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(54) **A rollator having height adjustable handles**

(57) A rollator comprises a main frame (1), wheels (2), and height adjustable handles (3). According to the present invention each handle (3) is provided with a height adjusting mechanism in the form of a movable ball (4) lockable in one of a plurality of corresponding locking holes (5) formed in the handle (3), a displaceable and spring-biased guide pin (6) having a recessed pressure surface (7) for the ball, and a pivotal rocker (8) displacing the guide pin (9) as to disengage the ball (4) during height adjustments.

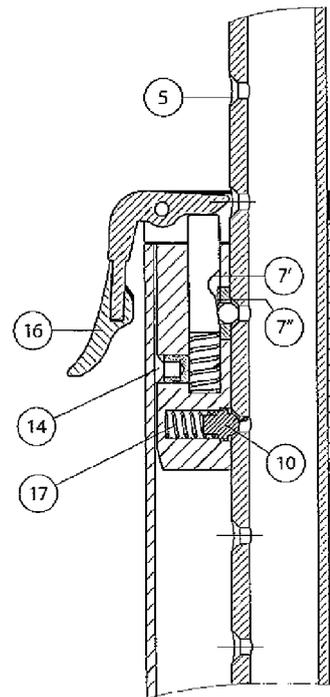


Fig. 2b

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Description

[0001] The present invention relates to a rollator comprising a main frame, wheels, and height adjustable handles.

[0002] Rollators are primarily intended for used by older persons. Different types of rollators are available in the market and, thus, the concept is well established in a number of countries. A typical rollator is disclosed by US-A1 2005/0156395.

[0003] Conventional rollators are more or less able of being adapted to the needs of individual users. For instance, the handles may be height adjusted. This situation may occur when adapting the rollator to the actual user, or even during transport within a motorcar, for instance.

[0004] The common manner of adjusting the handle height is by removing and repositioning screws and the like in the main frame. This procedure is difficult and burdensome for almost any rollator. Some sort of a screwing tool has additionally to be used not necessarily being at hand when to transport the rollator. Thus, improvements are obviously needed as regards adjusting the handle height.

[0005] The disadvantages mentioned above is remedied by means of a rollator comprising a main frame, wheels, and height adjustable handles, wherein each handle is provided with a height adjusting mechanism in the form of a movable ball lockable in one of a plurality of corresponding locking holes formed in the handle, a displaceable and spring-biased guide pin having a recessed pressure surface for the ball, and a pivotal rocker displacing the guide pin as to disengage the ball during height adjustments.

[0006] To effect accurate positioning by means of the ball engaging one of the locking holes, the adjusting mechanism may have a spring-biased indexing pin situated below the movable ball.

[0007] To disengage and lock the ball, an upper portion of the recessed pressure surface may be formed with a depression allowing the ball to be located outside the locking holes and a lower portion inclined towards an outer surface of the guide pin.

[0008] To inter alia facilitate assembling, the height adjusting mechanism may be arranged in connection with a body to be secured inside a tube portion of the main frame.

[0009] Thereby, there is provided a height adjusting mechanism which is easy and fast to use, which is safe to use by being self-locking without any operation after adjusting, and which is resulting in a stable locking function without slack.

[0010] Now, the present invention is to be further discussed by means of preferred embodiments illustrated by the accompanying drawings, in which:

Fig. 1 a and 1b are perspective views showing a collapsible rollator; and

Fig. 2a and 2b are vertical section views showing height adjusting and locking positions of a handle, respectively.

[0011] In a conventional manner, the present rollator comprises a main frame 1, wheels 2, and height adjustable handles 3. The main frame may have any convenient construction and is favourably formed of tube pieces including two side elements 13 supporting the respective handle. The rollator has also other features such as e.g. brake levers 15 not being part of the present invention, and these additional features are not to be discussed further below.

[0012] To facilitate height adjustments of the handles 3, the present invention is provided with an adjusting mechanism. The essential components included in this mechanism are a ball 4, a guide pin 6, and a rocker 8.

[0013] As depicted in Fig. 2a and 2b, the ball 4 is movable and lockable in one of more corresponding locking holes 5 formed in the handle 3. The guide pin 6 is a displaceable in a direction approximately perpendicular to the direction of ball movement and is biased by means of a spring 15. Further, the spring-biased guide pin is formed with a recessed pressure surface 7 allowing for movements of the ball to disengage from and lock in the respective holes when adjusting the handle. To disengage the ball during height adjustments, the guide pin is displaced using the pivotal rocker 8 as to pull the rocker in a direction outward from the guide pin using a grip 16 arranged in an end thereof opposite the guide pin.

[0014] The surface of the rocker facing an upper end of the guide pin, is configured as to facilitate both displacing and securing the pin. The rocker 8 is mounted pivotally on a pivot pin 9 arranged in an upper end of the main frame 1.

[0015] Before locking the handle, correct positioning is achieved by means of indexing pin 10 situated below the movable ball 4. The indexing pin is biased using a spring 17, and the pin is formed with a front surface adapted to fit into the respective locking hole 5. Thus, the distance between the ball and pin is equal to the distance between two adjacent locking holes.

[0016] The locking holes 5 are formed in an adjusting tube 12 of the handle 3, the adjusting tube 12 being displaceably arranged in the main frame 1. Further, the height adjusting mechanism 4, 6, 8 is arranged in connection with a body 13 situated inside a tube portion of the main frame 1. The body is secured by means of a protrusion 14 formed inside the tube portion.

[0017] Favourable, an upper portion 7' of the recessed pressure surface 7 is formed with a depression allowing the ball to be located outside the locking holes 5. To provide for ball movement between the locking and disengaging positions, respectively, the recessed pressure surface 7 is formed with a lower portion 7" inclining towards an outer surface of the guide pin 6. It is understood that the ball could be moved from and to the respective hole 5 using other means, e.g. a spring-biased ball situ-

ated in a bore formed in the guide pin 6, not illustrated.

[0018] Although depicted as collapsible, it is understood that the present rollator may be of any suitable type, e.g. provided with a fixed main frame. The number of wheels is not necessarily four as the pair of front wheels could be replaced by one wheel situated centrally to the main frame, for instance.

Claims

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- 10
1. A rollator comprising a main frame (1), wheels (2), and height adjustable handles (3), **characterized in that** each handle (3) is provided with a height adjusting mechanism in the form of a movable ball (4) lockable in one of a plurality of corresponding locking holes (5) formed in the handle (3), a displaceable and spring-biased guide pin (6) having a recessed pressure surface (7) for the ball, and a pivotal rocker (8) displacing the guide pin (9) as to disengage the ball (4) during height adjustments. 15 20
 2. A rollator according to the claim 1, **characterized in that** the adjusting mechanism is provided with a spring-biased indexing pin (10) situated below the movable ball (4). 25
 3. A rollator according to any of the preceding claims, **characterized in that** the locking holes (5) are formed in an adjusting tube (12) of the handle (3), the adjusting tube (12) being displaceably arranged in the main frame (1). 30
 4. A rollator according to any of the preceding claims, **characterized in that** an upper portion (7') of the recessed pressure surface (7) is formed with a depression allowing the ball to be located outside the locking holes (5). 35
 5. A rollator according to the claim 4, **characterized in that** a lower portion (7'') of the recessed pressure surface (7) is inclining towards a face of the guide pin (6). 40
 6. A rollator according to any of the preceding claims, **characterized in that** the rocker (8) is mounted pivotally on a pivot pin (9). 45
 7. A rollator according to any of the preceding claims, **characterized in that** the height adjusting mechanism is arranged in connection with a body (13) to be secured inside a tube portion of the main frame (1). 50

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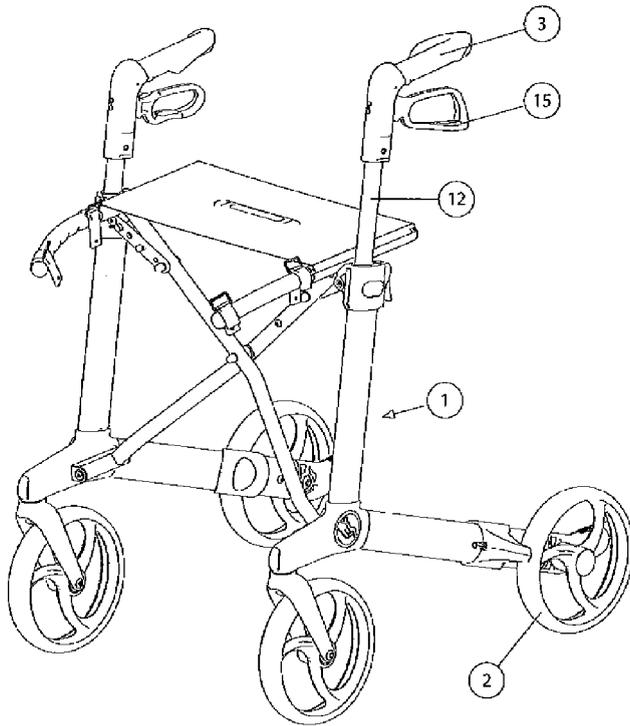


Fig. 1a

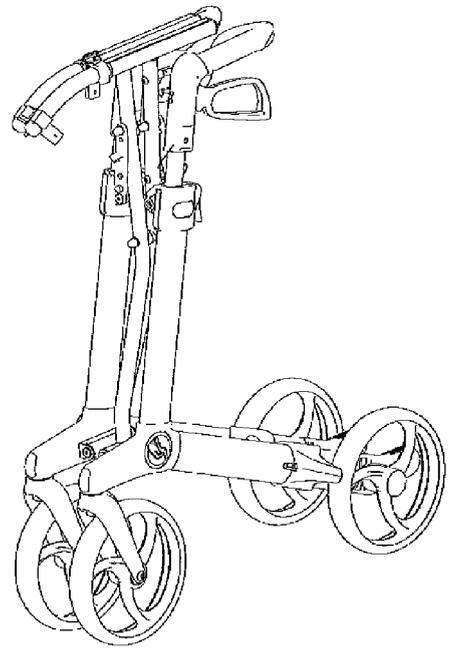


Fig. 1b

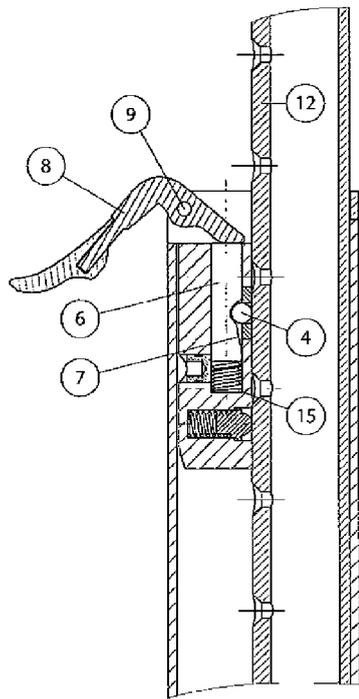


Fig. 2a

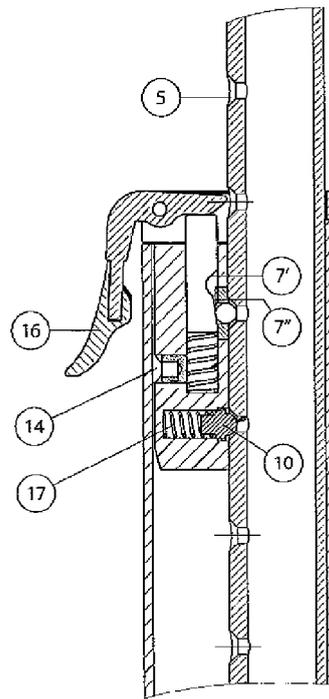


Fig. 2b



EUROPEAN SEARCH REPORT

Application Number
EP 10 15 0223

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 5 228 202 A (LIAO DICK [US]) 20 July 1993 (1993-07-20) * figures 2A,2B *	1	INV. A61H3/04
A	----- EP 0 812 992 A1 (INVACARE CORP [US]) 17 December 1997 (1997-12-17) * claims; figures *	1	
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			TECHNICAL FIELDS SEARCHED (IPC)
			A61H
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		7 May 2010	Knoflachner, Nikolaus
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		& : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 15 0223

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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07-05-2010

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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- US 20050156395 A1 [0002]