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(54) "Folding frame with increased safety, paricularly for high-chairs and the like"

(57) A folding frame with increased safety, particularly for high-chairs and the like, which comprises a framework which is constituted by a first U-shaped frame (2) and a second U-shaped frame (3) which are joined, at their ends, by joints (10',10"), each of which is provided with an internal body (11), which is hinged to the end of the U-shaped frames and forms a guiding slot (12) for the sliding of a pivot (13) for connecting two bars (14,15) which are pivoted, at one end, to the U-shaped frames. There is also an external body (16) which is connected to the connecting pivot (13) and can perform a translatory motion in order to arrange the U-shaped frames (2,3) in a closed position, in which the U-shaped frames (2,3) are mutually side by side, and in an open position, in which the U-shaped frames (2,3) are mutually inclined. The folding frame comprises, on at least one of the joints (10',10"), elastic means (20) which are meant to push the U-shaped frames (2,3) into the open position.

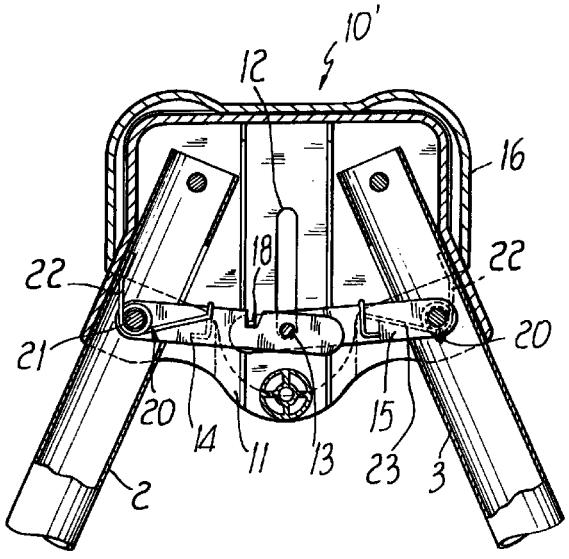

Fig. 2

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Description

[0001] The present invention relates to a folding frame with increased safety, particularly for high-chairs and the like.

[0002] U.S. Patent Application No. 09/122,696 of July 27, 1998 discloses a joint for producing folding trestle-like frames for high-chairs and the like which is substantially constituted by an internal body connected to the ends of U-shaped frames and forming a seat for the sliding of a pivot which joins bars for connection to the arms to be joined.

[0003] An external body is slidingly mounted on the internal body and can perform a translatory motion so as to change position in order to pass from a closed position to an open position and/or viceversa.

[0004] This embodiment, which is valid from many points of view, is however susceptible of improvement especially as regards safety and particularly in order to prevent accidental closures of the frame.

[0005] With the above-mentioned embodiment the joint may in fact remain in an intermediate position, so that accidental movements may cause the frame to close, with obvious consequent drawbacks.

[0006] Another problem is also constituted by the fact that if the external bodies are released accidentally, the two U-shaped frames may be movable with respect to each other.

[0007] The aim of the invention is to solve the above problems by providing a folding frame with increased safety, particularly for high-chairs and the like, in which means are provided which tend to keep the frame in the open position, thus preventing accidental and unintentional closures.

[0008] Within the scope of this aim, a particular object of the invention is to provide a folding frame in which it is possible to use joints which can be derived, from a structural point of view, from those used previously without thereby having to perform complicated or troublesome modifications.

[0009] Another object of the present invention is to provide a folding frame which, thanks to its particular constructive characteristics, is capable of giving the greatest assurances of reliability and safety in use.

[0010] Another object of the present invention is to provide a folding frame with increased safety, particularly for high-chairs and the like, which can be easily obtained starting from commonly commercially available elements and materials and is also competitive from a purely economical point of view.

[0011] This aim, these objects and others which will become apparent hereinafter are achieved by a folding frame with increased safety, particularly for high-chairs and the like, according to the invention, comprising a framework which is constituted by a first U-shaped frame and a second U-shaped frame which are joined, at their ends, by joints, each of which is provided with an internal body, which is hinged to the end of said U-shaped frames and forms a guiding slot for the sliding of a pivot for connecting two bars which are pivoted, at one end, to said U-shaped frames, an external body being also provided which is connected to said connecting pivot and can perform a translatory motion in order to arrange said U-shaped frames in a closed position, in which said U-shaped frames are mutually side by side, and in an open position, in which said U-shaped frames are mutually inclined, characterized in that it comprises, in at least one of said joints, elastic means which are adapted to push said U-shaped frames into the open position.

[0012] Further characteristics and advantages of the present invention will become apparent from the description of a preferred but not exclusive embodiment of a folding frame with increased safety, particularly for high-chairs and the like, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a perspective view of the folding frame;
Figure 2 is a view of the joint with elastic means in an open position;
Figure 3 is a view of the joint with elastic means in a closed position;
Figure 4 is a view of the joint without elastic means, in the open position;
Figure 5 is a side view of the frame with the high-chair applied thereto;
Figure 6 is a view of the frame taken from the other side.

[0013] With reference to the above Figures, the folding frame with increased safety, particularly for high-chairs and the like, generally designated by the reference numeral 1 is substantially constituted by a framework which is provided by means of a first U-shaped frame 2 and a second U-shaped frame 3, which are provided with castors 4 and which are pivoted, at the free ends of their arms, to joints designated by the reference numerals 10' and 10" respectively.

[0014] The joints are constituted by an internal body 11 to which the ends of the arms of the first frame 2 and of the second frame 3 are respectively pivoted.

[0015] The internal body 11 also forms a guiding slot 12 in which there slides a pivot 13 for connecting two bars 14 and 15 which are pivoted, at one end, to the arms of the U-shaped frames 2 and 3 respectively.

[0016] The connecting pivot 13 is connected to an external body 16 which is slideable with respect to the internal body and in practice moves the pivot 13, positioning the frames 2 and 3 in the closed position, with the frames arranged side by side, and in the open position, arranged at an angle to each other.

[0017] One of the joints, specifically the joint 10", is provided, at the end of the guiding slot 12, with narrower portions 12a and 12b, which in practice constitute a stop element for locking the frame in the closed position and

in the open position respectively.

[0018] The bars 14 and 15 are also respectively provided with a notch 17 and with a tab 18 which fits in the notch 17 when the bars are arranged in the open position and are consequently divaricated, in order to act as safety element and as retainer against further rotation.

[0019] The particularity of the invention is constituted by the fact that one of the joints, specifically the joint 10', is provided with elastic means which are meant to push the U-shaped frames into the open position.

[0020] Said elastic means are provided with flexing springs, designated by the reference numeral 20, which are constituted for example by coiled springs which are located on a pivot 21 for the pivoting of the bars to the arms of the U-shaped frames 2 and 3 and in which an arm 22 of each spring acts against the internal part of a tubular element 2,3 and an arm 23 of each spring couples to the respective bar 14,15.

[0021] This arrangement causes the spring 20 to elastically push the bars 14,15 into the open position, as shown in Figure 2.

[0022] The folding frame can remain in the closed position, since the other joint, i.e., the joint 10'', has the locking element 12a,12b and the springs 20 of joint 20' are in a loaded position, preset to produce opening as soon as the lock on the other joint 10'' is released.

[0023] From the above description it is therefore evident that the invention achieves the intended aim and objects, and in particular the fact is stressed that with the adopted solution the frame cannot remain in an unstable intermediate position, since the joint 10' is provided so that it divaricates elastically in order to move into the open position as soon as the lock provided on the other joint is removed.

[0024] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

[0025] All the details may furthermore be replaced with other technically equivalent elements.

[0026] In practice, the materials used, as well as the contingent shapes and dimensions, may be any according to the requirements.

[0027] The disclosures in Italian Patent Application No. MI98A002284 from which this application claims priority are incorporated herein by reference.

[0028] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A folding frame with increased safety, particularly for high-chairs and the like, comprising a framework which is constituted by a first U-shaped frame and a second U-shaped frame which are joined, at their ends, by joints, each of which is provided with an internal body, which is hinged to the ends of said U-shaped frames and forms a guiding slot for the sliding of a pivot for connecting two bars which are pivoted, at one end, to said U-shaped frames, an external body being also provided which is connected to said connecting pivot and can perform a translatory motion in order to arrange said U-shaped frames in a closed position, in which said U-shaped frames are mutually side by side, and in an open position, in which said U-shaped frames are mutually inclined, characterized in that it comprises, in at least one of said joints, elastic means which are adapted to push said U-shaped frames into the open position.

2. The folding frame according to claim 1, characterized in that said elastic means comprises a flexing spring which is connected to said pivot by means of which said bars are pivoted to said U-shaped frames and has an arm which acts on said bars.

3. The folding frame according to claim 1, characterized in that said elastic means has another arm which acts against the internal part of said U-shaped frames.

4. The folding frame according to one or more of the preceding claims, characterized in that at least one of said joints has means for removable locking in the open and closed position.

5. The folding frame according to claim 4, characterized in that said means for removable locking comprise narrower portions defined at the end of said guiding slot to lockingly engage said pivot.

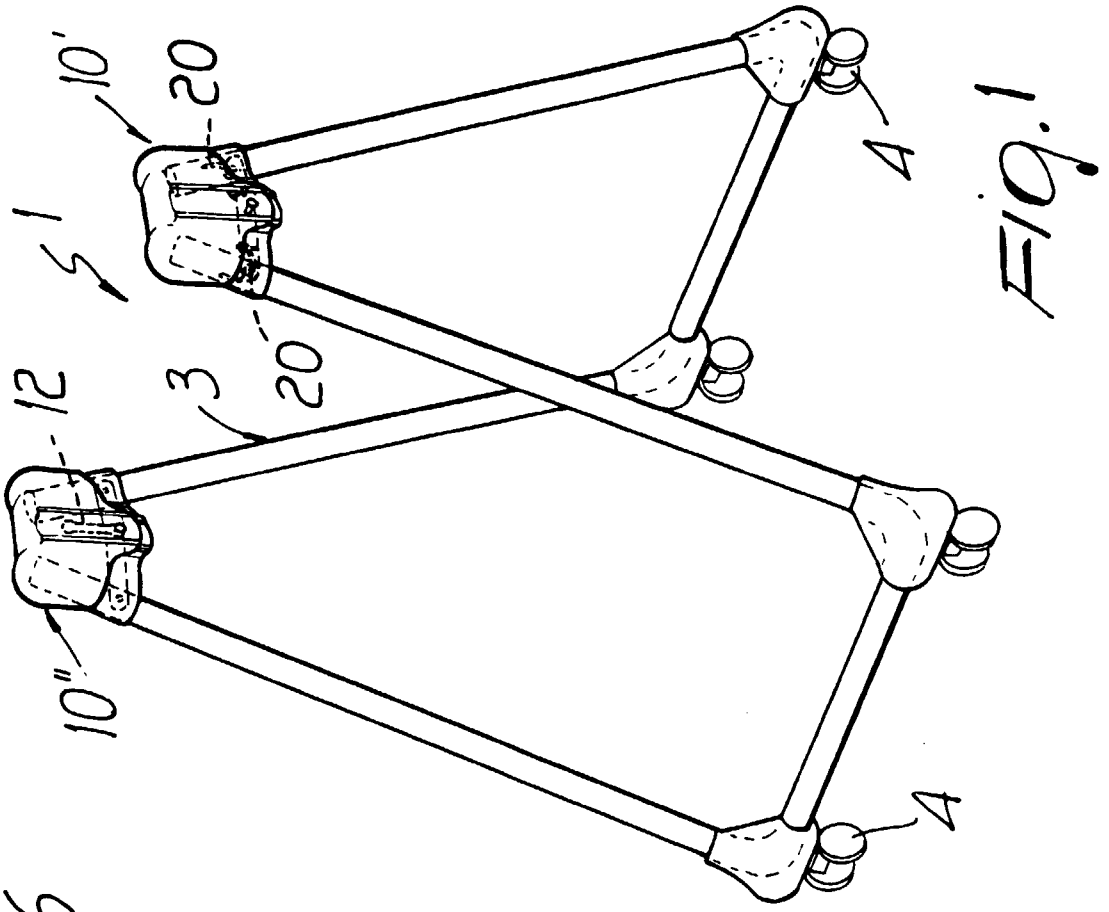
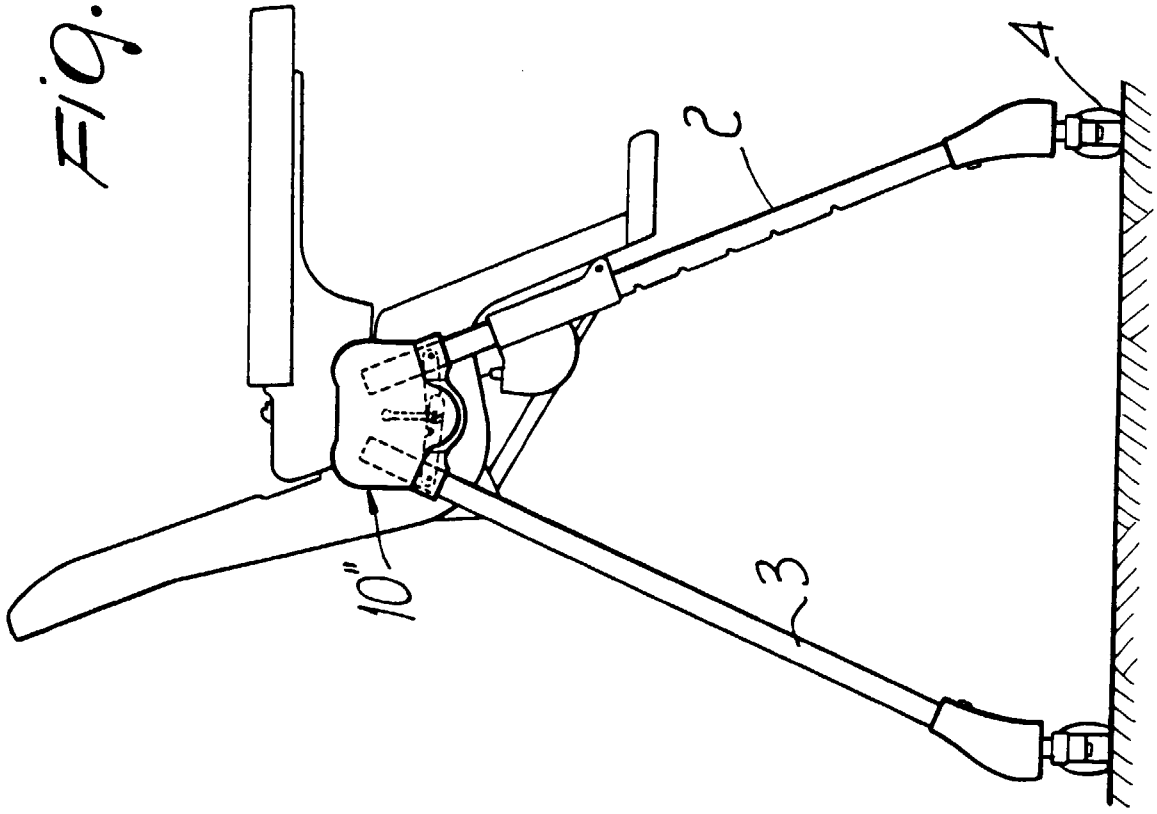


Fig. 1

Fig. 6



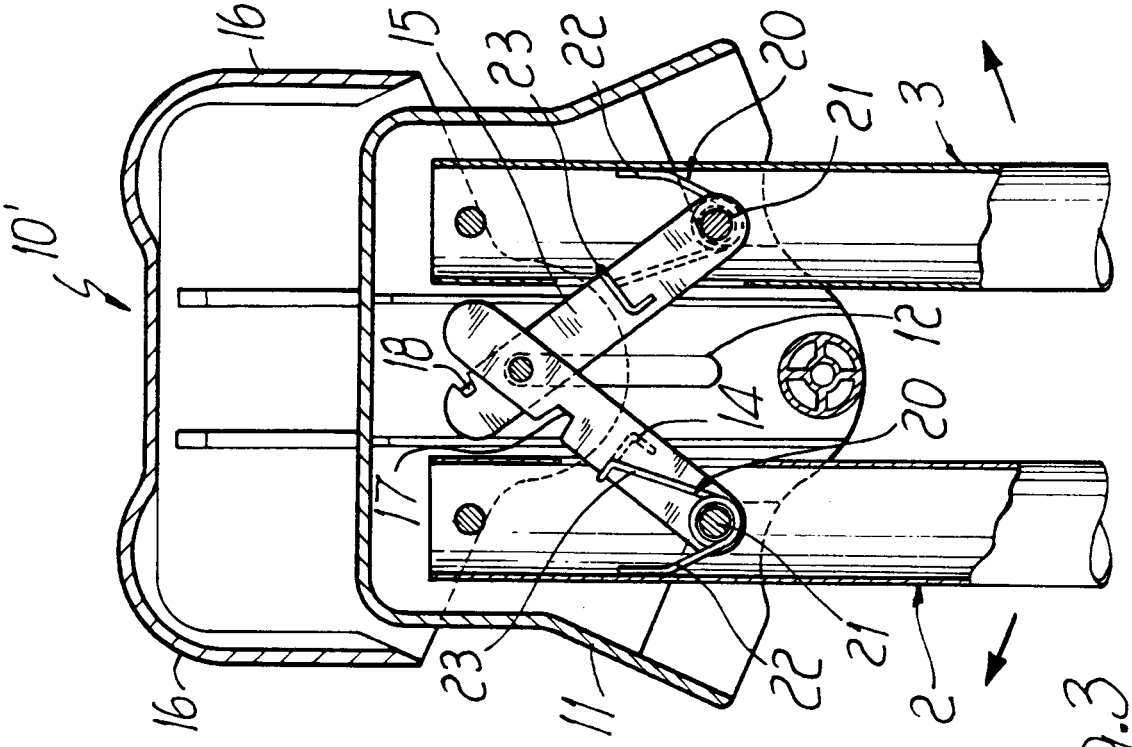

16
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Fig.3

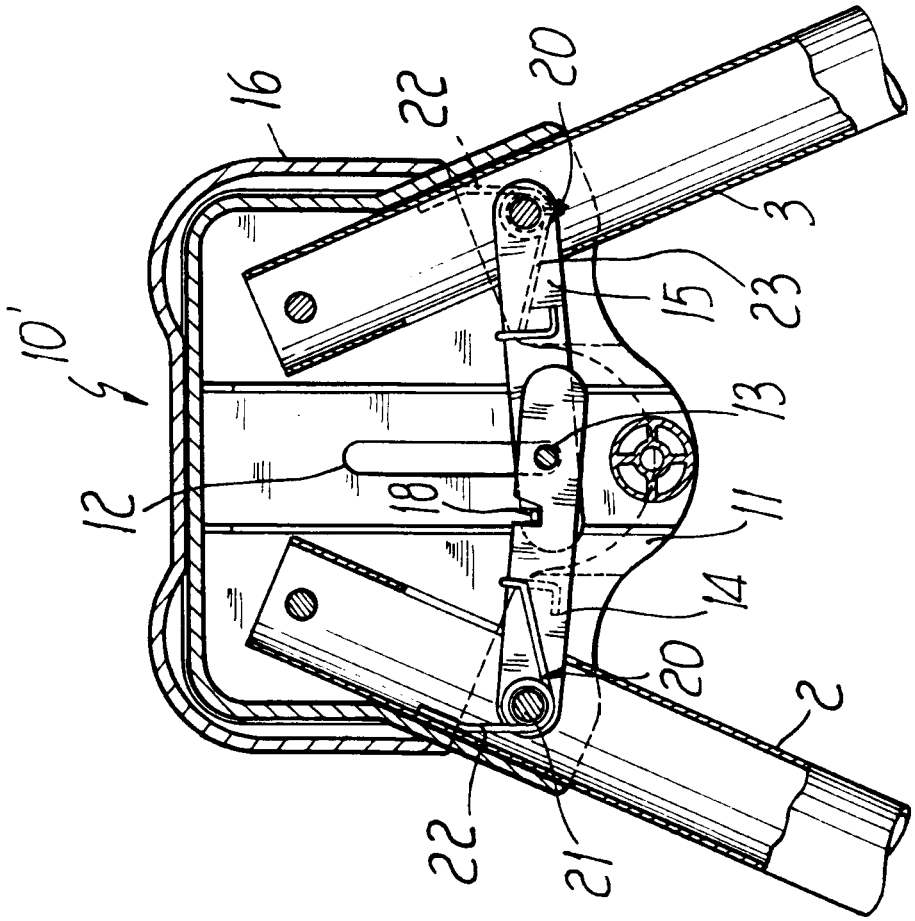
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Fig.2

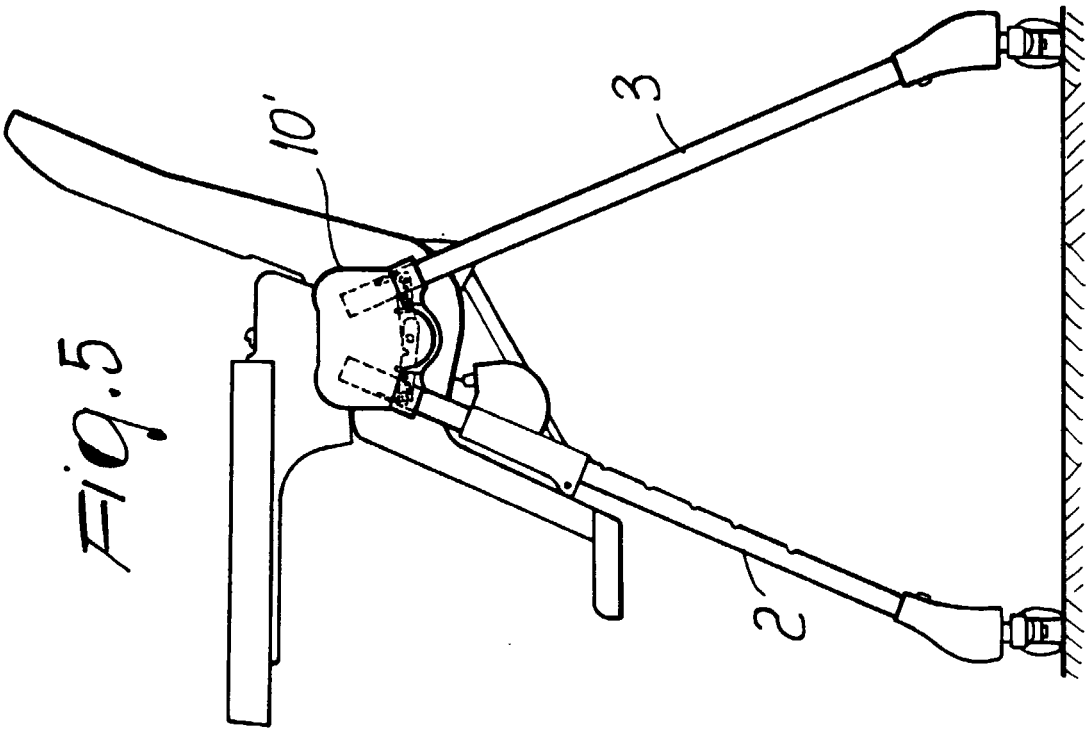

Fig.5

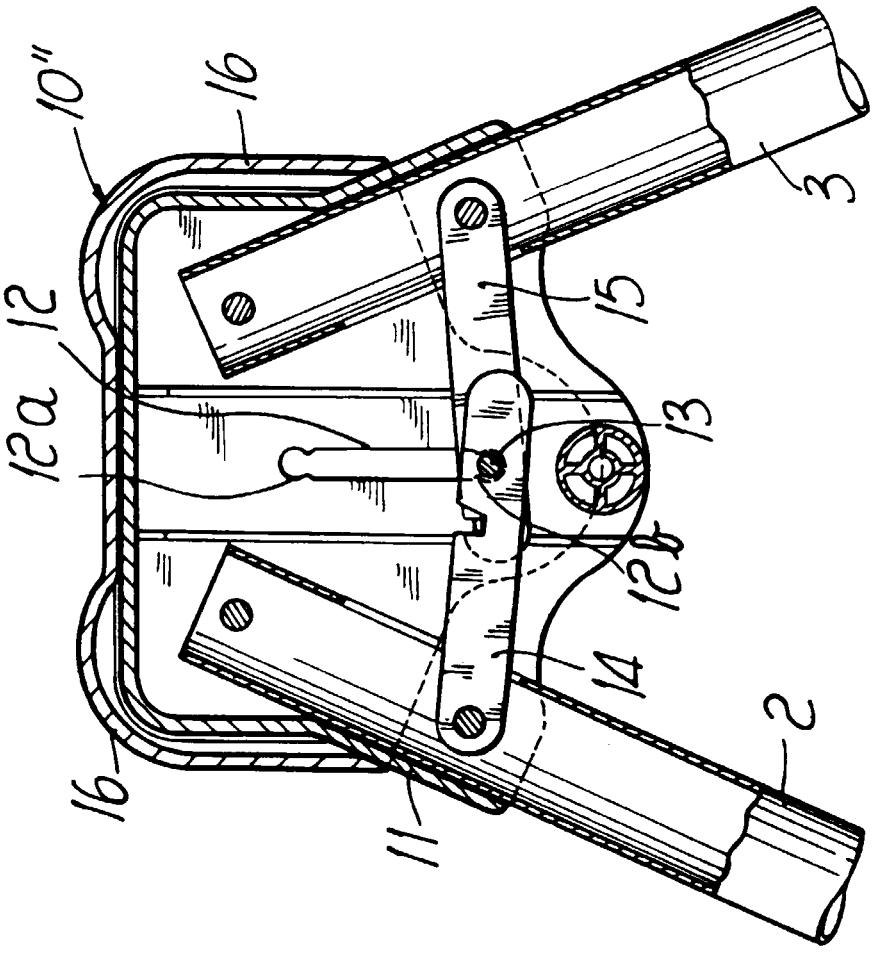

Fig.4

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EUROPEAN SEARCH REPORT

Application Number
EP 99 11 6762

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)
A	FR 2 593 689 A (MONBEBE SRL) 7 August 1987 (1987-08-07) * page 5, line 12-32 * * page 6, line 9-11 * * page 8, paragraph 4; figure 7 *	1-4	A47D1/02 A47D1/04
A	US 5 761 754 A (CHENG YING-HSIUNG) 9 June 1998 (1998-06-09) * column 4, line 41-57; figures 22,23 *	1-4	
A	US 4 499 619 A (KASSAI KENZOU) 19 February 1985 (1985-02-19) * abstract; figures 3,5,6 *	5	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A47D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	11 January 2000	Amghar, N

CATEGORY OF CITED DOCUMENTS

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