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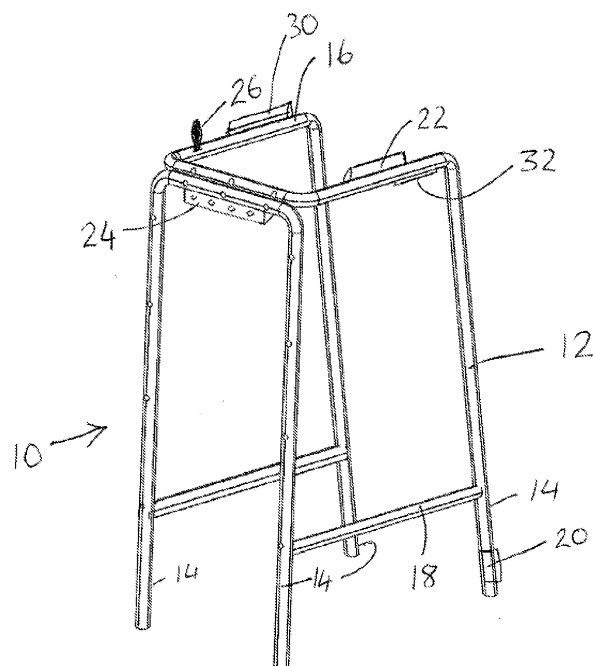
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(56) Documents Cited:
WO 2015/043286 A1 CN 206275808 U
CN 206102927 U CN 205494329 U
CN 106580643 A CN 105030489 A

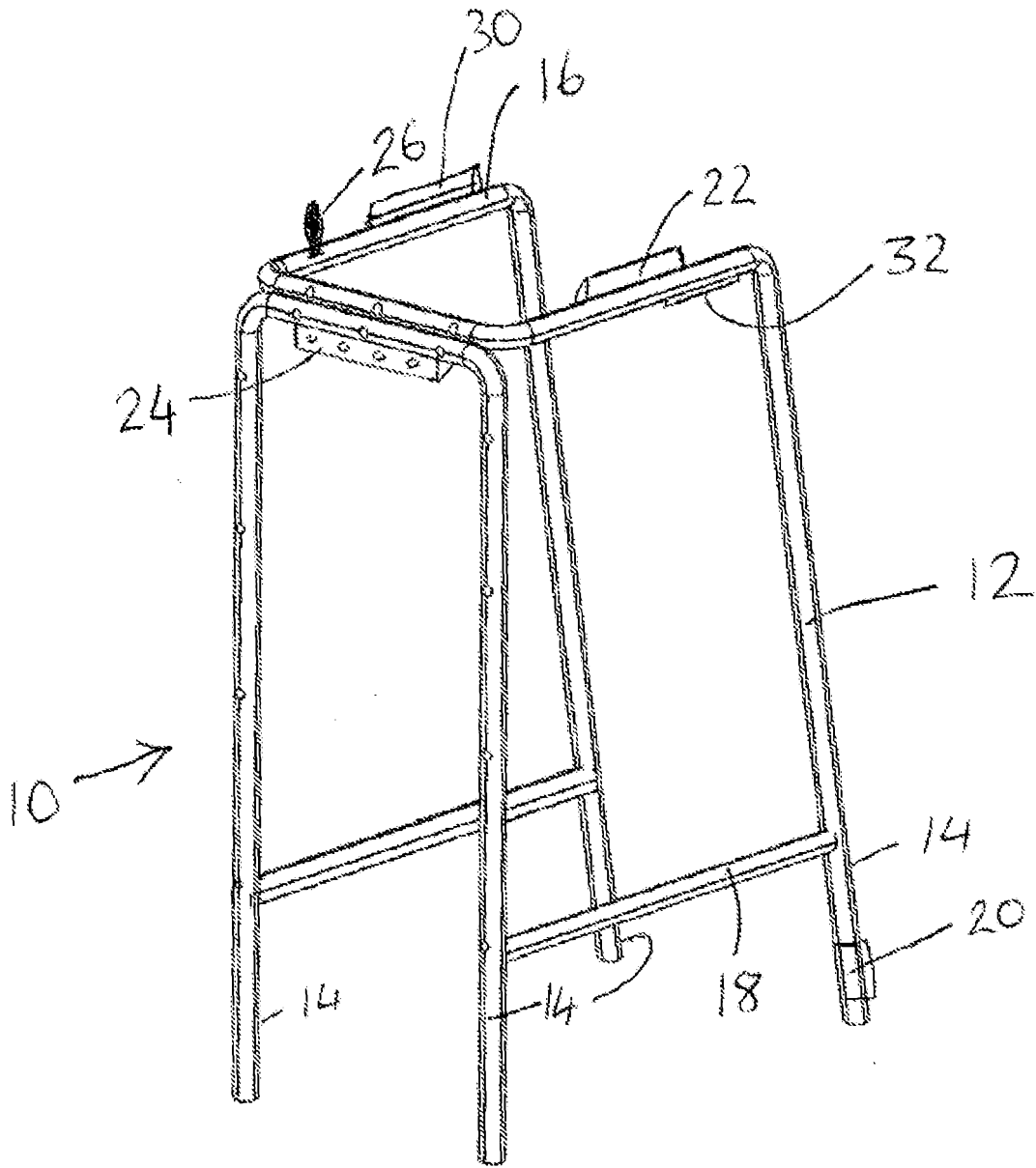
(58) Field of Search:
INT CL A61G, A61H
Other: EPODOC, WPI

(54) Title of the Invention: **Mobility aid**
Abstract Title: **A mobility aid with rechargeable power source**

(57) A mobility aid 10 for instance in the form of a walking frame 12 that includes a rechargeable power source 20. The device may contain a lighting arrangement in the form of a plurality of LED lamps 24 that can be powered by the rechargeable power source. There may be a connection unit for providing wireless connection means to communicate to an external device such as a mobile phone. There may be a hear field communication microchip. There may be a speaker, camera and/or a microphone. There may be GPS. There may be adjustable lighting arrangements 24 to provide forwards and/or downwards illumination. There may be a switch 26 for the lights in the form of a motion detector, pressure switch or sensor 32 to detect a person is holding the frame. There may be a retractable bracket for a phone or tablet. There may be a movable ground engaging part, such as wheels, that causes recharging of the rechargeable power source.



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Mobility Aid

This invention concerns mobility aids, and in particular walking frames, wheeled walkers, wheeled trollies and wheelchairs.

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Mobility aids in the form of walking frames, wheeled walkers, wheeled trollies or wheelchairs are widely used, and particularly by elderly persons. A problem encountered by elderly people is that it is often necessary to get out of the bed in the dark, for instance to go to the toilet. Difficulties can be encountered in actuating relevant light switches to illuminate their way.

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According to a first aspect of the invention there is provided a mobility aid, the mobility aid including a frame with a rechargeable power source on the frame.

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The rechargeable power source may be located within the frame, and may be located in a lower part of the frame. The rechargeable power source may be in the form of a rechargeable battery which may be a lithium battery. A connection, which may be a USB port may be provided on the frame, and desirably at a lower part of the frame, to permit charging of the rechargeable power source.

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Indication means may be provided to indicate that the battery is being charged and/or to indicate the charging state of the battery.

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A solar panel may be provided on the frame to enable charging of the battery.

A connection unit for providing wireless connection to a communication device such as a mobile phone, may be provided on the frame to permit communication therethrough. A speaker and/or a microphone may be provided on the frame for use with the connection unit.

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The connection unit may operate by a wireless technology such as BLUETOOTH®.

5 A camera, which may be a video camera, may be provided on the frame. The camera may connect to the connection unit, such that the camera can connect to a communication device such as a mobile phone.

10 An input to connect to a data storage means may be provided, and a slot for a memory card such as a micro SD card may be provided on the frame.

15 The mobility aid may include a GPS unit, which may connect to a communication device such as a mobile phone.

 A near field communication microchip may be provided in the frame.

20 One or more lighting arrangements powered by the rechargeable source may be provided on the frame. The lighting arrangements may provide downwards and/or forwards illumination. The lighting arrangements may be adjustable.

25 Switch means may be provided for the lighting arrangements, and the switch may include a motion detector.

 The switch means may include a pressure switch or sensor on the frame which cause the lighting arrangements to automatically be actuated when it is sensed that a person is holding onto the frame

30 A bracket may be provided on the frame for mounting a phone or tablet computer so as to be visible by a user of the frame. The bracket may be

adjustable. The bracket may be retractable, and may locate in the frame when not in use.

The mobility aid may be any of a walking frame, wheeled walker,
5 wheeled trolley, or a wheelchair.

The frame may include a movable ground engaging part, with the frame configured such that movement of the movable ground engaging causes recharging of the rechargeable power source.

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The movable ground engaging part may comprise one or more wheels.

Alternatively, the movable ground engaging part may be in the form of a reciprocally movable lower end in use on the support part. The reciprocally
15 movable lower end may provide shock absorbing for a user of the walking aid.

An embodiment of the present invention will now be described by way of example and with reference to the accompanying drawing which is a diagrammatic perspective view of a mobility aid according to the invention.

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The drawings show a mobility aid 10 in the form of a walking frame 12, often referred to as a Zimmer frame. The frame 12 as is conventional, includes four legs 14, an n shaped top frame 16, and two side supporting members 18 each extending between a respective pair of front and rear legs
25 14.

A rechargeable power source 20 in the form of a lithium battery is located in a lower part of a one of the rear legs 14. A USB port is provided to permit charging of the rechargeable power source 20. An indication light will
30 be provided to indicate the status of the rechargeable power source 20, and also to indicate when charging is complete.

Connections from the rechargeable power source lead to a bank of USB sockets 22 to permit other items to be powered or charged by the power source 20, such as a mobile phone, computer, fan or other.

5 A lighting arrangement is provided on the frame 12 powered by the rechargeable power source 20. In this instance the lighting arrangement is in the form of a plurality of LED lamps 24, the alignment of which can be adjusted to point forwards and/or downwards. It is to be realised that different and/or additional lighting arrangements could be provided.

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 An on/off switch 26 for the lamps 24 is provided. This can take any conventional configuration but a gesture operated switch could also be provided such that for instance a person waving their hand beneath the switch 26 will turn the lamps 24 on.

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 As a further alternative sensors or pressure switches may be provided on the frame 12 as shown at 32, which sensors or switches 32 causes the lamps 24 to automatically be activated when it is sensed that a person is holding on to the frame 12.

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 A bracket 28 may be provided to mount a mobile phone and/or a tablet or computer such that these can be used and read by a person using the frame 12. The bracket 28 may be extendible and flexible, and could be configured to be retractable into the frame 12 when not in use.

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 A solar panel 30 as indicated is provided on the frame 12 to assist with recharging the power source 20.

30 A connection unit for providing wireless connection for instance by BLUETOOTH® to a communication device such as a mobile phone may be provided in the frame 12. A speaker and/or microphone may be provided on the frame 12 for use with the connection unit.

A camera could be provided on the frame 12, which camera may be a video camera. The camera may connect to the connection unit such that the camera can connect to a device such as a mobile phone.

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A GPS unit may be provided in the frame 12 which can connect to the communication device. This can assist a user to identify their location, and also can be useful for carers or other persons to be able to locate a user. A rear field communication microchip may be provided in the frame 12.

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Whilst the above example is a walking frame 12, any or all of the above features could be provided in different mobility aids such as a wheeled walker, a wheeled trolley, or in a wheelchair.

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The above features provide for a number of advantages, including for instance permitting a person to be able to move around in the dark, which could be particularly useful if getting up during the night. The invention also permits a user of a mobility aid to be able to carry out various actions and enjoy the use of other devices and the like whilst using the mobility aid.

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A wide range of other modifications may be made without departing from the scope of the invention. For instance, different connections could be provided. A different type of rechargeable source could be used. Other devices could be connected to the frame, and other mountings provided thereon.

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Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

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CLAIMS

1. A mobility aid, the mobility aid including a frame with a rechargeable power source on the frame.

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2. A mobility aid according to claim 1, in which the rechargeable power source is located within the frame.

3. A mobility aid according to claims 1 or 2, in which a connection is provided on the frame to permit charging of the rechargeable power source.

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4. A mobility aid according to any of the preceding claims, in which indication means is provided to indicate that the battery is being charged and/or to indicate the charging state of the battery.

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5. A mobility aid according to any of the preceding claims, in which a solar panel is provided on the frame to enable charging of the rechargeable power source.

6. A mobility aid according to any of the preceding claims, in which a connection unit for providing wireless connection to a communication device such as a mobile phone, is provided on the frame to permit communication therethrough.

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7. A mobility aid according to claim 6, in which a speaker and/or a microphone is provided on the frame for use with the connection unit.

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8. A mobility aid according to any of the preceding claims, in which a camera, which may be a video camera, is provided on the frame.

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9. A mobility aid according to claim 8 when dependent on claims 6 or 7, in which the camera connects to the connection unit, such that the camera can connect to a communication device such as a mobile phone.

5 10. A mobility aid according to any of the preceding claims, in which an input to connect to a data storage means is provided on the frame.

11. A mobility aid according to any of the preceding claims, in which the mobility aid includes a GPS unit, which may connect to a communication
10 device such as a mobile phone.

12. A mobility aid according to any of the preceding claims, in which a near field communication microchip is provided in the frame.

15 13. A mobility aid according to any of the preceding claims, in which one or more lighting arrangements powered by the rechargeable source is provided on the frame.

14. A mobility aid according to claim 13, in which the lighting arrangements
20 provide downwards and/or forwards illumination.

15. A mobility aid according to claims 13 or 14, in which the lighting arrangements are adjustable.

25 16. A mobility aid according to any of claims 13 to 15, in which switch means are provided for the lighting arrangements.

17. A mobility aid according to claim 16, in which the switch means include a motion detector.

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18. A mobility aid according to claims 16 or 17, in which the switch means includes a pressure switch or sensor on the frame which cause the lighting

arrangements to automatically be actuated when it is sensed that a person is holding onto the frame

19. A mobility aid according to any of the preceding claims, in which a bracket is provided on the frame for mounting a phone or tablet computer so as to be visible by a user of the frame.

20. A mobility aid according to claim 19, in which the bracket is retractable, and can locate in the frame when not in use.

21. A mobility aid according to any of the preceding claims, in which the mobility aid is any of a walking frame, wheeled walker, wheeled trolley, or a wheelchair.

22. A mobility aid according to any of the preceding claims, in which the frame includes a movable ground engaging part, with the frame configured such that movement of the movable ground engaging causes recharging of the rechargeable power source.

23. A mobility aid according to claim 22, in which a movable ground engaging part comprises one or more wheels.

24. A mobility aid according to claim 22, in which the movable ground engaging part is in the form of a reciprocally movable lower end in use on the support part.

25. A mobility aid according to claim 24, in which the reciprocally movable lower end provides shock absorbing for a user of the walking aid.



Application No: GB1720115.3

Examiner: Dr Jonathon Carr

Claims searched: 1-25

Date of search: 13 May 2019

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	1-7, 10-16 and 19-21	WO2015/043286 A1 (LEE) see WPI abstract, accession number 2014-H60086, figures and detailed description of the preferred embodiment section in the description.
X	1-6 and 8-21	CN205494329 U (ZHANG) see EPODOC abstract, figures and Detailed description of the invention section in the description.
X	1-5, 7-11, 13-16 and 19-21	CN106580643 A (ZHANG) see EPODOC abstract, figures and the specific embodiment in the description
X	1-5, 7, 11, 13-16 and 19-21	CN206102927 U (WANG) see EPODOC abstract, figures and specific embodiment section of the description.
X	1-10, 12-13 and 19-21	CN206275808 U (LIU) see EPODOC abstract, figures and Detailed description section in description
X	1-6, 11-12 and 19-21	CN105030489 A (SUN) see EPODOC abstract, figures and the specific embodiment in the description

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^X :

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

A61G; A61H

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

EPODOC, WPI



International Classification:

Subclass	Subgroup	Valid From
A61H	0003/00	01/01/2006
A61G	0005/10	01/01/2006
A61H	0003/04	01/01/2006