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(54) **FOLDING CHAIR**

KLAPPSTUHL

CHAISE PLIANTE

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Description

[0001] The present invention relates to a folding chair, e.g. of the type which is used in home environments or similar.

[0002] It is known that in such environments free space is a fundamental problem, which is often dealt with by using pieces of furniture which, when in the non-operating condition, i.e. when not needed, take very little room. To this end, tables are available which can be folded, extended or tilted. Likewise, especially in kitchens, folding chairs are often used together with fixed ones.

[0003] The most common types of folding chairs are those having a movable seat, which can be rotated and positioned parallel to the backrest. The legs make the same movement in pairs, in a substantially accordion-like fashion, until a parallelepipedon is obtained which is made up of overlapping front legs, rear legs, seat, backrest and various mechanisms that allow for movement, rotation and articulation of the various parts. The chair thus folded still takes up considerable room, in that its height is given by the vertical dimension of the legs plus the vertical dimension of the backrest. Moreover, the overlapping parts also create a rather thick folded chair.

[0004] Another type of folding chair is known from BE490462 A.

[0005] The Applicant has dealt with the problem of limiting as much as possible the dimensions of a folding chair in the folded condition. Furthermore, the Applicant has also dealt with the problem of simplifying the steps necessary for switching the chair from the unfolded condition to the folded condition and vice versa.

[0006] For the purposes of the present invention, an unfolded chair is meant to be a chair in a condition wherein a person can use it to sit down. A folded chair, on the contrary, is meant to be a chair in a condition wherein it takes minimal room.

[0007] One aspect of the present invention relates to a folding chair having the features set out in the appended claim 1.

[0008] The features and advantages of the chair according to the present invention will become more apparent from the following explanatory and non-limiting description of one embodiment thereof with reference to the annexed drawings, wherein:

- Figure 1 shows the folding chair according to the present invention in the folded condition;
- Figure 2 shows the folding chair according to the present invention in the unfolded condition;
- Figures 3a - 3e sequentially illustrate the various intermediate steps to be carried out in order to switch the chair from the folded condition to the unfolded condition;
- Figures 4a and 4b show some construction details of the connection between the backrest and the seat;
- Figures 5a and 5b show some construction details

of the connection between the seat, the backrest and the load-bearing frame of the chair according to the present invention.

[0009] With reference to the above-mentioned drawings, the chair according to the present invention comprises a fixed structure 2, substantially shaped like an upside down "U", to which respective articulated support frames 31 and 32 supporting the fixed structure on the ground are constrained on each of the two vertical sides 21 and 22 of the "U". Each frame can rotate relative to its corresponding vertical side, e.g. through suitable pins 23, so that both frames, when the chair is folded, are inside fixed structure 2 and, when the chair is unfolded, are substantially orthogonal to said structure.

[0010] A seat 4 is constrained in an articulated way to one of the two support frames 31 or 32; when the chair is unfolded, it is coupled to the other frame 32 or 31, whereas when the chair is folded it is held inside the free space obtained within the frame to which it is constrained.

[0011] Preferably, both support frames are made from sections having a rectangular or quadrangular shape, and the seat is constrained to the upper horizontal section of the frame itself.

[0012] The seat also comprises at least one sleeve 41 associated with the upper horizontal section of the frame it is integral with. On the opposite side of the seat there is at least one hook 42 that engages the upper horizontal section of the opposite frame, preferably into a suitable housing 33.

[0013] The two movable frames substantially act as legs supporting the chair on the ground, and may also be shaped differently with respect to the embodiment shown herein, provided that they are still articulated and foldable by rotating within fixed structure 2. Furthermore, their dimensions must be compatible with the possibility of folding them within the same structure and with the possibility of housing the seat in the central space.

[0014] Backrest 5 is constrained to seat 4 in an articulated way; it can rotate relative to said seat about an axis parallel to upper horizontal side 24 of the fixed structure, so as to unfold the chair and be locked, through suitable locking means, in a substantially vertical position or tilted by a few degrees (e.g. up to 10°) relative to the vertical. In the embodiment shown herein, said locking means comprise two vertical bars 51 and 52 between which said backrest is constrained, which rotate relative to the seat through respective pins 53 inserted at the rear corners of the seat itself.

[0015] In brief, the folded chair has the backrest folded against the seat; the seat itself is folded and held within the frame it is constrained to, and both frames are folded and held within the fixed structure; all this is done in a manner such that said chair, when folded, becomes a small parallelepipedon, the side surface of which is not bigger than the side surface of the fixed structure, and the thickness of which does not exceed the thickness of the vertical sides of said fixed structure.

[0016] When unfolding the chair, one must first unfold the two frames 31 and 32 to form the support legs of the chair as shown in Figure 3a. Afterwards, one must rotate seat 4 in the direction indicated by arrows F1 in Figures 3b and 3c until it reaches its final position shown in Figure 3e, with the hooks secured to the frame section.

[0017] Finally, one must rotate the backrest upwards in the direction shown by arrow F2 in Figure 3e, until the locking means lock it in the final unfolded position shown in Figure 2.

[0018] Advantageously, the locking means have such a shape that allows the backrest to have some elasticity with respect to the final unfolded position.

[0019] The various parts of the folding chair may be made of metal or plastic material. Of course, strong and light materials should be preferred over other materials, e.g. heavier ones. In fact, preferable materials include carbon, aluminium and alloys thereof.

Claims

1. Folding chair, comprising:

- a fixed structure (2), substantially shaped like an upside down "U", to which respective articulated support frames (31,32) supporting the fixed structure on the ground are constrained on each of the two vertical sides (21,22) of the "U", each frame being allowed to rotate relative to its corresponding vertical side, so that both frames, when the chair is folded, are inside the fixed structure (2) and, when the chair is unfolded, are substantially orthogonal to said structure,
- a seat (4) constrained in an articulated way to one of the two support frames (31,32), said seat being coupled to the other frame (32,31) when the chair is unfolded, and said seat being held inside the free space obtained within the frame to which it is constrained when the chair is folded,
- a chair backrest (5) constrained in an articulated way to said seat (4), and so positioned that when the chair is folded it is folded against the seat itself within the central space not occupied by the frames, and when the chair is unfolded it is in a substantially vertical position, or is tilted by a few degrees with respect to the vertical, above said horizontal side of the fixed structure, and is held in that position by locking means.

2. Folding seat according to claim 1, wherein said backrest rotates about an axis parallel to the rear horizontal side (24) of the "U".

3. Folding seat according to claim 1, wherein said locking means comprise two vertical bars (51,52) between which said backrest is constrained, which ro-

tate relative to the seat through respective pins (53) inserted at the rear corners of the seat itself.

4. Folding chair according to claim 1, further comprising at least one sleeve (51) associated with the upper horizontal section of the frame integral with the seat, and wherein on the opposite side of the seat there is at least one hook (52) that engages the upper horizontal section of the opposite frame, preferably into a suitable housing (33).

Patentansprüche

1. Klapstuhl, umfassend:

- eine feste Struktur (2), die im Wesentlichen wie ein umgedrehtes "U" geformt ist, an dem jeweils gelenkige Stützrahmen (31, 32), die die feste Struktur auf dem Boden stützen, auf jeder der zwei vertikalen Seiten (21, 22) des "U" gehalten werden, wobei jeder Rahmen gegenüber seiner entsprechenden vertikalen Seite rotieren kann, sodass beide Rahmen, wenn der Stuhl zusammengeklappt ist, sich innerhalb der festen Struktur (2) befinden, und wenn der Stuhl aufgeklappt wird, im Wesentlichen orthogonal zur Struktur sind,
- einen Sitz (4), der in gelenkiger Weise mit einem der zwei Stützrahmen (31, 32) gehalten wird, wobei der Sitz mit dem anderen Rahmen (32, 31) verbunden ist, wenn der Stuhl ausgeklappt ist, und wobei der Sitz innerhalb des freien Raums gehalten wird, der innerhalb des Rahmens erhalten wird, an dem er befestigt ist, wenn der Stuhl gefaltet ist,
- eine Stuhlrückenlehne (5), die in einer gelenkigen Weise am Sitz (4) befestigt ist und so positioniert ist, dass, wenn der Stuhl zusammengeklappt ist, gegen den Sitz selbst innerhalb des Zentralraums gefaltet ist, der nicht von den Rahmen eingenommen wird, und wenn der Stuhl ausgeklappt wird, ist er in einer im Wesentlichen senkrechten Position oder ist um ein paar Grad gegenüber der Senkrechten geneigt, oberhalb der horizontalen Seite der festen Struktur, und wird in dieser Position durch Verriegelungsmittel gehalten.

2. Klapstuhl nach Anspruch 1, wobei die Stuhlrückenlehne um eine Achse parallel zur hinteren horizontalen Seite (24) des "U" rotiert.

3. Klapstuhl nach Anspruch 1, wobei das Verriegelungsmittel zwei senkrechte Stäbe (51, 52) umfasst, zwischen denen die Rückenlehne festgehalten wird, die relativ zum Sitz durch entsprechende Stifte (53) rotieren, die an den hinteren Ecken des Sitzes selbst

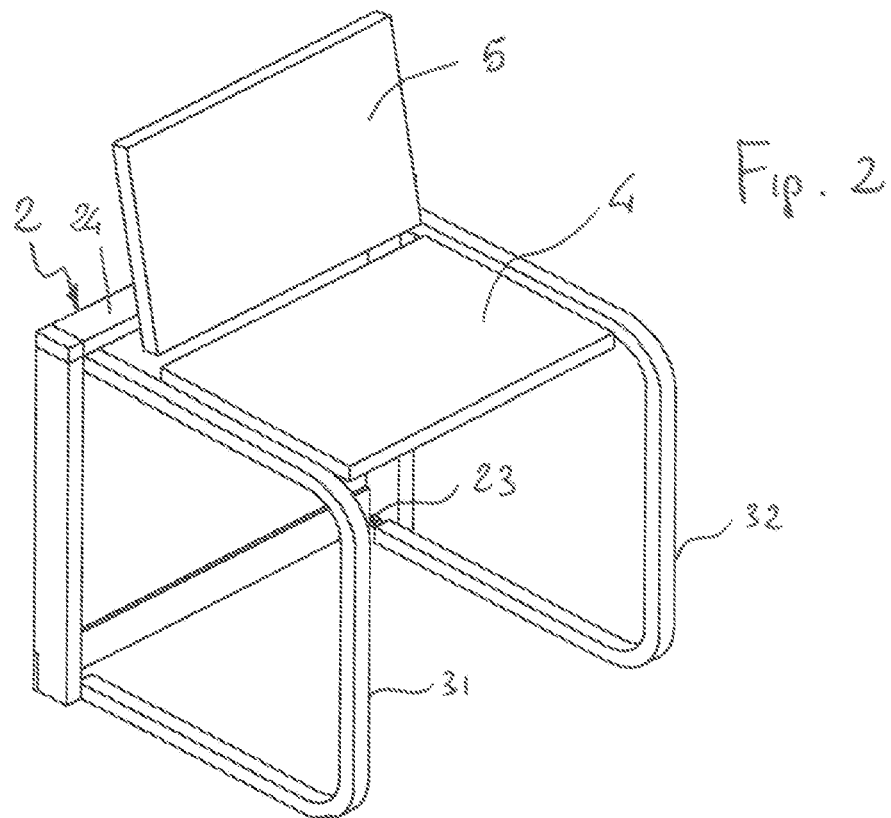
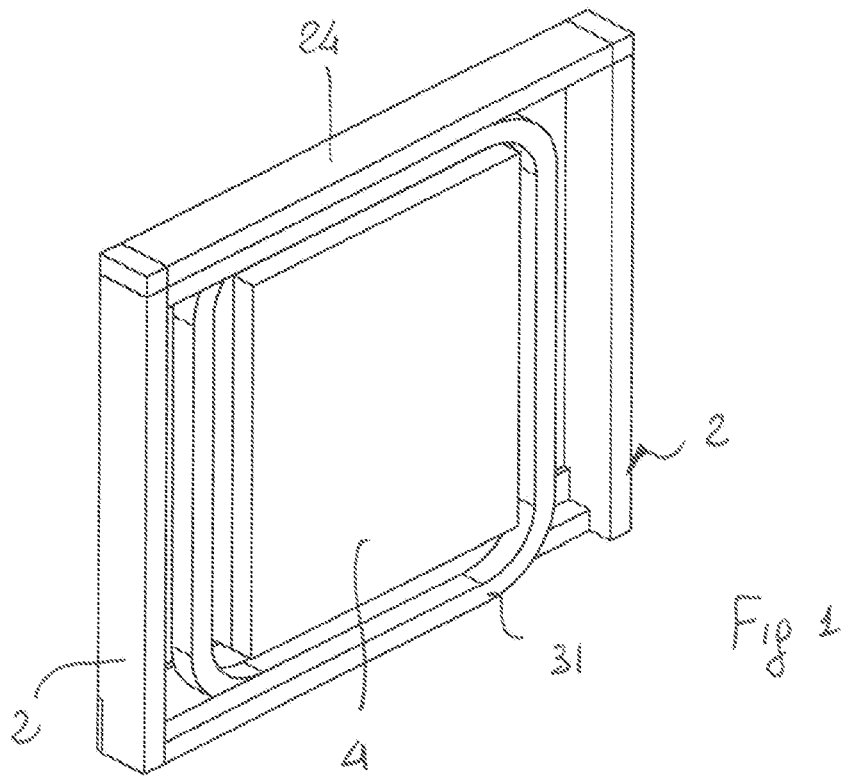
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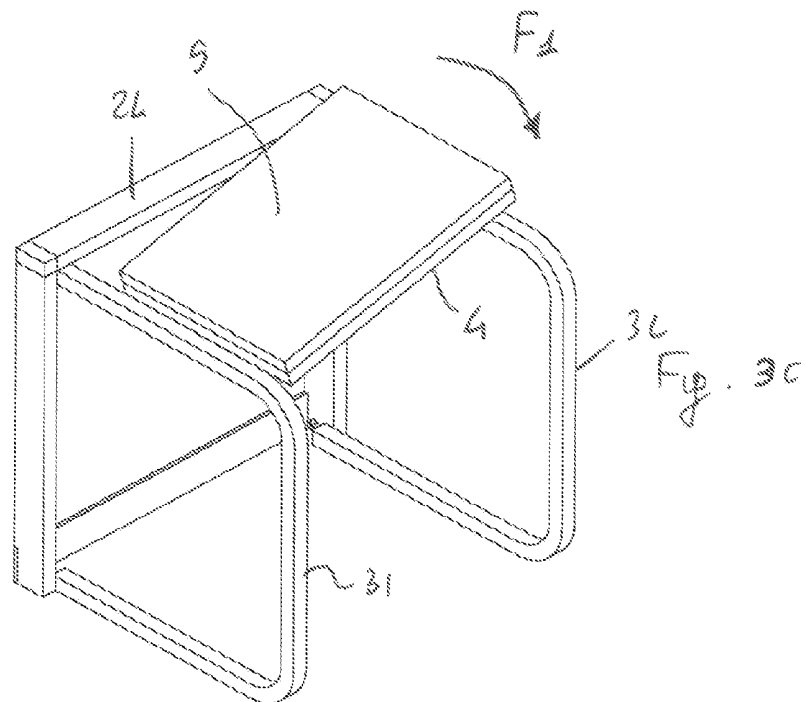
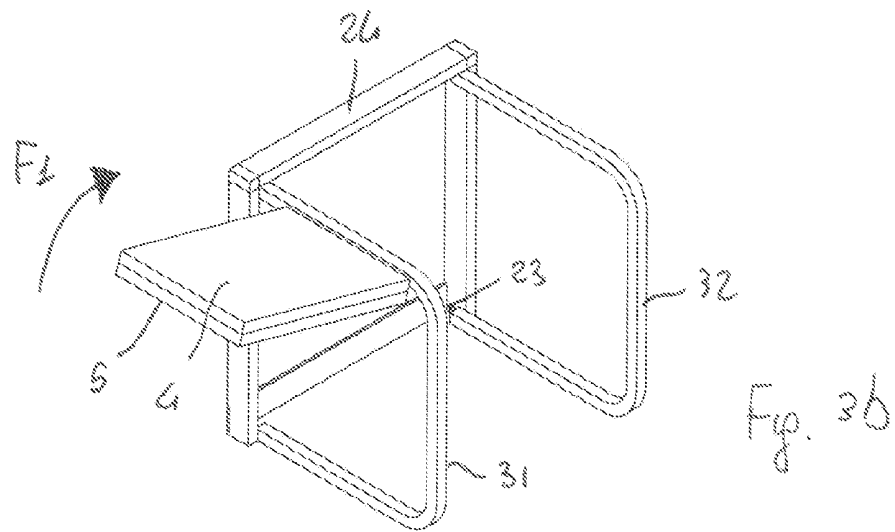
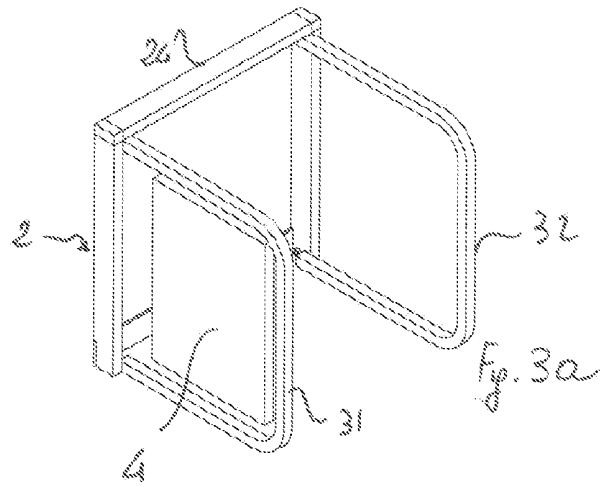
4. Klapstuhl nach Anspruch 1, der ferner mindestens eine Hülse (51) umfasst, die mit dem oberen horizontalen Abschnitt des Rahmens integral mit dem Sitz verbunden ist, und wobei auf der entgegengesetzten Seite des Sitzes mindestens ein Haken (52) besteht, der in den oberen horizontalen Abschnitt des entgegengesetzten Rahmens eingreift, vorzugsweise in ein geeignetes Gehäuse (33).

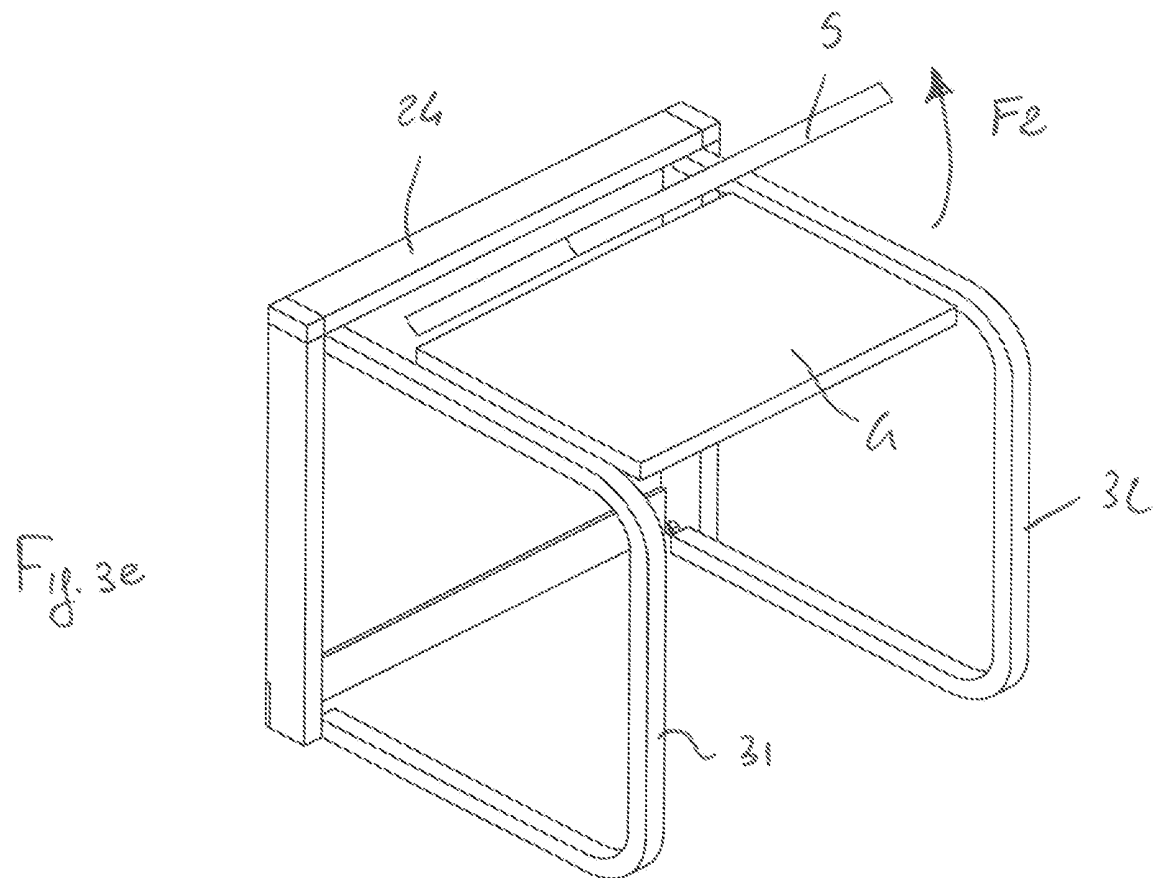
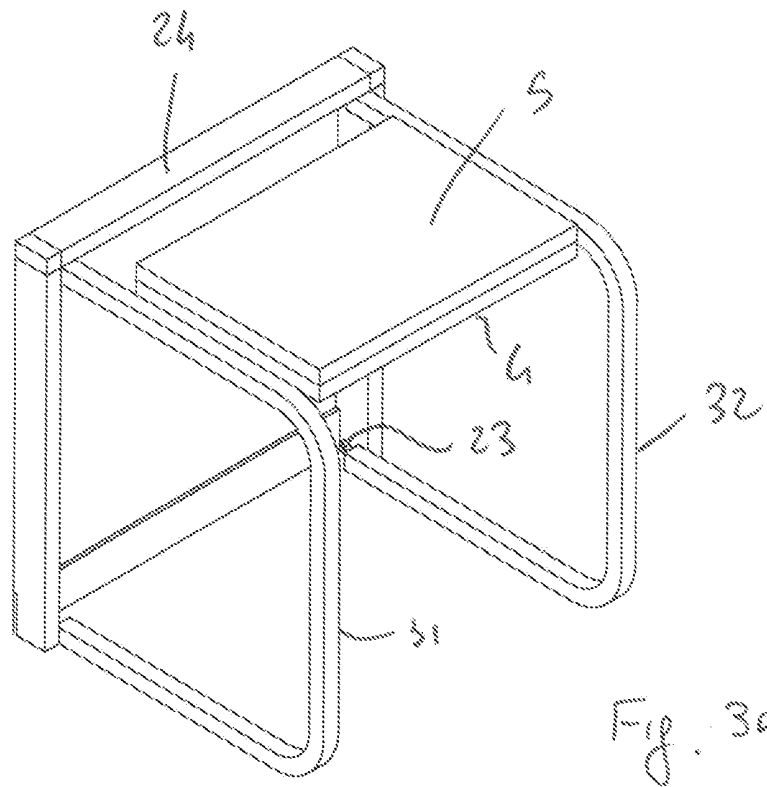
en outre au moins un manchon (51) associé à la section horizontale supérieure du cadre solidaire avec l'assise, et dans laquelle sur le côté opposé de l'assise, il existe au moins un crochet (52) qui se met en prise avec la section horizontale supérieure du cadre opposé, de préférence dans un logement approprié (33).

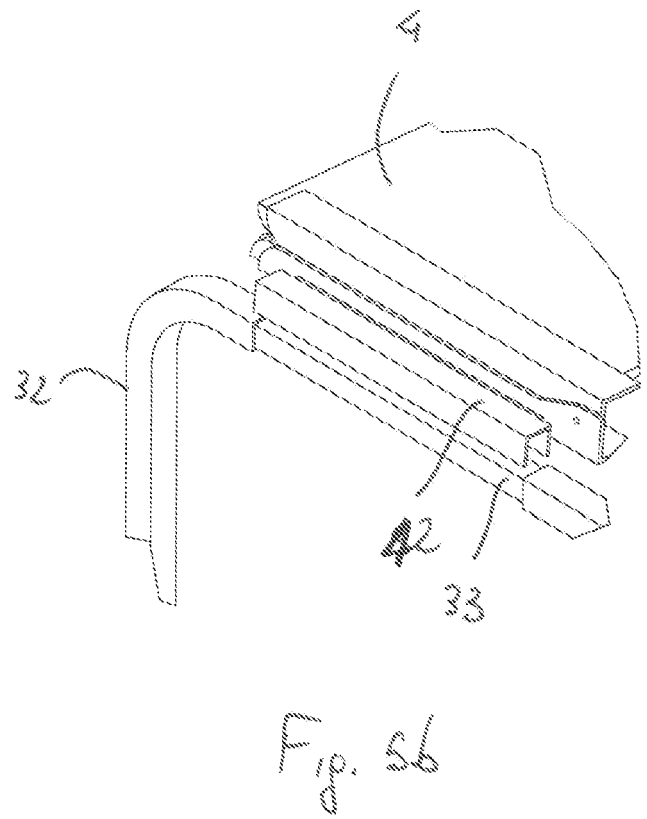
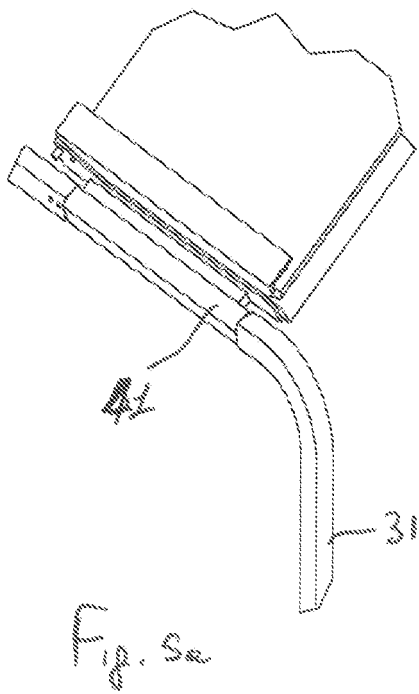
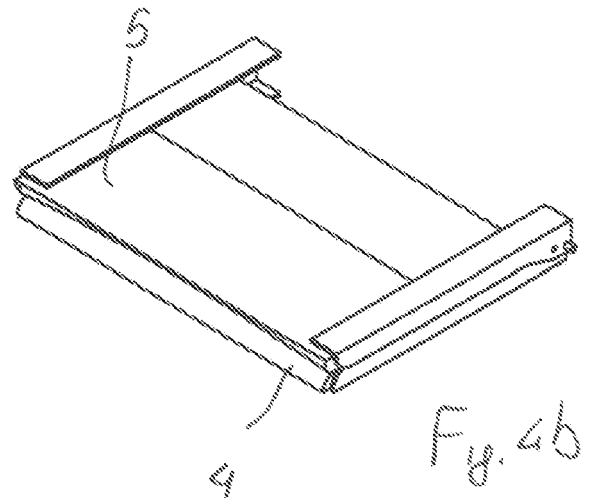
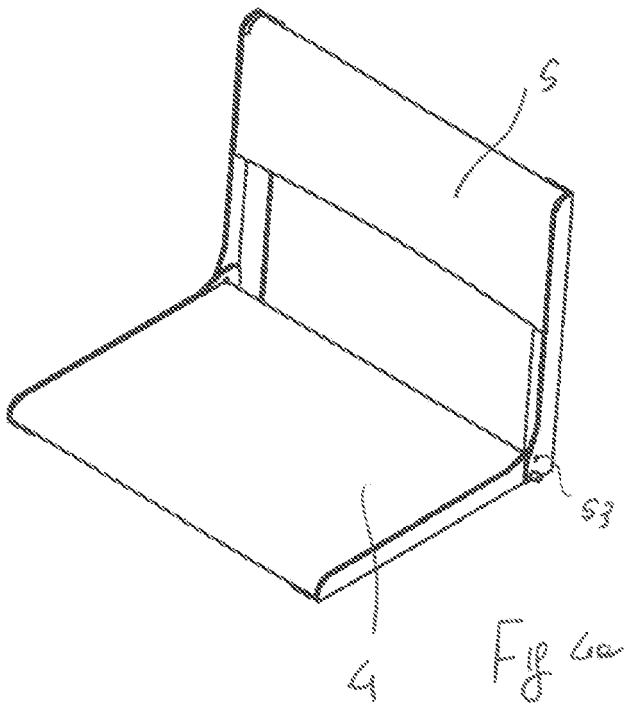
Revendications

1. Chaise pliante, comprenant :
 - une structure fixe (2), sensiblement en forme de « U » renversé, vers laquelle des cadres de support articulés (31, 32) supportant la structure fixe sur le sol sont contraints sur chacun des deux côtés verticaux (21, 22) du « U », chaque cadre pouvant tourner par rapport à son côté vertical correspondant, de telle sorte que les deux cadres, lorsque la chaise est pliée, se trouvent à l'intérieur de la structure fixe (2) et, lorsque la chaise est dépliée, sont sensiblement orthogonaux à ladite structure,
 - une assise (4) contrainte d'une manière articulée vers l'un des deux cadres de support (31, 32), ladite assise étant couplée à l'autre cadre (32, 31) lorsque la chaise est dépliée, et ladite assise étant maintenue à l'intérieur de l'espace libre obtenu au sein du cadre vers lequel elle est contrainte lorsque la chaise est pliée,
 - un dossier de chaise (5) contraint d'une manière articulée vers ladite assise (4), et positionné de telle manière que lorsque la chaise est pliée, il est plié contre l'assise elle-même au sein de l'espace central non occupé par les cadres, et lorsque la chaise est dépliée, il est dans une position sensiblement verticale, ou est incliné de quelques degrés par rapport à la verticale, au-dessus dudit côté horizontal de la structure fixe, et est maintenu dans cette position par des moyens de verrouillage.
2. Chaise pliante selon la revendication 1, dans laquelle ledit dossier tourne autour d'un axe parallèle au côté horizontal arrière (24) du « U ».
3. Chaise pliante selon la revendication 1, dans laquelle lesdits moyens de verrouillage comprennent deux barreaux verticaux (51, 52) entre lesquels ledit dossier est contraint, qui tournent par rapport à l'assise par le biais de tiges respectives (53) insérées au niveau des angles arrière de l'assise elle-même.
4. Chaise pliante selon la revendication 1, comprenant









REFERENCES CITED IN THE DESCRIPTION

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