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(54) **Safety and adjustment device for inclination in foldable deckchairs**

(57) The invention concerns a safety and adjustment device for the inclination of foldable deckchairs, of the so-called rocker type. This consists of at least one locking device composed of a rod having a side bearing

positioning teeth (21), engaging a fixed crosspiece (17) to define various inclinations for use of the backrest, and a terminal hook (22) intended to intercept from the bottom upwards such crosspiece (17) to prevent accidental tipping forward of the backrest towards the seat.

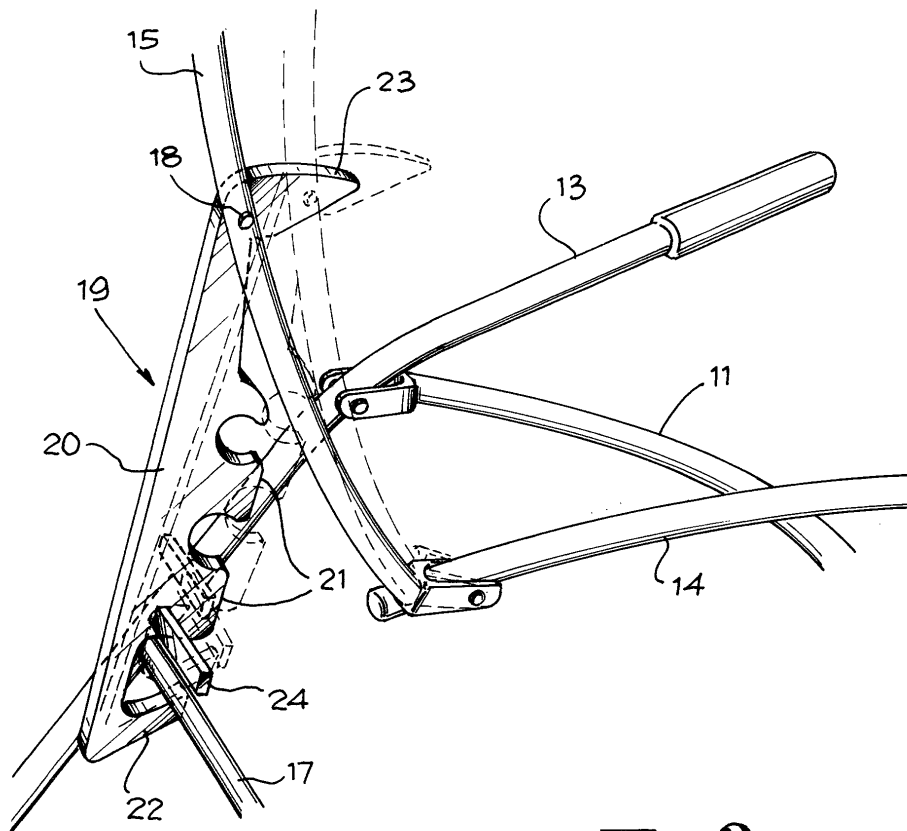


Fig.3

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Description

[0001] This finding regards foldable deckchairs, so-called "rocker" chairs, and more particularly a safety and adjustment device for positioning a chair of the type including two pairs of support legs hinged at their top, a seat frame hinged to an intermediate section of the fore legs, a backrest frame hinged to the back part of the seat frame, a cloth applied to said frames to constitute the seat and backrest, and wherein the backrest frame is movable between at least an upright position and a backwards reclined position as well as collapsible forward onto the seat thus permitting folding of the chair.

[0002] In a previous application by the same applicant there has been described and claimed a safety device for such deckchairs including at least one locking device rocker-hinged to the backrest frame of the chair and interacting with at least one crosspiece or several elements fixed to the back legs of the backrest frame. The locking device is provided with a control rod or lever which extends upward to the level of the chair arm-rest and ends with a end-piece facing frontward on which the sitting person may act with an arm or an elbow in order to disengage the locking device from the crosspiece or elements thus modifying the position of the backrest.

[0003] In such construction, the backrest frame finds a stable support on the crosspiece or on the back element when it is in position for use, but may however be accidentally tipped forward, onto the seat frame, which is not admissible for the safety purposes of the chair.

[0004] The purpose of this finding is to obviate this disadvantage and provide a safety and adjustment device for deckchairs which may be controlled with an elbow, that prevents the backrest from tipping forward while in position for use.

[0005] The purpose is achieved by a safety and adjustment device for so-called "rocker" deckchairs substantially in conformity with claim 1. The device shall however be described more in detail with reference to the enclosed designs, indicative and not limitative, wherein:

Figs. 1 and 2 show a perspective view and a side view, respectively, of a chair in position for use and complete with a safety device; and

Fig. 3 shows a detailed view of the safety device.

[0006] The said designs show a so-called "rocker" chair including, in the known construction, a pair of fore legs 11; a pair of back legs 12 convergent and hinged to the top of the fore legs 11 and having each an extension forming the armrests 13; a seat frame 14 hinged to an intermediate section of the fore legs 11; a backrest frame 15 hinged to the back part of the seat frame 14; and a cloth 16 applied to the frames 14, 15 to form the seat and the backrest of the chair.

[0007] The chair structure according to this configuration is foldable to reduce the volume when not in use,

and when it is unfolded for use the backrest frame 15 may be positioned and locked in at least two extreme positions: an upright position for the use of the structure as a chair, and a backwards reclined position for use as a lie-down. The backrest frame 15 may also be locked in one or more intermediate positions between the said extreme positions.

[0008] A crosspiece or element 17 is fixed to the back legs 12 and a locking device 19 intended to be engaged with said crosspiece 17 so as to constitute the safety and positioning device is hinged, in 18, to least one side arm of the backrest frame 15. In particular, the locking device 19 comprises a rod 20 having a side bearing locking teeth configured to engage with the crosspiece 17 thus blocking the backrest 15 in upright position and in one or more other backwards reclined positions. The figures illustrate, as an example, a locking device 19 with three teeth 21 to define, in addition to the extreme positions, upright and reclined backwards, an intermediate position. At its lower end the rod 20 is provided with a hook 22 intended to intercept from the bottom upwards the crosspiece or element 17 so as to prevent the backrest from accidentally tipping forward.

[0009] The upper end of the rod 20, above the hinging point 18 with the backrest frame, is bent forward horizontally so as to form a lever 23 to allow the user to operate the locking device 19 with an elbow, while remaining sitting on the chair.

[0010] In practice it is possible to disengage the locking device 19 from the crosspiece 17 in order to change inclination of the backrest or to free the end hook 21 from the crosspiece or element for a voluntary folding of the chair by just pushing the lever 23 downwards.

[0011] The locking rod, furthermore, may be provided with two pins 24 jutting transversally one from the external side of the rod and the other from the internal side, intended to intercept respectively a back leg 12 of the chair and the side arm of the backrest frame on which the rod is hinged, thus maintaining the locking device 19 in position for use even when it is free to rock.

[0012] Finally, it should be noted that the deckchair may be provided, if necessary, with two locking devices 19, one for each side of the backrest 15, connected to each other by a crosspiece for simultaneous movement thereof.

Claims

1. A safety and adjustment device for the inclination of foldable deckchairs, in which the deckchair comprises a pair of fore legs (11), a pair of back legs (12) convergent and hinged to the top of the fore legs (11) and provided with arm-rests, a seat frame (14) hinged to an intermediate section of the fore legs (11), a backrest frame (15) hinged to a back part of the seat frame, and a cloth (16) applied to said frames (14, 15) to constitute the seat and back-

rest, in which said backrest frame is movable at least between an upright position and a backwards reclined position, in which the safety device includes at least one locking device (19) rockered-hinged to the backrest frame (16) and interacting with at least one crosspiece or element (17) fixed to the back legs (12) so as to define and stabilize the positions of the backrest frame and in which said locking device (19) is provided with a control lever (22) that extends upwards and forwards at the level of the arm-rest (13) so as to support an arm or elbow of a person sitting on the chair to cause disengagement of the locking device (19) from the crosspiece or element thus modifying the position of the backrest, **characterized in that** that said locking device comprises a rod having a side bearing positioning teeth (21) to define various inclinations for use of the backrest and a terminal hook (22) intended to intercept from the bottom upwards the cross-piece or element (17) in order to prevent accidental tipping forward of the backrest towards the seat.

2. A Safety and adjustment device for the inclination of foldable deckchairs according to claim 1, wherein said rod of the locking device is provided on opposite sides with the projections (24) that extend transversally with respect to the chair so that one intercepts the back leg of the chair and the other the backrest frame to limit the rocking of the locking device when not hooked to the crosspiece.

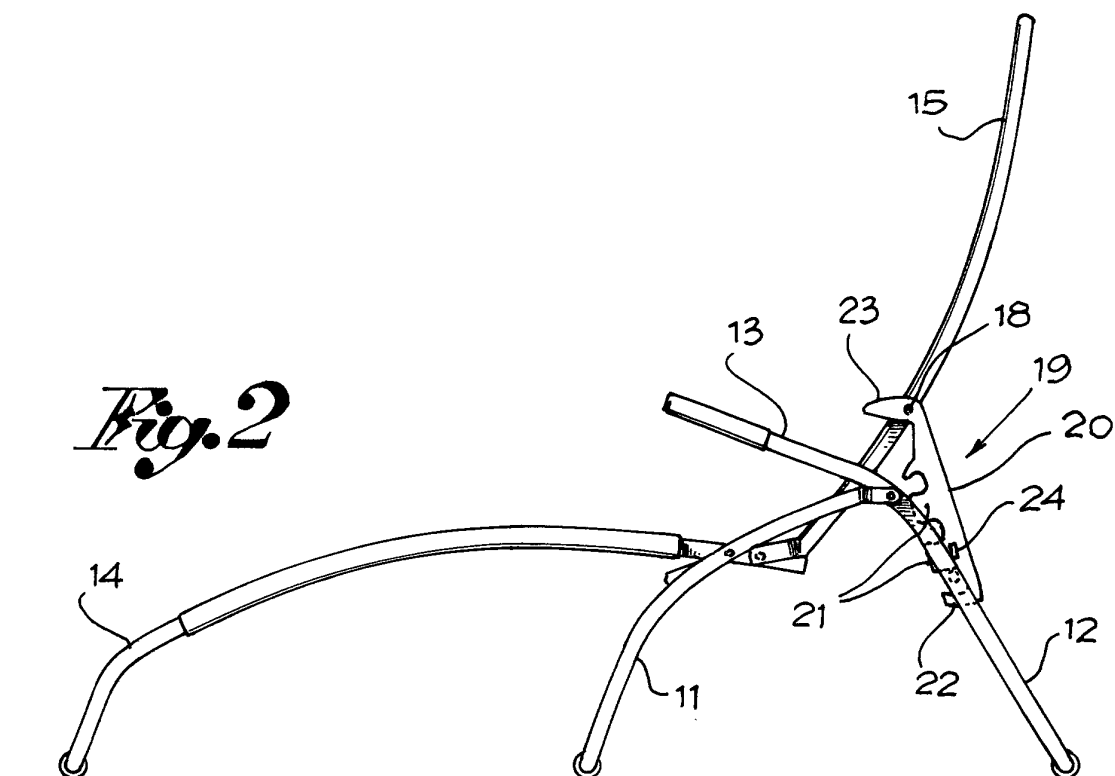
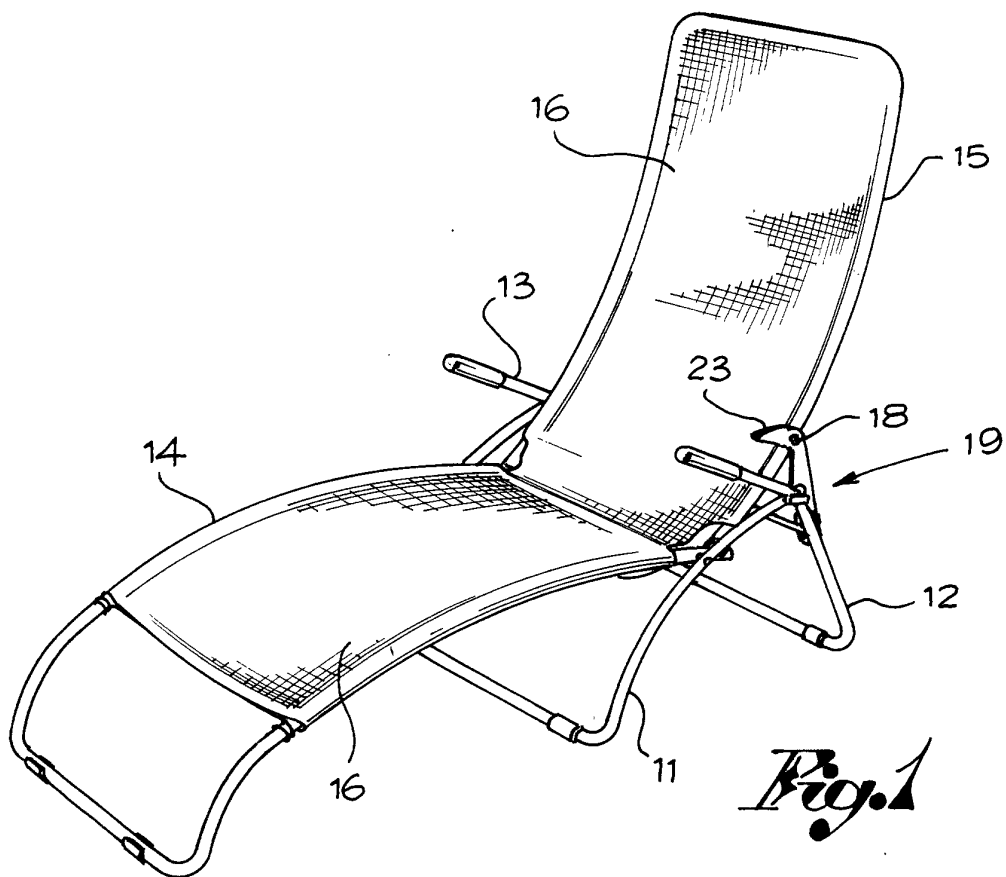
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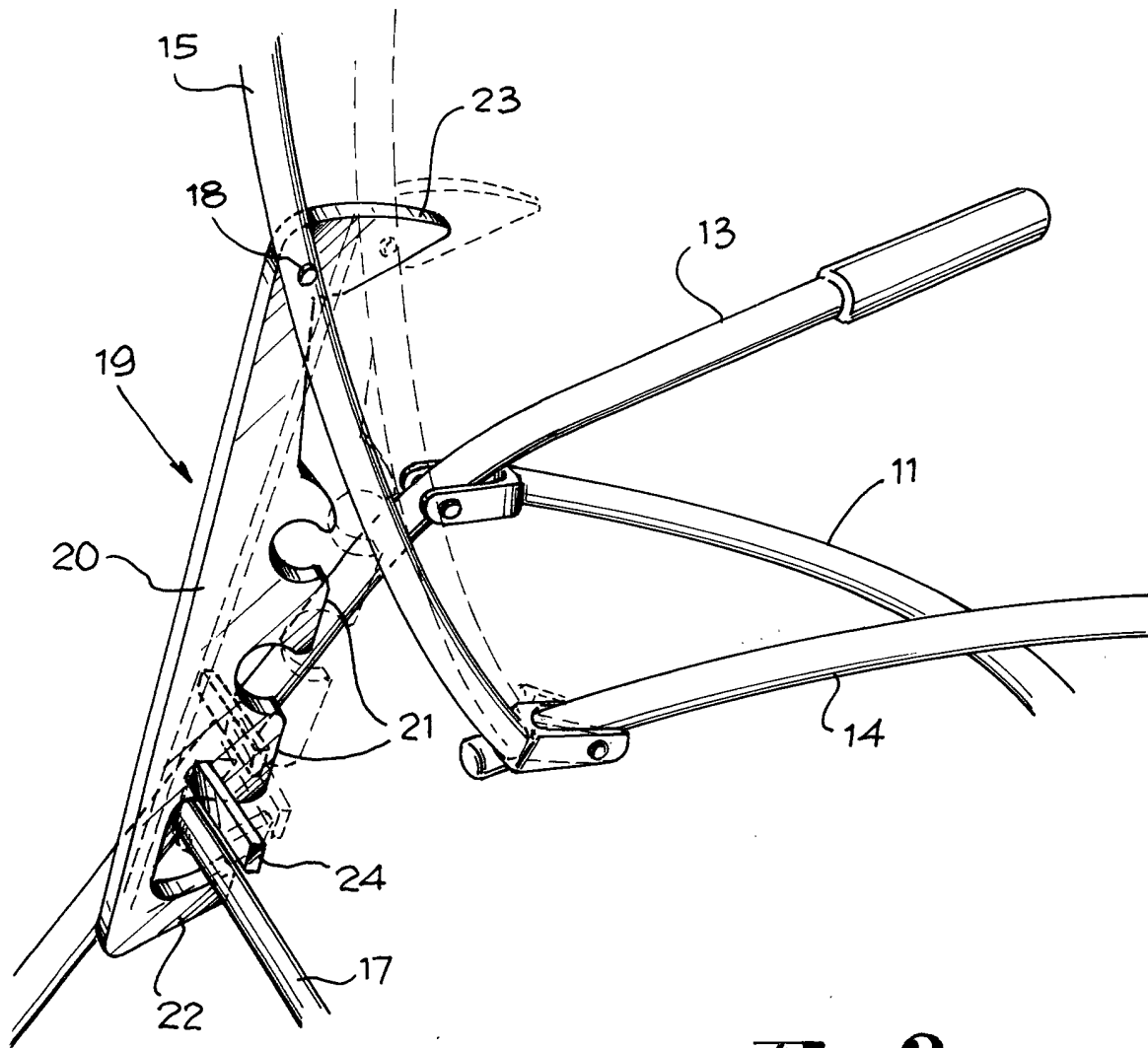


Fig.3



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EUROPEAN SEARCH REPORT

Application Number
EP 01 83 0603

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 198 57 752 A (FIAM) 24 June 1999 (1999-06-24) * column 3, line 45 - line 58; claims; figures *	1	A47C4/26 A47C1/026
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			A47C
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		19 August 2002	VandeVondele, J
CATEGORY OF CITED DOCUMENTS 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 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 & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82