FOOT BRACE FOR BED

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ABSTRACT

A foot brace for use with a bed includes a rear wall configured to extend adjacent a footboard of the bed and a front wall configured to extend from generally adjacent one side of the bed to generally adjacent an opposed side of the bed. The foot brace includes at least two telescopic rods each extending from the front wall to the rear wall. The telescopic rods are each lockable at a first extension configuration that separates the front wall from the rear wall and a second extension configuration that separates the front wall from the rear wall such that the front and rear walls are separated by one distance when the telescopic rods are at the first extension configuration and another distance when the telescopic rods are at the second extension configuration. An adjustable fastener removably couples one of the rear wall and the front wall to the bed.
FOOT BRACE FOR BED

BACKGROUND OF THE INVENTION

[0001] This invention relates generally to medical accessories and, more particularly, to a foot brace for a bed that enables a hospital patient to be maintained in an upright position rather than sliding down in the bed.

[0002] A doctor may prescribe that a hospitalized patient be maintained in a generally upright position or "semi-Fowler's" position. This means that the patient's head and upper torso be maintained partially elevated, such as 45 degrees, so as to prevent a buildup of fluid in the lungs. Positioning a patient in this position often requires two or more persons. Positioning overweight patients is especially difficult and staff-intensive. Unfortunately, the patient may slide back down in the bed due to a slippery mattress or sheets. In this instance, hospital staff may be required to repeatedly reposition the patient.

[0003] Another problem experienced by patients who are hospitalized for a long period of time or otherwise bedridden is "foot drop." This is a condition in which a patient's foot may tend to become bent forward or to the side as a result of constant pressure of bed sheets and blankets or merely from a lack of "standing" type pressure on the feet and ankles.

[0004] Various devices have been proposed to assist in maintaining a person's position while lying in a bed. Although presumably effective for their intended purposes, the existing or proposed devices are not useful with different varieties of hospital beds or are not easily adjustable for the varying heights of different hospital patients.

[0005] Therefore, it would be desirable to have a foot brace for use with a bed that is adjustable for use with patients of different heights or to maintain a patient at different positions within the same bed. Further, it would be desirable to have a foot brace that may provide support or even pressure to the bottom of a patient's feet while lying in bed.

SUMMARY OF THE INVENTION

[0006] Accordingly, a foot brace for use with a bed according to the present invention includes a rear wall configured to extend adjacent a footboard of the bed and a front wall configured to extend from generally adjacent one side of the bed to generally adjacent an opposite side of the bed. The foot brace includes at least two telescopic rods each extending from the front wall to the rear wall. The telescopic rods are each lockable at a first extension configuration that separates the front wall from the rear wall and a second extension configuration that separates the front wall from the rear wall such that the front and rear walls are separated by one distance when the telescopic rods are at the first extension configuration and another distance when the telescopic rods are at the second extension configuration. An adjustable fastener removably couples one of the rear wall and the front wall to the bed.

[0007] This invention is also useful to provide a support means to the bottom of a patient's feet while lying in bed for a long period of time, especially to a patient that may be bedridden for days or weeks. Having this support may alleviate the problem of "foot drop" which may be caused by the pressure of sheets and blankets upon the vertically disposed toes and feet of the patient. More particularly, the foot brace may prevent a patient's foot from being undesirably pressed forward or to the side in a way that could be painful or even debilitating over time.

[0008] Therefore, a general object of this invention is to provide a foot brace for a bed that enables a patient to maintain a desired position on the bed without sliding.

[0009] Another object of this invention is to provide a foot brace, as aforesaid, that is adjustable for use by persons of different heights or to maintain a person at selective positions.

[0010] Still another object of this invention is to provide a foot brace, as aforesaid, that is easy to install on a bed and easy to operate.

[0011] Yet another object of this invention is to provide that is comfortable when in contact with a patient's feet, such as with padding or warm/cold gel packs.

[0012] A further object of this invention is to provide a foot brace, as aforesaid, that is economical to manufacture.

[0013] Other objects and advantages of the present invention will become apparent from the following description taken in connection with the accompanying drawings, wherein is set forth by way of illustration and example, embodiments of this invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 is a perspective view of a foot brace in use on a bed according to a preferred embodiment of the present invention with the foot brace positioned in a shortened configuration;

[0015] FIG. 2 is a perspective view of the foot brace as in FIG. 1 shown in an extended configuration;

[0016] FIG. 3 is a perspective view of the foot brace as in FIG. 1 removed from the bed;

[0017] FIG. 4 is a perspective view of the foot brace as in FIG. 2 removed from the bed and with a temperature sustaining material partially removed from a front wall;

[0018] FIG. 5 is a front view of the foot brace as in FIG. 1;

[0019] FIG. 6 is a top view of the foot brace as in FIG. 1;

[0020] FIG. 7 is an isolated view on an enlarged scale taken from FIG. 2;

[0021] FIG. 8 is a sectional view taken along line 8-8 of FIG. 6;

[0022] FIG. 9a is a sectional view taken along line 9a-9a of FIG. 5;

[0023] FIG. 9b is a sectional view taken along line 9b-9b of FIG. 6;

[0024] FIG. 9c is an isolated view on an enlarged scale taken from FIG. 9a;

[0025] FIG. 10a is an isolated view on an enlarged scale taken from FIG. 9b showing a cam lock at a locked configuration;

[0026] FIG. 10b is an isolated view as in FIG. 10a showing the cam lock at a released configuration;

[0027] FIG. 11 is a perspective view on an enlarged scale taken from FIG. 1; and

[0028] FIG. 12 is a side view of the foot brace in use by a patient in a hospital bed.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0029] A foot brace for use with a bed will now be described in detail with reference to FIG. 1 through FIG. 12 of the accompanying drawings. More particularly, a foot brace 100 of one embodiment for use with a bed 10 includes a rear wall 110 and a front wall 120.

[0030] As shown in FIG. 1 and FIG. 2, the rear wall 110 is configured to extend adjacent a footboard 12 of the bed 10.
The rear wall 110 may be generally planar and may extend from generally adjacent one side 14a of the bed 10 to generally adjacent an opposed side 14b of the bed 10. Any appropriate materials may be used to construct the rear wall 110, such as metal, wood, and/or plastic.

[0031] Still referring to FIG. 1 and FIG. 2, the front wall 120 may be configured to extend from generally adjacent the side 14a of the bed 10 to generally adjacent the opposed side 14b of the bed 10. The front wall 120 may be padded (i.e., may include padding 122, as shown in FIG. 1) for comfort and/or may include at least one temperature sustaining material 124 (FIG. 4) to provide a warm or cold environment. The temperature sustaining material 124 may be, for example, hot/cold gel packs. The padding 122 and/or the material 124 may be removably received in pockets 125 (FIG. 9 c) for replacement, cleaning, heating, and cooling, for example.

[0032] At least two telescopic rods 130 each extend from the front wall 120 to the rear wall 110, as shown in FIG. 1 through FIG. 4 and FIG. 8. Each telescopic rod 130 may include sections of tubing 132 of various diameters slidable relative to one another to extend or shorten a length of the telescopic rod 130. FIGS. 2 and 4 for example show the telescopic rods 130 relatively extended, and FIGS. 1 and 3 for example show the telescopic rods 130 relatively shortened. The telescopic rods 130 may be constructed of metal tubing or any other appropriate materials.

[0033] Means may be included for selectively locking the telescopic rods 130 at different configurations such that the front and rear walls 120, 110 are separated from one another at different distances (e.g., at an extended configuration shown in FIGS. 1 and 3 and a shortened configuration shown in FIGS. 2 and 4). For example, as shown in FIGS. 7, 10 a, and 10 b, cam locks 140 may be in communication with the sections of tubing 132. When a respective cam lock 140 is at a released configuration (FIG. 10 b), the associated sections of tubing 132 may move relative to one another; but when a lock configuration (FIG. 10 a), the associated sections of tubing 132 may be fixed relative to one another. In some embodiments, one cam lock 140 is used for every two sections of tubing 132 such that the two sections of tubing 132 may be fixed relative to one another.

[0034] As shown in FIG. 1 and FIG. 2, one adjustable fastener 150 a may removably couple the rear wall 110 to the bed 10, and another adjustable fastener 150 b may removably couple the front wall 120 to the bed 10. In some embodiments, the fastener 150 a may be coupled to the rear wall 110 at two locations and extend beneath the bed 10, and the fastener 150 b may similarly be coupled to the front wall 120 at two locations and extend beneath the bed 10. The fasteners 150 a, 150 b may be, for example, straps, and the rear and front walls 110, 120 may each have at least one anchor 160 to interact with the fasteners 150 a, 150 b. The fasteners 150 a, 150 b may be tightened using a buckle or hook and loop fasteners (FIG. 11), for example.

[0035] In use, the foot brace 100 may be positioned at the foot of the bed 10 such that the rear wall 110 is adjacent the footboard 12 of the bed 10. The adjustable fastener 150 a may travel beneath the bed 10, for example, to couple the rear wall 110 to the bed 10. The front wall 120 may be positioned a distance away from the rear wall 110 such that, as shown in FIG. 12, a person laying on the bed 10 may fully extend his legs while his back is generally parallel to a raised portion 10 a of the bed 10. For a person with relatively longer legs, the distance between the rear and front walls 110, 120 may be relatively small; and for a person with relatively shorter legs, the distance between the rear and front walls 110, 120 may be relatively large. Once the distance between the rear and front walls 110, 120 (i.e., the configuration of the telescopic rods 130) is determined, the means (e.g., cam locks 140) may be used to maintain that distance/configuration, as set forth above, and the adjustable fastener 150 b may couple the front wall 120 to the bed 10. The padding 122 and/or the temperature sustaining material 124 may comfort the user’s feet. As such, the user may comfortably remain in position on the bed 10 without sliding.

[0036] It is understood that while certain forms of this invention have been illustrated and described, it is not limited thereto except insofar as such limitations are included in the following claims and allowable functional equivalents thereof:

1. A foot brace for use with a bed, said foot brace comprising:
   a rear wall configured to extend adjacent a footboard of said bed from generally adjacent one side of said bed to generally adjacent an opposed side of said bed;
   a front wall configured to extend from generally adjacent one side of said bed to generally adjacent an opposed side of said bed;
   at least two telescopic rods each extending from said front wall to said rear wall;
   means for selectively locking said telescopic rods at a first extension configuration separating said front wall from said rear wall and a second extension configuration separating said front wall from said rear wall, wherein said front and rear walls are separated by one distance when said telescopic rods are at said first extension configuration and another distance when said telescopic rods are at said second extension configuration;
   an adjustable fastener to removably couple said rear wall to said bed;
   another adjustable fastener to removably couple said front wall to said bed;
   wherein:
   said front wall includes a plurality of pockets;
   said front wall includes padded material removably situated in said plurality of pockets;
   said front wall includes at least one temperature sustaining material to provide at least one of a warm environment and a cold environment, said at least one temperature sustaining material being removably situated in said plurality of pockets.
2. The foot brace of claim 1, wherein each said telescopic rod includes tubing of various diameters slidable relative to one another to extend and shorten a length of said telescopic rod.
3. (canceled)
4. The foot brace of claim 1, wherein:
   said rear wall has an anchor;
   said front wall has an anchor;
   said adjustable fastener interacts with said rear wall anchor to removably couple said rear wall to said bed; and
   said another adjustable fastener interacts with said front wall anchor to removably couple said front wall to said bed.
5. The foot brace of claim 4, wherein each said telescopic rod includes tubing of various diameters slidable relative to one another to extend and shorten a length of said telescopic rod.
6. The foot brace of claim 5, wherein said means for selectively locking includes at least one cam lock in communication with each said telescopic rod.

7. The foot brace of claim 6, wherein said front wall is padded.

8. (canceled)

9. The foot brace of claim 1, wherein said means for selectively locking includes at least one cam lock in communication with each said telescopic rod.

10. The foot brace of claim 1, wherein said front wall is padded.

11. (canceled)

12. The foot brace of claim 1, wherein:
   said said telescopic rod includes first and second sections of tubing having different diameters from one another and being slideable relative to one another to extend and shorten a length of said telescopic rod; and
   said means for selectively locking includes a cam lock in communication with said first and second sections.

13. The foot brace of claim 12, wherein:
   said rear wall has an anchor;
   said front wall has an anchor;
   said adjustable fastener interacts with said rear wall anchor to removably couple said rear wall to said bed; and
   said another adjustable fastener interacts with said front wall anchor to removably couple said front wall to said bed.

14. (canceled)

15. The foot brace of claim 4, wherein:
   said adjustable fastener extends below said bed to removably couple said rear wall to said bed; and
   said another adjustable fastener extends below said bed to removably couple said front wall to said bed.

16. The foot brace as in claim 15, wherein said at least one temperature sustaining material is one of a hot and a cold gel pack.

17. The foot brace as in claim 1, wherein said at least one temperature sustaining material is one of a hot and a cold gel pack.

18. A foot brace for use with a bed, said foot brace comprising:
   a rear wall configured to extend adjacent a footboard of said bed from generally adjacent one side of said bed to generally adjacent an opposed side of said bed;
   a front wall configured to extend from generally adjacent one side of said bed to generally adjacent an opposed side of said bed;
   at least two telescopic rods each extending from said front wall to said rear wall;
   means for selectively locking said telescopic rods at a first extension configuration separating said front wall from said rear wall and a second extension configuration separating said front wall from said rear wall, wherein said front and rear walls are separated by one distance when said telescopic rods are at said first extension configuration and another distance when said telescopic rods are at said second extension configuration;
   an adjustable fastener to removably couple said rear wall to said bed;
   another adjustable fastener to removably couple said front wall to said bed; wherein:
   said front wall includes a plurality of pockets;
   said front wall includes padded material removably situated in said plurality of pockets;
   said front wall includes at least one temperature sustaining material to provide at least one of a warm environment and a cold environment, said at least one temperature sustaining material being removably situated in said plurality of pockets;
   said rear wall has an anchor;
   said front wall has an anchor;
   said adjustable fastener interacts with said rear wall anchor to removably couple said rear wall to said bed;
   and
   said another adjustable fastener interacts with said front wall anchor to removably couple said front wall to said bed;
   said at least one temperature sustaining material is one of a hot and a cold gel pack;
   said adjustable fastener extends below said bed to removably couple said rear wall to said bed; and
   said another adjustable fastener extends below said bed to removably couple said front wall to said bed.

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