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(71) Applicant: **L. Rossi S.r.l.**
24060 Telgate (BG) (IT)

(72) Inventor: **Sergio Rossi**
c/o L.Rossi S.R.L.
24060 Telgate (Bergamo) (IT)

(74) Representative: **Sangiacomo, Fulvia**
BIESSE S.R.L.,
Corso Matteotti 42
25122 Brescia (IT)

(54) Supporting structure without screws particularly for baby changing table and bath

(57) The present invention concerns a supporting structure for baby changing table with bath, comprising four supporting legs (12) including two front (12') and two back (12") legs connected at the top by horizontal crosspieces (13) designed to hold a bath with a top above it acting as a changing table. The front and rear legs and the horizontal crosspieces have some sections slanting (18, 22) in regard to the vertical and are connected by inserting the slanting portions of said legs into the slanting portions of said crosspieces. The two front legs are connected to the two back legs by means of at least some horizontal coplanar crosspieces (24, 24') at right angles to the crosspieces. The legs are also connected by means of at least one rigid object holder tray (14) resting on and attached to said crosspieces, designed to prevent any approach and separating movement of the legs between each other.

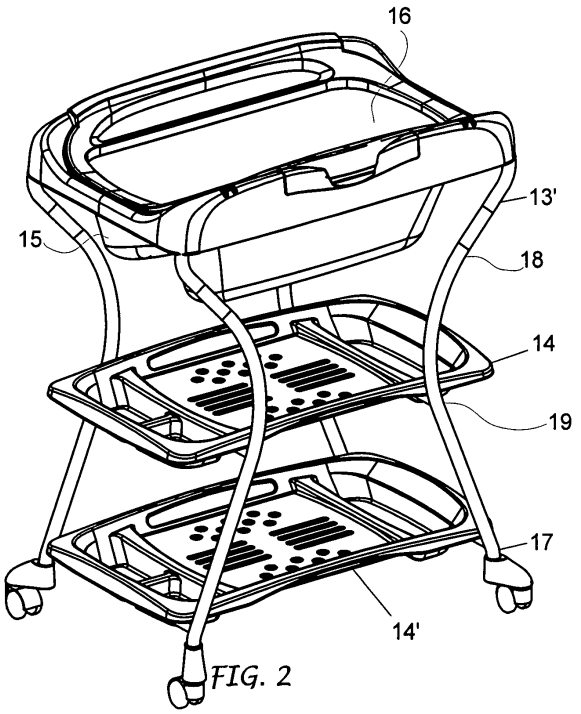

FIG. 2

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Description

Field of the Invention

[0001] The present invention concerns in general a baby changing table and bath, and refers in particular to a structure to support such an article for babies.

Prior Art

[0002] Structures or frames to support the changing table with bath combinations which can be folded, dismantled or which are fixed, with shelves or holder trays, of various shapes, dimensions and material are already well known. Some of these structures usually include supporting legs connected at the top to horizontal crosspieces on which rests a bath covered by a top acting as a changing table. To assemble said structures, additional mechanical securing means such as screws, rivets and the like are used, which makes both assembling laborious, long and costly and, when required, also dismantling.

Objectives of the Invention

[0003] The main objective of this invention is to provide a supporting structure or frame for the above use made using a combination of elements configured to be assembled without having to use additional securing means, that is without screws or the like, and without the need for tools.

[0004] Another objective of this invention is also to provide a supporting structure or frame which is easy and rapid to assemble, achieved by simple lock joints, maintaining nevertheless high stability and safety characteristics of the resulting product.

[0005] Yet another objective of the invention is to provide a structure whose components can be kept separate to facilitate storing, packing and transport where space may be limited, without however causing problems as regards to assembly and setting up for use even directly by the purchaser/user given that there is no need for any means of securing nor to have to determine where to position them.

[0006] A further consequential objective of the invention is to be able to have a supporting structure or frame for a baby changing table with bath easy to dismantle when the product is no longer needed and has to be stored in a restricted space.

[0007] These objectives and evident advantages are achieved, according to the invention, with a supporting structure according tc claim 1. Other characteristic aspects of the structure will appear evident from the remaining claims.

Brief Description of the Drawings

[0008] Greater details of the invention will however be more evident from the following description made with reference to the enclosed indicative and not limiting drawings, in which:

Fig. 1 shows a view in perspective only the supporting frame;
Fig. 1 shows a view in perspective of an example of a complete bath and changing table incorporating the supporting structure in Fig. 1;
Figs. 3 and 4 show respectively, a front view and side view of the whole in Fig. 2; and
Fig. 5 shows a cross section of the portion circled in Fig. 3.

Detailed Description of the Invention

[0009] In the example shown, the supporting structure 11 basically comprises four supporting legs 12, two horizontal crosspieces 13 and at least one rigid holder tray 14 and it is provided to support a bath 15 on which can be placed a top 16 that acts as a changing table for babies.

[0010] Each of the legs 12, all equal in shape and dimensions, usually tubular, comprises a bottom portion 17, a top portion 18 and a middle portion 19. The bottom portion 17, basically vertical, acts as a supporting element on the ground with or without wheels 21. The top portion 18 is inclined with respect to the vertical portion and at least its terminal portion 22 is tapered. The middle portion 19 of each leg joins the top 18 and bottom 17 portions and can be, even if not necessarily, arched in shape with a convexity 23 that can face in the opposite direction to the inclination of the top portion 18 of the leg itself.

[0011] The horizontal crosspieces 13, also tubular, each has two symmetric end portions 13', both bent and sloping with regards to the vertical with at least a terminal section with a slope corresponding to the one of the sloping top portions of the legs and forming a tubular seat 113 - Fig. 5.

[0012] The legs 12 are paired to form two front legs 12' and two back legs 12" - Fig. 1- so that, where provided, the convexity 23 of the paired legs face one towards the other. The front legs 12' are connected to the back legs 12" by means of intermediate coplanar crosspieces 24 fixed at least on a level with their middle portion 19, and possibly by means of further lower crosspieces 24' fixed on a level with the bottom portion 17.

[0013] With this connection two rigid substructures are formed, one right and one left, facing the front, which are connected at the top by means of horizontal crosspieces 13, the tapered terminal section 22 of the legs being housed in the terminal seats 113 of said crosspieces 13.

[0014] The structure 10 formed by the two rigid substructures, connected by means of the horizontal crosspieces 13 is shown in Fig. 1, and is therefore assembled without the use of screws or the like. Its configuration in its setting up for use combination is then established by

fixing the holder tray 14 to the middle crosspieces 24 and a possible second holder tray 14', similar to the first one, to the bottom crosspieces 24' connecting the front legs to the back legs. For the connection to the respective intermediate 24 and bottom 24' crosspieces, each holder tray 14, 14' will be equipped with constraining means, which, although not shown, could be, for example, in the form of pins designed to be inserted into the holes provided in said crosspieces or in the form of attaching means that are pressure fitted to saddle the crosspieces. Practically, at least the first holder tray 14 forms a functional component for the assembly of the supporting structure, also assembled without screws or the like, the same applying to the other holder tray 14' so as to prevent any approach or distancing movements between the legs on the left and right.

[0015] The tray 15 with or without the changing table 16 can be mounted and fixed to the horizontal crosspiece 13 of the supporting structure assembled in the usual way, to form a changing table with bath as shown in Figs. 2 to 4.

[0016] In any case, once assembled and stabilised with one or both holder trays, the supporting structure, although mounted without screws or the like, is not dismountable unless carried out purposely and only then after removing the holder tray or trays. In fact, thanks to the joining of the slanting parts of the legs to the top, horizontal crosspieces, the latter cannot be disconnected from the respective legs even if tugged vertically. The separation of the legs from said horizontal crosspieces will be possible, after removing the tray or trays, only by tugging and moving each leg in line with the portions inserted one into the other in order to join them.

Claims

1. Supporting structure without assembling screws, particularly for baby changing table with bath, comprising four supporting legs (12) including two front (12') and two back (12") legs connected at the top by horizontal crosspieces (13) designed to hold a bath with a top above it acting as a changing table, **characterized in that** the front and rear legs and the horizontal crosspieces have sections (18, 22) slanting in regard to the vertical and are connected by inserting the slanting portions of said legs into the slanting portions of said crosspieces, the two front legs being connected to the two back legs by means of at least horizontal coplanar crosspieces (24, 24') at right angles to the crosspieces, and **in that** the legs are also connected by means of at least one rigid object holder tray (14) resting on and attached to said crosspieces, designed to prevent any approach and separating movement of the legs between each other.

2. Supporting structure according to claim 1, wherein each of said supporting legs (12) has a lower portion (17) acting as a supporting element on the ground with or without wheels (21), an upper portion (18) sloping with regard to the vertical and possibly tapered at least along its end section, and an intermediate portion (19) that joins the upper and lower portions and which can be an arched shape where each of said horizontal crosspieces (13) has two symmetric end portions, both bent and slanting with regard to the vertical and having at least an end portion (13') with a slant corresponding to the upper slanting portions of said legs and forming a tubular seat (113) to receive the tapered end portion of a leg.

3. Supporting structure according to claims 1 or 2, wherein the two back and front legs are connected by at least two horizontal coplanar crosspieces (24) on a level with their intermediate section, and in which the connecting tray (14) is engaged to said crosspieces, designed to prevent any approach or separating movements of the legs between each other.

4. Supporting structure according to claims 1 or 2, wherein the two back and front legs are connected by a couple of horizontal coplanar crosspieces (24) on a level with their intermediate section and by a couple of horizontal coplanar crosspieces (24') on a level with their bottom portions, and where on each of said couples of horizontal coplanar crosspieces is attached an object holder tray (14, 14').

5. Supporting structure according to claims 3 or 4, wherein the or each object holder tray (14, 14') is provided with a connecting means in the form of pins designed to be inserted in holes provided in the crosspieces it is associated with.

6. Supporting structure according to claims 3 or 4, wherein the or each object holder tray (14, 14') is provided with a connecting means in the form of a attachment that is pressure fitted to saddle the crosspieces they are associated with.

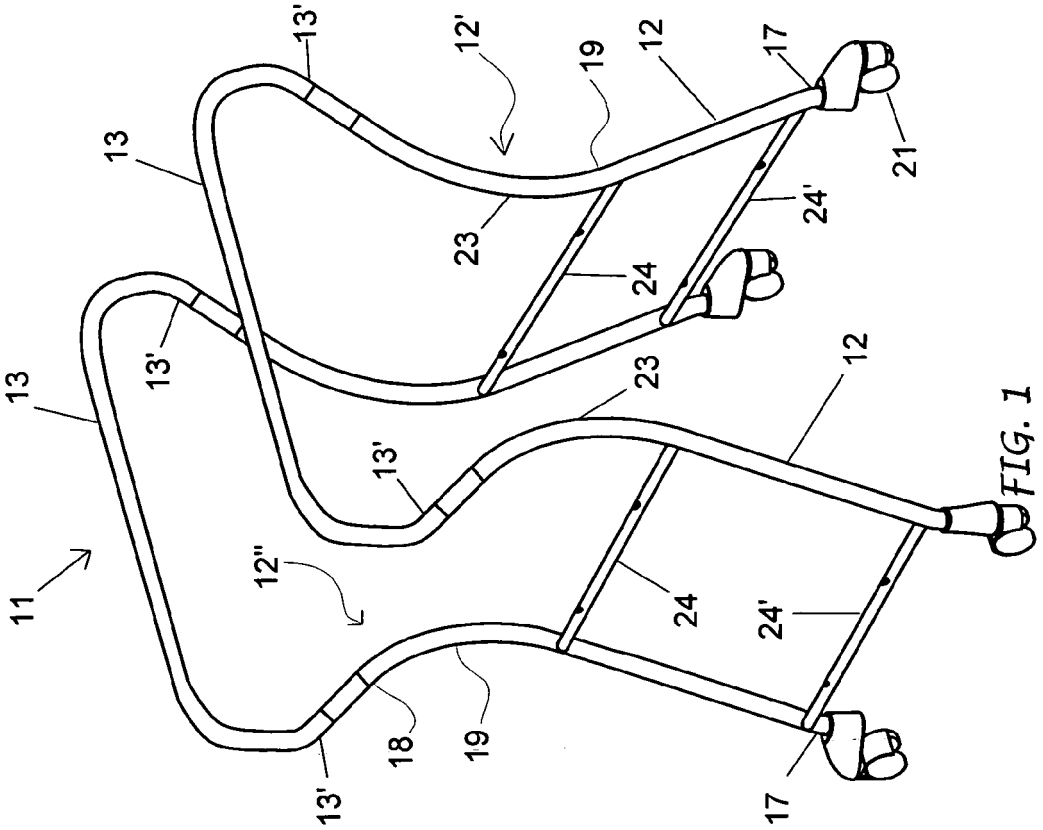
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FIG. 1

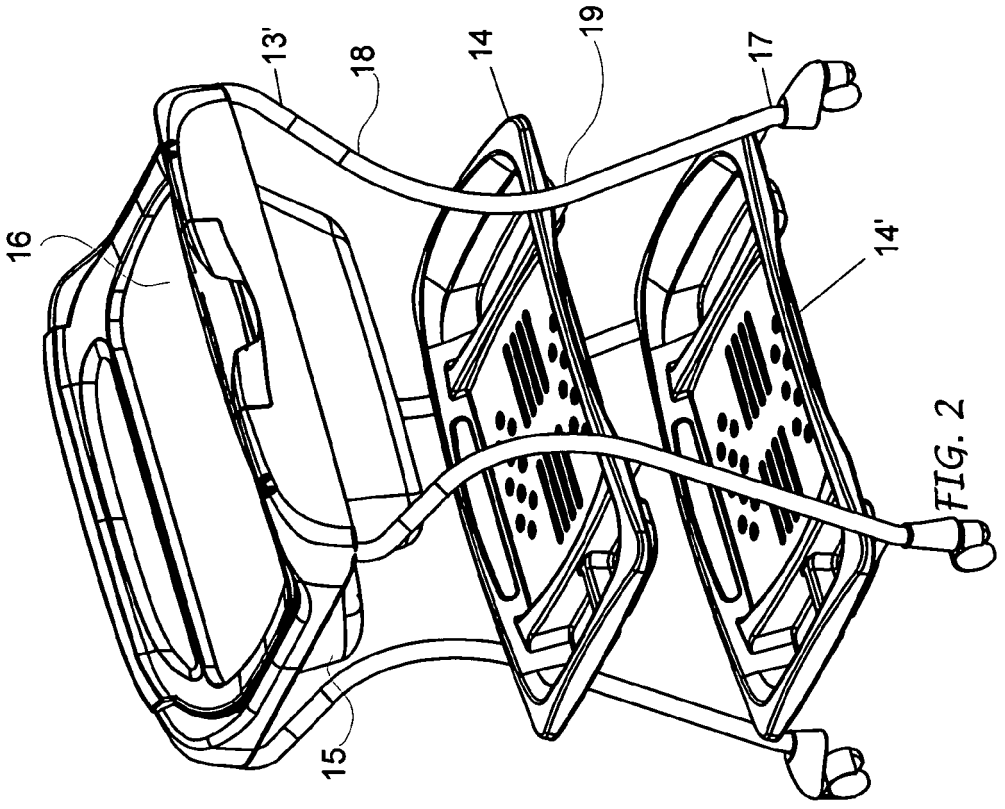
13'
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FIG. 2

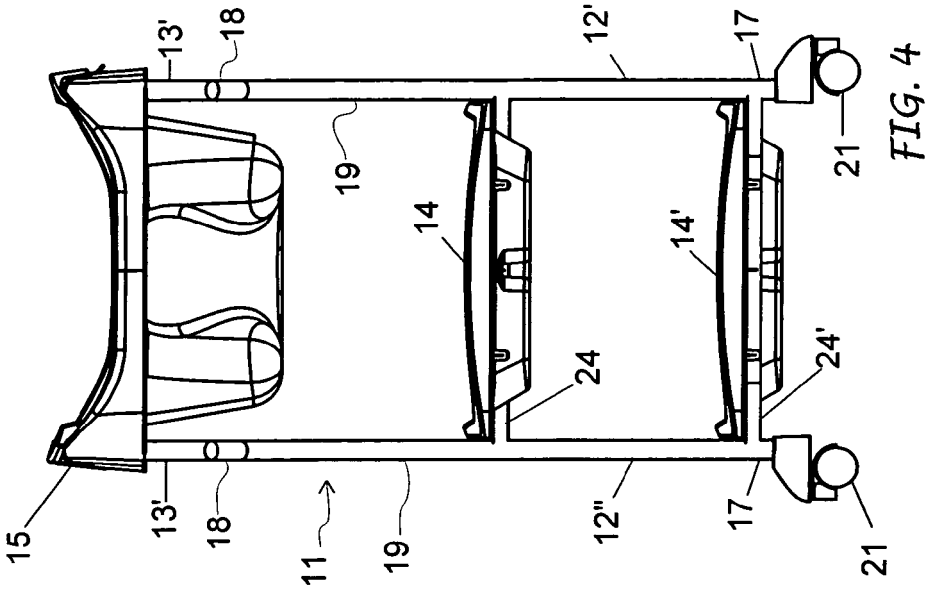

FIG. 4

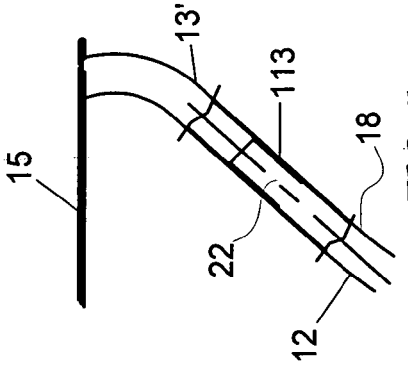

FIG. 5

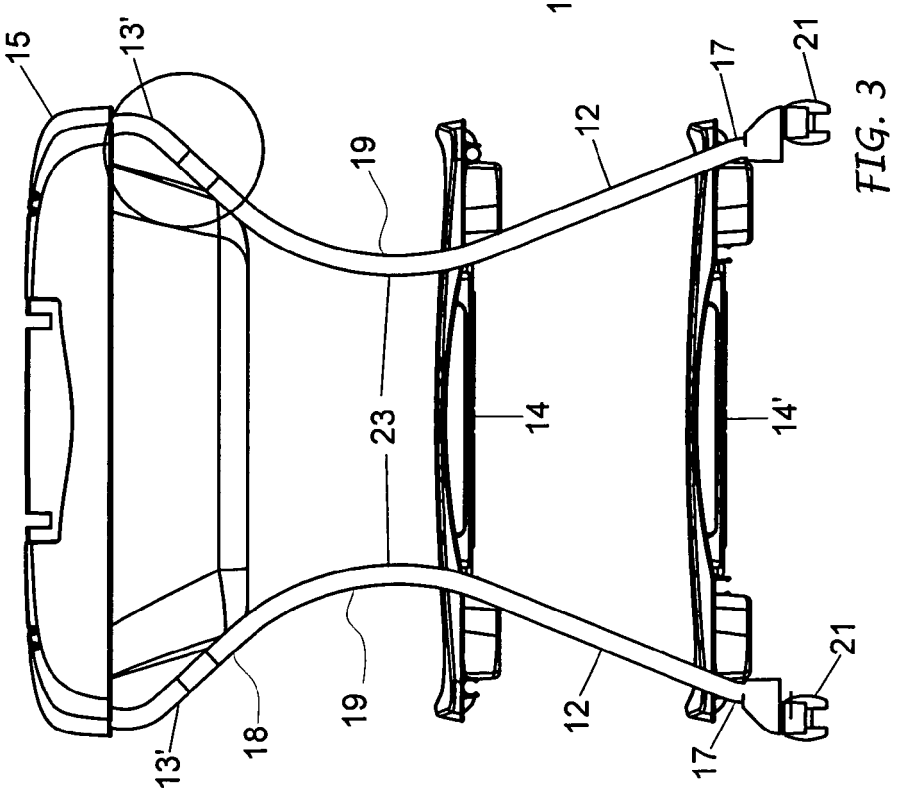

FIG. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 08 42 5480

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	FR 2 791 246 A (JANE SA) 29 September 2000 (2000-09-29) * figure 1 * -----	1,3,6	INV. A47D5/00 A47K3/164
A	EP 1 378 196 A (RESTA SRL) 7 January 2004 (2004-01-07) * figures 2,4 * -----	1,4,6	
A	EP 1 393 666 A (JAKOBSON JAKOB) 3 March 2004 (2004-03-03) * figure 1 * -----	1	
A	US 2 513 457 A (DE PUY CHARLES T) 4 July 1950 (1950-07-04) * figures 4-6 * -----	2	
			TECHNICAL FIELDS SEARCHED (IPC) A47D A47K

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	12 November 2008	Reichhardt, Otto

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 42 5480

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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12-11-2008

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