

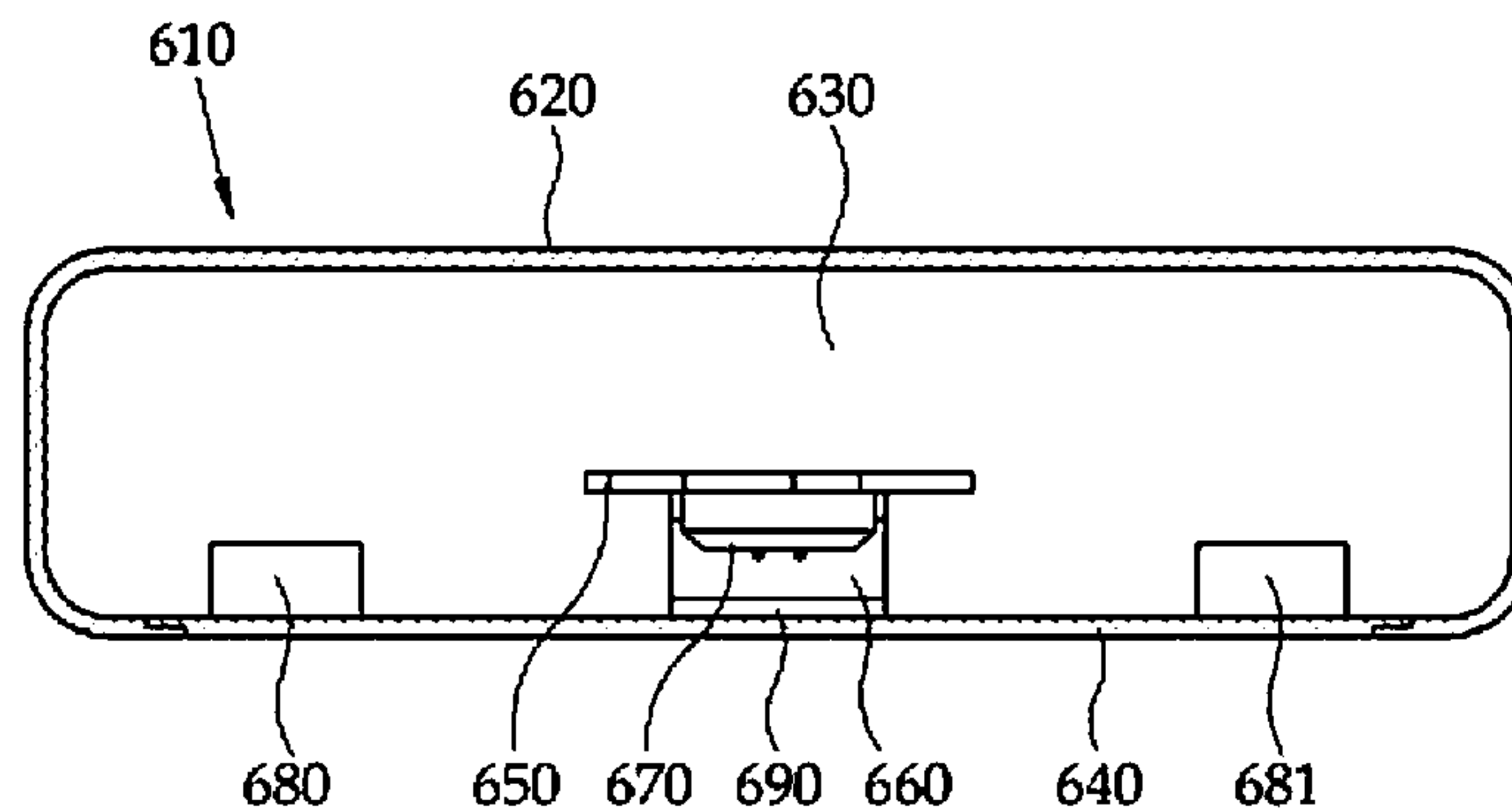


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(54) Titre : SIEGE VIBRANT  
 (54) Title: VIBRATING SEAT

600



(57) **Abrégé/Abstract:**

The present disclosure relates to a vibrating seat including: a main body unit 610 which has a cushion member 630 therein; a fixing bracket 640 which supports a rear side of the main body unit 610; an insert 650 which is inserted into and formed integrally with the cushion member 630; a fastening groove 660 which is concavely formed from a rear end of the cushion member 630 to the insert 650; and a vibrating unit 670 which is disposed in the fastening groove 660, and directly fastened to the insert 650.

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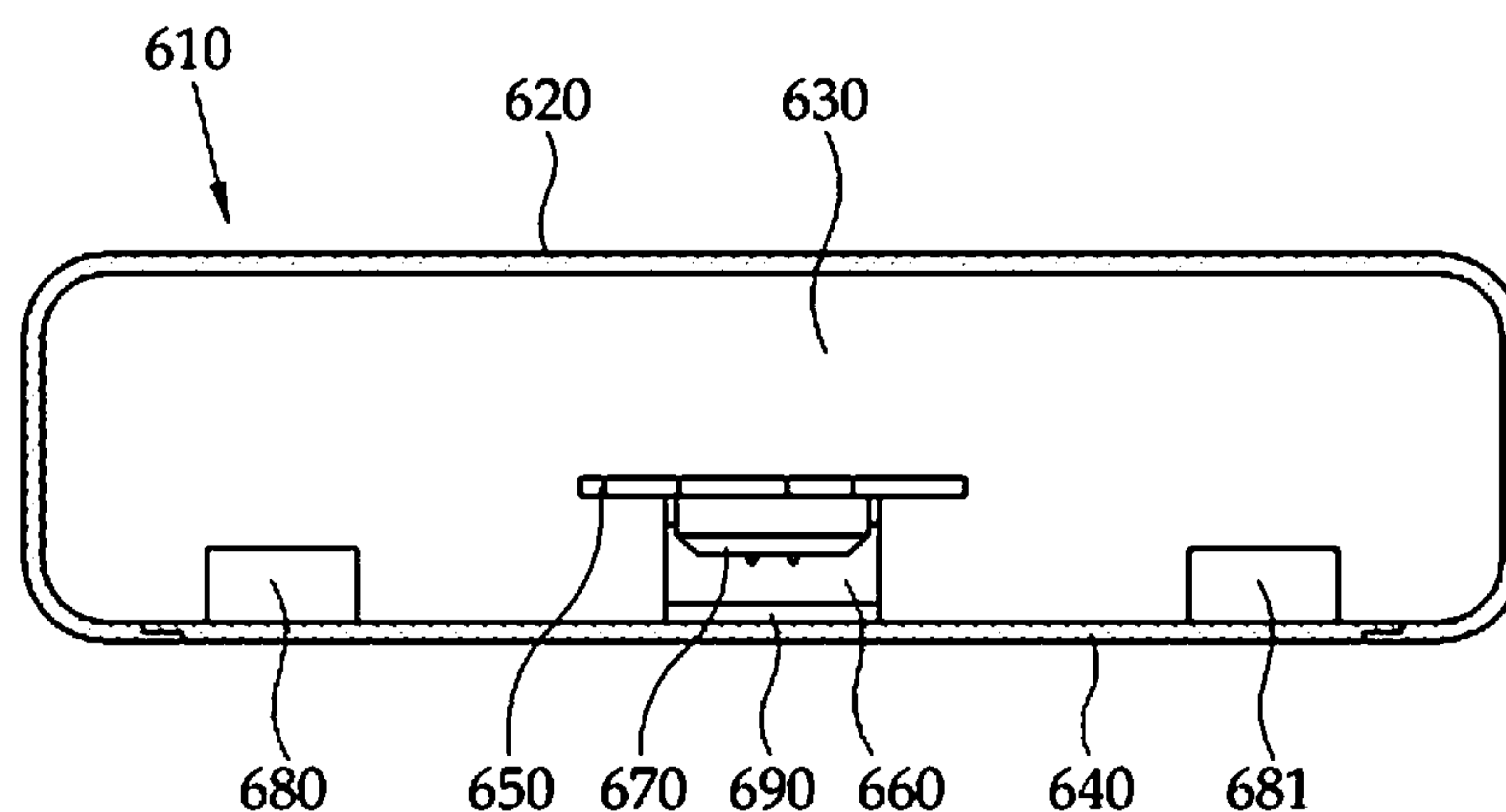
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600

(57) Abstract: The present disclosure relates to a vibrating seat including: a main body unit 610 which has a cushion member 630 therein; a fixing bracket 640 which supports a rear side of the main body unit 610; an insert 650 which is inserted into and formed integrally with the cushion member 630; a fastening groove 660 which is concavely formed from a rear end of the cushion member 630 to the insert 650; and a vibrating unit 670 which is disposed in the fastening groove 660, and directly fastened to the insert 650.

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## Description

### Title of Invention: VIBRATING SEAT

#### Technical Field

[1] The present disclosure relates to a portable vibrating seat in which by a vibrating unit directly fastened to an insert inserted into and formed integrally with a cushion member disposed in a main body unit, vibration is strongly transmitted to a spectator, thereby improving an interest of the spectator.

[2]

#### Background Art

[3] Movie theaters may be widely classified into a general movie theater which shows a general movie (two-dimensional image), a special movie theater at a place for providing amusement, such as a theme park, and an exhibition movie theater for education or for providing public relations at a museum/public relation center/exhibition hall.

[4] In general, a person mainly sees three-dimensional images, but because a person sees two-dimensional images when viewing the images, which are captured using image capturing devices such as a camera or a camcorder, through a screen in a general movie theater, and as a result, a stereoscopic effect is greatly degraded.

[5] A movie screening facility in the related art such as a general movie theater simply provides movies to spectators, but recently, due to propagation of digital media capable of performing bidirectional signal communication and development of movie industries, new types of movies are provided, and various effects are provided to the spectator in addition to movie screening. That is, the general movie theater in the related art is a place which simply allows people to see the movies in visual and auditory manners, but recently, the movie theater becomes a place that allows people to see the movie in a visual manner, and allows people to directly feel various effects.

[6] In general, the movie theater where people may feel stereoscopic effects of the movies in a visual manner while seeing the movies, which are specially made, is generally called a '3D movie theater', and other than the 3D movie theater, a movie theater, which allows people to feel five sensory senses such as tactile sense, olfactory sense, and the like, in addition to visual and auditory senses when seeing the movies, is referred to as a '4D movie theater'.

[7] Recently, in the 3D movie theater, the 4D movie theater, or the theme movie theater, in order to provide spectators with vibration corresponding to situations in the movie, vibrating units are installed in chairs in the movie theater, and the chairs are controlled to be automatically vibrated by allowing the vibrating unit to be operated in con-

junction with heavy low tone sound of the movie, thereby allowing the spectators to more strongly feel the vibration.

[8] Hereinafter, a vibrating chair in the related art will be described in more detail.

[9] FIG. 1 illustrates a front view of a vibrating chair 10 in the related art, and FIG. 2 illustrates a side view of the vibrating chair 10 in the related art.

[10] Referring to FIGS. 1 and 2, the vibrating chair 10 in the related art has fixing units 60 fixed to a floor 70.

[11] A pair of fixing units 60 is generally provided.

[12] A backrest portion 20 is fixedly installed at portions of the pair of fixing units 60, a seat portion 30 is rotatably installed at portions of the pair of fixing units 60 by connecting units 50, and a pair of armrest portions 40 is disposed at upper ends of the pair of fixing units 60.

[13] The backrest portion 20 has a first cushion member 22 therein in order to provide comfort to the spectator, and the entirety of a front side and a lateral side of the first cushion member 22 and a part of a rear side of the first cushion member 22 are covered by a first cover 21. In addition, a rear side of the first cushion member 22 is covered by a first fixing bracket 23. A transducer 34 is installed in the first cushion member 32.

[14] The seat portion 30 has a second cushion member 32 therein in order to provide comfort to the spectator, and the entirety of a front side and a lateral side of the second cushion member 32 and a part of a rear side of the second cushion member 32 are covered by a second cover 31. In addition, a rear side of the second cushion member 32 is covered by a second fixing bracket 33. A transducer 34 is installed in the second cushion member 32.

[15] Korean Utility Model Registration No. 20-0419026 also discloses the technical spirit like the aforementioned description.

[16] However, in the case of a children's theater or a general theater, the aforementioned vibrating chairs are not installed, such that the spectators are seated on a general floor or general seats, and as a result, there is a problem in that the spectators cannot strongly feel vibration that conforms with film screening information, and an interest of the spectators is degraded.

[17] In addition, there are problems in that a lot of facility costs are incurred to install the vibrating chairs in a children's theater or a general theater, and the movie theater should be closed during a working process, thereby increasing maintenance costs.

[18] Furthermore, in a case in which vibration is transmitted to a child or a kid in a state in which the child or the kid is seated on a seat portion of a general chair or a seat portion of a vibrating chair in the related art, there is a problem in that a safety accident may occur as the child falls from the seat portion.

[19]

## **Disclosure of Invention**

### **Technical Problem**

[20] The present disclosure has been made in an effort to solve the aforementioned problem, and an object of the present disclosure is to provide a vibrating seat in which by a vibrating unit directly fastened to an insert inserted into and formed integrally with a cushion member provided in a main body unit, vibration is strongly and directly transmitted to a spectator without separate installation costs or installation time required to install a vibrating chair in a theater in the related art, thereby improving an interest of the spectator, and reducing installation costs.

[21]

### **Solution to Problem**

[22] In order to achieve the object of the present disclosure, a vibrating seat according to an exemplary embodiment of the present disclosure includes: a main body unit which has a cushion member therein; a fixing bracket which supports a rear side of the main body unit; an insert which is inserted into and formed integrally with the cushion member; a fastening groove which is concavely formed from a rear end of the cushion member to the insert; and a vibrating unit which is disposed in the fastening groove, and directly fastened to the insert.

[23] In addition, the vibrating seat according to another exemplary embodiment of the present disclosure may further include a supporting frame which has both ends fixed to the main body unit, and is installed to support the insert.

[24] In addition, the vibrating seat according to another exemplary embodiment of the present disclosure may further include: a communication unit which is installed at a portion of the main body unit; and a power supply unit which is installed at a portion of the main body unit, and supplies electric power to the vibrating unit in accordance with a signal of the communication unit.

[25] In addition, the vibrating seat according to another exemplary embodiment of the present disclosure may further include a cover which is installed to cover the entirety of a front side and a lateral side of the main body unit, and a part of a rear side of the main body unit.

[26] In addition, the cover of the vibrating seat according to another exemplary embodiment of the present disclosure may be made of a waterproof material.

[27] In addition, the insert of the vibrating seat according to another exemplary embodiment of the present disclosure may be formed in an octagonal plate shape, and may include: a plurality of bolt fastening holes for coupling the vibrating unit; a first through hole which is formed in a circular shape at a center; a plurality of second through holes which is disposed at a predetermined angle along an outer circumference

of the first through hole, and formed in a circular shape; and a plurality of third through holes which is constantly disposed between the second through holes along the outer circumference of the first through hole, and formed in a circular shape, in which the first through hole, the second through hole, and the third through hole have diameters that are different from each other.

[28] In addition, the insert of the vibrating seat according to another exemplary embodiment of the present disclosure may be formed in an octagonal plate shape, and may include: a plurality of bolt fastening holes for coupling the vibrating unit; and a plurality of through holes which is disposed in a matrix shape, has the same diameter, and is formed in a circular shape.

[29] In addition, the insert of the vibrating seat according to another exemplary embodiment of the present disclosure may be formed in a plate shape that is bent several times in a zigzag shape.

[30] In addition, the insert of the vibrating seat according to another exemplary embodiment of the present disclosure may include: a plurality of bolt fastening holes for coupling the vibrating unit; and a plurality of horizontal portions, and a plurality of vertical portions, in which intervals between the vertical portions, which are disposed to be adjacent to each other, are equal, and the vertical portions, which form both ends of the insert, are disposed to be opposite to each other.

[31] In addition, the insert of the vibrating seat according to another exemplary embodiment of the present disclosure may include: a main body; a concave portion which has a plurality of horizontal portions and a plurality of vertical portions which are formed in the main body by bending the concave portion several times in a zigzag shape; and a plurality of bolt fastening holes which is formed at a portion of the main body so as to couple the vibrating unit, in which a first interval and a second interval between the vertical portions of the concave portion are different from each other.

[32] In addition, the vibrating seat according to another exemplary embodiment of the present disclosure may be detachably installed in a seat portion of a vibrating chair.

[33]

### **Advantageous Effects of Invention**

[34] According to the vibrating seat according to the present disclosure, by the vibrating unit directly fastened to the insert inserted into and formed integrally with the cushion member provided in the main body unit, vibration is strongly transmitted to the spectator, thereby maximizing an interest of the spectator through strong vibration which conforms with film screening information.

[35] In addition, the vibrating seat according to the present disclosure is formed to have a comparatively simple configuration, thereby reducing manufacturing costs.

[36] Furthermore, according to the vibrating seat according to the present disclosure, the vibrating chair need not be separately installed, and the vibrating seat may be conveniently portable, and easily installed on the existing vibrating chair, a general floor, or a general chair, thereby reducing facility costs.

[37]

### **Brief Description of Drawings**

[38] FIG. 1 illustrates a front view of a vibrating chair in the related art.

[39] FIG. 2 illustrates a side view of the vibrating chair in the related art.

[40] FIG. 3 illustrates a perspective view of a vibrating seat according to an exemplary embodiment of the present disclosure.

[41] FIG. 4 illustrates a cross-sectional view of the vibrating seat according to the exemplary embodiment of the present disclosure.

[42] FIG. 5 illustrates a front view of an insert that is inserted into a vibrating seat according to another exemplary embodiment of the present disclosure.

[43] FIG. 6 illustrates a front view of the insert that is inserted into the vibrating seat according to another exemplary embodiment of the present disclosure.

[44] FIG. 7 illustrates a front view of the insert that is inserted into the vibrating seat according to another exemplary embodiment of the present disclosure.

[45] FIG. 8 illustrates a front view of the insert that is inserted into the vibrating seat according to another exemplary embodiment of the present disclosure.

[46] FIG. 9 illustrates a front view of a vibrating chair in which the vibrating seat according to the exemplary embodiment of the present disclosure may be installed.

[47] FIG. 10 illustrates a side view of the vibrating chair in which the vibrating seat according to the exemplary embodiment of the present disclosure may be installed.

[48] FIG. 11 illustrates a top plan view of a cross section taken along line A-A of FIG. 9.

[49] FIG. 12 illustrates a top plan view of a cross section taken along line B-B of FIG. 9.

[50]

### **Best Mode for Carrying out the Invention**

[51] Exemplary embodiments of the present disclosure will be described in detail with reference to the accompanying drawings. First of all, in giving reference numerals to constituent elements in each of the drawings, like reference numerals refer to like constituent elements.

[52] FIG. 3 illustrates a perspective view of a vibrating seat 600 according to an exemplary embodiment of the present disclosure, and FIG. 4 illustrates a cross-sectional view of the vibrating seat 600 according to the exemplary embodiment of the present disclosure.

[53] Referring to FIGS. 3 and 4, the vibrating seat 600 according to the exemplary em-

bodiment of the present disclosure may include a main body unit 610, a fixing bracket 640, an insert 650, a fastening groove 660, and a vibrating unit 670.

- [54] The main body unit 610 has a cushion member 630 therein in order to provide comfort to a spectator, and the cushion member 630, which is provided in the main body unit 610, may be made of a material having elasticity such as sponge or urethane.
- [55] The fixing bracket 640 is installed at a rear side of the main body unit 610 so as to support the rear side of the main body unit 610. According to the exemplary embodiment of the present disclosure, the fixing bracket 640 may be made of metal, plastic, or plywood having a flat plate shape.
- [56] The insert 650 may be inserted into and integrally molded in the cushion member 630. When the cushion member 630, which is provided in the main body unit 610, is molded, the insert 650 may be put into a mold for foam-molding the cushion member 630, and then the mold may be filled with sponge, thereby forming the cushion member 630.
- [57] The fastening groove 660 may be concavely formed from a rear end side of the cushion member 630 of the main body unit 610 to a position at which the insert 650 is inserted. That, the mold for foam-molding the cushion member 630 has a convex portion (not illustrated) for forming the fastening groove 660, the insert 650 is inserted into the mold, and then the mold is filled with sponge, thereby forming the cushion member 630.
- [58] The vibrating unit 670 is disposed in the fastening groove 660, and may be directly fastened to the insert 670. In addition, the vibrating unit 670 may be provided as a transducer that converts heavy low tone sound in a movie theater into vibration.
- [59] By the vibrating seat 600 which has a comparatively simple configuration and is conveniently portable as described above, costs required to manufacture the vibrating seat may be reduced, and vibration, which conforms to film screening information, may be strongly transmitted to the spectator, thereby maximizing the interest of the spectator. In addition, the vibrating seat 600 may be directly installed to the chair or on the floor in the existing movie theater, thereby reducing installation costs required to install the vibrating chair.
- [60] As illustrated in FIGS. 3 and 4, the vibrating seat 600 according to the exemplary embodiment of the present disclosure may further include a supporting frame 690 which is fixedly installed on the main body unit 610.
- [61] Both ends of the supporting frame 690 are fixed to both side surfaces of the main body unit 610, respectively, and the supporting frame 690 may be installed so that one side surface of the supporting frame 690 is in contact with the fixing bracket 640 so as to support the vibrating unit 670.
- [62] In addition, both ends of the supporting frame 690 may be fastened to both side

surfaces of the main body unit 610 by a publicly known fastening means such as bolting, riveting, or welding.

- [63] Thereby, the supporting frame 690 supports the vibrating unit 670 which is directly fastened to the insert 650 that is formed integrally with the cushion member 630 of the main body unit 610, thereby preventing the cushion member 630 from being damaged by the vibration of the vibrating unit 670, and reducing costs required for maintenance of the vibrating seat 600.
- [64] In addition, the vibrating seat 600 according to another exemplary embodiment of the present disclosure further includes a communication unit 680, and a power supply unit 681.
- [65] The communication unit 680 is disposed in the main body unit 610, and receives film screening information by communicating with a control device (not illustrated in the drawings) that is disposed in a control room of a film screening system. In order to prevent a safety accident to the spectator at a children's theater where even general chairs are not installed in the movie theater, the communication unit 680 may be formed as a wireless communication unit that may perform wireless communication with the control device disposed in the control room of the film screening system, but the present disclosure is not necessarily limited thereto.
- [66] The communication unit 680 may include a digital signal receiving unit (digital signal transformation), a digital signal converting unit, an analogue signal output unit, and an analogue signal amplifying unit (analog signal amplify), but the present disclosure is not necessarily limited thereto. In addition, as the form of a control module, the digital signal receiving unit, the digital signal converting unit, and the analogue signal output unit may be installed in the control room or the like of the film screening system instead of the vibrating seat 600, and only the analogue signal amplifying unit may constitute the communication unit of the vibrating seat 600, as necessary.
- [67] According to the exemplary embodiment of the present disclosure, the wireless communication may be implemented as an RF wireless communication method, but the present disclosure is not necessarily limited thereto. In this case, a digital signal transmitting unit (digital signal transmit), which is installed in the control room of the film screening system, encodes an analogue sound signal. Thereafter, the digital signal transmitting unit compresses and converts the analogue sound signal, and then transmits the digital wireless signal to the digital signal receiving unit. The digital signal converting unit receives the transmitted digital signal, and then decodes, compresses and converts the received digital signal to an analogue signal. The analogue signal output unit outputs the converted analogue signal, and the analogue signal amplifying unit amplifies the analogue signal, and then transmits the amplified

signal to the vibrating unit 670.

[68] However, in a case in which the existing general chairs or vibrating chairs are installed in the movie theater, the communication unit 680 may communicate with the control unit disposed in the control room of the film screening system using a wired communication method.

[69] The power supply unit 681 may be disposed at a portion of the main body unit 610. The power supply unit 681 supplies electric power to the vibrating unit 670 based on a signal from the communication unit 680 so as to operate the vibrating unit 670. Here, the power supply unit 681 may be configured as a battery for the purpose of portability of the vibrating seat 600 according to the exemplary embodiment of the present disclosure.

[70] In addition, the vibrating seat 600 according to the exemplary embodiment of the present disclosure may further include a cover 620.

[71] The cover 620 covers the entirety of a front side and a lateral side of the main body unit 610, and a part of the rear side of the main body unit 610. The cover 620 may be made of a woven fabric or a leather material, but the present disclosure is not necessarily limited thereto.

[72] In addition, the cover 620 may be made of a waterproof material, which exhibits excellent waterproof performance, in order to protect the insert 650 integrally inserted and molded in the cushion member 630 disposed in the cover 620 from beverages or other foreign substances when the spectator spills beverages or other foreign substances.

[73] FIGS. 5 to 8 illustrate front views of the insert 670 that is inserted into the vibrating seat 600 according to another exemplary embodiment of the present disclosure.

[74] As illustrated in FIG. 5, the insert 650, which is inserted into the vibrating seat 600 according to a first exemplary embodiment of the present disclosure, may be formed in an octagonal plate shape, and may include a plurality of bolt fastening holes 651, a first through hole 652-1, second through holes 652-2, and third through holes 652-3.

[75] Here, a total of eight third through holes 652-3 may be formed by forming a pair of third through holes 652-3 at one side of the octagonal insert 650, the second through hole 652-2 may be formed outside the pair of third through holes 652-3, and the bolt fastening hole 651 may be formed between the pair of third through holes 652-3.

[76] The vibrating unit 670 may be fastened by bolts that are inserted into the plurality of bolt fastening holes 651. According to the first exemplary embodiment of the present disclosure, four bolt fastening holes 651 may be formed at the same intervals and at an angle of 90 degrees. However, more bolt fastening holes 651 than the aforementioned number of bolt fastening holes 651 may be formed in accordance with a size or a shape of the vibrating unit 670.

- [77] The first through hole 652-1 may be disposed to penetrate a center of the octagonal plate shape, and one first through hole 652-1 may be formed in a circular shape.
- [78] The plurality of second through holes 652-2 may be disposed at a predetermined angle along an outer circumference of the first through hole 652-1, and the respective second through holes 652-2 may be formed in a circular shape. According to the first exemplary embodiment of the present disclosure, four second through holes 652-2 may be formed at an angle of 90 degrees.
- [79] The plurality of third through holes 652-3 may be constantly disposed along the outer circumference of the first through hole 652-1 between the second through holes 652-2, and the respective third through holes 652-3 may be formed in a circular shape. According to the first exemplary embodiment of the present disclosure, eight third through holes 652-3 may be formed along the outer circumference of the first through hole 652-1 so that two third through holes 652-3 are disposed between the second through holes 652-2.
- [80] In addition, the first through hole 652-1, the second through hole 652-2, and the third through hole 652-3 may be formed to have diameters different from each other. That is, the diameters may be decreased in the order of the diameter of the first through hole, the diameter of the second through hole, and the diameter of the third through hole. The vibrating unit 670 is directly fastened to the insert 650 having the aforementioned shape, thereby precisely transmitting fine vibration, which is generated by the vibrating unit 670, to the spectator.
- [81] As illustrated in FIG. 6, an insert 650, which is inserted into a vibrating seat 600 according to a second exemplary embodiment of the present disclosure, may be formed in an octagonal plate shape, and may have a plurality of bolt fastening holes 651, and a plurality of through holes 653.
- [82] The vibrating unit 670 may be fastened by bolts that are inserted into the plurality of bolt fastening holes 651. According to the second exemplary embodiment of the present disclosure, four bolt fastening holes 651 may be formed at the same intervals and at an angle of 90 degrees. However, more bolt fastening holes 651 than the aforementioned number of bolt fastening holes 651 may be formed in accordance with a size or a shape of the vibrating unit 670.
- [83] The plurality of through holes 653 may be disposed in a matrix shape, and neighboring through holes 233 may be formed at equal intervals. In addition, the plurality of through holes 653 may be formed in a circular shape having the same diameter.
- [84] The vibrating unit 670 is directly fastened to the insert 650 having the aforementioned shape, thereby transmitting even fine vibration, which is generated by the vibrating unit 670, to the spectator.

- [85] As illustrated in FIG. 7, an insert 650, which is inserted into a vibrating seat 600 according to a third exemplary embodiment of the present disclosure, may be formed in a plate shape that is bent several times in a zigzag shape. In addition, the insert 650 may have a plurality of bolt fastening holes 651, a plurality of horizontal portions 654-1, and a plurality of vertical portions 654-2.
- [86] The insert 650 is formed in a plate shape that is bent several times in a zigzag shape, thereby precisely transmitting fine vibration, which is generated by the vibrating unit 670, to the spectator, and reducing costs required to manufacture the insert.
- [87] The vibrating unit 670 may be fastened by bolts that are inserted into the plurality of bolt fastening holes 651. According to the third exemplary embodiment of the present disclosure, four bolt fastening holes 651 may be formed at the same intervals and at an angle of 90 degrees. However, more bolt fastening holes 651 than the aforementioned number of bolt fastening holes 651 may be formed in accordance with a size or a shape of the vibrating unit 670.
- [88] In addition, according to the third exemplary embodiment of the present disclosure, four horizontal portions 654-1 may be formed to be positioned in a zigzag shape, five vertical portions 654-2 may be formed to be positioned in a zigzag shape, and the horizontal portions 654-1 and the vertical portions 654-2 may be integrally formed. However, more vertical portions 654-2 and horizontal portions 654-1 than the aforementioned numbers of vertical portions 654-2 and horizontal portions 654-1 may be formed in accordance with a size or a shape of the vibrating chair or the vibrating unit.
- [89] In addition, according to the third exemplary embodiment of the present disclosure, intervals between the vertical portions 654-2, which are disposed to be adjacent to each other, may be equal, and the vertical portions 654-2, which form both ends of the insert 650, may be disposed to be opposite to each other.
- [90] The vibrating unit 670 is directly fastened to the insert 650 having the aforementioned shape, thereby minimizing damage to the cushion member 630 due to the repetitive vibration of the vibrating unit 670.
- [91] As illustrated in FIG. 8, an insert 650, which is inserted into a vibrating seat 600 according to a fourth exemplary embodiment of the present disclosure, may include a main body 655, a concave portion 657, and a plurality of bolt fastening holes 651.
- [92] The main body 655 of the insert 650 may be formed in a plate shape in order to maintain an overall shape of the insert 650.
- [93] The plurality of bolt fastening holes 651 may be formed at a portion of the main body 655, and may be formed in the main body 655 except for the concave portion 657 that will be described below.
- [94] The vibrating unit 670 may be fastened by bolts that are inserted into the plurality of bolt fastening holes 651. According to the fourth exemplary embodiment of the present

disclosure, four bolt fastening holes 651 may be formed at the same intervals and at an angle of 90 degrees. However, more bolt fastening holes 651 than the aforementioned number of bolt fastening holes 651 may be formed in accordance with a size or a shape of the vibrating unit 670.

- [95] The concave portion 657 may include a plurality of horizontal portions 656-1 and a plurality of vertical portions 656-2 which are formed in the main body 655 by bending the concave portion 657 several times in a zigzag shape.
- [96] Intervals between the vertical portions 656-2 of the concave portion 657 may be a first interval 658-1 and a second interval 658-2 that are different from each other, and the first interval between the vertical portions 656-2, which are formed at both sides and a center of the concave portion 657, may be greater than the second interval formed between the first intervals.
- [97] The vibrating unit 670 is directly fastened to the insert 650 having the aforementioned shape, thereby conveniently, accurately, and directly transmitting vibration, which is generated by the vibrating unit 670, to the spectator, and improving an interest of the spectator.
- [98] FIG. 9 illustrates a front view of a vibrating chair 100 in which the vibrating seat 600 according to the exemplary embodiment of the present disclosure may be installed, and FIG. 10 illustrates a side view of the vibrating chair 100 in which the vibrating seat 600 according to the exemplary embodiment of the present disclosure may be installed. FIG. 11 illustrates a top plan view of a cross section taken along line A-A of FIG. 9, and FIG. 12 illustrates a top plan view of a cross section taken along line B-B of FIG. 9.
- [99] The vibrating chair 100 in which the vibrating seat 600 according to the exemplary embodiment of the present disclosure may be installed will be described with reference to FIGS. 9 to 12.
- [100] The vibrating chair 100 may include a pair of fixing units 60 that is fixed to a floor 70. The fixing unit 60 may be formed in various shapes as necessary, and may be fastened to the floor 70 by a publicly known fastening means such as bolt fastening, welding, or riveting.
- [101] A backrest portion 20 may be fixedly installed at portions of the pair of fixing units 60, a seat portion 30 may be rotatably installed at portions of the pair of fixing units 60 by connecting units 50, and a pair of armrest portions 40 may be installed at upper ends of the pair of fixing units 60.
- [102] Although not illustrated, beverage storage holders may be provided at both ends of the armrest portions 40, as necessary.
- [103] The backrest portion 20 has a first cushion member 22 therein in order to provide comfort to the spectator, and the entirety of a front side and a lateral side of the first

cushion member 22 and a part of a rear side of the first cushion member 22 may be covered by a first cover 21, but the present disclosure is not necessarily limited thereto. In addition, the rear side of the first cushion member 22 is covered by a first fixing bracket 23.

- [104] The seat portion 30 has a second cushion member 32 therein in order to provide comfort to the spectator, and the entirety of a front side and a lateral side of the second cushion member 32 and a part of a rear side of the second cushion member 32 may be covered by a second cover 31, but the present disclosure is not necessarily limited thereto. In addition, the rear side of the second cushion member 32 is covered by a second fixing bracket 33.
- [105] Meanwhile, the backrest portion 20 and the first or second cover 31 or 32 of the seat portion 30 may be made of a woven fabric or a leather material, the backrest portion 20 and the first or second cushion member 22 or 23 of the seat portion 30 may be made of a material having elasticity such as sponge, or urethane, and the backrest portion 20 and the first or second fixing bracket 23 or 33 of the seat portion 30 may be made of metal, plastic, plywood, or the like having a flat plate shape.
- [106] A first insert 200 may be inserted into and formed integrally with the first cushion member 22 of the backrest portion 20, and a second insert 210 may be inserted into and formed integrally with the second cushion member 32 of the seat portion 30. In addition, when the first cushion member 22, which is provided in the backrest portion 20, or the second cushion member 32, which is provided in the seat portion 30, is molded, the first or second insert 200 or 210 is put into a mold for foam-molding the first or second cushion member 22 or 32, and then the mold is filled with sponge, thereby forming the first or second cushion member 22 or 32.
- [107] A first or second fastening groove 300 or 310 is concavely formed from a rear end of the first cushion member 22 of the backrest portion 20 to a position at which the first insert 200 is inserted, or from a rear end of the second cushion member 32 of the seat portion 30 to a position at which the second insert 210 is inserted. That is, the mold for foam-molding the first or second cushion member 22 or 32 has a convex portion for forming the first or second fastening groove 300 or 310, the first or second insert 200 or 210 is inserted into the mold, and then the mold is filled with sponge, thereby forming the first or second cushion member 22 or 32, but the present disclosure is not necessarily limited thereto.
- [108] A first or second vibrating unit 400 and 410 is disposed in the first or second fastening groove 300 or 310, and directly fastened to the first or second insert 200 and 210. The first or second vibrating unit 400 or 410 may be provided as a transducer that converts heavy low tone sound in the movie theater into vibration, but the present disclosure is not necessarily limited thereto.

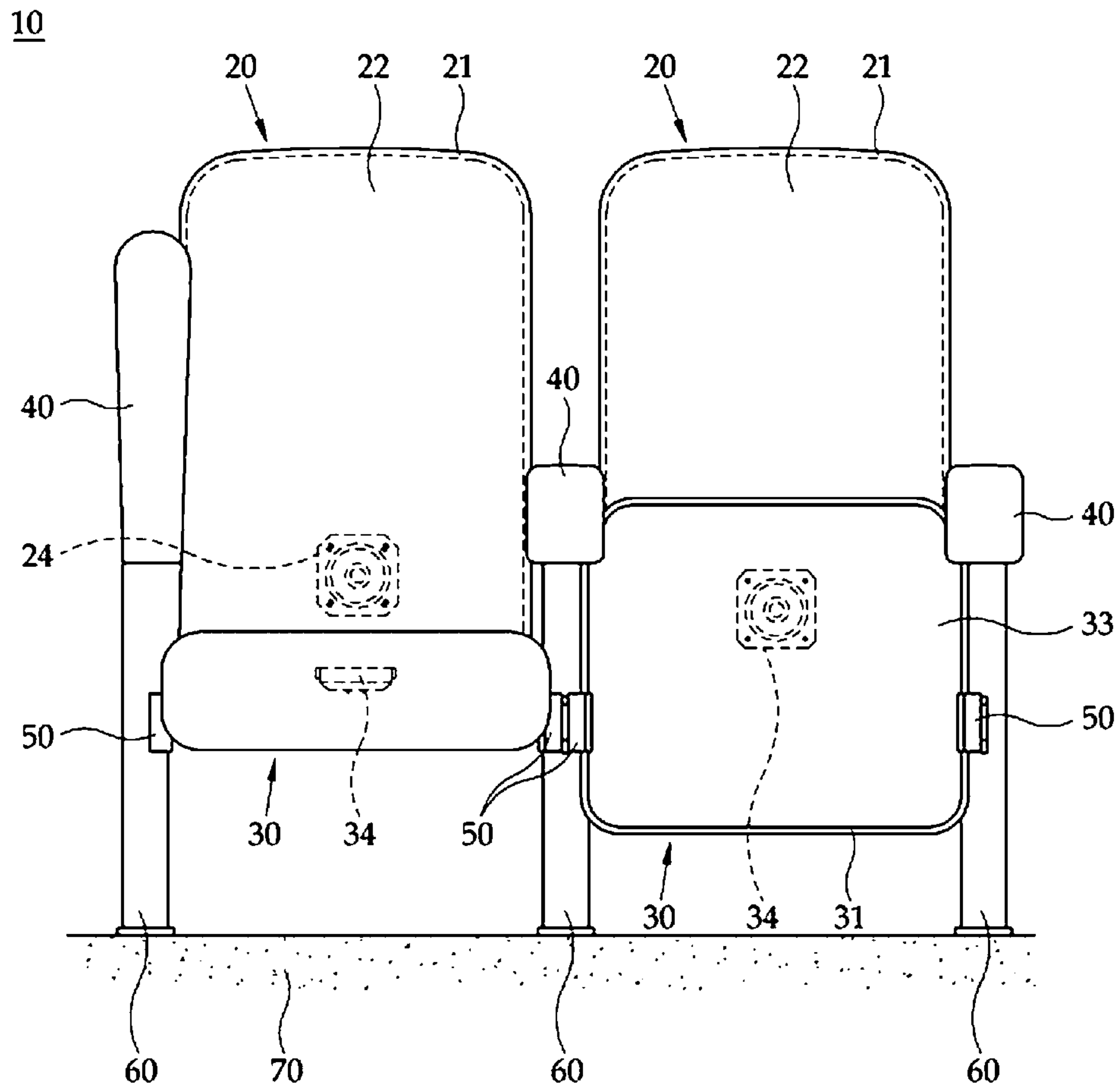
- [109] As illustrated in FIGS. 9 to 12, the vibrating chair 100 may further include a first supporting frame 500 which is installed in the backrest portion 20, or a second supporting frame 510 which is installed in the seat portion 30. The first supporting frame 500, which is installed in the backrest portion 20, has both ends which are fixed to both sides of the backrest portion 20, respectively, and the first supporting frame 500 may be installed so that one side of the first supporting frame 500 is in contact with the first fixing bracket 23 so as to support the first vibrating unit 400. In addition, the second supporting frame 510, which is installed in the seat portion 30, has both ends which are fixed to both sides of the seat portion 30, respectively, and the second supporting frame 510 may be installed so that one side of the second supporting frame 510 is in contact with the second fixing bracket 33 so as to support the second vibrating unit 410.
- [110] Regarding the first or second supporting frame 500 or 510, both ends of the first or second supporting frame 500 or 510 may be fastened to both sides of the backrest portion 20 or the seat portion 30 by a publicly known fastening means such as bolting, riveting, or welding, but the present disclosure is not necessarily limited thereto.
- [111] According to the exemplary embodiment of the present disclosure, the vibrating seat 600 may be detachably installed in the seat portion 30 of the vibrating chair 100.
- [112] That is, when the portable vibrating seat 600 is placed on the seat portion 30 of the vibrating chair 100 based upon a request of the spectator, vibration may be strongly transmitted to the spectator seated in the vibrating seat 600 in accordance with a film screening state using a wired or wireless communication unit. In addition, it is not necessary to install or remove all of the vibrating chairs when the vibrating seat is installed or removed, thereby reducing installation costs and manufacturing costs.
- [113] The present disclosure is not limited by the modifications illustrated in the drawings and the aforementioned exemplary embodiments, but may be expanded to other exemplary embodiments that belong to the scope of the appended claims.

## Claims

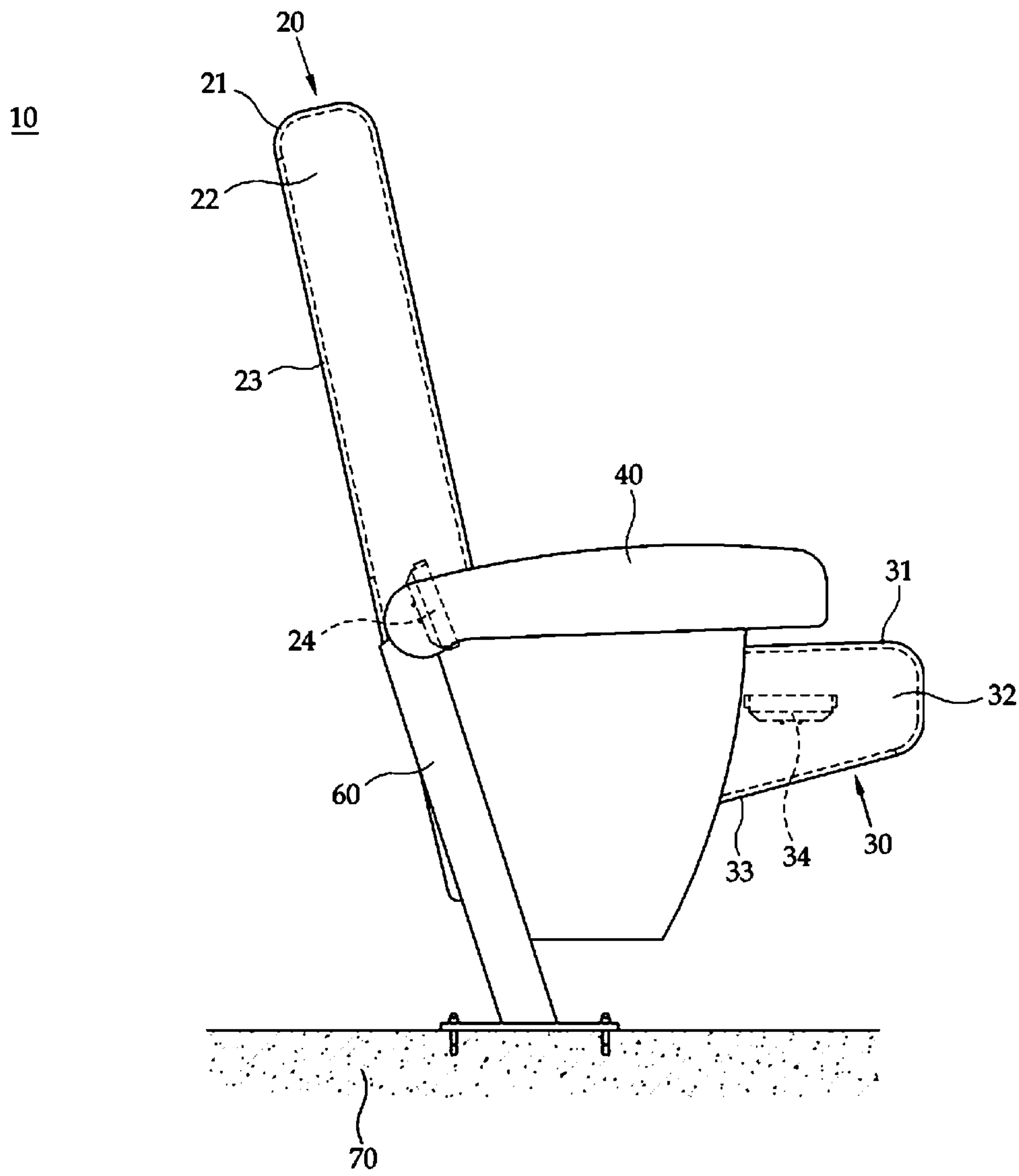
- [Claim 1] A vibrating seat comprising:  
a main body unit which has a cushion member therein;  
a fixing bracket which supports a rear side of the main body unit;  
an insert which is inserted into and formed integrally with the cushion member;  
a fastening groove which is concavely formed from a rear end of the cushion member to the insert;  
a vibrating unit which is disposed in the fastening groove, and directly fastened to the insert;  
a supporting frame which has both ends fixed to the main body unit, and is installed to support the insert;  
a communication unit which is installed at a portion of the main body unit; and  
a power supply unit which is installed at a portion of the main body unit, and supplies electric power to the vibrating unit in accordance with a signal of the communication unit.
- [Claim 2] The vibrating seat of claim 1, further comprising:  
a cover which is installed to cover the entirety of a front side and a lateral side of the main body unit, and a part of a rear side of the main body unit.
- [Claim 3] The vibrating seat of claim 2, wherein the cover is made of a waterproof material.
- [Claim 4] The vibrating seat of any one of claims 1-3, wherein the insert is formed in an octagonal plate shape, and includes:  
a plurality of bolt fastening holes for coupling the vibrating unit;  
a first through hole which is formed in a circular shape at a center;  
a plurality of second through holes which is disposed at a predetermined angle along an outer circumference of the first through hole, and formed in a circular shape; and  
a plurality of third through holes which is constantly disposed between the second through holes along the outer circumference of the first through hole, and formed in a circular shape,  
wherein the first through hole, the second through hole, and the third through hole have diameters that are different from each other.
- [Claim 5] The vibrating seat of any one of claims 1-3, wherein the insert is formed in an octagonal plate shape, and includes:  
a plurality of bolt fastening holes for coupling the vibrating unit; and  
a plurality of through holes which is disposed in a matrix shape, has the same diameter, and is formed in a circular shape.
- [Claim 6] The vibrating seat of any one of claims 1-3, wherein the insert is formed in a plate shape that is bent several times in a zigzag shape.

- [Claim 7] The vibrating seat of claim 6, wherein the insert includes:  
a plurality of bolt fastening holes for coupling the vibrating unit; and  
a plurality of horizontal portions, and a plurality of vertical portions,  
wherein intervals between the vertical portions, which are disposed to  
be adjacent to each other, are equal, and the vertical portions, which  
form both ends of the insert, are disposed to be opposite to each other.
- [Claim 8] The vibrating seat of any one of claims 1-3, wherein the insert  
includes:  
a main body;  
a concave portion which includes a plurality of horizontal portions  
and a plurality of vertical portions which are formed in the main body  
by bending the concave portion several times in a zigzag shape; and  
a plurality of bolt fastening holes which is formed at a portion of the  
main body so as to couple the vibrating unit,  
wherein a first interval and a second interval between the vertical  
portions of the concave portion are different from each other.
- [Claim 9] The vibrating seat of any one of claims 1 to 8, wherein the vibrating  
seat is detachably installed in a seat portion of a vibrating chair.

[Fig. 1]

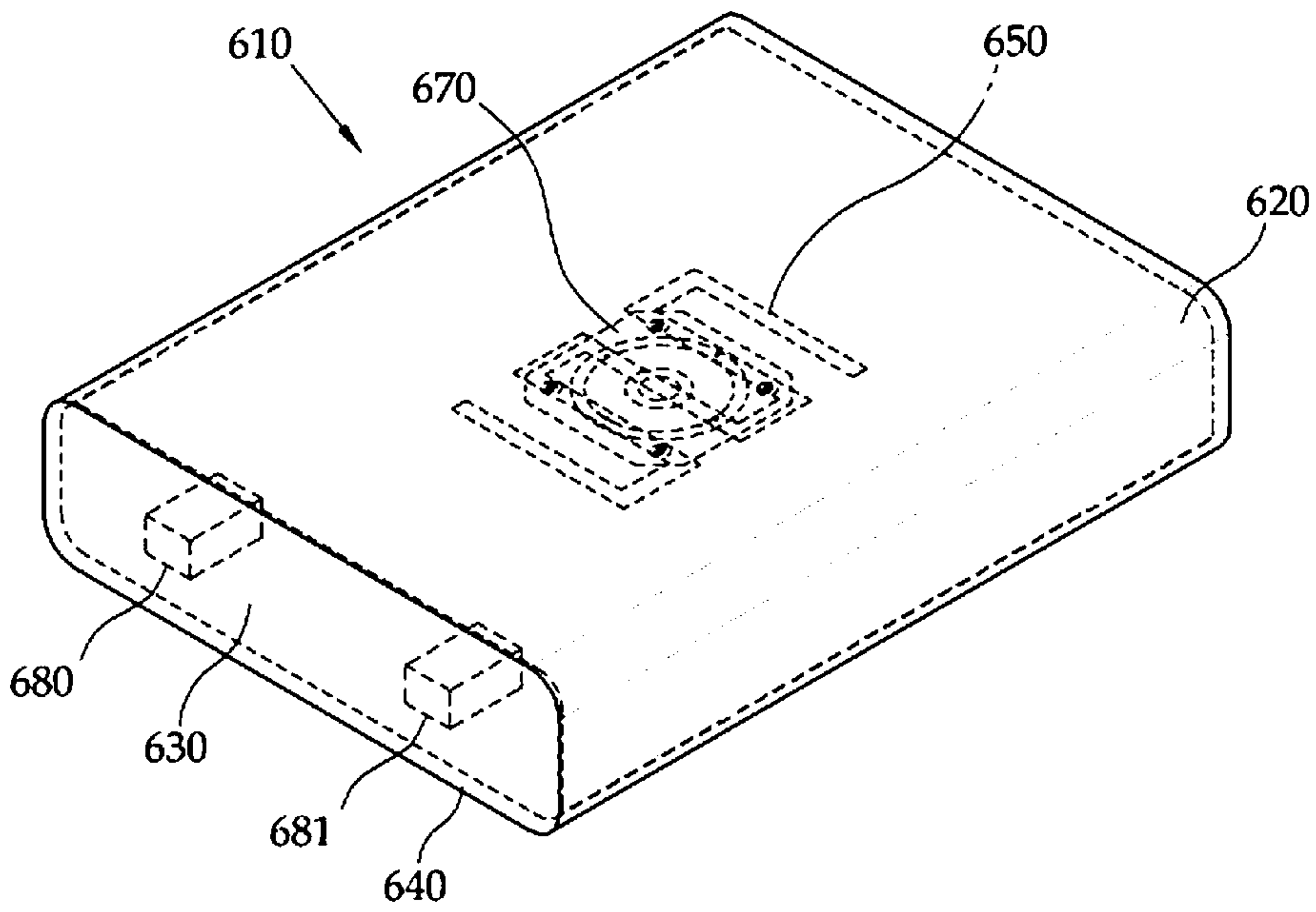


[Fig. 2]



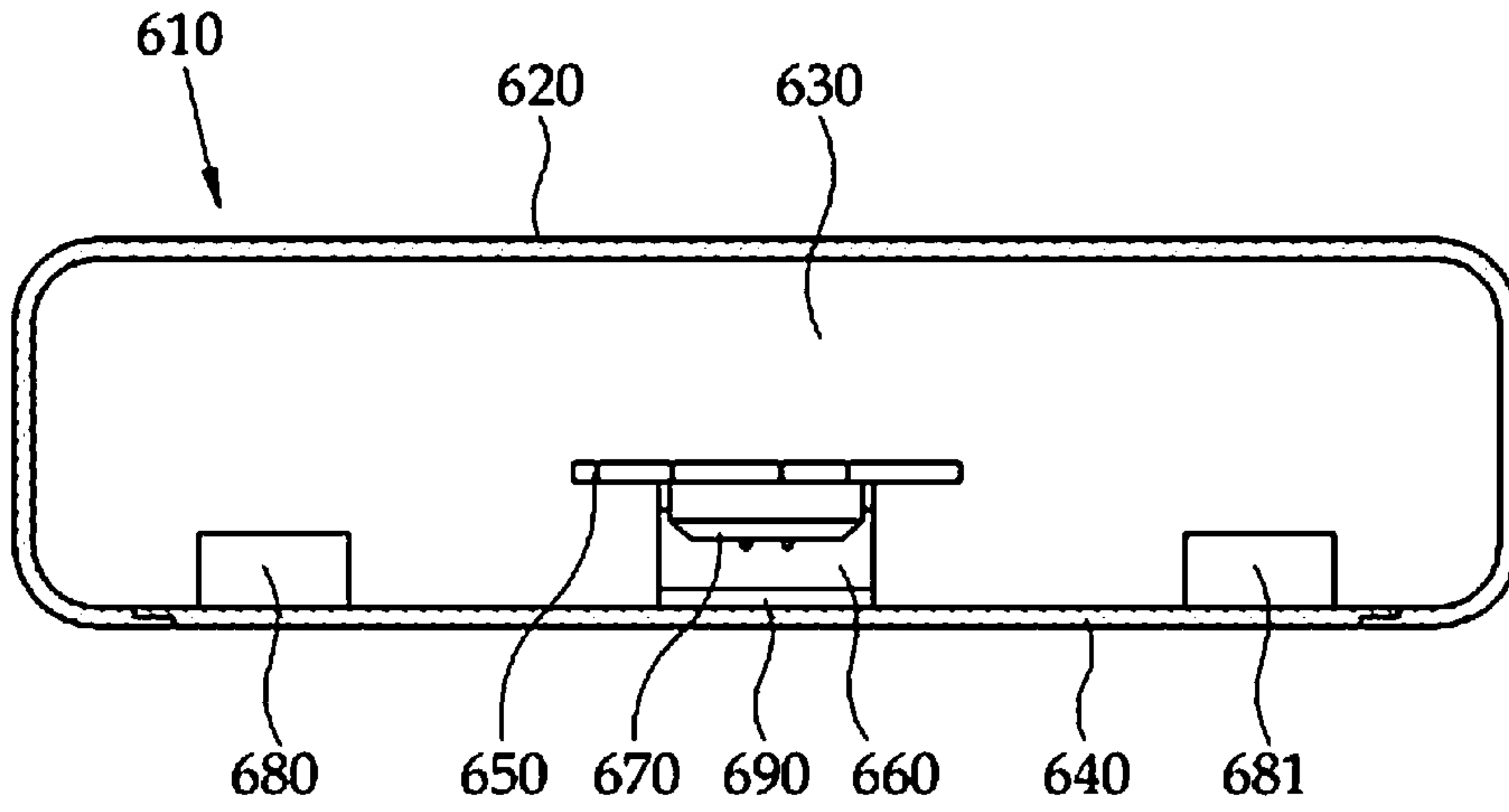
[Fig. 3]

600



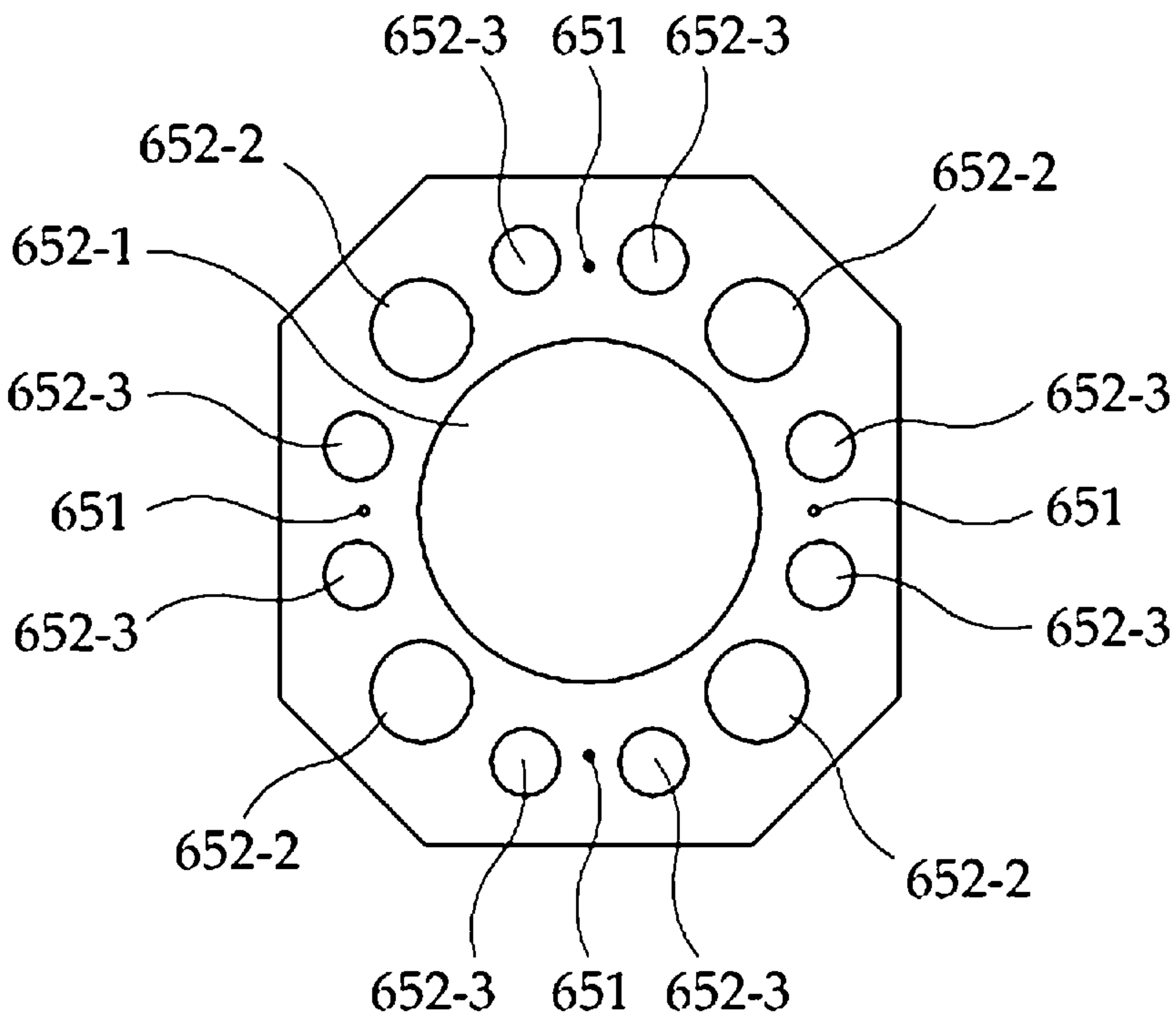
[Fig. 4]

600

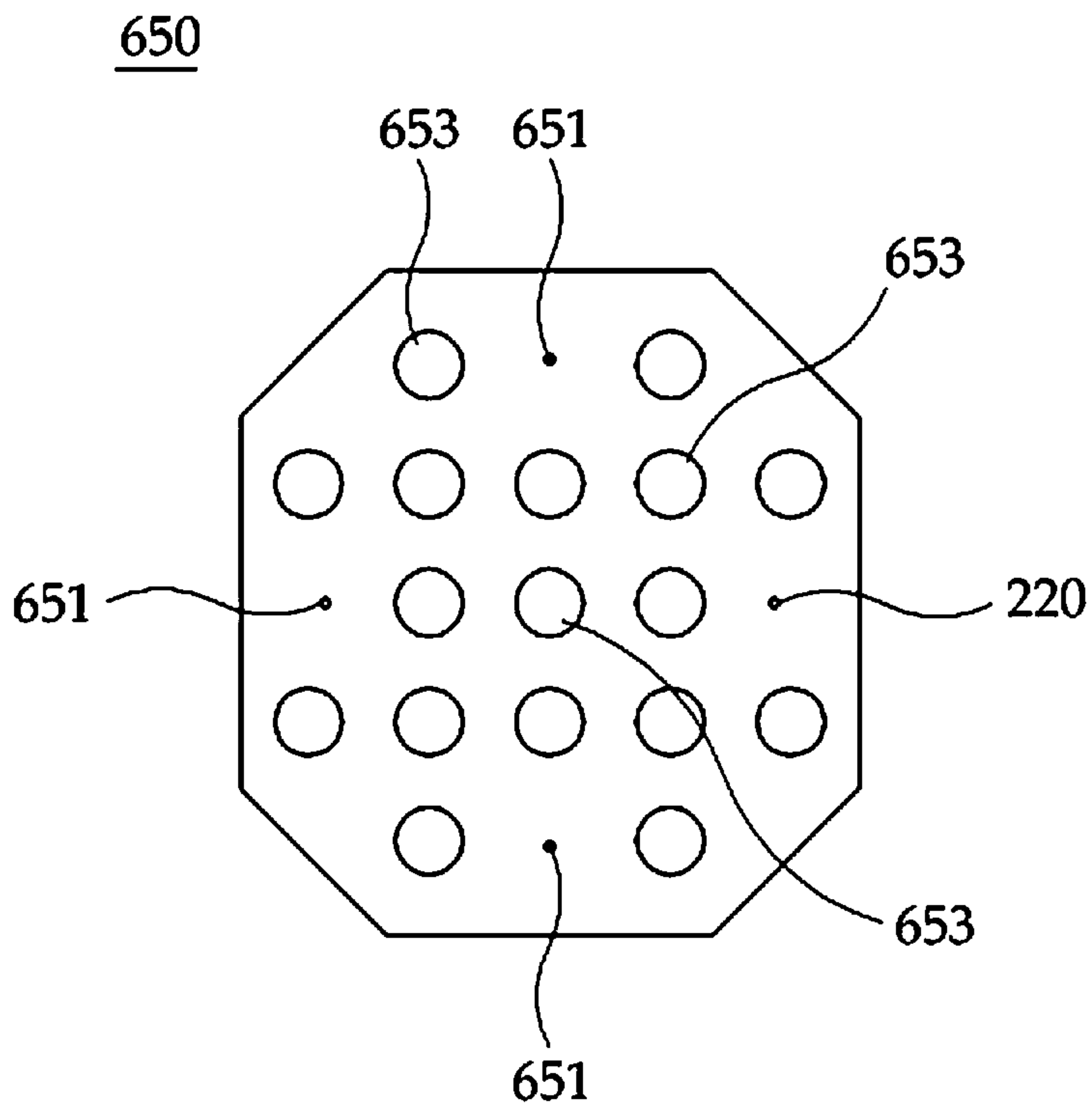


[Fig. 5]

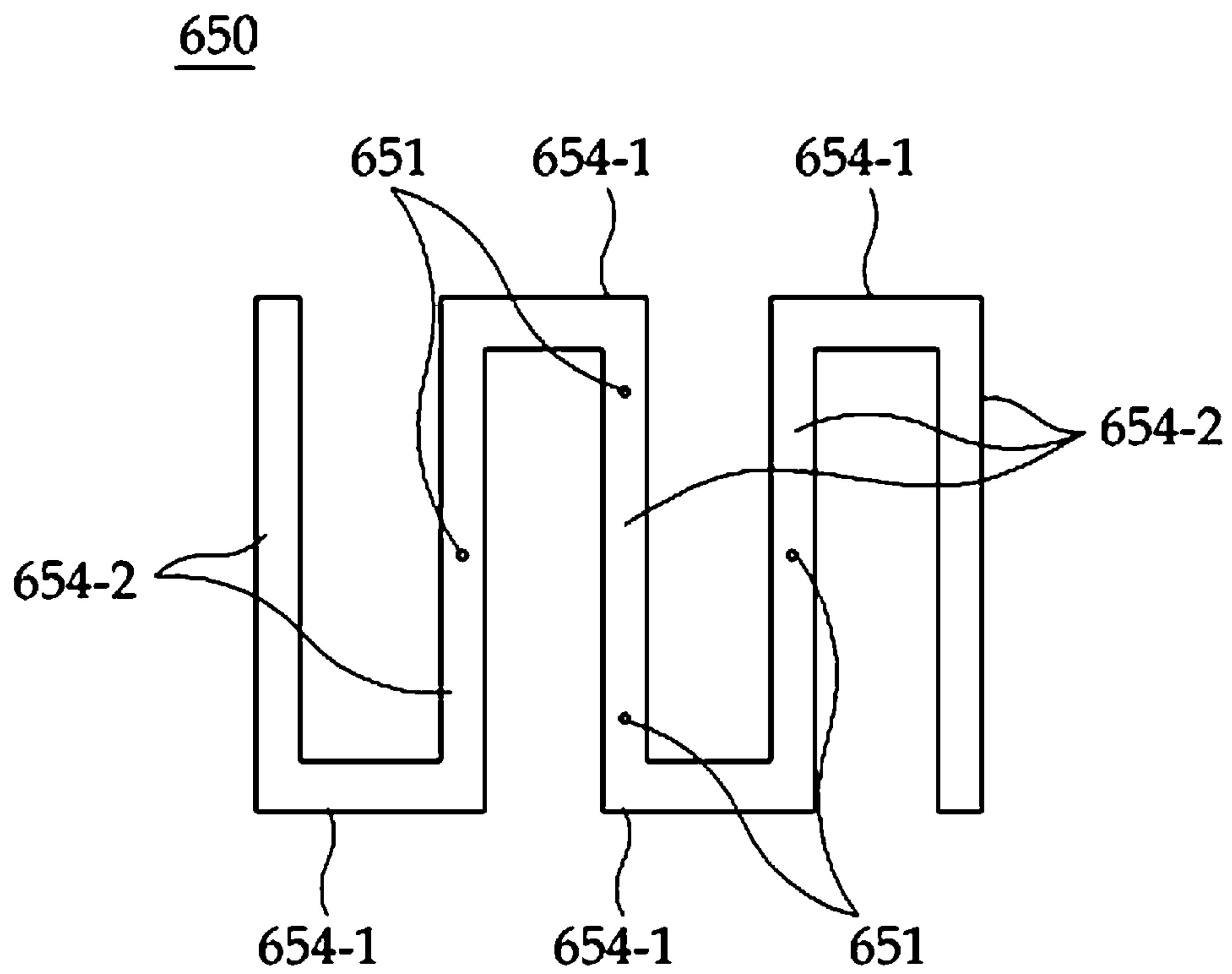
650



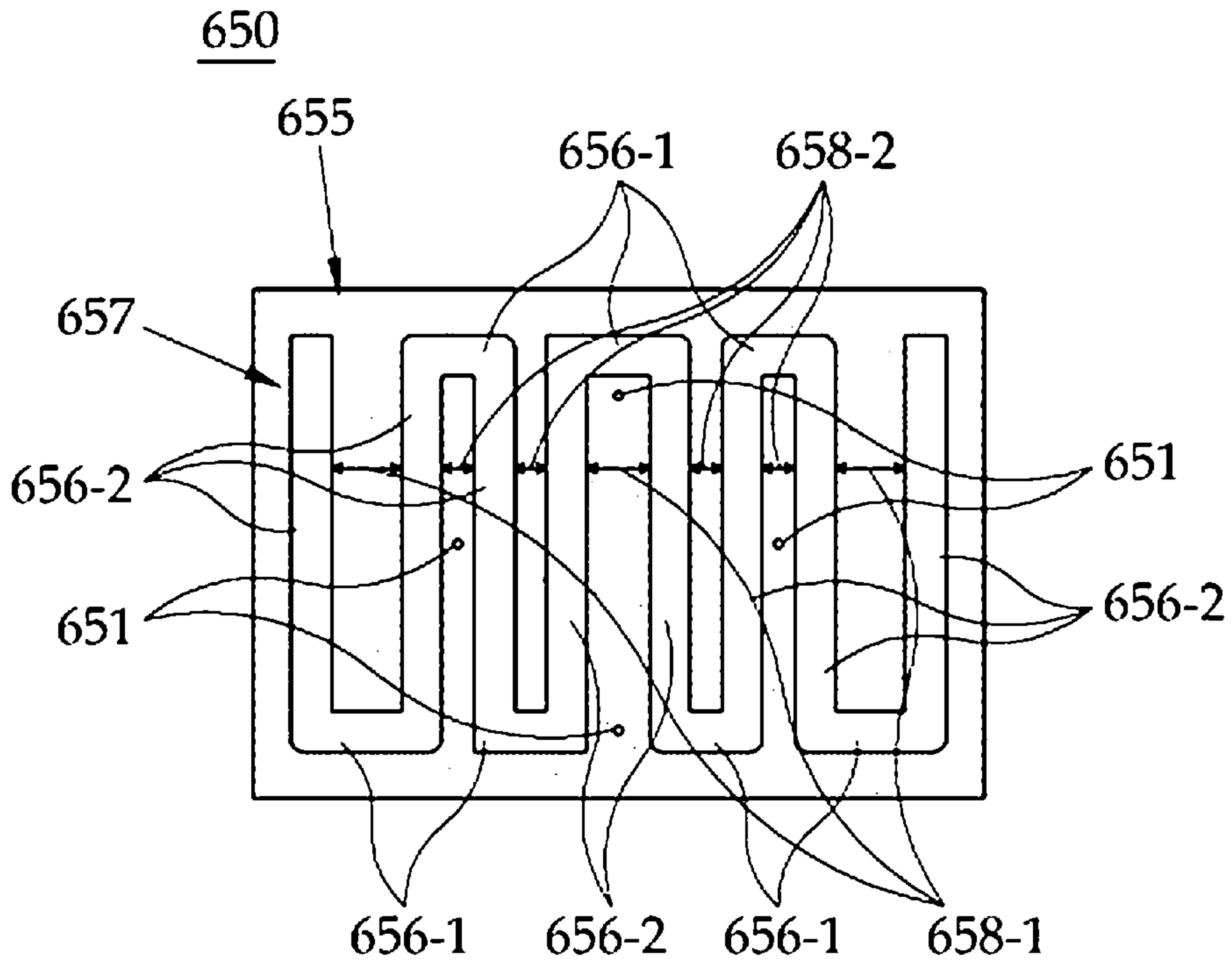
[Fig. 6]



[Fig. 7]

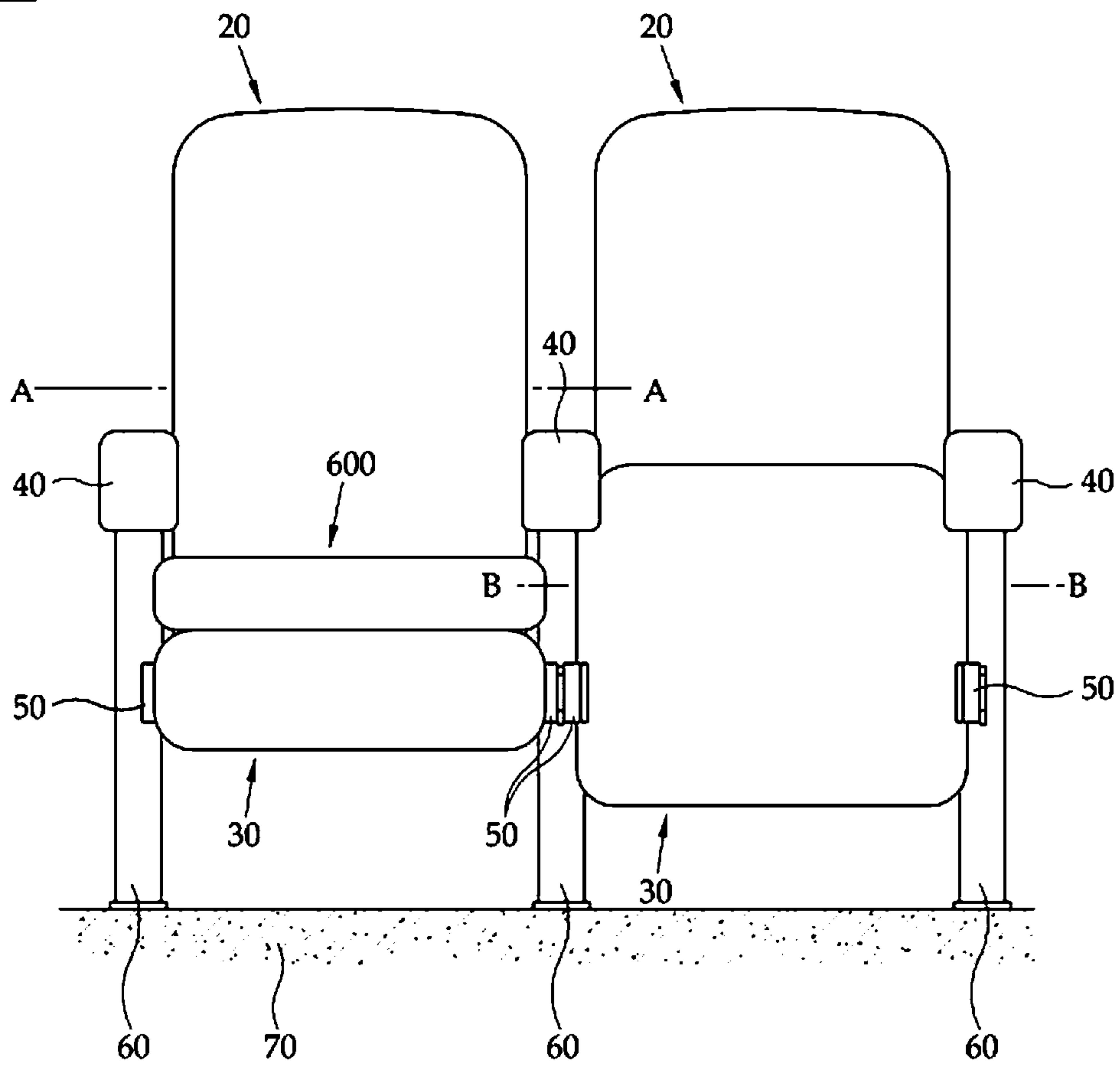


[Fig. 8]

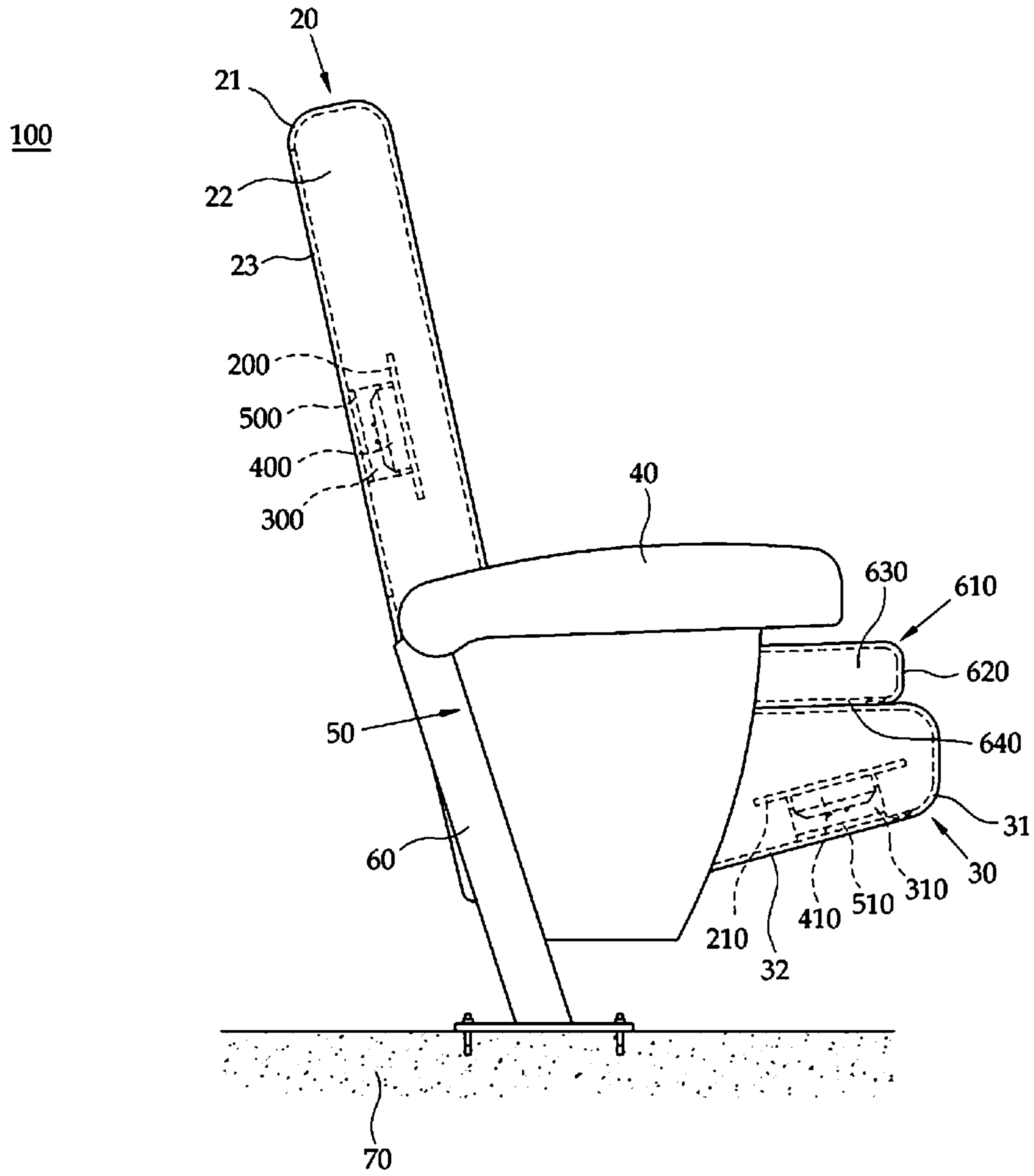


[Fig. 9]

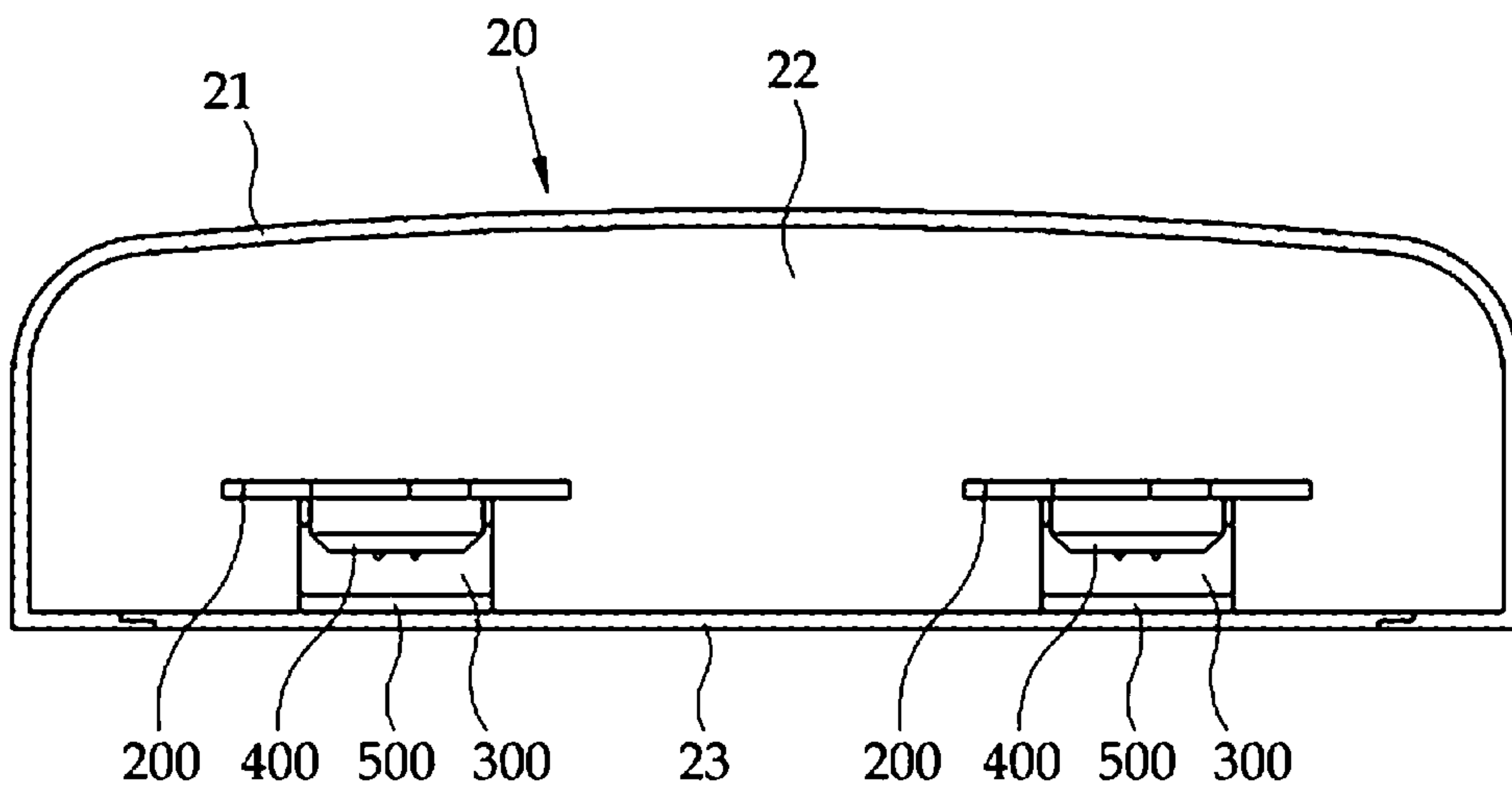
100



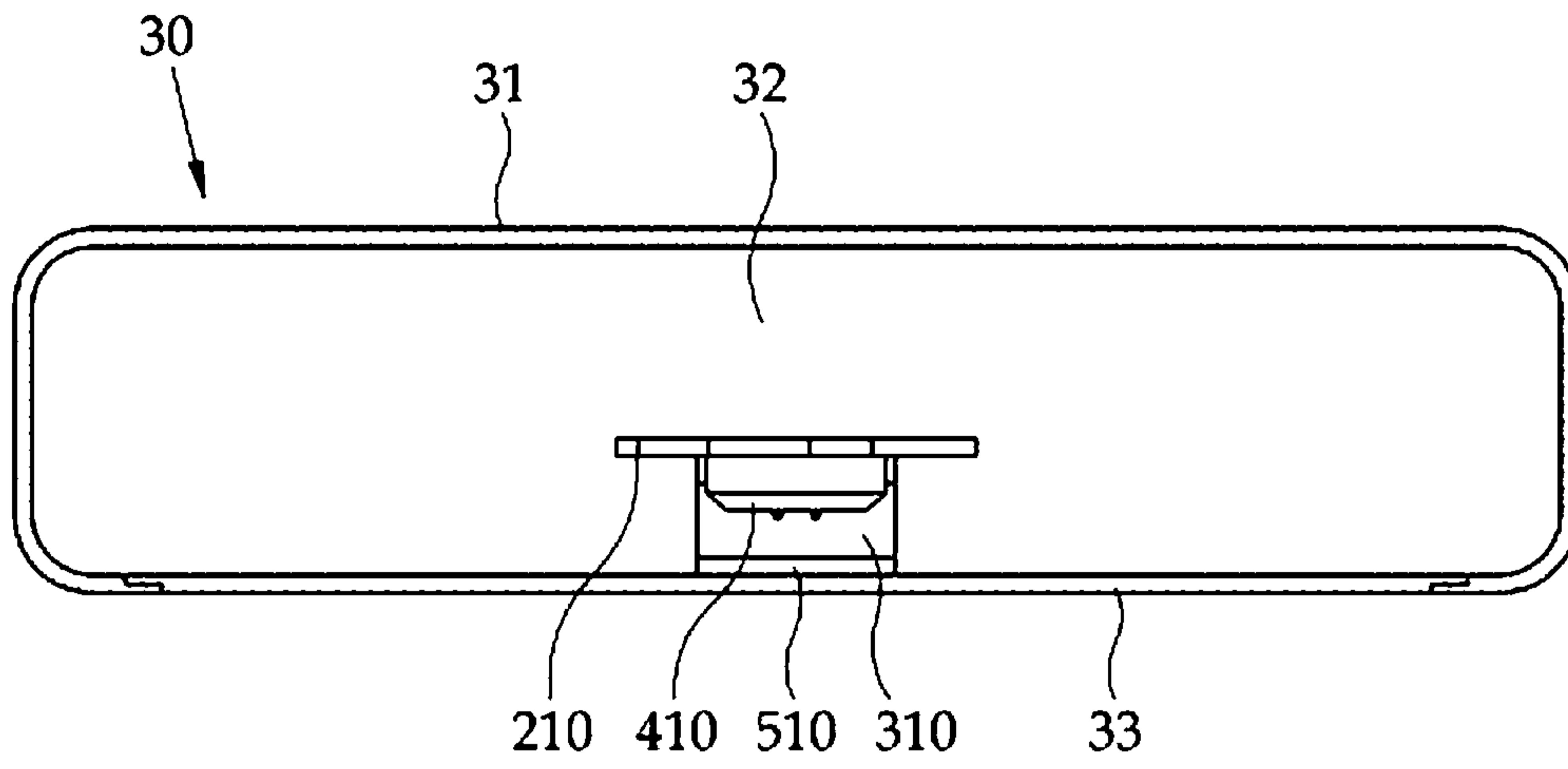
[Fig. 10]



[Fig. 11]



[Fig. 12]



600

