



(11) **EP 1 651 080 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
15.12.2010 Bulletin 2010/50

(51) Int Cl.:
B62B 9/12 (2006.01) F16B 7/10 (2006.01)

(21) Application number: **04748764.0**

(86) International application number:
PCT/NO2004/000188

(22) Date of filing: **25.06.2004**

(87) International publication number:
WO 2005/002946 (13.01.2005 Gazette 2005/02)

(54) **DEVICE FOR HEIGHT ADJUSTMENT OF A CHILD SEAT AND TELESCOPICALLY ADJUSTABLE FOOT SUPPORT**

VORRICHTUNG FÜR DIE HÖHENVERSTELLUNG EINES KINDERSITZES UND TELESKOPISCH VERSTELLBARE FUSSTÜTZE

DISPOSITIF DE REGLAGE EN HAUTEUR D'UN SIEGE D'ENFANT ET APPUI-PIED A REGLAGE TELESCOPIQUE

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL HR LT LV MK

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(30) Priority: **03.07.2003 NO 20033053**

(43) Date of publication of application:
03.05.2006 Bulletin 2006/18

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Description

[0001] The present invention relates to a seat, especially a children's seat, which may be height adjusted in relation to a stem which the seat is fastened to.

Background of the invention

[0002] A children's trolley with height-adjustable seat is known from prior art, and is described in Norwegian patent application 2001 5159, wherein the seat may be fastened onto the central stem at different levels. Height regulation of this manner may be achieved by known methods such as through clamping means or snap-on locks, which clamp around the main stem, or a hole/pin system. The disadvantage with these systems is that they are cumbersome and time consuming to use.

[0003] US 5,451,072 describes a locking device for a golf cart. This locking device comprises a movable casing, which surrounds a stem, and a handle rotating in order to provide tension and friction against the stem. It, however, is only intended for securing the upper end of a golf bag and is therefore not suited for use in a children's trolley, where considerable loads will be applied to the seat.

[0004] There is therefore a need for the possibility to adjust the height of the trolley seat in a quick and simple manner during use, and not only as the child grows, while at the same time preventing the seat from sliding down, when load is applied.

Object of the invention

[0005] The object of the present invention is to obtain a seat for children for use in, for example, a trolley which may be height adjusted in a simple manner.

Detailed description of the invention

[0006] The above object is attained by a locking device and a seat as described below.

[0007] The present invention therefore concerns a locking device and a seat for use in a trolley as shown in figure 1.

[0008] The locking device shown in figure 1 is adapted to the stem 2 to which the seat 3 will be attached. The locking device may be an integrated part of the seat 3, or a separate part onto which a separate part such as the seat 3 or other modules may be attached.

[0009] In the present embodiment, the locking device 1 is formed as a casing 4 around the figure of the stem as shown in Figure 3, and may glide up and down along the stem 2. The casing 4 may surround the stem 2 completely, or have an open side and possibly rails gripping into corresponding tracks in the longitudinal direction of the stem 2.

[0010] The sectional profile of the locking device 1, may advantageously be essentially the same shape as

the stem 2, in order to avoid dirt and particles jamming between the two elements.

[0011] The locking device 1 is further equipped with a friction element 5 and a handle 6, rotating eccentrically and used to tighten the friction element 5 against the stem 2, creating sufficient friction between the locking means 1 and the stem 2. In this manner a seat 3 fastened to the locking device 1 may, for example, retain its position on the stem even with the load of a child. In order to lock the handle 6 and provide resistance against unintended release, the locking device 1 is equipped with a spring 8, in this embodiment, located between the handle 6 and the friction element 5.

[0012] It is also advantageous for increased security if the stem 2 is equipped with a friction pattern 7, such as grooves or indents, increasing the friction against the friction element 5 which may be made of an elastic material which adapts to the friction pattern. The friction element 5 may possibly be a hard material such as plastic and may have the counterpart pattern of the friction pattern 7 on the stem 2, such that the locking device 1 tolerates heavy loads when it is tightened firmly with the handle 6.

[0013] The locking device 1 may be an integrated part of the seat 1, or another module which may be fastened onto the stem 2 of, for example, a trolley or a stem of a chair. The locking device may possibly contain fastening or coupling means, making it possible to fasten modules to it, such as a baby seat, a luggage holder, or a bracket for such modules.

[0014] As the seat 3 may be adjusted to different height positions, it is advantageous if the seat 3 comprises a telescopic foot rest 20, not part of the invention, as shown in Figure 4. With the possibility to receive the length of the foot rest 20 into the seat, the seat 3 may for example be placed all the way down towards the ground for a small child, so that the child may climb alone in and out of the trolley or the chair to which the seat is fastened. Possibly, the foot rest 20 may be used as a footstep to help climb up into the seat 3. In Figure 4 and 5 the seat 3 is shown with a footrest 20 which comprises two rails 21 connected to a common foot plate received into the guides 22 which are integrated in the seat 3. The guides have locks 23 which by, for example, friction or a hole-and-pin system, lock the foot rest 20 at the correct length according to the child's height. In a preferred embodiment, the locks 23 are spring-loaded friction locks which only allow the footrest 20 to be adjusted upwards by only sliding it, but which still prevents the footrest from slipping down.

[0015] The locks 23 may be operated by the handles 24, thus releasing the footrest 20 which may be removed from the seat. This may be preferable if the seat is used for babies who do not need the footrest, thereby reducing the weight of the seat and occupying less space. By employing a seat 3 on a trolley as shown in figure 1 and described in Norwegian patent application 2001 5159, it will be possible to turn the seat, positioning it either in the driving direction or the opposite direction. By provid-

ing the footrest 20 with an opening between the rails 21, the footrest may be received into the seat 3 when the seat is mounted in the opposite direction of the driving direction, so that the rails 21 pass on either side of the stem 2. The footrest may be mounted by using only one hand to push the footrest 20 into place, using the above mentioned favorable embodiment of the locks 23.

Claims

1. Locking device (1) for height adjustment of a module, such as a children's seat (3) on a stem (2) in a trolley or a chair, the locking device (1) comprises a movable casing (4) which partly or completely surrounds the stem (2), a handle (5) rotating eccentrically in order to provide tension and friction against the stem (2), **characterized in that**
 - a friction element (5) is arranged between the handle (6) and the stem (2);
 - a spring (8) is arranged between the handle (6) and the friction element (5);
 - the stem (2) being equipped with a friction pattern (7), such as grooves or indents; and
 - the friction element (5) having a pattern corresponding to the friction pattern (7) on the stem (2).
2. Locking device (1) according to claim 1, **characterized in that** the locking device (1) is an integrated part of a seat (3) or a bracket thereto.

Patentansprüche

1. Verriegelungsvorrichtung (1) für die Höhenverstellung eines Moduls wie eines Kindersitzes (3) an einem Stiel (2) bei einem Wagen oder einem Stuhl, wobei die Verriegelungsvorrichtung (1) ein bewegliches Gehäuse (4), das den Stiel (2) teilweise oder vollständig umgibt, und einen Griff (5) umfasst, der sich exzentrisch dreht, um für Spannung und Reibung gegen den Stiel (2) zu sorgen, **dadurch gekennzeichnet, dass**
 - ein Reibungselement (5) zwischen dem Griff (6) und dem Stiel (2) angeordnet ist,
 - eine Feder (8) zwischen dem Griff (6) und dem Reibungselement (5) angeordnet ist,
 - der Stiel (2) mit einem Reibungsmuster (7) wie Nuten oder Vertiefungen versehen ist und
 - das Reibungselement (5) ein Muster hat, das dem Reibungsmuster (7) am Stiel (2) entspricht.
2. Verriegelungsvorrichtung (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** die Verriegelungsvorrichtung (1) ein integrierter Teil eines Sitzes (3)

oder einer Halterung dazu ist.

Revendications

1. Dispositif de verrouillage (1) pour l'ajustement en hauteur d'un module, tel qu'un siège d'enfant (3), sur une barre (2) dans un chariot ou une chaise, le dispositif de verrouillage (1) comprenant un boîtier déplaçable (4) qui entoure en partie ou complètement la barre (2), et une poignée (6) tournant de manière excentrique afin de fournir une tension et une friction contre la barre (2), **caractérisé en ce que**
 - un élément de friction (5) est agencé entre la poignée (6) et la barre (2) ;
 - un ressort (8) est agencé entre la poignée (6) et l'élément de friction (5) ;
 - la barre (2) étant munie d'un motif de friction (7), comme par exemple des gorges ou des indentations ; et
 - l'élément de friction (5) ayant un motif correspondant au motif de friction (7) sur la barre (2).
2. Dispositif de verrouillage (1) selon la revendication 1, **caractérisé en ce que** le dispositif de verrouillage (1) fait partie intégrante d'un siège (3) ou d'une console sur celui-ci.

Fig.1.

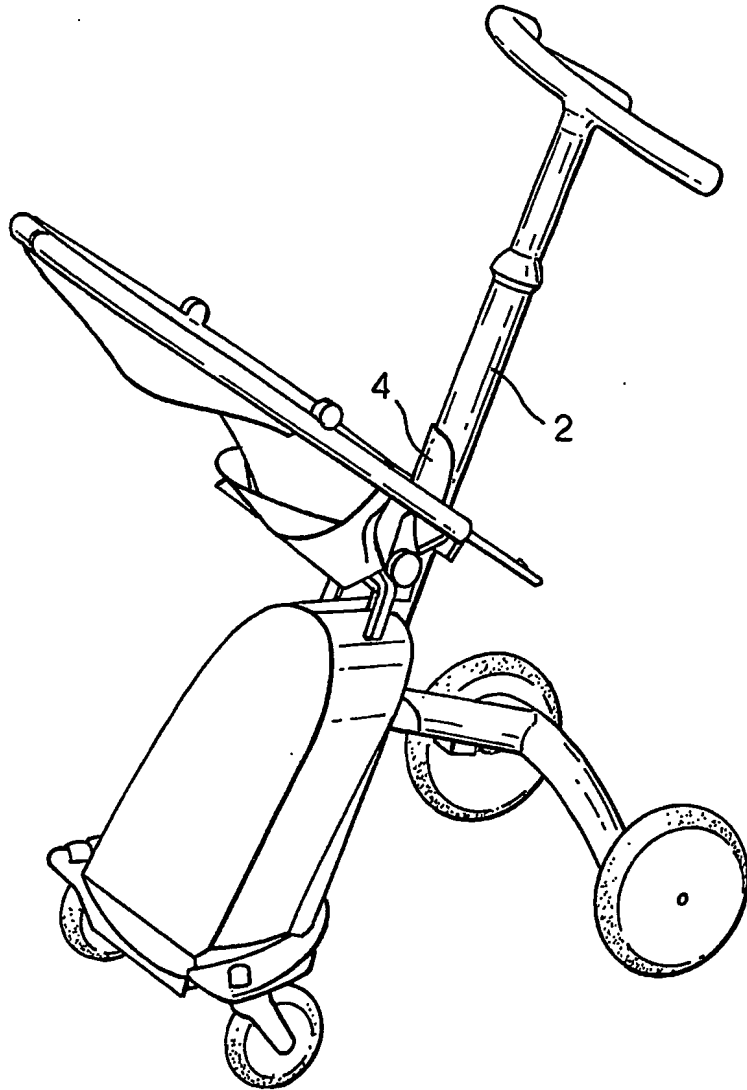


Fig.2.

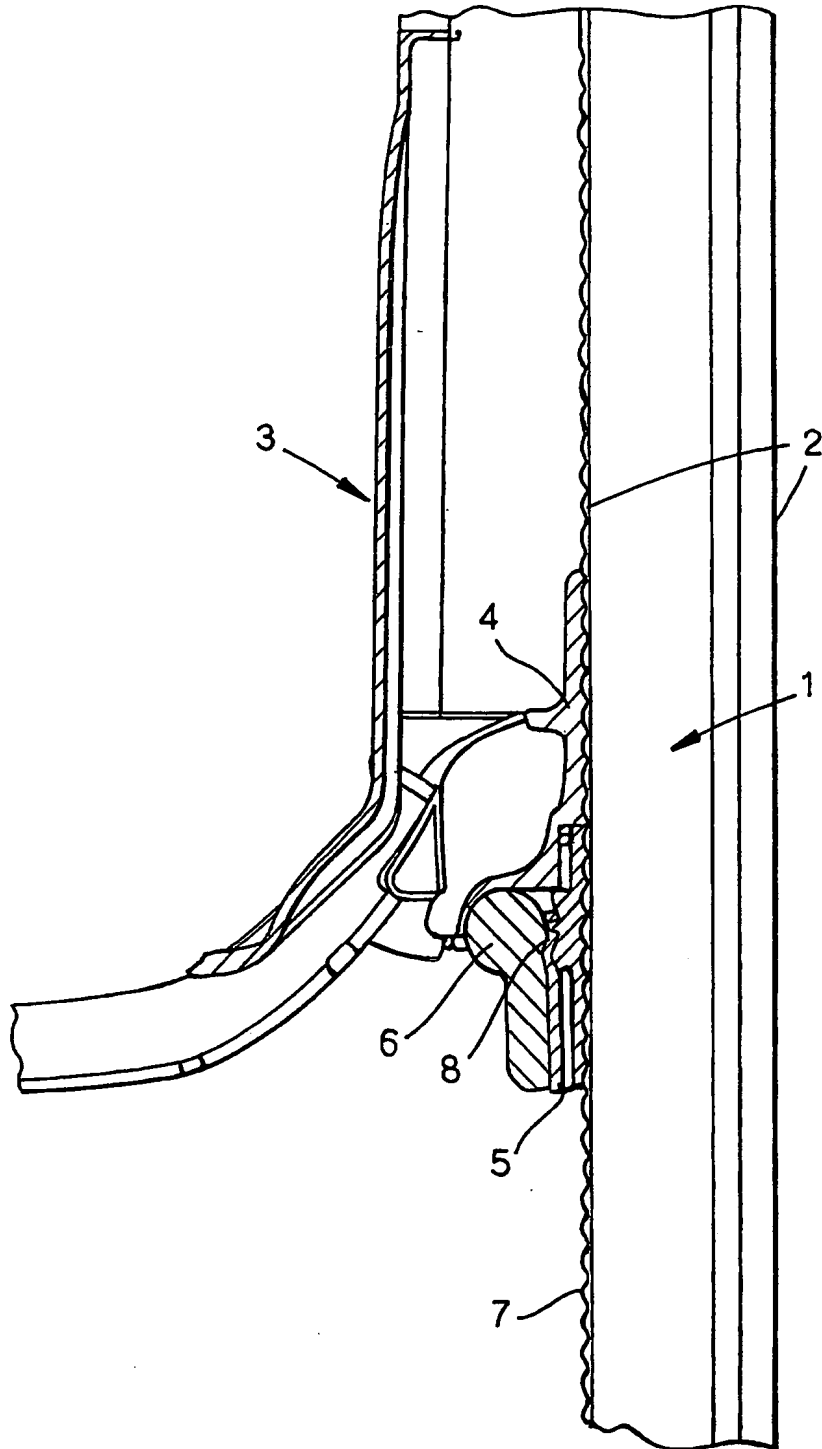


Fig.3.

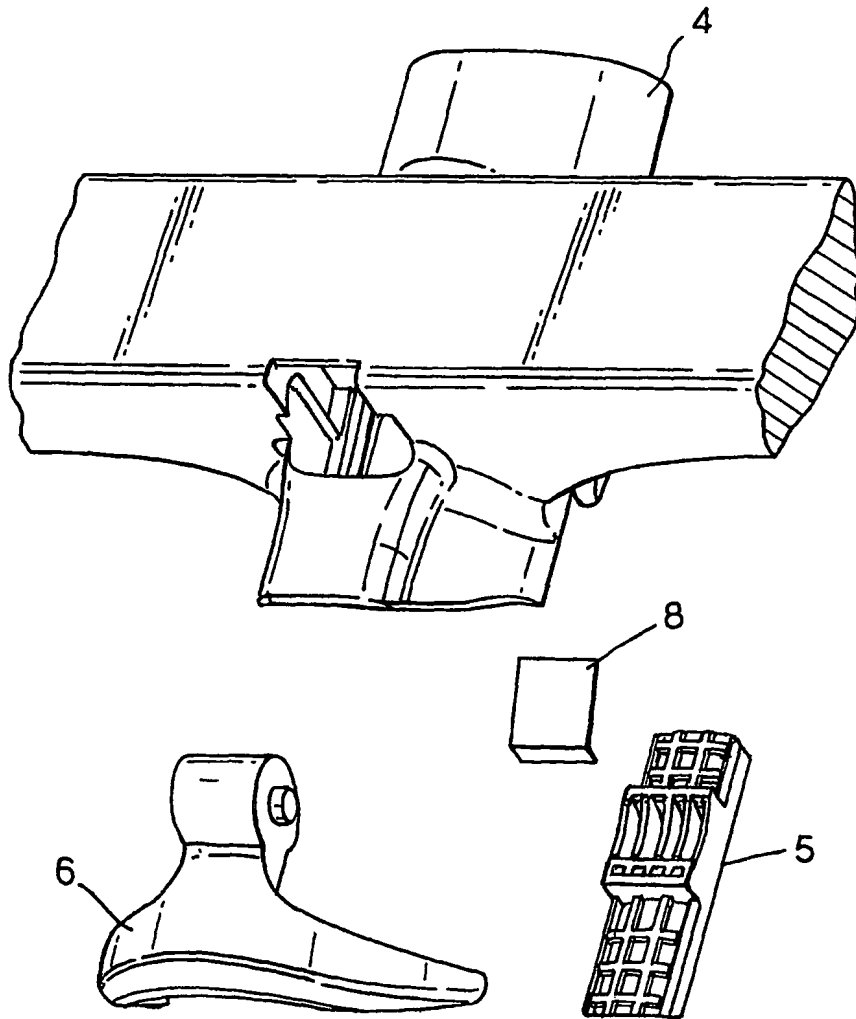


Fig.4.

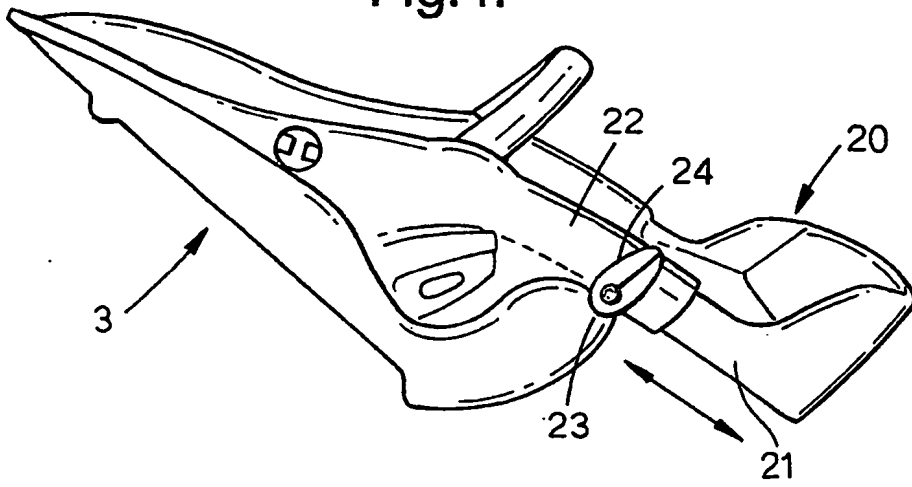
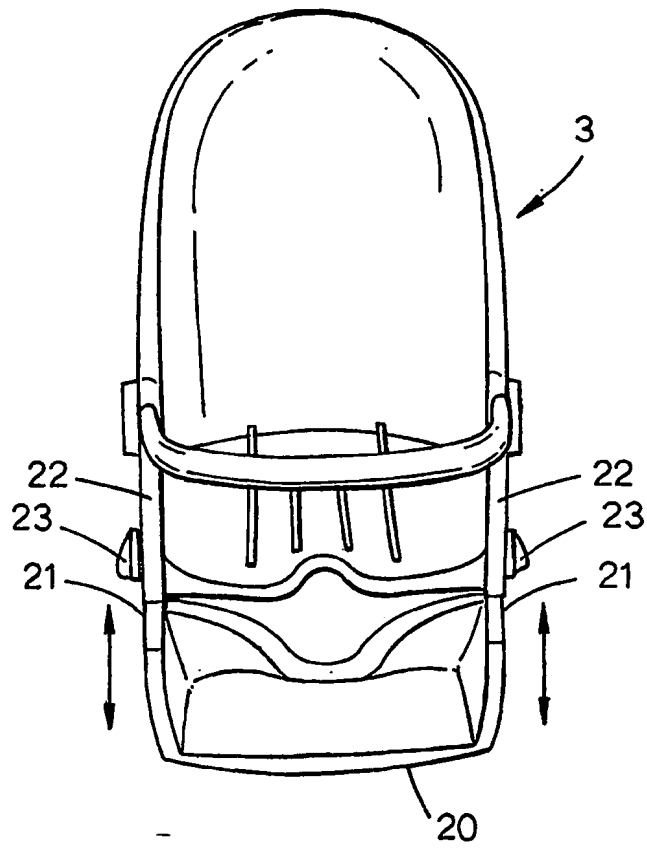


Fig.5.



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REFERENCES CITED IN THE DESCRIPTION

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