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(54) **Chair**

Stuhl

Chaise

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**US-A- 4 084 850** **US-A- 4 790 432**  
**US-A- 5 924 770**

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**EP 1 284 113 B1**

## Description

**[0001]** The present invention relates to a chair.

**[0002]** Known kinds of chairs are currently used being usually constituted by a supporting frame for a seat that is optionally provided with a backrest and/or with armrests.

**[0003]** The frame and the seat are preferably interconnected by riveting or bolting or by way of the interconnection of screws that pass through the seat to be associated in complementarily shaped holes formed in the frame.

**[0004]** Such known types of chairs, however, have the drawback that they require, for their assembly, the use of riveting machines or at least of personnel specialized in performing the assembly and interconnection of parts by way of the above cited known kinds of mechanical means.

**[0005]** Accordingly, these assembly operations are performed directly during production, so that the end product is the complete chair ready for use.

**[0006]** This known kind of chair, preassembled directly at the factory, has the drawback of being very bulky, thus causing the operations for storing and transporting it to be difficult and onerous.

**[0007]** As a partial remedy, chairs are known which are provided so that they can be stacked together, thus allowing a considerable reduction in bulk.

**[0008]** However, this constructive solution has the drawback of entailing a considerable limitation of the creative possibilities of the engineer and designer, since the aesthetic appearance of the chair becomes subordinate to the need for it to be stackable; moreover, the dimensions still remain significant.

**[0009]** The aim of the present invention is to solve the above-noted technical problems, eliminating the drawbacks of the cited prior art, by providing a chair that allows an easy and quick interconnection between the seat and the frame that does not require the availability of any kind of machine.

**[0010]** Within this aim, an object of the invention is to provide a chair that allows optimum storage and transport from the point of production to the point of distribution or sale.

**[0011]** Another object is to reduce the production costs of said chairs by reducing both the number of machines used and the use of labor.

**[0012]** Another object is to provide a chair that allows adjustment of the mutual position of the frame and the seat, ensuring that the user can customize the chair.

**[0013]** Another object is to provide a chair that is structurally simple and has low manufacturing costs.

**[0014]** This aim and these and other objects that will become better apparent hereinafter are achieved by a chair according to the appended claim 1.

**[0015]** Advantageously, there are additional means for locking said seat in a chosen position with respect to said frame.

**[0016]** Conveniently, there are stroke limiting means for positioning said seat with respect to said frame.

**[0017]** Further characteristics and advantages of the invention will become better apparent from the following detailed description of a particular embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a bottom view of the chair according to the invention;

Figure 2 is a partially sectional front view of the chair of Figure 1;

Figure 3 is an exploded bottom perspective view of the chair;

Figures 4 and 5 are perspective views of two details of Figure 3;

Figure 6 is a perspective view of a second embodiment of the frame of the chair.

**[0018]** With reference to the figures, the reference numeral 1 designates a chair that comprises a frame, designated by the reference numeral 2, that is advantageously made of a metallic material that is advantageously tubular and has, in this embodiment, four legs 3 that protrude downward.

**[0019]** The legs are advantageously mutually associated or rigidly coupled by two transverse elements 4a and by two longitudinal elements, designated by the reference numeral 4b, which constitute a quadrilateral that is arranged on an approximately horizontal plane.

**[0020]** The frame 2 acts as a support for a seat, designated by the reference numeral 5, with which a backrest 6 and/or two armrests, not shown in the figure, are optionally associated.

**[0021]** Two approximately rectangular wings 7 protrude externally from the pair of longitudinal elements 4b of the frame 2 and constitute means for sliding coupling to complementarily shaped means formed below said seat 5.

**[0022]** The complementarily shaped means are advantageously constituted by a pair of receptacles 8 formed by the interspaces between the lower surface of the seat 5 and two tabs 9 that protrude from it so as to lie approximately parallel to the seat 5.

**[0023]** The tabs 9 are associated, or obtained monolithically, with the seat at at least one edge, designated by the reference numeral 10a.

**[0024]** In the example shown in the figures, the tabs 9 have a first edge 10a and a second edge 10b, which are contiguous and provide a connection to the seat 5, so that the second edge 10b constitutes stroke limiting means for the sliding of the pair of wings 7 in the respective seats 8.

**[0025]** The pair of wings 7 advantageously has first holes, designated by the reference numeral 11, which are preferably threaded for the optional interconnection of screws, not shown, that pass through slots 12a or second holes 12b formed in the tabs 9.

[0026] Advantageously, there are also means suitable to facilitate unidirectional sliding, such as for example lugs 13 that protrude obliquely from the lower surfaces of the two wings 7 and can be optionally associated within said second holes 12b.

[0027] With reference to Figure 3, it is noted that it is possible to fit the seat on the frame easily and very rapidly: this assembly does not require special knowledge or skills and therefore can optionally be performed even by the user.

[0028] This allows to ship the chairs in a disassembled condition, so that they occupy a very small space by being constituted by a frame and a seat (with or without a backrest) that can be stacked separately on other frames and seats.

[0029] The sliding and interlocking connection further allows to save on the cost of the mechanical means that are normally used, particularly avoiding the use of screws and rivets.

[0030] Nonetheless, it is possible to use for example screws for the connection of the wings 7 of the frame to the tabs 9.

[0031] It has thus been observed that the chair of the invention has achieved the intended aim and objects, a chair having been provided that allows to assemble the seat and the frame rapidly and simply, so as to allow to perform the interconnection once the components have been transported to the points of distribution or sale.

[0032] In this manner one reduces not only production costs but also storage and shipping costs.

[0033] Figure 6 illustrates a different embodiment of the invention, in which the reference numeral 101 designates a chair that comprises a frame 102 suitable to act as a support for a seat, designated by the reference numeral 105, with which a backrest 106 and/or two armrests, not shown in the figure, are optionally associated.

[0034] The frame 102 is advantageously constituted by a plate 120, which is approximately rectangular and is provided with interconnection means 121 for one or more ground resting legs, which are not shown.

[0035] The interconnection means 121 are constituted, for example, by a hole that is suitable for interconnection for example with a pin, not shown, that is in turn associated in a lower region with said one or more legs.

[0036] The plate 120 is provided laterally with two longitudinal edges, designated by the reference numeral 104b, from which two approximately rectangular wings 107 protrude to constitute means for sliding coupling to complementarily shaped means formed under the seat 105.

[0037] The complementarily shaped means are advantageously constituted by two receptacles 108 formed by the interspaces provided between the lower surface of the seat 105 and two tabs 109 that protrude from the seat so as to lie approximately parallel to the seat 105.

[0038] This embodiment achieves the same advantages as the preceding one.

[0039] The materials used, as well as the dimensions that constitute the individual components of the chair of the invention, may of course be more pertinent according to specific requirements.

[0040] 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 chair (1), comprising a frame (2) for supporting a seat (5) with or without a backrest (6) **characterized in that** said frame (2) is provided with coupling means (7) for sliding engagement with complementarily shaped coupling means (8,9) arranged on the underside of said seat (5) to thereby effect assembly of the chair, said sliding engagement taking place in a plane substantially parallel to the plane of the seat surface.
2. The chair according to claim 1, **characterized in that** said frame has one or more legs (3) for resting on the ground and has two mutually parallel longitudinal elements (4b) at its upper end.
3. The chair according to claim 1, **characterized in that** said frame (2) has four legs (3) that protrude downward, are mutually associated or rigidly coupled by way of two transverse elements (4a) and two longitudinal elements (4b) that constitute a quadrilateral that lies on an approximately horizontal plane.
4. The chair according to claims 1 and 3, **characterized in that** said means for sliding coupling are constituted by two approximately rectangular wings (7) that protrude outward from said two longitudinal elements (4b).
5. The chair according to claims 1 and 3, **characterized in that** said sliding coupling means (7) interact in said complementarily shaped means (8,9), formed under said seat, which are constituted by two receptacles in the form of interspaces defined between the lower surface of said seat (5) and two tabs (9) that protrude from said seat so as to lie approximately parallel to said seat.
6. The chair according to claim 5, **characterized in that** said tabs (9) are associated, or obtained monolithically, with said seat at at least one first edge (10a).

7. The chair according to claim 5 or 6, **characterized in that** said tabs (9) are associated, or obtained monolithically, with said seat (5) at said first edge (10a) and at a second edge (10b) that is contiguous to the first edge (10a) and constitutes stroke limiting means for the sliding of said pair of wings (7) in said pair of receptacles.
8. The chair according to one or more of claims 4-7, **characterized in that** said pair of wings (7) is provided with first holes which are threaded and are designed for the optional interconnection of screws that pass through slots or second holes formed in said pair of tabs.
9. The chair according to one or more of claims 5-8, **characterized in that** it has means suitable to facilitate a unidirectional sliding of said pair of wings within said pair of receptacles, said means protruding obliquely from the lower surfaces of said pair of wings, so as to be associated within said second holes of said pair of tabs.
10. The chair according to one or more of the preceding claims, **characterized in that** said seat has, in a lower region, at least one pair of L-shaped lugs that constitute said means for sliding coupling within complementarily shaped C-like profiled elements formed in said frame.
11. The chair according to one or more of the preceding claims, **characterized in that** said frame is constituted by an approximately rectangular plate, which is provided with means for connection to one or more ground resting legs and is laterally provided with two longitudinal edges from which two approximately rectangular wings protrude externally and constitute means for sliding coupling to complementarily shaped means formed below said seat.

#### Patentansprüche

1. Stuhl (1), umfassend einen Rahmen (2) zum Halten eines Sitzes (5) mit einer oder ohne eine Rückenstütze (6),  
**dadurch gekennzeichnet, dass** der Rahmen (2) mit Verbindungseinrichtungen (7) zum gleitenden Eingriff mit auf der Unterseite des Sitzes (5) angeordneten, komplementär geformten Verbindungseinrichtungen (8, 9) versehen ist, um auf diese Weise einen Zusammenbau des Sitzes zu bewirken, wobei der gleitende Eingriff in einer Ebene, die im Wesentlichen parallel zu der Ebene der Sitzfläche liegt, stattfindet.
2. Stuhl nach Anspruch 1,  
**dadurch gekennzeichnet, dass** der Rahmen ein

oder mehrere Beine (3), die auf dem Boden ruhen, und an seinem oberen Ende wechselweise zwei parallele Längselemente (4b) aufweist.

3. Stuhl nach Anspruch 1,  
**dadurch gekennzeichnet, dass** der Rahmen (2) vier Beine (3) aufweist, die nach unten hervorstehen und wechselweise zugeordnet oder starr verbunden sind durch zwei quer verlaufende Elemente (4a) und zwei Längselemente (4b), die ein Viereck bilden, das in einer annähernd waagerechten Ebene liegt.
4. Sitz nach den Ansprüchen 1 und 3,  
**dadurch gekennzeichnet, dass** die Einrichtungen zum gleitenden Verbinden durch zwei annähernd rechteckige Flügel (7) gebildet sind, die von den zwei Längselementen (4b) nach außen hervorstehen.
5. Stuhl nach den Ansprüchen 1 und 3,  
**dadurch gekennzeichnet, dass** die gleitenden Verbindungseinrichtungen (7) in den unter dem Sitz ausgebildeten, komplementär geformten Einrichtungen (8, 9), die durch zwei Aufnahmen in Form von Zwischenräumen gebildet sind, die zwischen der unteren Fläche des Sitzes (5) und zwei Streifen (9), die von dem Sitz hervorstehen, damit sie etwa parallel zu dem Sitz zu liegen, zusammenwirken.
6. Stuhl nach Anspruch 5,  
**dadurch gekennzeichnet, dass** die Streifen (9) mit dem Sitz an zumindest einer ersten Kante (10a) zugeordnet oder monolithisch erhalten werden.
7. Stuhl nach Anspruch 5 oder 6,  
**dadurch gekennzeichnet, dass** die Streifen (9) mit dem Sitz (5) an der ersten Kante (10a) und an einer zweiten Kante (10b), die der ersten Kante (10a) benachbart ist und eine Hub begrenzende Einrichtung für das Gleiten des Paares von Flügeln (7) in dem Paar von Aufnahmen bildet, zugeordnet oder monolithisch erhalten werden.
8. Stuhl nach einem oder mehreren der Ansprüche 4 bis 7,  
**dadurch gekennzeichnet, dass** das Paar von Flügeln (7) mit ersten Löchern ausgestattet ist, die mit Gewinde versehen sind und für die frei wählbare Verbindung von Schrauben, die durch Schlitzlöcher in dem Paar von Streifen ausgebildete, zweite Löcher hindurchgehen, ausgelegt sind.
9. Stuhl nach einem oder mehreren der Ansprüche 5 bis 8,  
**dadurch gekennzeichnet, dass** er Einrichtungen aufweist, die geeignet sind, um ein in einer Richtung verlaufendes Gleiten des Paares von Flügeln inner-

halb des Paares von Aufnahmen zu erleichtern, wobei die Einrichtungen von den unteren Flächen des Paares von Flügeln schräg hervorstehen, um innerhalb der zweiten Löcher des Paares von Streifen zu geordnet zu werden.

10. Stuhl nach einem oder mehreren der vorhergehenden Ansprüche,

**dadurch gekennzeichnet, dass** der Sitz in einem unteren Bereich zumindest ein Paar von L-förmigen Ösen aufweist, die die Einrichtung zum gleitenden Verbinden innerhalb der komplementär geformten, C-ähnlichen, profilierten Elemente, die in dem Rahmen ausgebildet sind, bilden.

11. Stuhl nach einem oder mehreren der vorhergehenden Ansprüche,

**dadurch gekennzeichnet, dass** der Rahmen durch eine annähernd rechteckige Platte gebildet ist, die mit Einrichtungen zur Verbindung mit einem oder mehreren, auf dem Boden ruhenden Beinen versehen und seitlich mit zwei Längskanten ausgestattet ist, von denen zwei annähernd rechteckige Flügel nach außen hervorstehen und eine Einrichtung zur gleitenden Verbindung mit unterhalb des Sitzes gebildeten, komplementär geformten Einrichtungen bilden.

#### Revendications

1. Chaise, comprenant un bâti (2) pour supporter un siège (5) avec ou sans dossier (6), **caractérisée en ce que** ledit bâti (2) est pourvu d'un moyen d'accouplement (7) destiné à coopérer par coulissement avec un moyen d'accouplement d'une forme complémentaire (8, 9) disposé sur le dessous dudit siège (5) pour ainsi réaliser l'assemblage de la chaise, ladite coopération par coulissement se faisant dans un plan sensiblement parallèle au plan de la surface du siège.

2. Chaise selon la revendication 1, **caractérisée en ce que** ledit bâti comporte un pied ou davantage (3) destiné à reposer au sol et comporte à son extrémité supérieure deux éléments longitudinaux mutuellement parallèles (4b).

3. Chaise selon la revendication 1, **caractérisée en ce que** ledit bâti (2) a quatre pieds (3) qui font saillie vers le bas, sont associés les uns aux autres ou font corps les uns avec les autres par l'intermédiaire de deux éléments transversaux (4a) et de deux éléments longitudinaux (4b) qui constituent un quadrilatère situé dans un plan sensiblement horizontal.

4. Chaise selon les revendications 1 et 3, **caractérisée en ce que** lesdits moyens pour l'accouplement

coulissant sont constitués par deux ailes sensiblement rectangulaires (7) qui font saillie vers l'extérieur depuis lesdits deux éléments longitudinaux (4b).

5. Chaise selon les revendications 1 et 3, **caractérisée en ce que** lesdits moyens d'accouplement par coulissement (7) coopèrent dans lesdits moyens (8, 9) de forme complémentaire, formés sous ledit siège, qui sont constitués par deux logements sous la forme d'espaces intermédiaires définis entre la surface inférieure dudit siège (5) et deux pattes (9) qui dépassent dudit siège de façon à être sensiblement parallèles audit siège.

6. Chaise selon la revendication 5, **caractérisée en ce que** lesdites pattes (9) sont associées, ou réalisées d'une seule pièce, avec ledit siège sur au moins un premier bord (10a).

7. Chaise selon la revendication 5 ou 6, **caractérisée en ce que** lesdites pattes (9) sont associées, ou réalisées d'une seule pièce, avec ledit siège (5) sur ledit premier bord (10a) et sur un deuxième bord (10b) qui est contigu au premier bord (10a) et constitue un moyen de limitation de course pour le coulissement de ladite paire d'ailes (7) dans ladite paire de logements.

8. Chaise selon une ou plusieurs des revendications 4 à 7, **caractérisée en ce que** ladite paire d'ailes (7) est pourvue de premiers trous qui sont filetés et sont conçus pour le montage facultatif de vis qui passent à travers des fentes ou des seconds trous formés dans ladite paire de pattes.

9. Chaise selon une ou plusieurs des revendications 5 à 8, **caractérisée en ce qu'elle** comporte des moyens convenant pour faciliter un coulissement dans un seul sens de ladite paire d'ailes à l'intérieur de ladite paire de logements, lesdits moyens faisant saillie de manière oblique depuis les surfaces inférieures de ladite paire d'ailes, de manière à être associés à l'intérieur desdits deuxième trous de ladite paire de pattes.

10. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** ledit siège a, dans une région basse, au moins une paire d'oreilles en L qui constituent lesdits moyens d'accouplement par coulissement à l'intérieur des éléments à profil complémentaire en C formés dans ledit bâti.

11. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** ledit bâti est constitué par une plaque sensiblement rectangulaire, qui est pourvue de moyens d'accouplement

avec un ou plusieurs pieds reposant au sol et qui est pourvue latéralement de deux bords longitudinaux depuis lesquels deux ailes approximativement rectangulaires font saillie vers l'extérieur et constituent des moyens pour l'accouplement par coulissement avec des moyens de forme complémentaire formés sous ledit siège.

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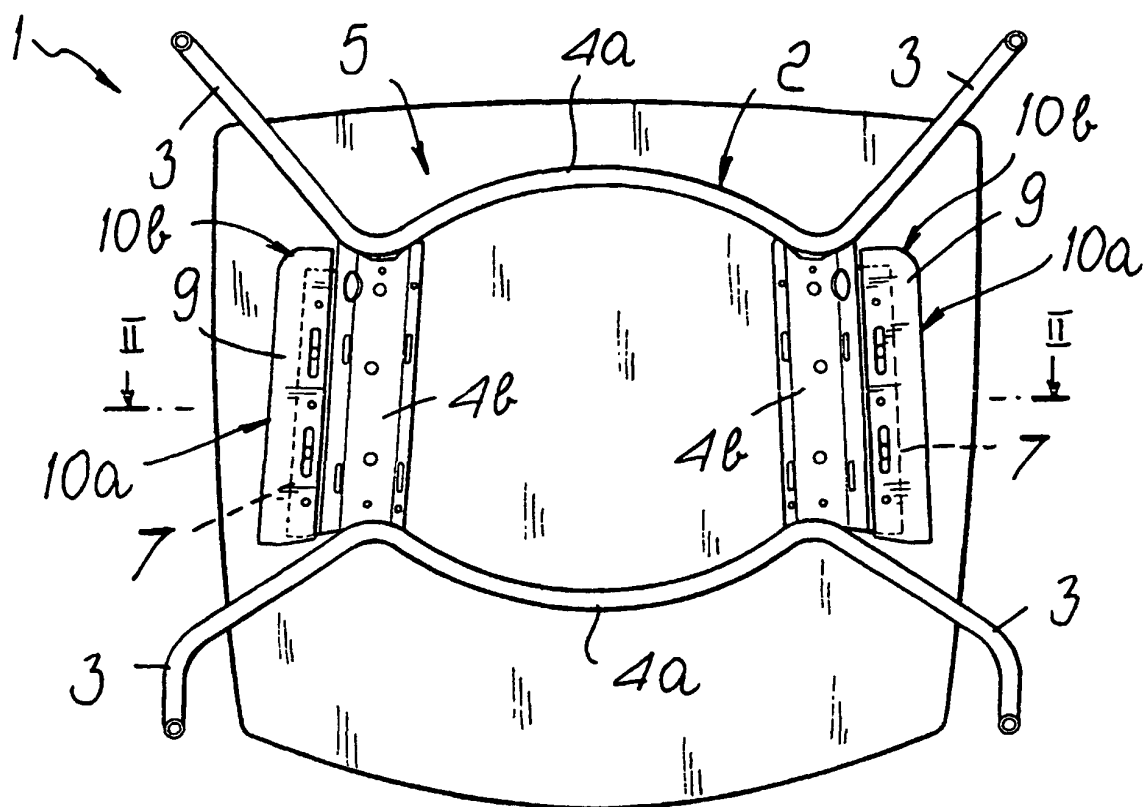


Fig. 1

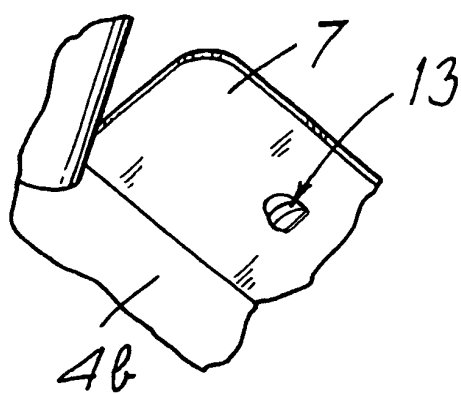


Fig. 4

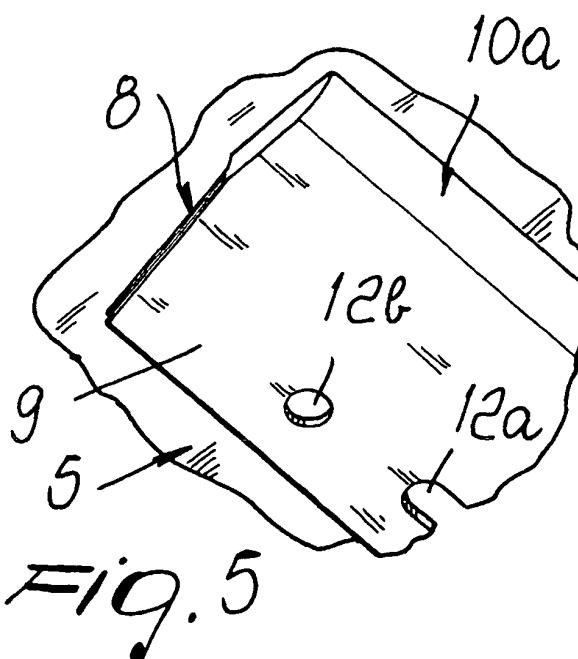


Fig. 5

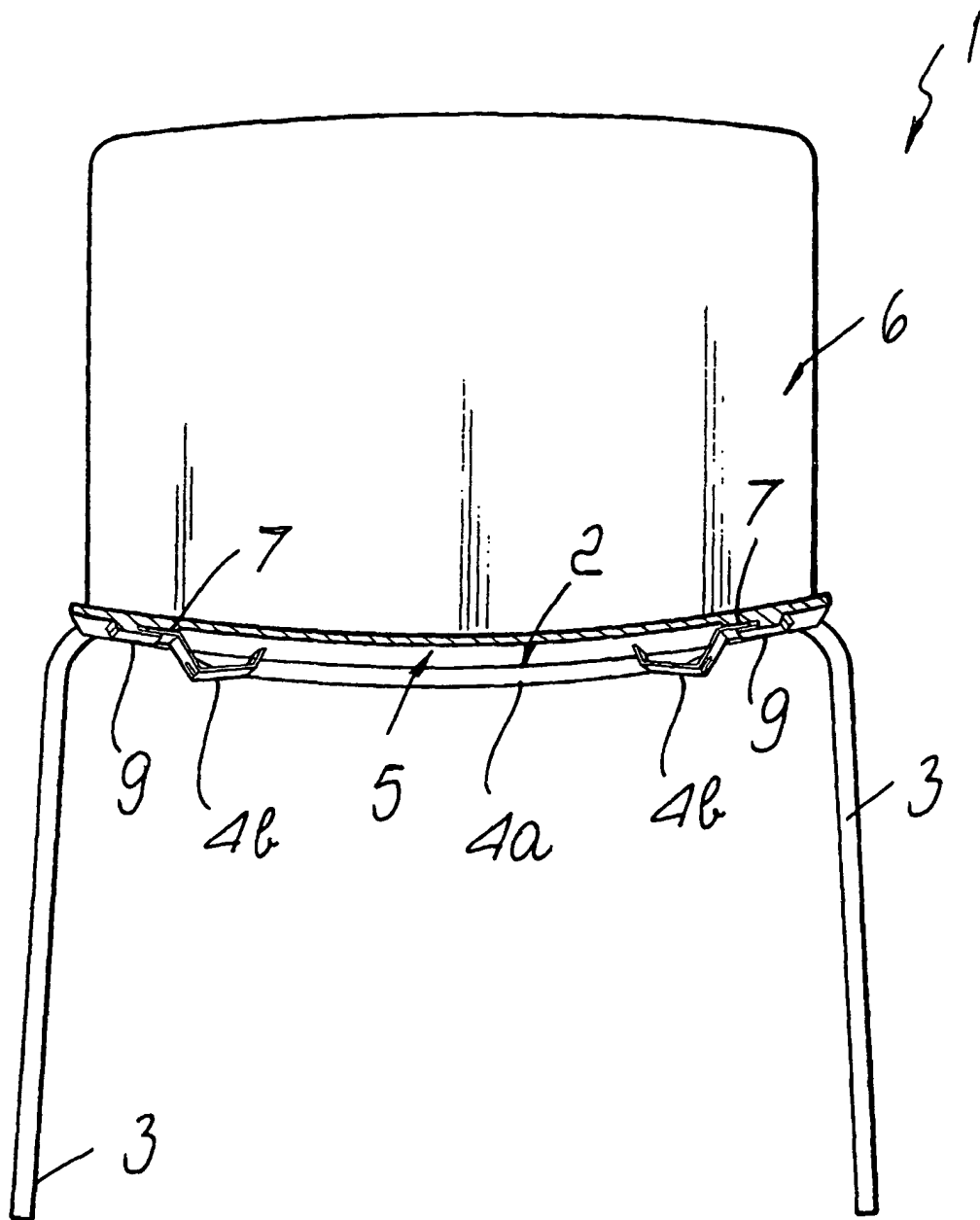


Fig. 2



