its respective side ends turned back upon itself to form the respective bushings 76 and 78. In associating arms 62 with the scissor-type jack adjustment unit 14, I have used eight of such arms to provide the upper and lower levels of member 14 as best seen in FIG. 3. For this purpose, each level comprises two pairs of arms 62 of which each pair of pivotally connected by a pivot pin 80 through hole 66 at end 64 and as seen in FIG. 3, pin 80 is journaled through a spacer tube 82 to appropriately separate the upper and lower levels of arms 62 at a distance approximating the spacing between the upper and lower lips on brackets 40 and 56. The geared ends 68 of arms 62 of the respective pivotally connected pairs of arms are arranged relative to brackets 40 and 56 as seen in FIG. 2 and for this purpose, a stabilizer member 72 is disposed between the upper and lower lips of the respective brackets 40 and 56. Appropriate holes (not shown) are provided in said lips for registration with the bushings 76 and 78. The upper level of arms 62 are mounted between the top of stabilizers 72 and the upper lip of brackets 40 and 56 and pivotally secured thereto by the respective pins 84 and 86 extending through hole 70 in the respective arms 62 and through the respective bushings 76 and 78. In this arrangement, the geared ends 68 of the respective opposed pairs of arms will be in meshing relationship with each other as best seen in FIG. 2.

The geared ends 68 of the lower level of arms 62 are arranged similarly to that described for the upper level and will be appropriately mounted in meshing relationship with each other to brackets 40 and 56 between the bottom of stabilizers 72 and the respective lower lips on said brackets. By this arrangement, it will be understood that cushion member 48 can be extended and retracted relative to the mounting bracket 12 as illustrated by the solid and broken lines in FIG. 2 which is in effect a scissor-type jack adjustment means. The two level arrangement of jack arms together with the meshing relationship of the geared end 68 of such arms and the bushings 76 and 78 provide a rigid and stable adjustment and support means for the cushion 46 so that there is no lateral twisting or deformation in the use or handling of this item.

To hold assembly 14 in desired positions of adjustment, there is provided an elongated locking bar 88 having a plurality of longitudinally spaced slots or notches 90. Bar 88 is pivotally attached at one end 92 to pin 80 above the upper level of arms 62 and is designed so that it can be engaged with the oppositely disposed pin 80 by means of one of the notches 90. With bar 88 thus engaged as seen in FIG. 2, the relative movement of arms 62 is prevented so that the extensible position of cushion 46 in relation to the bracket assembly 12 can be fixed at any desired point to accommodate persons of different heights. Accordingly, in view of all of the foregoing, it is thought that a full understanding of the construction and operation of this invention will be had and its several advantages appreciated.

I claim:

1. A footrest structure for beds, comprising: an elongated support bar, a hook means on each respective end of said support bar adapted for removable slip fit attachment to the footboard of a bed, a cushion footrest member adapted to lie on the top surface of a bed, and an extensible scissor-jack-type linkage assembly connected respectively to said support bar and said cushioned footrest whereby said cushioned footrest can be moved longitudinally of a bed to selective positions of spaced relationship relative to said support bar.
2. A footrest structure as defined in claim 1 including releasable lock means carried by said linkage assembly and selectively operable to hold said linkage assembly immovable.
3. A footrest structure as defined in claim 1 wherein said hook means comprises: an inverted L-shaped hook member defining a horizontal and vertical arm at each end of said support bar, a pair of separate inverted L-shaped hook members defining respective horizontal and vertical arms, the horizontal arms of all hook members being provided with a respective elongated slot, the horizontal arm of respective separate hook members disposed in juxtaposition to a horizontal arm on respective hook members on said support bar so that respective slots are in registration and respective vertical arms are in parallel spaced relationship, and releasable fastening means operable through said slots whereby the spaced relationship of said vertical arms can be selectively varied and secured against relative movement.
4. A foot rest structure as defined in claim 1 wherein said

linkage assembly comprises:

- a first support bracket on said elongated support bar and a second support bracket secured to said cushioned footrest member,
- a first pair of elongated rigid adjustment arms pivotally secured together at one respective end, the other end of one arm pivotally secured to said first support bracket and the other end of said other arm pivotally secured to said second support bracket, and
- a second pair of elongated rigid adjustment arms in the same plane as said first pair and similarly secured together and to said support brackets as said first pair to provide a scissor-type jack extensible adjustment assembly for said cushioned footrest member.
5. A footrest structure as defined in claim 4 including: an elongated locking bar provided with longitudinally spaced notches along one edge, said locking bar being pivotally secured at one end to the pivotally connected ends of one of said pairs of adjustment arms, and said locking bar being releasably engageable by a selected notch with the pivotally connected ends of said other pair of adjustment arms whereby relative movement of both pairs of arms can be prevented.
6. A footrest structure as defined in claim 4 including: gear teeth on said other ends of each arm of said first and second pairs of adjustment arms, and the connection of respective arms to said first and second support brackets being arranged so that gear teeth on the arm of one pair is in meshing relationship with the gear teeth on the arm of the other pair on both said first and second support brackets.
7. A footrest structure as defined in claim 4 including: a third pair of adjustment arms in parallel spaced relationship below said first pair and similarly connected to each other and to said first and second support brackets as said first pair of adjustment arms, a fourth pair of adjustment arms in parallel spaced relationship below said second pair and similarly connected to each other and to said first and second brackets as said second pair of adjustment arms, respective spacer sleeves between the pivotally connected ends of said first and third pairs of adjustment arms and between the pivotally connected ends of said second and fourth pairs of adjustment arms, and respective bushings on said first and second brackets intermediate the respective ends of said pairs of adjustment arms connected thereto.

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