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(56) Documents Cited:  
**GB 2469093 A** **WO 2008/134801 A1**  
**WO 2006/051316 A1**

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(58) Field of Search:  
 INT CL **A47C, B66B**

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(54) Title of the Invention: **Improvements in or relating to stairlifts**  
 Abstract Title: **Stairlift chair assembled from components chosen from a selection of standard parts**

(57) A stairlift chair 5 comprising a seat base 10, a seat back 14 and two arm rests 15 that are pivotably supported on uprights 16 which can be removed from the chair. The chair 5 also contains a seat back bracket 17 that extends between the uprights 16. The seat back bracket may be removable from the uprights. The uprights 16 may extend vertically and laterally with respect to the seat base 10. The seat back bracket 17 and uprights 16 may be spaced further apart than the opposed side edges 13 (fig 3) of the seat base 10. Both the uprights 16 and seat back bracket 17 may be made from sheet metal. The method of configuring the stairlift chair 5 consists of choosing a pair of uprights 16 from a selection of standard parts, pivotably attaching these to the arm rests 15, selecting a seat back bracket 17 from a range of standard parts, attaching this between the uprights 16 and fixing the seat back 14 to the seat back bracket 17.

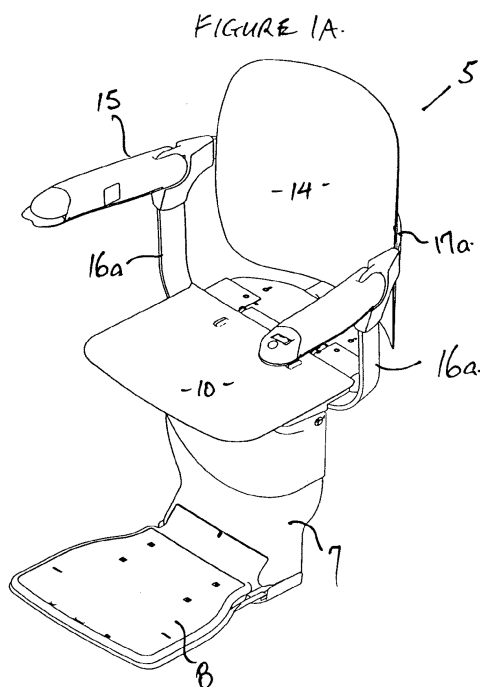


FIGURE 1B

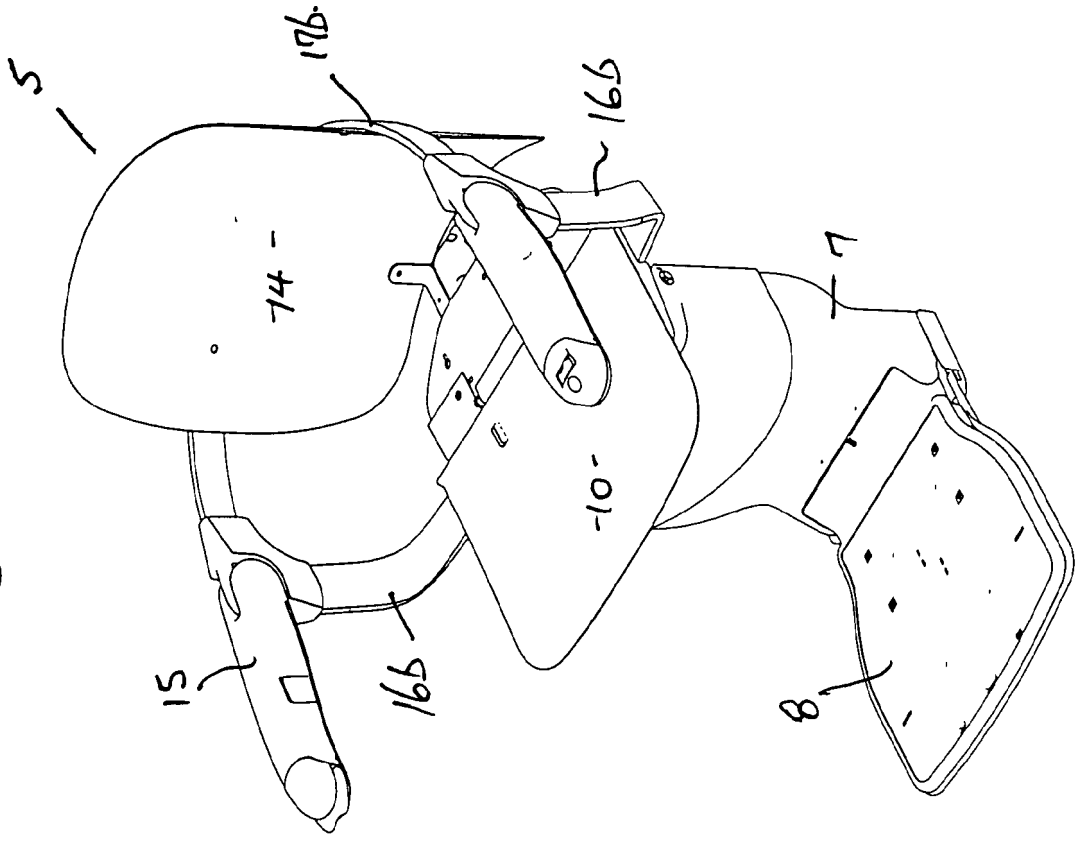


FIGURE 1A.

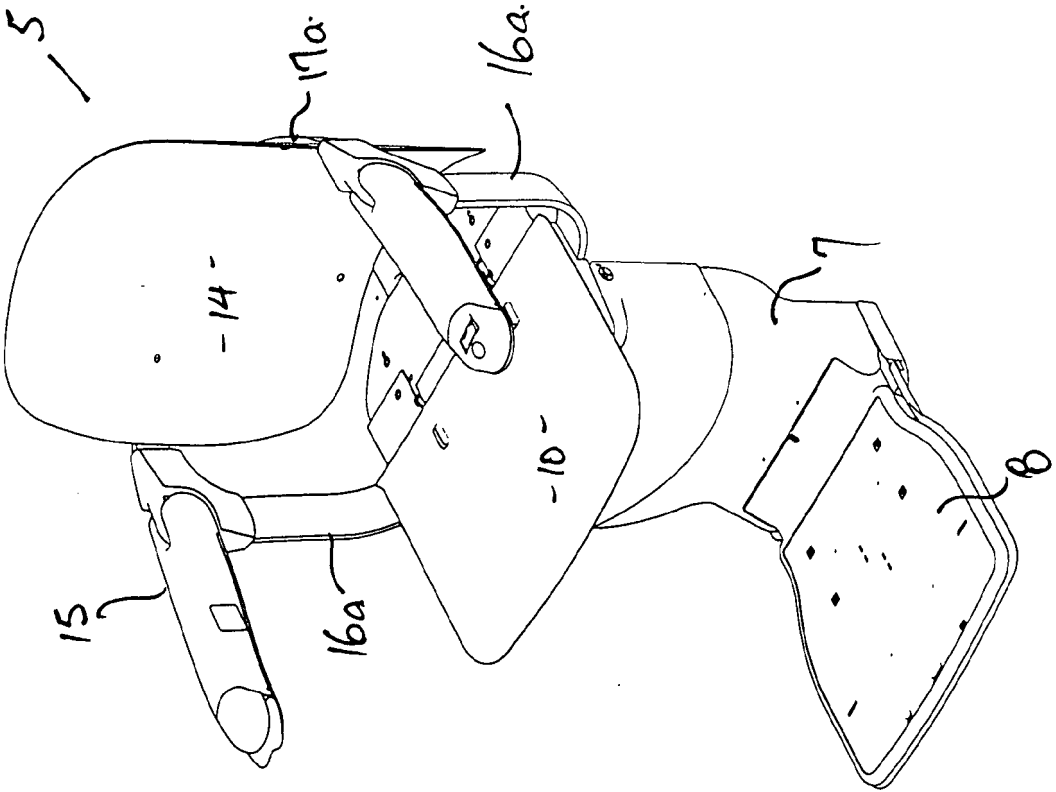


FIGURE 2A.

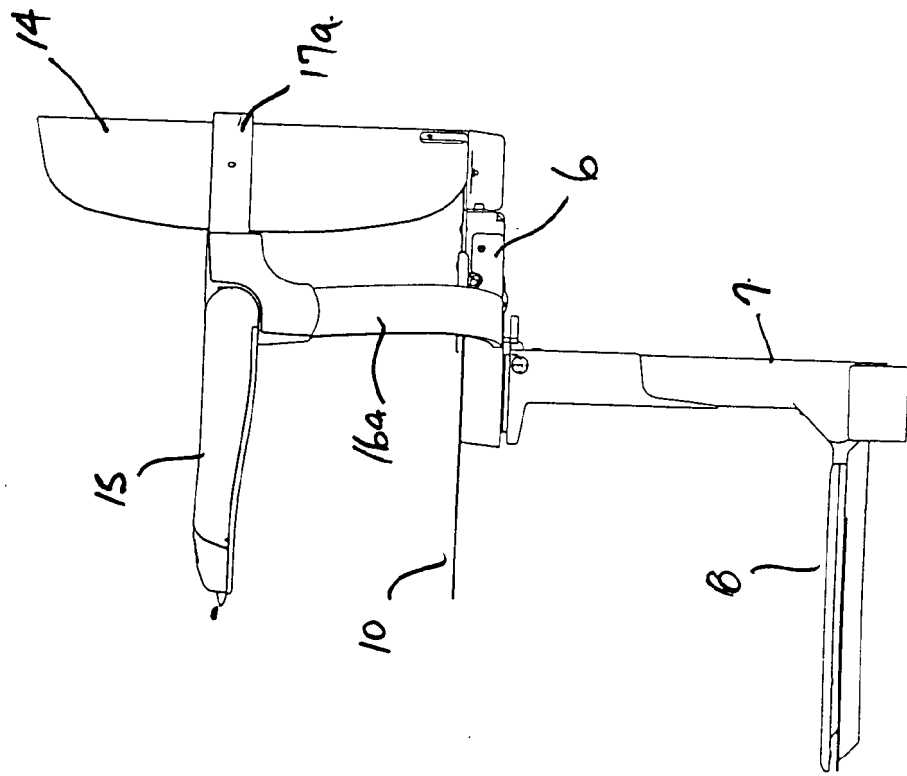


FIGURE 2B

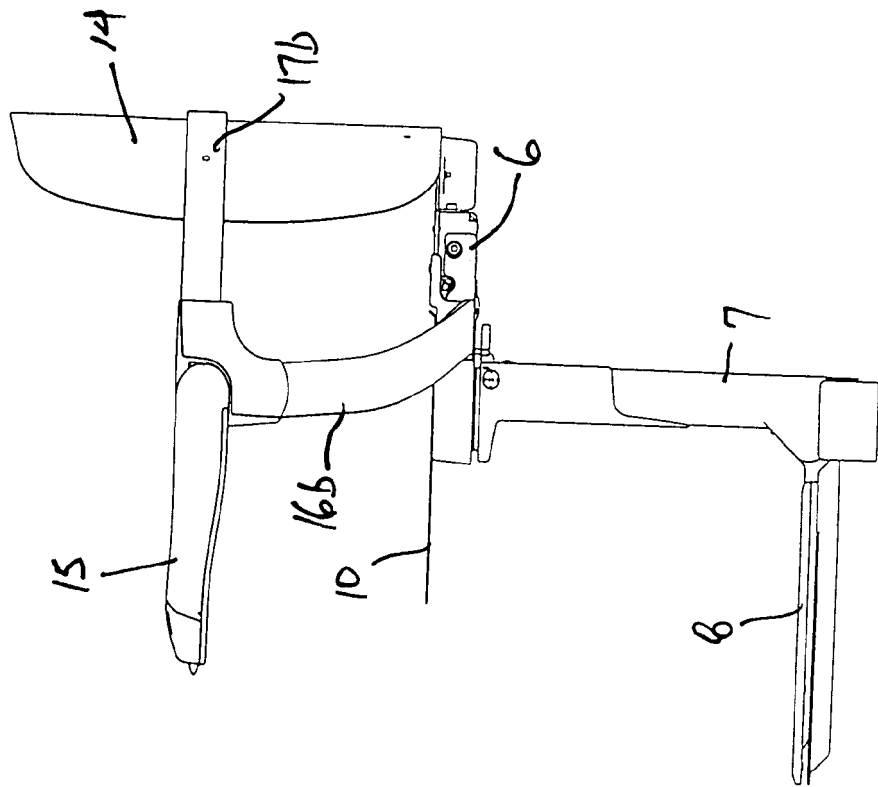
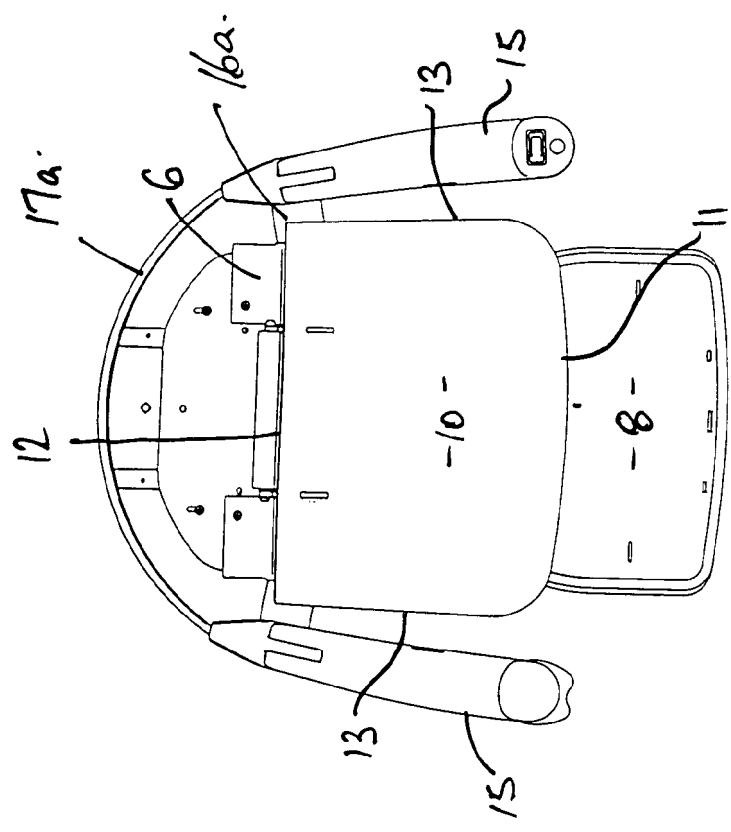


FIGURE 3A



5 /

3/4

FIGURE 3B

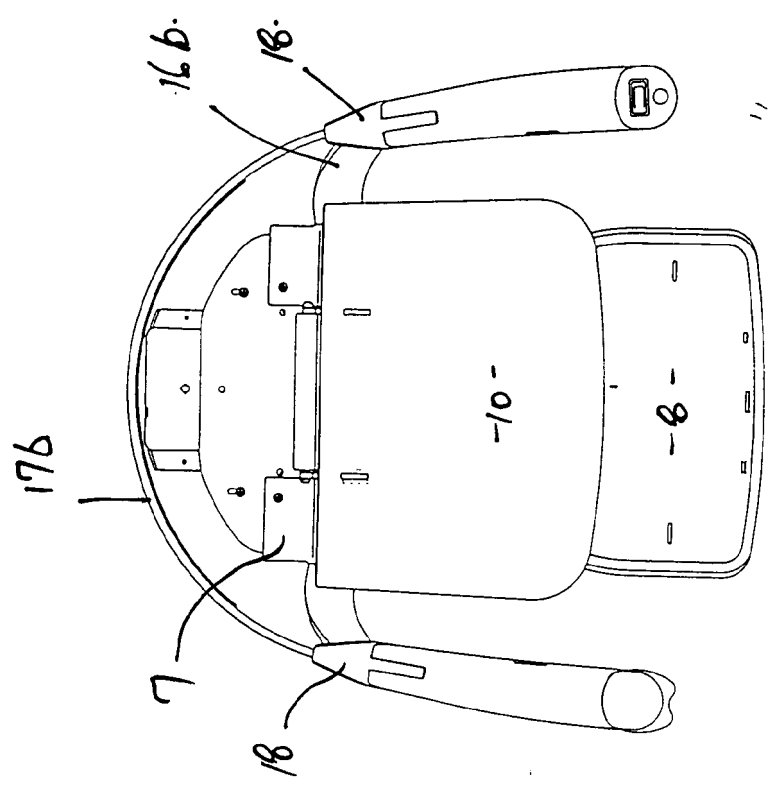


FIGURE 4B.

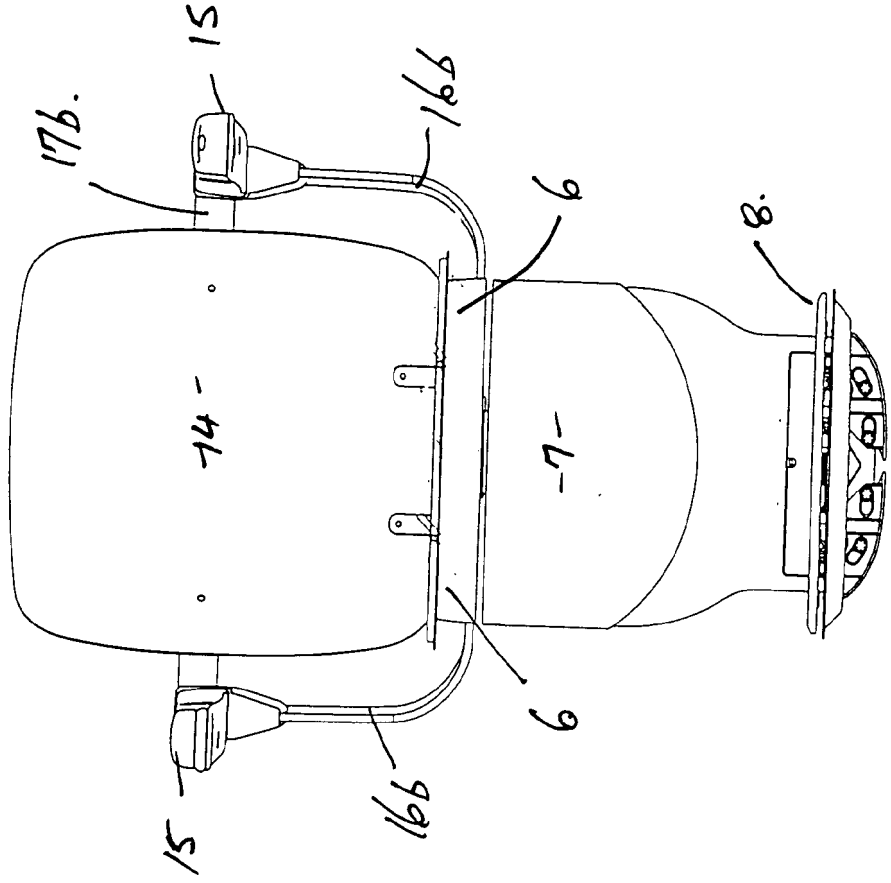
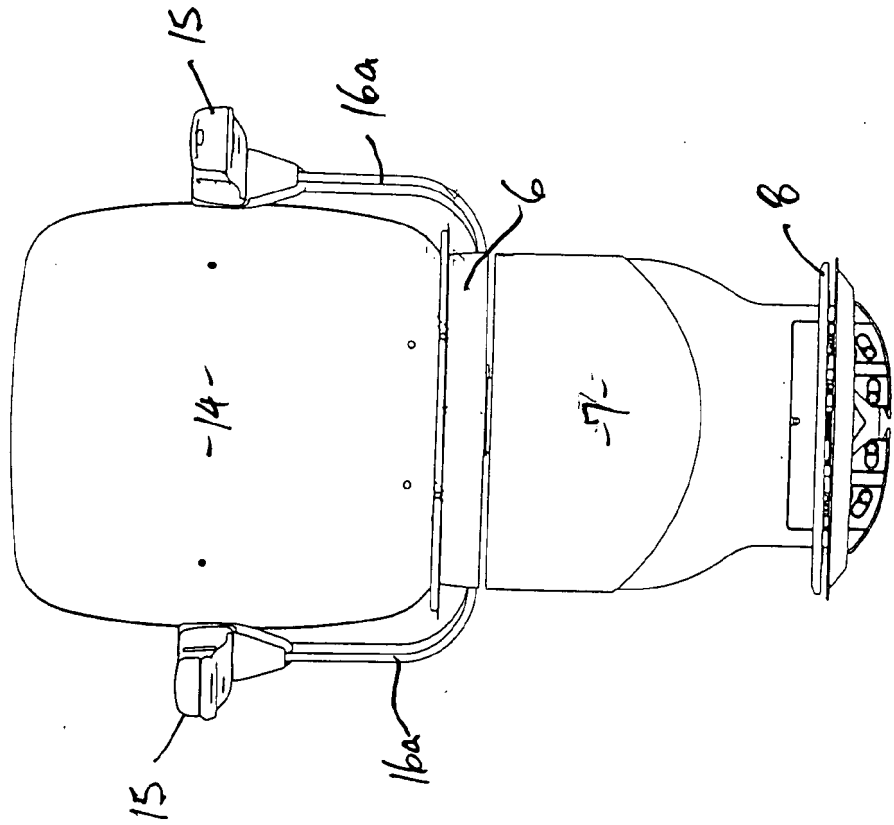


FIGURE 4A.



## ***IMPROVEMENTS IN OR RELATING TO STAIRLIFTS***

### *Field of the Invention*

This invention relates to a stairlifts and, in particular, to a stairlift chair.

### *Background to the Invention*

The form and size of a stairlift chair can significantly influence the comfort and security of a stairlift user. If the chair is too narrow then larger users will have difficulty fitting into the chair. If the chair is too wide, smaller users may worry that the chair offers insufficient support for their journey up and down the stairlift rail. A further problem with wider chairs is that the armrests may clash with the walls defining the stairway whilst moving through bends and whilst swiveling at the top and/or bottom of the rail. To avoid this type of clashing the chair may be moved forward on the carriage but this then means that the stairlift intrudes further into the stairlift and provides a greater obstacle for able-bodied users of the stairway.

Given that a stairlift chair includes a seat base, backrest and two armrests, all of which are typically bespoke items and may even be, in substantial part, single mouldings or castings, there is significant investment required if chairs of varying width are to be provided. As a consequence, chair widths tend to be wider or narrower than is often optimum or desirable.

It is an object of the present invention to provide a stairlift chair and/or a method of providing a stairlift chair, that will go at least some way to addressing the aforementioned drawbacks; or which will at least provide a novel and useful choice.

*Summary of the invention*

Accordingly, in a first aspect, the invention provides a stairlift chair including a seat base having opposed side edges; a seat back; and two arm rests, said chair being characterized in that said armrests are pivotally supported on uprights that are removably connected to said chair, and being further characterized in that said seat back is supported on a seat back bracket extending between said uprights.

Preferably said seat back bracket has opposite ends that removably engage with said uprights.

Preferably said uprights project both vertically and laterally with respect to said seat base.

Preferably the connections between said seat back bracket and said uprights are spaced further apart than the spacing between said opposed side edges.

Preferably said seat back bracket and said uprights are fabricated from sheet metal.

In a second aspect the invention provides a method of configuring a stairlift chair that includes a seat base having opposed side edges; a seat back and armrests; said method including selecting a pair of uprights for removable engagement with said chair; pivotally mounting said armrests on said uprights; mounting a seat back bracket between said uprights; and fixing said seat back to said seat back bracket.

Preferably said uprights are chosen from a selection of uprights and said seat back bracket chosen from a selection of seat back brackets.

Many variations in the way the present invention can be performed will present themselves to those skilled in the art. The description which follows is intended as an illustration only of one means of performing the invention and the lack of description of variants or equivalents should not be regarded as

limiting. Wherever possible, a description of a specific element should be deemed to include any and all equivalents thereof whether in existence now or in the future.

*Brief Description of the Drawings*

The various aspects of the invention will now be described with reference to the accompanying drawings in which:

Figures 1A & 1B: show isometric views of two alternative forms of stairlift chair according to the invention;

Figures 2A & 2B: show side elevational views of the chairs shown in Figures 1A & 1B;

Figures 3A & 3B: show plan views of the chairs shown in Figures 1A & 1B; and

Figures 4A & 4B: show front elevational views of the chairs shown in Figures 1A & 1B.

*Detailed Description of Working Embodiment*

The invention provides a method for establishing the form of a stairlift chair and/or a stairlift chair so formed, which allows the chair to be tailored to suit users of differing bulk in a simple and cost effective manner. In particular, it allows chairs of different bulk to be formed from a selection of components simply fabricated from relatively low cost materials.



In the attached drawings the Figures suffixed 'A' depict a narrow version of a stairlift chair while those suffixed 'B' depict a wide version of the chair.

In both versions, the chair 5 includes a chassis 6 mounted to an interface 7. A footrest 8 is, in turn, mounted on the lower edge of the interface 7.

Conventionally the interface is connected to a stairlift carriage (not shown) that translates along a stairlift rail (not shown). Given that the arrangement of the interface, carriage and rail has no influence on the implementation of the invention, no further description will be provided.

Both versions of chair 5 formed according to the invention include a seat base 10, the seat base having a front edge 11, a rear edge 12, and opposed side edges 13. Both versions of chair 5 further include a seat back 14, and two arm rests 15. A characterizing feature of the chair is that the armrests 15 are pivotally supported on uprights 16a, 16b that are removably mounted on the chassis 6. A further characterizing feature is that the seat back 14 is also mounted to the uprights 16a, 16b by way of alternative seat back brackets 17a, 17b. As will be described in greater detail below, this configuration allows chairs of different widths to be formed in a simple and relatively inexpensive manner using common seat bases, backs and armrests.

The uprights 16a, 16b and seat back brackets 17a, 17b are conveniently fabricated from sheet metal such as steel plate and can thus be formed without the need for specialist or bespoke tooling. While two configurations are depicted and described herein it will be appreciated that further configurations could be provided to allow further end configurations of chair to be provided. The uprights are preferably bolted to the chassis 6 whilst the seat back bracket may be bolted or screwed to the uprights.

As indicated in the drawings, the uprights 16a, 16b project both vertically and laterally with respect to the seat base 10 such that the connections 18 between the seat back bracket and the uprights are spaced further apart than the spacings between the opposed

side edges 13. As can be seen most clearly in Figures 2A and 2B, the uprights 16a project substantially vertically whilst the uprights 16b are kinked forward at their upper ends. This is to position the armrests further forward for larger users. It follows that seat back bracket 17b has both a deeper and wider span than seat back bracket 17a.

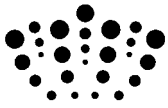
Further adjustment can be provided by altering the configuration and positioning of the mounting points between the uprights 16a, 16b and the chair chassis 6.

It follows that the invention also provides a method of configuring a stairlift chair from a common seat base, a common seat back component, and common armrests. According to the invention a pair of uprights 16a or 16b and a corresponding seat back bracket 17a or 17b are selected according to the size of the intended user. The uprights are then bolted to the chassis 6 and the seat back bracket 17 then bolted or screwed to the uprights. The seat base, seat back and armrests may then be mounted in the conventional manner.

The precise configurations and finishes of seat base, seat back and armrests may vary as widely as in the prior art and should not in any way limit the scope of this invention.

*Claims*

1. A stairlift chair including a seat base having opposed side edges; a seat back; and two arm rests, said chair being characterized in that said armrests are pivotally supported on uprights that are removably connected to said chair, and being further characterized in that said seat back is supported on a seat back bracket extending between said uprights.
2. A stairlift chair as claimed in claim 1 wherein said seat back bracket has opposite ends that removably engage with said uprights.
3. A stairlift chair as claimed in claim 1 or claim 2 wherein said uprights project both vertically and laterally with respect to said seat base.
4. A stairlift chair as claimed in any one of the preceding claims wherein the connections between said seat back bracket and said uprights are spaced further apart than the spacing between said opposed side edges.
5. A stairlift chair as claimed in any one of the preceding claims wherein said seat back bracket and said uprights are fabricated from sheet metal.
6. A method of configuring a stairlift chair that includes a seat base having opposed side edges; a seat back and armrests; said method including selecting a pair of uprights for removable engagement with said chair; pivotally mounting said armrests on said uprights; mounting a seat back bracket between said uprights; and fixing said seat back to said seat back bracket.
7. A method as claimed in claim 6 wherein said uprights are chosen from a selection of uprights and said seat back bracket is chosen from a selection of seat back brackets.



**Application No:** GB1207246.8

**Examiner:** Ms Alison Florance

**Claims searched:** 1-7

**Date of search:** 15 October 2013

**Patents Act 1977: Search Report under Section 17**

**Documents considered to be relevant:**

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1, 4	GB2469093 A Seat back 12, two arm rests 13 and page 4 of the description
X	1, 4	WO2006/051316 A1 Seat back 8, two arm rests 7a 7b
A	-	WO2008/134801 A1

**Categories:**

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

**Field of Search:**

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC<sup>X</sup> :

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Worldwide search of patent documents classified in the following areas of the IPC

A47C; B66B

The following online and other databases have been used in the preparation of this search report

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**International Classification:**

Subclass	Subgroup	Valid From
B66B	0009/08	01/01/2006