

(19)



(11)

EP 3 960 033 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:

31.01.2024 Bulletin 2024/05

(51) International Patent Classification (IPC):

A47C 1/124 ^(2006.01) **A47C 4/03** ^(2006.01)
A47C 3/04 ^(2006.01) **A47C 5/10** ^(2006.01)

(21) Application number: **21187341.9**

(52) Cooperative Patent Classification (CPC):

A47C 1/124; A47C 3/04; A47C 4/03; A47C 5/10

(22) Date of filing: **23.07.2021**

(54) **CHAIR**

STUHL

CHAISE

(84) Designated Contracting States:

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

(30) Priority: **25.08.2020 IT 202000020395**

(43) Date of publication of application:

02.03.2022 Bulletin 2022/09

(73) Proprietor: **Gaber Srl**

31030 Altivole, Frazione Caselle TV (IT)

(72) Inventor: **GALLINA, Luigino**

31030 Altivole, Frazione Caselle TV (IT)

(74) Representative: **Modiano, Micaela Nadia et al**

Modiano & Partners
Via Meravigli, 16
20123 Milano (IT)

(56) References cited:

DE-U1-202020 002 848 US-A1- 2012 013 156
US-A1- 2017 164 745

EP 3 960 033 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to a chair.

[0002] The sector to which the invention relates is the sector of chairs that are often used in waiting rooms in public and private places, meeting rooms, study rooms etc.

[0003] Among these, chairs A are widespread, like the ones shown in Figure 1, with a body B made of plastic material, which constitutes a seating portion and a backrest, and a metallic frame that provides the supporting legs for the body. As shown in Figure 1, such a metallic frame comprises one or more tubular elements which are folded to provide two "U-shaped" parts, indicated with the letter C, which define the legs D, and a transverse portion E resting on the ground at the sides of the chair. Between the two U-shaped parts is a transverse element F at approximately half height or slightly lower below the seating portion, which is welded at the ends to the two front legs and is adapted to increase the stability of the chair by preventing the lateral oscillation of the legs. Examples of such known chairs are disclosed in US2012/013156A1, DE202020002848U1 and US2017/164745A1.

[0004] Typically, on each transverse portion anti-skid feet are attached at the corners of the U-shaped part. Optionally, the feet on one side of the chair can be shaped so as to define a coupling for the feet on the other side of a similar chair to be placed beside and coupled to the previous chair, so as to create, with a plurality of such chairs, an aligned and orderly row.

[0005] The presence of the transverse element obstructs the freedom of movement of the user, in particular the freedom to position his/her legs, and affects the final overall weight of the chair.

[0006] Furthermore, such chairs have a further drawback in that, in order to increase their overall stability, the body needs to be joined to the frame by fixing with screws, thus requiring relatively long assembly times.

[0007] The aim of the present invention is to provide a chair that is capable of improving the known art in one or more of the above mentioned aspects.

[0008] Within this aim, an object of the invention is to provide a chair that ensures at least the same level of stability as the known models of chairs while at the same time allowing a greater freedom of movement and positioning of the user's legs.

[0009] Another object of the invention is to provide a chair frame that makes it possible to reduce the overall weight of the chair to which it is joined.

[0010] A further object of the invention is to provide a chair that can be assembled in shorter times.

[0011] A still further object of the present invention sets out to overcome the drawbacks of the background art in a manner that is alternative to any existing solutions.

[0012] Another object of the invention is to provide a chair that is highly reliable, easy to implement and of low cost.

[0013] This aim and these and other objects which will become better apparent hereinafter are achieved by a chair, characterized in that it comprises a frame with at least two U-shaped parts, each one defining a pair of supporting legs, of which one is a front leg and the other is a rear leg, and a transverse portion for resting on the ground, the two front legs and the two rear legs being connected in an upper region by a respective transverse element and each said transverse portion of the respective U-shaped part having a section bent inward at the part resting on the ground of the respective front leg and/or of the rear leg.

[0014] According to the invention, there is provided a chair as claimed in claim 1. Preferred features of the invention are set out in the dependent claims.

[0015] Further characteristics and advantages of the invention will become better apparent from the description of a preferred, but not exclusive, embodiment of the chair according to the invention, which is illustrated by way of non-limiting example in the accompanying drawings wherein:

- Figure 1 is a perspective view of a chair according to the prior art;
- Figure 2 is a perspective view of a chair according to the present invention;
- Figure 3 is a perspective view of the frame of the chair according to the invention;
- Figure 4 is an exploded perspective view of the chair according to the invention;
- Figure 5 is a transverse cross-sectional view of a portion of chair according to the invention;
- Figure 6 is a cross-sectional view of a chair part.

[0016] With reference to the figures, the chair according to the invention, generally designated by the reference numeral 10, comprises a frame 20 with at least two U-shaped parts 11, each one defining a pair of supporting legs 11a, 11b, of which one is a front leg 11a and the other is a rear leg 11b, and a transverse portion 12 for resting on the ground. The two front legs 11a and the two rear legs 11b are connected in an upper region by a respective transverse element, 13a or 13b. Each transverse portion 12 of the respective U-shaped part 11 has a section 14 bent inward at the part resting on the ground of the respective front leg 11a and/or rear leg 11b.

[0017] In the case shown, the section 14 is in the front part of the structure, therefore at the part resting on the ground of the front leg 11a.

[0018] The frame 20 is constituted by one or more metallic tubular elements folded and/or welded together.

[0019] The two U-shaped parts 11 are inclined so as to define a distance between them that increases proceeding downward from above. This makes it possible to easily stack several chairs 10 and even just frames 20.

[0020] Each transverse portion 12 of the respective U-shaped part 11 is provided with an anti-skid covering 16 for resting on the ground.

[0021] At each transverse portion 12 of the respective U-shaped part 11 a first engagement element 17a protrudes outward in an intermediate region and is shaped complementarily to a second engagement element 17b which protrudes outward in an intermediate region from a transverse portion 12 of a similar chair 10 to be placed laterally adjacent to the preceding chair. Therefore each chair 10 is provided with an engagement element 17a on one side and with a complementarily-shaped element 17b on the other side.

[0022] The first engagement element 17a and the second engagement element 17b protrude from a respective anti-skid covering 16.

[0023] The first engagement element 17a has a dovetail shape structure, while the second engagement element 17b has an opening that is shaped complementarily to the previous dovetail shape. The two elements are engageable by inserting the former into the latter downward from above or, conversely, the latter into the former.

[0024] The chair 10 advantageously also comprises rapid coupling means 18 between the frame 20 and the body 15 that defines the seating portion 19 and the backrest 21 of the chair 10 itself. The means 18 are indicated in Figure 4, which is an exploded view of the chair seen from below.

[0025] These rapid coupling means 18 comprise coupling portions 22, C-shaped in cross-section, below the seating portion 19 proximate to its front and rear edges and with the opening directed downward, with respect to the position for use of the chair, and are adapted to couple with snap action, by elastic deformation, with respective transverse elements 13a and 13b of the frame 20.

[0026] In particular, such coupling portions 22 extend longitudinally and in parallel below the seating portion 19 along its edges.

[0027] The coupling between the body 15 and the frame 20 is also shown in the cross-section of Figure 5, where it is evident that the transverse elements 13a and 13b are inserted into C-shaped portions.

[0028] The chair 10 conveniently also comprises a pair of plates 23 (indicated in Figure 3 and in Figure 6) made of metallic material, which protrude from the rear transverse element 13b, to which they are welded, on each one of which is a covering element 24 with which they are adapted to be inserted into special seats of the backrest 21 with interference. The covering elements 24 are thickness compensating elements and with the plates 23 they constitute a system for stiffening the backrest 21.

[0029] Below the seating portion 19 there are also knurled elements 25, to be covered with caps adapted to act as spacers in stacking chairs. The receptacles 26, which are also under the seating portion 19, also need to be closed with respective plugs, and also act as spacers in stacking.

[0030] Use of the chair, according to the invention, is evident from the foregoing description and, in particular, it is evident that the sections 14 increase the stability of the structure by limiting their lateral oscillations, by virtue

of their intermediate inclination (on the bearing plane) between the transverse portions 12 and the transverse element 13a.

[0031] It should also be noted that the proposed solution makes it possible to obtain the desired stability while avoiding the welding of a transverse element at approximately half-height or slightly lower below the seating portion between the two front legs.

[0032] The stability obtained makes it possible to avoid the use of screws and of adhesive in order to affix the body to the frame, making a snap coupling between the two elements sufficient.

[0033] In practice it has been found that the invention fully achieves the intended aim and objects by providing a chair with the same level of stability as conventional models of structures, while at the same time allowing a greater freedom of movement and of positioning of the legs for the user, while reducing the overall weight of the chair and enabling, during assembly, a rapid coupling of the body with the frame.

[0034] The invention thus conceived is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0035] 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 (10), comprising a frame (20) with at least two U-shaped parts (11), each one defining a pair of supporting legs (11a, 11b), of which one is a front leg (11a) and the other is a rear leg (11b), and a transverse portion (12) for resting on the ground, the two front legs (11a) and the two rear legs (11b) being connected in an upper region by a respective transverse element (13a, 13b) and each said transverse portion (12) of the respective U-shaped part (11) having a section (14) bent inward at the U-shaped part (11) resting on the ground of the respective front leg (11a) and/or of the rear leg (11b), wherein the chair (10) comprises rapid coupling means (18) between said frame (20) and a body (15) that defines a seating portion (19) and a backrest (21) of said chair (10), said rapid coupling means (18) comprising coupling portions (22), C-shaped in cross-section, below said seating portion (19) proximate to its front and rear edges and with the opening directed downward, with respect to the position for use of the chair (10), wherein said coupling portions (22) are adapted to couple with snap action, by elastic deformation, with respective said transverse elements (13a, 13b).

2. The chair according to claim 1, **characterized in that** said two U-shaped parts (11) are inclined so as to define a distance between them that increases proceeding downward from above.
3. The chair according to one or more of the preceding claims, **characterized in that** each transverse portion (12) of the respective U-shaped part (11) is provided with an anti-skid covering (16) for resting on the ground.
4. The chair according to one or more of the preceding claims, **characterized in that** at each transverse portion (12) of the respective U-shaped part (11) a first engagement element (17a) protrudes outward in an intermediate region and is shaped complementarily to a second engagement element (17b) which protrudes outward in an intermediate region from a transverse portion (12) of a similar chair (10) to be placed laterally adjacent to the preceding chair.
5. The chair according to one or more of the preceding claims, **characterized in that** said first engagement element (17a) and said second engagement element (17b) each protrude from a respective said anti-skid
6. The chair according to one or more of the preceding claims, **characterized in that** it comprises a pair of plates (23) which protrude from said rear transverse element (13b), on each one of which is a covering element (24) with which they are adapted to be inserted into adapted seats of said backrest (21).

Patentansprüche

1. Ein Stuhl (10), der einen Rahmen (20) mit mindestens zwei U-förmigen Teilen (11) umfasst, von denen jedes ein Paar von Stuhlbeinen (11a, 11b), von denen eines ein vorderes Bein (11a) und das andere ein hinteres Bein (11b) ist, und einen transversalen Abschnitt (12) zum Stehen auf dem Boden bestimmt; wobei die zwei vorderen Beine (11a) und die zwei hinteren Beine (11b) in einem oberen Bereich durch ein dazugehöriges transversales Element (13a, 13b) verbunden sind und jeder transversale Abschnitt (12) des entsprechenden U-förmigen Teils (11) einen Abschnitt (14) hat, der an dem U-förmigen Teil (11) des jeweiligen vorderen Beins (11a) und/oder des hinteren Beins (11b), das auf dem Boden steht, nach innen gebogen ist; wobei der Stuhl (10) Schnellkopplungsmittel (18) zwischen dem Rahmen (20) und einem Körper (15) umfasst, welcher ein Sitzteil (19) und eine Rückenlehne (21) des Stuhls (10) bestimmt; wobei die Schnellkopplungsmittel (18) Kopplungsabschnitte (22) mit C-förmigem Querschnitt unterhalb des Sitzteils (19) in der Nähe

seiner vorderen und hinteren Kanten umfassen, wobei die Öffnung, mit Bezug auf die Nutzungsposition des Stuhls (10), nach unten gerichtet ist; wobei die Kopplungsabschnitte (22) ausgebildet sind, um sich mit Schnappwirkung durch elastische Verformung mit den jeweiligen transversalen Elementen (13a, 13b) zu koppeln.

2. Der Stuhl gemäß Anspruch 1, **dadurch gekennzeichnet, dass** die U-förmigen Teile (11) schräg sind, um so einen Abstand zwischen sich zu bestimmen, der von unten nach oben zunimmt.
3. Der Stuhl gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** jeder transversale Abschnitt (12) des jeweiligen U-förmigen Teils (11) zum Stehen auf dem Boden mit einer rutschfesten Abdeckung (16) ausgestattet ist.
4. Der Stuhl gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** an jedem transversalen Abschnitt (12) des jeweiligen U-förmigen Teils (11) ein erstes Eingriffselement (17a) in einem Zwischenbereich vorsteht und komplementär zu einem zweiten Eingriffselement (17b) geformt ist, das in einem Zwischenbereich von einem transversalen Abschnitt (12) eines ähnlichen Stuhls (10) vorsteht, der seitlich neben den erstgenannten Stuhl platziert werden soll.
5. Der Stuhl gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** das erste Eingriffselement (17a) und das zweite Eingriffselement (17b) jeweils von einer entsprechenden rutschfesten Abdeckung (16) vorstehen.
6. Der Stuhl gemäß einem oder mehreren der obigen Ansprüche, **dadurch gekennzeichnet, dass** er ein Paar von Platten (23) umfasst, die von dem hinteren transversalen Element (13b) vorstehen und auf denen sich jeweils ein Abdeckelement (24) befindet, mit dem sie ausgebildet sind, um in passende Sitze der Rückenlehne (21) eingeführt zu werden.

Revendications

1. Chaise (10), comprenant un châssis (20) comportant au moins deux parties en U (11), définissant chacune une paire de pieds d'appui (11a, 11b), dont l'un est un pied avant (11a) et l'autre est un pied arrière (11b), et une portion transversale (12) destinée à reposer sur le sol, les deux pieds avant (11a) et les deux pieds arrière (11b) étant reliés dans une région supérieure par un élément transversal (13a, 13b) respectif et chaque portion transversale (12) de la partie en U (11) respective ayant une section (14) courbée vers l'intérieur au niveau de la partie en U

- (11) reposant sur le sol du pied avant (11a) respectif et/ou du pied arrière (11b), la chaise (10) comprenant des moyens d'accouplement rapide (18) entre ledit châssis (20) et un corps (15) qui définit une portion d'assise (19) et un dossier (21) de ladite chaise (10), lesdits moyens d'accouplement rapide (18) comprenant des portions d'accouplement (22), à section en C, au-dessous de ladite portion d'assise (19) à proximité de ses bords avant et arrière et dont l'ouverture est dirigée vers le bas, relativement à la position d'utilisation de la chaise (10), dans laquelle lesdites portions d'accouplement (22) sont adaptées à s'accoupler avec encliquetage, par déformation élastique, avec lesdits éléments transversaux (13a, 13b) respectifs. 5
10
15
2. Chaise selon la revendication 1, **caractérisée en ce que** lesdites deux parties en U (11) sont inclinées de façon à définir une distance entre elles qui croît en allant du haut vers le bas. 20
3. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** chaque portion transversale (12) de la partie en U (11) respective est pourvue d'un revêtement antidérapant (16) destiné à reposer sur le sol. 25
4. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce qu'**au niveau de chaque portion transversale (12) de la partie en U (11) respective, un premier élément d'emboîtement (17a) fait saillie vers l'extérieur dans une région intermédiaire et est façonné de manière complémentaire d'un second élément d'emboîtement (17b) qui fait saillie vers l'extérieur dans une région intermédiaire depuis une portion transversale (12) d'une chaise (10) similaire devant être placée de manière latéralement adjacente à la chaise précédente. 30
35
5. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** ledit premier élément d'emboîtement (17a) et ledit second élément d'emboîtement (17b) font saillie chacun depuis un dit revêtement antidérapant (16) respectif. 40
45
6. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce qu'**elle comprend une paire de plaques (23) qui font saillie depuis ledit élément transversal arrière (13b), sur chacune desquelles se trouve un élément de recouvrement (24) avec lequel elles sont adaptées à être insérées dans des alvéoles adaptées dudit dossier (21). 50
55

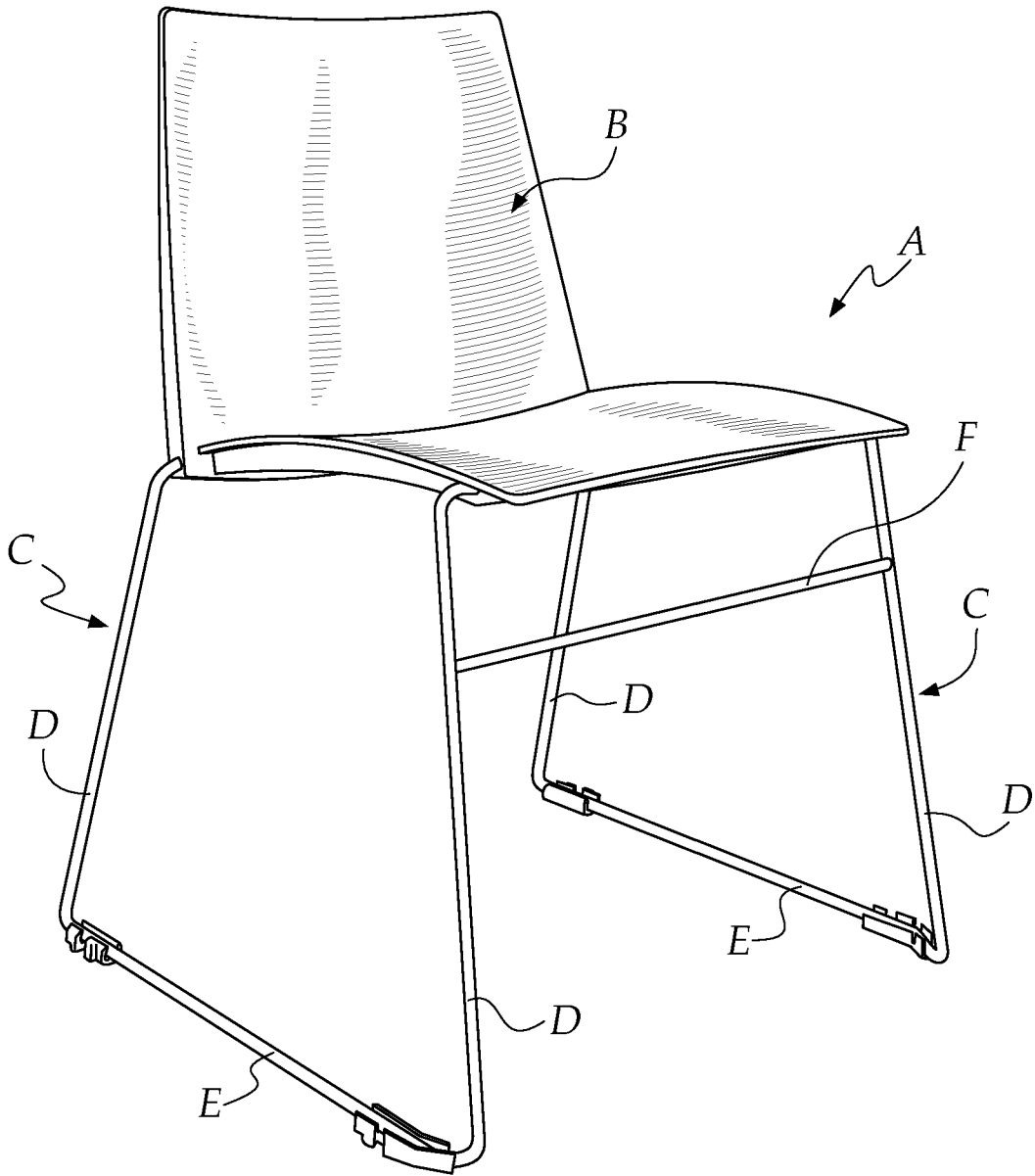
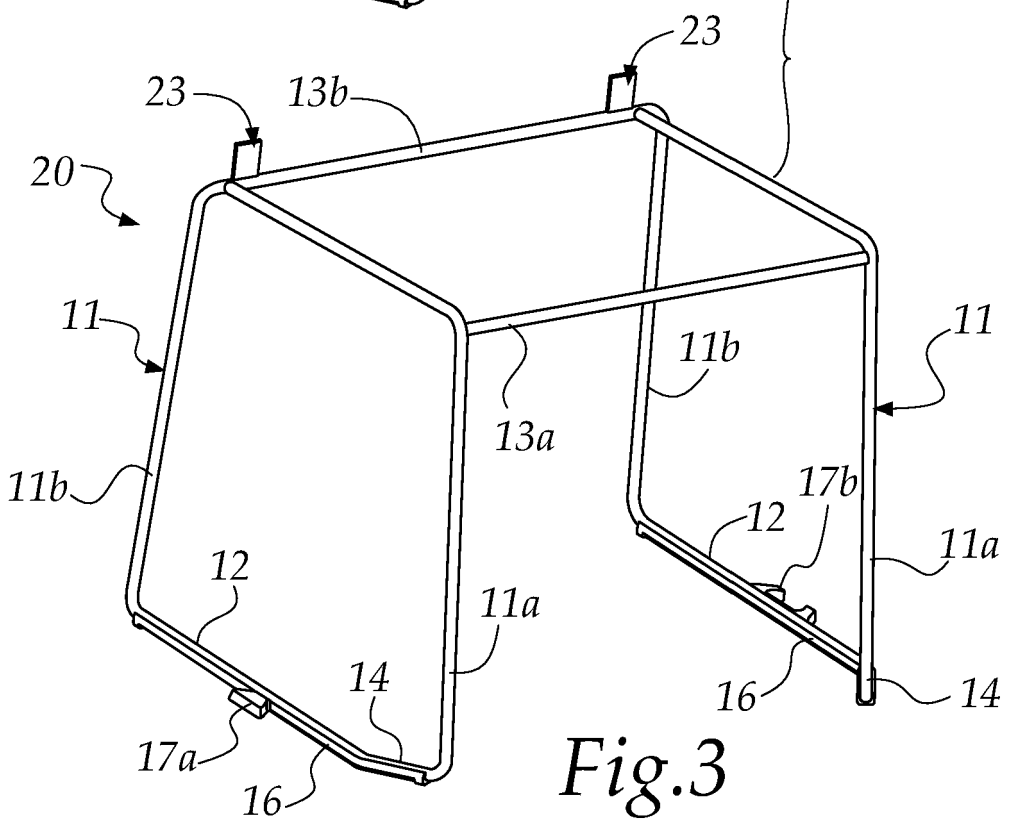
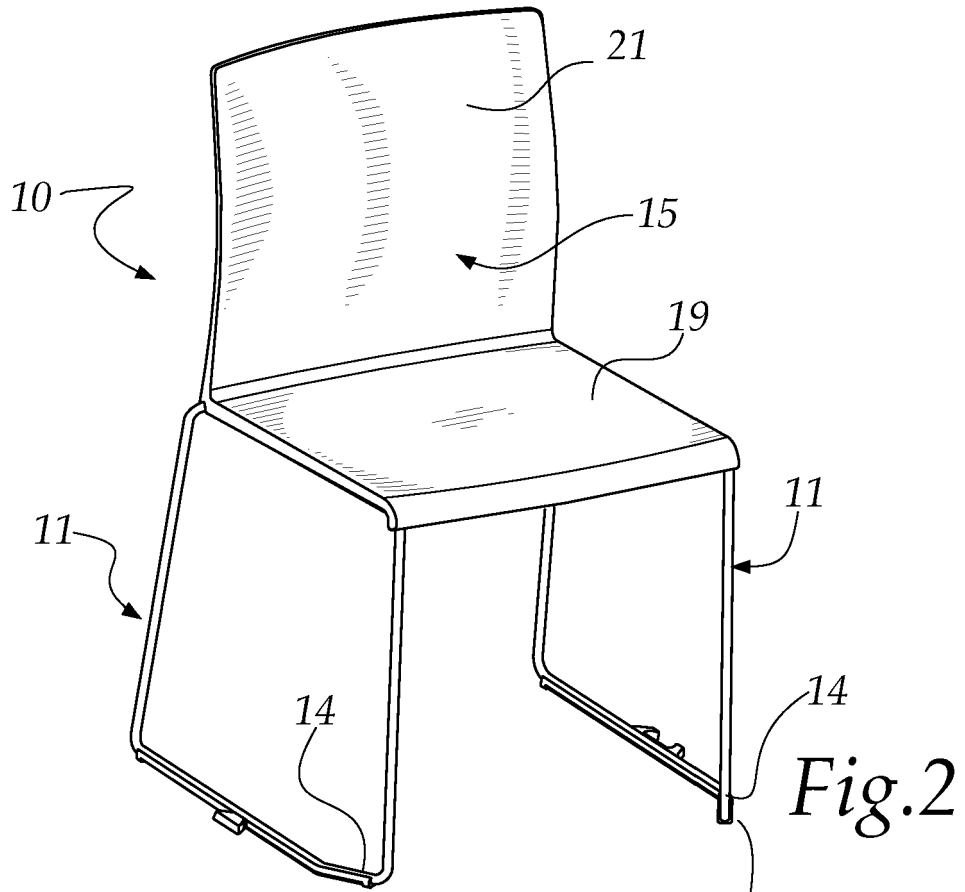


Fig.1



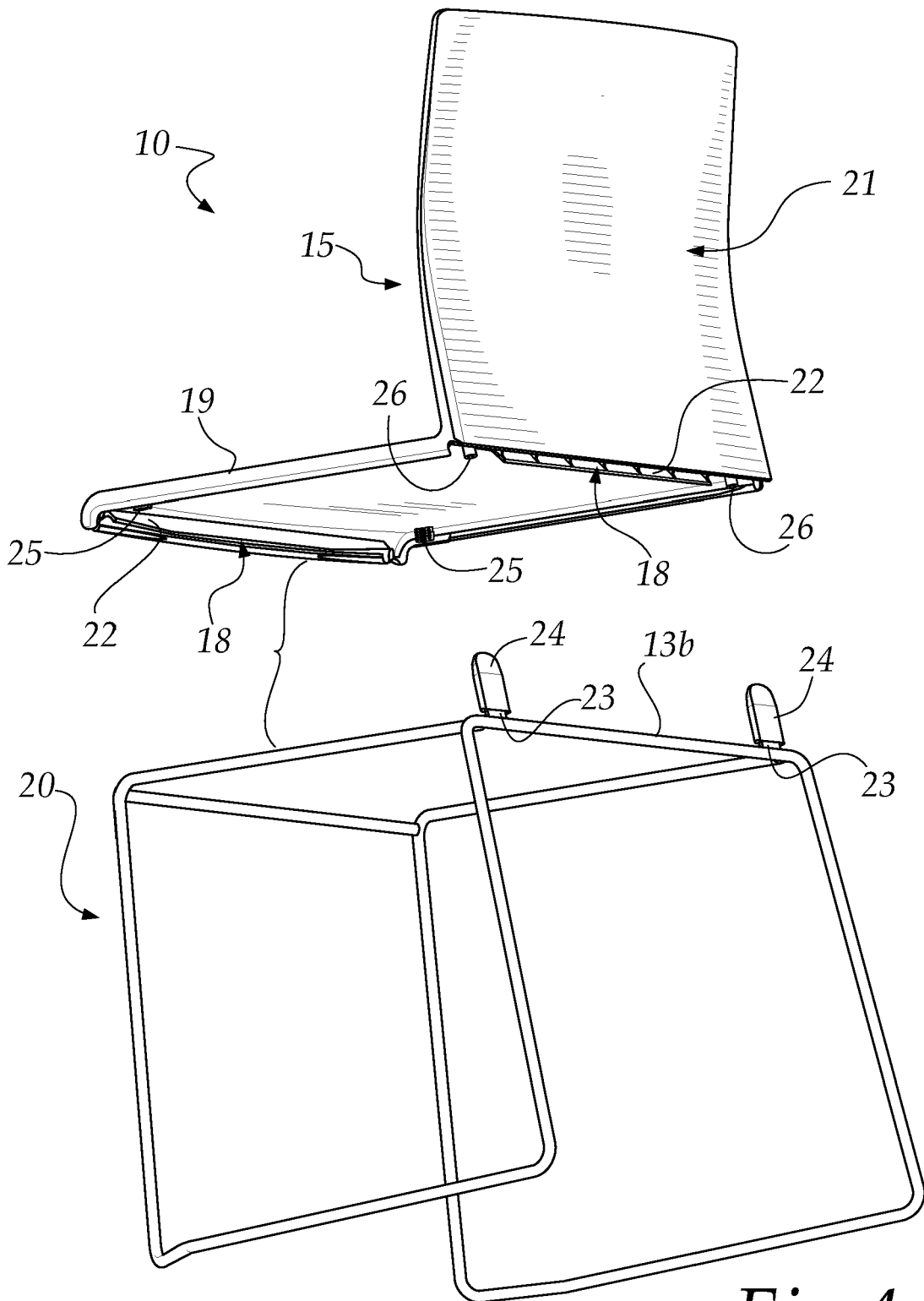


Fig.4

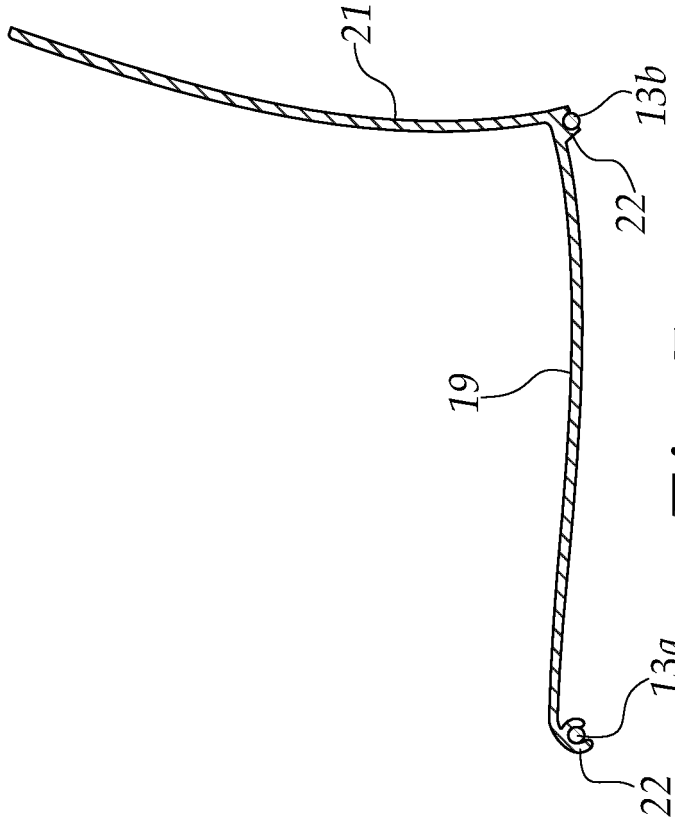


Fig. 5

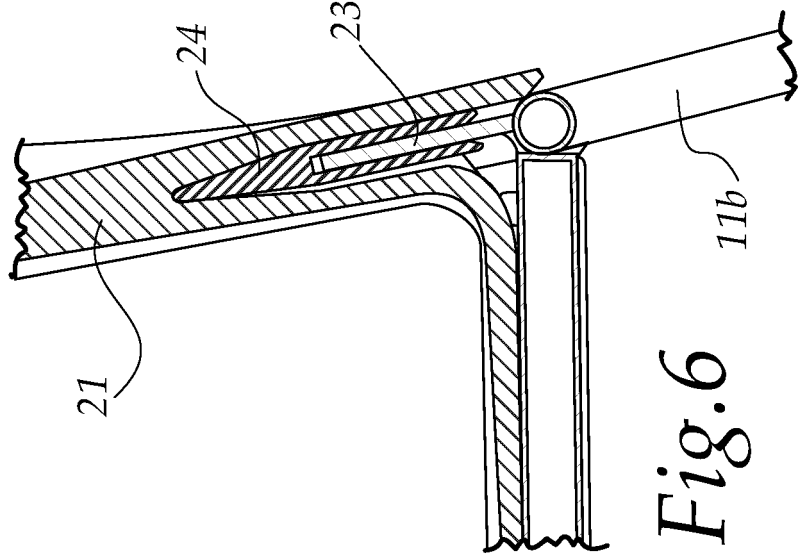


Fig. 6

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- US 2012013156 A1 [0003]
- DE 202020002848 U1 [0003]
- US 2017164745 A1 [0003]