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Declarations under Rule 4.17:

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

(57) Abstract: 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, characterized in that the locking device (1) comprises a movable casing (4) which partly or completely surrounds the stem (2), a friction element (5) and a handle (6) which rotates eccentrically in order to tighten the friction element (5) against the stem (2) and providing friction between the locking device (1) and the stem (2). The children's seat (3) may comprise a footrest (20) characterized in that two rails (21) are received in guides (22) integrated in the seat, such that the footrest (20) may be displaced telescopically in relation to the seat (3).



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

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, said stem being
5 equipped with a telescopic length-adjustable footrest.

Background of the invention

A children's trolley with height-adjustable seat is known from prior art, and is described in Norwegian patent
10 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
15 disadvantage with these systems is that they are cumbersome and time consuming to use.

From regular children's trolleys, footrests are known which may be adjusted at an angle according to whether the child is sitting upright or sleeping, or is lying in a position
20 somewhere between. Such footrests may be rotated around an axis at the extreme of the seating area of the seat. The disadvantage with these solutions is that the length of the footrest is suited to the largest children for which the trolley is designed. Therefore, the footrest is in the way;
25 when a small child or baby uses the trolley, as only a small part of the footrest is used.

Furthermore, adjustable foot blocks are known from children's bicycle seats, which may be secured at different heights in the extension of the seat, which project
30 downward on either side of the bicycle, often in order to protect the child from the spokes of the wheel. The seat is of a size which should fit a child up to a certain age. When the foot blocks or footrests are used in the upper

position for a small child, large parts of the lower part of the seat are not used, thus occupying space when, for example, the seat is dismantled and stored. The foot blocks are equipped with coupling devices which fit into receiving
5 coupling devices at different heights on the seat itself. Generally, one foot block must be adjusted at a time, and the user of the bicycle must park the bicycle and use both hands to do so.

There therefore exists a need for a footrest which may be
10 adjusted in length in a simple manner, without occupying unnecessary space and which may possibly be removed and attached as required, preferably single handedly.

Furthermore, there is a need for the possibility to adjust the height of the trolley seat in a quick and simple manner
15 during use, and not only as the child grows.

Object of the invention

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, and which has a
20 footrest which may be adjusted to fit the child using the seat, and which does not occupy unnecessary space.

Detailed description of the invention

The above objects are attained by a locking device and a seat as described below.

25 The present invention therefore concerns a locking device and a seat with a telescopic footrest for use in a trolley as shown in figure 1.

The locking device shown in figure 1 is adapted to the stem
30 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.

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.

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.

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.

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.

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.

As the seat 3 may be adjusted to different height positions, it is advantageous if the seat 3 comprises a telescopic foot rest 20 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.

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 providing 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
s footrest 20 into place, using the above mentioned favorable embodiment of the locks 23.

P a t e n t C l a i m s

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,
5 **characterized in that** the locking device (1) comprises a movable casing (4) which partly or completely surrounds the stem (2), with a friction element (5) and a handle (5) rotating eccentrically in order to tension the friction element (5) against the stem (2) and providing friction
10 between the locking device (1) and the stem (2).
2. Locking device (1) according to claim 1,
characterized in that a spring (8) is arranged between the handle (6) and the friction element (5).
3. Locking device (1) according to claims 1 or 2,
15 **characterized in that** the stem (2) is equipped with a friction pattern (7), such as grooves or indents, increasing the friction against the friction element (5).
4. Locking device (1) according to claim 3,
characterized in that the friction element (5) has a
20 pattern corresponding to the friction pattern (7) on the stem (2).
5. Locking device (1) according to any of the claims 1-4,
characterized in that the locking device (1) is an integrated part of a seat (3) or a bracket thereto.
- 25 6. Footrest (20) for a children's seat (3),
characterized in that it is comprised of two rails (21), possibly connected to a foot plate, which is received in guides (22) integrated in the seat, such that the footrest (20) may be displaced telescopically in relation to the
30 seat.

7. Footrest (20) according to claim 6,
characterized in that the guides (22) are provided with
locks (23), such as a friction or hole-and-pin system,
which may lock the rails (21) at different positions.
- 5 8. Telescopic footrest (20) according to the claims 6 or
7,
characterized in that the locks (23) are spring-loaded
friction locks, allow the footrest 20 to be adjusted
upwards by only sliding it, but which still prevents the
10 footrest from slipping down.
9. Telescopic footrest (20) according to any of the
claims 6-8,
characterized in that the locks (23) are operated by
handles (24) which release the footrest (20).
- 15 10. Telescopic footrest (20) according to claims 6-9,
characterized in that there is an opening between the rails
(21) allowing the rails to pass on either side of a stem
(2).

Fig.1.

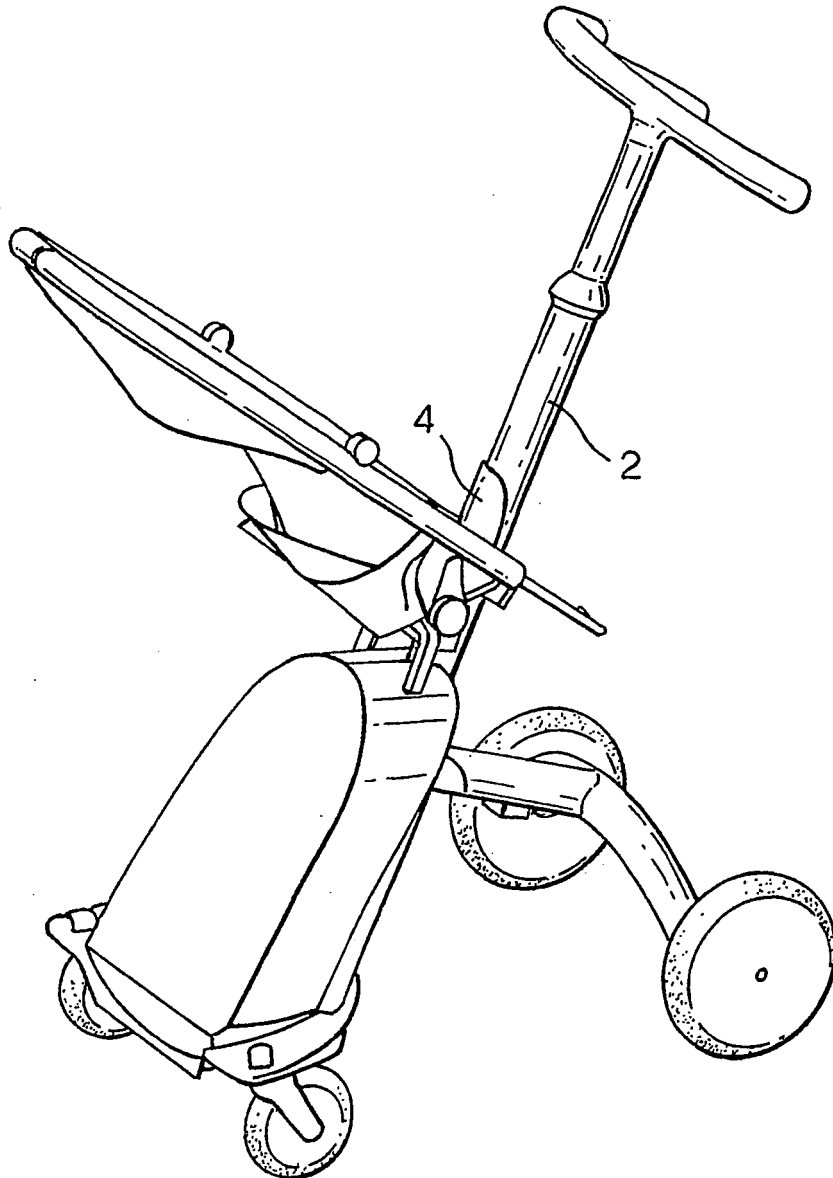


Fig.2.

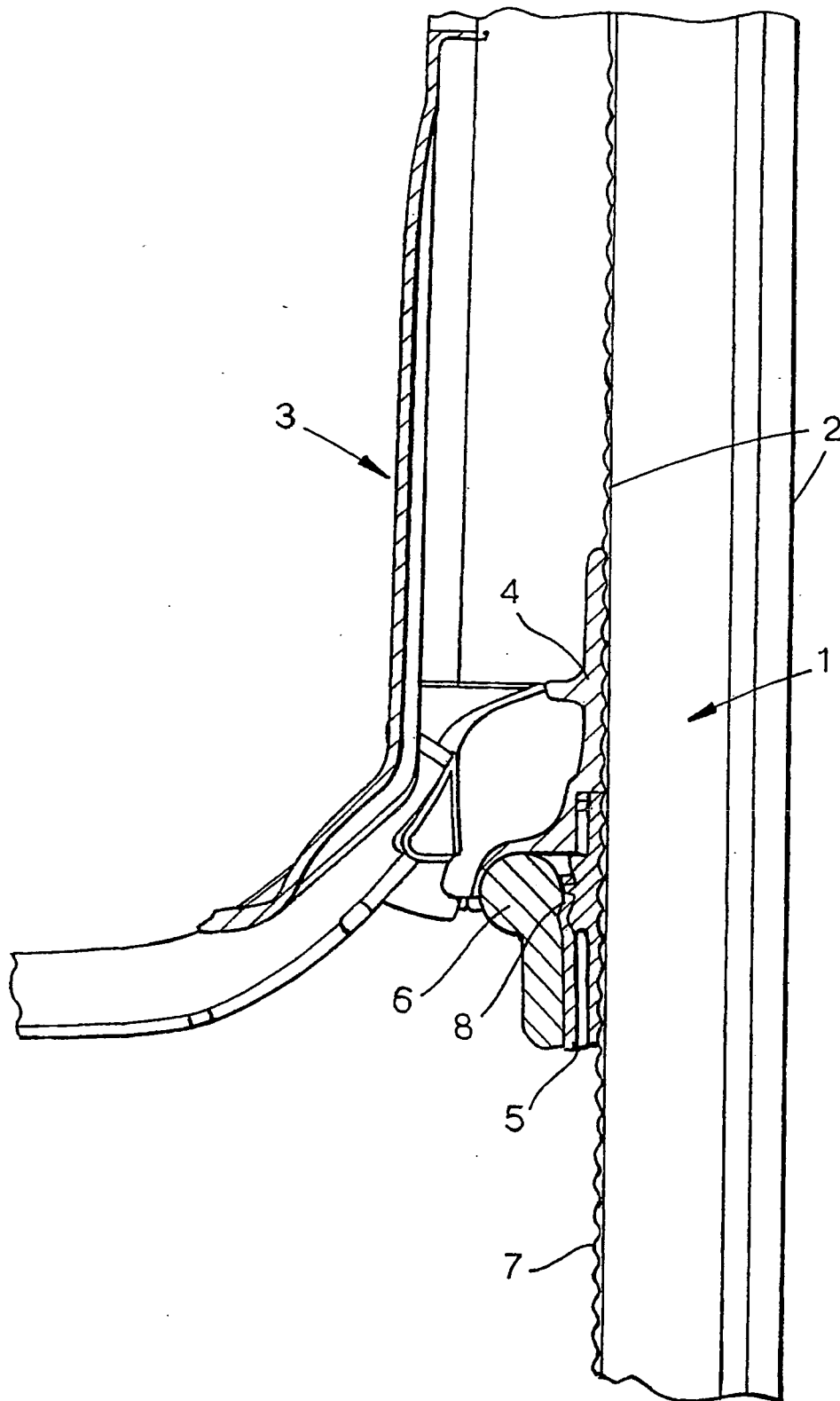


Fig.3.

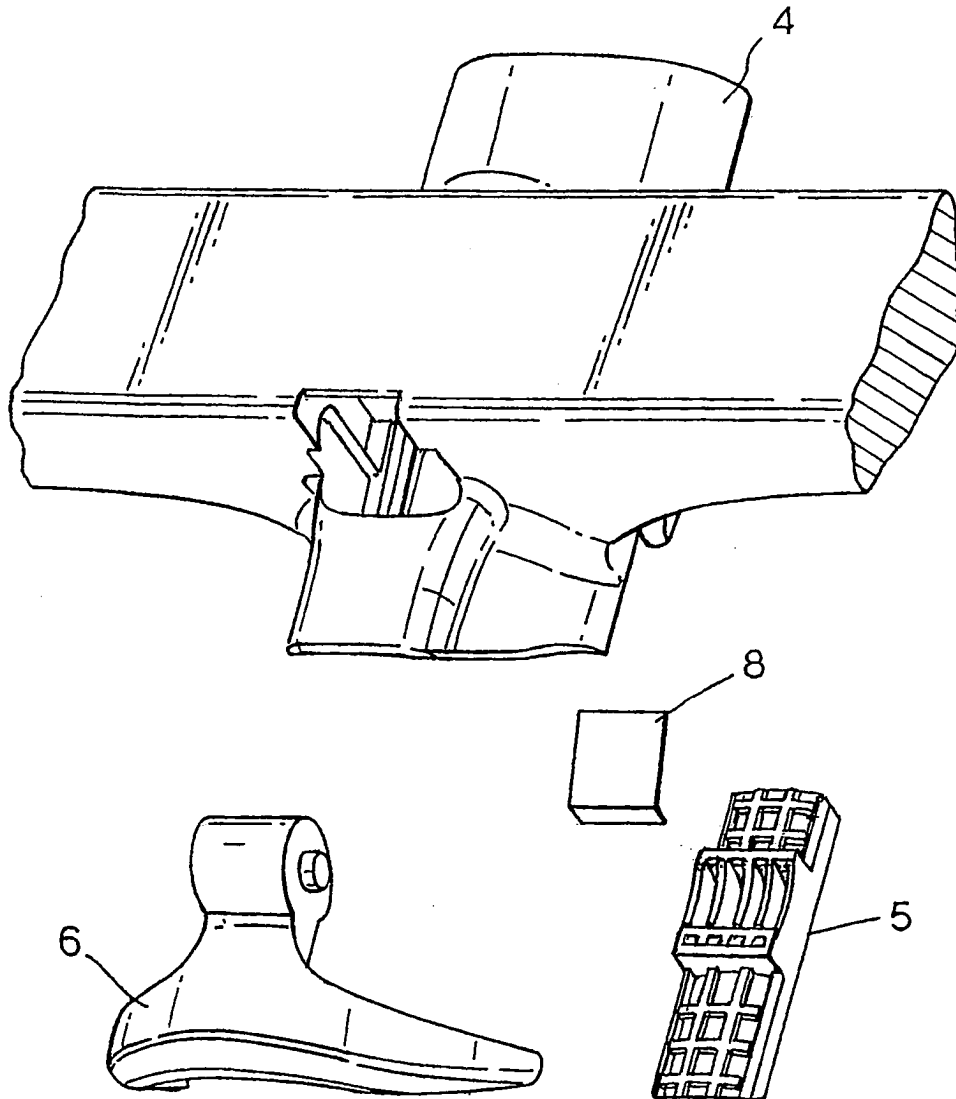


Fig.4.

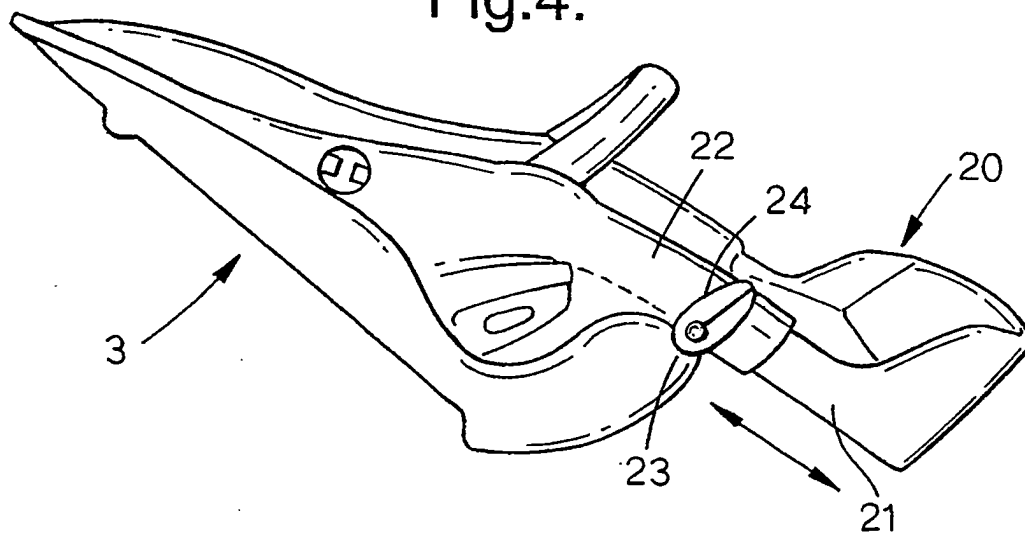
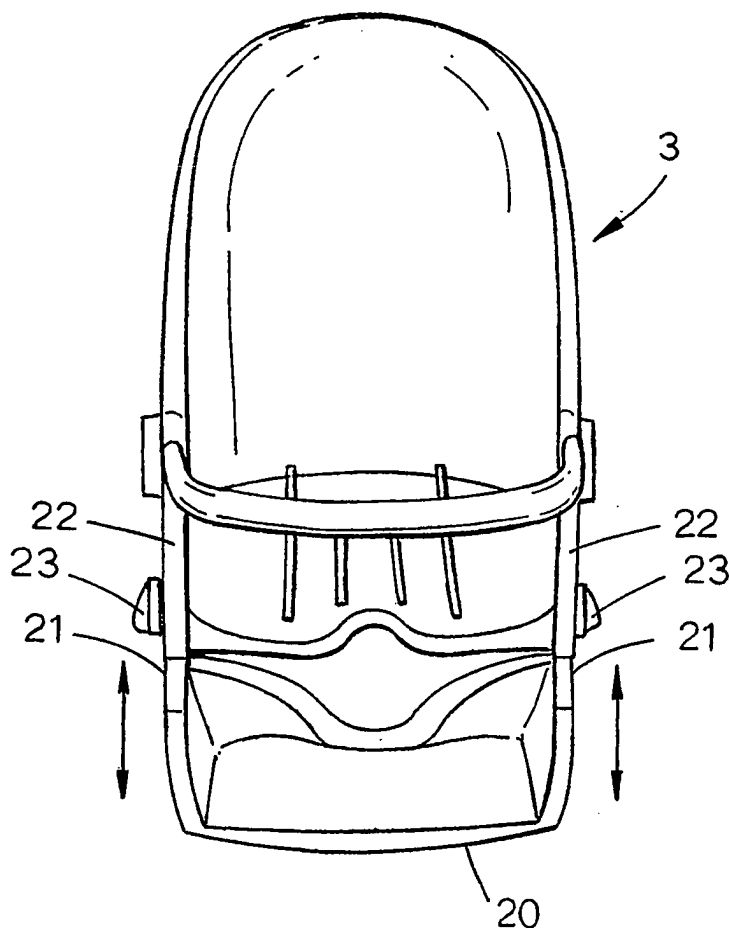


Fig.5.



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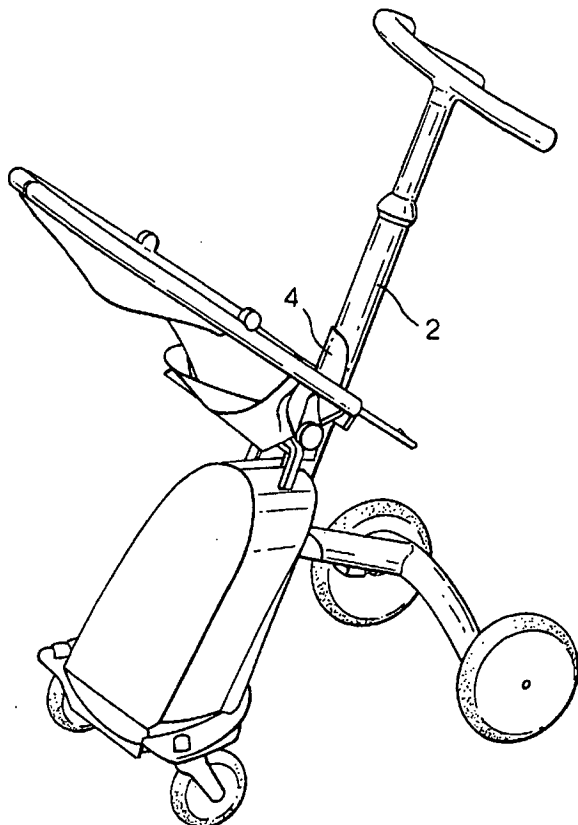
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- (72) Inventor; and
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- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

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



(57) Abstract: 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, characterized in that the locking device (1) comprises a movable casing (4) which partly or completely surrounds the stem (2), a friction element (5) and a handle (6) which rotates eccentrically in order to tighten the friction element (5) against the stem (2) and providing friction between the locking device (1) and the stem (2). The children's seat (3) may comprise a footrest (20) characterized in that two rails (21) are received in guides (22) integrated in the seat, such that the footrest (20) may be displaced telescopically in relation to the seat (3).

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IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— of inventorship (Rule 4.17(iv)) for US only

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,

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PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL SEARCHING AUTHORITY

INVITATION TO PAY ADDITIONAL FEES

To:
OSLO PATENTKONTOR AS
P.O. Box 7007 M
N-0306 OSLO
NORWAY

Nr. 47	Nr.
Mottatt 03 JAN. 2005	
Går til: 5	Date of mailing (day/month/year)

(PCT Article 17(3)(a) and Rule 40.1)

Applicant's or agent's file reference 158161 CL-AT	PAYMENT DUE within 30 60 days/days from the above date of mailing
International application No. PCT/NO2004/000188	International filing date (day/month/year) 25/06/2004
Applicant STOKKE GRUPPEN AS	

1. This International Searching Authority

(i) considers that there are 2 (number of) inventions claimed in the international application covered by the claims indicated ~~below~~ on the extra sheet:

and it considers that the international application does not comply with the requirements of unity of invention (Rules 13.1, 13.2 and 13.3) for the reasons indicated ~~below~~ on the extra sheet:

(ii) has carried out a partial international search (see Annex) will establish the international search report on those parts of the international application which relate to the invention first mentioned in claims Nos.:
see annex

(iii) will establish the international search report on the other parts of the international application only if, and to the extent to which, additional fees are paid


2. The applicant is hereby **invited**, within the time limit indicated above, to pay the amount indicated below:

EUR 1.550,00 x 1 = EUR 1.550,00
Fee per additional invention number of additional inventions total amount of additional fees

Or, _____ x _____ = _____

The applicant is informed that, according to Rule 40.2(c), **the payment of any additional fee may be made under protest**, i.e., a reasoned statement to the effect that the international application complies with the requirement of unity of invention or that the amount of the required additional fee is excessive.

3. Claim(s) Nos. _____ have been found to be unsearchable under Article 17(2)(b) because of defects under Article 17(2)(a) and therefore have not been included with any invention.

Name and mailing address of the International Searching Authority  European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Cristina Rincón Ruiz REGISTERED
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1. The present communication is an Annex to the invitation to pay additional fees (Form PCT/ISA/206). It shows the results of the international search established on the parts of the international application which relate to the invention first mentioned in claims Nos.:
2. see 'Invitation to pay additional fees'
This communication is not the international search report which will be established according to Article 18 and Rule 43.
3. If the applicant does not pay any additional search fees, the information appearing in this communication will be considered as the result of the international search and will be included as such in the international search report.
4. If the applicant pays additional fees, the international search report will contain both the information appearing in this communication and the results of the international search on other parts of the international application for which such fees will have been paid.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 451 072 A (WENG KUAN-JEN) 19 September 1995 (1995-09-19) column 3, line 15 - line 31; figures 3,4 column 3, line 32 - line 34; figures 5,6 -----	1-5
A	WO 85/01874 A (SAMARITE AB) 9 May 1985 (1985-05-09) figures -----	1
P,X	DE 203 07 043 U (WEGNER ALBERT ERWIN) 4 September 2003 (2003-09-04) page 6 - page 7 figures 7-1,7-2 -----	1

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-5

Locking device for height adjustment

2. claims: 6-10

Footrest for a children's seat

The International Searching Authority considers that the present application contains 2 inventions. This observation is based on the following reasons:

The prior art has been identified as US-5,451,072 (D1) as cited in the International Search Report. This document describes a locking system for height adjustment, wherein the locking device comprises a movable casing (61) which partly surrounds the stem (2), with a pressing block (62) and a handle (6) rotating eccentrically in order to tension the pressing block (62) against the stem (2) and providing friction between the locking device and the stem.

1. From the comparison of the first invention and the disclosure of D1, the following technical feature of the first invention can be seen to make a contribution over D1 and therefore is considered to be "special technical feature" (STF) (Rule 13.2 PCT) of the first invention : a friction element against the stem. Therefore the objective problem solved by this invention seems to be : the locking device risks sliding down the stem along which it is fixed.

2. For the same reasoning, from the comparison of claims 6-10 and this same prior art (D1) the STF of the second invention are : a footrest which is comprised of a two rails, possibly connected to a foot plate, which are received in guides integrated in the seat. Therefore the objective problem solved by this invention seems to be : the footrest takes large space in any position of adjustment.

It appears therefore that there are two problems, not related, which are not solved by corresponding features. In conclusion the two groups of claims are not linked by common or corresponding special technical features and define two different inventions not linked by a single general inventive concept so that the requirement of unity of invention as defined in Rules 13.1 and 13.2 PCT are not fulfilled. The application relates to a plurality of inventions, or groups of inventions, in the sense of Rule 13.1 PCT.

Patent Family Annex

Information on patent family members

International Application No

PCT/N02004/000188

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US 5451072	A	19-09-1995	NONE		
WO 8501874	A	09-05-1985	EP	0163662 A1	11-12-1985
			SE	8305877 A	27-04-1985
			WO	8501874 A1	09-05-1985
DE 20307043	U	04-09-2003	DE	20307043 U1	04-09-2003

摘 要

用於兒童座椅和可伸縮調節的擱腳的高度調節的裝置

一種用於一模塊的高度調節的裝置(1)，所述模塊諸如在一推車或一椅子上的一杆柱(2)上的一兒童座椅(3)，其特徵在於，鎖定裝置(1)包括一可移動的鑄件(4)，它部分地或全部地包圍杆柱(2)，它帶有一摩擦元件(5)和一手柄(6)，手柄偏心地轉動以便將摩擦元件(5)壓緊抵靠在杆柱(2)上，從而在鎖定裝置(1)與杆柱(2)之間提供摩擦力。兒童座椅(3)可包括一擱腳(20)，其特徵在於兩個軌道(21)可納入到一體地形成在座椅內的兩導向件(22)，這樣，擱腳(20)可相對於座椅(3)伸縮地位移。