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

(11) **EP 4 420 558 A1**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.08.2024 Bulletin 2024/35

(21) Application number: **23383154.4**

(22) Date of filing: **10.11.2023**

(51) International Patent Classification (IPC):
A47B 23/02 *(2006.01)* ***A47C 7/62*** *(2006.01)*
A47C 7/68 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
A47C 7/68; A47B 23/02; A47C 7/62

(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 ME MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA
Designated Validation States:
KH MA MD TN

(30) Priority: **27.02.2023 ES 202330314 U**

(71) Applicant: **Gómez Nebot, Aparicio**
L'Hospitalet de Llobregat (ES)

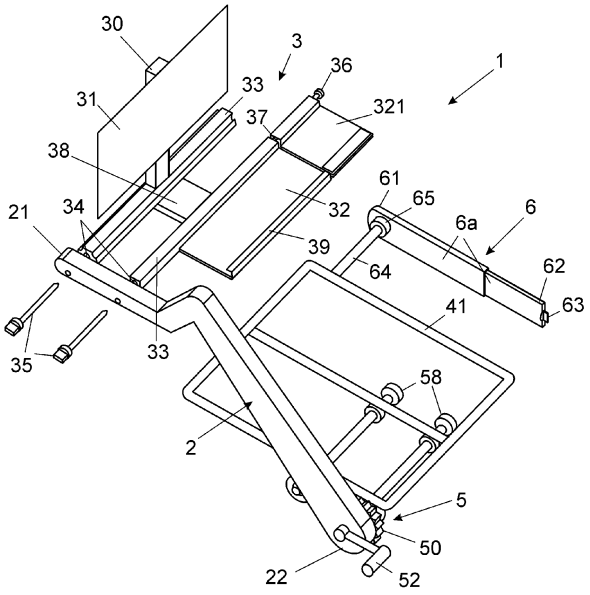
(72) Inventor: **Gómez Nebot, Aparicio**
L'Hospitalet de Llobregat (ES)

(74) Representative: **Espiell Gomez, Ignacio**
R. Volart Pons y Cia., S.L.
Pau Claris, 77 2º 1ª
08010 Barcelona (ES)

(54) **MOBILE STRUCTURE FOR WORKING WITH COMPUTER EQUIPMENT IN RECLINING CHAIRS OR ARMCHAIRS**

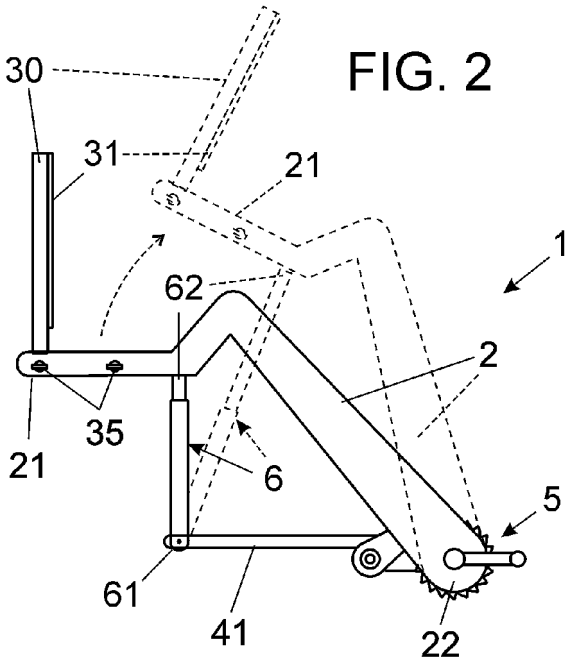
(57) Mobile structure for working with computer equipment in reclining chairs or armchairs which, comprising a main mobile arm (2) which incorporates at its distal end (21) support means (3) to incorporate different elements of computer equipment or electronic devices, and the proximal end (22) of which is coupled to a reclining chair or armchair (4) incorporates a movement mechanism (5) the actuation of which determines the rotation of said arm (2) together with said support means (3) to vary its inclination with respect to the seat of the chair (4) in at least two positions of use, and being able to place it in accordance with the reclining position of the chair (4), also comprises a second additional folding arm (6) which, at a first end (61), is coupled in an articulated manner to the chair (4) on the side of said chair opposite to the one to which the main mobile arm (2) is coupled, presenting a folded position of non-use, in which it is flush with the seat (4a) of the chair (4), and a raised position of use in which it is attached by its opposite end (62) to the support means (3) of the computer equipment, serving as support for same as a reinforcement of their anchorage to the main mobile arm (2). Optionally, the additional folding arm (6) is attached at its first end (61) to the front part of the seat (4a) of the chair (4).

FIG. 1



EP 4 420 558 A1

FIG. 2



Description

OBJECT OF THE INVENTION

[0001] As expressed in the title of this specification, the invention relates to a mobile structure for working with computer equipment in reclining chairs or armchairs which provides to the function for which it is intended advantages and features that are described in detail later. and which represent an improvement to the current state of the art.

[0002] The object of the present invention relates to a support structure to incorporate computer equipment, normally made up of a screen, keyboard and mouse (it can be any electronic work device, touch screen, tablet, etc.) which, being specially designed to be coupled to a chair or armchair with a reclining backrest and being able to move it angularly, in accordance with the inclination adopted by the chair, and work in a reclined position, and being of the type comprising a mobile arm with support means, which act as a work table to incorporate the different elements of the computer equipment, and which is coupled to one side of the reclining chair or armchair through a mechanism that allows the inclination of said arm to be adjusted with respect to the chair in at least two positions, which are the main ones, presents improvements which, basically consisting of the inclusion of a second folding arm for additional support, increase the resistance of the structure and ensure its comfort of use when working with computer equipment, avoiding vibrations or eventual instability movements that may affect said work.

FIELD OF APPLICATION OF THE INVENTION

[0003] The field of application of the present invention falls within the sector of the industry dedicated to the manufacture of furniture, focusing particularly on the field of support structures and work tables for computer equipment or personal computers and other electronic devices, covering at the same time the field of reclining chairs and armchairs.

BACKGROUND OF THE INVENTION

[0004] Reclining chairs and armchairs which, through different types of mechanisms, go from an upright position to a reclined or lying down position of the backrest, are widely known on the market. These chairs and armchairs, in addition, may or may not have footrests which, in turn, also rise when the backrest reclines, and they may or may not have armrests as well.

[0005] Likewise, it is known that the time spent using computer equipment or electronic devices of all kinds is becoming more frequent and prolonged, both for professional and recreational use.

[0006] As a solution to said demand, a utility model with application number U201631099 is known, the owner of which is the applicant of the present invention, disclosing a "*Mobile structure to work with computer equipment that can be coupled to reclining chairs or armchairs* ", which presents certain aspects that can be improved despite the fact that it satisfactorily fulfills its objective of providing the market with a structure that allows the combined use of computer equipment or electronic devices in reclining chairs or armchairs to be able to work in them both in a vertical position and in a reclining position.

[0007] More specifically, the structure proposed by said utility model is essentially made up of a mobile arm which incorporates at its distal end support means to incorporate different elements of computer or electronic equipment, and the proximal end of which is coupled to a reclining chair or armchair and where it incorporates a movement mechanism the actuation of which determines the rotation of said arm together with said support means to vary its inclination with respect to the seat of the chair in at least two positions of use, one with the backrest upright and the other with the backrest inclined, and to be able to place it in accordance with the reclining position of the chair.

[0008] The problem is that since said structure is fixed only on one side of the chair by means of said mobile arm, when working on the computer equipment incorporated in the support means of the distal end of said arm, for example when typing on a keyboard or on a touch screen, said support means vibrate, causing the corresponding discomfort for working.

[0009] The objective of the present invention is, therefore, the development of an improved mobile structure, to work with computer equipment in reclining chairs or armchairs, avoiding said vibration problems and, at the same time, providing a safer and more stable support to the support surface on which the equipment is incorporated in such a way as to ensure greater working comfort.

DESCRIPTION OF THE INVENTION

[0010] The mobile structure for working with computer equipment in reclining chairs or armchairs proposed by the invention is configured as the ideal solution to the aforementioned objective, with the characterizing details that make it possible and that distinguish it being duly included in the claims attached at the end of this description.

[0011] Specifically, the invention proposes a structure of the type the purpose of which is to allow the incorporation of computer equipment or electronic devices so that it is possible to work with them or use them for recreation in a reclining chair or armchair and it is possible to move said structure angularly, in accordance with the inclination of the chair, at least in a vertical position and a reclined position, being formed for this, by a mobile arm with a movement mechanism that is coupled to any reclining chair or armchair and that has support means as a work table to incorporate the computer equipment, and

which further comprises improvements which, basically consisting of the inclusion of a second folding arm for additional support to the support means of the computer equipment, increase the resistance of the structure and ensure its comfort of use when working with the computer equipment, avoiding vibrations or eventual instability movements, especially in the support means on which the computer equipment is placed, for example when typing, which may affect its use.

[0012] To do this, the aforementioned mobile arm or main arm of the structure, which can be coupled to any type of reclining chair or armchair, incorporates at its distal end support means which are suitable as a work station for any type of computer equipment, being understood as such any technological-electronic device and its respective peripherals, while the opposite or proximal end of said main arm is coupled to the reclining chair or armchair incorporating a movement mechanism, preferably a ratchet mechanism with a crank, but which can optionally also be an automatic mechanism actuated by a small electric motor, the actuation of which determines the rotation of said arm together with said support means to vary its inclination with respect to the seat of the chair in at least two positions of use, and to be able to place it in accordance with the reclining position of the chair.

[0013] Based on said already known configuration, the structure is distinguished by the fact that it comprises a second folding arm which, being able to be coupled to the chair on the opposite side of the same in which the main mobile arm is coupled, can be placed in a position folded, such that it is flush with the seat allowing the user to enter the chair to sit down, and in a raised position in which its end is attached to the base of the support means of the computer equipment, serving as additional support for sane as a reinforcement of their anchorage to the mobile arm.

[0014] Preferably, the end of said folding support arm has fastening means to fix it to the base of the support means of the computer equipment, to secure its raised support position.

DESCRIPTION OF THE DRAWINGS

[0015] To complete the description, and for the purpose of helping to make the features of the invention more readily understandable, this description is accompanied by a set of drawings constituting an integral part of the same, which by way of illustration and not limitation represents the following:

Figure 1 shows a schematic perspective view of an example of a mobile structure for working with computer equipment or electronic devices in reclining chairs or armchairs, object of the invention, which is seen in a partially exploded view, showing the main parts and elements that it comprises, as well as the configuration and arrangement thereof;

Figure 2 shows a schematic side elevational view of the structure of the invention, according to the same example of Figure 1, represented in its at least two positions of use, vertical and reclined;

Figure 3 shows a schematic perspective view of an example of a reclining chair with the structure of the invention incorporated in its vertical position of use;

Figure 4 shows a perspective view similar to Figure 3 of the reclining chair, in this case represented with the support for the elements of the computer equipment separated from the main arm of the structure, which has been placed in a raised position, and with the additional support arm represented in a folded and partially extended position, in an example thereof fixed to the front part of the seat of the chair;

Figure 5 again shows a perspective view of the reclining chair with the structure of the invention, according to the example shown in Figures 3 and 4, in this case represented in a reclined position;

Figure 6 shows a perspective view similar to Figure 4, represented with the support for the elements of the computer equipment separated from the main arm of the structure and placed in a raised position, and with the additional support arm represented in a folded and partially extended position, in this case in another example thereof fixed to the rear part of the seat of the chair; and

Figure 7 shows a perspective view of the reclining chair with the structure of the invention, according to the example shown in Figure 6 but represented in a reclined position.

PREFERRED EMBODIMENT OF THE INVENTION

[0016] In view of the aforementioned figures, and in accordance with the numbering adopted, two separate, non-limiting exemplary embodiments of the mobile structure for working with computer equipment in reclining chairs or armchairs of the invention can be seen therein, which structure includes what is described in detail below.

[0017] Therefore, as can be seen in said figures, the structure (1) of the invention comprises, in a known manner, a main mobile arm (2) which incorporates at its distal end (21) support means (3) to incorporate different elements of computer equipment or electronic devices, so that they are properly located to work with them or use them for recreation, while sitting in a reclining chair (or armchair) (4) to which the arm (2) is coupled by its opposite or proximal end (22), where it incorporates a movement mechanism (5) the actuation of which determines the rotation of said arm (2) together with said support means (3) to vary its inclination with respect to the seat of the chair (4) in at least two positions of use, and to be able to place it in accordance with the reclining position of the chair (4), and it is distinguished in that it further comprises a second additional folding arm (6) which, at a first end (61), is coupled in an articulated manner to the chair (4) on the side of said chair opposite to the one

to which the main mobile arm (2) is coupled, said second arm (6) presenting a folded position of non-use, in which it is flush with the seat (4a) of the chair (4), and a raised position of use in which it is attached by its other end or opposite end (62) to the support means (3) of the computer equipment, serving as support for same as a reinforcement of their anchorage to the main mobile arm (2).

[0018] Preferably, said additional folding arm (6) is attached at its first end (61) to the front part of the seat (4a) of the chair (4), as shown in the examples of Figures 1 to 5, thus better offsetting the pressure exerted on the support means (3) when working. However, in an alternative embodiment, the additional folding arm (6) is attached at its first end (61) to the rear part of the seat (4a) of the chair (4), close to the reclining backrest (4b), as shown in the example of figures 6 and 7, or even on the backrest (4b) itself.

[0019] In any case, preferably, the opposite end (62) of said additional folding arm (6) comprises fixing means (63) for fixing same, for example by means of pressure (clicking), to the support means (3) of the computer equipment, to secure its raised support position. And to loosen it, there is preferably provided an element, for example a tab, which allows the detachment.

[0020] Considering Figures 1 and 2, it can be seen how, in a preferred embodiment of the structure (1) of the invention, the movement mechanism (5) of the arm (2) is a ratchet mechanism (50) with a crank (52) or motor (not depicted) and bearings (58) inserted in the frame (41) itself of the seat of the chair or armchair (4) in which the structure (1) of the invention is coupled, there having been provided on the opposite side of said frame (41) a shaft (64) to which the additional folding arm (6) is attached at its first end (61) by means of an articulated joint (65).

[0021] In turn, the support means (3) of the computer equipment or electronic devices, incorporated at the distal end (21) of the arm (2) preferably comprise a column (30) to which a holder (31) for screens, viewers or image devices would be attached, and a main base (32), perpendicular to said holder (31) for screens, the function of which would be a surface for keyboards or similar input peripherals, with the column (30) and the main base (32) attached to respective parallel bars (33) that are provided with end holes (34) in which there are threaded pins (35) inserted therein through the straight section of the distal end (21) of the arm (2), to achieve anchoring same to the arm (2).

[0022] In addition, preferably, the bar (33) in which the main base (32) is incorporated includes an additional base (321) as a surface for the appropriate mouse or other peripheral, which can be fixed with a variable inclination by means of a thread (36) that is inserted into the opposite end of the bar (33), part of the bar (33) attached to the support (32), on a rotating rod (37), in such a way that after loosening said thread (36), it allows the adjustment of the inclination of this additional base (321) for the mouse and the adjustment thereof as the user wishes.

[0023] Preferably, both bars (33) are attached to one another by means of an attachment piece or plate (38) that reinforces the assembly, and at least the main base (32) and, optionally, also the additional base (321), present a ridge (39) to prevent the keyboard and mouse from slipping and falling in the tilted position of the arm (2).

[0024] In any case, the additional folding arm (6) preferably consists of an extendable element, for example based on telescopic segments (6a), in such a way that its end (62) with the fixing means (63) can be extended to be fixed to the base (32) of the support means or, where appropriate, to the additional base (321) provided for the mouse.

As can be seen in the figures, in the preferred embodiment, the arm (2) is made up of an angled piece that has at its distal end (21) at least one straight section which, when the arm (2) is in a first lower work or leisure position on a horizontal basis, said section remains in a horizontal position, parallel to the ground, as shown in Figure 3, being in correspondence with the support means (3) for computer equipment or other electronic devices, in such a way that so that the column (30) and holder (31) for screens are in a vertical position and the main base (32) for the keyboard is in a horizontal position. In this position, the additional folding arm (6) is in a raised vertical position and the telescopic segments (6a) are retracted, as there is less distance between the seat and the base (32) of the support means where the end (62) of said arm (6) is fixed.

[0025] In turn, by rotating the main arm (2), through the movement mechanism (5), the straight section of the distal end (21) with support means (3) is kept in a higher position and inclined with respect to the floor and the frame (41) of the seat of the reclining chair (4), as shown in Figures 5 and 7. In this position, the additional folding arm (6) is in a raised oblique vertical position and the telescopic segments (6a) are extended, as there is a greater distance between the seat and the base (32) of the support means where the end (62) of said arm (6) is fixed.

[0026] Having sufficiently described the nature of the present invention, as well as the ways in which it may be implemented, it is not considered necessary to elaborate on the explanation thereof in order for a person skilled in the art to understand the scope of the invention and the advantages derived therefrom.

Claims

1. Mobile structure for working with computer equipment in reclining chairs or armchairs which, comprising a main mobile arm (2) which incorporates at its distal end (21) support means (3) to incorporate different elements of computer equipment or electronic devices, and the proximal end (22) of which is coupled to a reclining chair or armchair (4) incorporates a movement mechanism (5) the actuation of which

determines the rotation of said arm (2) together with said support means (3) to vary its inclination with respect to the seat of the chair (4) in at least two positions of use, and being able to place it in accordance with the reclining position of the chair (4), is **characterized by** further comprising a second additional folding arm (6) which, at a first end (61), is coupled in an articulated manner to the chair (4) on the side of said chair opposite to the one to which the main mobile arm (2) is coupled, presenting a folded position of non-use, in which it is flush with the seat (4a) of the chair (4), and a raised position of use in which it is attached by its opposite end (62) to the support means (3) of the computer equipment, serving as support for same as a reinforcement of their anchorage to the main mobile arm (2).

2. Mobile structure to work with computer equipment in reclining chairs or armchairs according to claim 1, **characterized in that** the additional folding arm (6) is attached at its first end (61) to the front part of the seat (4a) of the chair (4).

3. Mobile structure to work with computer equipment in reclining chairs or armchairs according to claim 1, **characterized in that** the additional folding arm (6) is attached at its first end (61) to the rear part of the seat (4a) of the chair (4), close to the reclining backrest (4b), or on the backrest (4b) itself.

4. Mobile structure to work with computer equipment in reclining chairs or armchairs according to any of the preceding claims, **characterized in that** the opposite end (62) of said additional folding arm (6) comprises fixing means (63) for fixing same to the support means (3) of the computer equipment to secure its raised support position.

5. Mobile structure to work with computer equipment in reclining chairs or armchairs according to claim 4, **characterized in that** the opposite end (62) of said additional folding arm (6) comprises fixing means (63) for fixing same by means of pressure to the support means (3) of the computer equipment, and a tab or other element that allows detachment.

6. Mobile structure to work with computer equipment in reclining chairs or armchairs according to any of the preceding claims, **characterized in that** the additional folding arm (6) is attached at its first end (61) by means of an articulated joint (65) to the frame (41) itself of the seat of the chair or armchair (4) by means of a shaft (64).

7. Mobile structure to work with computer equipment in reclining chairs or armchairs according to any of the previous claims, **characterized in that** the additional folding arm (6) is made up of an extendable element based on telescopic segments (6a), in such a way that its end (62) with the fixing means (63) can be extended to be fixed to the support means.

FIG. 1

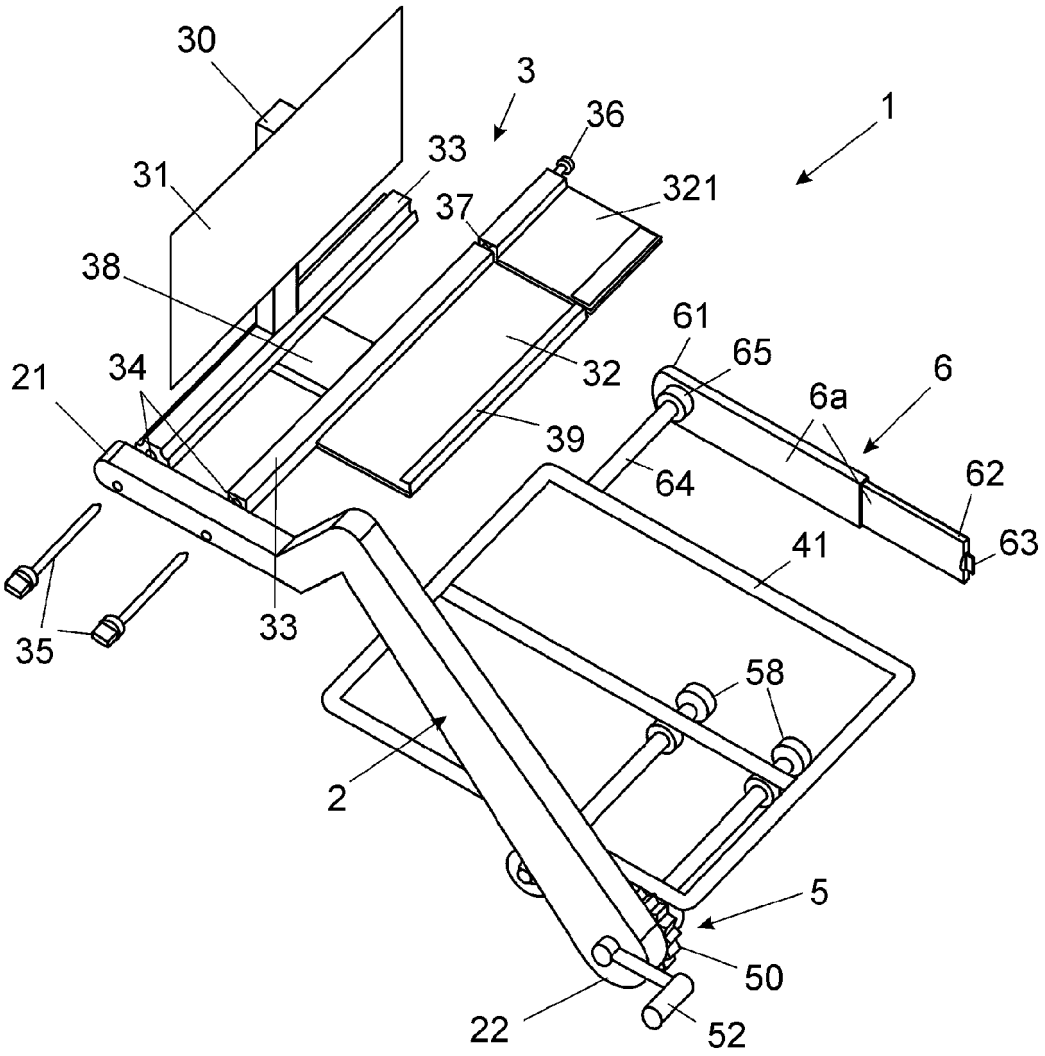

30
3
36
1
33
31
321
37
38
61
65
6
6a
21
34
32
39
64
62
63
41
35
33
58
2
5
50
22
52

FIG. 2

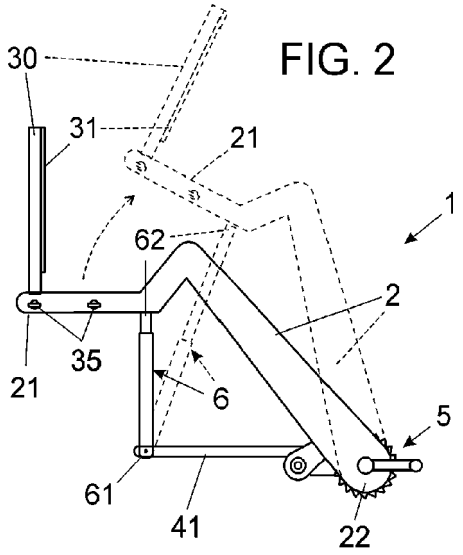


FIG. 3

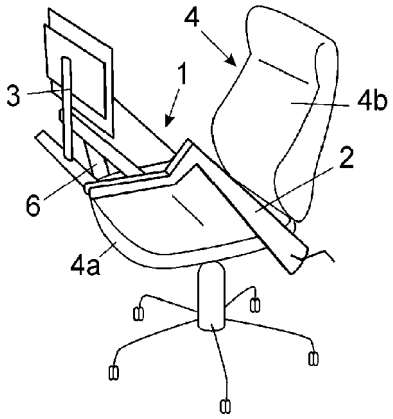
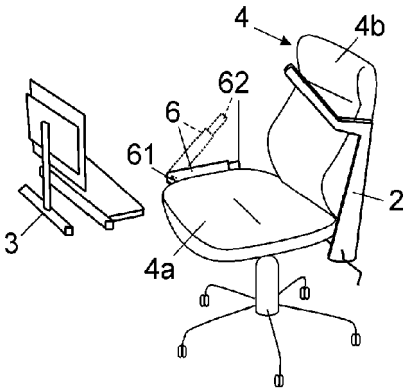


FIG. 4



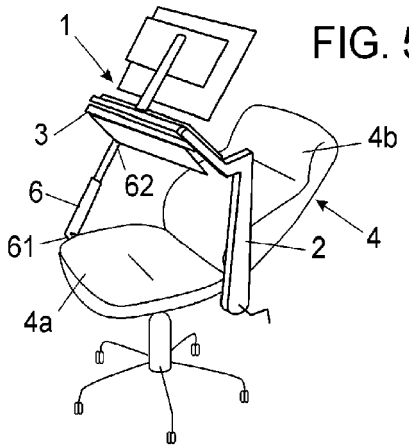


FIG. 5

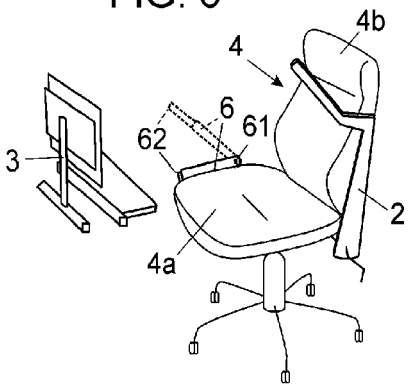


FIG. 6

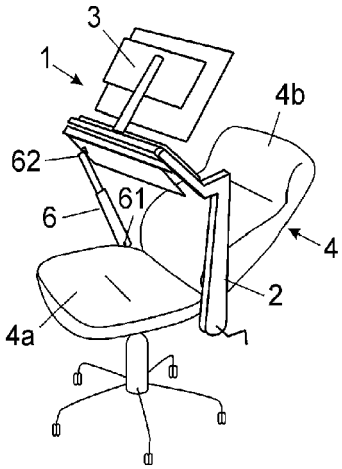


FIG. 7

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 23 38 3154

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	CN 201 052 001 Y (CHANGPING CHENG [CN]) 30 April 2008 (2008-04-30) * the whole document *	1-7	INV. A47B23/02 A47C7/62 A47C7/68
A	US 6 354 658 B1 (SHER MICHAEL L [US] ET AL) 12 March 2002 (2002-03-12) * column 3, line 55 - column 7, line 67; figures 1-8 *	1	

TECHNICAL FIELDS SEARCHED (IPC)

A47B
A47C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	17 April 2024	Lehe, Jörn

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 23 38 3154

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

17-04-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 201052001 Y	30-04-2008	NONE	
US 6354658 B1	12-03-2002	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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

- WO 201631099 A **[0006]**