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(54) Corner joint structure for use in folding bed

(57) A corner joint structure for use in a folding bed comprises: an angled corner member having a coupling part on the bottom center thereof and two pivotal joining parts respectively on both sides thereof; and two rods for respectively pivotally coupling with the pivotal joining parts, wherein each rod has a circular profile head that exactly stuffs up each of the pivotal joining parts to prevent the formation of an undesired gap that jams the user's fingers during the rotation of the rods in the pivotal joining parts, thereby promoting the operating safety.

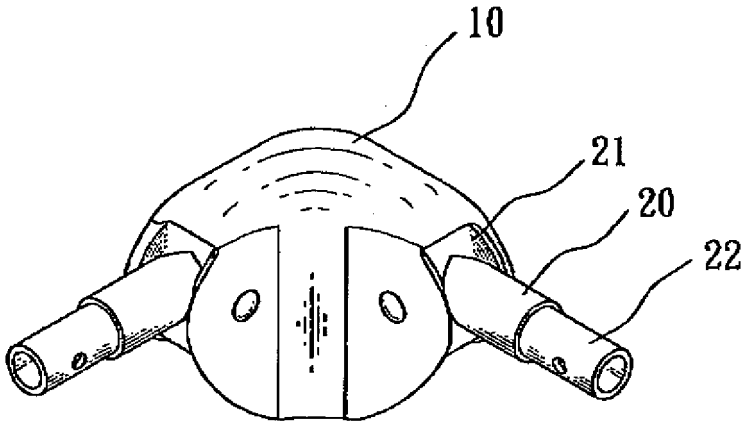

Fig. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a safer corner joint structure for use in a folding baby bed or the like.

BACKGROUND OF THE INVENTION

[0002] The newly born baby has no motor ability and self-protecting ability. As a result, the parents always prepare the baby bed, which is essential to protect the baby. However, the baby bed occupies large space. In order to overcome this drawback, the typical baby bed is thus changed from a non-foldable wooden bed to a folding bed, which is foldable to occupy minimum space when it is not in use.

[0003] As shown in FIG. 7, the commercial folding baby bed has a bedstead A, which is composed of several rods C, several corner members B and several knuckle joints D. The bedstead A has four corner members B on the upper portion. Each corner member B is pivotally coupled with two rods C. Two corner members B are pivotally connected with each other by a knuckle joint D and two rods C. As a result, the rods C can be rotated for folding the bedstead A by means of the knuckle joint D. This folding baby bed can overcome the problem of the conventional baby bed that occupies large space. However, each rod C is pivotally coupled with the corner member B via a coupling part. When the rods C are rotated, the gaps that cause the operator's fingers to be jammed therein are respectively formed between the rods C and the corner members B.

[0004] In view of these drawbacks, the present inventor makes diligent studies in providing the consumers with a simple-constructed corner joint structure for use in a folding bed so as to promote the operating safety of the folding bed.

SUMMARY OF THE INVENTION

[0005] It is a main object of the present invention to provide a corner joint structure that protects the user's fingers from getting hurt so as to promote operating safety of a folding bed.

[0006] In order to achieve the above-mentioned objects, a corner joint structure for use in a folding bed comprises: an angled corner member having a coupling part on the bottom center thereof and two pivotal joining parts respectively on both sides thereof; and two rods for respectively pivotally coupling with the pivotal joining parts, wherein each rod has a circular profile head that exactly stuffs up each of the pivotal joining parts to avoid the formation of an undesired gap that jams the user's fingers during the rotation of the rods in the pivotal joining parts, thereby promoting the operating safety.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] Other features and advantages of the present invention will become apparent in the following detailed description of the preferred embodiments with reference to the accompanying drawings, in which:

FIG. 1 is a three-dimensional view showing a preferred embodiment of the present invention;
FIG. 2 is an exploded view showing the preferred embodiment of the present invention;
FIG. 3 is a schematic, cross-sectional view showing the operation of the preferred embodiment of the present invention;
FIG. 4 is an exploded view showing the folding bed of the present invention;
FIG. 5 is a schematic, cross-sectional view showing an application of FIG. 4;
FIG. 6 is a schematic, cross-sectional view showing another application of FIG. 4; and
FIG. 7 is three-dimensional view showing a conventional folding bed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0008] Referring to FIGS. 1 and 2, the corner joint structure of the present invention comprises an angled corner member 10 and two rods 20.

[0009] The corner member 10 has a coupling part 11 on the bottom center and two pivotal joining parts 12 and 13 recessed inwardly on both sides. Besides, the pivotal joining parts 12 and 13 have two shaft holes 121 and 131 penetrated therethrough, respectively.

[0010] A circular profile head 21, which is fitted to the pivotal joining parts 12 and 13 of the corner member 10, is formed on one end of each rod 20. The circular profile head 21 has a shaft hole penetrated therethrough. In addition, a coupling tube 22, which has a coupling hole, is formed on the other end of each rod 20.

[0011] In the assembling process, the circular profile heads 21 of the rods 20 are inserted into the pivotal joining parts 12 and 13 of the corner member 10, respectively. Next, two pivotal joining devices 25 are inserted through the shaft holes 121 and 131 and the shaft holes of the circular profile heads 21, respectively, for pivotally coupling the rods 20 with the corner member 10.

[0012] As shown in FIG. 3, the circular profile heads 21 are so fitted to the pivotal joining parts 12 and 13 that when the circular profile heads 21 are pivotally coupled with the pivotal joining parts 12 and 13, the pivotal joining parts 12 and 13 are exactly stuffed with the circular profile heads 21. As a result, the formation of undesired gap, which causes damage to the user's fingers, is avoided during the rotation of the rods 20.

[0013] Referring to FIGS. 4 and 5, a folding bed that utilizes the corner joint structures 10 of the present invention generally comprises a folding bedstead and sev-

eral soft fabric layers 30 around the bedstead and on the bottom of the bedstead. The folding bed has a rigid, detachable, folding bedplate 31. Two plates 32 and 33 are located between the long sides of the folding bed, and detachably coupled with the opposite short fabric layers 30. Besides, several hook and loop tapes 301 are disposed on the lower portions of the opposite long fabric layers 30. Each of the opposite short fabric layers 30 has several coupling parts 302 on the center portion. The plates 32 and 33 have several respective coupling parts 321 and 331 on the respective short sides corresponding to the coupling parts 302 of the opposite short fabric layers 30. The plates 32 and 33 have respective opposite zippers 322 and 332 on the respective long sides. The plates 32 and 33 have a plurality of hook and loop tapes 323 and 333 adjacent to the zippers 322 and 332 corresponding to the hook and loop tapes 301.

[0014] If this folding bed is applied to the newly born baby or infant who cannot sit up, the zippers 322 and 332 on the long sides of the plates 32 and 33 are cooperatively zipped up, and the coupling parts 321 and 331 on the short sides of the plates 32 and 33 are coupled with the coupling parts 302 on the opposite short fabric layers 30 so as to form an upper base. Next, as shown in FIG. 5, the detachable bedplate 31 is placed on this upper base such that the height of the detachable bedplate 31 can be elevated from a deeper position to a shallower position. As a result, it is easy for a person to hold up the little baby from the folding bed or put the little baby on the folding bed.

[0015] However, when the baby grows up, the height of the upper base may be insecure for the child who can sit up or crawl. As a result, as shown in FIG. 6, the detachable bedplate 31 is detached from the folding bed, and the coupling parts 321 and 331 on the short sides of the plates 32 and 33 are separated from the coupling parts 302 on the opposite short fabric layers 30. Next, the zippers 322 and 332 of the upper base are unzipped to separate the upper base into individual plates 32 and 33. Next, the hook and loop tapes 323 and 333 of the plates 32 and 33 are coupled with the hook and loop tapes 301 on the lower portions of the opposite long fabric layers 30 to allow the plates 32 and 33 to recline on the opposite long fabric layers 30. Finally, the detachable bedplate 31 is put on the folding bed to form a lower base. As a result, the folding bed becomes a safe playground for the child who can sit up or crawl

[0016] In accordance with the foregoing description, it is apparent that the present invention provides the advantage as follows:

1. The folding bedstead of the present invention has effectively promoted safety since the folding process of the folding bedstead is prevented from forming the undesired gap that causes the user's fingers to be jammed therein.
2. The base of the simple-structured folding bed can be adjusted to a proper height effectively so that the little baby can be held up or put down easily.

[0017] In summary, the present invention indeed achieves the expected objects by disclosing a corner joint structure for use in a folding bed. Accordingly, the present invention meets the requirement for patentability and is therefore submitted for a patent.

[0018] While the preferred embodiment of the invention has been set forth for the purpose of disclosure, modifications of the disclosed embodiment of the invention as well as other embodiments thereof may occur to those skilled in the art. Accordingly, the appended claims are intended to cover all embodiments, which do not depart from the spirit and scope of the invention.

Claims

1. A corner joint structure for use in a folding bed comprising:

   an angled corner member having a coupling part on the bottom center thereof and two pivotal joining parts respectively on both sides thereof; and two rods for respectively pivotally coupling with said two pivotal joining parts, each rod having a circular profile head to exactly stuffing up each of said two pivotal joining parts for preventing the formation of an undesired gap that jams user's fingers during the rotation of said two rods in said two pivotal joining parts, thereby promoting operating safety.

2. The corner joint structure for use in a folding bed of claim 1, wherein said folding bed comprises: a folding bedstead composed of a plurality of said corner joint structures; a plurality of soft fabric layers disposed around said bedstead and on the bottom of said bedstead; a detachable folding bedplate; and two plates attached to opposite sides of said plurality of fabric layers, wherein said plurality of fabric layers have a plurality of coupling parts and said two plates have a plurality of coupling parts on the respective edges thereof corresponding to said plurality of coupling parts of said plurality of fabric layers.

3. The corner joint structure for use in a folding bed of claim 2, wherein said two plates are made of fabrics, and said two plates have respective zippers on opposite long sides thereof and a plurality of respective hook and loop tapes adjacent to said zippers.

4. The corner joint structure for use in a folding bed of claim 3, wherein a plurality of hook and loop tapes are disposed on lower portions of opposite long sides of said plurality of fabric layers corresponding to said plurality of hook and loop tapes of said two plates.

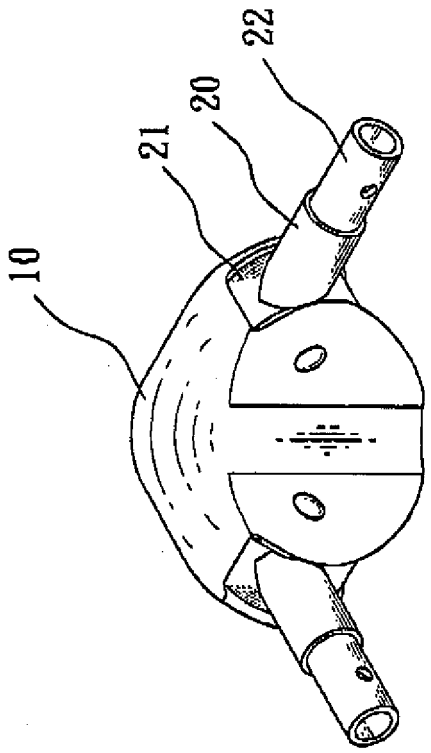

Fig. 1

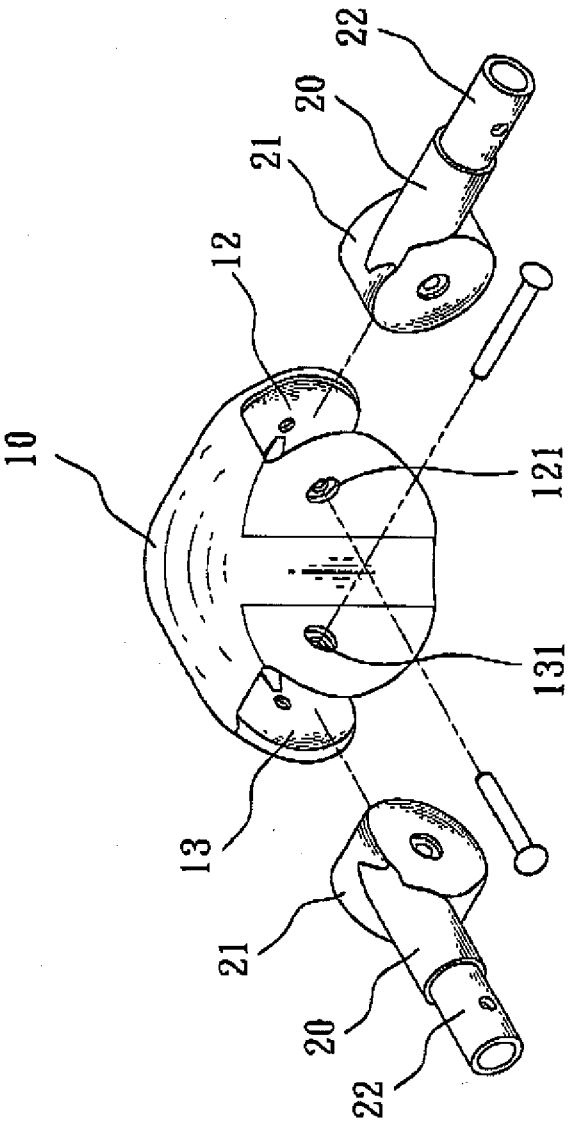

Fig. 2

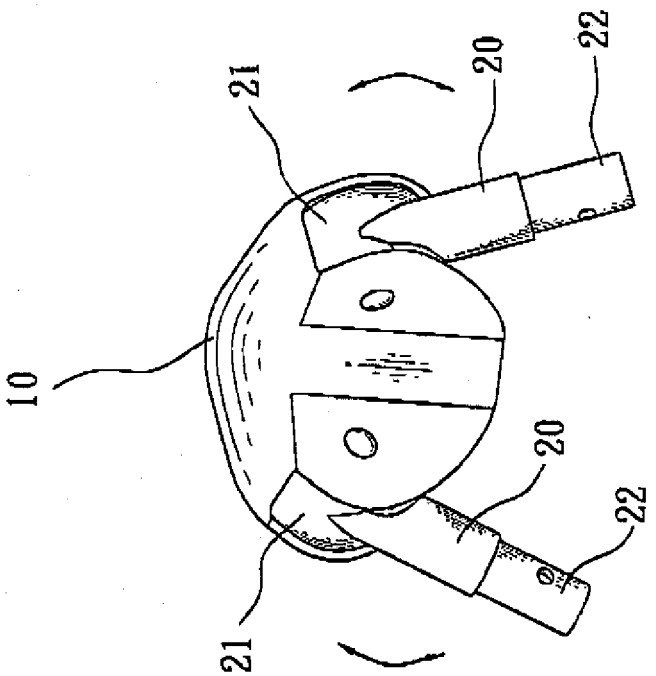

Fig. 3

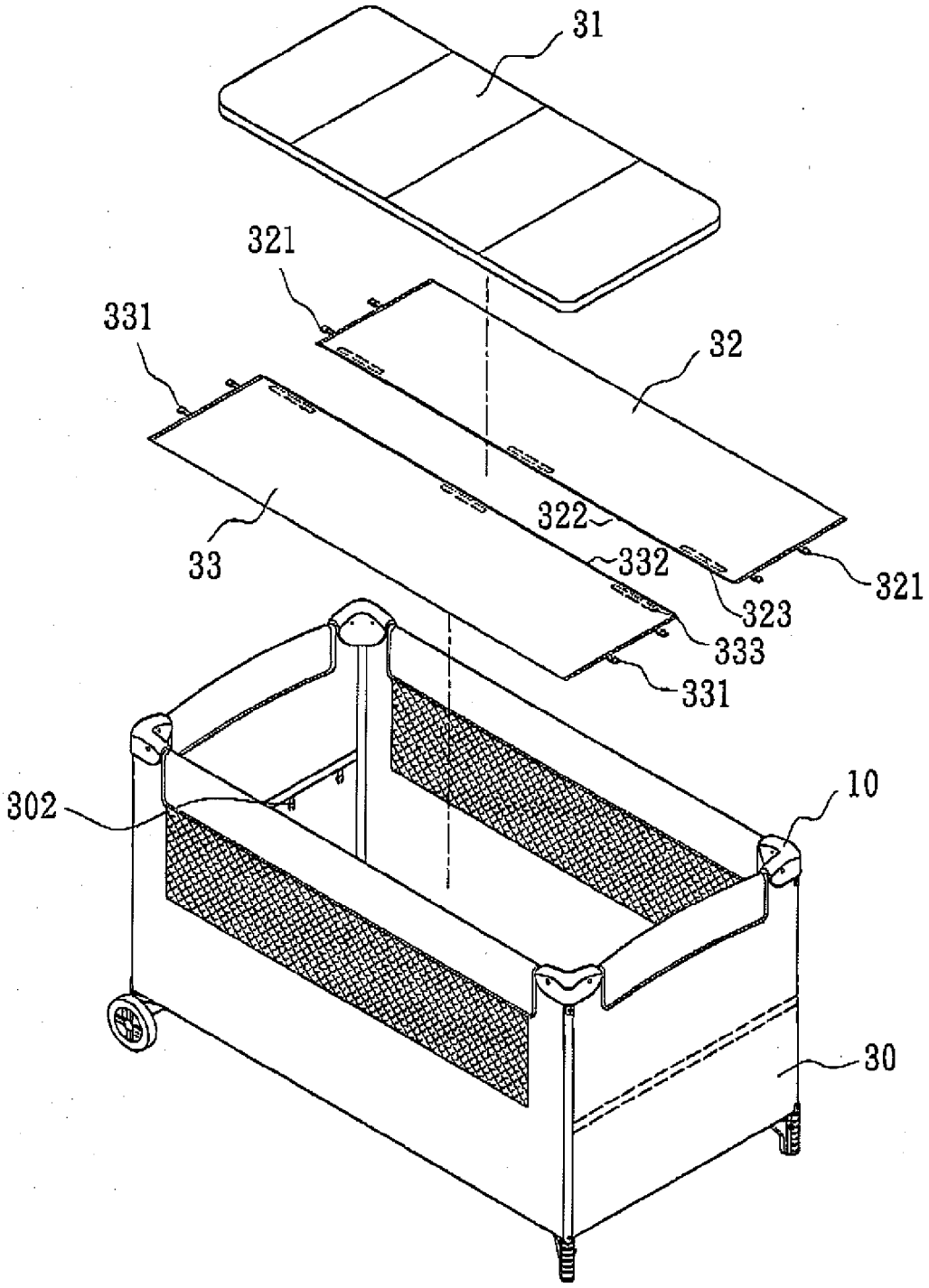

Fig. 4

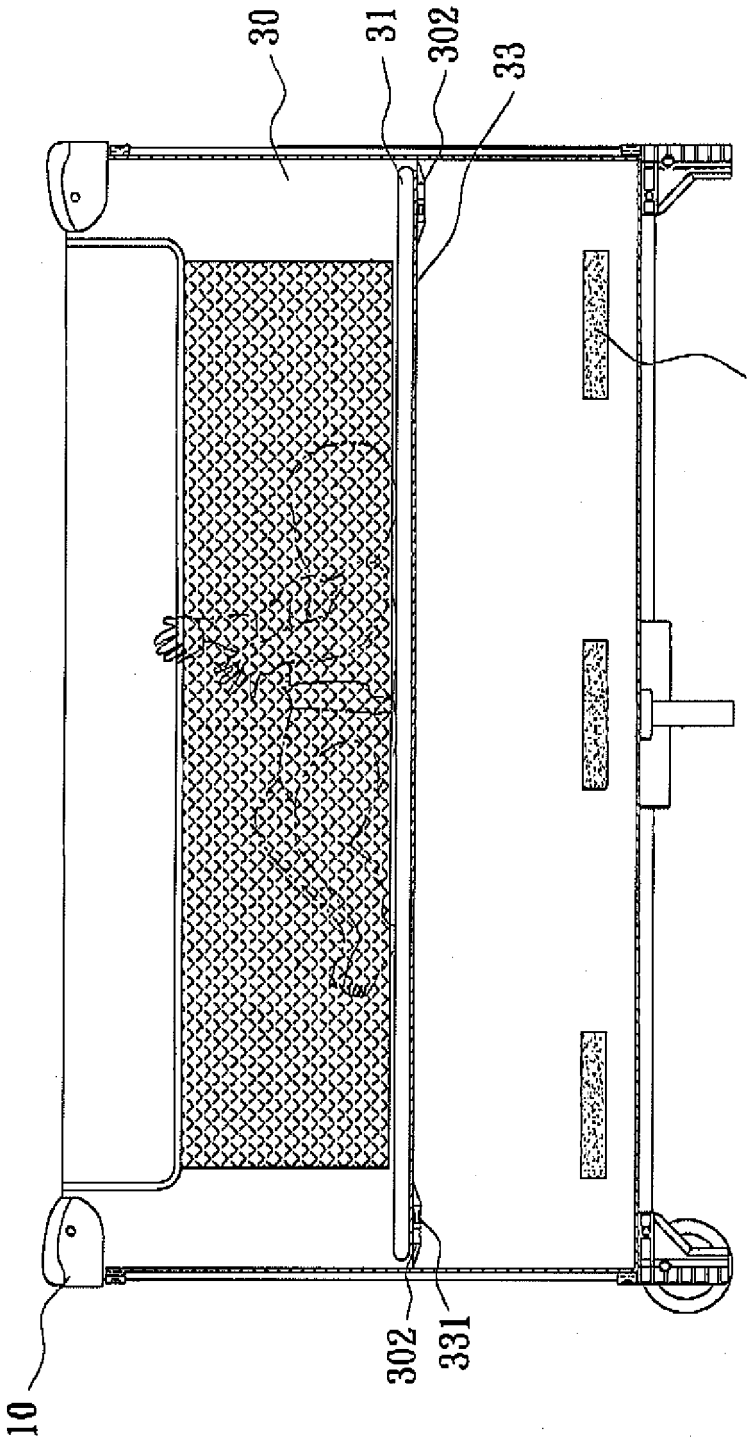

Fig. 5

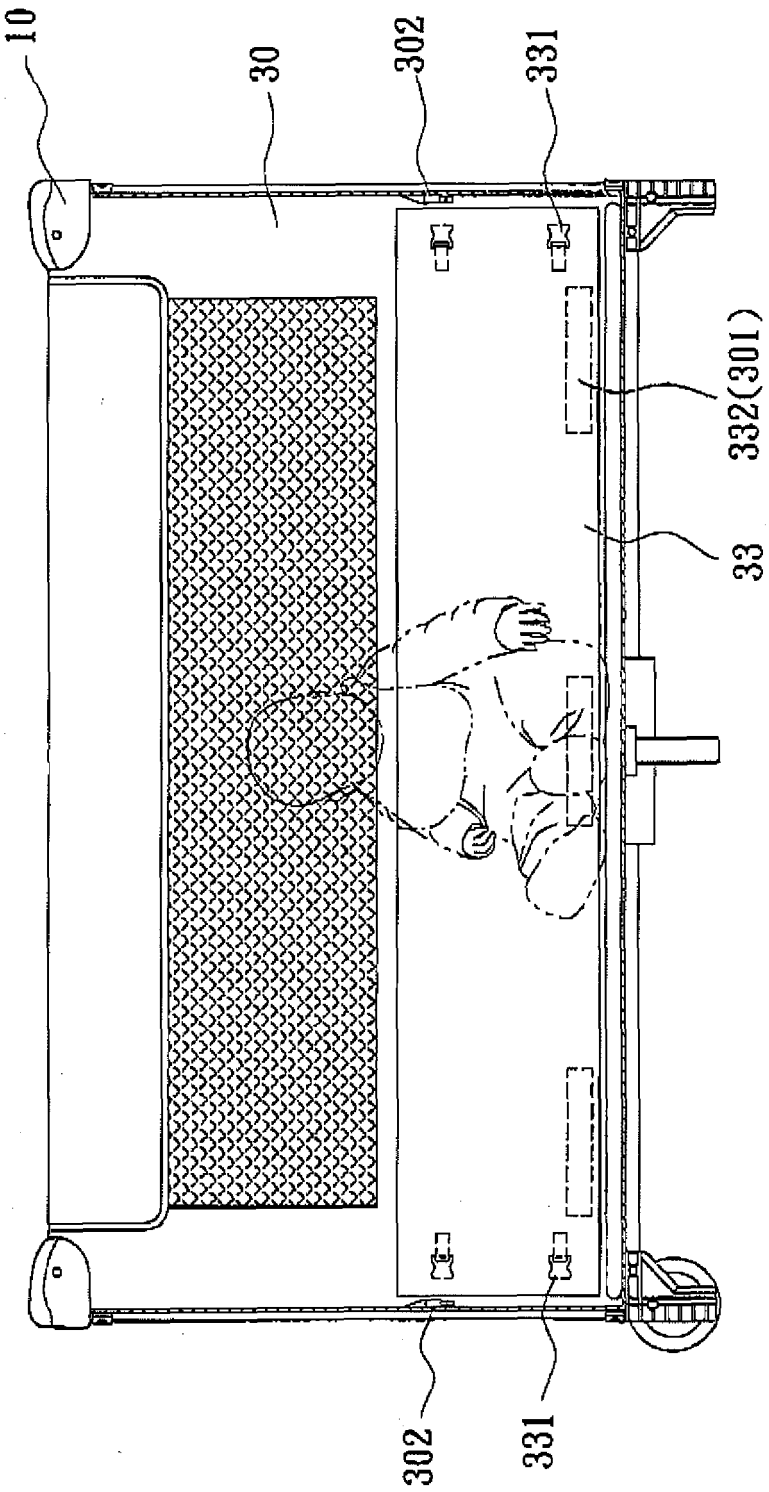

Fig. 6

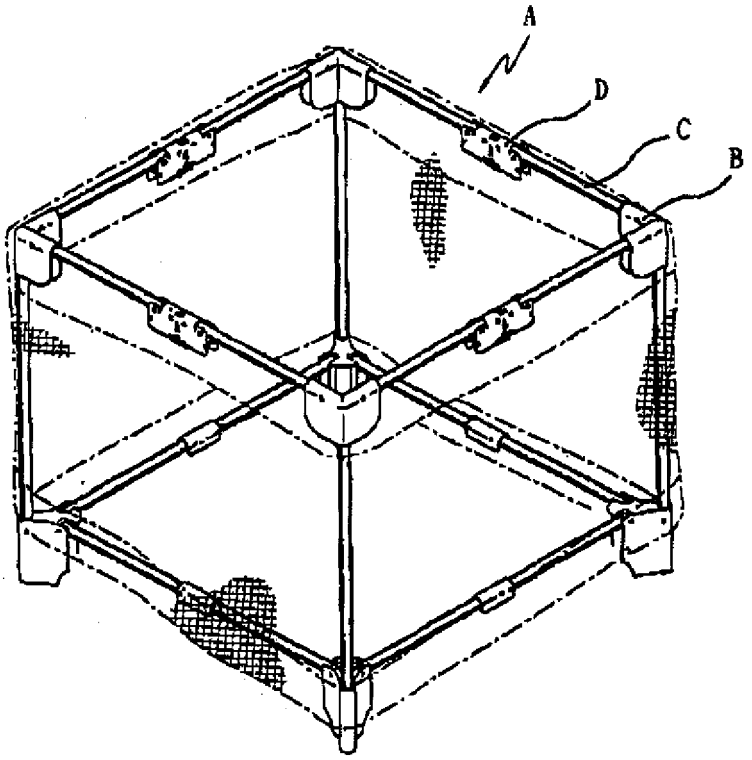

Fig. 7
Prior Art

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 06 11 7327

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	GB 2 284 988 A (* TOP FORTUNE LTD) 28 June 1995 (1995-06-28) * abstract; figures 1-3 * -----	1,2	INV. A47D7/03
X	US 6 721 971 B1 (CHENG PAO-HSIEN [TW]) 20 April 2004 (2004-04-20) * abstract; figures 1-5 * -----	1	
A	US 5 617 592 A (CHENG ET AL) 8 April 1997 (1997-04-08) * abstract; figures * -----	1-4	
A	US 6 125 483 A (STROUD ET AL) 3 October 2000 (2000-10-03) * abstract; figures 1,2 * -----	1-4	
A	US 5 970 539 A (MCDERMOTT, JR. ET AL) 26 October 1999 (1999-10-26) * abstract; figures * -----	1-4	
			TECHNICAL FIELDS SEARCHED (IPC) A47D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	9 October 2006	MacCormick, Duncan

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 06 11 7327

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