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Remarks:
Amended claims in accordance with Rule 137(2) EPC.

(54) CHAIR WITH SWING FUNCTION

(57) The invention provides a chair with swing function, including a base frame (10), a swing structure (20) and swing driving component (40). The swing structure (20) is arranged on the base frame (10), has a swing base frame (21) and at least two swing arms (22). A bottom end of one of the two swing arms (22) is connected to the swing base frame (21), and a top end of the one of the two swing arms (22) is connected to the base frame (10). The swing driving component (40) including a motor (41), a transmission component (42), an eccentric (43), a universal component (44) and a connecting device (445). The motor (41) cooperates with and drive the transmission component (42). One end of the eccentric (43) is connected to the transmission component (42), and the other end of the eccentric (43) has a protrusion structure (431). One end of the universal component (44) is connected to the protrusion structure (431) of the eccentric (43), and the other end of the universal component (44) has a spherical connecting rod (444). The connecting device (445) is arranged on the base frame (10).

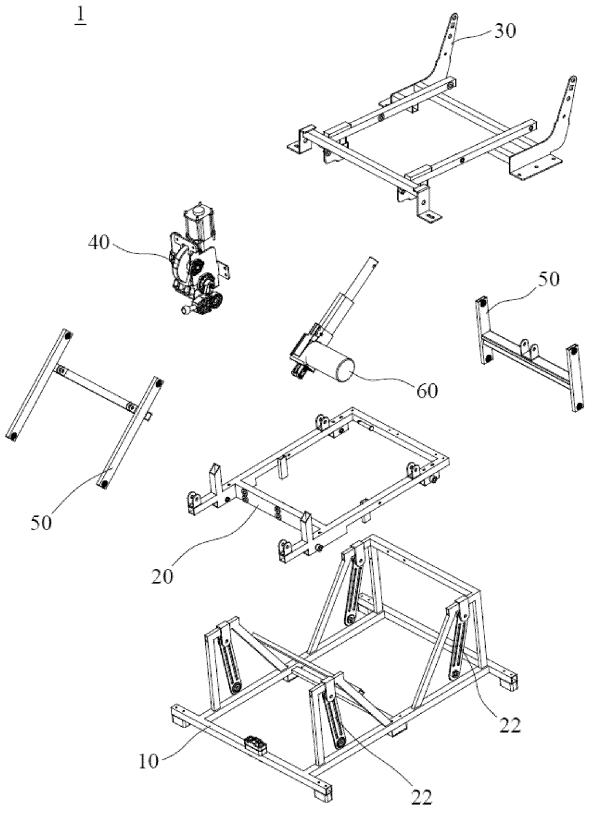

Fig.2

EP 4 501 177 A1

Description

BACKGROUND

Technical Field

[0001] The present invention belongs to the technical field of chairs, in particular to a chair with a swing function.

Description of the Related Art

[0002] The swing chairs currently on the market, including the chair frame and the seat frame. The swing chairs drive the chair frame to swing back and forth through the drive mechanism to bring comfort and relaxation to the users when they are tired. However, under the condition that the swing frequency of the swing chairs is based on the swing length of the swing mechanism at present, the swing frequency is almost a fixed value. In the cases, the non-adjustable swing rate makes it impossible for the swing chair to match the user's breathing rate and thus achieve a better relaxation effect.

[0003] Furthermore, although there is currently a technology of the chair with an electrically-driven to swing, for example, Reference CN213431443U. In Reference CN213431443U, discloses the base and the swing base frame are connected with a gear and a connecting rod. The gears and connecting rods are used to drive the swing of the swing base frame. However, the design of the gear directly driving the connecting rod makes it easy to damage the gear and shorten the product life when the product is impacted.

SUMMARY

[0004] The main purpose of the present invention is to provide a chair with a swing function, which can effectively solve the above problems. A chair with swing function comprises a base frame, a swing structure, and a swing driving component. Wherein the swing structure is swingably arranged on the base frame, comprises a swing base frame and a swing driving component. The swing base frame , and at least two swing arms. Each of the swing arms comprises a top end and a bottom end, the bottom end is connected to the swing base frame, and the top end is connected to the base frame. The swing driving component is connected to the base frame and the swing base frame for driving the swing base frame to swing. The swing driving component comprising:a motor, a transmission component, a eccentric, a universal component, and a connecting device. The transmission component is cooperated with the motor to drive the transmission component to rotate. The eccentric is connected to the transmission component with one end,and the other end of the eccentric has a protrusion structure. The universal component is connected to the protrusion structure of the eccentric with one end, and the other end of the universal component has a spherical connecting rod. The connecting device is arranged on the base frame, and the connecting device has a groove for cooperating the spherical connecting rod.

[0005] Based on the foregoing embodiments, preferably, the swing structure further comprises a support bracket. The support bracket is arranged on the swing base frame and connected to the swing base frame.

[0006] Based on the foregoing embodiments, preferably, the transmission component of the swing driving component comprises a first gear, a first shaft, a driving wheel, a second shaft and a belt. The motor drives the first gear to rotate around the first shaft, and the belt transmission connects the first shaft and the driving wheel to cause the driving wheel to rotate around the second shaft. One end of the eccentric sleeved on the second shaft.

[0007] Based on the foregoing embodiments, preferably, the universal component comprises: a first connector, a guide rod, and a second connector. The first connector connected to the protrusion structure of the eccentric. The guide rod passes through the pilot hole of the connector for pivoting the first connector to the second connector. The spherical connecting rod has a spherical end and a rod end, and the second connector connected to the rod end of the spherical connecting rod.

[0008] Based on the foregoing embodiments, preferably, the swing frequency of the swing structure decreases gradually.

[0009] Based on the foregoing embodiments, preferably, the swing frequency of the swing structure is less than or equal to 15 times per minute.

[0010] Based on the foregoing embodiments, preferably, the swing frequency of the swing structure is between 8 and 15 times per minute.

[0011] Another object of this invention is to provide a chair with a swing function. The chair with a swing function comprises a base frame, a swing structure, and a a swing driving component. The swing structure is swingably arranged on the base frame, comprises a swing base frame, and at least two swing arms. Each of the swing arms comprises a top end and a bottom end, the bottom end is connected to the swing base frame, and the top end is connected to the base frame. The swing driving component is connected to the base frame and the swing base frame for driving the swing base frame to swing; the swing frequency of the swing structure is between 8 and 15 times per minute.

[0012] Based on the foregoing embodiments, preferably, the the swing frequency of the swing structure decreases gradually, and is not less than 8 times.

[0013] Based on the foregoing embodiments, preferably, the swing driving component comprises a motor, a transmission component, a eccentric, a universal component, and a connecting device. The transmission component is cooperated with the motor to drive the transmission component to rotate. The eccentric is connected to the transmission component with one end, and the other end of the eccentric has a protrusion structure. The

universal component is connected to the protrusion structure of the eccentric with one end, and the other end of the universal component has a spherical connecting rod. The connecting device is arranged on the base frame, and the connecting device has a groove for cooperating with the spherical connecting rod. Among them, the voltage of the motor is adjustable to control the swing frequency of the swing structure.

[0014] Based on the above,. by arranging the swing driving component between the base frame and the swing base frame, the present invention utilizes the transmission component and the universal component of the swing driving component to adjust the assembly errors of the swing base frame and the base frame in multiple directions. Thereby improving product installation accuracy. Reduced requirements. In addition, when the product is impacted, the transmission component and universal component also provide buffering in multiple directions, increasing the reliability of the product.

[0015] The swing length of the restricted swing structure cannot be adjusted, and the length of the drive shaft is limited. The swing frequency of the chair in the current technology is between 16 and 42 times per minute, and cannot be lower than 16 times per minute. The swing frequency of the swing structure of the present invention is less than or equal to 15 times per minute. Moreover, the swing frequency can be gradually lowered by adjusting the motor voltage so that the swing frequency can match the user's breathing frequency and improve the user's riding experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] In order to allow the abovementioned and other purposes, features, advantages and embodiments of the present invention to be more clearly understood, the accompanying drawings are described as following:

Fig. 1A is a side view of the chair with swing function provided by the embodiment of the present invention swinging forward.

Fig. 1B is a side view of the chair with swing function provided by the embodiment of the present invention swinging backward.

Fig 1C is a schematic diagram of the structure of. the chair with swing function provided by the embodiment of the present invention.

Figs. 2 is a exploded view of the chair with swing function provided by the embodiment of the present invention.

Fig 3 is a schematic diagram of the structure of. the swing driving component provided by the embodiment of the present invention.

Figs. 4 is a exploded view of swing driving component provided by the embodiment of the present invention.

Figs. 5 is a exploded view of swing driving component provided by the embodiment of the present invention.

DETAILED DESCRIPTION

[0017] To more completely and clearly illustrate the technical means and effects of this invention, the detailed descriptions are set forth below. Please refer to the disclosed figures and the reference numbers.

[0018] The advantages, features, and technical methods of the present invention are to be explained in detail with reference to the exemplary embodiments and the accompanying drawings for the purpose of being more easily to be understood. Moreover, the present invention may be realized in different forms, and should not be construed as being limited to the embodiments set forth herein. Conversely, for a person of ordinary skill in the art, the embodiments provided shall make the present invention convey the scope more thoroughly, comprehensively, and completely.

[0019] In the description of the present invention, the terms "first" and "second" are only used for descriptive purposes and cannot be understood as indicating or implying relative importance or implicitly indicating the number of indicated technical features. Therefore, features defined as "first" and "second" may explicitly or implicitly include one or more of these features. In the description of the present invention, "plurality" means two or more than two, unless otherwise explicitly and specifically limited.

[0020] Fig. 1A is a side view of the chair with swing function provided by the embodiment of the present invention swinging forward. Fig. 1B is a side view of the chair with swing function provided by the embodiment of the present invention swinging backward. Fig 1C is a schematic diagram of the structure of. the chair with swing function provided by the embodiment of the present invention. Figs. 2 is a exploded view of the chair with swing function provided by the embodiment of the present invention. Fig 3 is a schematic diagram of the structure of. the swing driving component provided by the embodiment of the present invention. Figs. 4 and Figs. 5 is a exploded view of swing driving component provided by the embodiment of the present invention. Please refer to the disclosed figures 1 to 3. A chair with swing function 1 comprises a base frame 10, a swing structure 20, and a swing driving component 40. The swing structure 20 is swingably arranged on the base frame 10. The swing structure 20 comprises a swing base frame 21 and at least two swing arms 22. Each of the swing arms 22 comprises a top end 221 and a bottom end 222, the bottom end 222 is connected to the swing base frame 21, and the top end 221 is connected to the base frame 10. Taking the embodiment of the present invention as an example, there are four swing arms 22 in total. That is, two swing arms 22 are provided on both sides of the swing base frame 21. The present invention does not limit the number and placement of the swing arms, as long as they can drive the swing base frame to swing

forward and back. As shown in Figures 1A and 1B, when the swing base frame 21 swings forward or backward, the swing arms 22 is tilted at different angles. The swing driving component 40 connects the base frame 10 and the swing base frame 20 to drive the swing base frame 20 to swing.

[0021] Further, the top end 221 and the bottom end 222 of the swing arm 22 are both provided with bearings. Therefore the bottom end 222 can be rotationally connected to the swing base frame 21 through pins, and the top end 221 can be rotationally connected to the base frame 10 through pins. When the swing arm 22 swings under the action of the swing driving assembly 40, the seat swing function can be realized.

[0022] As shown in Figure 2, the swing structure 20 further comprises a support bracket 30, two sets of support frames 50, and a push rod 60. The two sets of support frames 50 are respectively connected to both ends of the swing base frame 20 and are used to support the support bracket 30. The push rod 60 is connected to one of the support frames 50 and the swing base frame 20 . During specific implementation, cloth can be arranged on the supporting frame 30 to form a seat for the user to sit on. The support frame 50 is preferably an H-shaped structure, which is structurally stable and facilitates better support of the support bracket 30. In the embodiment of the present invention, the support frames 50 are respectively located at the front end and the rear end of the swing base frame 20, but the present invention does not This is the limit. The push rod 60 is located between the two sets of support frames 50, which can improve the stability of the chair with swing function 1.

[0023] As shown in Figures 3 to 5, the swing driving component 40 comprises: a motor 41, a transmission component 42, an eccentric 43, a universal component 44 and a connecting device 445. The motor 41 cooperates with the transmission component 42 to drive the transmission component 42 rotates. One end of the eccentric 43 is connected to the transmission component 42, the other end of the eccentric 43 has a protrusion structure 431. One end of the universal component 44 is connected to the protrusion structure 431 of the eccentric 43, and the other end of the universal component 44 has a spherical connecting rod 444. A connecting device 445 is arranged on the base frame 10. The connecting device 445 has a groove for cooperating with the spherical connecting rod 444. The operation mode of the swing driving component 40 is that the motor 41 provides a force parallel to the gravity direction of the support bracket 30 to drive the rotation of the transmission component 42. Since one end of the eccentric 43 has a perforation 432 to connect the transmission component 42, The protrusion structure 431 located at the other end of the eccentric 43 can rotate off-axis. One section of the universal component 44 is sleeved on the protrusion structure 431 of the eccentric 43, and the other end has a spherical connecting rod 444 to connect with the connecting device 445. Since the connecting device 445 is fixedly connected to the base frame 10, the direction of force transmission is fixed. The transmission component 42 moves relative to the eccentric 43, thereby driving the swing base frame 21 to swing back and forth. Since the connecting device 445 is used as the fulcrum of the swing, the chair of this embodiment can swing in a full range. Preferably, the swing amplitude can be up to 6 cm, but the present invention is not limited to this. In the embodiment of the present invention, the groove (not shown) of the connecting base 445 conforms to the spherical connecting rod 444 of the universal component. That is, the surface of the groove is also spherical, which can be used to adjust the installation error between the swing base frame 21 and the base frame 10. Improve the buffering capacity for stress in all directions, reduce wear on transmission components, and increases product reliability. Preferably, the groove surface is similar and slightly larger than the spherical surface of the spherical connecting rod. Furthermore, the use of transmission components to drive the swing base frame can reduce the pauses produced when the swing base frame swings to its highest point forward and backward. Making the swing stroke of the swing base frame smoother and improving user experience satisfaction.

[0024] As shown in Figures 4 and 5. Further, the transmission component 42 of the embodiment of the present invention comprises a first gear 421, a first shaft 422, a driving wheel 423, a second shaft 424 and a belt 425. The motor 41 further comprises a motor shaft 411. The motor shaft 411 has, for example, teeth to mesh with the first gear 421 and drive the first gear 421 to rotate around the first shaft 422. The belt 425 is drivingly connected to the first shaft 422 and the driving wheel 423, so that The driving wheel 423 rotates around the second shaft 424. The perforation 432 of the eccentric 43 is sleeved on the second rotating shaft 424. Therefore, the protrusion structure 431 located at the other end of the eccentric 43 can rotate around the second shaft 424 as the center of the circle. The distance between the protrusion structure 431 and the perforation 432 is the rotation radius. The gear in the embodiment of the present invention is, for example, a reduction gear, which can be used for speed reduction, but is not limited thereto. When the product is impacted, the belt of this embodiment has the function of buffering the stress between the first gear and the driving wheel. Therefore, the impact of stress on the first gear and the driving wheel can be reduced, and damage to the components can be avoided, thereby improving product reliability.

[0025] Further, the universal component 44 of the embodiment of the present invention comprises a first connector 441, a guide rod 442 and a second connector 443. The first connector 441 comprises a first part 4412 and a second part 4413 that are connected to each other. The first part 4412 is, for example, an annular structure to be sleeved and connected to the protrusion structure 431 of the eccentric 43. The second part 4413 comprises a pilot hole 4411. The central axis of the pilot hole 4411 is

perpendicular to the central axis of the first part 4412. The guide rod 442 passes through the pilot hole 4411 of the first connector 441 to be pivotally connected to the second connector 443 . The spherical connecting rod 444 has a spherical end 4441 and a rod end 4442, and the second connector 443 is connected to the rod end 4442 of the spherical connecting rod 444.

[0026] Further, the swing driving component 40 of the embodiment of the present invention further comprises a transmission component bracket 46 and a transmission component protective cap 47. The transmission component bracket 46 is fixed on the swing base frame 21, and the transmission component 42 is fixed on the transmission component bracket 46. Therefore, the distance between the first shaft 422 and the second shaft 424 is fixed. The transmission component protection cap 47 is provided on the transmission component bracket 46 to protect the transmission component 42 from being damaged due to falling foreign objects, resulting in failure of transmission.

[0027] The swing length of the restricted swing structure cannot be adjusted. In the current technology, the swing frequency of the seat is almost constant and cannot be adjusted. Moreover, due to the limited length of the drive shaft in the past, the swing frequency could only be controlled between 16 times and 42 times per minute, and could nor be lower than 16 times per minute. The user may become dizzy when riding due to the too fast swing frequency. An embodiment of the present invention provides a chair with a swing function, including a base frame 10, a swing structure 20, and a swing driving component 40. The swing structure 20 is swingably disposed on the base frame 10. The swing structure 20 comprises a swing base frame 21 and at least two swing arms 22. Each swing arm 22 comprises a top end 221 and a bottom end 222. The bottom end 222 is connected to the swing base frame 21. The top end 221 is connected to the base frame 10. The swing driving component 40 connects the base frame 10 and the swing base frame 21. To drive the swing base frame 21 to swing, the swing frequency of the swing structure 20 is less than or equal to 15 times per minute. When the swing frequency of the swing structure is less than or equal to 15 times per minute, it can match the human body's breathing frequency, thereby allowing users to relax while riding. Preferably, the swing frequency of the swing structure is between 8 and 15 times per minute.

[0028] During specific implementation, the swing driving component 40 comprises a motor 41, a transmission component 42, an eccentric 43, a universal component 44 and a connecting device 445. The motor 41 cooperates with the transmission component 42 to drive the transmission component 42 to rotate. One end of the eccentric 43 is connected to the transmission component 42, the other end of the eccentric 43 has a protrusion structure 431. One end of the universal component 44 is connected to the protrusion structure 431 of the eccentric 43, the other end of the universal component 44 has a spherical connecting rod 444 . The connecting device 445 is fixedly arranged on the base frame 10, and the connecting device 445 has a groove for cooperating with the spherical connecting rod 444. By adjusting the voltage of the motor 41 of the swing driving component 40 in sections, the swing frequency of the swing structure 20 can be controlled. Preferably, the swing frequency of the swing structure 20 is gradually reduced. For example, in the time section from the 0th to the 5th minute, the first voltage is provided so that the swing frequency of the swing structure 20 is 15 times per minute. In the time section from the 6th to the 10th minute, the second voltage is provided so that the swing frequency of the swing structure 20 is 12 times per minute. In the time period from the eleventh to the fifteenth minute, a third voltage is provided so that the swing frequency of the swing structure 20 is 10 times per minute. In the fifteenth minutes later, a fourth voltage is provided so that the swing frequency of the swing structure 20 is 8 times per minute. where the first voltage is greater than the second voltage, the second voltage is greater than the third voltage, and the third voltage is greater than the fourth voltage. The first voltage, for example, is 24 volts.

[0029] Since the frequency of deep breathing of the human body is approximately 8 times per minute. Preferably, the swing frequency of the swing structure is not less than 8 times per minute.

[0030] Embodiments of the present invention can be applied to the field of massage chairs, combined with various mechanical, air pressure, vibration, percussion and other massage mechanisms provided on the back, seat cushion, hands, legs, feet and other parts. Massaging the human body can achieve the purpose of health massage in the process of swingind and relaxing.

[0031] The foregoing presents a simplified summary of the disclosure in order to provide a basic understanding to the reader. This summary is not an extensive overview of the disclosure and it does not identify key/critical elements of the present invention or delineate the scope of the present invention. Its sole purpose is to present some concepts disclosed herein in a simplified form as a prelude to the more detailed description that is presented later. Many of the attendant features will be more readily appreciated as the same becomes better understood by reference to the following detailed description considered in connection with the accompanying drawings.

Claims

1. A chair with swing function , comprising:

a base frame;
a swing structure, wherein the swing structure is swingably arranged on the base frame, further comprising:

a swing base frame;

at least two swing arms, each of the swing arms comprises a top end and a bottom end, the bottom end is connected to the swing base frame, and the top end is connected to the base frame; and
a swing driving component connected to the base frame and the swing base frame for driving the swing base frame to swing, wherein the swing driving component comprising:

a motor;
a transmission component cooperated with the motor to drive the transmission component to rotate;
a eccentric connected to the transmission component with one end, and the other end of the eccentric has a protrusion structure;
a universal component connected to the protrusion structure of the eccentric with one end, and the other end of the universal component has a spherical connecting rod; and,
a connecting device arranged on the base frame, and the connecting device has a groove for cooperating with the spherical connecting rod.

2. The chair with swing function of claim 1, wherein the swing structure further comprising:
a support bracket arranged on the swing base frame and connected to the swing base frame.

3. The chair with swing function of claim 1, wherein the transmission component of the swing driving component comprises: a first gear, a first shaft, a driving wheel, a second shaft and a belt;
the motor drives the first gear to rotate around the first shaft, and the belt transmission connects the first shaft and the driving wheel to cause the driving wheel to rotate around the second shaft, one end of the eccentric sleeved on the second shaft.

4. The chair with swing function of claims 1, wherein the universal component comprising: a first connector, a guide rod, and a second connector;
the first connector connected to the protrusion structure of the eccentric; the guide rod passes through the pilot hole of the connector for pivoting the first connector to the second connector; the spherical connecting rod has a spherical end and a rod end, and the second connector connected to the rod end of the spherical connecting rod.

5. The chair with swing function of claims 1, wherein a swing frequency of the swing structure decreases gradually.

6. The chair with swing function of claims 1, wherein the swing frequency of the swing structure is less than or equal to 15 times per minute..

7. The chair with swing function of claims 6, wherein the swing frequency of the swing structure is between 8 and 15 times per minute.

8. A chair with swing function , comprising:

a base frame;
a stwing structure, wherein the swing structure is swingably arranged on the base frame, further comprising:

a swing base frame;
at least two swing arms, each of the swing arms comprises a top end and a bottom end, the bottom end is connected to the swing base frame, and the top end is connected to the base frame; and
a swing driving component connected to the base frame and the swing base frame for driving the swing base frame to swing; a swing frequency of the swing structure is equal to or less than 15 times per minute.

9. The chair with swing function of claim 8, wherein the the swing frequency of the swing structure is between 8 and 15 times per minute.

10. The chair with swing function of claim 8, wherein the the swing frequency of the swing structure decreases gradually, and is not less than 8 times..

11. The chair with swing function of claim 8, wherein the swing driving component comprising:

a motor;
a transmission component cooperated with the motor to drive the transmission component to rotate;
a eccentric connected to the transmission component with one end, and the other end of the eccentric has a protrusion structure;
a universal component connected to the protrusion structure of the eccentric with one end, and the other end of the universal component has a spherical connecting rod; and
a connecting device arranged on the base frame, and the connecting device has a groove cooperated with the spherical connecting rod;
the voltage of the motor is adjustable to control the swing frequency of the swing structure.

Amended claims in accordance with Rule 137(2) EPC.

1. A chair with swing function , comprising:

a base frame (10);
a swing structure (20), wherein the swing structure is swingably arranged on the base frame (10), further comprising:

a swing base frame (21);
at least two swing arms (22), each of the swing arms (22) comprises a top end (221) and a bottom end (222), the bottom end (222) is connected to the swing base frame (21), and the top end (221) is connected to the base frame (10); and
a swing driving component (4) connected to the base frame (10) and the swing base frame (21) for driving the swing base frame (21) to swing, wherein the swing driving component (4) comprising:

a motor (41);
a transmission component (42) cooperated with the motor (41) to drive the transmission component (42) to rotate;
a eccentric (43) connected to the transmission component (42) with one end, and the other end of the eccentric (43) has a protrusion structure (431);
a universal component (44) connected to the protrusion structure (43 1) of the eccentric (43) with one end, and the other end of the universal component (44) has a spherical connecting rod (444); and,
a connecting device (445) arranged on the base frame (10), and the connecting device (445) has a groove for cooperating with the spherical connecting rod (444).

2. The chair with swing function of claim 1, wherein the swing structure (20) further comprising:
a support bracket (30) arranged on the swing base frame (21) and connected to the swing base frame (21).

3. The chair with swing function of claim 1, wherein the transmission component (42) of the swing driving component (4) comprises: a first gear (421), a first shaft (422), a driving wheel (423), a second shaft (424) and a belt (425);
the motor (41) drives the first gear (421) to rotate around the first shaft (422) , and the belt transmission connects the first shaft (422) and the driving wheel (423) to cause the driving wheel (423) to rotate around the second shaft (424), one end of the eccentric sleeved on the second shaft (424).

4. The chair with swing function of claims 1, wherein the universal component (44) comprising: a first connector (441), a guide rod (442), and a second connector (443);
the first connector (441) connected to the protrusion structure of the eccentric; the guide rod (442) passes through a pilot hole of the first connector (441) for pivoting the first connector (441) to the second connector (443); the spherical connecting rod (444) has a spherical end and a rod end, and the second connector (443) connected to the rod end of the spherical connecting rod (444).

5. The chair with swing function of claims 1, wherein a swing frequency of the swing structure (20) decreases gradually.

6. The chair with swing function of claims 1, wherein the swing frequency of the swing structure (20) is less than or equal to 15 times per minute..

7. The chair with swing function of claims 6, wherein the swing frequency of the swing structure (20) is between 8 and 15 times per minute.

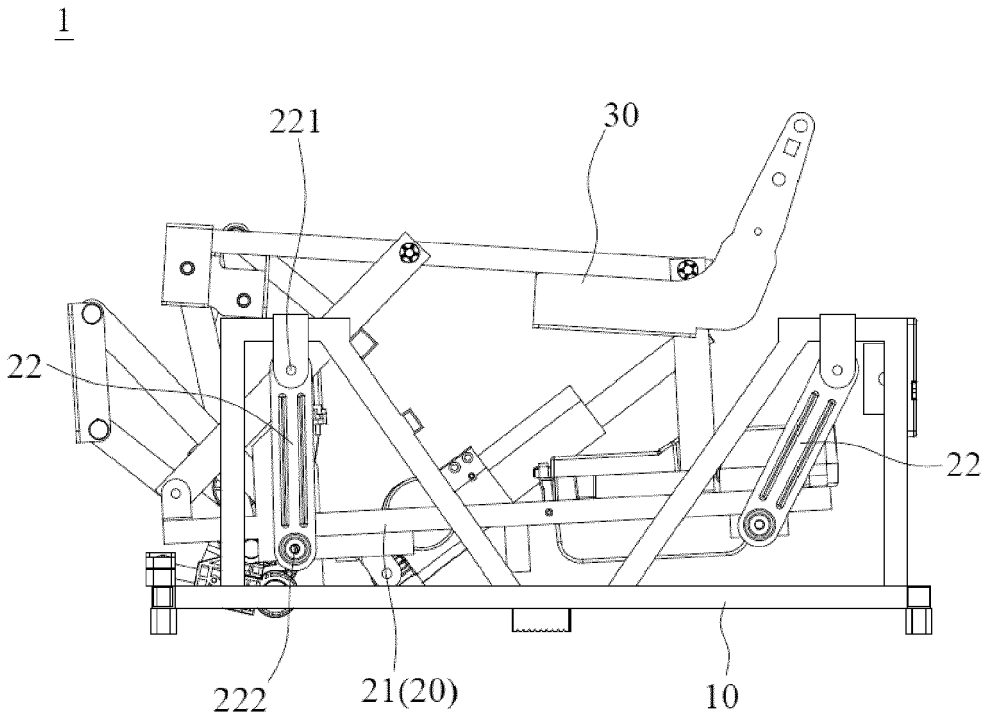

Fig.1A

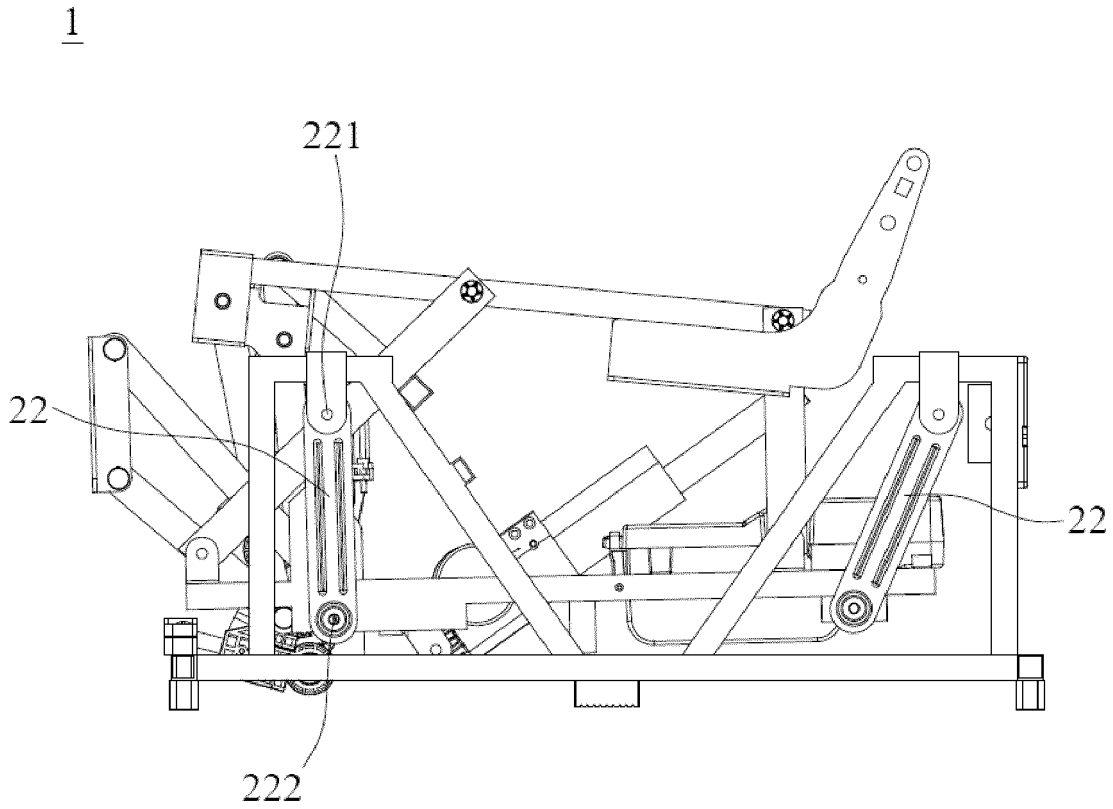

Fig.1B

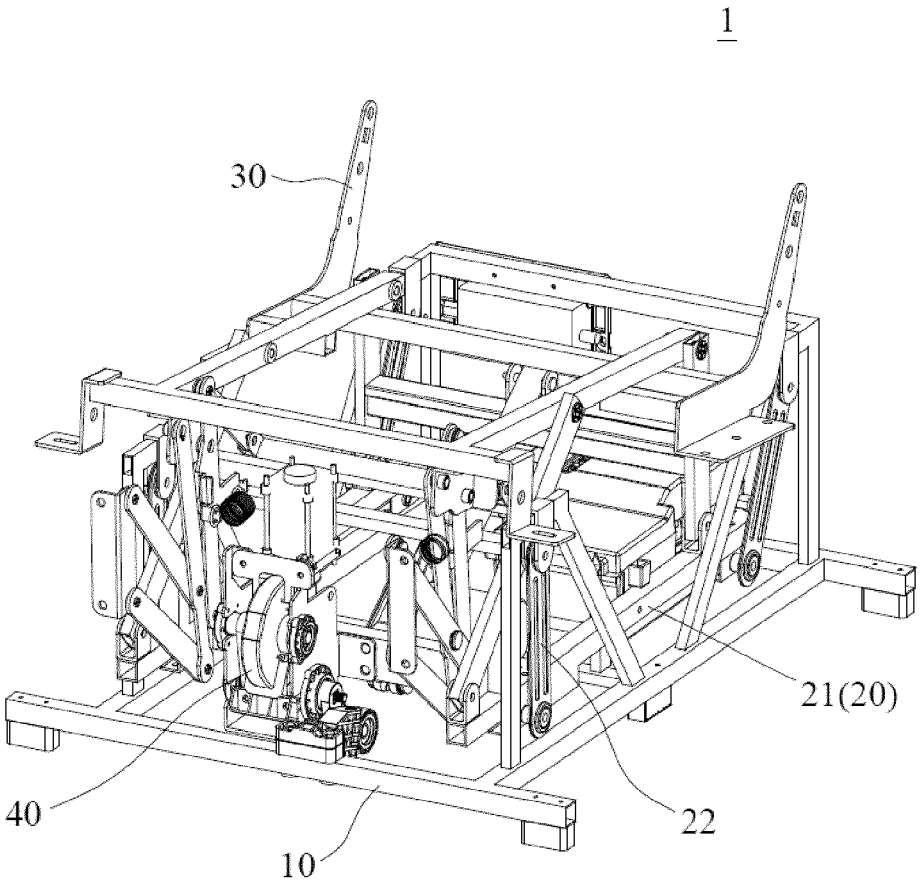

Fig.1C

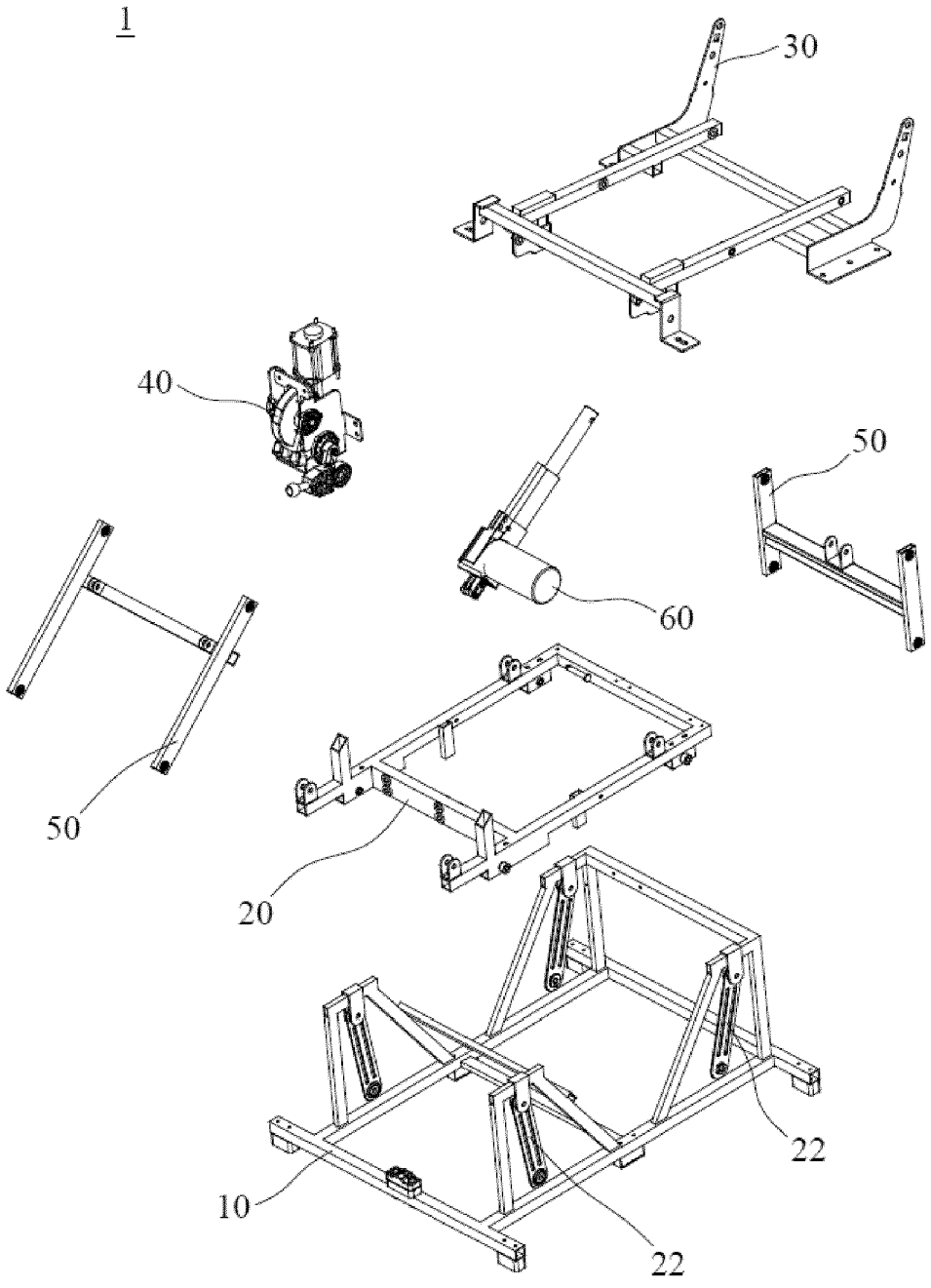

Fig.2

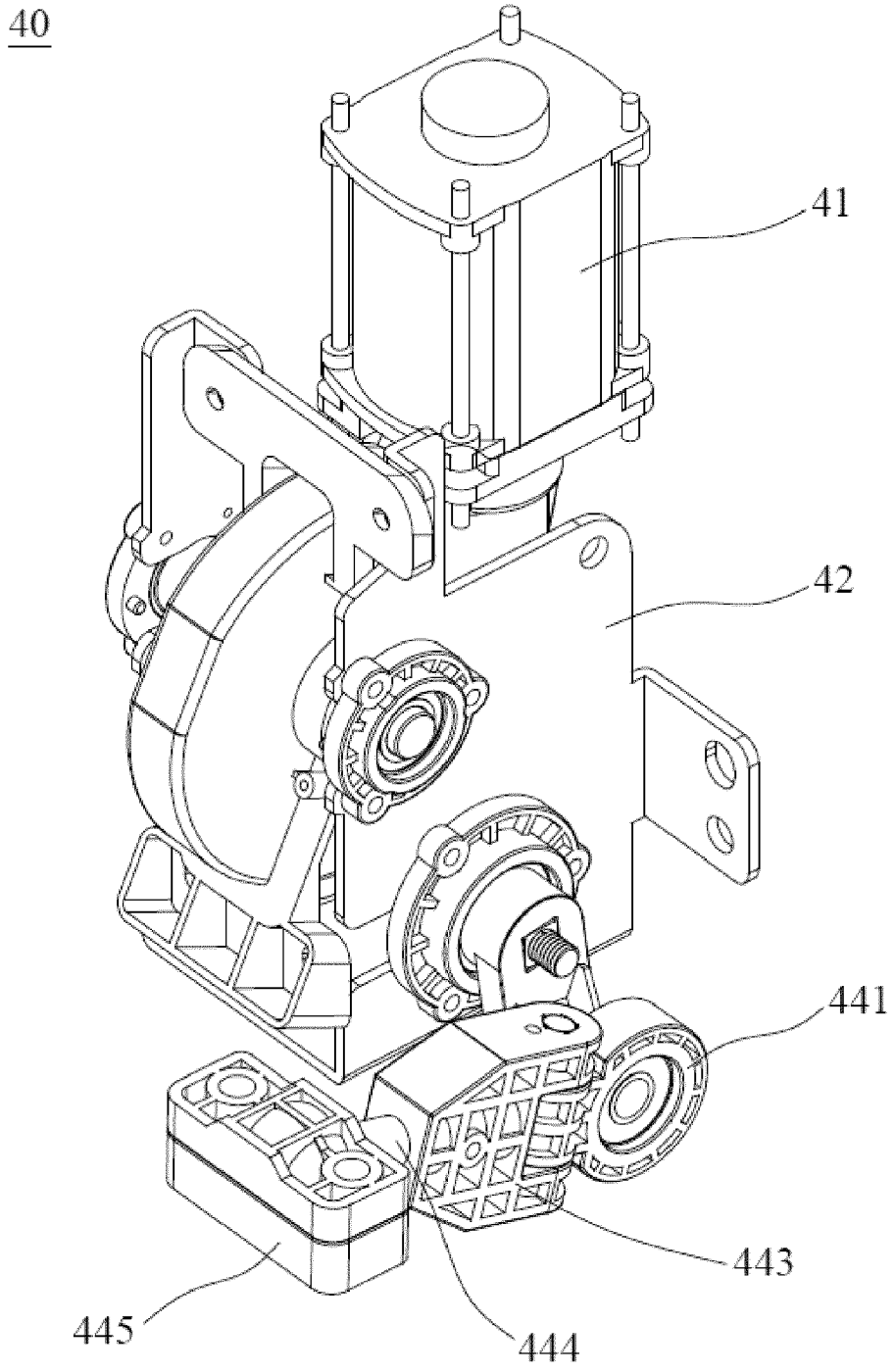

Fig.3

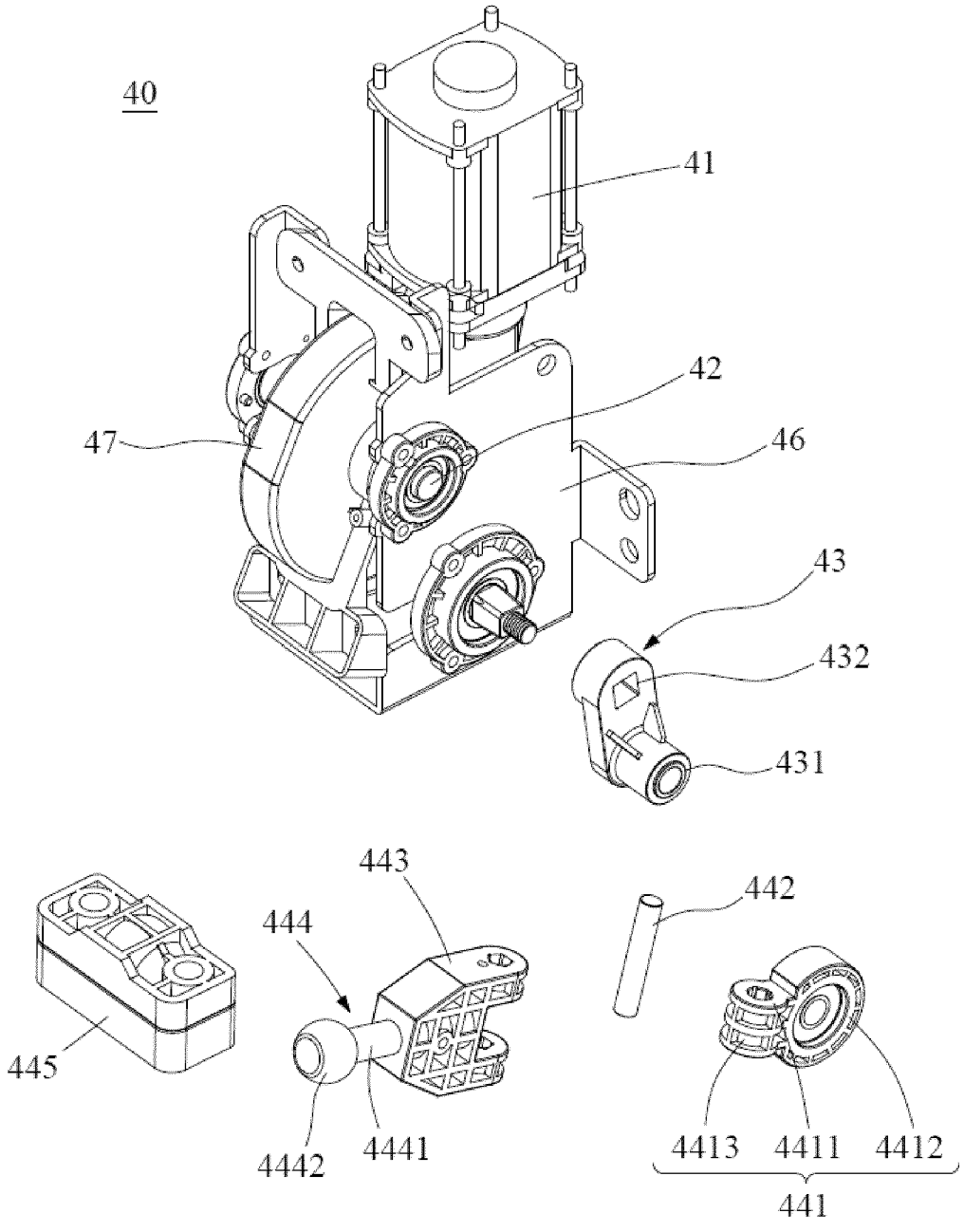
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Fig.4

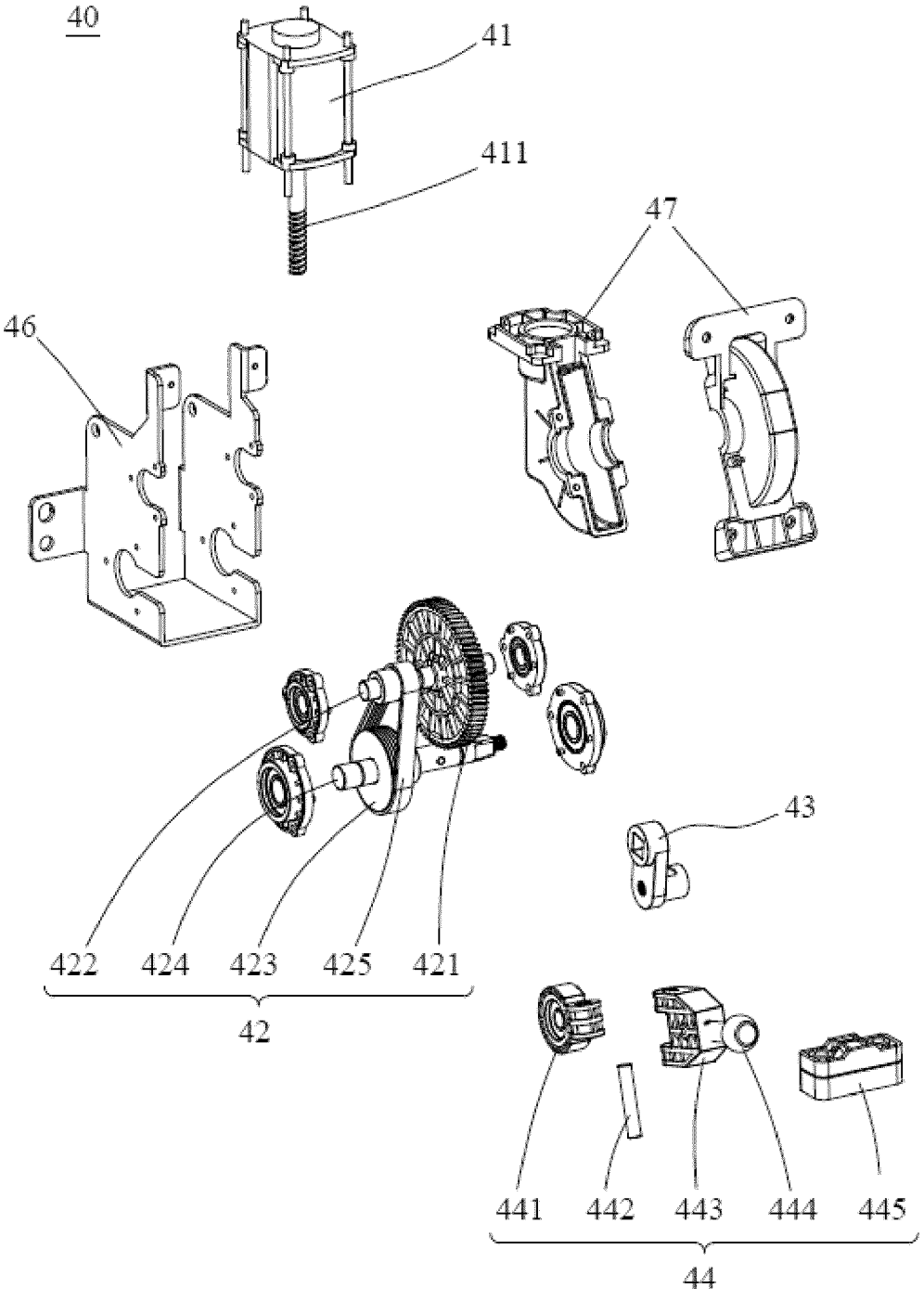

Fig.5

Europäisches Patentamt
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PARTIAL EUROPEAN SEARCH REPORT

under Rule 62a and/or 63 of the European Patent Convention. This report shall be considered, for the purposes of subsequent proceedings, as the European search report

Application Number
EP 23 21 3480

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X A	CN 216 854 282 U (GOODBABY GROUP CORP) 1 July 2022 (2022-07-01) * paragraphs [0030], [0056]; figures *	1-3,5-7 4	INV. A47C3/025
A	CN 213 605 371 U (ANJI HEFENG FURNITURE CO LTD) 6 July 2021 (2021-07-06) * paragraphs [0036], [0041]; figures *	1-7	
A	CN 213 431 443 U (NINGBO BEHEALTHY TECH GROUP CO LTD) 15 June 2021 (2021-06-15) * figures *	1-7	

TECHNICAL FIELDS SEARCHED (IPC)

A47C
A47D

INCOMPLETE SEARCH

The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC so that only a partial search (R.62a, 63) has been carried out.

Claims searched completely :

Claims searched incompletely :

Claims not searched :

Reason for the limitation of the search:

see sheet C

Place of search	Date of completion of the search	Examiner
The Hague	13 June 2024	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

EPO FORM 1503 03.82 (P04E07)

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European Patent Office
Office européen des brevets

INCOMPLETE SEARCH
SHEET C

Application Number
EP 23 21 3480

Claim(s) completely searchable:
1-7

Claim(s) not searched:
8-11

Reason for the limitation of the search:

Claims 1 and 8 have been drafted as separate independent claims.
Under Article 84 in combination with Rule 43(2) EPC, an application may contain more than one independent claim in a particular category only if the subject-matter claimed falls within one or more of the exceptional situations set out in paragraph (a), (b) or (c) of Rule 43(2) EPC. This is not the case in the present application, however.
The search has been restricted to the subject-matter indicated by the applicant in his letter of 05-06-2024 filed in reply to the invitation pursuant to Rule 62a(1) EPC (claims 1-7).

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 23 21 3480

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.

13-06-2024

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 216854282 U	01-07-2022	NONE	
CN 213605371 U	06-07-2021	NONE	
CN 213431443 U	15-06-2021	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

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Patent documents cited in the description

- CN 213431443 U **[0003]**