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(71) Applicant: **DAWON CHAIRS CO., LTD.**
Gyeonggi-do 12034 (KR)

(72) Inventor: **LEE, Gyu Youn**
11948 Gyeonggi-do (KR)

(74) Representative: **Müller Verweyen**
Patentanwälte
Friedensallee 290
22763 Hamburg (DE)

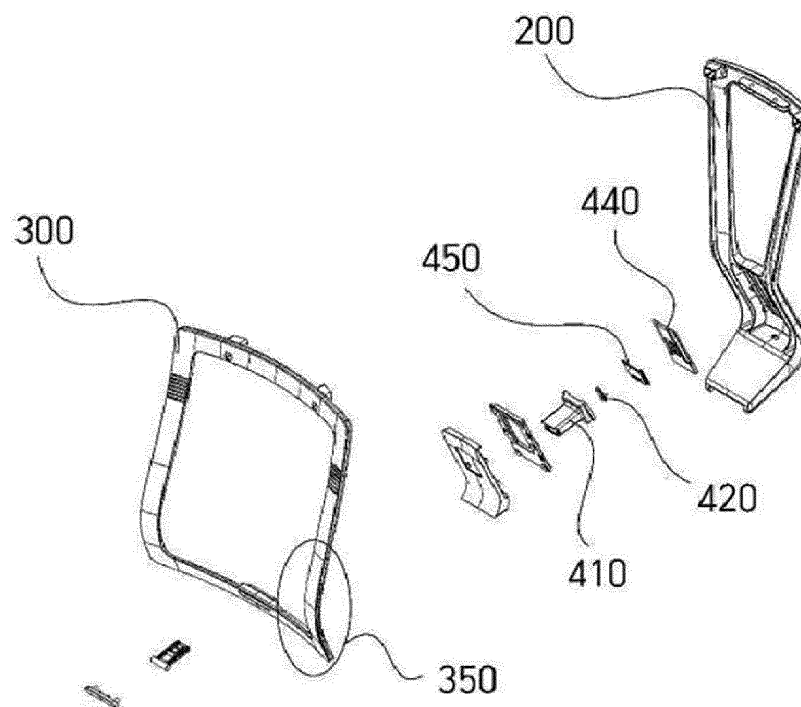
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(54) **CHAIR HAVING FLECTION ADJUSTMENT MODULE FOR LUMBAR SUPPORT PART**

(57) The present invention relates to a chair having a flection adjustment module (400) for a lumbar support part (350), the chair including: a seat part (100); a support part (200) coupled to the seat part (100); a backrest part (300) coupled to an upper end of the support part (200) so as to be disposed on an upper portion of the seat part

(100), extending downward from the upper end of the support part (200), and including a lumbar support part (350) bent corresponding to a waist portion of a user; and a flection adjustment module (400) movably coupled between the backrest part (300) and the support part (200) to adjust flection of the lumbar support part (350).

FIG. 2



Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a chair having a flexion adjustment module for a lumbar support part, and more particularly, to a chair having a flexion adjustment module for a lumbar support part, in which a backrest part and a support part are provided for supporting a back portion of a user, and the flexion adjustment module movably coupled between the backrest part and the support part to adjust flexion of the lumbar support part is provided, so that flexion suitable for the user is formed, and thus a waist portion of the user is supported more comfortably.

2. Description of the Related Art

[0002] In general, a chair is a mechanism for allowing a user to sit and relax, and various components such as a backrest, an armrest, and a headrest are additionally provided to provide various functions. Meanwhile, in modern society, a considerable amount of work is performed through a computer while sitting at a desk. Accordingly, a variety of chairs are being developed to provide more comfort to the user.

[0003] As an example of a recently developed chair, a chair in which a lumbar support part for supporting a waist portion is additionally provided on a backrest is being manufactured, so that the chair may support the waist portion properly while a user is sitting on the chair so as to prevent the waist portion from being strained even when the user is seated on the chair for a long time, and a simple acupressure treatment effect is provided.

[0004] Korean Patent No. 10-0427193, Korean Patent No. 10-0708303, and Korean Patent No. 10-1608737 disclose a conventional technique for providing a chair for supporting a waist portion.

[0005] Korean Patent No. 10-0427193 discloses a lumbar support chair, which has a seat support on which hips are seated and is provided for allowing a back to be leaned against the chair, the lumbar support chair including: a lumbar support provided to be protrudable to a front side of a backrest; a rotation knob rotatably provided on a rear surface of the backrest; and a rotation bar for allowing the lumbar support to protrude to the front side of the backrest or to be withdrawn from the front side of the backrest according to a rotation of the rotation knob.

[0006] Korean Patent No. 10-0708303 discloses a chair having a variable backrest, the chair including: a backrest in which a seat member having a predetermined elasticity is connected to a frame; and a waist support including a support member having an arc shape to maintain predetermined strength and having both ends connected to the frame with a bolt while forming a predetermined space between the support member and the seat

member, including a lifting/lowering device connected to the support member with a distance adjustment device interposed therebetween to lift/lower the support member, and having a contact surface corresponding to a back shape of a user.

[0007] In addition, Korean Patent No. 10-1608737 relates to a lumbar support device and a backrest unit of a chair including the same, in which the lumbar support device includes: a support frame having a communication hole; a lumbar support pad; and a back-and-forth movement adjustment unit for adjusting an amount of a back-and-forth movement of the lumbar support pad to a lumbar portion with respect to the support frame through the communication hole. Unlike the prior technique, in the above invention, a position of the lumbar support pad of the chair for supporting a waist portion of a seated person may be freely set in a vertical direction and a back-and-forth direction according to a body shape, and the lumbar support pad presses a backrest which supports the waist portion, so that it is possible to prevent an inconvenience from being caused by the lumbar support pad by making direct contact with the waist portion.

[0008] In such conventional techniques, a lumbar support part for supporting a waist portion or a lumbar portion is separately provided on the backrest of the chair, thereby providing convenience to the user. However, in Korean Patent No. 10-0427193, Korean Patent No. 10-0708303, and Korean Patent No. 10-1608737, since the lumbar support part is separately provided, assembly is complicated, and a number of components constituting a device is increased, and since a number of processes is increased, a manufacturing cost of the chair is increased. In addition, an overall design of the chair may have no sense of unity due to the lumbar support part, so that aesthetic beauty is reduced, and thus consumers may not tend to choose the chair.

[0009] Accordingly, the present invention proposes a chair having a flexion adjustment module for a lumbar support part, capable of adjusting flexion of a backrest of the chair by a simple scheme without separately providing the lumbar support part.

[Documents of Related Art]

[Patent Documents]

[0010]

(Patent document 0001) Korean Patent No. 10-0427193 (registered on April 02, 2004)

(Patent document 0002) Korean Patent No. 10-0708303 (registered on April 10, 2007)

(Patent document 0003) Korean Patent No. 10-1608737 (registered on March 29, 2016)

SUMMARY OF THE INVENTION

[0011] Accordingly, in order to solve the problems described above, an object of the present invention is to provide a chair having a flecion adjustment module for a lumbar support part, in which a backrest part and a support part are provided for supporting a back portion of a user, and the flecion adjustment module movably coupled between the backrest part and the support part to adjust flecion of the lumbar support part is provided, so that flecion suitable for the user may be formed, and thus a waist portion of the user may be supported more comfortably.

[0012] In addition, an object of the present invention is to provide a chair having a flecion adjustment module for a lumbar support part, in which the flecion of the lumbar support part is adjustable in a stepwise manner by simply pulling up the flecion adjustment module described above, so that a supporting force customized for each user may be provided through a simple scheme.

[0013] To achieve the objects described above, according to a preferred embodiment of the present invention, there is provided a chair having a flecion adjustment module for a lumbar support part, the chair including: a seat part; a support part coupled to the seat part; a backrest part coupled to an upper end of the support part so as to be disposed on an upper portion of the seat part, extending downward from the upper end of the support part, and including a lumbar support part bent corresponding to a waist portion of a user; and a flecion adjustment module movably coupled between the backrest part and the support part to adjust flecion of the lumbar support part.

[0014] In addition, according to a preferred embodiment of the present invention, the flecion adjustment module is fixedly coupled to the backrest part while being coupled to the support part so as to be vertically movable.

[0015] In addition, according to a preferred embodiment of the present invention, the flecion adjustment module includes: a connection member coupled to the backrest part and having a length extending toward the support part; a latching member mounted in the connection member to perform a pendular movement, and having a pin protruding toward the support part; an elastic member mounted on both sides of the latching member to allow the pendular movement to be elastically performed; and a step adjustment member coupled to the support part, and formed on a rear surface thereof with a step adjustment groove including one or more latching grooves in which the pin is inserted and seated.

[0016] In addition, according to a preferred embodiment of the present invention, the step adjustment member further includes a pin guide groove for guiding a movement of the pin along an outer periphery of the step adjustment groove.

[0017] In addition, according to a preferred embodiment of the present invention, the latching grooves are obliquely formed in a longitudinal direction of the step

adjustment member.

[0018] In addition, according to a preferred embodiment of the present invention, an insertion part of the latching groove into which the pin is inserted is formed at a position higher than a position of a seating part of the latching groove at which the pin is stopped.

[0019] In addition, according to a preferred embodiment of the present invention, an upper surface of each of the latching grooves has a streamline shape.

[0020] In addition, according to a preferred embodiment of the present invention, the latching grooves are formed on one side of the step adjustment groove in parallel to each other.

[0021] In addition, according to a preferred embodiment of the present invention, the flecion adjustment module further includes a cover member coupled to the connection member to cover the one surface of the connection member, and having a fluctuation groove corresponding to a fluctuation radius of the pin.

[0022] In addition, according to a preferred embodiment of the present invention, the step adjustment member further includes a connection member guide groove formed on both sides of the step adjustment groove to guide a movement of the connection member, and the connection member has a protrusion part having a shape corresponding to the connection member guide groove.

[0023] As described above, according to the chair having the flecion adjustment module for the lumbar support part of the present invention, the backrest part and the support part are provided for supporting the back portion of the user, and the flecion adjustment module movably coupled between the backrest part and the support part to adjust the flecion of the lumbar support part is provided, so that the flecion suitable for the user can be formed, and thus the waist portion of the user can be supported more comfortably.

[0024] In addition, according to the present invention, the flecion of the lumbar support part is adjustable in a stepwise manner by simply pulling up the flecion adjustment module described above, so that the supporting force customized for each user may be provided through a simple scheme.

BRIEF DESCRIPTION OF THE DRAWINGS

[0025]

FIG. 1 is a view schematically showing a chair having a flecion adjustment module for a lumbar support part according to an embodiment of the present invention.

FIG. 2 is a view schematically showing a configuration of the flecion adjustment module according to an embodiment of the present invention.

FIG. 3 is a view schematically showing an internal configuration of the flecion adjustment module according to an embodiment of the present invention. FIG. 4 is a view schematically showing a cover mem-

ber of the flection adjustment module according to an embodiment of the present invention.

FIG. 5 is a view schematically showing an operation state of the flection adjustment module according to an embodiment of the present invention.

FIG. 6 is a view schematically showing a state in which flection of the lumbar support part is adjusted according to an embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0026] Terms and words used in the specification and the claims shall not be interpreted as commonly-used or dictionary meanings, but shall be interpreted as meanings and concepts relevant to the technical idea of the present invention based on a principle that the inventor may appropriately define the concept of the term to explain his/her invention in the best way.

[0027] Therefore, the embodiment disclosed in the specification and the configurations depicted in the drawings represent the most preferred embodiment of the present invention only, and do not represent all of the technical ideas of the present invention, so it should be understood that various equivalents and modifications may be substituted for the embodiment and the configurations at the time of filing of the present application.

[0028] Hereinafter, preferred embodiments of the present invention will be described in detail with reference to the accompanying drawings.

[0029] FIG. 1 is a view schematically showing a chair having a flection adjustment module for a lumbar support part according to an embodiment of the present invention, FIG. 2 is a view schematically showing a configuration of the flection adjustment module according to an embodiment of the present invention, FIG. 3 is a view schematically showing an internal configuration of the flection adjustment module according to an embodiment of the present invention, FIG. 4 is a view schematically showing a cover member of the flection adjustment module according to an embodiment of the present invention, FIG. 5 is a view schematically showing an operation state of the flection adjustment module according to an embodiment of the present invention, and FIG. 6 is a view schematically showing a state in which flection of the lumbar support part is adjusted according to an embodiment of the present invention.

[0030] Referring to FIGS. 1 to 6, a chair having a flection adjustment module for a lumbar support part according to the present invention basically includes a seat part 100, a support part 200, a backrest part 300, and a flexion adjustment module 400.

[0031] The seat part 100 is configured to have an appropriate area for allowing a user to be seated, and may include: a leg part 110 provided at a lower portion of the seat part 100 with an adjustable height; an assembly 120 including an adjustment lever 125 that enables at least one of height adjustment of the leg part 110 and angle

adjustment of the support part 200; and an armrest part 130 mounted on both sides of the seat part 100 to support an arm of the user.

[0032] The support part 200 is configured to support a back portion of the user while being coupled with the backrest part 300, in which a lower end of the support part 200 is coupled with the seat part 100 to provide a supporting force. The support part 200 may extend upward from one side of the seat part 100. In this case, the support part 200 may include an elastic material to provide a suitable elastic force while supporting against a leaning force of the back portion of the user, and as shown in FIG. 6, in order to increase efficiency, the support part 200 may substantially have an "S" shape in which an upper bent portion is spread in an upward direction when viewed from a right side.

[0033] Meanwhile, the support part 200 may further include at least one of a headrest part 250 mounted on an upper portion of the support part 200 to support a head portion of the user, and a hanger part 260 mounted on the upper portion of the support part 200 while being disposed on a rear surface of the headrest part 250 to hang clothes of the user.

[0034] The backrest part 300 is coupled to an upper end of the support part 200 so as to be disposed on an upper portion of the seat part 100, extends downward from the upper end of the support part 200, and includes a lumbar support part 350 bent corresponding to a waist portion of the user. The backrest part 300 may be formed of an elastic material so that the lumbar support part 350 may further protrude toward the waist portion of the user by an operation of the flection adjustment module 400.

[0035] Meanwhile, as shown in FIG. 1, the backrest part 300 may be configured as a frame formed therein with an opening and a mesh net (not shown) provided in the opening of the frame. When a portion of the chair making direct contact with the back portion of the user is configured as the mesh net as described above, it may be advantageous in terms of ventilation on the back portion of the user.

[0036] The flection adjustment module 400 is movably coupled between the backrest part 300 and the support part 200 to adjust flection of the lumbar support part 350. Preferably, the flection adjustment module 400 may be fixedly coupled to the backrest part 300 while being coupled to the support part 200 so as to be vertically movable. Therefore, when the user pulls up the flection adjustment module 400 in an upward direction of the support part 200 while gripping the flection adjustment module 400, since the backrest part 300 is coupled to the flection adjustment module 400, the lumbar support part 350 is further bent. Accordingly, the lumbar support part 350 may protrude toward the waist portion of the user, so that the lumbar support part 350 may further make close contact with the waist portion of the user.

[0037] As a detailed configuration of the flection adjustment module 400, as shown in FIGS. 2 to 5, the flection adjustment module 400 may include: a connection

member 410 coupled to the backrest part 300 and having a length extending toward the support part 200; a latching member 420 mounted in the connection member 410 to perform a pendular movement, and having a pin 421 protruding toward the support part 200; an elastic member 430 mounted on both sides of the latching member 420 to allow the pendular movement to be elastically performed; and a step adjustment member 440 coupled to the support part 200, and formed on a rear surface thereof with a step adjustment groove 441 including one or more latching grooves 442 in which the pin 421 is inserted and seated. In addition, components for allowing the connection member 410 to be coupled to the backrest part 300 and allowing the step adjustment member 440 to be coupled to the support part 200 may be additionally provided.

[0038] The connection member 410 may have a shape which allows components such as the latching member 420 and the elastic member 430 to be mounted on one surface of the connection member 410. For example, as shown in FIG. 3(a), a protrusion groove 411 may be formed in an upper center of the one surface of the connection member 410, and an elastic member coupling groove 412 may be obliquely formed on both lower sides of the connection member 410 to correspond to right and left directions of the pendular movement of the latching member 420.

[0039] In addition, a protrusion part 413 protruding toward the support part 200 more than a center portion of the connection member 410 to form multiple steps may be provided on both sides of the connection member 410. The protrusion part 413 may make close contact with a connection member guide groove 443 recessed on both sides of the step adjustment member 440 to form multiple steps, as shown in FIG. 3(b), so that the flexion adjustment module 400 may be prevented from being separated to right and left when the flexion adjustment module 400 is moved vertically.

[0040] In addition, as shown in FIG. 4, a cover member 450 having a fluctuation groove 451 corresponding to a fluctuation radius of the pin 421 may be coupled to the one surface of the connection member 410. Therefore, components such as the latching member 420 and the elastic member 430 mounted inside the connection member 410 may be prevented from being separated.

[0041] The latching member 420 has an upper portion mounted in the protrusion groove 411 and extends downward from the protrusion groove 411 to perform the pendular movement in the right and left directions, and the latching member 420 may be formed at right and left ends thereof with an elastic member mounting groove 422 in which the elastic member 430 is mounted. In other words, the elastic member 430 may be inserted and mounted between the elastic member coupling groove 412 and the elastic member mounting groove 422 to allow the pendular movement of the latching member 420 in the right and left directions to be elastically performed. Meanwhile, the elastic member 430 may be a spring as shown in FIG. 3, but is not limited thereto, and other components

that may provide elasticity may be used.

[0042] Meanwhile, the latching grooves 442 formed in the step adjustment groove 441 of the step adjustment member 440 may be obliquely formed in a longitudinal direction of the step adjustment member 440, and an insertion part 442a of a latching groove 442 into which the pin 421 is inserted may be formed at a position higher than a position of a seating part 442b of the latching groove 442 at which the pin 421 is stopped. Moreover, an upper surface of each of the latching grooves 442 may have a streamline shape. The latching grooves 442 are formed on one side of the step adjustment groove 441 in parallel to each other, and the step adjustment member 440 further includes a pin guide groove 444 for guiding a movement of the pin 421 along an outer periphery of the step adjustment groove 441. In other words, the pin 421 is inserted into the pin guide groove 444 formed along an outer periphery of the step adjustment groove 441 or the latching groove 442 formed in the step adjustment groove 441 so as to be moved.

[0043] Referring to FIGS. 5 and 6, when the pin 421 is located at a lowermost position (A) of the pin guide groove 444, the flexion adjustment module 400 is located at a lowermost position, so that the lumbar support part 350 may maintain only basic flexion without additional protrusion. In this case, when the user grips and pulls up the flexion adjustment module 400, the pin 421 is fixedly inserted into a first latching groove (B) by an elastic force of the elastic member 430 after being moved in one fluctuation direction along the streamline shape of the upper surface of the latching groove 442. When above operations are performed several times, as shown in FIG. 6(b), the lumbar support part 350 gradually protrudes toward the waist portion of the user, so that the lumbar support part 350 may further make close contact with the waist portion of the user.

[0044] Meanwhile, when the flexion adjustment module 400 is further pulled up after the pin 421 is inserted into a third latching groove 442 based on FIG. 5, finally, the pin 421 may be located at the lowest position again after passing over (C) an upper surface of the third latching groove and moving along the pin guide groove 444. Accordingly, the lumbar support part 350 may have the basic flexion again by the elastic force.

Claims

1. A chair having a flexion adjustment module for a lumbar support part, the chair comprising:
 - a seat part (100);
 - a support part (200) coupled to the seat part (100);
 - a backrest part (300) coupled to an upper end of the support part (200) so as to be disposed on an upper portion of the seat part (100), extending downward from the upper end of the

support part (200), and including a lumbar support part (350) bent corresponding to a waist portion of a user; and

a flection adjustment module (400) movably coupled between the backrest part (300) and the support part (200) to adjust flection of the lumbar support part (350),

wherein the flection adjustment module (400) includes:

a connection member (410) coupled to the backrest part (300) and having a length extending toward the support part (200);

a latching member (420) mounted in the connection member (410) to perform a pendular movement, and having a pin (421) protruding toward the support part (200);

an elastic member (430) mounted on both sides of the latching member (420) to allow the pendular movement to be elastically performed; and

a step adjustment member (440) coupled to the support part (200), and formed on a rear surface thereof with a step adjustment groove (441) including one or more latching grooves (442) in which the pin (421) is inserted and seated,

the latching grooves (442) are obliquely formed in a longitudinal direction of the step adjustment member (440),

the latching member (420) is mounted in a protrusion groove (411) formed in an upper center of one surface of the connection member (410), and

the elastic member (430) is mounted in an elastic member coupling groove (412) obliquely formed on both lower sides of the connection member (410).

2. The chair of claim 1, wherein the flection adjustment module (400) is fixedly coupled to the backrest part (300) while being coupled to the support part (200) so as to be vertically movable.

3. The chair of claim 1, wherein the step adjustment member (440) further includes a pin guide groove (444) for guiding a movement of the pin (421) along an outer periphery of the step adjustment groove (441).

4. The chair of claim 1, wherein an insertion part (442a) of the latching groove (442) into which the pin (421) is inserted is formed at a position higher than a position of a seating part (442b) of the latching groove (442) at which the pin (421) is stopped.

5. The chair of claim 1, wherein an upper surface of

each of the latching grooves (442) has a streamline shape.

6. The chair of claim 1, wherein the latching grooves (442) are formed on one side of the step adjustment groove (441) in parallel to each other.

7. The chair of claim 1, wherein the flection adjustment module (400) further includes a cover member (450) coupled to the connection member (410) to cover the one surface of the connection member (410), and having a fluctuation groove (451) corresponding to a fluctuation radius of the pin (421).

8. The chair of claim 1, wherein the step adjustment member (440) further includes a connection member guide groove (443) formed on both sides of the step adjustment groove (441) to guide a movement of the connection member (410), and the connection member (410) has a protrusion part (413) having a shape corresponding to the connection member guide groove (443) .

FIG. 1

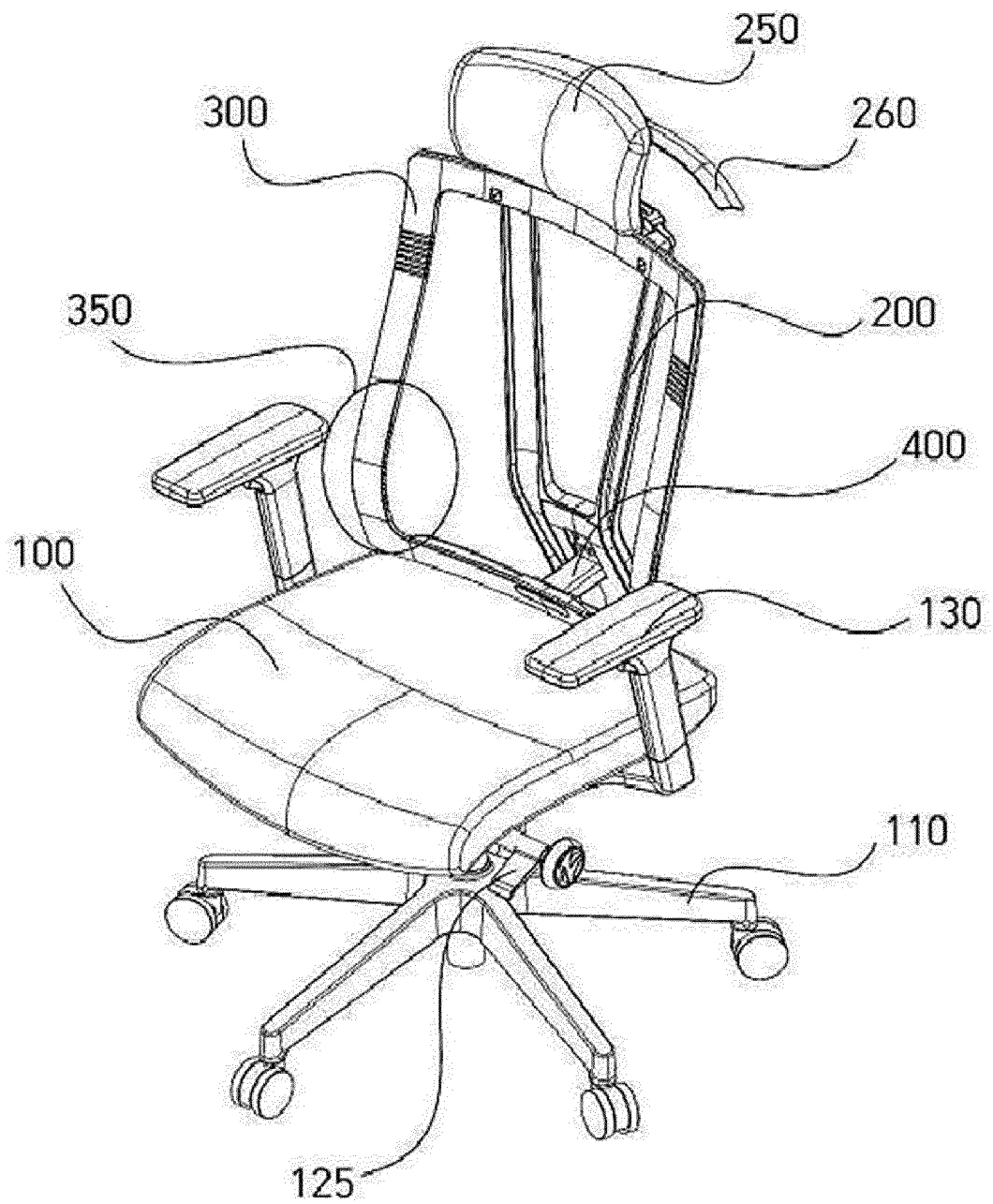


FIG. 2

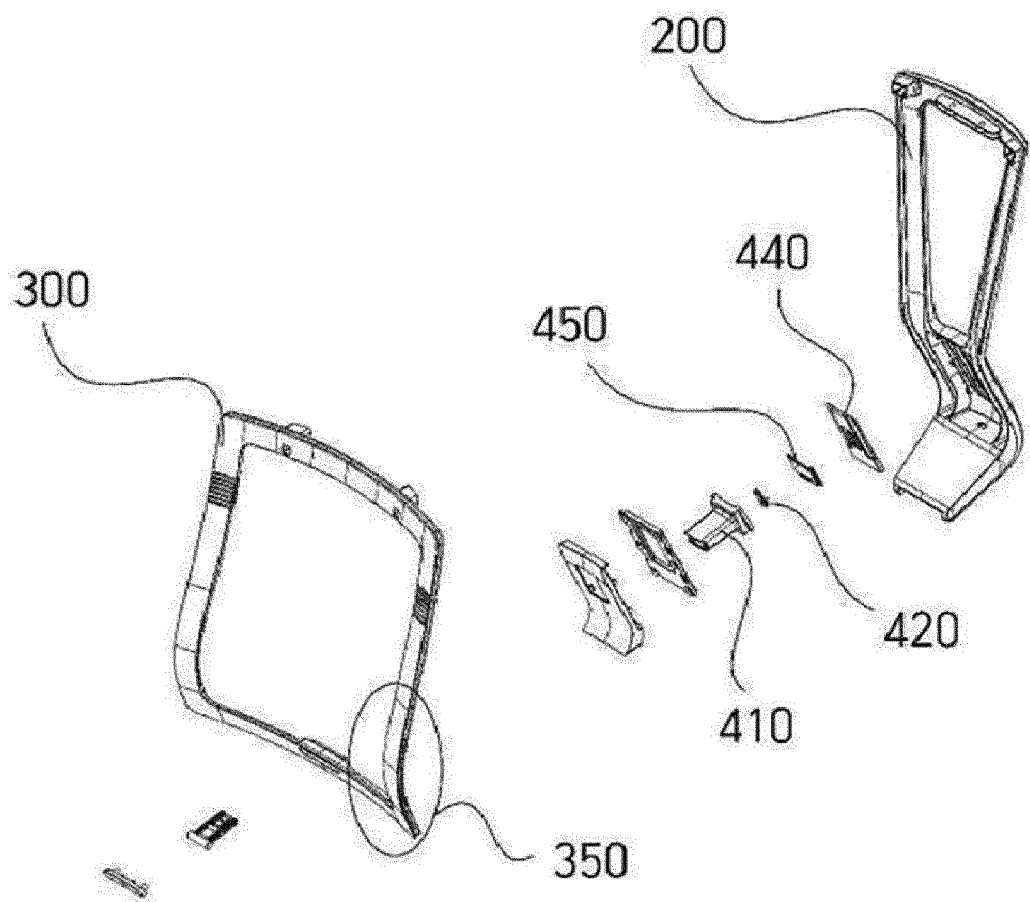


FIG. 3

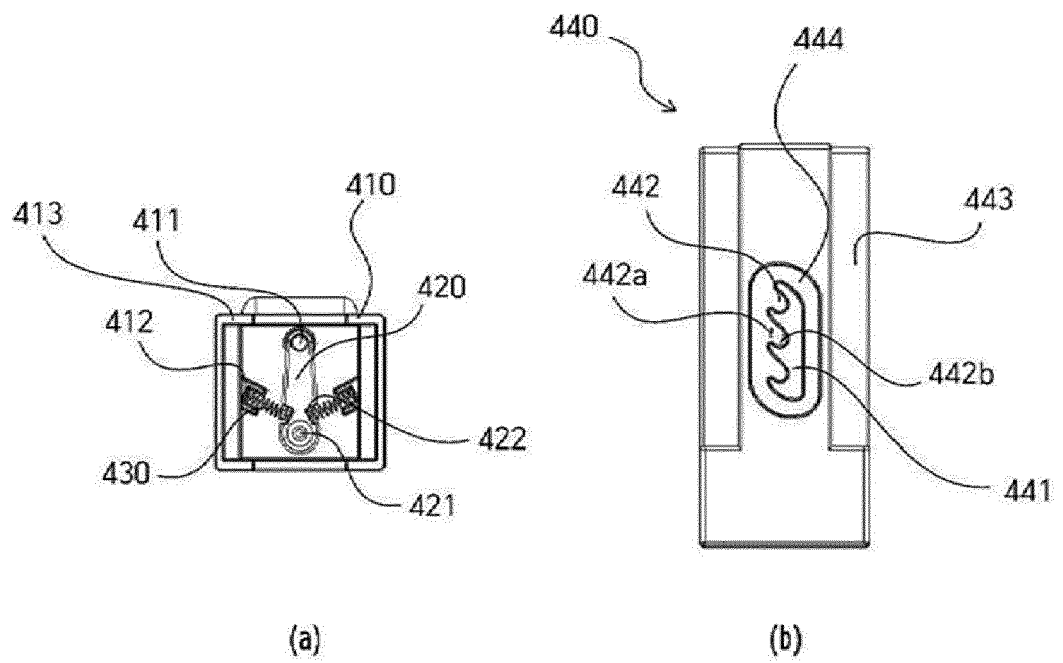


FIG. 4

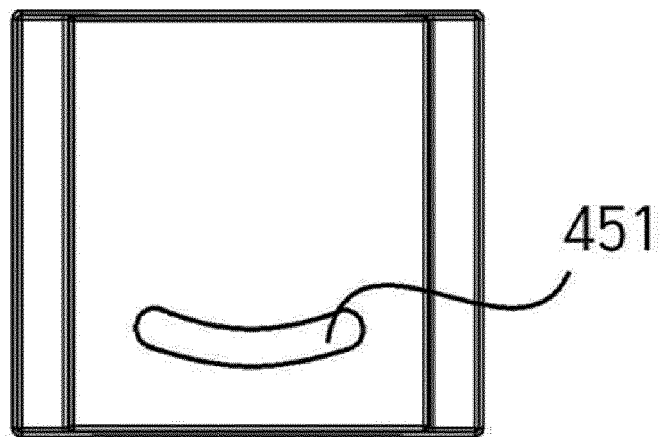


FIG. 5

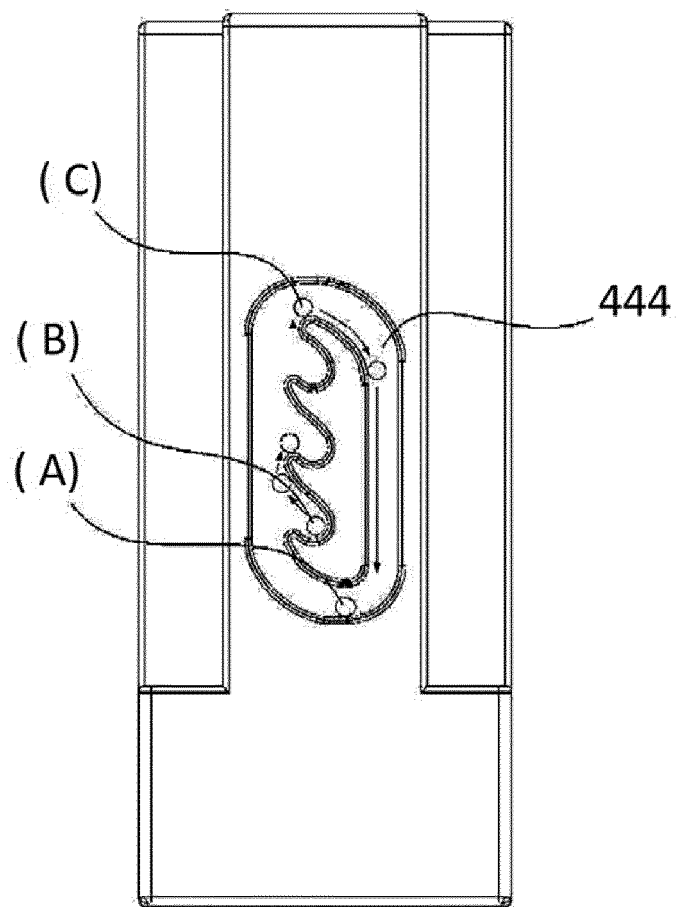
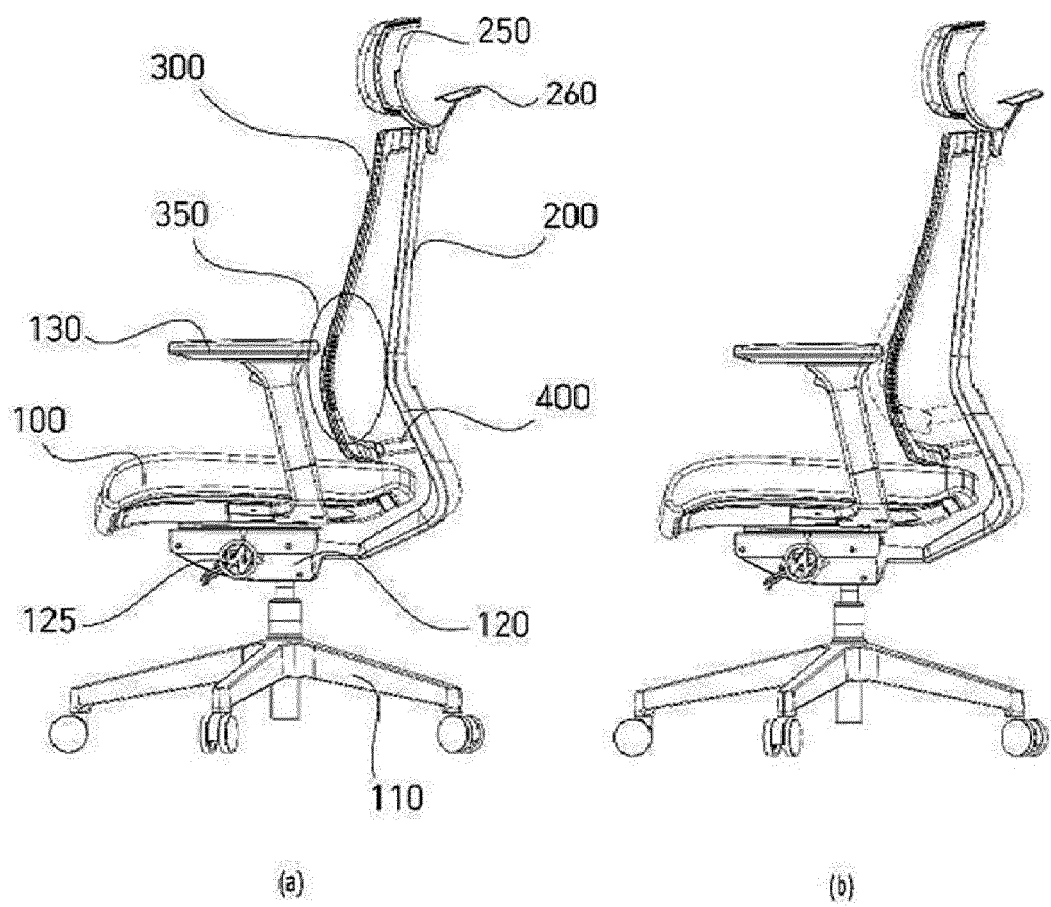


FIG. 6





EUROPEAN SEARCH REPORT

Application Number
EP 19 18 3905

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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	KR 101 759 479 B1 (DAWON CHAIRS CO LTD [KR]) 20 July 2017 (2017-07-20) * figures *	1-8	INV. A47C7/46
A	----- KR 101 730 880 B1 (DAWON CHAIRS CO LTD [KR]; KIM RAN SOON [KR]) 28 April 2017 (2017-04-28) * figures *	1-8	
A	----- US 2016/360892 A1 (NEIL GARY [CA]) 15 December 2016 (2016-12-15) * paragraphs [0046], [0047]; figures *	1-8	
A	----- US 9 247 821 B1 (WU YAO-CHUAN [TW]) 2 February 2016 (2016-02-02) * claim 1; figures 1,10-14 *	1-8	

			TECHNICAL FIELDS SEARCHED (IPC)
			A47C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 25 September 2019	Examiner Kis, Pál
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			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 19 18 3905

5 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
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25-09-2019

10	Patent document cited in search report	Publication date	Patent family member(s)	Publication date
	KR 101759479	B1	20-07-2017	NONE
	KR 101730880	B1	28-04-2017	NONE
15	US 2016360892	A1	15-12-2016	NONE
	US 9247821	B1	02-02-2016	NONE
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- KR 100427193 [0004] [0005] [0008] [0010]
- KR 100708303 [0004] [0006] [0008] [0010]
- KR 101608737 [0004] [0007] [0008] [0010]