

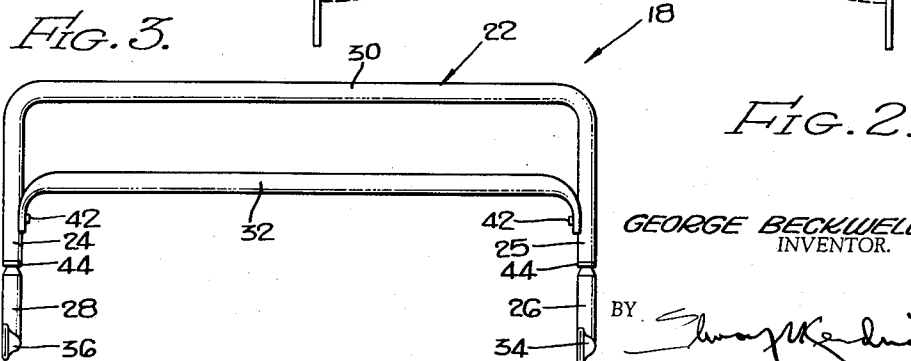
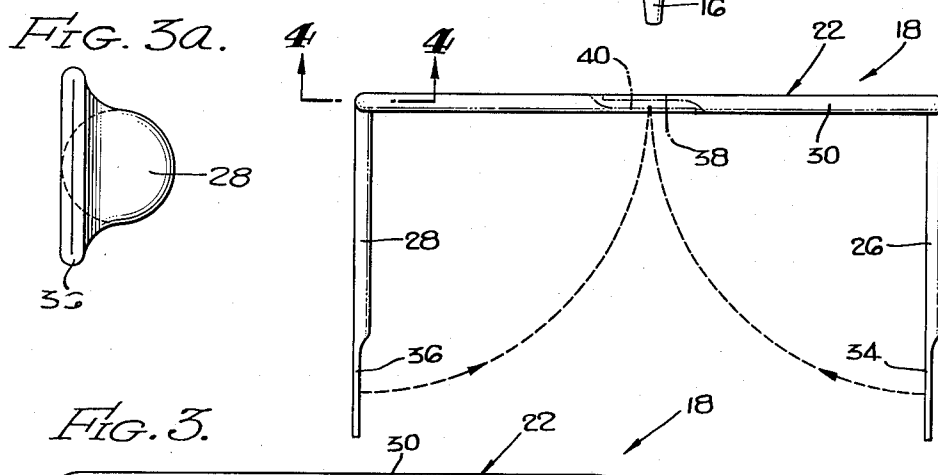
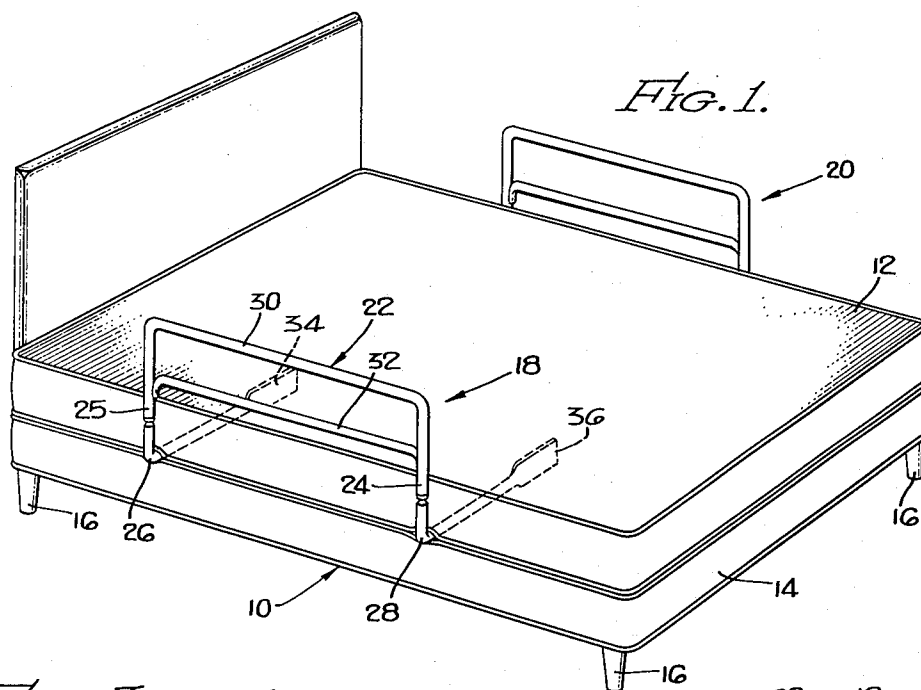
July 11, 1961

G. BECKWELL
COLLAPSIBLE BED RAIL

2,991,487

Filed Oct. 20, 1958

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

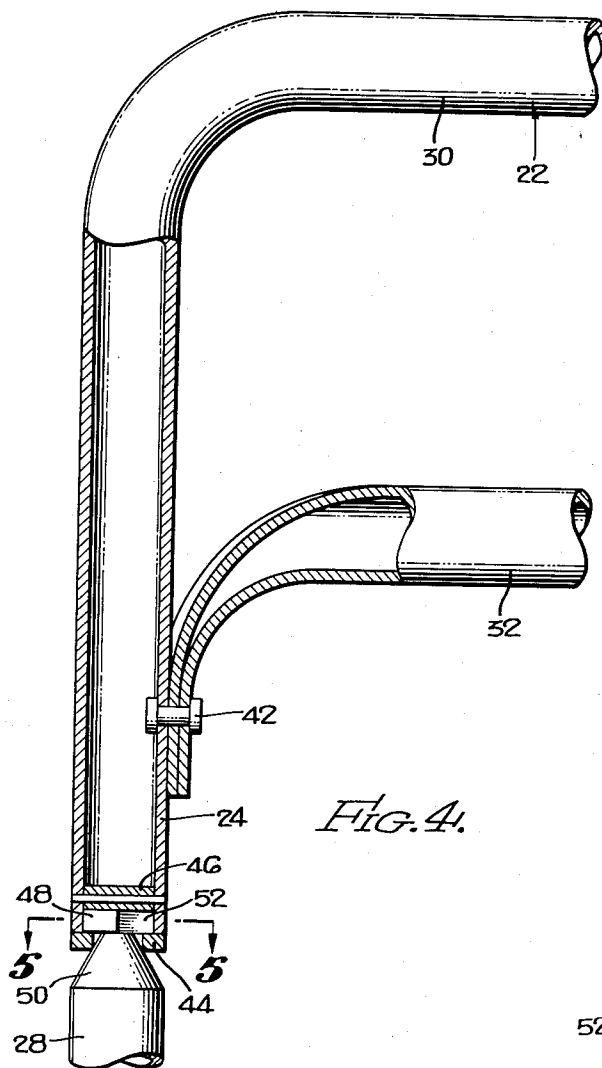


FIG. 4.

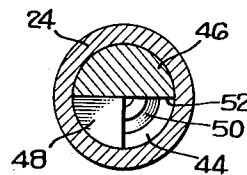


FIG. 5.

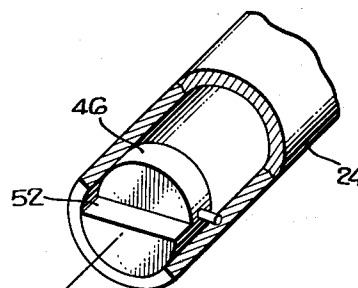
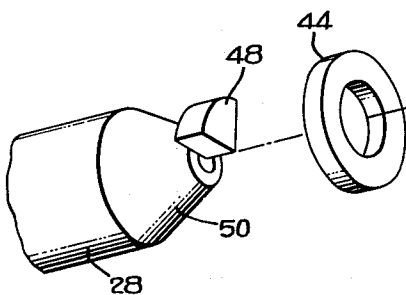


FIG. 6.



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1

2,991,487

COLLAPSIBLE BED RAIL

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Filed Oct. 20, 1958, Ser. No. 768,467

4 Claims. (Cl. 5—331)

This invention relates to portable bed rails, and more particularly to bed rails which may be folded into a compact position, whereby they may be more easily transported or stored.

This application is a continuation-in-part of application Serial No. 641,350 and now Patent No. 2,859,454, entitled "Collapsible Bed Rail" filed February 20, 1957, by George Beckwell.

The use of a foldable or collapsible bed rail has several advantages. They are used especially on large or adult size beds to prevent young children from falling out of bed. This for the reason that this practice is generally preferred to the expensive practice of purchasing so-called "youth" beds which are used only temporarily because they are longer and wider than cribs but lower than adult size beds. It is also advantageous to use collapsible bed rails for small children when traveling or staying overnight at a dwelling not provided with "youth" beds but only provided with adult size beds.

However, whether or not portable bed rails are employed to avoid the use of "youth" beds for small children or while traveling, since the bed rail is a relatively temporary expedient it is desirable to make portable bed rails collapsible in order that they may be more compact when folded or collapsed and thereby be more easily transported and stored.

To the present time, many collapsible bed rails comprise a frame member and two legs hinged at the bottom of the frame member to swing outwardly and downwardly of it in parallel vertical planes. The two legs are then inserted between a mattress and a mattress support such as a set of box springs. However, the legs tend to slip outwardly from the space between the mattress and the mattress support. This means that the frame member will collapse toward the side of the bed. Locking means then must be provided to prevent the collapse of the frame member. Such locking means are of course undesirable both because they are troublesome to operate and because they add to the cost of a portable bed rail.

It is therefore an object of the invention to provide a collapsible bed rail having two support legs requiring no additional means to lock them in position for stability while the bed rail is in use.

The present invention achieves this object and overcomes this and other disadvantages of the prior art by providing a collapsible bed rail for use with a bed having a mattress covered with a selected material and an underlying material covered support for the mattress, the bed rail including a frame member to extend only vertically along the side of the bed, two tubular legs mounted on the frame member that are rotatably movable about parallel axes in a substantially horizontal plane, the sum of the lengths of the legs from their respective rotational axes to their respective ends being greater than the distance between their rotational axes, the legs being movable to a position perpendicular to the plane of the frame member and being further rotatably movable to a compact position extending towards each other from their respective axes of rotation lengthwise of the frame member, the ends of the legs being flattened in a vertical plane at least a distance therealong where they overlap when rotated to said compact position, the flattened ends

2

thereby permitting the legs to be rotated to the compact position substantially in line with each other, the flattened ends also protruding above and below the outline of the tubular portion of the legs to frictionally resist the withdrawal of the legs from the space between the mattress and the mattress support.

Mounting means may be additionally provided, including stop means to prevent rotation of the legs beyond two extreme positions, one of the extreme positions being between each of the mounting means on the straight line extending through them, and the other of the extreme positions being perpendicular to the straight line.

It is to be noted further that it is an advantage of the invention that the bed rail of the invention is mechanically stable while in use but is just as compact as collapsible bed rails of the prior art in view of the fact that the height of the frame member is substantially the same in either case.

The above described and other objects and advantages of the present invention will be better understood when considered with the following description taken in connection with the accompanying drawings made a part of this specification, wherein several embodiments are illustrated by way of example. The device of the present invention is by no means limited to the specific embodiments illustrated in the drawings since they are shown merely for purposes of description.

FIG. 1 is a perspective view of a mattress and a set of box springs with a pair of bed rails of the present invention mounted thereon;

FIG. 2 is a plan view of one of the bed rails;

FIG. 3 is a front elevational view of the bed rail shown in FIG. 2;

FIG. 3a is an enlarged elevation view of the end of one of the bed rail legs shown in FIG. 3;

FIG. 4 is a broken away sectional view taken on the line 4—4 shown in FIG. 2;

FIG. 5 is a sectional view taken on the line 5—5 shown in FIG. 4; and

FIG. 6 is an exploded view of the structure shown in FIG. 4.

In the drawing in FIG. 1 a bed 10 is shown comprising a mattress 12 and a set of box springs 14, with legs 16 mounted thereon. A pair of bed rails 18 and 20 constructed in accordance with the present invention are provided, bed rail 18 comprising a frame member 22 having mounting means 24 and 25 at its lower end to rotatably mount a pair of legs 26 and 28 to fit between the mattress 12 and set of box springs 14. Frame member 22 comprises simply an inverted U-shaped member 30 made out of a hollow tube with a hollow tubular brace 32 extending across and connected to each leg of the U-shaped member 30.

As shown in FIG. 2, flattened ends 34 and 36 are provided for bed rail legs 26 and 28, respectively, both to provide enlargement means to prevent the bed rail 10 from slipping outwardly from the space between mattress 12 and set of box springs 14 and to provide a convenient configuration so that the legs may be folded to the compact position shown in FIG. 2 at 38 and 40.

In FIG. 3 the ends of brace 32 to the ends of brace 32 are fixed to the legs of the U-shaped member 30 by means of rivets 42. The shapes of flattened ends 34 and 36 are shown in FIG. 3a.

U-shaped member 30, brace 32, rivet 42 and leg 28 are shown in FIG. 4. Member 30 is provided with a washer-like member 44 fixed to the end of U-shaped member 30 to enclose a notched disc 46 contained inside the interior of member 30. Disc 46 is also fixed to member 30 to provide stop means for a wedge-shaped member 48 fixed to the end of leg 28. As can be seen from both FIGS. 4

3

and 6, leg 28 is tapered at 50 at its upper end. At the end of the taper 50, wedge-shaped member 48 is fixed thereto to slide in a horizontal plane from the position shown in FIG. 5 to a position 90 degrees to the right shown in FIG. 5. Apertured disc or ring 44 with disc 46 provides stop means to prevent vertical movement of leg 28 with respect to frame member 22.

Disc 46 is notched at 52 as shown in FIG. 6 to permit rotational movement of wedge-shaped member 48 fixed to the end of leg 28. Notch 52 thus provides stop means to prevent rotation of leg 28 from its extreme position shown in FIG. 2 to the extreme position denoted by dotted lines 40.

Although one specific embodiment of the invention has been shown and described, it is to be noted that the invention is not limited thereto since the scope of the invention is not defined thereby but only defined in the appended claims.

What is claimed is:

1. A collapsible bed rail for use with a bed having a mattress and a material-covered support for said mattress, the said bed rail comprising: a frame member to extend only vertically along the side of the bed; two tubular legs mounted on said frame member that are rotatably movable about parallel axes in a substantially horizontal plane, the sum of the length of said legs from their respective rotational axes to their respective ends being greater than the distance between their rotational axes, said legs being movable to a position perpendicular to the plane of said frame member and being further rotatably movable to a compact position extending towards each other from their respective axes of rotation lengthwise of said frame member, the ends of said legs being flattened in a vertical plane at least a distance therealong where they overlap when rotated to said compact position, said flattened ends thereby permitting said legs to be rotated to said compact position substantially in line with each other, said flattened ends also protruding above and below the outline of the tubular portion of said legs to frictionally resist the withdrawal of said legs from the space between said mattress and the said mattress support.

2. The collapsible bed rail claimed in claim 1 in which stop means are provided to prevent rotational movement of the leg members beyond a given fixed position in perpendicular alignment with the plane of the frame member.

3. A collapsible bed rail for use with a bed having a mattress and a material-covered support for said mattress, the said bed rail comprising: a frame member to extend only vertically along the side of the bed; two tubular legs mounted on said frame member that are rotatably movable about parallel axes in a substantially horizontal plane, the sum of the lengths of said legs from their respective rotational axes to their respective ends being greater than the distance between their rotational axes, said legs being rotatable to a position perpendicular to the plane of said frame member and being further rotatable to a compact position extending towards each other from their respective axes of rotation lengthwise of said frame member, the ends of said legs being flattened in a vertical plane at least a distance therealong

4

where they overlap when rotated to said compact position, said flattened ends thereby permitting said legs to be rotated to said compact position substantially in line with each other, said flattened end of one of said legs being positioned to extend in front of the other in spaced relation thereto when said legs are rotated to said compact position, said flattened ends also protruding above and below the outline of the tubular portion of said legs to frictionally resist the withdrawal of said legs from the space between said mattress and the said mattress support.

4. A collapsible bed rail for use with a bed having a mattress and a material-covered support for said mattress, the said bed rail comprising: a frame member to extend only vertically along the side of the bed; two tubular legs mounted on said frame member that are rotatably movable about parallel axes in a substantially horizontal plane, the sum of the lengths of said legs from their respective rotational axes to their respective ends being greater than the distance between their rotational axes, said legs being rotatable to a position perpendicular to the plane of said frame member and being further rotatable to a compact position extending towards each other from their respective axes of rotation lengthwise of said frame member, the ends of said legs being flattened in a vertical plane at least a distance therealong where they overlap when rotated to said compact position, said flattened ends thereby permitting said legs to be rotated to said compact position substantially in line with each other, said flattened end of said one leg being positioned to extend in front of the other in spaced relation thereto when said legs are rotated to said compact position, said flattened end of said one leg having a front vertical surface lying in a predetermined vertical plane tangent to the cylindrical external surface of said one leg, said flattened end of said one leg also having contacting internal surfaces parallel to said predetermined plane and a rear external surface parallel to said predetermined plane, said flattened end of said other leg having front vertical surface parallel to said predetermined plane and contacting internal surfaces parallel to said plane, said front external surface of said other leg being spaced from the rear external surface of said one leg, said flattened end of said other leg also having a rear surface lying in a plane tangent to the cylindrical external surface of said other leg and parallel to said predetermined plane, said flattened ends also protruding above and below the outline of the tubular portion of said legs to frictionally resist the withdrawal of said legs from the space between said mattress and the said mattress support.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 2,991,487

July 11, 1961

George Beckwell

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 2, line 61, strike out "to the ends of brace 32";
column 3, line 4, after "right" insert -- of that --.

Signed and sealed this 2nd day of January 1962.

(SEAL)

Attest:

ERNEST W. SWIDER

Attesting Officer

DAVID L. LADD

Commissioner of Patents