

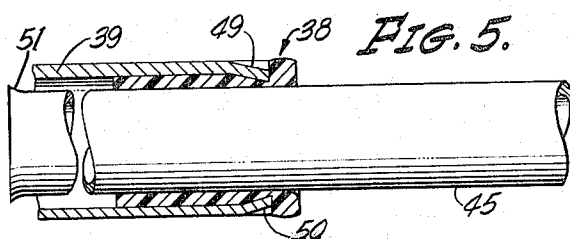
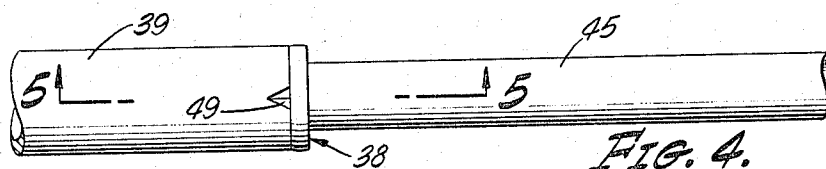
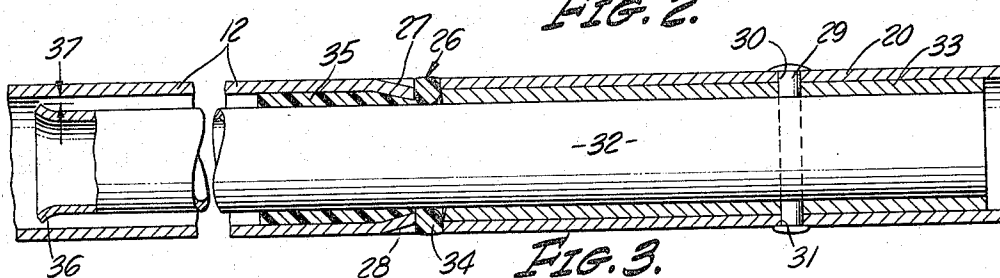
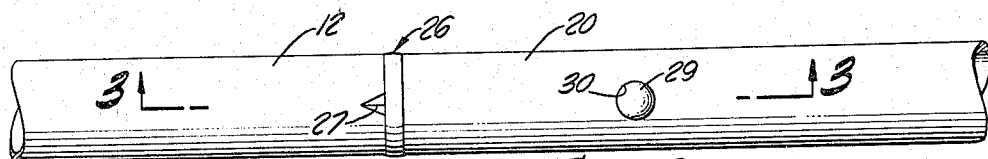
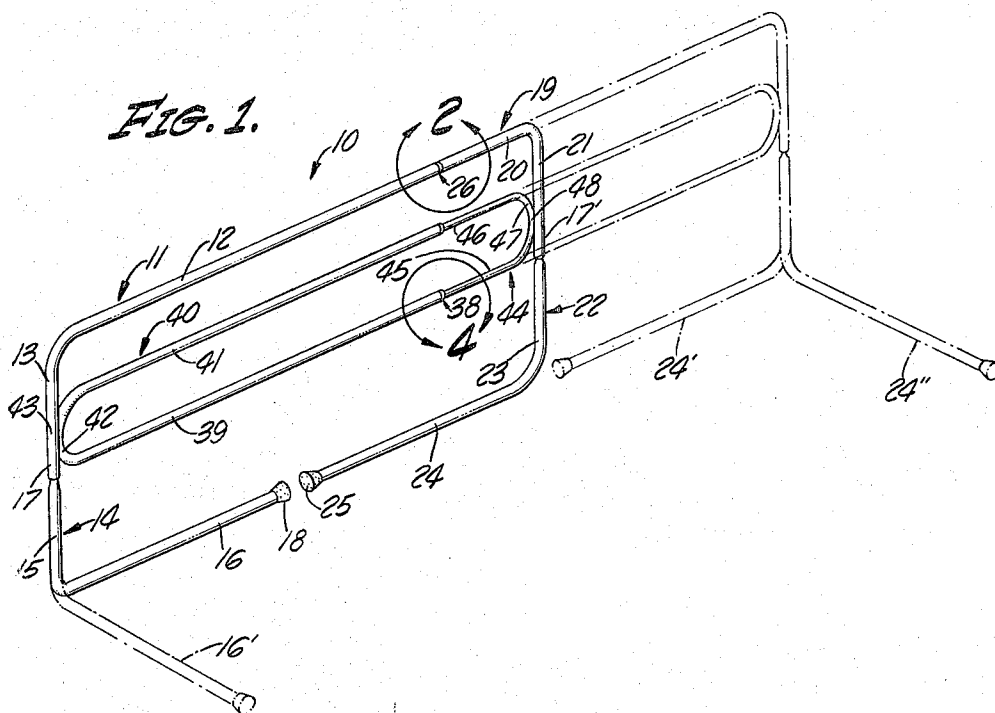
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3,290,701

BED RAIL

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3,290,701
BED RAIL

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This invention relates to portable accessories for use with a bed, and more particularly to a versatile bed rail collapsible to a compact position for transportation or storage.

Portable bed rails are disclosed in U.S. Patents Nos. 2,859,454 and 2,991,487, issued to George Beckwell. However, these bed rails are of a fixed and unalterable length.

In accordance with the present invention, the above-described and other disadvantages of the prior art are overcome by providing a framework and means to mount the framework in a substantially vertical plane along the side of a bed, the framework being lengthwise extensible.

According to one outstanding feature of the device of the present invention, telescoping tubes having anti-friction bushings or bearings are employed to make it possible to collapse the bed rail easily and quickly.

According to another feature of the present invention, a plurality and preferably more than two sets of telescoping tubes are employed to make it possible to collapse the bed rail without having the tubes bind.

It is also a feature of the present invention that the plural tube strengthening and straightening feature is employed with collapsible legs, whereby the device of the invention may be packed, shipped and stored in a very small space.

Although telescoping devices of the prior art have been devised for elevating bed covering such as in U.S. Patent No. 2,602,171, no such device has had any of the aforementioned constructions or features of the device of the present invention.

The above-described and other advantages of the present invention will be better understood from the following description when considered in connection with the accompanying drawings.

In the drawings which are to be regarded as merely illustrative:

FIG. 1 is a perspective view of a bed rail constructed in accordance with the present invention;

FIG. 2 is an enlarged side elevation view of a portion of the bed rail indicated at 2—2 in FIG. 1;

FIG. 3 is a longitudinal sectional view of the bed rail taken on the line 3—3 shown in FIG. 2;

FIG. 4 is an enlarged side elevation view of another portion of the bed rail indicated at 4—4 shown in FIG. 1; and

FIG. 5 is a longitudinal sectional view of the portion of the bed rail taken on the line 5—5 shown in FIG. 4.

A bed rail constructed in accordance with the present invention is indicated at 10 in FIG. 1. Bed rail 10 includes a first inverted L-shaped member 11 having a foot 12 and a leg 13. Bed rail 10 also includes an upright L-shaped member 14 having a leg 15 and a foot 16. Leg 15 is rotatable inside leg 13. Foot 16 therefore may be rotated to a position indicated at 16' in FIG. 1. It also may be rotated to the position it is shown in solid lines in FIG. 1. Rotation beyond these two positions is limited by pivot means including stops at 17. Pivot means 17 may be conventional and identical to those shown in the said Beckwell patents identified previously. A rubber cap 18 may also be mounted on foot 16, as is conventional.

A third inverted L-shaped member 19 is also provided having a foot 20 and a leg 21. A fourth upright L-

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shaped member 22 is provided having a leg 23 and a foot 24. A rubber cap 25 is mounted on the end of foot 24. Leg 23 is rotatably mounted in leg 21 by pivot means 17' which may be identical to pivot means 17. Pivot means 17' limits movement of foot 24 to that shown in solid lines in FIG. 1, to that shown in dotted lines at 24', and to that shown in dotted lines at 24'' in FIG. 1.

As shown in FIG. 2, feet 12 and 20 are spaced apart by a nylon ferrule 26 that is held in foot 12 by a pair of V-shaped indentations 27 and 28, both of which are shown in FIG. 3. A pin 29 is press fit in a pair of openings 30 and 31 of foot 20.

An inner tube 32 is held in a fixed position relative to foot 20 by pin 29. Pin 29 also extends through an intermediate tube 33 inside foot 20 and outside of tube 32.

As shown in FIG. 3, ferrule 26 has an annular head 34 integral with a bearing shank 35. Ferrule 26 may be made of nylon to provide a low friction bearing surface for tube 32.

The left end of tube 32 may be flared as at 36. The left end of tube 32 may be spaced a small distance 37 from the internal surface of foot 12, which is tubular. Flared end 36 thus may provide a guide and bearing surface for tube 32 against the internal surface of foot 12. Further, flare 36 may act as a stop to prevent tube 32 from being pulled completely through the space inside of ferrule 26.

As shown in FIGS. 4 and 5, a ferrule 38 is provided identical to ferrule 26 in the end of a leg 39 of a U-shaped member 40. Member 40 has a second leg 41 which is identical to leg 39 and therefore will not be described further in detail. Member 40 has a bight portion 42 which is fastened to leg 13 of member 11 by a rivet 43. A second U-shaped member 44 is provided having legs 45 and 46 which extend into the legs of member 40, legs 39 and 41 thereof being hollow tubular legs.

Member 44 has a bight portion 47 which is fastened to leg 21 of member 19 by a rivet 48.

As shown in FIGS. 4 and 5, leg 39 has indentations 49 and 50 to retain ferrule 36 as ferrule 26 is retained by indentations 27 and 28 in foot 12. The left end of leg 45 is flared at 51 in the same manner that inner tube 32 is flared at 36.

From the foregoing, it will be appreciated that bed rail 10 may be extended by the telescoping effect of tubes 32, 45 and 46 in tubes 12, 39 and 41, respectively. However, the bed rail of the present invention still may be collapsed to the position shown in solid lines in FIG. 1. This means that the bed rail of the present invention has considerable versatility, but yet is collapsible to a compact position for transportation or storage.

In addition, the telescoping tubes including the anti-friction bushings or bearings 26 and 38 make it possible to collapse the bed rail 10 easily and quickly.

The use of a plurality of sets of telescoping tubes, preferably more than two, makes it possible to collapse the bed rail 10 without having the tubes bind. Note will be taken that were foot 12 and tube 32 used alone, members 11 and 19 would tend to turn relative to each other about the axis of feet 12 and 20. Further, if legs 39 and 45 were used with legs 41 and 46 or foot 12 and tube 32, the corresponding pairs of tubes would tend to turn about an axis midway therebetween. The same is true of the construction of bed rail 10 without legs 39 and 45. However, in accordance with an outstanding feature of the present invention, the use of all three tubes 12, 39 and 41 with tubes 32, 45 and 46 keeps the orientation of the bed rail 10 straight and stable in use and in storage. In this same regard, it is an advantage to employ the plural tube strengthening and straightening feature with the rotatable members 14 and 22.

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Although only one specific embodiment of the present invention has been described and illustrated herein, many changes and modifications will of course suggest themselves to those skilled in the art. This single embodiment has been selected for this disclosure for the purpose of illustration only. The present invention should therefore not be limited to the embodiment so selected, the true scope of the invention being defined only in the appended claims.

What is claimed is:

1. A bed rail comprising: a first inverted L-shaped member having a horizontal foot and a vertical leg; a second upright L-shaped member having a vertical leg and a horizontal foot; pivot means mounting said second member leg from said first member leg rotatably about the common longitudinal first axis of said first and second member legs, said pivot means including stops to limit rotation of said second member to a position perpendicular to a first plane of said first member and to a position in said first plane with said first and second member feet extending from said first axis in the same predetermined direction; a third inverted L-shaped member having a horizontal foot and a vertical leg, said foot including an outer tube; a cylinder in said outer tube, and an inner tube in said cylinder; a pin fixing said inner and outer tubes and said cylinder together, said first member foot also being tubular; an anti-friction cylindrical bushing fixed in the end of said first member foot, said inner tube being slidable in said first member foot through said bushing, said inner tube being flared at its end inside said first member foot; a fourth upright L-shaped member having a vertical leg and a horizontal foot; pivot means mounting said fourth member leg from said third member leg rotatably about the common longitudinal second axis of said third and fourth member legs, said pivot means including stops to limit rotation of said fourth member to a position perpendicular to a second plane of said third member and to a position in said second plane with said third and fourth member feet extending in a direction opposite said predetermined direction; a larger U-shaped tube having two parallel legs and a connecting bight portion; means fastening said larger tube bight portion to said first member leg, said larger tube tends having anti-friction cylindrical bushings fixed thereto; a smaller U-shaped tube having legs slidable respectively in said larger tube legs through said bushings, said smaller tube legs being flared at their ends inside the corresponding legs of said larger tube, said smaller tube also having a bight portion; and means fastening said smaller tube bight portion to said third member leg.

2. A bed rail comprising: a framework including a first horizontal tube-like body and a second horizontal body slidably telescoped into said first body; a pair of L-shaped members swingably mounted on said framework for movement between retracted positions in the plane of said framework and extended positions normal to the plane of said framework; and a bushing fixed to said first body in a position extending around said second body, said second body also being tube-like and having a flared end inside said first body larger than the inner diameter of said bushing.

3. A bed rail comprising: a framework including a first set of two parallel, horizontal tube-like bodies and a second set of two parallel, horizontal bodies having their inner ends slidably telescoped into the respective bodies of said first set; a pair of L-shaped members swingably mounted on said framework for movement between retracted positions in the plane of said framework and extended positions normal to the plane of said framework; an anti-friction bushing fixed to each body in said first set in positions extending around each corresponding body of said second set; means on said

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first set of bodies holding said bushings in fixed position thereon; and means on the inner ends of said second bodies larger than the inner diameters of said bushings.

4. A bed rail comprising: a framework including a first set of two parallel, horizontal tube-like bodies and a second set of two parallel, horizontal bodies slidably telescoped into the respective bodies of said first set; a pair of L-shaped members to fit below the mattress of a bed in a position to support said framework in an upright position, said framework being located substantially in a single vertical plane, said members being rotatable to a collapsed position in said plane; and an anti-friction bushing fixed to each body in said first set in positions extending around each corresponding body of said second set, said bodies of said second set also being tube-like and having flared ends in corresponding bodies of said first set.

5. A bed rail as set forth in claim 3 in which at least one of the bodies in said second set comprises an outer tube; a cylinder in said outer tube; an inner tube in said cylinder projecting therebeyond and slidably carried in one of said bushings; and means interconnecting said inner and outer tubes and cylinder; the end of said inner tube remote from said outer tube being flared to a diameter larger than the inner diameter of said one of said bushings.

6. A bed rail comprising: a first inverted L-shaped member having a horizontal foot and a vertical leg; a second upright L-shaped member having a vertical leg and a horizontal foot; pivot means mounting said second member leg from said first member leg rotatably about the common longitudinal first axis of said first and second member legs; a third inverted L-shaped member having a horizontal foot and a vertical leg, said foot including an outer tube; a cylinder in said outer tube, and an inner tube in said cylinder; a pin fixing said inner and outer tubes and said cylinder together, said first member foot also being tubular; an anti-friction cylindrical bushing fixed in the end of said first member foot, said inner tube being slidable in said first member foot through said bushing, said inner tube being flared at its end inside said first member foot; a fourth upright L-shaped member having a vertical leg and a horizontal foot; pivot means mounting said fourth member leg from said third member leg rotatably about the common longitudinal second axis of said third and fourth member legs; a larger U-shaped tube having two parallel legs and a connecting bight portion; means fastening said larger tube bight portion to said first member leg, said larger tube ends having anti-friction cylindrical bushings fixed thereto; a smaller U-shaped tube having legs slidable respectively in said larger tube legs through said bushings, said smaller tube legs being flared at their ends inside the corresponding legs of said larger tube, said smaller tube also having a bight portion; and means fastening said smaller tube bight portion to said third member leg.

References Cited by the Examiner

UNITED STATES PATENTS

2,817,856	12/1957	Dewitt et al.	5—331
2,859,454	11/1958	Beckwell	5—331
2,873,904	2/1959	McCormick	5—100 X
3,097,370	7/1963	Murcott	5—331
3,220,024	11/1965	Nelson	5—331

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