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(54) Folding chair

(57) A folding chair is described of the type comprising two forward legs and two rearward legs which at their upper sides carry a seat member for supporting a user of the folding chair, wherein the forward legs, rearward legs and each forward and rearward leg positioned at the same side of the folding chair each are interconnected by scissor links which each comprise two crossing scissor arms hingeably interconnected at the crossing point, which scissor arms each with first, mutually corresponding ends are connected to the corresponding forward and rearward legs in a hingeable yet non-slidable manner. The forward legs and rearward legs at their upper ends are provided with hingeable extensions which are hingeable between a collapsed position substantially in parallel to the corresponding leg and a deployed position substantially in the prolongation of the corresponding leg, wherein the seat member comprises strips of material extending between the extensions of adjacent legs.

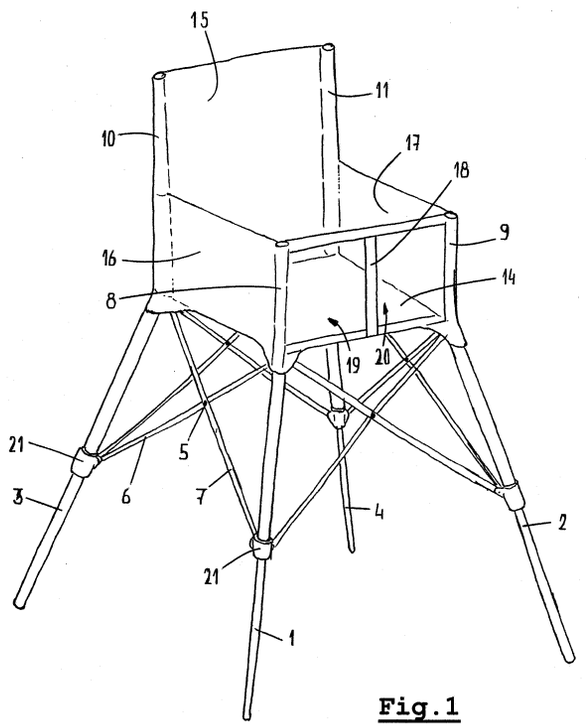

Fig.1

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Description

[0001] The invention relates to a folding chair comprising two forward legs and two rearward legs which at their upper sides carry a seat member for supporting a user of the folding chair, wherein the forward legs, rearward legs and each forward and rearward leg positioned at the same side of the folding chair each are interconnected by scissor links which each comprise two crossing scissor arms hingeably interconnected at the crossing point, which scissor arms each with first, mutually corresponding ends are connected to the corresponding forward and rearward legs in a hingeable yet non-slidable manner.

[0002] A folding chair of this type is known from US patent specification 6.247.749. With this known folding chair the upper ends of the forward legs end at the upper ends of the scissor arms. In the deployed position of the folding chair the rearward legs extend beyond the upper ends of the scissor arms for defining a back support. Although this known folding chair is handy in its use, it is less appropriate for very small children, because this known folding chair apart from providing a support for the bottom only provides a support for the back of a user.

[0003] It is an object of the present invention to provide an improved folding chair of the type referred to above.

[0004] According to the present invention this goal is achieved in that, in a folding chair of the type referred to above, the forward legs and rearward legs at their upper ends are provided with hingeable extensions which are hingeable between a collapsed position substantially in parallel to the corresponding leg and a deployed position substantially in the prolongation of the corresponding leg, wherein the seat member comprises strips of material extending between the extensions of adjacent legs.

[0005] In the deployed position of the folding chair, in which the extensions are pivoted towards their deployed position, the strips of material extending between the extensions of adjacent legs provide an additional support for a user of the folding chair. Especially these strips of material can avoid effectively that a small child sitting on the folding chair can fall sidewardly from the folding chair unintentionally. Because in the collapsed position of the folding chair the extensions assume the mentioned collapsed position, in which they substantially extend in parallel to the corresponding legs, the folding chair, according to the present invention, in its collapsed position nevertheless occupies a reduced amount of space and is compact.

[0006] In a preferred embodiment of the folding chair according to the present invention the hinge motion of the extensions from the deployed position towards to collapsed position is directed outwardly. Thus, in the deployed position of the folding chair the extensions cannot hinge inwardly (for example this may be realised in a manner known per se by abutments or by specially designed hinges). An outward hinge motion of the extensions in the deployed position of the folding chair is avoided by means of the strips of material extending between the extensions. Only when the folding chair is collapsed, during which the legs, and thus also the extensions, are moved towards each other, the strips of material allow the outward hinge motion of the extensions from the deployed position towards the collapsed position.

[0007] A proper adaptation of the folding chair to the envisaged use is obtained, when the strip of material interconnecting the extensions of the rearward legs is shaped as a back support, wherein these extensions have a greater length than the extensions of the forward legs. As a result of the increased length of the extensions of the rearward legs a back support can be realised which offers an effective support to a user, for example a small child.

[0008] In another embodiment of the folding chair according to the invention, the strip of material interconnecting the extensions of the forward legs is provided with at least one passage for the legs of a user. For example, it is possible that the respective strip of material comprises two adjacently positioned passages, each for one leg. As a result a very stable sitting position can be provided, especially to a small child.

[0009] Several kinds of materials can be used for the strips of material, however, it is preferred, that the strips of material are made of a flexible material, such as for example fabric strips. Such flexible strips of material allows the hinge motion of the extensions in a simple manner, without the need for disengaging the seat element from these extensions. When the strips of material comprise a non-flexible material, it generally is necessary to disengage these from the extensions before the start of the hinge motion.

[0010] Further a special embodiment of the folding chair according to the invention is mentioned, wherein the scissor links are shaped such that in the collapsed position of the chair the legs substantially extend in parallel, yet in the deployed position of the folding chair diverge downwardly. Because in the deployed position of the folding chair its legs diverge downwardly, in a manner of speaking an increased base surface of the folding chair is obtained, such that its stability is increased. Especially this can be of importance when the folding chair is used for a small child which often is very agile.

[0011] In the type of folding chair to which the invention refers, the scissor arms, as mentioned before, each with first, mutually corresponding ends are connected to the corresponding forward and rearward legs in a hingeable yet non-slidable manner. Preferably the non-slidable first end of a scissor arm is positioned in the vicinity of the hinge between the corresponding leg and its extension, whereas the slidable second end is positioned therebelow.

[0012] Hereinafter the invention will be elucidated while referring to the drawing, in which an embodiment

of the folding chair according to the invention is represented. Herein:

figure 1 shows a perspective view of an embodiment of the folding chair according to the invention, and

figures 2a-e illustrate the folding chair (without seat element) as represented in figure 1 during five successive stages during deployment from the collapsed position towards the deployed position.

[0013] The folding chair represented in figure 1 comprises two forward legs 1,2 and two rearward legs 3, 4. Between adjacent legs (for example a rearward leg 3 and a forward leg 1) a respective scissor link known per se is provided which comprises two crossing scissor arms 6 and 7 which are hingeably interconnected at the crossing point 5 (between other pairs of legs corresponding scissor links are provided which for ease of survey are not provided with reference numbers).

[0014] At their upper ends the forward legs 1,2 and rearward legs 3, 4 are provided with extensions 8-11. These extensions 8-11 are connected to the respective legs by means of hinges 12 (see figure 2a).

[0015] The upper ends of the scissor arms 6, 7 of the scissor links are connected to the corresponding forward and rearward legs in a hingeable, yet non-slidable manner (see figure 2a, hinges 13).

[0016] In the position illustrated in figure 1 the folding chair assumes a deployed position, in which the extensions 8-11 of the legs 1-4 assume a so-called deployed position in which they substantially extend in parallel to the corresponding legs. In this situation a seat element, comprising a bottom part 14, back part 15, two side parts 16 and 17 and a forward part 18 defining two passages 19 and 20, is positioned at these extensions 8-11. The bottom part 14 is meant for supporting the bottom of a user (for example a small child), whereas the back part 15 of course will provide a support for the back. The side parts 16 and 17 avoid a sideward motion of the user, whereas the passages 19 and 20 are meant for the passage of the legs of the user.

[0017] As appears clearly from figure 1, the legs 1-4 diverge downwardly. As a result the folding chair assumes a stable position.

[0018] The lowermost ends of the scissor arms 6, 7 are connected to slide parts 21 which slide upwards and downwards along the corresponding legs.

[0019] In figure 2a the fully collapsed position of the folding chair is represented (the seat element is not illustrated). The legs 1-4 are positioned close to each other in a substantially parallel position, whereas the scissor arms 6, 7 did pivot around their respective hinge 5 and the slide parts 21 have slid downwardly along the corresponding legs. The extensions 8-11 (extension 11 is not visible) are pivoted outwardly around their hinges 12 towards a position, in which they substantially extend in parallel to the corresponding legs 1-4. In the collapsed position illustrated in figure 1 the folding chair assumes a compact configuration.

[0020] Figure 2b shows the first stage of deployment. The extensions 8-11 already did move partially around their hinges 12 towards the deployed position. The position of the scissor links has not yet changed, such that the legs 1-4 still extend close to each other.

[0021] In figure 2c the scissor links still assume their original position, whereas the extensions 8-11 are moved fully towards their deployed positions.

[0022] In figure 2d moving apart the legs 1-4 has started, whereas the scissor links carry out their scissor motion and the slide parts 21 move upwardly along the corresponding legs towards the hinges 12.

[0023] Finally figure 2e illustrates the fully deployed position of the folding chair which corresponds with figure 1, in which the extensions 8-11 have assumed their deployed position and the legs 1-4 are positioned at their maximum spacing.

[0024] In the position of the folding chair illustrated in figure 2e the parts 15-18 (see figure 1) of the non-illustrated seat element will avoid an outward hinging motion of the extensions 8-11 (towards the collapsed position). At the same time the respective parts of the seat element are tensioned, such that the seat element is tensioned in a correct manner.

[0025] While referring to figures 2a-2a it has been described in which manner the extensions 8-11 move around their hinges 12 towards the deployed position, only after which the legs 1-4 are moved apart using the scissor links. Of course also a reversed order would be possible, but then the seat element would have to be provided on to the extensions 8-11 afterwards, because firstly moving apart the legs 1-4 in correspondence with figure 2d and figure 2a does not allow to move the extensions 8-11 thereafter from the collapsed position corresponding to figure 2a towards the deployed position according to figure 2c when the seat element is already present.

[0026] The seat element can be manufactured from many materials, however preferably from fabric. The motion of the scissor links can be limited by abutments (not illustrated) on the corresponding legs which cooperate with the slide parts 21.

[0027] The invention is not limited to the embodiment described before which may be varied widely within the scope of the invention as defined by the claims.

Claims

1. Folding chair comprising two forward legs and two rearward legs which at their upper sides carry a seat member for supporting a user of the folding chair, wherein the forward legs, rearward legs and each forward and rearward leg positioned at the same side of the folding chair each are interconnected by scissor links which each comprise two crossing

scissor arms hingeably interconnected at the crossing point, which scissor arms each with first, mutually corresponding ends are connected to the corresponding forward and rearward legs in a hingeable yet non-slidable manner,
characterised in that
the forward legs and rearward legs at their upper ends are provided with hingeable extensions which are hingeable between a collapsed position substantially in parallel to the corresponding leg and a deployed position substantially in the prolongation of the corresponding leg, wherein the seat member comprises strips of material extending between the extensions of adjacent legs.

2. Folding chair according to claim 1, wherein the hinge motion of the extensions from the deployed position towards the collapsed position is directed outwardly.

3. Folding chair according to claim 2, wherein the strip of material interconnecting the extensions of the rearward legs is shaped as a back support, wherein these extensions have a greater length than the extensions of the forward legs.

4. Folding chair according to claim 2 or 3, wherein the strip of material interconnecting the extensions of the forward legs is provided with at least one passage for the legs of a user.

5. Folding chair according to claim 4, wherein the respective strip of material comprises two adjacently positioned passages, each for one leg.

6. Folding chair according to one of the claims 2-5, wherein the strips of material are made of a flexible material, such as for example fabric strips.

7. Folding chair according to any of the previous claims, wherein the scissor links are shaped such that in the collapsed position of the chair the legs substantially extend in parallel, yet in the deployed position of the folding chair diverge downwardly.

8. Folding chair according to any of the previous claims, wherein the scissor arms each with their second, mutually corresponding ends are connected to the corresponding forward and rearward legs in a hingeable and slidable manner.

9. Folding chair according to claim 8, wherein the non-slidable first end of a scissor arm is positioned in the vicinity of the hinge between the corresponding leg and its extension, whereas the slidable second end is positioned therebelow.

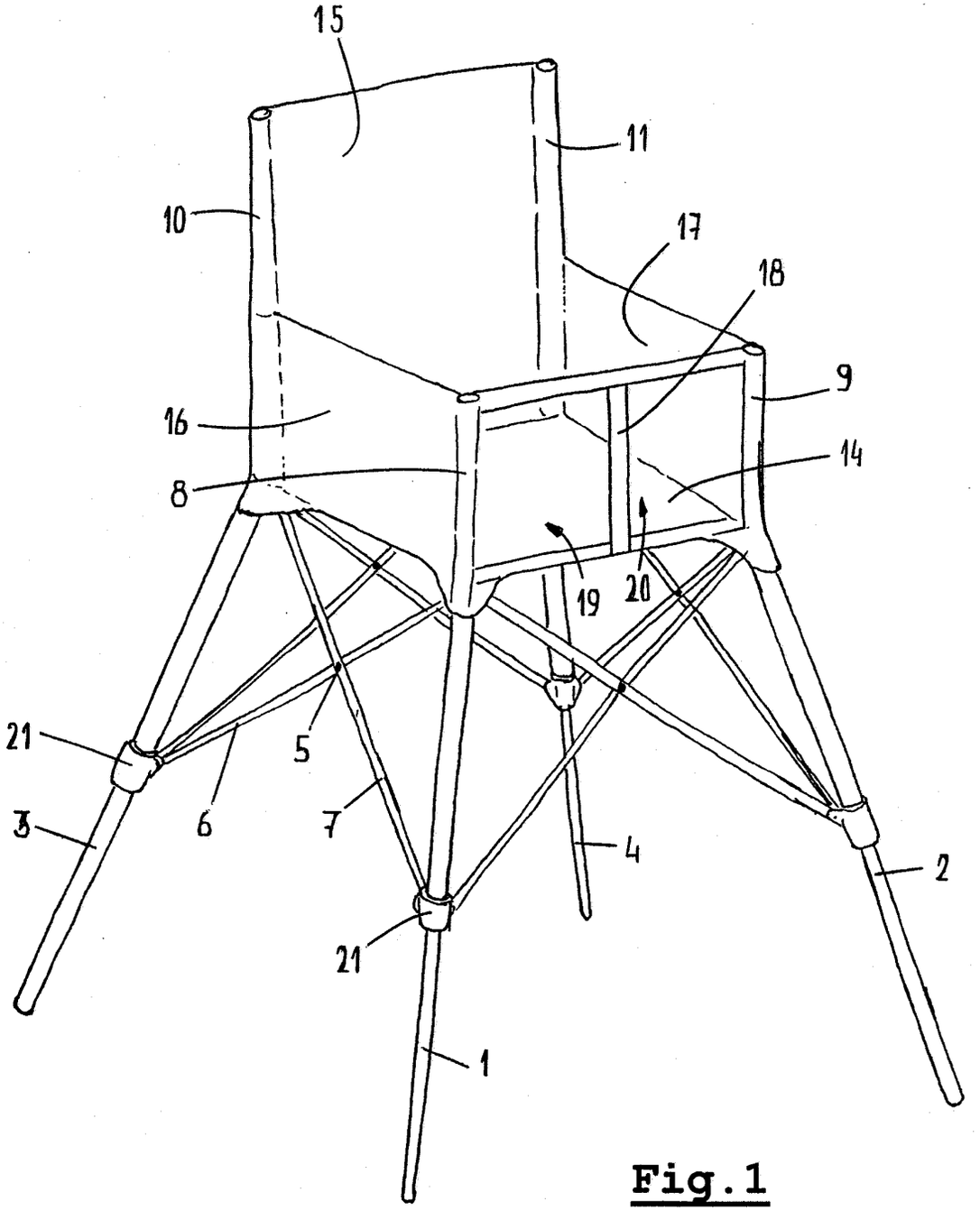

Fig.1

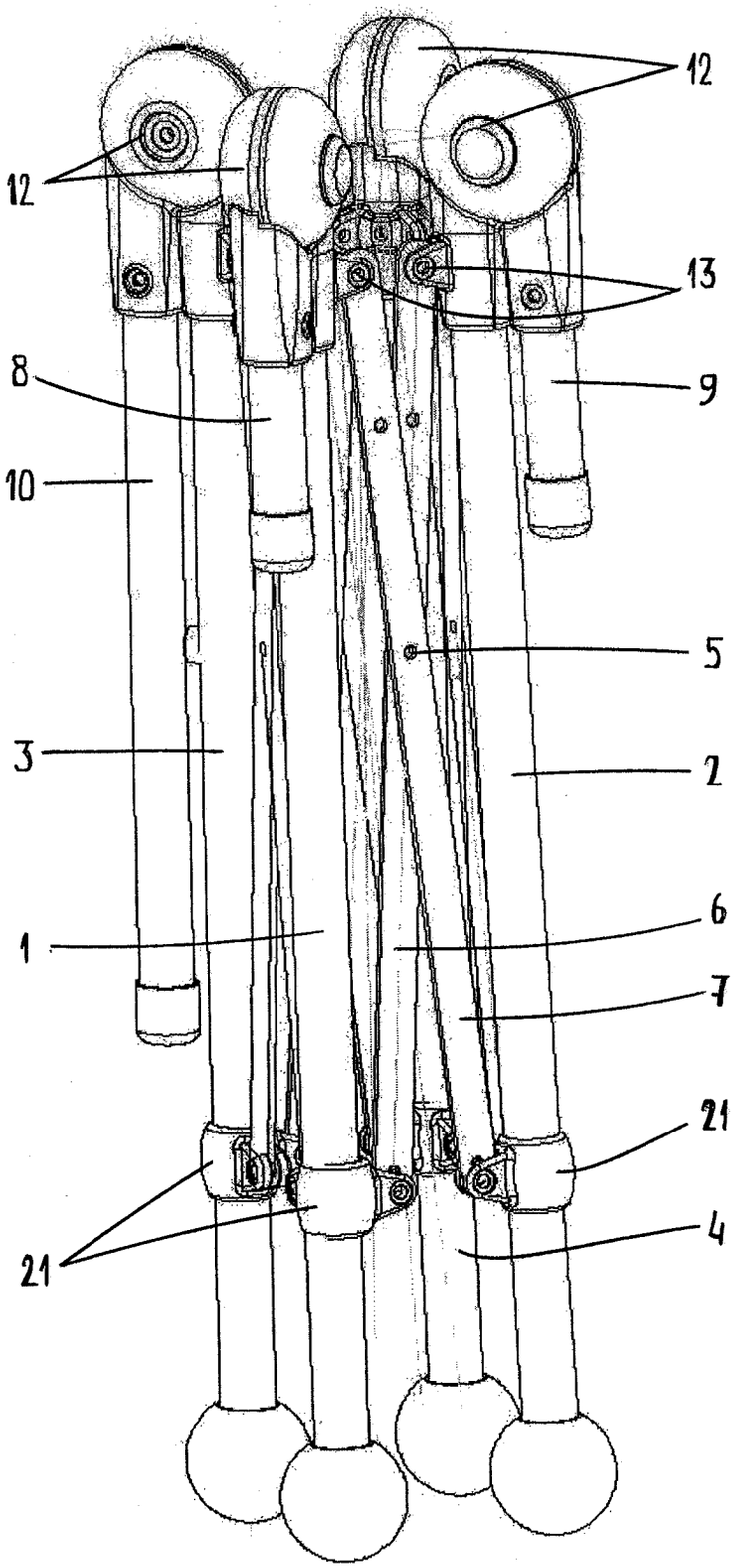

Fig.2a

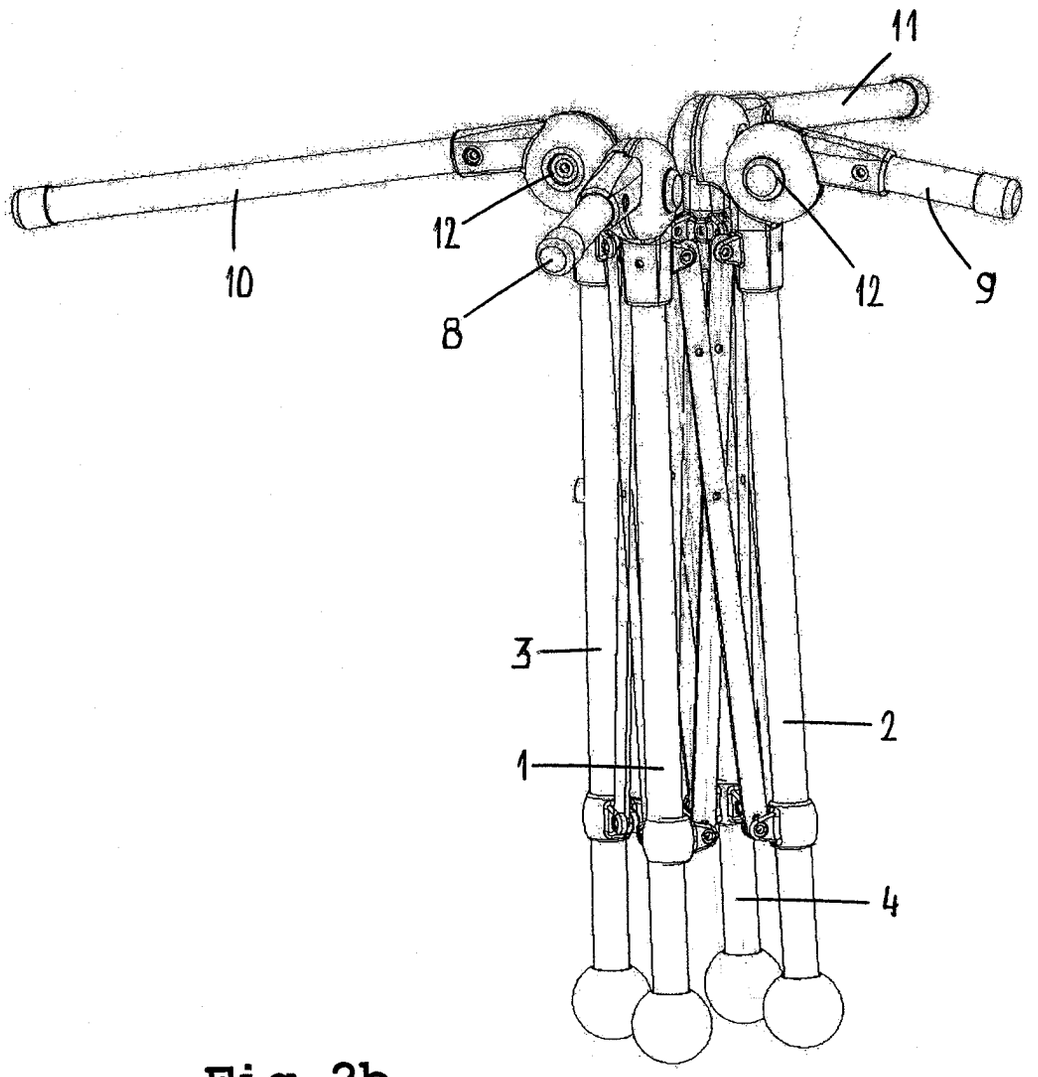

Fig.2b

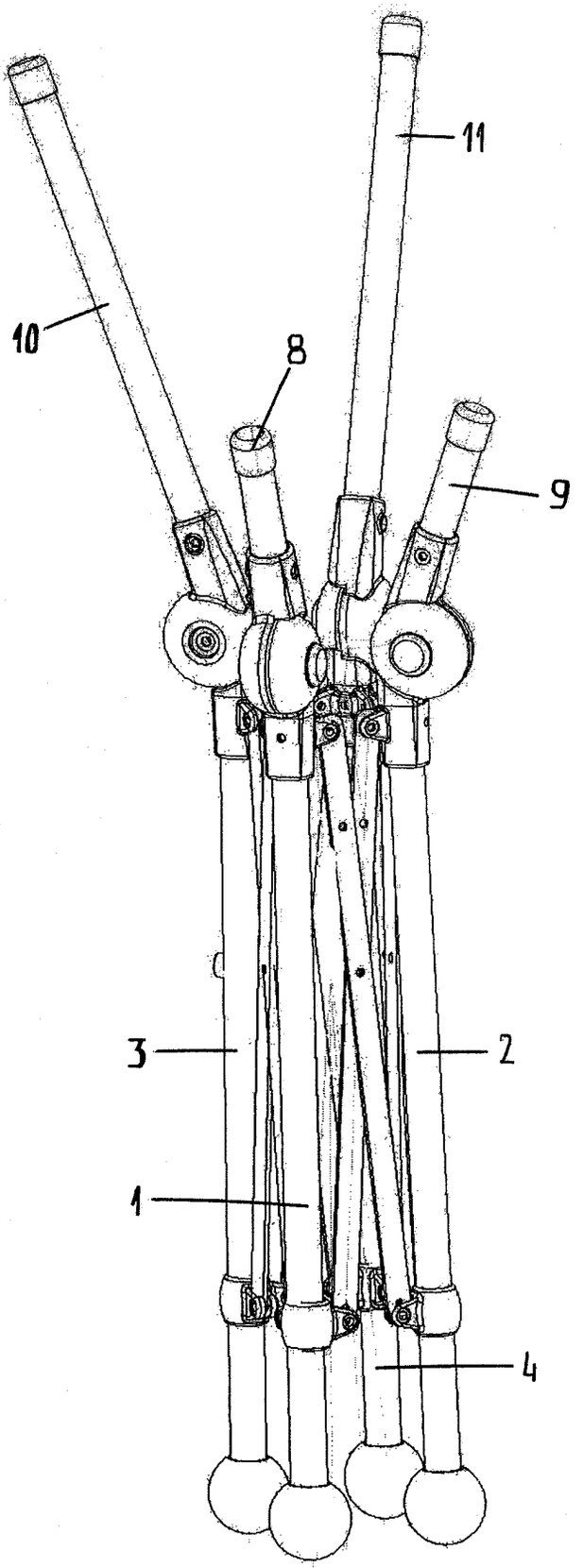

Fig.2c

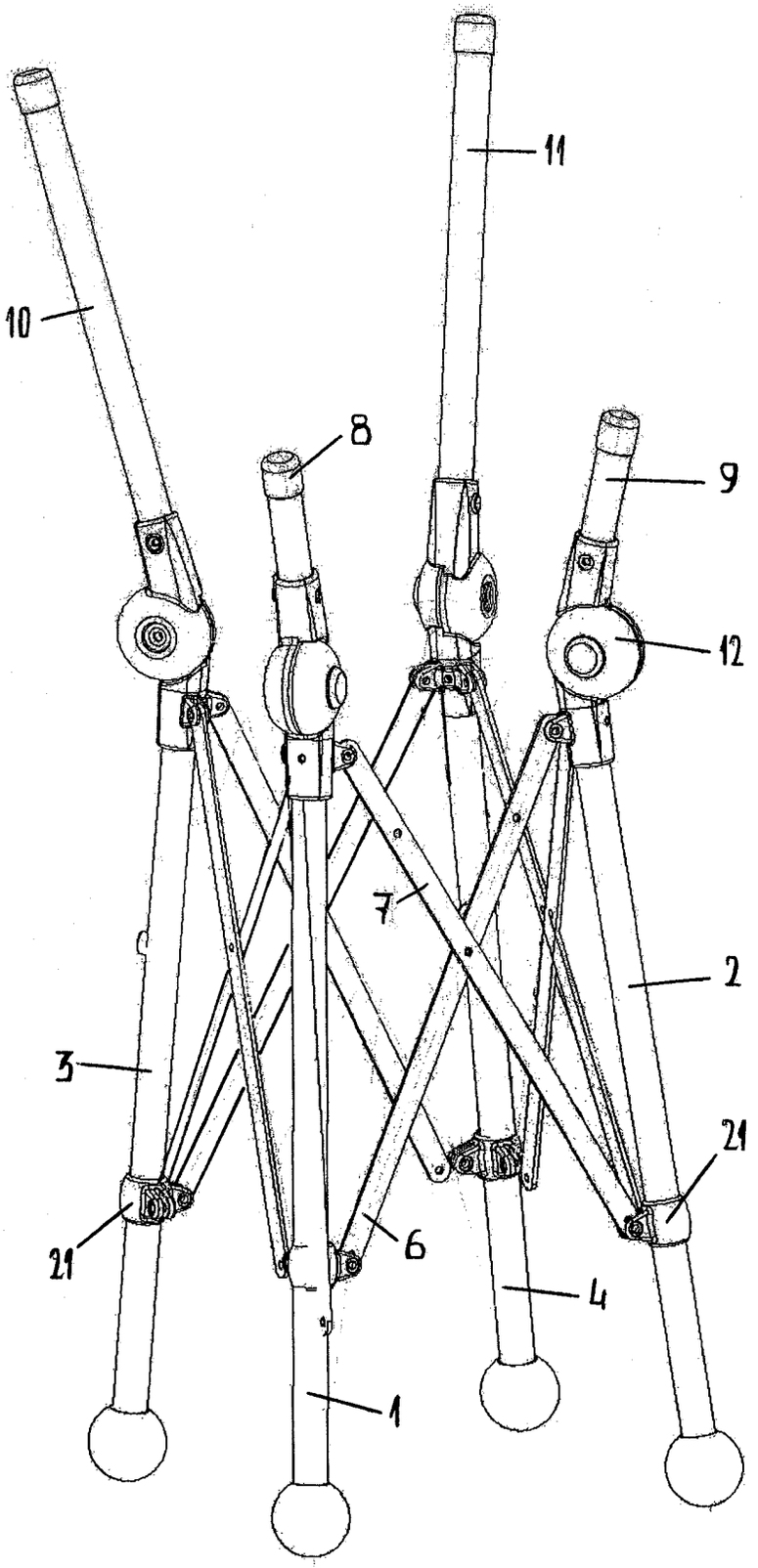

Fig.2d

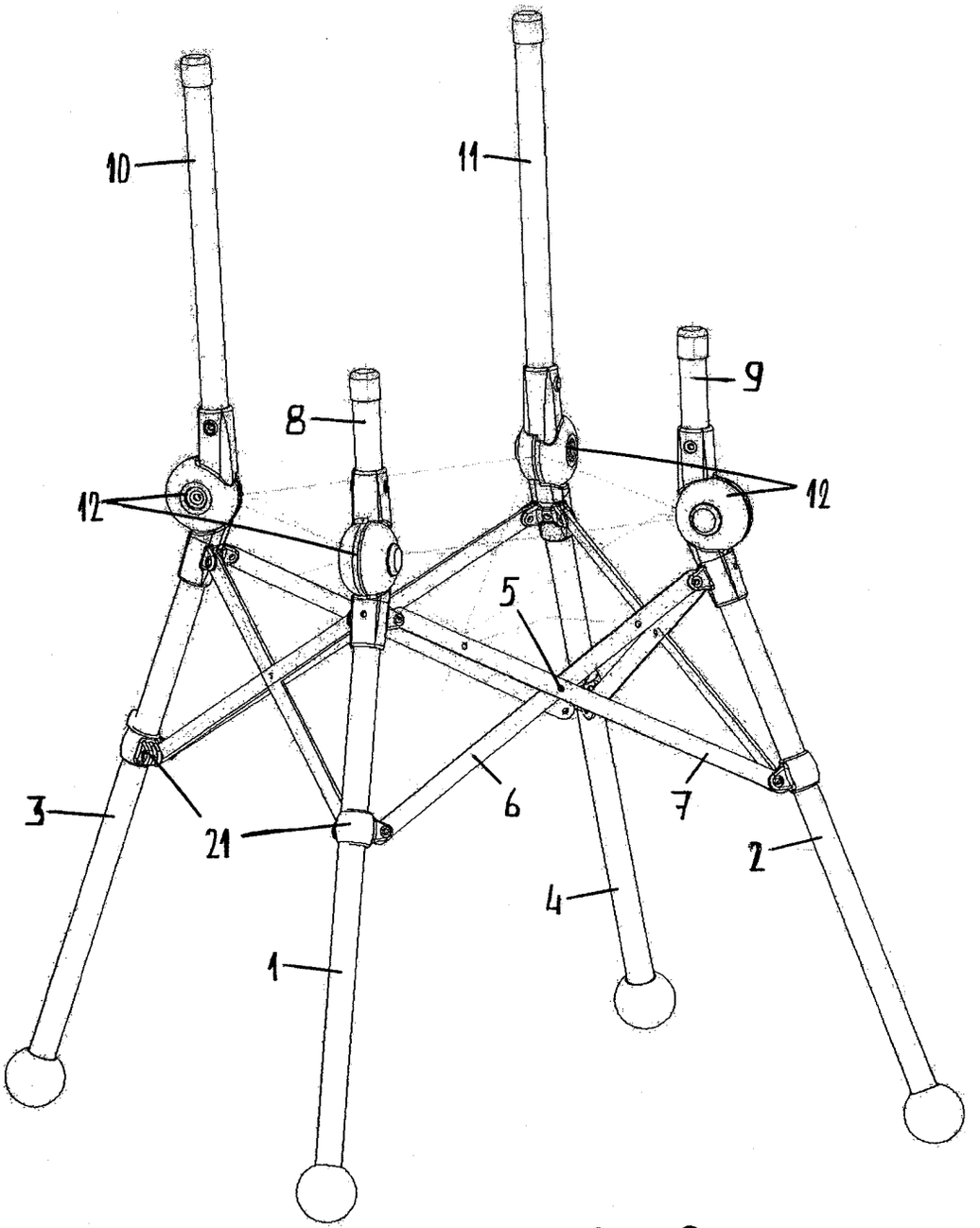

Fig.2e

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EUROPEAN SEARCH REPORT

Application Number
EP 04 10 3950

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)
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	18 October 2004	VandeVondele, J

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