(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 465 384 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
26.03.2014 Bulletin 2014/13

(21) Application number: **11192286.0**

(22) Date of filing: **07.12.2011**

(51) Int Cl.:
A47C 1/024 *(2006.01)* ***A47C 1/028*** *(2006.01)*
A47C 1/034 *(2006.01)*

(54) **An armchair convertible into a chaise longue**

In eine Chaiselongue konvertierbarer Sessel

Fauteuil convertible en chaise longue

(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: **14.12.2010 IT TO20100992**

(43) Date of publication of application:
20.06.2012 Bulletin 2012/25

(73) Proprietor: **Autostudi S.r.l.**
10136 Torino (IT)

(72) Inventor: **Angiono, Carlo**
10133 Torino (IT)

(74) Representative: **Robba, Pierpaolo**
Interpatent S.R.L.
Via Caboto 35
10129 Torino (IT)

(56) References cited:
WO-A1-2010/073470
DE-U1-202006 010 006
GB-A- 728 690
US-A- 2 681 099
US-A1- 2008 203 802

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).

EP 2 465 384 B1

Printed by Jouve, 75001 PARIS (FR)

Description

Technical Field

[0001] The present invention refers to an armchair convertible into a chaise longue.

[0002] More precisely, the present invention refers to a furniture armchair convertible into a chaise longue.

[0003] Even more precisely, the present invention refers to a furniture armchair, particularly a design one, convertible into a chaise longue.

Prior Art

[0004] Furniture armchairs generally comprise a seat; a back, preferably high in case of a design armchair; possible arms; a base; and, possibly, a system for tilting the back.

[0005] For instance, such a chair is known from GB 728690.

[0006] The furniture armchairs are sometimes devised for allowing an extended position and, in such case, they are equipped with a leg-rest.

[0007] The furniture armchairs usually have to meet minimum functional and ergonomic requirements; moreover, they can have nice aesthetic features and, in valuable versions, they can also be equipped with additional means for a better comfort such as, for instance, the movement of the back for maintaining the correct posture and helping muscle decontraction.

[0008] Armchairs, called "chaise longue", are known, which are specifically intended for the relax and which are usually arranged in a fixed position.

[0009] A chaise longue looks like an "inclined" armchair: the back is bent backwards and the leg-rest faces upwards whereby, when on the chaise longue, one rests almost lying down, in a position following the lines of the relaxed, but not sleeping, human body.

[0010] The main quality of the chaise longue is, therefore, its comfort, even if the user is anyhow able to carry out some activities, such as for instance reading.

[0011] From the structural point of view, the chaise longue does not usually have arms; some models have a single side arm, joined to the back.

[0012] The chaise longue can be equipped with accessories such as a head-rest cushion or a foot-rest; it is also possible to provide the adjustment either of the whole tilting of the armchair or of the sole back, or a rocking or wheel base; the chaise longue can also have a folding arrangement.

[0013] The chaise longue, however, due to its typical arrangement, lacks practicality of use when one should pass from the lying position to an upright position, more suitable for operability (formal position).

[0014] An armchair convertible into a chaise longue, devised by the same inventor of the present invention, is known. The previous invention, however, had stability problems, so the inventor designed a new armchair convertible into a chaise longue overcoming the drawbacks of the previous one and assuring the maximum stability.

Description of the Invention

[0015] Therefore, the inventor has now found a solution allowing to join the practicality of a furniture armchair and the comfort of a chaise longue, thanks to the provision of a leg-rest placed under the seat and sliding outwards. Said leg-rest is, in turn, equipped with an extensible foot-rest that can also act as a point of support on the ground, thus giving front stability to the chaise longue.

[0016] Moreover, the back of the chaise longue is equipped with two arm-rests that can take three positions: in the formal position they properly act as arm-rests while in the chaise longue position they can be tilted by rotating backwards and they can act as a point of support on the ground, thus giving rear stability to the chaise longue; said arm-rests can further take a rest position, when they are lined up with the back.

[0017] Advantageously, the armchair according to the invention allows to take a formal upright position and a position suitable for relax, depending on the user's need. Furthermore, advantageously, maximum stability is assured to the user in the relax position.

[0018] Furthermore, advantageously, the armchair according to the invention is of simple manufacturing, so that it can be manufactured in series.

Brief Description of the Figures

[0019] The armchair convertible into a chaise longue according to the present invention will be now described more in detail, with reference to the following figures given by way of non-limiting example, in which:

- FIG. 1 is a perspective view of an armchair / chaise longue according to the invention in the formal armchair position;
- FIG. 2 is a perspective view of an armchair / chaise longue according to the invention in the chaise longue position;
- FIG. 3 is a low perspective view of the armchair / chaise longue shown in FIG. 2;
- FIGS. 4A, 4B and 4C are side views of the armchair / chaise longue shown in FIGS. 1 and 2 representing the conversion from an armchair into a chaise longue;
- FIGS. 5A and 5B show two details of the conversion mechanism carrying out the conversion from an armchair into a chaise longue;
- FIG. 6 shows a detail of the front portion of the armchair / chaise longue upon conversion into the chaise longue position shown in FIGS. 4B and 4C;
- FIGS. 7A, 7B and 7C shows a detail of the rear portion of the armchair / chaise longue upon conversion into the chaise longue position shown in FIGS. 4A, 4B and 4C;

- FIGS. 8A and 8B show two details of the sprocket that allows the arm-rest to take the three different positions allowing the conversion from an armchair into a chaise longue.

Detailed Description of the Invention

[0020] With reference to FIG. 1, it can be seen that the armchair / chaise longue 1, according to the preferred embodiment herein shown, comprises:

- a seat 10,
- a back 20, and
- a base 30.

[0021] Furthermore, the armchair / chaise longue according to the invention comprises a leg-rest 40 and two arm-rests 21.

[0022] With reference to FIG. 2, it can be seen that the back 20 is equipped with said two tiltable arm-rests 21, and with an adjusting control 22 for tilting the back 20.

[0023] Furthermore, always referring to FIG. 2, it is to be noticed that said leg-rest 40 is equipped with a foot-rest 41 equipped, in turn, with an arch base 42 for resting on the ground.

[0024] In FIG. 3 it can be seen that the armchair / chaise longue 1 is equipped with sliding guides 50, placed under the seat 10, on which the leg-rest 40 can slide between a first hidden position (shown in FIG. 1), in which said leg-rest 40 is placed under said seat 10, and a second extracted position (shown in FIG. 2), in which said leg-rest 40 is placed in front of said seat 10, and vice versa, so to convert the armchair into a chaise longue, and vice versa.

[0025] In FIG. 4A the armchair / chaise longue 1 in the formal position is visible, ready to begin the conversion step from an armchair into a chaise longue; in this formal position the back 20 is inclined of 98° with respect to the seat 10.

[0026] In FIG. 4B the armchair / chaise longue 1 is represented in an intermediate step of the conversion from an armchair into a chaise longue: the back 20 has increased its inclination with respect to the seat 10, the arm-rests 21 are lined up with the back 20 and the leg-rest 40 has come out linearly from under the seat 10.

[0027] FIG. 4C shows the armchair / chaise longue 1 converted into the chaise longue position: the back 20 has reached the maximum inclination with respect to the seat 10, preferably of 132°, the arm-rests 21 have been rotated and rest on the ground and the leg-rest 40, from which the foot-rest 41 has been extracted and the arch base 42 tilted, rests on the ground thanks to said arch base 42 connected to said foot-rest 41.

[0028] Reverting to FIG. 4B it can be seen that each of said sliding guides 50 is equipped with a sliding block/slider 52, sliding inside the corresponding sliding guide 50.

[0029] Said sliding guides 50 are linear guides, having a low friction coefficient, preferably made of stainless steel, like the corresponding sliding blocks/sliders 52; preferably said sliding blocks/sliders 52 are sliding blocks/sliders commercially available from ROLLON, in particular belonging to the CEX/CES series.

[0030] Said sliding guides 50 are arranged so as to be visible, like the whole mechanics of the sliding mechanism, since the armchair / chaise longue 1 is inspired to a minimalist concept, and it is just in the very clean and simplified design that the multifunctionality of the armchair / chaise longue 1 resides.

[0031] The front ends of said guides 50 are equipped with two buttings 59, which are visible in FIGS. 4A, 4B and 4C, made of steel for structural/aesthetic reasons.

[0032] The sliding guides 50 suitable for making the armchair / chaise longue 1 are sliding guides commercially available from ROLLON, in particular the guides of the TEX/TES series. The armchair / chaise longue 1 according to the invention incorporates the mechanism allowing its conversion from an armchair into a chaise longue, and vice versa; for carrying out said conversion, the armchair / chaise longue 1 modifies the form status in three portions thereof.

[0033] As shown in FIG. 4B, the leg-rest 40 can exit from under the seat thanks to the sliding of the sliding block/slider 52 inside the guide 50; furthermore, the foot-rest 41 can be extracted from the leg-rest 40 and rest on the ground, as shown in FIG. 4C, through the tiltable arch base 42.

[0034] The back 20, as shown in FIGS. 4A, 4B and 4C, can take several positions between the upright / formal one and the extended / chaise longue one thanks to the inclination adjusting device 23, which preferably of a spring / gas piston allowing the shift, with a fluid movement, of said back 20 between a position more or less inclined and a totally upright / formal position, and vice versa; preferably said spring / gas piston is a spring / gas piston commercially available from STABILUS and named Bloc-O-Lift. In FIGS. 4A, 4B and 4C it can be seen that the arm-rests 21 can take three positions thanks to the device 90.

[0035] In FIGS. 4A, 4B and 4C, in particular, the conversion of the armchair / chaise longue 1 from an armchair into a chaise longue is shown, which will be described in detail hereinafter.

[0036] To convert the armchair into a chaise longue according to the user's need, said leg-rest 40 is caused to slide, by the user's hand, from the position hidden under said seat 10 towards outside and in front of said seat 10 (FIG. 4B); when the whole leg-rest 40 is extracted, it leans downwards by gravity.

[0037] The rotation of the leg-rest 40 is limited by the stop lever 53 that comes to rest against the buttings 59, so as to allow the foot-rest 41 to open the arch base 42 to reach flush with floor (FIG. 4C): in such way, a point of support in front of the chaise longue is obtained for assuring the optimum stability thereof.

[0038] On the contrary, when the user wants reconvert

the armchair / chaise longue 1 from a chaise longue into an armchair, it will be sufficient to lift said leg-rest 40 with the hand so as to release the stop lever 53 and, subsequently, make it slide backwards on said sliding guides 50 until bringing it again under the seat 10, finally tilting the arch base 42 under the seat: the armchair / chaise longue 1 will return in the formal armchair position shown in FIG. 4A.

[0039] Referring to FIGS. 5A and 5B, it will be now shown in detail the conversion mechanism allowing the conversion from an armchair into a chaise longue in the leg-rest area; said conversion mechanism comprises a stop lever 53 and a bracket 54.

[0040] Said stop lever 53 is connected to said bracket 54 through a pin 58 and the bracket 54 is fastened by means of four screws 55, in its rear part, to the sliding block/slider 52 sliding, in turn, in the guide 50; in particular, said stop lever 53 can rotate, around its centre 58, with respect to said bracket 54.

[0041] Furthermore, said stop lever 53 is connected to the leg-rest 40 by means of a screw 57 and the pin 58 (that also acts as a fastening element), while said bracket 54 is connected to the leg-rest 40 always through the pin 58.

[0042] In FIG. 6 the device of front point of support on the ground of the armchair / chaise longue 1 is shown.

[0043] Once the foot-rest 41 has been extracted from the leg-rest 40, the arch base 42 can be tilted and made ready for resting on the ground; said arch base 42 is hinged through the pin 43, which allows the rotation thereof. Furthermore, a return spring 44 is interposed in the arch base 42 for assuring the position at rest and the position resting on the ground.

[0044] In FIGS. 7A, 7B and 7C the triple function of the arm-rest 21 is shown: the first function is in the formal position, shown in FIG. 7A corresponding to FIG. 4A; the second function is in the position at rest, shown in FIG. 7B corresponding to FIG. 4B; while the third function is in the chaise longue position, shown in FIG. 7C corresponding to FIG. 4C, in which said arm-rests 21 are completely rotated towards the ground to give an anti-overturning stability point in the rear part of the armchair / chaise longue 1.

[0045] In FIGS. 8A and 8B the device is described in detail that adjusts the three positions of the arm-rests 21 thanks to the sprocket 25 through its three positioning notches, denoted by the letters A, B, C in FIG. 8A. In FIG. 8B it can be seen how each arm-rest 21 can axially move along the axis of the pin 26, thus releasing itself from the positioning notches; this occurs by making the arm-rests 21 rotate around the pin 26, generating with the hand a strength suitable for overcoming the return of the spring 27, releasing it from the positioning notches and allowing it to pass from one to another of the three positions that it can take.

[0046] The structure of the armchair / chaise longue 1 according to the present invention is preferably made of steel, although any other metallic material can be used.

[0047] The covering of the armchair / chaise longue 1 according to the present invention is preferably made of fabric or saddled skin with stuffing, although any other technical or structural fabric can be used.

[0048] From the description depicted in detail hereinabove, the advantages resulting from the armchair convertible into a chaise longue according to the present invention are evident; in particular:

- the practicability and the comfort combined in a single product;
- the adaptability of the product to the user's needs;
- the excellent ergonomic performances in both ways of use, as an armchair or as a chaise longue;
- the elegance given by the linearity of the forms and by the minimalist design;
- the constructive simplicity and the low cost of the product;
- the easy and reliable functioning.

[0049] The armchair / chaise longue 1 according to the present invention has been provided for being mainly used at home but, however, it can be used also in different environments such as recreational and hotel facilities, fitness centres, executive offices or on boats.

Claims

1. An armchair (1) comprising:

- a seat (10);
- a back (20);
- a base (30);
- a leg-rest (40),

wherein said seat (10) comprises a conversion mechanism allowing the conversion of the armchair (1) between a first upright position and a second extended position, and vice versa, so as to convert the armchair into a chaise longue, and vice versa; and wherein said back (20) comprises two armrests (21) and an adjusting control (22) for tilting the back (20), **characterised in that** said arm-rests (21) being connected to the armchair (1) through a sprocket (25) allowing the rotation thereof thus making said arm-rests (21) a rear stability point of the armchair (1) when in the chaise longue configuration; and wherein said leg-rest (40) comprises a foot-rest (41), in turn comprising an arch base (42), which foot-rest by extending outwards and tilting its arch base (42) becomes a front stability point of the armchair (1) when in the chaise longue configuration.

2. An armchair (1) according to claim 1, wherein said conversion mechanism comprises two sliding guides (50), each equipped with a corresponding sliding

block (52) sliding inside it, and a device comprising, in turn, a stop lever (53), a bracket (54) and a butting (59), said conversion mechanism allowing said leg-rest (40) to slide onto said guides (50) thus permitting the movement thereof between a first hidden position, placed under said seat (10), and a second extracted position, placed in front of said seat (10), and vice versa, so to convert the armchair into a chaise longue, and vice versa.

3. An armchair (1) according to claim 2, wherein said bracket (54) is fastened on said sliding block (52) and said stop lever (53) is rotatably connected, around its rotation centre, to said bracket(54).

4. An armchair (1) according to claim 3, wherein said stop lever (53) can move linearly along the axis of said guides (50), from which it can also extend outwards.

5. An armchair (1) according to claim 4, wherein said stop lever (53) is connected to the leg-rest (40) by means of a rotation pin (58) and a screw (57).

6. An armchair (1) according to claim 5, wherein said bracket (54) is connected to the leg-rest (40) by means of said rotation pin (58).

7. An armchair (1) according to claim 6, wherein said butting (59) cooperates with said stop lever (53) in order to block the leg-rest (40).

8. An armchair (1) according to claim 7, wherein said back (20) is equipped with a device (23) for tilting the back (20) .

9. An armchair (1) according to claim 8, wherein said device (23) for tilting the back (20) consists of a mechanical bracket / gas piston.

Patentansprüche

1. Sessel (1) umfassend:

- einen Sitz (10);
- eine Rückenlehne (20);
- eine Basis (30);
- eine Beinauflage (40),

wobei der Sitz (10) einen Umstellmechanismus umfasst, der die Umstellung des Sessels (1) zwischen einer ersten aufrechten Stellung und einer zweiten gestreckten Stellung und umgekehrt ermöglicht, um den Sessel in eine Chaiselongue und umgekehrt zu konvertieren, und wobei die Rückenlehne (20) zwei Armlehnen (21) und eine Stellsteuerung (22) zum Kippen der Rückenlehne (20) umfasst, **dadurch gekennzeichnet, dass** die Armlehnen (21) durch ein Sperrad (25), das die Verschwenkung der Armlehnen ermöglicht und dadurch die Armlehnen (21) zu einem hinteren Stabilitätspunkt des Sessels (1) bei der Chaiselongue-Konfiguration macht, mit dem Sessel (1) verbunden sind, und wobei die Beinauflage (40) eine Fußstütze (41) umfasst, die ihrerseits ein bogenförmiges Basisteil (42) umfasst, welche Fußstütze zu einem vorderen Stabilitätspunkt des Sessels (1) bei der Chaiselongue-Konfiguration wird, indem sie ausgestreckt wird und ihr bogenförmiges Basisteil (42) gekippt wird.

2. Sessel (1) nach Anspruch 1, wobei der Umstellmechanismus zwei Schiebeführungen (50) umfasst, von denen jede mit einem entsprechenden in ihr gleitenden Schiebeblock (52) versehen ist, sowie eine Vorrichtung, die ihrerseits einen Arretierhebel (53), eine Konsole (54) und einen Anschlag (59) umfasst, wobei der Umstellmechanismus die Verschiebung der Beinauflage (40) auf den Führungen (50) ermöglicht sowie deren Bewegung zwischen einer ersten unter dem Sitz (10) befindlichen versteckten Stellung und einer zweiten vor dem Sitz (10) befindlichen ausgestreckten Stellung und umgekehrt, sodass der Sessel in eine Chaiselongue und umgekehrt konvertiert wird.

3. Sessel (1) nach Anspruch 2, wobei die Konsole (54) an dem Schiebeblock (52) befestigt ist und der Arretierhebel (53) drehbar um sein Drehzentrum mit der Konsole (54) verbunden ist.

4. Sessel (1) nach Anspruch 3, wobei sich der Arretierhebel (53) linear bewegen kann entlang der Achse der Führungen (50), ausgehend von denen er sich nach außen auch erstrecken kann.

5. Sessel (1) nach Anspruch 4, wobei der Arretierhebel (53) durch einen Drehbolzen (58) und eine Schraube (57) mit der Beinauflage (40) verbunden ist.

6. Sessel (1) nach Anspruch 5, wobei die Konsole (54) durch den Drehbolzen (58) mit dem Beinauflage (40) verbunden ist.

7. Sessel (1) nach Anspruch 6, wobei der Anschlag (59) mit dem Arretierhebel (53) zusammewirkt, um die Beinauflage (40) zu blockieren.

8. Sessel (1) nach Anspruch 7, wobei die Rückenlehne (20) mit einer Vorrichtung (23) zum Kippen der Rückenlehne (20) ausgerüstet ist.

9. Sessel (1) nach Anspruch 8, wobei es sich bei der Vorrichtung (23) zum Kippen der Rückenlehne (20) um einen mechanischen Bügel / Gaskolben handelt.

Revendications

1. Fauteuil (1) comprenant:

- un siège (10);
- un dos (20);
- une base (30);
- un repose-jambes (40),

dans lequel ledit siège (10) comprend un mécanisme de conversion permettant la conversion du fauteuil (1) entre une première position relevée et une seconde position étendue, et vice versa, de manière à convertir le fauteuil en une chaise longue, et vice-versa, et dans lequel ledit dos (20) comprend deux accoudoirs (21) et une commande de réglage (22) pour incliner le dos (20), **caractérisé en ce que** lesdits accoudoirs (21) sont reliés au fauteuil (1) par l'intermédiaire d'un rochet (25) permettant la rotation desdits accoudoirs, de telle sorte que lesdits accoudoirs (21) deviennent un point de stabilité postérieur du fauteuil (1) dans la configuration en chaise longue, et dans lequel ledit repose-jambes (40) comprend un repose-pied (41), qui à son tour comprend une base arquée (42), ledit repose-pied, en s'étendant vers l'extérieur et en inclinant sa base arquée (42), devenant un point de stabilité antérieur du fauteuil (1) dans la configuration en chaise longue.

2. Fauteuil (1) selon la revendication 1, dans lequel ledit mécanisme de conversion comprend deux guides de coulissement (50), chacun équipé d'un correspondant bloc de coulissement (52) coulissant à son intérieur, et un dispositif comprenant, à son tour, un levier d'arrêt (53), un raccord (54) et une butée (59), ledit mécanisme de conversion permettant audit repose-jambes (40) de coulisser sur lesdits guides (50), permettant ainsi son mouvement entre une première position cachée, où il est rétracté sous ledit siège (10), et une deuxième position extraite, où il est placé devant ledit siège (10), et vice versa, de manière à convertir le fauteuil dans une chaise longue, et vice-versa.

3. Fauteuil (1) selon la revendication 2, dans lequel ledit raccord (54) est fixé sur ledit bloc de coulissement (52) et ledit levier d'arrêt (53) est relié de manière rotative, autour de son centre de rotation, audit raccord (54).

4. Fauteuil (1) selon la revendication 3, dans lequel ledit levier d'arrêt (53) peut se déplacer linéairement le long de l'axe desdits guides (50), à partir desquels il peut aussi s'étendre vers l'extérieur.

5. Fauteuil (1) selon la revendication 4, dans lequel ledit levier d'arrêt (53) est relié au repose-jambes (40) par un pivot de rotation (58) et une vis (57).

6. Fauteuil (1) selon la revendication 5, dans lequel ledit raccord (54) est relié au repose-jambes (40) par ledit pivot de rotation (58).

7. Fauteuil (1) selon la revendication 6, dans lequel ladite butée (59) coopère avec ledit levier d'arrêt (53) afin de bloquer le repose-jambes (40).

8. Fauteuil (1) selon la revendication 7, dans lequel ledit dos (20) est équipé d'un dispositif (23) pour incliner le dos (20).

9. Fauteuil (1) selon la revendication 8, dans lequel ledit dispositif (23) pour incliner le dos (20) est constitué d'une fixation mécanique / piston à gaz.

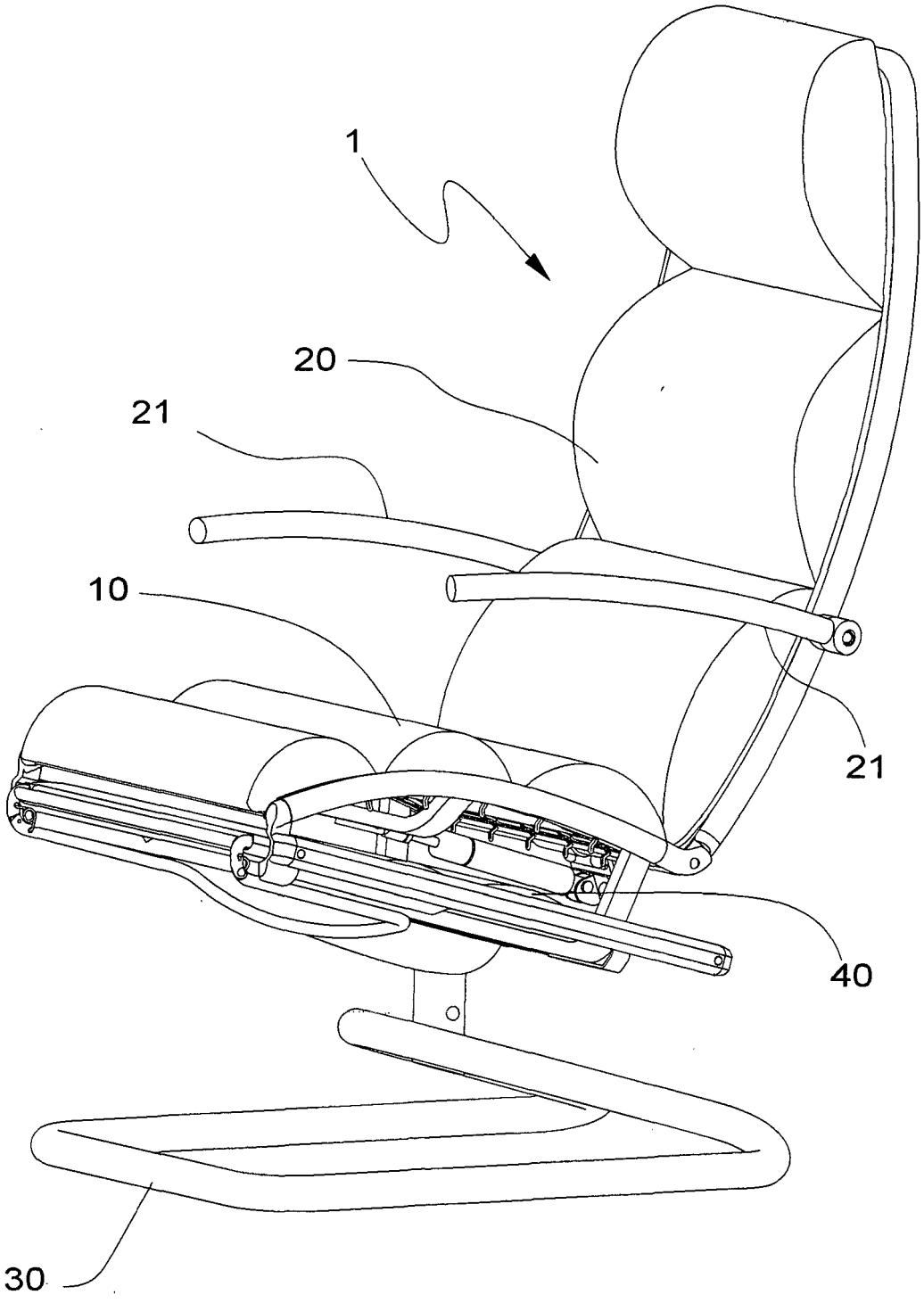


Fig. 1

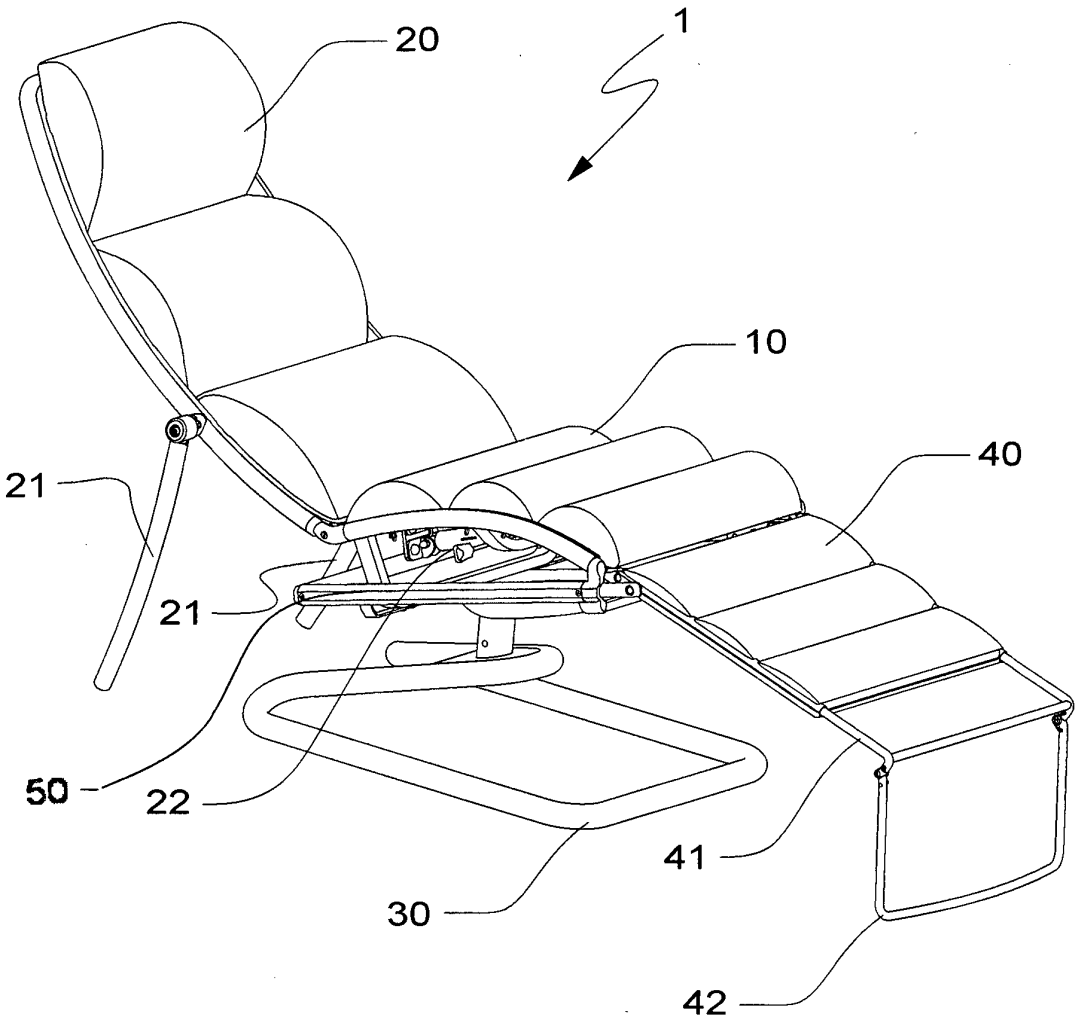


Fig. 2

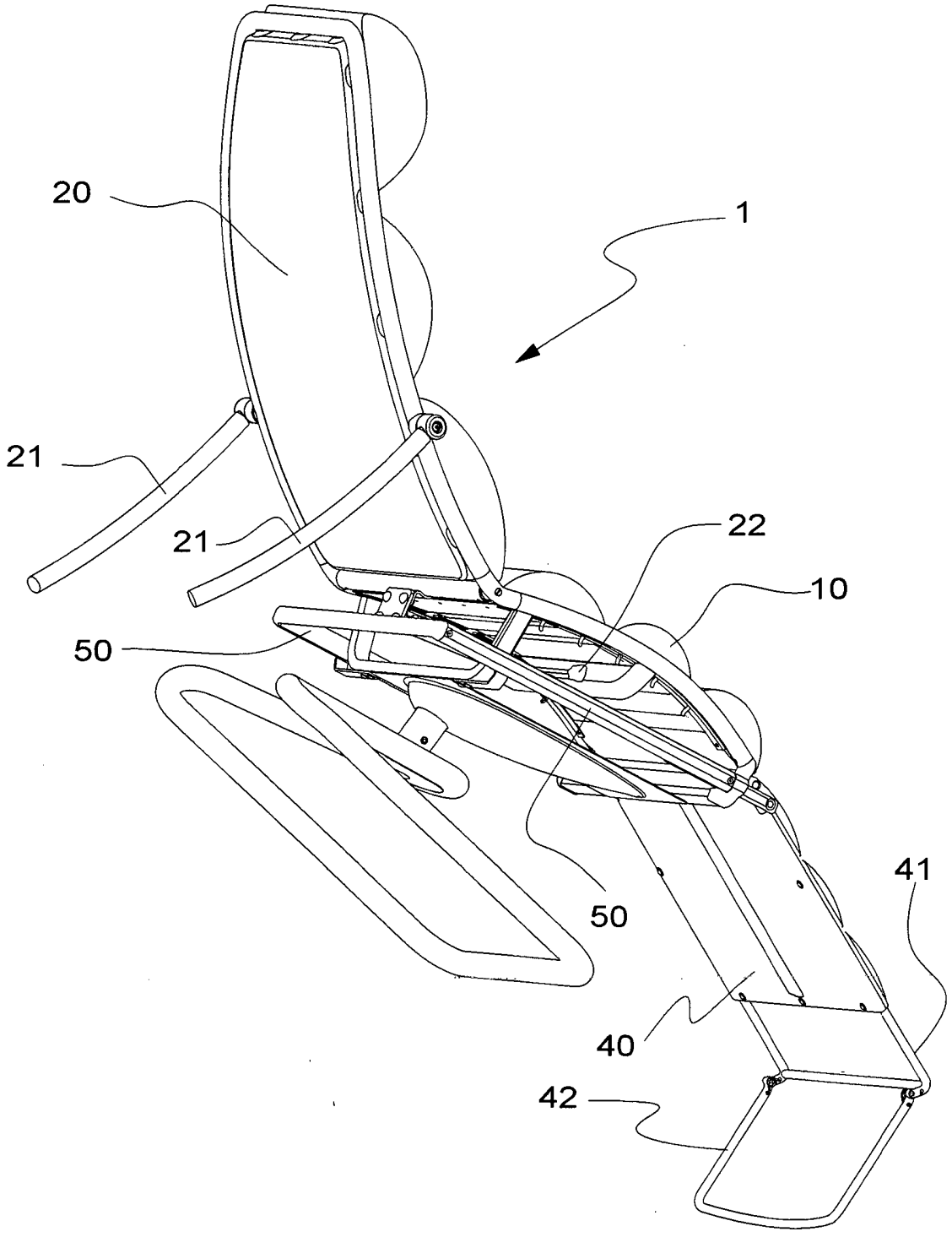


Fig. 3

Fig.4A

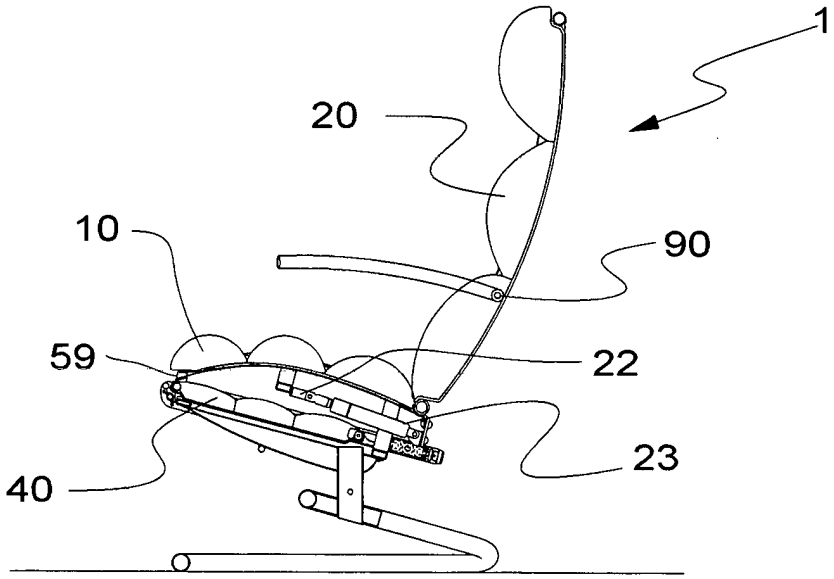


Fig.4B

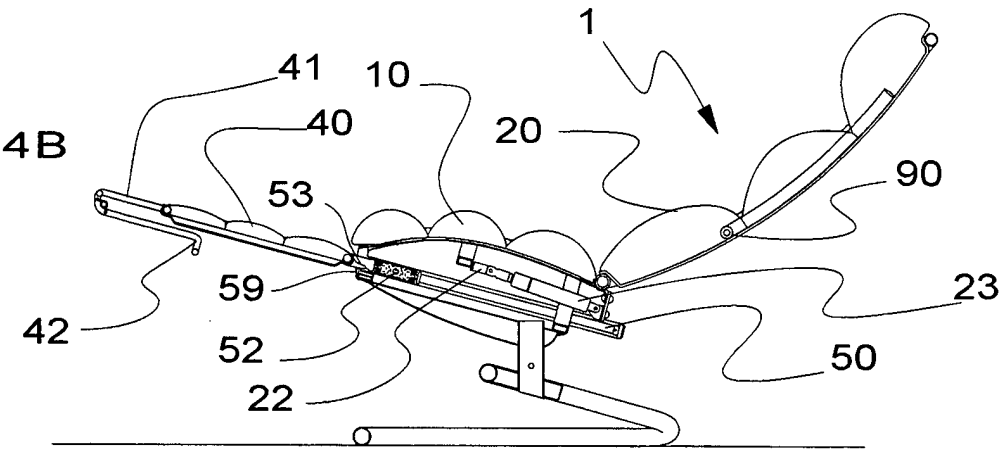
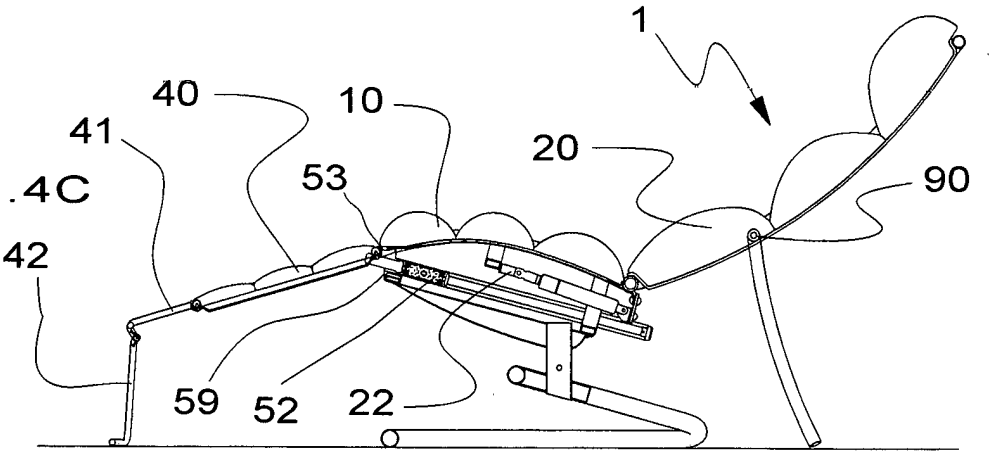


Fig.4C



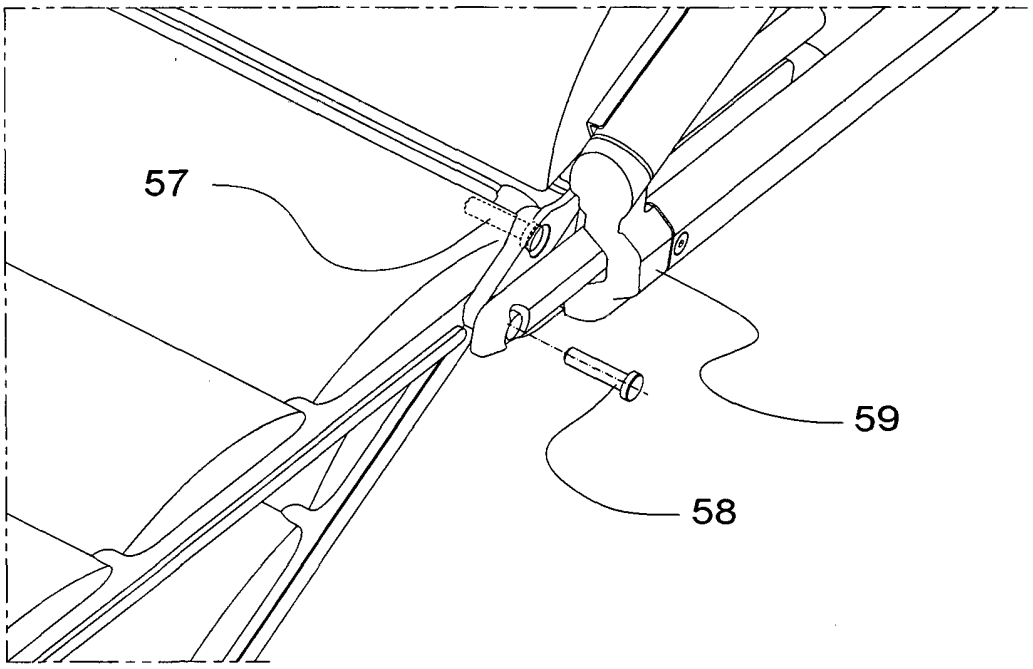


Fig.5A

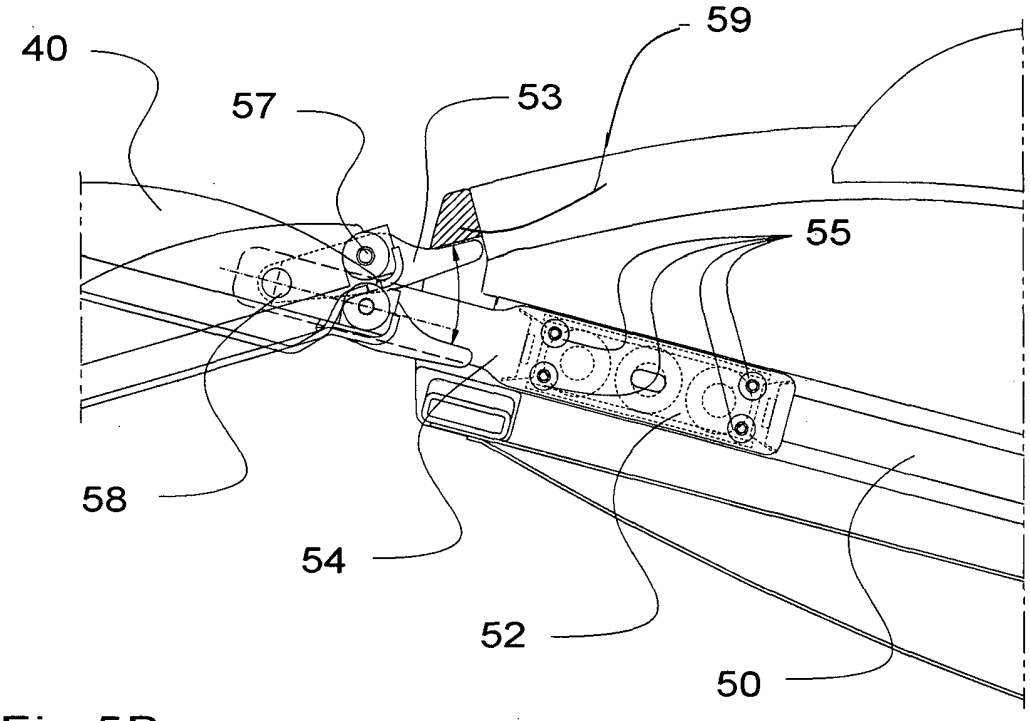


Fig.5B

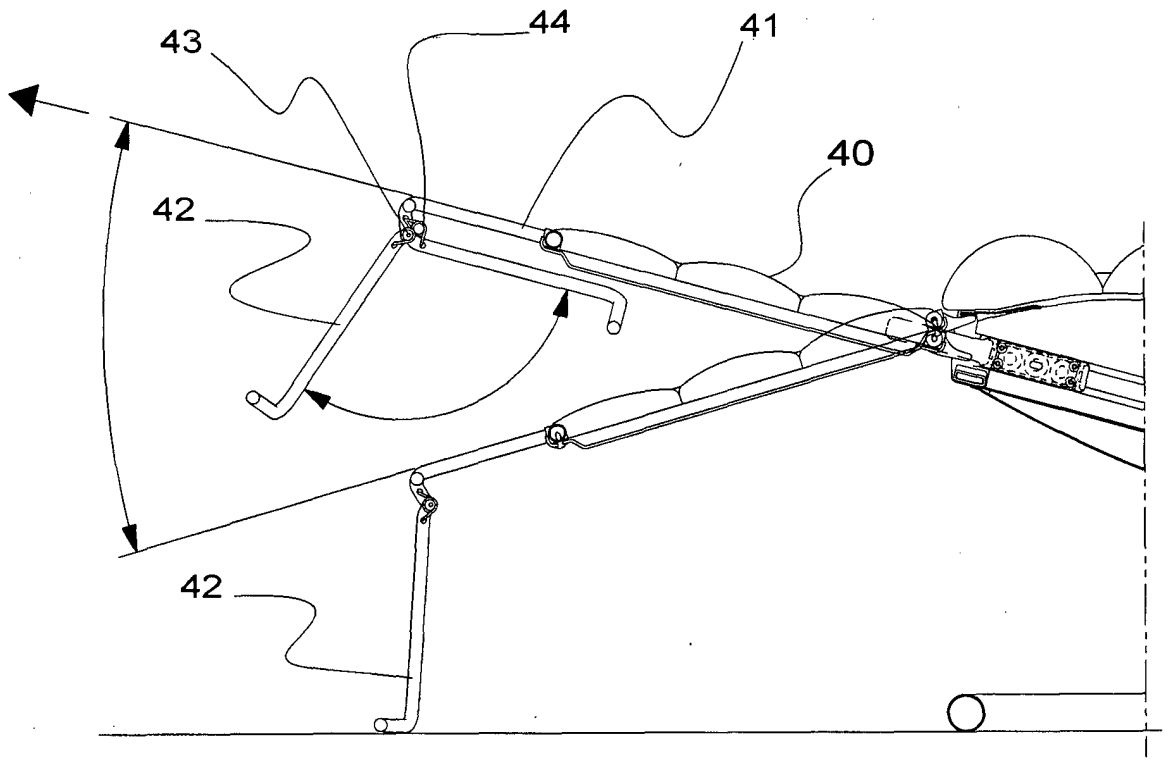


Fig. 6

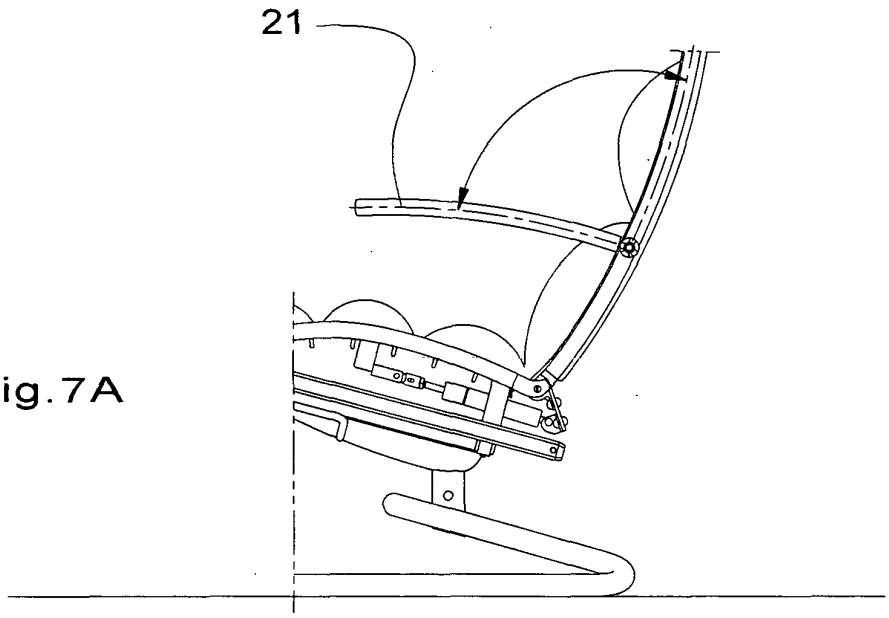


Fig.7A

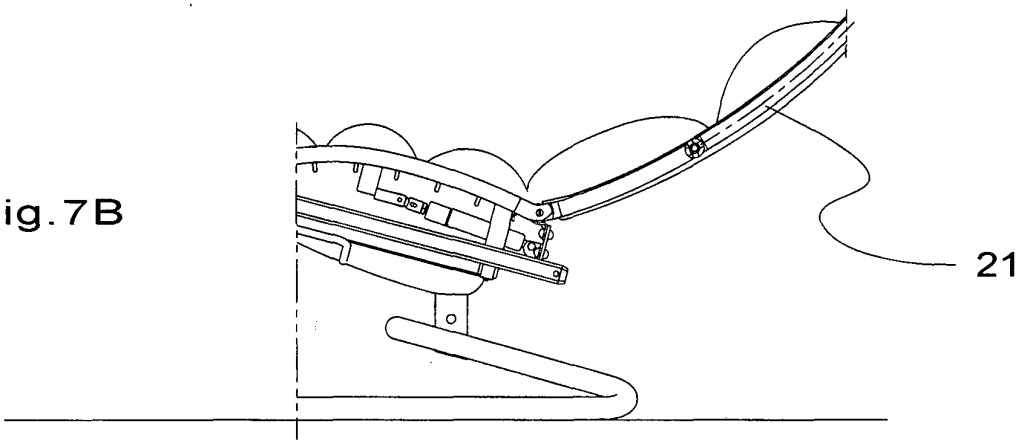


Fig.7B

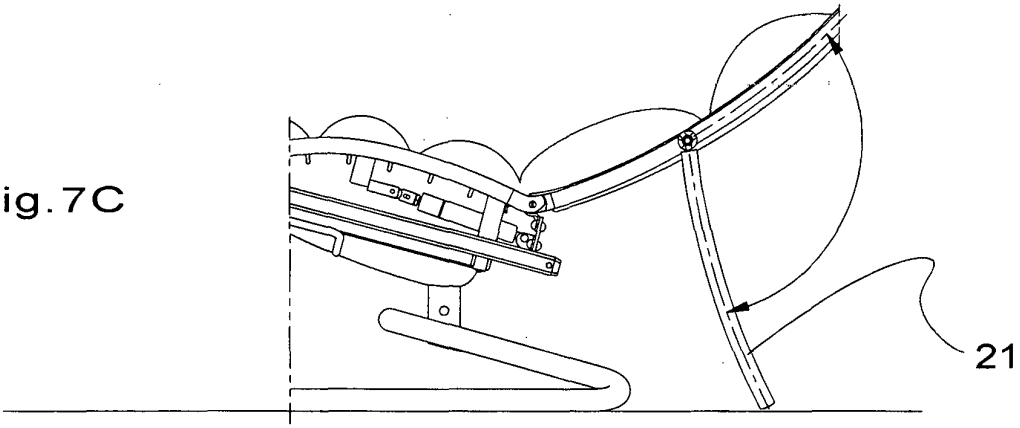


Fig.7C

Fig.8A

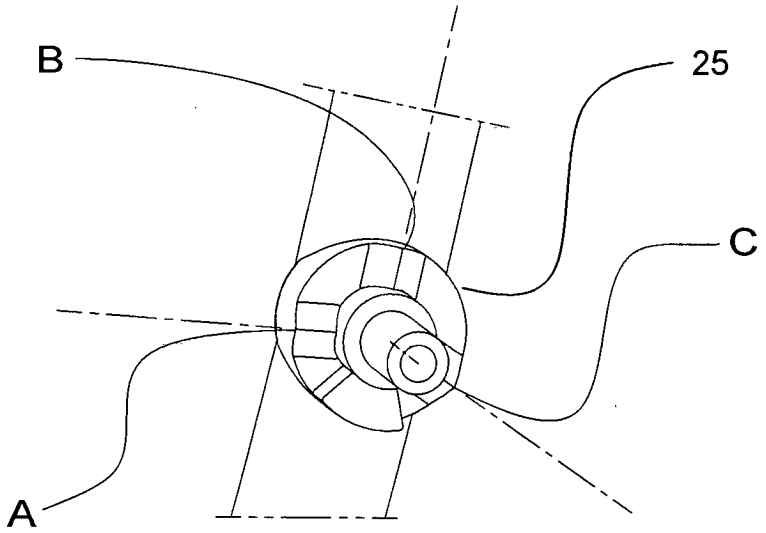
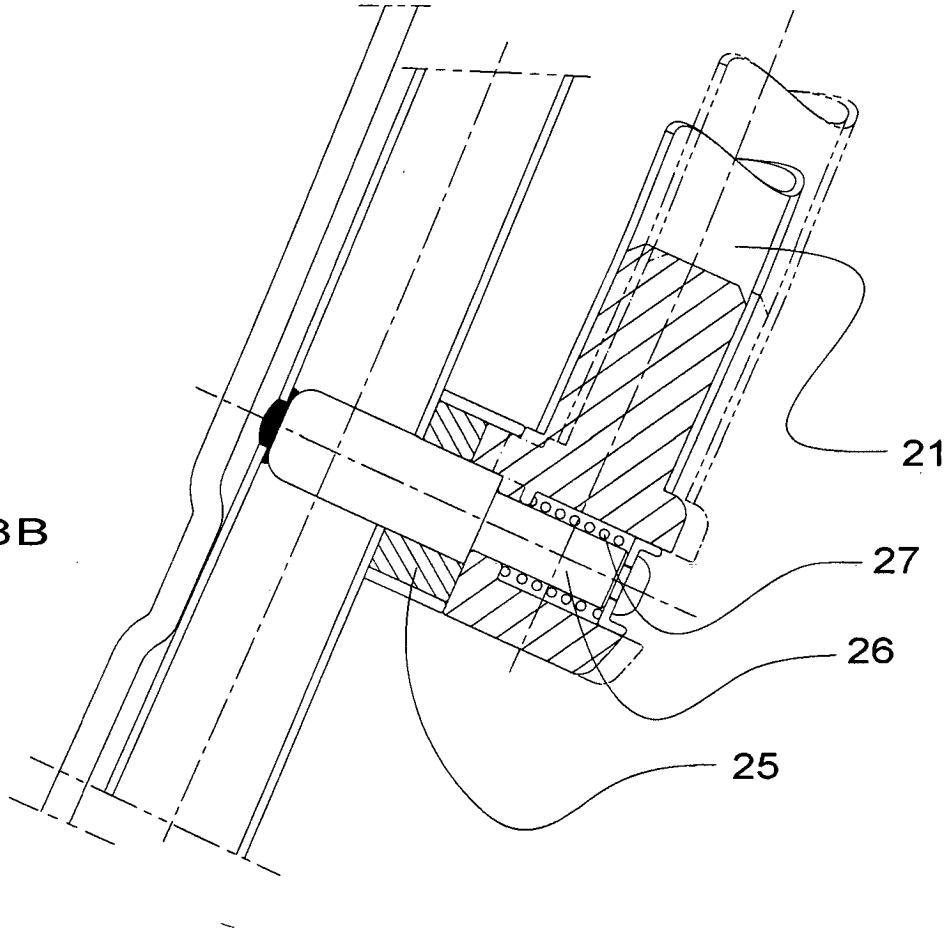


Fig.8B



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

- GB 728690 A **[0005]**