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

(11) **EP 4 029 409 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
01.11.2023 Bulletin 2023/44

(21) Application number: **21206340.8**

(22) Date of filing: **04.11.2021**

(51) International Patent Classification (IPC):
A47C 7/38 *(2006.01)*

(52) Cooperative Patent Classification (CPC):
A47C 7/38

(54) ADJUSTMENT DEVICE FOR A HEADREST

ANPASSUNGSVORRICHTUNG FÜR EINE KOPFSTÜTZE

DISPOSITIF DE RÉGLAGE POUR APPUI-TÊTE

(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: **18.01.2021 DE 202021100215 U**

(43) Date of publication of application:
20.07.2022 Bulletin 2022/29

(73) Proprietor: **CIAR S.p.A.**
61122 Pesaro (PU) (IT)

(72) Inventor: **CARRERA, Massimo**
61010 Tavullia (PU) (IT)

(74) Representative: **Tetzner, Michael**
Tetzner & Partner mbB
Patent- und Rechtsanwälte
Van-Gogh-Strasse 3
81479 München (DE)

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Description

[0001] The invention relates to an adjustment device for a headrest, in particular for the headrest of a piece of seating or reclining furniture.

[0002] In the case of seating or reclining furniture, such as armchairs or sofas, the inclination of the headrests can often be motorized. DE 20 2016 102 413 U1 discloses an automatic holding system for a headrest, which system has a first pivoting component that is pivotably held on a fastening plate. The headrest is pushed onto the first pivoting component by means of a plug-on component and can be detached therefrom for cleaning purposes, for example. The pivoting takes place by actuating a linear drive component, the drive rod of which is connected in an articulated manner to the first pivoting component via a connecting portion and a coupling element. At its end remote from the connecting portion, the linear drive component is held pivotably on the fastening plate in order to be able to carry out a compensating movement during the inclination adjustment of the headrest. However, the pivoting movement of the drive component requires additional space. In addition, this solution is relatively complex due to a large number of articulation points and the inclination of the headrest can only be adjusted in a very limited angular range.

[0003] US 5 640 730 A discloses an adjustable articulated bed with a tiltable head rest section utilizing a pair of angled lifting levers having a pivot axis which coincides with the pivot axis of the back support section. The angled head ends of the levers are operatively connected to the head rest section with a sliding-pin-and-slot arrangement. When the lifting levers are pivoted a pin at the head end acts through a longitudinal slot formed in a bracket formed downward from the head rest section to pivot/lift that section to an upwardly-angled position (about 45°) relative to the horizontal back support section. The pin slides in the longitudinal slot as the head rest section is lifted. Continued pivoting of the lifting levers by the bed motor causes a tab on its top surface to engage and lift the back support section (and together therewith the upwardly-angled head rest section) about the pivot axis to an inclined angle of generally sixty degrees.

[0004] DE 29 32 344 A1 relates to a device for the adjustment of a headrest designed for a dental patient chair. In this known device, the linear drive unit has a drive element which is linearly adjustable along a stationary spatial axis and which is connected in an articulated manner to a headrest holder via a coupling element. As a result of the drive unit, which is also stationary during the inclination adjustment, less installation space is required in the region of the drive unit. The significantly reduced number of pivot points also allows more cost-effective production. However, the pivoting range of the headrest is also relatively limited in this solution.

[0005] The invention is therefore based on the object of specifying a compact adjustment device for a headrest which has a larger adjustment range for its inclination.

[0006] According to the invention, this object is achieved by the features of claim 1.

[0007] The adjustment device according to the invention for a headrest has at least one stationary first mounting plate on which a first headrest holder is held so as to be pivotable about a first axis of rotation. Furthermore, a drive unit is provided which has a drive element which is linearly adjustable along a stationary spatial axis between an initial position and an end position, wherein a coupling element is articulated at one end to the drive element and at the other end to the first headrest holder, such that a linear movement of the drive element causes a rotation of the first headrest holder about the first axis of rotation. The adjustment device also has a stop element which comes into contact with the coupling element or the first headrest holder in an intermediate position of the drive element and a further rotation of the coupling element relative to the first headrest holder is blocked between the intermediate position and the end position.

[0008] The stop element allows the pivoting of the headrest beyond the dead center, which significantly increases the pivoting angle. In particular, a pivoting angle of the first headrest holder between the initial position and the end position of 140° +/- 20°, preferably 140° +/- 10°, most preferably 140° +/- 5°, can be realized. The first headrest holder can assume a pivoting angle of 90° +/- 20°, preferably 90° +/- 10°, most preferably 90° +/- 5°, between the initial position and the intermediate position.

[0009] Furthermore, the pivoting angle of the first headrest holder between the intermediate position and the end position can be 50° +/- 20°, preferably 50° +/- 10°, most preferably 50° +/- 5°.

[0010] The stationary alignment of the drive unit, even during the pivoting process, and the small number of components and articulation points required for the pivoting movement allow a compact and also inexpensive to manufacture adjustment device. In connection with the invention, the term "stationary" is to be understood as a rigid fastening to a component, in particular to a backrest of a piece of seating or reclining furniture, such as a sofa, an armchair, or a bed on which the headrest is pivotably held.

[0011] According to the preferred embodiment of the invention, the stop element is arranged on the first headrest holder and is in contact with the coupling element between the intermediate position and the end position of the drive element. The stationary spatial axis for the drive element can be implemented, for example, in that a guide for the linearly adjustable drive element is arranged on the first mounting plate. However, other configurations are also conceivable in which the drive unit is arranged in a stationary manner relative to the first mounting plate.

[0012] In an optional embodiment, a first extension element is articulated at an end of the first headrest holder remote from the first axis of rotation, which extension element can be pivoted between a retracted and an ex-

tended position relative to the first headrest holder. The first extension element can be coupled to the first headrest holder via at least one first pivot mechanism, the first pivot mechanism preferably being designed in the manner of a parallelogram guide. According to a further embodiment, a first coupling arm can be provided for the adjustment of the first extension element, one end of which is connected to the first pivot mechanism and the other end of which is directly or indirectly articulated to the first mounting plate. The extension element offers the possibility of extending the headrest further in the position of use, while it can be folded down to save space in the idle position.

[0013] The headrest is expediently held on both sides, for which a second headrest holder is provided which is pivotable on a second mounting plate about a second axis of rotation, the first headrest holder and the second headrest holder also being arranged at a distance from one another in such a way that the first and second axes of rotation are aligned. The first headrest holder and the second headrest holder can be connected to one another, in particular via the headrest, in order to ensure synchronous adjustment. In this case, however, it is sufficient if the drive unit is only connected to the first headrest holder via the first coupling element. If the optional first extension element is present, a second extension element will also be articulated on the second headrest holder at an end remote from the second axis of rotation. In this embodiment, the first extension element and the second extension element are connected to one another for synchronous adjustment, in particular via the headrest.

[0014] Further configurations of the invention are explained in more detail with reference to the following description.

[0015] In the drawings:

Fig. 1 is an exploded view of the device according to the invention according to a first embodiment,

Fig. 2 is a schematic side view of the first embodiment in an initial position of the drive element,

Fig. 3 is a schematic side view of the first embodiment in an intermediate position of the drive element,

Fig. 4 is a schematic side view of the first embodiment in an end position of the drive element,

Fig. 5 is a schematic side view of a second embodiment of the device according to the invention in an initial position of the drive element,

Fig. 6 is a schematic side view of the second embodiment in an intermediate position of the drive element, and

Fig. 7 is a schematic side view of the second embodiment in an end position of the drive element.

[0016] The adjustment device for a headrest shown in Fig. 1 has a first headrest holder 1 for holding the headrest and a stationary first mounting plate 2 on which the first headrest holder 1 is held such that it can pivot about a first axis of rotation 3. Furthermore, a drive unit 4 is provided which has a linearly adjustable drive element 5. A guide 6 for the linearly adjustable drive element 5 is fastened to the first mounting plate 2 by means of screws 7. The end 8 of the drive unit 4 which is remote from the linearly adjustable drive element 5 is fixed on a holder 9, in which it is pushed onto a pin 10 and locked with a locking ring 11. The holder 9 is also arranged in a stationary manner and could, for example, also be formed by extending the first mounting plate 2.

[0017] The connection between the linearly adjustable drive element 5 and the first headrest holder 1 is formed by a coupling element 12 which has a pin 13 at one end, with which it is articulated to the drive element 5 and fixed by means of a locking ring 14. The other end of the coupling element 12 is articulated to the first headrest holder 1 at an articulation point 15.

[0018] In Fig. 2 to 4, the first mounting plate 2 and the holder 9 are fastened to a component 16, which is, for example, the backrest of a piece of seating or reclining furniture. The drive unit 1 held on the holder 9 and on the guide 6 is thus arranged in a stationary manner with respect to the component 16, so that the adjustment of the linearly adjustable drive element 5 of the drive unit 1 takes place along a stationary spatial axis 17 between an initial position (Fig. 2) and an end position (Fig. 4).

[0019] A headrest 18 is fastened to the first headrest holder 1 and is adjustable from a rearwardly folded position according to Fig. 2 via an intermediate position (Fig. 3) to a forwardly inclined position according to Fig. 4, whereby of course every other intermediate position can also be assumed. During the linear movement of the drive element 5, the first headrest holder 1 rotates with the headrest 18 around the articulation point 15 and in this way changes the inclination of the headrest 18.

[0020] The headrest 18 is folded back in Fig. 2 and aligned approximately horizontally. During the adjustment between the initial position according to Fig. 2 and the intermediate position according to Fig. 3, the coupling element is freely movable in the region of the pin 13 and the articulation point 15. In the intermediate position of Fig. 3, the headrest 18 is pivoted upwards through an angle α of approximately 90° and is thus oriented approximately vertically. The pin 13 and the articulation point 15 lie on the stationary spatial axis 17, in the direction of which the drive element 5 is adjustable. In this position, the coupling element comes into contact with a stop element 19 arranged on the first headrest holder 1, the stop element 19 being arranged in such a way that it blocks a rotation of the coupling element 12 relative to the first headrest holder 1 upon further adjustment of the headrest 18 into the end position shown in Fig. 4. In this way, the headrest 18 or the first headrest holder 1 can be tilted forward by a further angle β of approximately

50°, so that a total pivoting angle ($\alpha + \beta$) of approximately 140° results.

[0021] In the exploded view of Fig. 1, the adjustment device furthermore has a second headrest holder 20 which is pivotable on a second mounting plate 21 about a second axis of rotation 22, the first headrest holder and the second headrest holder also being arranged at a distance from one another, in particular on the backrest of the seating or reclining furniture, in such a way that the first axis of rotation 3 and the second axis of rotation 22 are aligned. For the synchronous adjustment of the first headrest holder 1 and the second headrest holder 20, these are connected to one another via the headrest 18 (not shown).

[0022] Fig. 5 to 7 show a second embodiment of the adjustment device according to the invention for a headrest, which differs from the first embodiment only in that a first extension element 23 is articulated to the first headrest holder 1 at an end remote from the first axis of rotation 3, the first extension element 23 between a retracted position (Fig. 5) and an extended position (Fig. 7) being pivotable relative to the first headrest holder 1. The first extension element 23 is held on the first headrest holder 1 via a first pivot mechanism 24, the first pivot mechanism 24 being designed in the illustrated embodiment with two lever arms 24a, 24b in the manner of a parallelogram guide. The two lever arms 24a, 24b, which are aligned parallel to one another, are articulated at one end to the first headrest holder and articulated to the extension element 23 at the other end.

[0023] For the adjustment of the first extension element 23, a first coupling arm 25 is provided, one end of which is articulated to the first pivot mechanism 24, in this case to the lever arm 24b thereof, and the other end to an articulation point 26 provided on the first mounting plate 2. Fig. 5 again shows the position of the headrest 18 folded backwards, while Fig. 6 shows the intermediate position, and Fig. 7 shows the forwardly inclined end position of the headrest 18. The rotational movement of the first headrest holder 1 via the coupling element 12 and the linearly adjustable drive element 5 corresponds to that of the first embodiment. During the rotation, the coupling of the first pivot mechanism 24 to the first coupling arm 25 causes the first extension element 23 to pivot relative to the first headrest holder 1 in the sense of an extension of the first headrest holder 1 by the amount a (Fig. 7). As a result, the headrest 18 reaches a somewhat greater distance from the seat surface in the forwardly inclined position, while it is arranged relatively compactly in the folded-back position and does not protrude excessively backwards beyond the backrest (component 16).

[0024] In a corresponding manner, also a second extension element (not shown) is articulated to the second headrest holder 20 (Fig. 1) at an end remote from the second axis of rotation 22, the first extension element 23 and the second extension element being connected to one another, in particular via the headrest 18 for synchronous adjustment.

Claims

1. Adjustment device for a headrest (18) having

   - at least one first headrest holder (1) for holding the headrest (18),
   - at least one stationary first mounting plate (2) on which the first headrest holder (1) is held such that it can pivot about a first axis of rotation (3),
   - a drive unit (4) which has a drive element (5) which is linearly adjustable along a stationary spatial axis (17) between an initial position and an end position, and
   - a coupling element (12) which is articulated at one end to the drive element (5) and at the other end articulated to the first headrest holder (1), wherein a linear movement of the drive element (5) causes a rotation of the first headrest holder (1) about the first axis of rotation (3),

   wherein the adjustment device comprises a stop element (19) which comes into contact with the coupling element (12) or the first headrest holder (1) in an intermediate position of the drive element (5) and blocks a further rotation of the coupling element (12) relative to the first headrest holder (1) between the intermediate position and the end position.

2. Adjustment device according to claim 1, **characterized in that** the stop element (19) is arranged on the first headrest holder (1) and is in contact with the coupling element (12) between the intermediate position and the end position of the drive element (5).

3. Adjustment device according to claim 1, **characterized in that** the first headrest holder (1) has a pivoting angle (α) of 90° +/- 20°, preferably 90° +/- 10°, most preferably 90° +/- 5° between the initial position and the intermediate position.

4. Adjustment device according to claim 1, **characterized in that** the first headrest holder (1) has a pivoting angle (β) of 50° +/- 20°, preferably 50° +/- 10°, most preferably 50° +/- 5° between the intermediate position and the end position.

5. Adjustment device according to claim 1, **characterized in that** the first headrest holder (1) has a pivoting angle of 140° +/- 20°, preferably 140° +/- 10°, most preferably 140° +/- 5° between the initial position and the end position.

6. Adjustment device according to claim 1, **characterized in that** a guide (6) for the linearly adjustable drive element (5) is arranged on the first mounting plate (2).

7. Adjustment device according to claim 1, **character-**

ized in that the drive unit (4) is arranged stationary relative to the first mounting plate (2).

8. Adjustment device according to claim 1, **characterized in that** a first extension element (23) is articulated to the first headrest holder (1) at an end remote from the first axis of rotation (3), the first extension element (23) between a retracted and an extended position being pivotable relative to the first headrest holder (1).

9. Adjustment device according to claim 8, **characterized in that** the first extension element (23) is coupled to the first headrest holder (1) via at least one first pivot mechanism (24).

10. Adjustment device according to claim 9, **characterized in that** the first pivot mechanism (24) is designed in the manner of a parallelogram guide.

11. Adjustment device according to claim 8, **characterized in that** a first coupling arm (25) is provided for adjusting the first extension element (23), one end of which is connected to the first pivot mechanism (24) and the other end of which is directly or indirectly articulated to the first mounting plate (2).

12. Adjustment device according to claim 1, **characterized in that** a second headrest holder (20) is provided which is pivotable on a second mounting plate (21) about a second axis of rotation (22), the first headrest holder (1) and the second headrest holder (20) also being arranged at a distance from one another in such a way that the first and second axes of rotation (3, 22) are aligned.

13. Adjustment device according to claim 12, **characterized in that** the first headrest holder (1) and the second headrest holder (20) are connected to one another for synchronous adjustment.

14. Adjustment device according to claim 12, **characterized in that** a second extension element is articulated to the second headrest holder (20) at an end remote from the second axis of rotation (22), the first extension element (23) and the second extension element being connected to one another for synchronous adjustment.

Patentansprüche

1. Einstellvorrichtung für eine Kopfstütze (18), aufweisend

- mindestens eine erste Kopfstützenhalterung (1) zum Halten der Kopfstütze (18),
- mindestens eine ortsfeste erste Befestigungsplatte (2), an der die erste Kopfstützenhalterung (1) um eine erste Drehachse (3) schwenkbar gehalten ist,
- eine Antriebseinheit (4), die ein Antriebselement (5) aufweist, das entlang einer ortsfesten Raumachse (17) zwischen einer Ausgangsposition und einer Endposition linear verstellbar ist, und
- ein Kopplungselement (12), das an einem Ende an dem Antriebselement (5) angelenkt ist und an dem anderen Ende an der ersten Kopfstützenhalterung (1) angelenkt ist, wobei eine lineare Bewegung des Antriebselements (5) eine Drehung der ersten Kopfstützenhalterung (1) um die erste Drehachse (3) bewirkt,

wobei die Einstellvorrichtung ein Anschlagelement (19) umfasst, das in einer Zwischenposition des Antriebselements (5) mit dem Kopplungselement (12) oder der ersten Kopfstützenhalterung (1) in Kontakt kommt und eine weitere Drehung des Kopplungselements (12) relativ zur ersten Kopfstützenhalterung (1) zwischen der Zwischenposition und der Endposition blockiert.

2. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** das Anschlagelement (19) an der ersten Kopfstützenhalterung (1) angeordnet ist und mit dem Kopplungselement (12) zwischen der Zwischenposition und der Endposition des Antriebselements (5) in Kontakt steht.

3. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die erste Kopfstützenhalterung (1) einen Schwenkwinkel (α) von 90° +/- 20°, vorzugsweise 90° +/- 10°, am meisten bevorzugt 90° +/- 5° zwischen der Ausgangsposition und der Zwischenposition aufweist.

4. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die erste Kopfstützenhalterung (1) einen Schwenkwinkel (β) von 50° +/- 20°, vorzugsweise 50° +/- 10°, am meisten bevorzugt 50° +/- 5° zwischen der Zwischenposition und der Endposition aufweist.

5. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die erste Kopfstützenhalterung (1) einen Schwenkwinkel von 140° +/- 20°, vorzugsweise 140° +/- 10°, am meisten bevorzugt 140° +/- 5° zwischen der Ausgangsposition und der Endposition aufweist.

6. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** an der ersten Befestigungsplatte (2) eine Führung (6) für das linear verstellbare Antriebselement (5) angeordnet ist.

7. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** die Antriebseinheit (4) ortsfest relativ zu der ersten Befestigungsplatte (2) angeordnet ist.

8. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** ein erstes Verlängerungselement (23) an der ersten Kopfstützenhalterung (1) an einem Ende, das von der ersten Drehachse (3) entfernt ist, angelenkt ist, wobei das erste Verlängerungselement (23) zwischen einer eingefahrenen und einer ausgefahrenen Stellung relativ zur ersten Kopfstützenhalterung (1) schwenkbar ist.

9. Einstellvorrichtung nach Anspruch 8, **dadurch gekennzeichnet, dass** das erste Verlängerungselement (23) mit der ersten Kopfstützenhalterung (1) über mindestens einen ersten Schwenkmechanismus (24) gekoppelt ist.

10. Einstellvorrichtung nach Anspruch 9, **dadurch gekennzeichnet, dass** der erste Schwenkmechanismus (24) nach Art einer Parallelogrammführung ausgebildet ist.

11. Einstellvorrichtung nach Anspruch 8, **dadurch gekennzeichnet, dass** ein erster Kopplungsarm (25) zum Verstellen des ersten Verlängerungselements (23) vorgesehen ist, dessen eines Ende mit dem ersten Verstellmechanismus (24) und dessen anderes Ende direkt oder indirekt an der ersten Befestigungsplatte (2) angelenkt ist.

12. Einstellvorrichtung nach Anspruch 1, **dadurch gekennzeichnet, dass** eine zweite Kopfstützenhalterung (20) vorgesehen ist, der an einer zweiten Befestigungsplatte (21) um eine zweite Drehachse (22) schwenkbar ist, wobei die erste Kopfstützenhalterung (1) und die zweite Kopfstützenhalterung (20) zudem derart voneinander beabstandet angeordnet sind, dass die erste und zweite Drehachse (3, 22) ausgerichtet sind.

13. Einstellvorrichtung nach Anspruch 12, **dadurch gekennzeichnet, dass** die erste Kopfstützenhalterung (1) und die zweite Kopfstützenhalterung (20) zur synchronen Verstellung miteinander verbunden sind.

14. Einstellvorrichtung nach Anspruch 12, **dadurch gekennzeichnet, dass** ein zweites Verlängerungselement an der zweiten Kopfstützenhalterung (20) an einem Ende, das von der zweiten Drehachse (22) entfernt ist, angelenkt ist, wobei das erste Verlängerungselements (23) und das zweite Verlängerungselement zur synchronen Verstellung miteinander verbunden sind.

Revendications

1. Dispositif de réglage pour un appui-tête (18), ledit dispositif de réglage ayant :

   - au moins un premier support d'appui-tête (1) pour maintenir l'appui-tête (18),
   - au moins une première plaque de montage fixe (2) sur laquelle le premier support d'appui-tête (1) est maintenu, de manière telle qu'il puisse pivoter autour d'un premier axe de rotation (3),
   - une unité d'entraînement (4) qui a un élément d'entraînement (5) qui est réglable de façon linéaire le long d'un axe spatial fixe (17) entre une position initiale et une position finale, et
   - un élément d'accouplement (12) qui, au niveau d'une extrémité, est articulé sur l'élément d'entraînement (5) et, au niveau de l'autre extrémité, est articulé sur le premier support d'appui-tête (1), dispositif de réglage dans lequel un mouvement linéaire de l'élément d'entraînement (5) provoque une rotation du premier support d'appui-tête (1) autour du premier axe de rotation (3),

   où le dispositif de réglage comprend un élément de butée (19) qui vient au contact de l'élément d'accouplement (12) ou du premier support d'appui-tête (1) dans une position intermédiaire de l'élément d'entraînement (5), et ledit élément de butée bloque une rotation ultérieure de l'élément d'accouplement (12) par rapport au premier support d'appui-tête (1) entre la position intermédiaire et la position finale.

2. Dispositif de réglage selon la revendication 1, **caractérisé en ce que** l'élément de butée (19) est agencé sur le premier support d'appui-tête (1) et est au contact de l'élément d'accouplement (12) entre la position intermédiaire et la position finale de l'élément d'entraînement (5).

3. Dispositif de réglage selon la revendication 1, **caractérisé en ce que** le premier support d'appui-tête (1) a un angle de pivotement (α) de 90° +/-20°, de préférence de 90° +/-10°, de façon la plus préférable de 90° +/-5° entre la position initiale et la position intermédiaire.

4. Dispositif de réglage selon la revendication 1, **caractérisé en ce que** le premier support d'appui-tête (1) a un angle de pivotement (β) de 50° +/-20°, de préférence de 50° +/-10°, de façon la plus préférable de 50° +/-5° entre la position intermédiaire et la position finale.

5. Dispositif de réglage selon la revendication 1, **caractérisé en ce que** le premier support d'appui-tête (1) a un angle de pivotement de 140° +/-20°, de préférence de 140° +/-10°, de façon la plus préférable

de 140° +/-5° entre la position initiale et la position finale.

6. Dispositif de réglage selon la revendication 1, **caractérisé en ce qu'**un guide (6) pour l'élément d'entraînement (5) réglable de façon linéaire est agencé sur la première plaque de montage (2).

7. Dispositif de réglage selon la revendication 1, **caractérisé en ce que** l'unité d'entraînement (4) est agencée fixement par rapport à la première plaque de montage (2).

8. Dispositif de réglage selon la revendication 1, **caractérisé en ce qu'**un premier élément d'extension (23) est articulé sur le premier support d'appui-tête (1) au niveau d'une extrémité éloignée du premier axe de rotation (3), le premier élément d'extension (23), qui se trouve entre une position rentrée et une position déployée, peut pivoter par rapport au premier support d'appui-tête (1).

9. Dispositif de réglage selon la revendication 8, **caractérisé en ce que** le premier élément d'extension (23) est accouplé au premier support d'appui-tête (1) via au moins un premier mécanisme de pivotement (24).

10. Dispositif de réglage selon la revendication 9, **caractérisé en ce que** le premier mécanisme de pivotement (24) est conçu à la manière d'un guide de parallélogramme.

11. Dispositif de réglage selon la revendication 8, **caractérisé en ce qu'**un premier bras d'accouplement (25) est prévu pour régler le premier élément d'extension (23) dont une extrémité est reliée au premier mécanisme de pivotement (24) et dont l'autre extrémité est directement ou indirectement articulée sur la première plaque de montage (2).

12. Dispositif de réglage selon la revendication 1, **caractérisé en ce qu'**un deuxième support d'appui-tête (20), qui est prévu, peut pivoter sur une deuxième plaque de montage (21) autour d'un second axe de rotation (22), le premier support d'appui-tête (1) et le deuxième support d'appui-tête (20) étant agencés également à distance l'un de l'autre, de manière telle que les premier et second axes de rotation (3, 22) soient alignés.

13. Dispositif de réglage selon la revendication 12, **caractérisé en ce que** le premier support d'appui-tête (1) et le deuxième support d'appui-tête (20) sont reliés l'un à l'autre pour un réglage synchrone.

14. Dispositif de réglage selon la revendication 12, **caractérisé en ce qu'**un deuxième élément d'extension est articulé sur le deuxième support d'appui-tête (20) au niveau d'une extrémité éloignée du second axe de rotation (22), le premier élément d'extension (23) et le deuxième élément d'extension étant reliés l'un à l'autre pour un réglage synchrone.

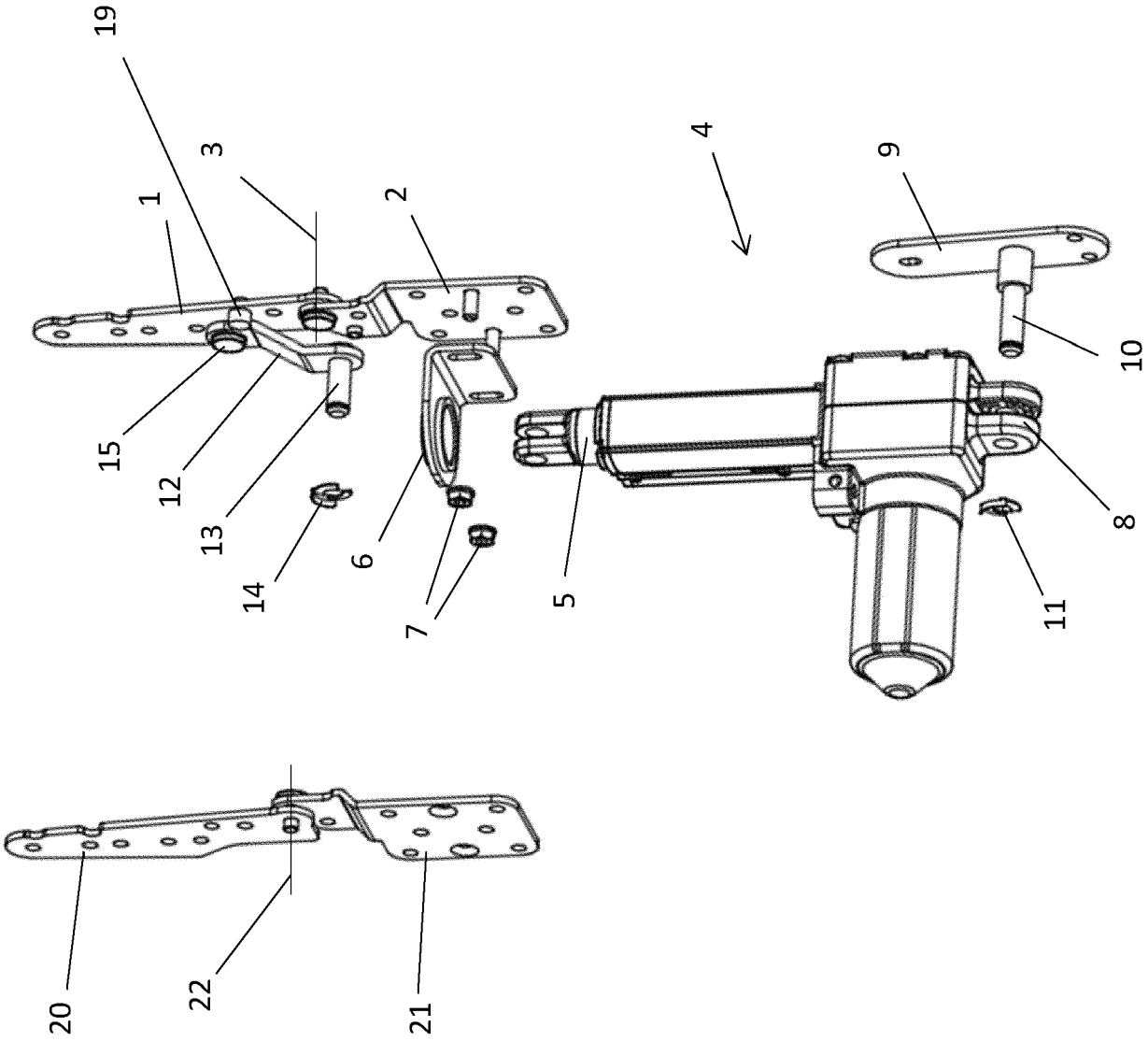

Fig. 1

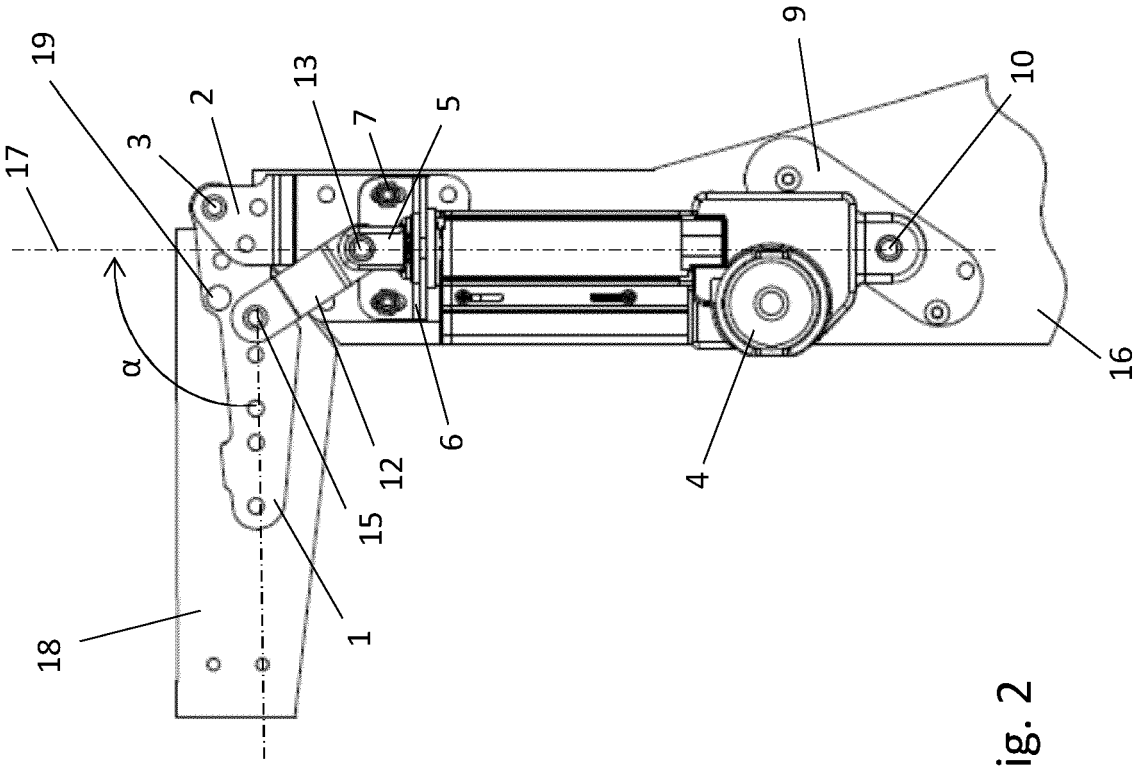

Fig. 2

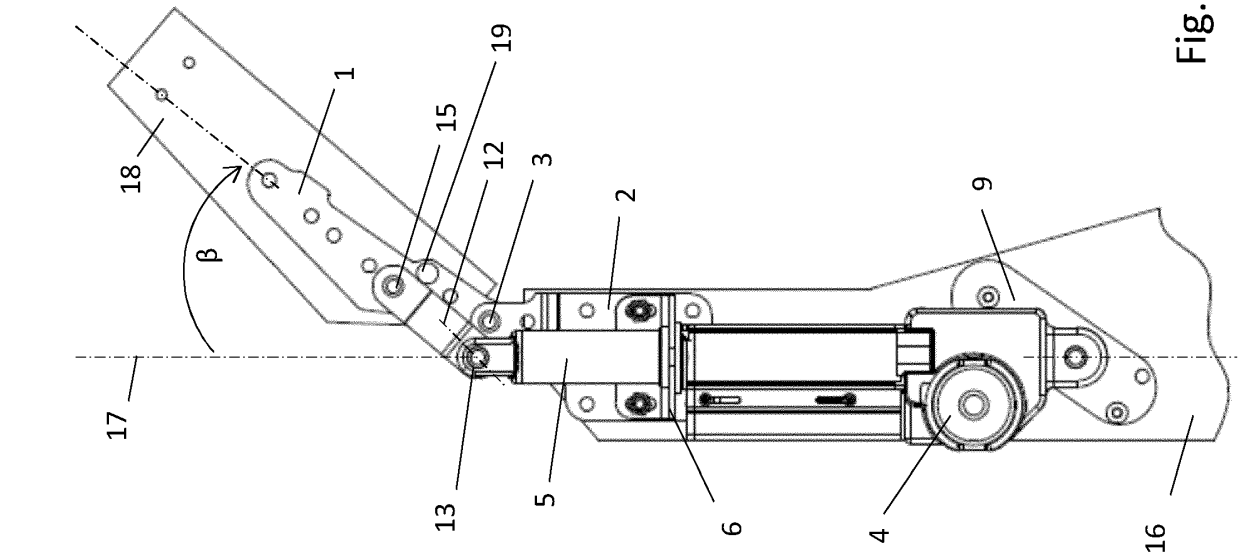

Fig. 4

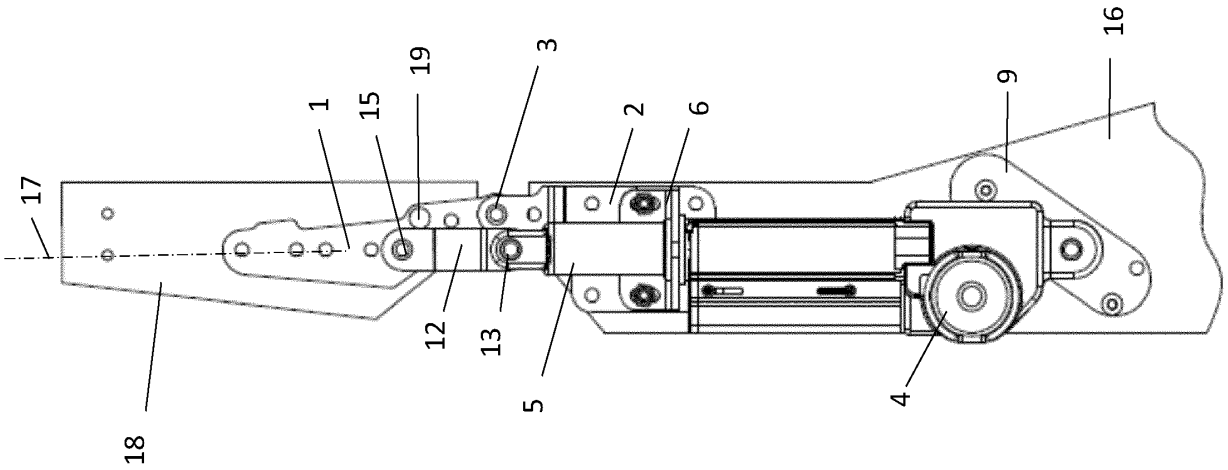

Fig. 3

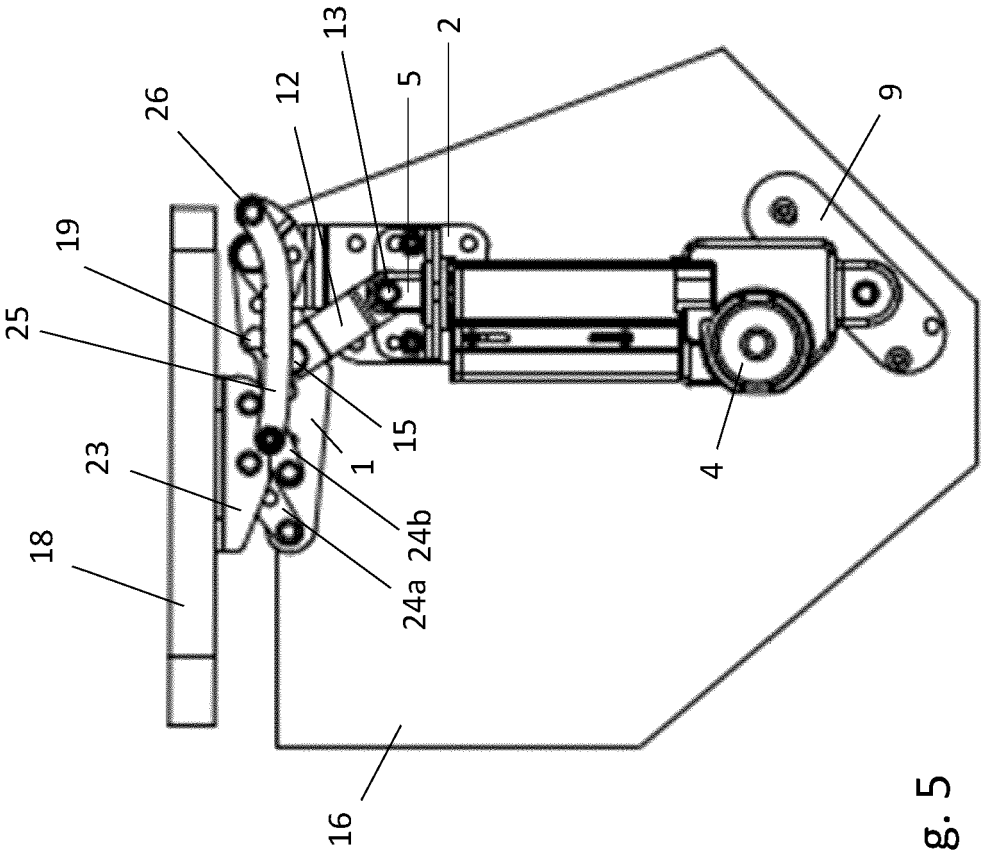

Fig. 5

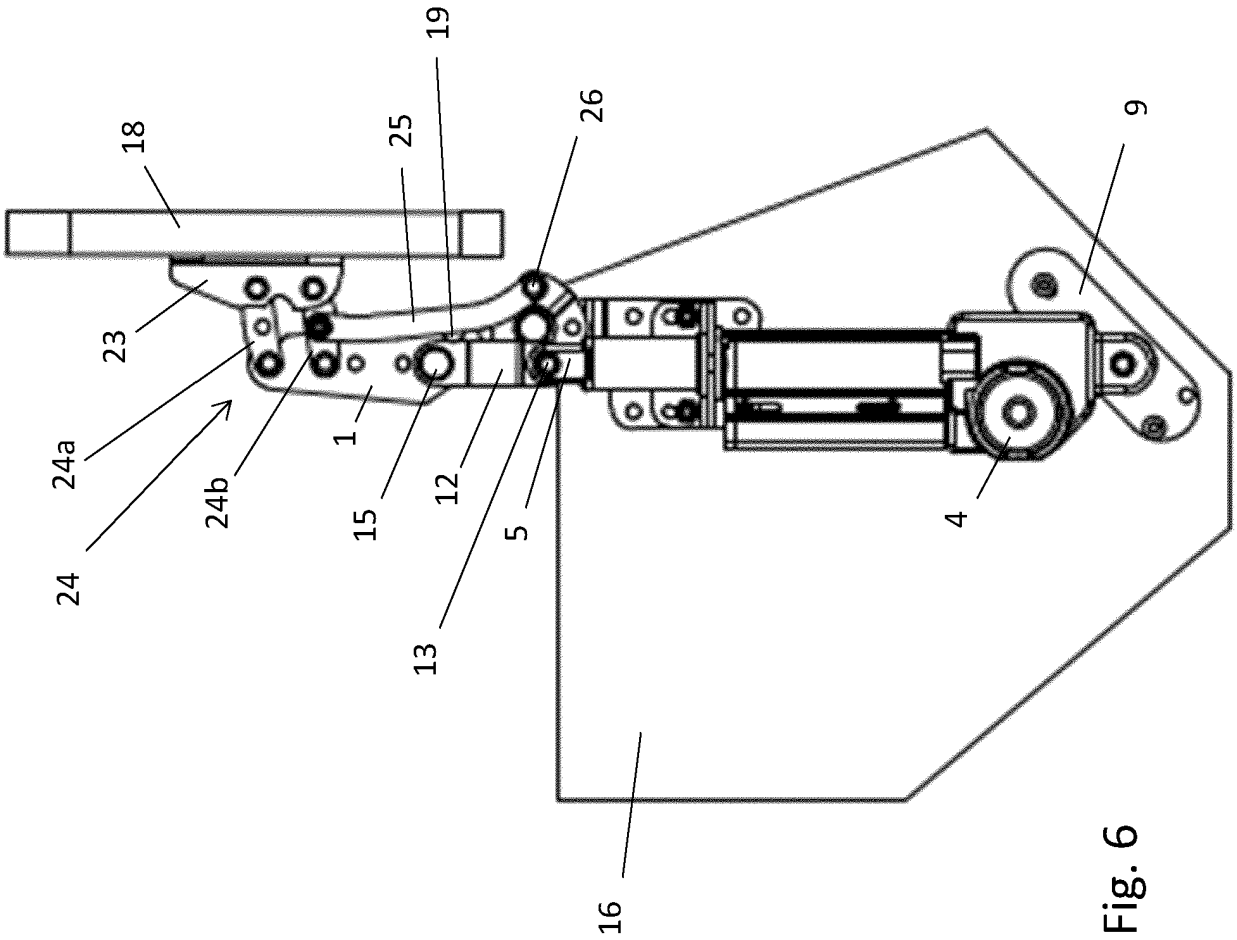

Fig. 6

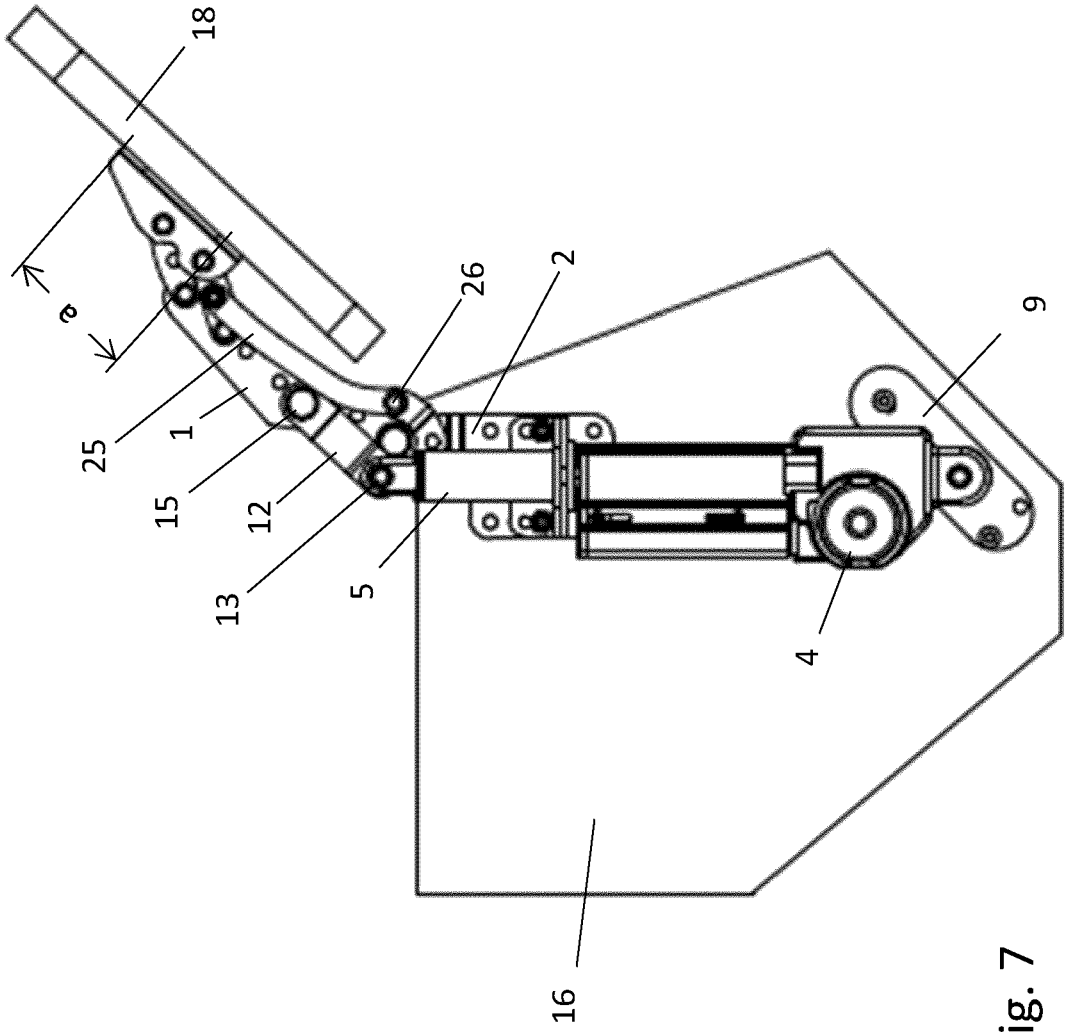

Fig. 7

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- US 5640730 A **[0003]**
- DE 2932344 A1 **[0004]**