A multi-use mobility aid (100) can provide convenient and easy to use assistance for moving, lifting, or supporting disabled individuals. It comprises an elongated strap (105) that has a distal end (110), a tie end (115), a front surface (120), and a back surface (125). A plurality of handles (130) are attached to the strap (105) between the distal end (110) and the tie end (115). Also, a quick-release fastener, comprising for example Velcro-type hook and loop fasteners (135), is attached to the tie end (115), and a slip-resistant material (140) is attached to the back surface (125). Padding can be inserted into the elongated strap (105) between the front surface (120) and the back surface (125) and adjacent to the slip-resistant material (140).
The present invention relates to ergonomic equipment. In particular, although not exclusively, the invention relates to a multi-use mobility aid device that can provide disabled individuals, with or without the help of a nurse or other caregiver, assistance when lifting, walking or moving.

During an average shift, nurses often lift more than 20 patients into a bed and transfer about 5-10 patients from a bed to a chair. Further, the total weight lifted by a nurse during a typical shift may approach several tonnes. It is therefore not surprising that reports from the United States indicate that nursing is the highest risk occupation with respect to lifting and handling-related injuries.

When a nurse or other caregiver moves a patient, it is important that the caregiver maintain his or her centre of gravity low and close to a base of support. For example, this can sometimes be accomplished by the caregiver moving his or her feet, rather than twisting or bending his or her back. However, when a patient requires assistance getting out of a bed or assistance in walking, for example, a caregiver is often required to extend their arms to assist the patient, and that often induces severe strain on the caregiver's back and extremities.

The prior art therefore includes numerous articles and documentation intended to educate and assist nurses and other caregivers regarding safe patient lifting practices. Also, various countries and jurisdictions have passed regulations and legislation intended to mandate safer working environments, such as by limiting the lifting requirements that a hospital employer can impose on employee nurses. However, the high pressure and real world demands of nursing work generally means that such advice, regulations and legislation—
although helpful—is of limited value in ensuring that safe lifting practices are adhered to consistently.

The prior art also includes various equipment and devices intended to increase comfort and quality of care for patients, while also minimizing physical strain on care givers. For example, motorised hospital beds, powered lift chairs, and walking aids can dramatically improve the care and quality of life of elderly or disabled individuals. However, such devices are generally very expensive and are often not available in many circumstances and locations.

Other prior devices include relatively low-cost lifting aids such as canes, belts, and straps. These devices can provide very valuable assistance to care givers and to disabled individuals. For example, various lift belts include multiple handles that enable a care giver to more safely and comfortably pull a disabled person from a bed or wheel chair. Also, various types of lift straps can be tied to a bed or other fixed anchor point to enable a disabled person to comfortably pull themselves to a more upright position.

However, such specialised lifting belts and straps are often not available when needed. For example, if a nurse is required to turn in a bed a relatively heavy disabled patient, and the patient is not already wearing a lift belt, time pressure on the nurse may result in the patient simply being turned without the assistance of a lift belt, as it can be inconveniently time consuming for the nurse to acquire a lift belt and then place it around the patient. There is therefore a need for a more convenient lift aid that can be readily and easily used by nurses or other care givers, or by patients, and that can be readily maintained near a patient so that it is quickly accessible when needed.

**OBJECTS OF THE INVENTION**

Therefore, an object of some embodiments of the present invention is to overcome or alleviate one or more limitations of the prior art, including providing a multi-use mobility aid.
Another object of some embodiments of the present invention is to provide a multi-use mobility aid that can be readily used by both a patient and one or more caregivers to assist the patient with a variety of body movements.

Still another object of some embodiments of the present invention is to provide a multi-use mobility aid that includes handles and a quick release tie end that can be secured to an anchor point. Still further objects will be evident from the following detailed description.

SUMMARY OF THE INVENTION

According to one aspect, the present invention is a multi-use mobility aid device, comprising:

an elongated strap having a distal end, a tie end, a front surface and a back surface;

a plurality of handles attached to the strap between the distal end and the tie end;

a fastener attached to the tie end of the strap; and

a slip-resistant material on the back surface of the strap between the distal end and the tie end.

Preferably, a padding material is located between the front surface and the back surface of the elongated strap.

Preferably, the slip-resistant material is a rubber-like cloth.

Preferably, the elongated strap has a rectangular shape.

Preferably, the front surface comprises a first material, the back surface comprises a second material, and the first material and the second material are sewn together along an edge seam.

Preferably, each handle in the plurality of handles is sewn into an edge seam and extends across the front surface of the strap.

Preferably, each handle in the plurality of handles is padded.
Preferably, the fastener attached to the tie end of the strap enables the tie end to be formed into a sling;

Preferably, the fastener attached to the tie end comprises a Velcro-type hook and loop fastener.

Preferably, the plurality of handles includes at least five handles.

BRIEF DESCRIPTION OF THE DRAWINGS

To assist in understanding the invention and to enable a person skilled in the art to put the invention into practical effect, preferred embodiments of the invention are described below by way of example only with reference to the accompanying drawings, in which:

FIG. 1 is a diagram illustrating a side perspective view of a multi-use mobility aid, according to some embodiments of the present invention;

FIG. 2 is a diagram illustrating a top view of the multi-use mobility aid of FIG. 1;

FIG. 3 is a perspective view illustrating a use of the multi-use mobility aid of FIG. 1 that enables a patient to pull himself or herself to an upright position in a bed;

FIG. 4 is a perspective view illustrating a use of the multi-use mobility aid of FIG. 1 that enables a care giver to assist a patient to stand up from a bed;

FIG. 5 is a perspective view illustrating a further use of the multi-use mobility aid of FIG. 1 that enables a care giver to assist a patient to stand up from a bed or lie down;

FIG. 6 is a perspective view illustrating a further use of the multi-use mobility aid of FIG. 1 that enables a care giver to assist a patient to move his or her legs onto or off of a bed;

FIG. 7 is a perspective view illustrating a further use of the multi-use mobility aid of FIG. 1 that enables two care givers to assist a patient to walk;
FIG. 8 is a perspective view illustrating a still further use of the multi-use mobility aid of FIG. 1 that enables care givers to assist a patient in moving into or out of a chair; and

FIG. 9 is a further perspective view illustrating a use of the multi-use mobility aid of FIG. 1 that enables care givers to assist a patient in moving into or out of a chair.

DETAILED DESCRIPTION OF THE INVENTION

Embodiments of the present invention comprise a multi-use mobility aid. Elements of the invention are illustrated in concise outline form in the drawings, showing only those specific details that are necessary to understanding the embodiments of the present invention, but so as not to clutter the disclosure with excessive detail that will be obvious in light of the present description to those having ordinary skill in the art.

In this patent specification, adjectives such as first and second, front and back, distal end and tie end, etc., are used solely to define one element or method step from another element or method step without necessarily requiring a specific relative position or sequence that is described by the adjectives. Words such as "comprises" or "includes" are not used to define an exclusive set of elements or method steps. Rather, such words merely define a minimum set of elements or method steps included in a particular embodiment of the present invention.

Referring to FIG. 1, a diagram illustrates a side perspective view of a device defined as a multi-use mobility aid 100, according to some embodiments of the present invention. The multi-use mobility aid 100 comprises an elongated strap 105 that has a distal end 110, a tie end 115, a front surface 120, and a back surface 125.

A plurality of handles 130 are attached to the strap 105 between the distal end 110 and the tie end 115. Also, a quick-release fastener, comprising for example Velcro-type hook and loop fasteners 135, is attached to the tie end 115, and a slip-resistant material 140 is attached to the back surface 125. As shown,
padding can be inserted into the elongated strap 105 between the front surface 120 and the back surface 125 and adjacent to the slip-resistant material (140).

Referring to FIG. 2, a diagram illustrates a top view of the multi-use mobility aid 100. As shown, the handles 130 can extend across the front surface 120 and can be sewn into edge seams 205.

The multi-use mobility aid 100 can provide convenient and easy to use assistance for moving, lifting, or supporting disabled individuals. Because it is adaptable and effective for use in many different circumstances, the multi-use mobility aid 100 can be conveniently located near a bed, for example, and then quickly accessed and used to perform one of a variety of moving, lifting, or supporting functions. Some examples of these multiple functions are described in detail below.

Referring to FIG. 3, a perspective view illustrates a use of the multi-use mobility aid 100 that enables a patient 300 to pull himself or herself to an upright position in a bed 405. The tie end 115 can be secured to an anchor point on the bed 405 such as, for example, a rail underneath the bed 405. Alternatively, as shown in FIG. 3, if such a rail is not easily accessible, an anchor strap 305 can be secured around legs of the bed 405 and the tie end 115 of the multi-use mobility aid 100 then can be secured to the anchor strap 305.

When not needed, the multi-use mobility aid 100 can simply lie across the bed 405 within easy reach of the patient 300. When the patient 300 then needs to lift himself or herself to a more upright position, he or she simply grasps one of the handles 130 and pulls himself or herself upward to the position shown.

The multi-use mobility aid 100 can be fabricated from various materials. For example, the front surface 120, back surface 125, and handles 130 can be fabricated from a durable canvas cloth, and the slip-resistant material 140 can comprise any rubber-like material, such as a multi-purpose "gripliner" material made by EMP Industrial Australia Pty Ltd. The dimensions of a multi-use mobility aid can also vary, according to various embodiments of the present invention. For example, small sizes can be fabricated for children and larger sizes for adults. Exemplary dimensions of the multi-use mobility aid 100 include
a total length of 172cm, a width of 9.5cm, and 5 x 16.5 cm handles 130. Of course, various other dimensions can be used including, for example, a wider embodiment for use by large or heavy individuals, and a smaller embodiment for use by children or very small adults.

Referring to FIG. 4, a perspective view illustrates a use of the multi-use mobility aid 100 that enables a care giver 400 to assist the patient 300 to stand up from the bed 405. For example, if the multi-use mobility aid 100 had previously been strapped to the bed 405 as shown in FIG. 3, the care giver 400 can quickly and conveniently undo the Velcro-type hook and loop fasteners 135 attached to the tie end 115 and place the multi-use mobility aid 100 around the patient 300. The slip-resistant material 140 prevents the multi-use mobility aid 100 from slipping upward or downward along the patient's back, and the padding in the elongated strap 105 ensures that forces applied to the patient 300 are evenly distributed and thus comfortably applied.

Referring to FIG. 5, a perspective view illustrates a further use of the multi-use mobility aid 100 that enables the care giver 400 to assist the patient 300 to stand up from the bed 405 or lie down. Here the multi-use mobility aid 100 is placed around the patient's back and just under the patient's arms.

Referring to FIG. 6, a perspective view illustrates a further use of the multi-use mobility aid 100 that enables the care giver 400 to assist the patient 300 to move his or her legs onto or off of the bed 400. Here the tie end 115 is slipped through some of the handles 130 to provide an effective loop or sling.

Referring to FIG. 7, a perspective view illustrates a further use of the multi-use mobility aid 100 that enables two care givers 400 to assist the patient 300 to walk. The multi-use mobility aid 100 is placed behind and beneath the patient's buttocks to provide both vertical and horizontal stability assistance.

Referring to FIG. 8 and FIG. 9, perspective views illustrate still further uses of the multi-use mobility aid 100 that enable care givers 400 to assist a patient 300 in moving into or out of a chair 800.

Various other embodiments and modifications of the present invention are also enabled by the present disclosure. For example, those skilled in the art will
readily appreciate that various reconfigurations of the embodiment shown in FIGs. 1 through 9 are possible, while still accomplishing the features and functions of a multi-use mobility aid of the present invention. For example, various relative dimensions of the elements of the multi-use mobility aid 100 can be changed, and various alternative types of materials can be substituted.

The above description of various embodiments of the present invention is provided for purposes of description to one of ordinary skill in the related art. It is not intended to be exhaustive or to limit the invention to a single disclosed embodiment. As mentioned above, numerous alternatives and variations to the present invention will be apparent to those skilled in the art of the above teaching. Accordingly, while some alternative embodiments have been discussed specifically, other embodiments will be apparent or relatively easily developed by those of ordinary skill in the art. This patent specification is intended to embrace all alternatives, modifications and variations of the present invention that have been discussed herein, and other embodiments that fall within the spirit and scope of the above described invention.
Claims:

1. A multi-use mobility aid device, comprising:
   an elongated strap having a distal end, a tie end, a front surface and a back surface;
   a plurality of handles attached to the strap between the distal end and the tie end;
   a fastener attached to the tie end of the strap; and
   a slip-resistant material on the back surface of the strap between the distal end and the tie end.

2. The device of claim 1, wherein a padding material is located between the front surface and the back surface of the elongated strap.

3. The device of claim 1, wherein the slip-resistant material is a rubber-like cloth.

4. The device of claim 1, wherein the elongated strap has a rectangular shape.

5. The device of claim 1, wherein the front surface comprises a first material, the back surface comprises a second material, and the first material and the second material are sewn together along an edge seam.

6. The device of claim 1, wherein each handle in the plurality of handles is sewn into an edge seam and extends across the front surface of the strap.
7. The device of claim 1, wherein each handle in the plurality of handles is padded.

8. The device of claim 1, wherein the fastener attached to the tie end of the strap enables the tie end to be formed into a sling.

9. The device of claim 1, wherein the fastener attached to the tie end comprises a Velcro-type hook and loop fastener.

10. The device of claim 1, wherein the plurality of handles includes at least five handles.
**INTERNATIONAL SEARCH REPORT**

**INTERNATIONAL APPLICATION**

**International application No**

PCT/7AU2008/001417

**A. CLASSIFICATION OF SUBJECT MATTER**

Int Cl

A61G 7/10 (2006 01)  
A61G 7/053 (2006 01)  
A61G 7/14 (2006 01)

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of data base and, where practicable, search terms used)

DWPI- IPC A61F 5/1- A44B 11/00; A62B 35/00; A61G & keywords: (mobility, move, lift, raise, sit, walk, pull-up, stand, lie down, aid, help, support, assist, strap, band, belt, strip, handle, hand grip, slip resistant) and similar terms.

EPODOC: IPC A61F 5/1- A44B 11/00, A62B 35/00, A61G & keywords (mobility, move, lift, raise, sit, walk, pull-up, stand, lie down, aid, help, support, assist, strap, band, belt, strip, handle, hand grip, slip resistant) and similar terms

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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| Y         | US 2927329 A (JOHANNIS) 8 March 1960  
Column 2, Lines 3-45; Column 2, Line 65- Column 4, Line 50, and Figures 1-3 and 5-7 | 1-10 |
| Y         | US 4396013 A (HASSLINGER) 2 August 1983  
Abstract, Column 3, Line 3- Column 4, Line 22; Column 4, Line 39- Column 7, Line 21, and Figures 1-5 | 1-10 |

Further documents are listed in the continuation of Box C

- Special categories of cited documents
  - A: document defining the general state of the art which is not considered to be of particular relevance
  - E: earlier application or patent but published on or after the international filing date
  - L: document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  - O: document referring to an oral disclosure, use, exhibition or other means
  - P: document published prior to the international filing date but later than the priority date claimed

- Later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- Document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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Date of the actual completion of the international search: 02 December 2008

Date of mailing of the international search report: 16 DEC 2008

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<td>US 2843858 A (BJORKLUND ET AL) 22 July 1958 Column 1, Line 50 - Column 3, Line 5; and Figures 1-5</td>
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<td>Y</td>
<td>US 4679265 A (WICKS) 14 July 1987 Figures 1-2</td>
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<td>Y</td>
<td>EP 1092410 A1 (JASANI) 18 April 2001 Abstract, Paragraphs [0001], [0007]-[0018]; Claims 1; and Figure 1, 3A, 3B</td>
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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX