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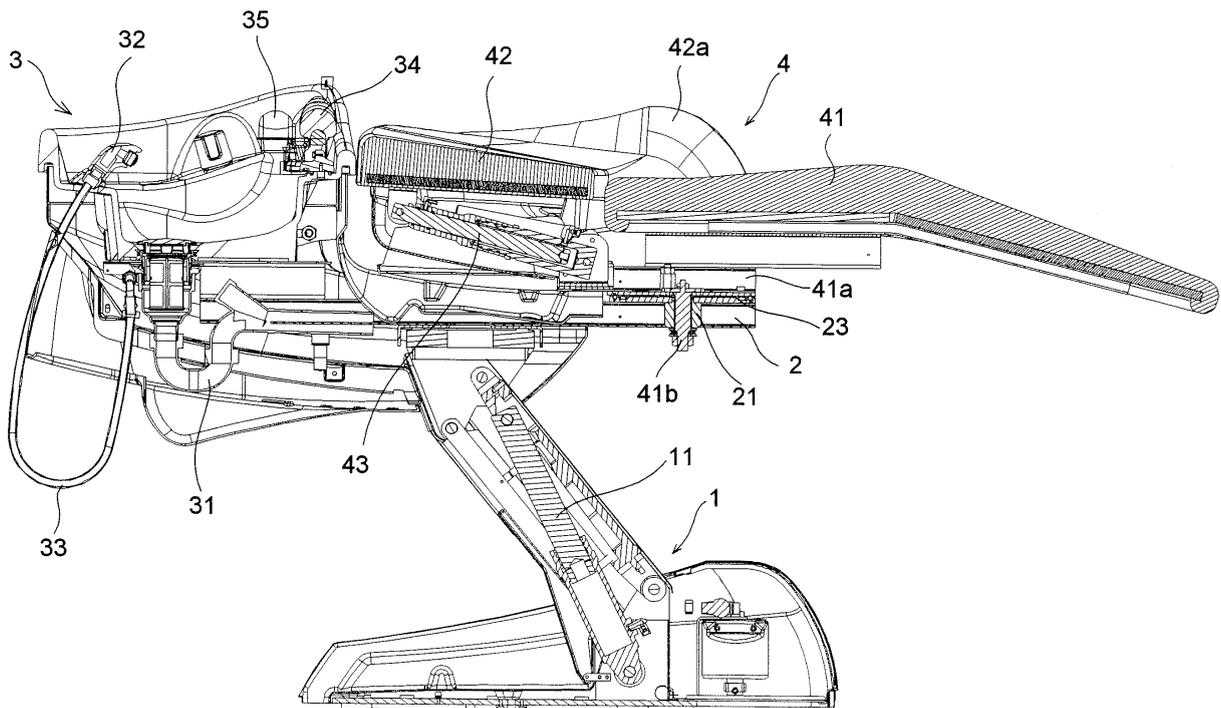
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(54) **Barber or beauty salon chair**

(57) A barber or beauty salon chair wherein a chair (4) with a backrest (42) allows a recline angle to be adjustable, and is attached in a rotatable manner to a base

(2) of an elevating device (1) while a shampoo bowl (3) is attached to the base in a position to which an upper surface of the backrest in a deeply reclined condition comes close.

**FIG. 1**



## Description

**[0001]** The present invention relates to a barber or beauty salon chair in which a shampoo bowl is mounted integrally on a back side of a bed-shaped chair, the barber or beauty salon chair enabling a nail treatment, a facial treatment, a beauty treatment, a massage, or the like to be operated in a condition where the chair is rotated.

**[0002]** There has conventionally been a chair for washing a customer's hair, in which a chair and a shampoo bowl are fixed to a floor surface. With this chair, a backrest and a seat portion of the chair are moved to control position adjustment so that the rear neck region of the customer who is sitting is laid in a concave portion of the shampoo bowl while fine adjustments are made in a manner such that the rear neck region of the customer fits in the aforementioned concave portion by adjusting a height or back and forth motion of the shampoo bowl. This type of chair, however, requires adjustments of the chair and shampoo bowl, so that there has arisen a problem that the adjustments take trouble and time.

**[0003]** Therefore, in order to solve the above problems, the present applicant invented a barber or beauty salon chair, and filed the patent application disclosed as Japanese Patent Application Laid-Open No. 2006-61519 disclosing the barber or beauty salon chair in which a shampoo bowl is mounted integrally on a side of a head portion of a bed-shaped chair. According to the invention in the aforementioned application, the chair and the shampoo bowl disposed on the side of head portion of the chair are mounted integrally to a base of an elevating device to lift and lower the chair and the shampoo bowl at the same time so the customer on the chair can be moved up and down, thereby enabling the neck rear region of the customer to be fit in the concave portion.

**[0004]** According to the invention in the aforementioned application, the chair and the shampoo bowl are integrated with the base, so that a practitioner cannot stand behind the customer, causing a problem that treatment other than shampoo, such as a facial treatment, a beauty treatment, a massage, or the like cannot be performed.

**[0005]** The present invention is intended to solve the above problems and to provide a barber or beauty salon chair which enables treatments other than shampoo by setting a backrest recline angle to be adjustable and by setting only a chair to be rotatable with respect to a base of an elevating device, the barber or beauty salon chair enabling a customer to sit thereon safely and easily while preventing the backrest from coming in contact with a shampoo bowl at the time of rotation of the chair by setting the backrest and a front drooping portion in an upright position when a customer is sitting on the chair.

**[0006]** The present invention is intended to accomplish the purpose described above. According to a first aspect of the invention, a chair with a backrest allowing a recline angle to be adjustable is attached in a rotatable manner to a base of an elevating device while a shampoo bowl

is attached to the base in a position to which an upper surface of the backrest in a deeply reclined condition comes close.

**[0007]** According to a second aspect of the invention, in the first aspect, a headrest is attached in a detachable manner to the upper surface of the backrest.

**[0008]** According to a third aspect of the invention, in the first aspect, the chair is attached to the base through a ring-shaped shaft receiver with a bearing in a rotatable manner.

**[0009]** According to a fourth aspect of the invention, in the first aspect, a locking means for locking the chair into a predetermined rotation angle position is attached to the base.

**[0010]** According to a fifth aspect of the invention, in the first aspect, a locking means for bringing the chair in a desired angle position in pressurized contact with abutment surfaces of a fixation supporting board and a rotation supporting board by piston discharge using hydraulic pressure of a hydraulic cylinder is attached to the base.

**[0011]** According to a sixth aspect of the invention, in the first aspect, the backrest is formed wide enough to support an arm of a customer with the backrest deeply reclined.

**[0012]** According to a seventh aspect of the invention, in the first aspect, a chair seat portion of the chair is formed in a bed shape by uniting a seat portion with a front drooping portion, and a front drooping cylinder enables the front drooping portion of the bed-shaped chair seat portion to be displaced between a horizontal condition and a vertical condition while a sliding means is intervened between a pivotal motion board on which one end of the front drooping portion is supported by a shaft and a front drooping base to which the front drooping portion is fixed to prevent a pulling force from being exerted on the seat portion, the pulling force occurring at the time of rotation of the front drooping portion in a vertical direction.

**[0013]** According to an eighth aspect of the invention, in the first aspect, a chair seat portion is composed of a seat portion and a front drooping portion separated from the chair portion, wherein a front drooping cylinder enables the front drooping portion to be displaced between a horizontal condition and a vertical condition.

**[0014]** According to a ninth aspect, in the seventh or eighth aspect, hydraulic cylinders of the front drooping portion and the back rest are controlled in synchronization with each other so that the front drooping portion and the backrest portion are displaced at a recline angle in synchronization with each other.

**[0015]** As described above, according to the present invention, the chair, in which the backrest recline angle is adjustable, is attached in a rotatable manner to the base of the elevating device while the shampoo bowl is attached to a position where an upper surface of the backrest comes close with the backrest deeply reclined, so that a treatment such as a facial treatment, a beauty treatment, a massage, or the like can be operated by rotating

and placing the chair in a position distant from the shampoo bowl. Furthermore, the backrest is set in an upright position when the customer is sitting on the chair, so that the customer can take a seat safely while the backrest does not come in contact with the shampoo bowl at the time of rotation of the chair.

**[0016]** The customer can undergo the treatment other than shampoo in a comfortable posture with his or her head supported since the headrest is detachably attached to the upper surface of the backrest.

**[0017]** The chair is rotatably attached to the base through a ring-shaped shaft receiver with a bearing, thereby achieving smooth rotation even under one-sided load. The locking means is attached to lock the chair in a predetermined rotation angle position with respect to the base, for example, two positions such as a position of shampoo and a position of a facial treatment, beauty treatment, massage, or the like. Therefore, the chair is certainly prevented from rotating at these two positions, i.e., a shampoo position, and other treatment position, thereby avoiding the risk of the chair rotation at the time of treatment.

**[0018]** The chair can be fixed at a rotation position where the practitioner desires since the chair is equipped with the locking means bringing the chair in pressurized contact with abutment surfaces of a fixation supporting board and a rotation supporting board, at a desired angle by a piston discharge using hydraulic pressure of a hydraulic cylinder. Therefore, the practitioner can perform a treatment with the chair at a rotation position allowing easy performance of treatment.

**[0019]** Furthermore, the backrest is formed to have a width wide enough to support the arms of the customer in a condition where the backrest is deeply reclined, thereby preventing the customer's arms from falling from the backrest at the time of a treatment of shampoo, nail, or the like. Therefore, the customer can undergo the treatment in a stable posture.

**[0020]** A bed-shaped part, on which calves of the customer are put, is set as a front drooping portion allowing displacement between a horizontal condition and a vertical condition, thereby enabling the customer to get on and off the chair easily without taking a straddling posture by displacing the front drooping portion in a vertical direction when the customer is getting on and off. Therefore, the present invention further produces such an advantage that even women or children can easily take a seat or get off from a seated condition.

**[0021]** The front drooping portion and the cylinder of the backrest are controlled in synchronization with each other, thereby being displaced between the horizontal condition and the vertical condition in synchronization. Thus, the present invention further has such an advantage that this chair changes a posture of the seated customer comfortably between a seated condition and a lying condition.

## IN THE DRAWINGS

### [0022]

- 5 Fig. 1 is a cross-sectional view of a barber or beauty salon chair in a condition where a backrest is deeply reclined according to the present invention;  
 Fig. 2 is a cross-sectional view showing a rotating portion between a chair and a base;  
 10 Fig. 3 is a perspective view of the barber or beauty salon chair in a condition where the backrest is deeply reclined;  
 Fig. 4 is a plan view of Fig. 3;  
 Fig. 5 is a side view of Fig. 3;  
 15 Fig. 6 is a side view of the barber or beauty salon chair in a condition where the backrest is set upright;  
 Fig. 7 is a plan view of the barber or beauty salon chair in a condition where other treatment such as a nail treatment is conducted;  
 20 Fig. 8 is a cross-sectional view of a barber or beauty salon chair in a condition where a front drooping portion is displaced in a vertical direction according to a second embodiment;  
 Fig. 9 is a cross-sectional view of the barber or beauty salon chair in a condition where the front drooping portion is displaced in a horizontal direction;  
 25 Fig. 10A is a cross-sectional view of a sliding means;  
 Fig. 10B is a cross-sectional view orthogonal to Fig. 10A; and  
 30 Fig. 11 is a cross-sectional view showing a locking means for locking a rotation supporting board onto a fixation supporting board.

**[0023]** According to the present invention, a shampoo bowl is fixed to a base of an elevating device and a chair is attached to the base in a rotatable manner.

### [First Embodiment]

40 **[0024]** Hereinafter, a first embodiment of a barber or beauty salon chair according to the present invention will be described with reference to drawings.

Numeral 1 denotes an elevating device with a known structure in which a base 2 is lifted and lowered in a horizontal condition by oil supply or oil removal with respect to a hydraulic cylinder 11. Numeral 3 denotes a shampoo bowl attached to one end of the base 2, which is moved up and down by the elevating means 1 while maintaining a horizontal condition. A hose 31 for discharging shampoo water flowing in the shampoo bowl 3 or a water-supply pipe 33 for supplying a showerhead 32 with warm water is provided inside the elevating device 1 and equipped at a lower position compared to the elevating device 1.

55 **[0025]** A rotatable neck receiver 34 for supporting the neck rear region of the customer at the time of shampoo and a rotatable occipital region receiver 35 for receiving two regions of the occipital region of the customer are

provided inside the shampoo bowl 3. Since the neck receiver 34 and the occipital region receiver 35 support the neck rest region and the occipital region of the customer, the chair allows the customer to maintain a comfortable condition without imposing a burden.

**[0026]** Numeral 4 denotes a chair composed of a bed-shaped portion 41 which receives the leg below the hip of the customer in a horizontal condition and a backrest 42 which is rotatably supported by a shaft at an upper end side of the bed-shaped portion 41 and allows a recline angle to be changed by oil supply or oil removal with respect to a hydraulic cylinder 43. A shaft rod 41b, that is supported by the shaft receiver 21 with the bearing attached to the base 2, is arranged in a standing manner to a pivotal motion board 41a at a rear face of the bed-shaped portion 41.

**[0027]** A rotation supporting board 44, that is fixed to the pivotal motion board 41a, is fixed to a side of a rear face of the pivotal motion board 41 while a fixation supporting board 22 is fixed to a side of a top face of the base 2. Outer circumferential portions of the rotation supporting board 44 and the fixation supporting board 22 are provided with a rotation holding means 23, that is composed of ring-shaped recesses for receiving a one-sided load applied to the chair and a ball intervened between the recesses.

**[0028]** Furthermore, the rotation supporting board 44 is provided with a locking means 45 composed of a spring 45a and a ball 45b that borders on an arc-shaped guiding recess 22a formed to the fixation supporting board 22. Both ends of the arc of the guiding recess 22a are formed deeper than a recess depth of the others, resulting in locking recesses. One locking recess in the guiding recess 22a is formed in a position where the ball 45b of the locking means 45 enters when the chair 41 is set in a rotation position in a direction parallel to the base 2, that is, a position shown in Fig. 1 and Figs. 3 to 6. The other locking recess is formed in a position at an angle of 60 degrees with respect to the above looking recess, that is, a position where the chair 41 is rotated as shown in Fig. 7.

**[0029]** As a result, the chair 4 enters a locked condition in two positions for a shampoo treatment and other treatments (a position where the chair is rotated by 60 degrees from a position for a shampoo treatment) since the ball 45b enters in the locking recess. When a strong rotation force is applied to the chair 4 in the above locked position, the ball 45b gets out of the locking recess, shifts along the guiding recess, and enters the other locking recess to set a locked condition. At the time of rotation of the chair 4, the shaft rod 41b, the shaft receiver 21, and the rotation holding means 23 achieve smooth rotation. The above rotation angle from the shampoo position to the other position is not limited to 60 degrees.

**[0030]** The backrest 42, which is attached to the chair 41 in a manner to allow a recline angle to be adjustable, is provided integrally with arm receivers 42a formed to overhang in right and left directions. These arm receivers

42a slightly increase in vertical height as they extend. Lower ends of the arm receivers 42a extend up to both end surfaces of the bed-shaped portion 41 so as to be formed longer than a portion for receiving the back region of the customer. Therefore, each of the arm receivers 42a is in a form capable of supporting the whole arm of the customer in a lying condition with the backrest 42 deeply reclined. A front end portion of the backrest 42 (a side of the cephalic region of the lying customer) is provided with an installation hole for attaching a headrest 5 shown in Fig. 7.

**[0031]** The following explains what posture the barber and beauty salon chair is set in to shampoo the hair of the customer in a lying condition.

First, the practitioner lets the customer sit on the bed-shaped portion 41 of the chair 4 in a condition where the backrest 42 shown in Fig. 6 is set upright. Since the back region of the customer is brought in contact with the backrest 42 by setting the backrest 42 upright in this manner, the customer can be led into a lying posture slowly in association with reclining of the backrest 42 at the time of setting the customer into a lying position. In this condition, the arms of the customer are held with the arm receivers 42a of the backrest 42, thereby letting the customer be in a comfortable posture.

**[0032]** The customer in a lying posture is shifted in a manner to place his/her rear neck region on the neck receiver 34 of the shampoo bowl 3, so that his/her occipital region are supported by the occipital region receiver 35. The practitioner shampoos the customer's hair in this condition and sets the backrest 42 upright after the shampoo. When the treatment is completed after the shampoo only, the practitioner lets the customer get off the bed-shaped portion 41 and the shampoo treatment is completed.

**[0033]** After the shampoo treatment, when the customer undergoes other treatment such as a facial treatment, a beauty treatment, a massage, or the like, the practitioner pushes the bed-shaped portion 41 or the backrest 42 to rotate the chair 4, and thus the chair 4 is locked in a rotation angle of 60 degrees and enters a locked condition (see Fig. 7). In this position, the practitioner attaches the headrest 5 to the upper surface of the backrest 42 and reclines the backrest 42 to set the chair 4 in a position for other treatment described above.

In the meantime, in a lying condition, the arms of the customer are held with the arm receivers 42a, thereby allowing the customer to undergo the treatment in a stable condition.

**[0034]** After completion of the treatment, the backrest 42 is set upright and the practitioner lets the customer get off the bed-shaped portion 41 and rotates the chair 4 in a side of the shampoo bowl 3 again to prepare the next treatment, thereby completing the whole operation. It is to be noted that up and down motion of the chair 4 was not described in the above explanation for the operation but it goes without saying that a height of the chair 4 is adjustable according to a height of the customer.

[Second Embodiment]

**[0035]** In the embodiment described above, the customer sits on or gets off the chair 4 from the side surface of the bed-shaped portion 41. Thus, it is very difficult for customers of short stature such as women or children to get on or off the chair 4 since they have to open their legs widely to straddle the chair 4. There has arisen such a problem especially for women in a skirt that they get embarrassed when they open their legs widely.

**[0036]** Therefore, at a seat portion 41c on which the customer's hip region is placed and the front drooping portion 41d on which the customer's calves are placed in the bed-shaped portion 41 shown in Fig. 8, the front drooping portion 41d is made to allow displacement between a horizontal condition and a vertical condition. In this manner, the customer can get on or off the chair 4 easily by setting the front drooping portion 41d in a vertical condition.

**[0037]** Hereinafter, the second embodiment will be described in detail with reference to Figs. 8 and 9. The same numerals indicate the same elements as those in the first embodiment described above, and therefore a description is omitted.

N numeral 6 denotes a front drooping cylinder supported at one end by a shaft to a bed attaching table 46 for attaching the bed-shaped portion 41, and supported at the other end by a shaft to a pivotal motion board 47 attached to be pivotable at the front end portion of the bed attaching table 46.

**[0038]** Furthermore, a sliding means 48 is intervened between the pivotal motion board 47 and the front drooping board 41e. One example of the sliding means 48 is described with reference to Fig. 10. The sliding means 48 is composed of a base 48b having three long holes 48a fixed to the pivotal motion board 47 and a roller 48 in a tubular shape attached to a front drooping base 41e in a manner to be rotatable with respect to a pin 48c. When the base 48b is displaced in a vertical direction by the front drooping cylinder 6 as shown in Fig. 8, the roller 48d is moved inside the long hole 48a to set motion of the front drooping base 41e in a free condition.

**[0039]** Next, operation based on the above structure will be described. In Fig. 9, when a backrest cylinder discharges oil and a piston fits in the cylinder, the pivotal motion board 47 is pivotally moved in a counterclockwise direction. When the pivotal motion board 47 is pivotally moved in a counterclockwise direction, the front drooping board 41e is pivotally moved through the sliding means 48, so that the front drooping portion 41d attached to the front drooping base 41e is displaced in an upright direction.

**[0040]** Since the front drooping portion 41d and the seat portion 41c are integrated, a pulling force (force in a right direction in Fig. 9) is exerted on the front drooping portion 41d and thus, the pulling force is also exerted on the front drooping base 41e at the time of pivotal motion of the front drooping base 41e. Upon occurrence of this

pulling force, the front drooping base 41e is shifted in a right direction by the sliding means 48 formed between the pivotal motion board 47 and the front drooping base 41e. Thus, the front drooping base 41e is shifted upwardly, thereby easing the pulling force of the front drooping portion 41d with respect to the seat portion 41c.

**[0041]** The customer takes a seat or gets off from a seated condition where the front drooping portion 41d is displaced in a vertical direction, so that the customer can take a seat or gets off by taking the same action applied to a regular chair, thereby making it easy to get on or off the chair.

**[0042]** It is to be noted that a case of the chair in which the seat portion 41c and the front drooping portion 41d are integrated is described in the embodiment described above, but the chair in which the seat portion 41c and the front drooping portion 41d are separated produces the same effects in that the customer can get on or off the chair 4 very easily.

**[0043]** Furthermore, a case where the backrest 42 and the front drooping portion 41d are operated separately was explained in the embodiment described above. However, the backrest 42 and the front drooping portion 41e can be displaced in a horizontal or vertical direction in synchronization with each other by bringing the backrest cylinder 43 into synchronization with the front drooping cylinder 6 electrically.

**[0044]** The rotation device of the chair 41 in the first embodiment described above is structured in a manner to lock the chair 41 in two positions, the shampoo position and the position rotated by an angle of 60 degrees from the shampoo position. However, it is desired to lock the chair 41 at a desired angle position other than these two positions depending on the type of treatment.

**[0045]** Thus, a structure to lock the chair 41 at a desired angle position other than the above two positions will be described with reference to Fig. 11. The numerals that are the same as those in Fig. 2 indicate the same elements, and therefore a description is omitted.

This embodiment is composed of a locking means 7 including a hydraulic cylinder 7b having a piston 7a attached to a concave portion 44a formed to one portion of the outer circumference of the rotation supporting board 44 and a hydraulic device 7c for supplying oil to the hydraulic cylinder 7a. Furthermore, abutment surfaces 44b, 22b in a curved form are formed to outer surfaces of the rotation supporting board 44 and the fixation supporting board 22 in positions facing the front end of the piston 7.

**[0046]** With a locking means 6 structured in the above manner, where the practitioner rotates the chair 41 up to a position allowing him or her to perform a treatment easily, the hydraulic device 7c supplies pressurized oil into the piston 7b to move the piston 7a with hydraulic pressure in a discharge direction and a front end portion of the piston 7a is brought in pressurized contact with the abutment surfaces 44b, 22b, thereby leading the rotation supporting board 44 into a locked condition with respect

to the fixation supporting board 22. In this manner, the chair 41 can be locked in a desired angle position other than the above two positions.

### Claims

1. A barber or beauty salon chair, wherein a chair with a backrest allowing a recline angle to be adjustable is attached in a rotatable manner to a base of an elevating device while a shampoo bowl is attached to the base in a position to which an upper surface of the backrest in a deeply reclined condition comes close. 5
2. The barber or beauty salon chair according to claim 1, wherein a headrest is attached in a detachable manner to the upper surface of the backrest. 10
3. The barber or beauty salon chair according to claim 1, wherein the chair is attached to the base through a ring-shaped shaft receiver with a bearing in a rotatable manner. 15
4. The barber or beauty salon chair according to claim 1, wherein a locking means for locking the chair into two predetermined rotation angle positions is attached to the base. 20
5. The barber or beauty salon chair according to claim 1, wherein a locking means for bringing the chair in a desired angle position in pressurized contact with abutment surfaces of a fixation supporting board and a rotation supporting board by piston discharge using hydraulic pressure of a hydraulic cylinder is attached to the base. 25
6. The barber or beauty salon chair according to claim 1, wherein the backrest is formed wide enough to support an arm of a customer with the backrest deeply reclined. 30
7. The barber or beauty salon chair according to claim 1, wherein a chair seat portion of the chair is formed in a bed shape by integrating a seat portion with a front drooping portion, and a front drooping cylinder enables the front drooping portion of the bed-shaped chair seat portion to be displaced between a horizontal condition and a vertical condition while a sliding means is intervened between a pivotal motion board on which one end of the front drooping portion is supported by a shaft and a front drooping base to which the front drooping portion is fixed to prevent a pulling force from being exerted on the seat portion, the pulling force occurring at the time of rotation of the front drooping portion in a vertical direction. 35
8. The barber or beauty salon chair according to claim 40

1, wherein a chair seat portion is composed of a seat portion and a front drooping portion separated from the chair portion, and a front drooping cylinder enables the front drooping portion to be displaced between a horizontal condition and a vertical condition. 45

9. The barber or beauty salon chair according to claim 7 or claim 8, wherein hydraulic cylinders of the front drooping portion and the back rest are controlled in synchronization with each other so that the front drooping portion and the backrest portion are displaced at a recline angle in synchronization with each other. 50

FIG.1

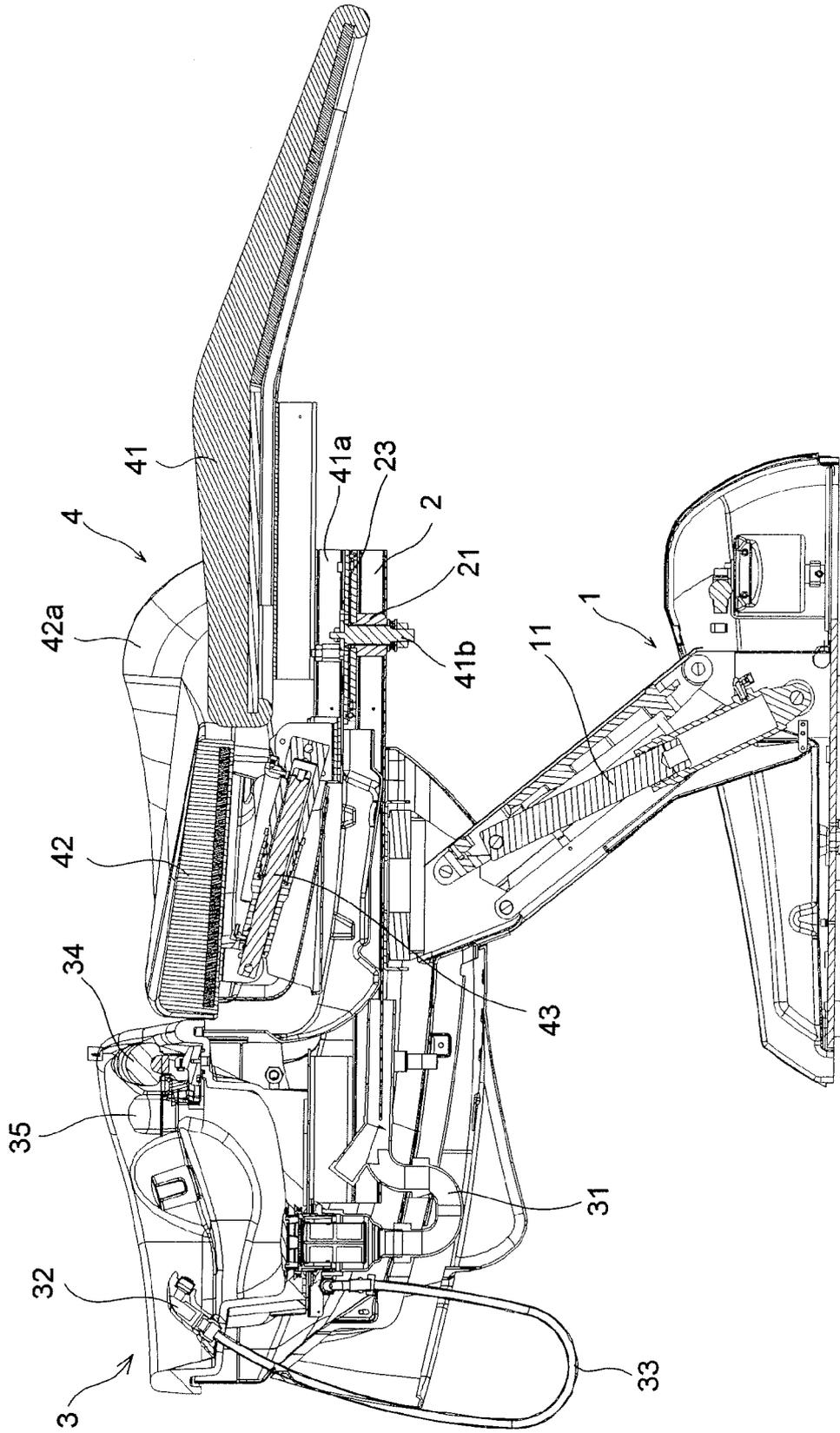


FIG. 2

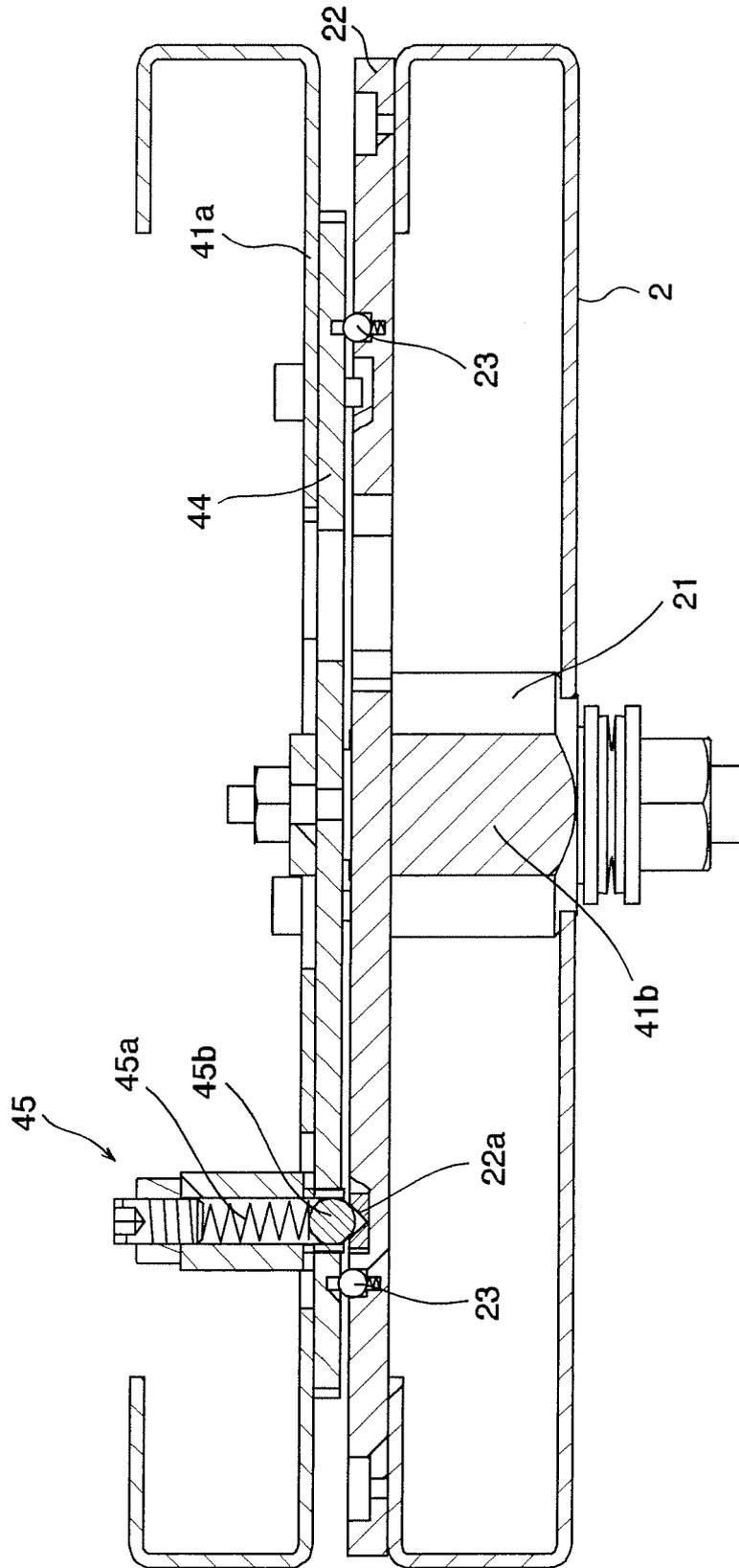


FIG. 3

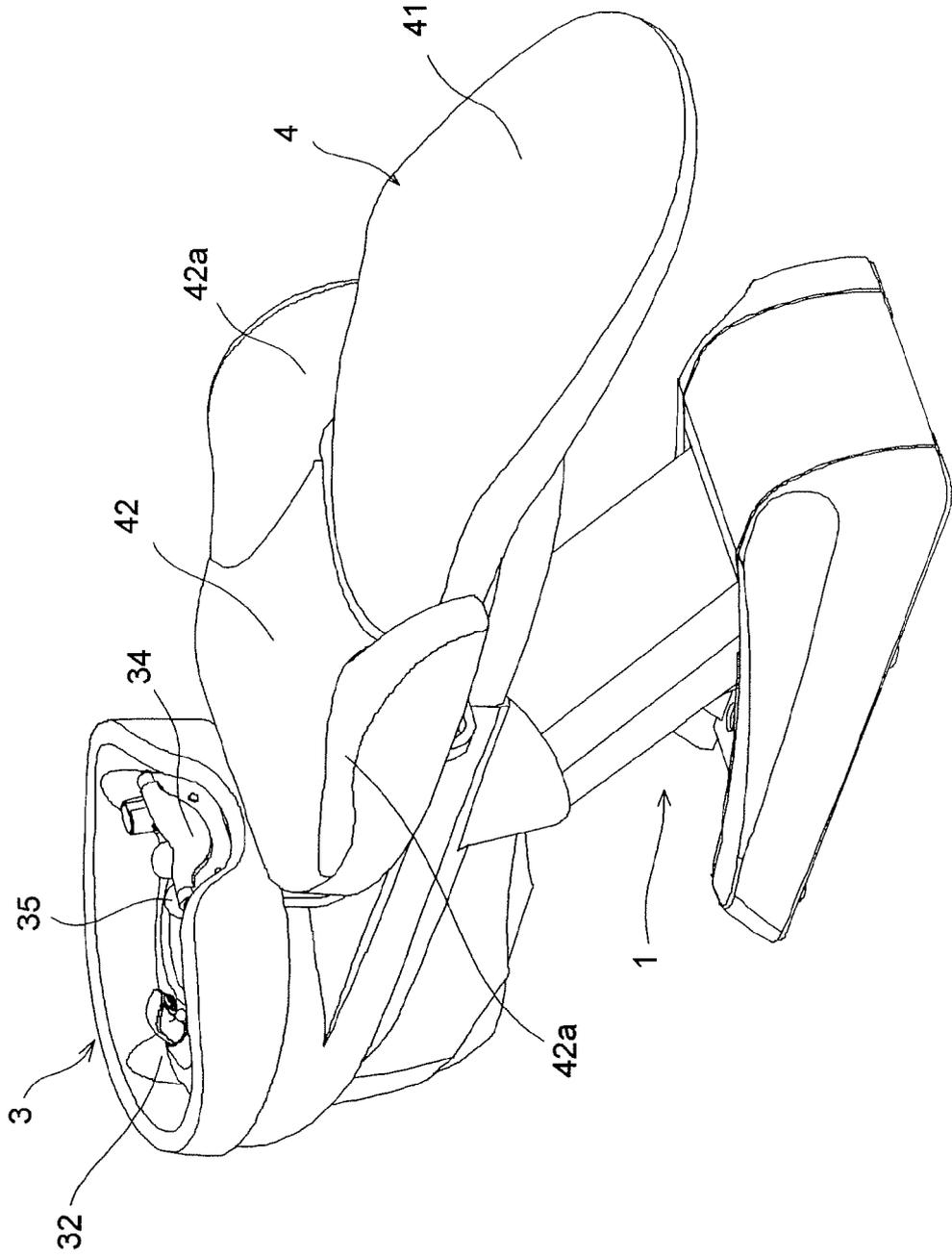


FIG.4

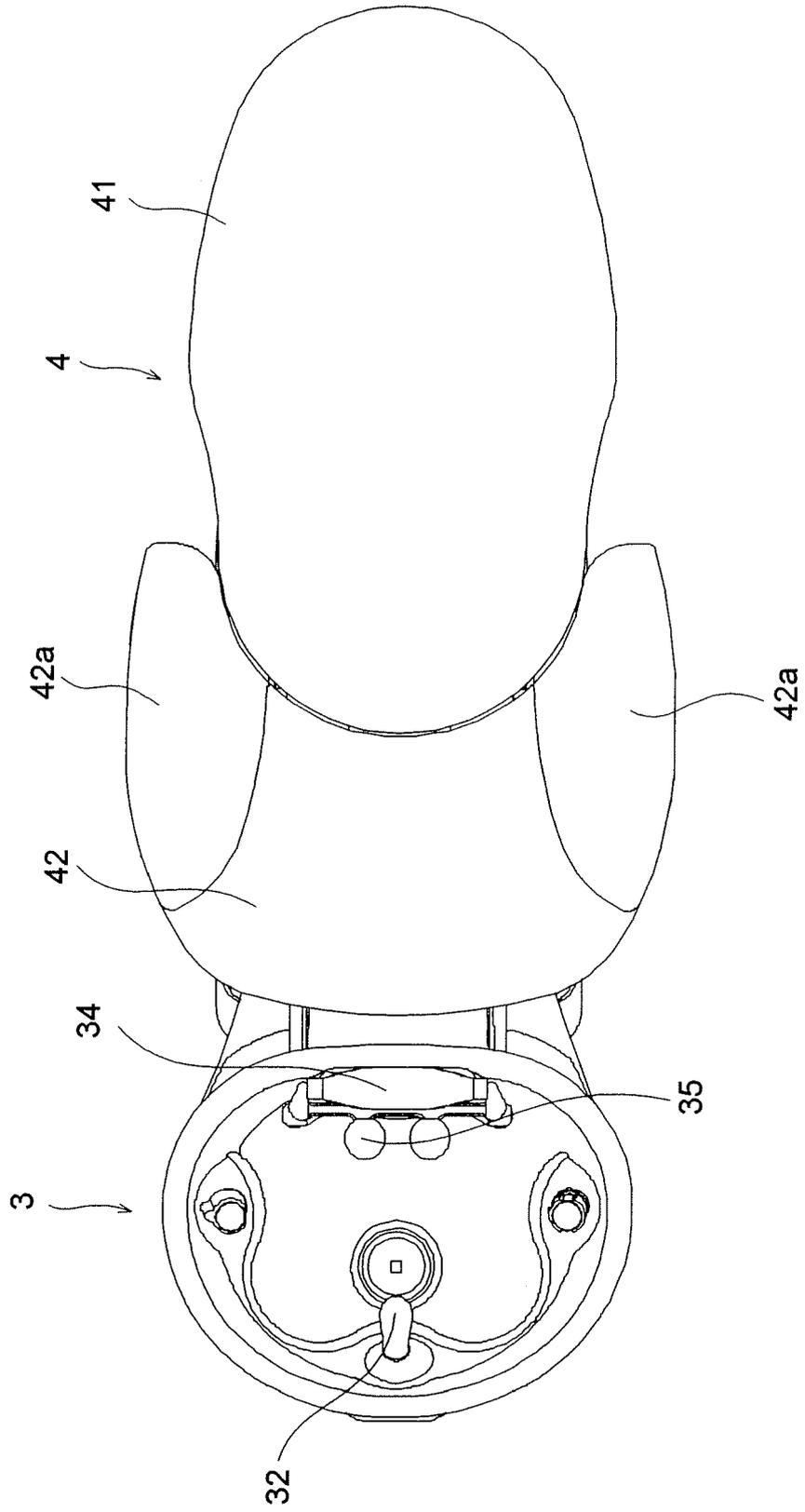


FIG. 5

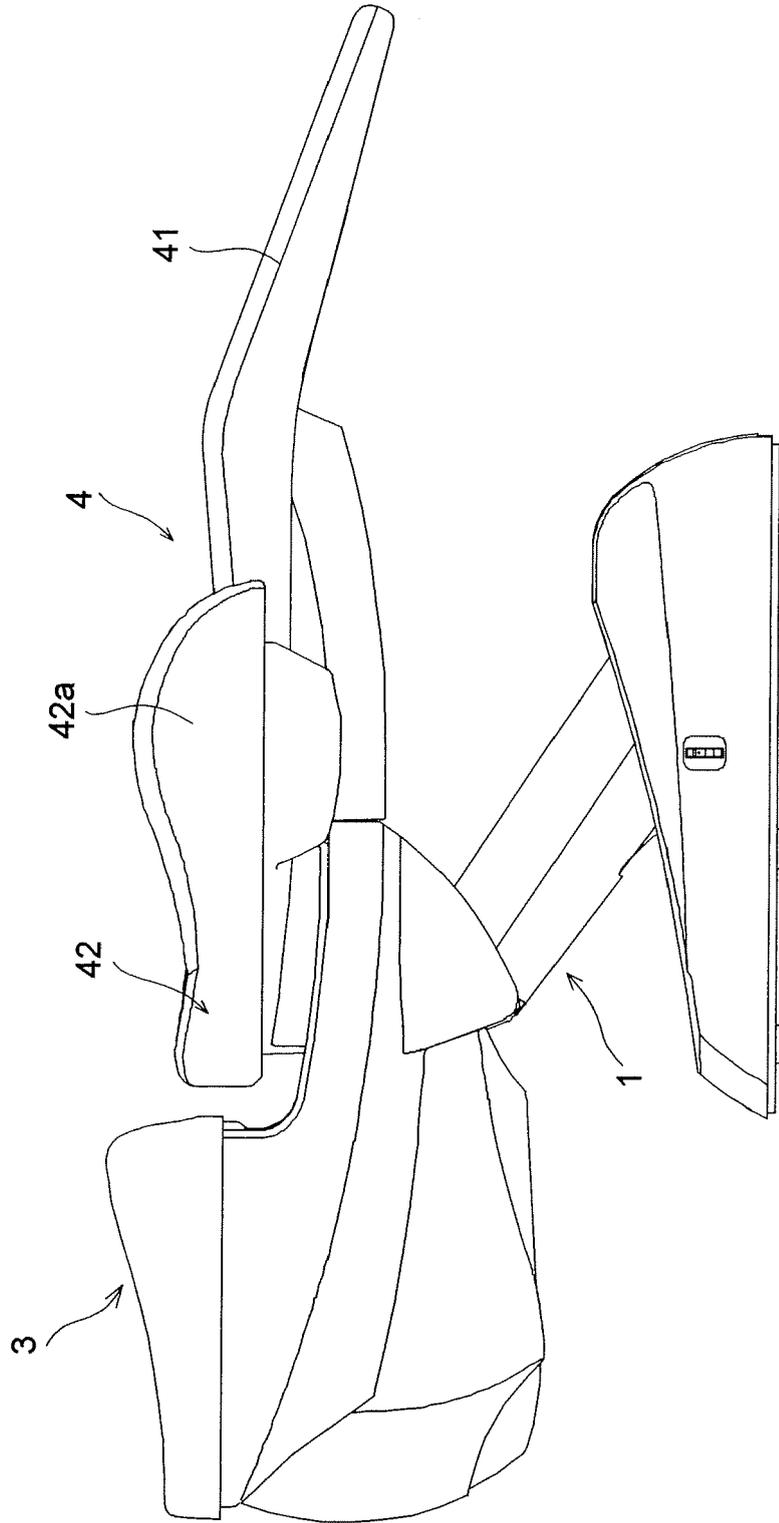


FIG.6

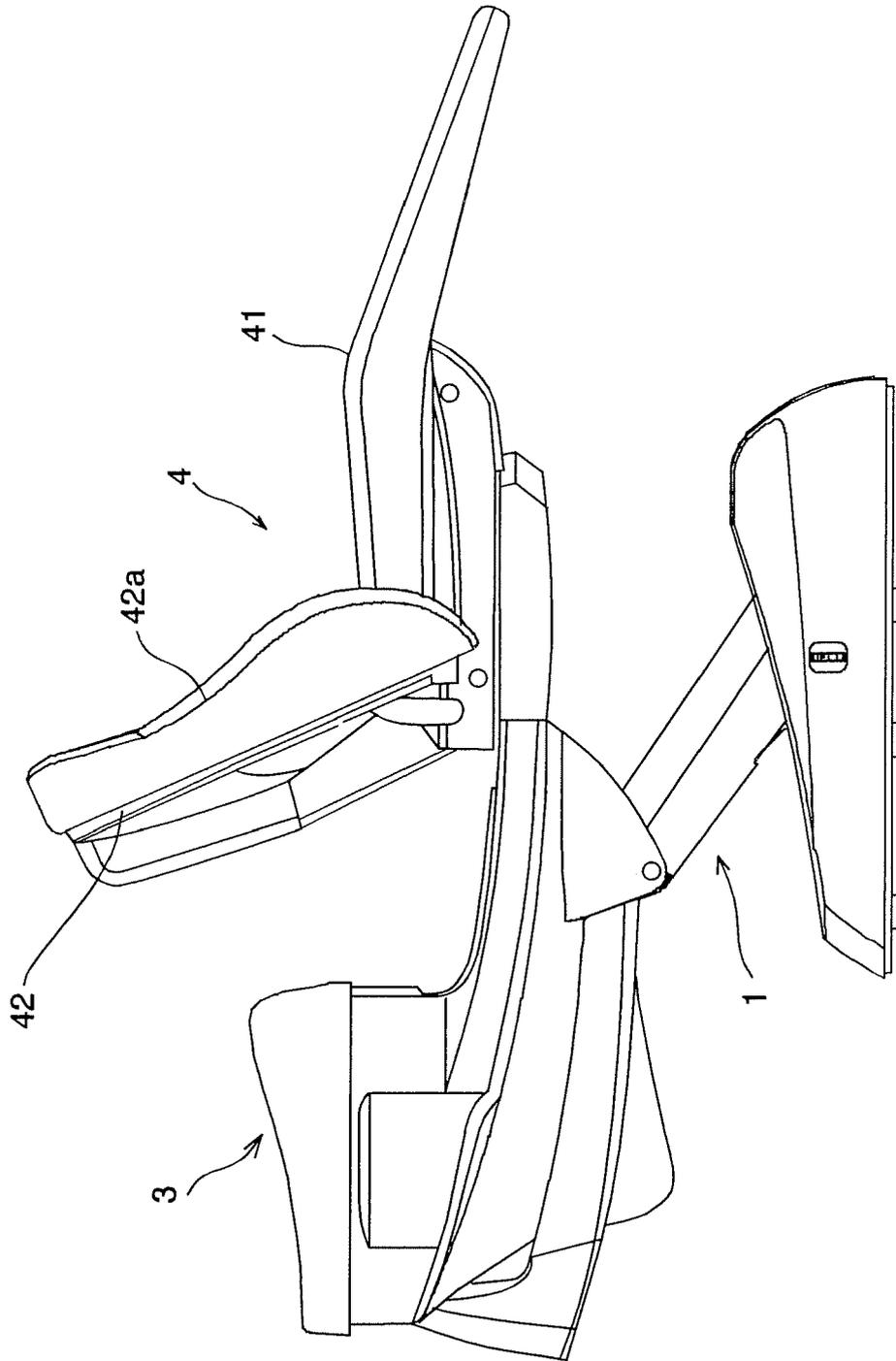


FIG. 7

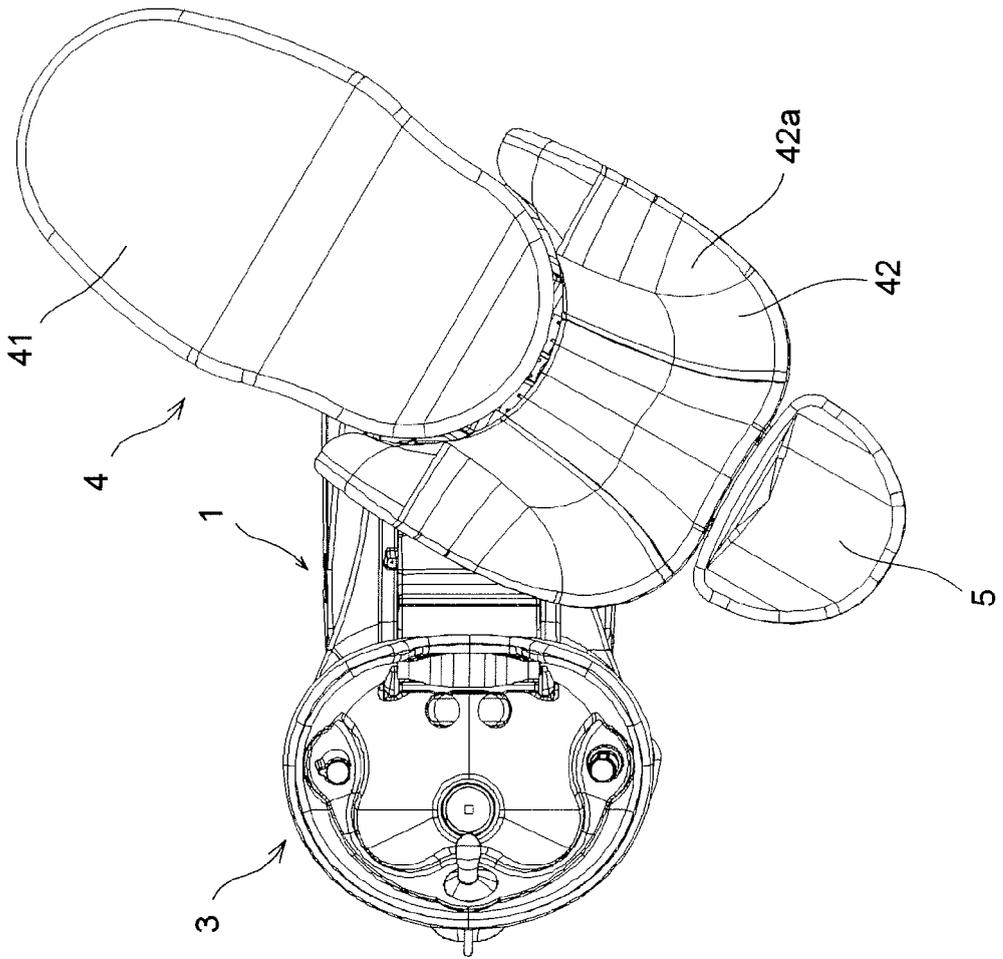


FIG. 8

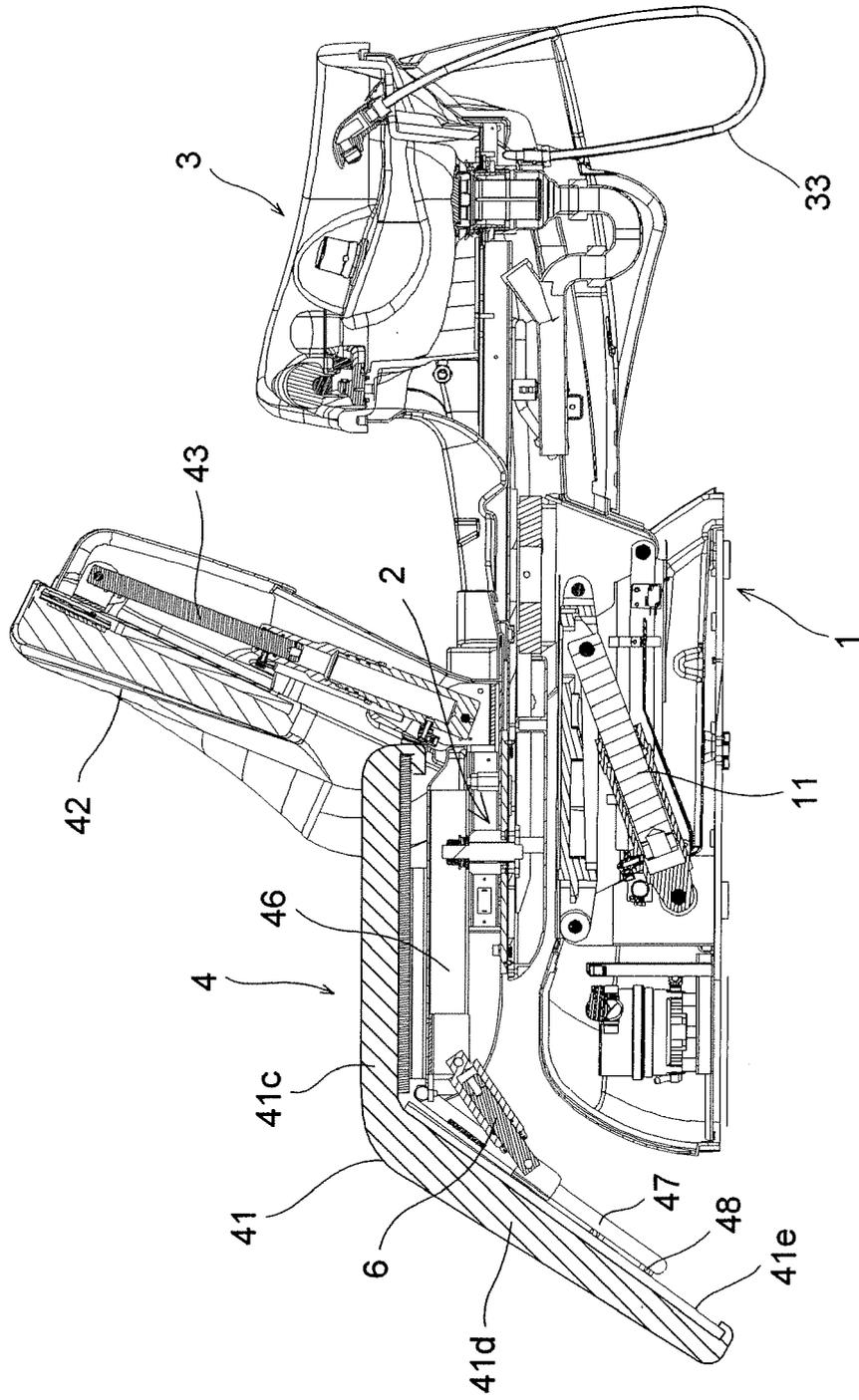


FIG. 9

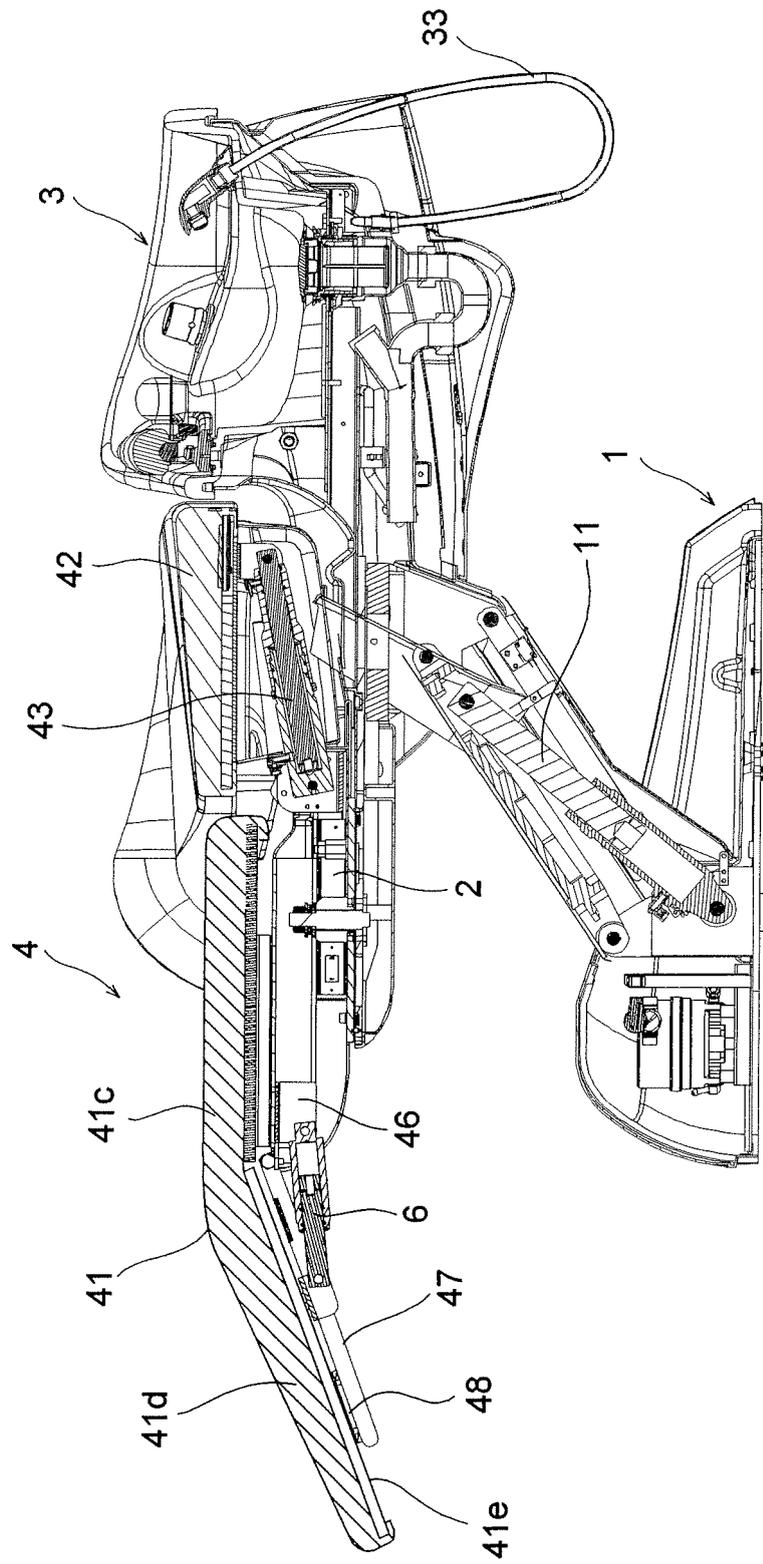


FIG.10 (a)

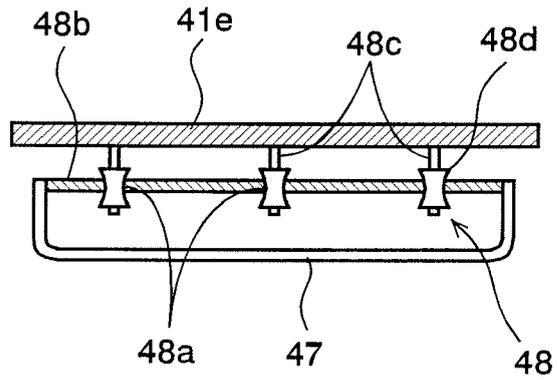


FIG.10 (b)

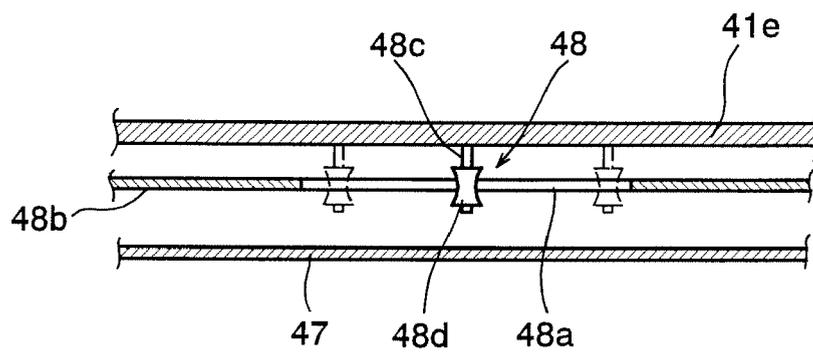
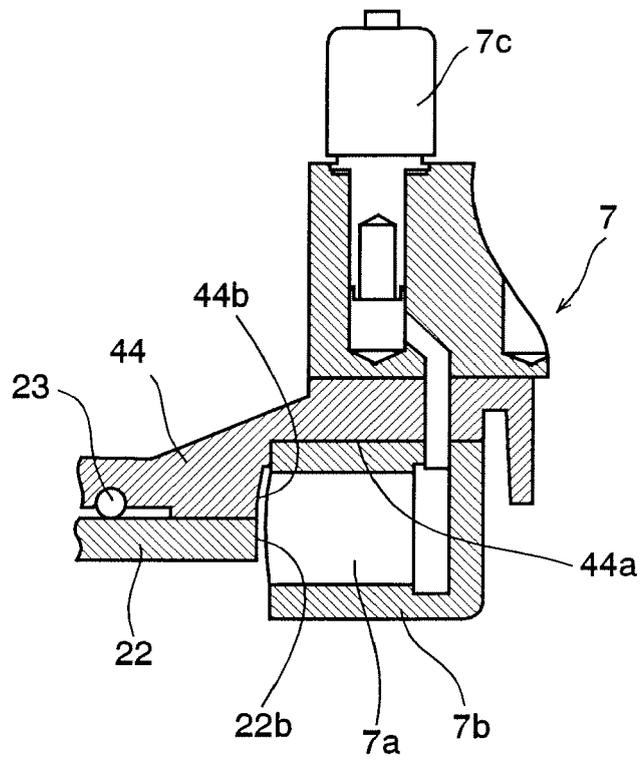


FIG. 11





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	EP 1 629 747 A (TAKARA BELMONT CORP [JP]) 1 March 2006 (2006-03-01) * abstract; figures *	1,6-8	INV. A47C1/04
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A	DE 101 32 852 A1 (OHIRO WORKS LTD [JP]) 21 March 2002 (2002-03-21) * abstract; figures 1-3 *	1-9	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC) A47C A45D
Place of search Munich		Date of completion of the search 2 November 2007	Examiner MacCormick, Duncan
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	

2  
EPO FORM 1503 03/82 (P04/C01)

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

EP 07 11 5180

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02-11-2007

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