

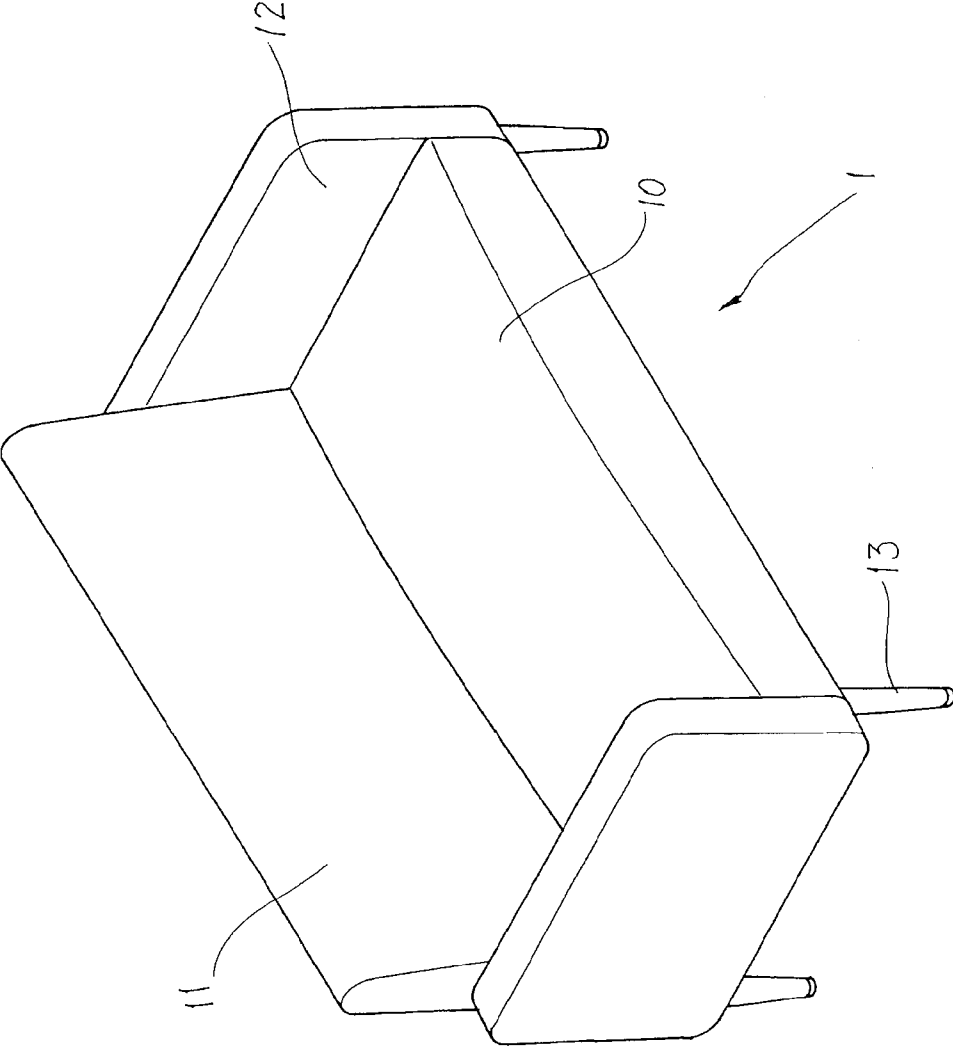


FIG. 1
PRIOR ART

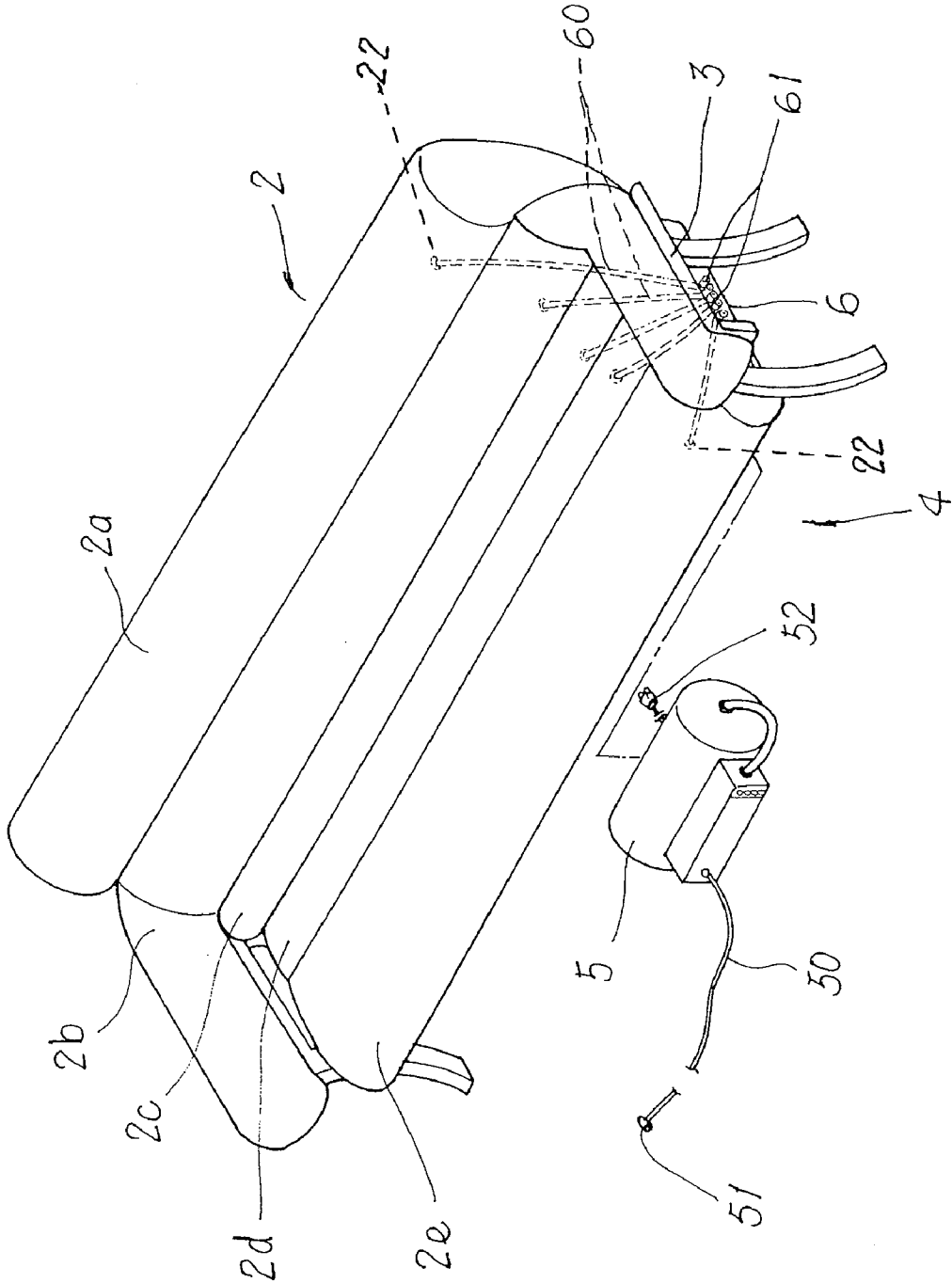


FIG. 2

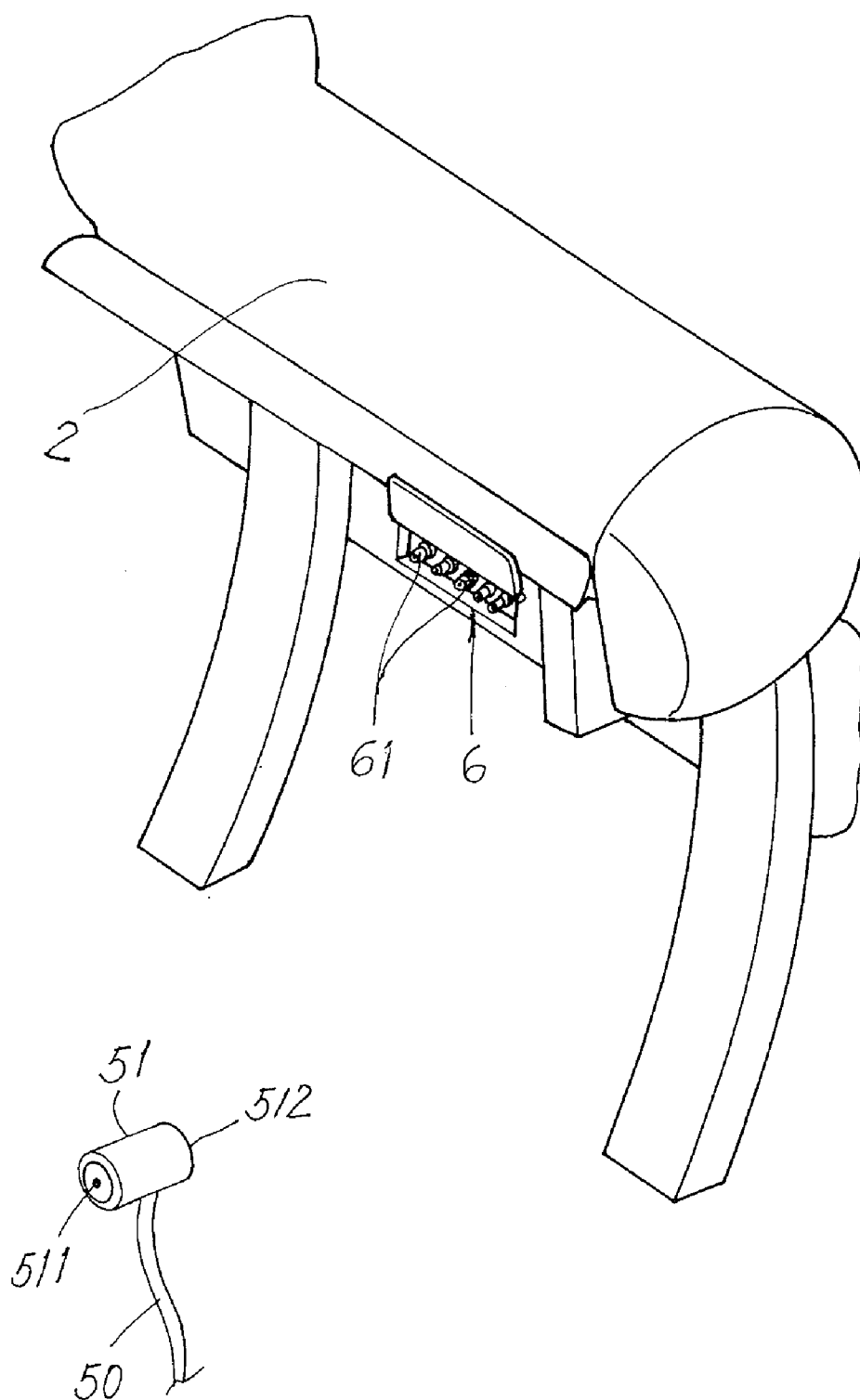


FIG. 3

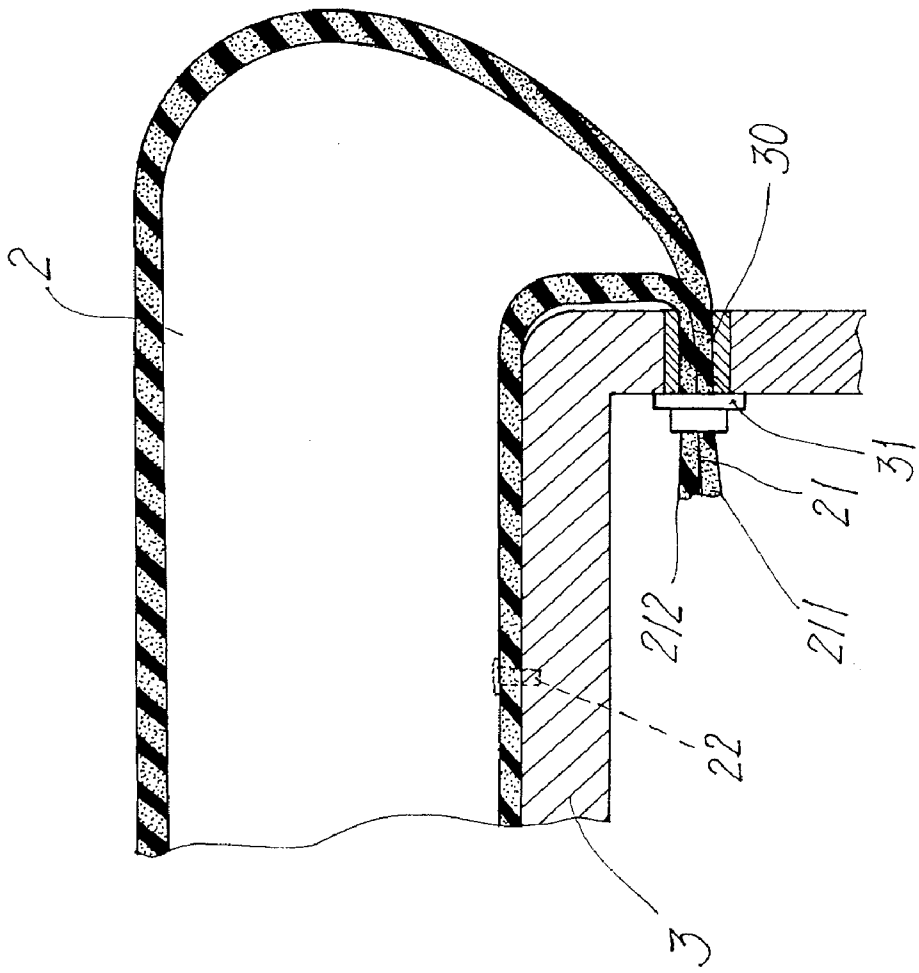


FIG. 4

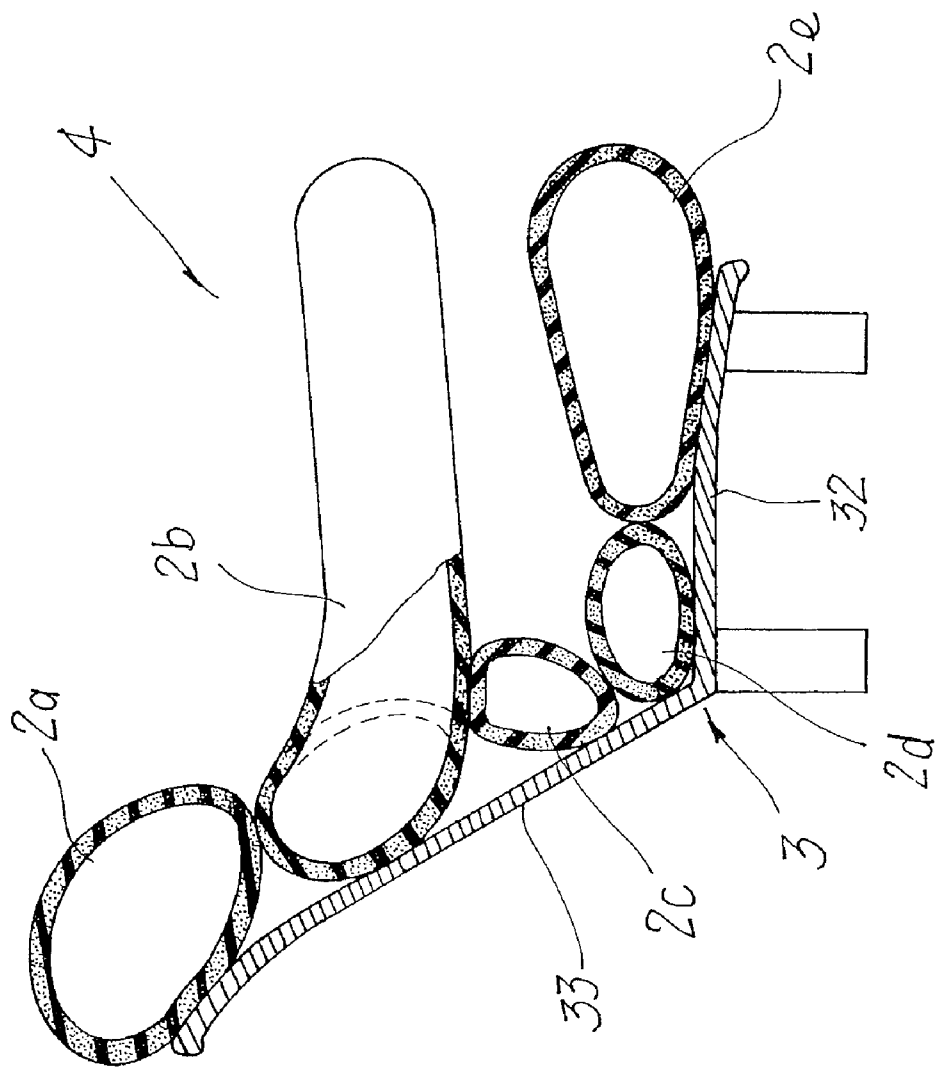


FIG. 5

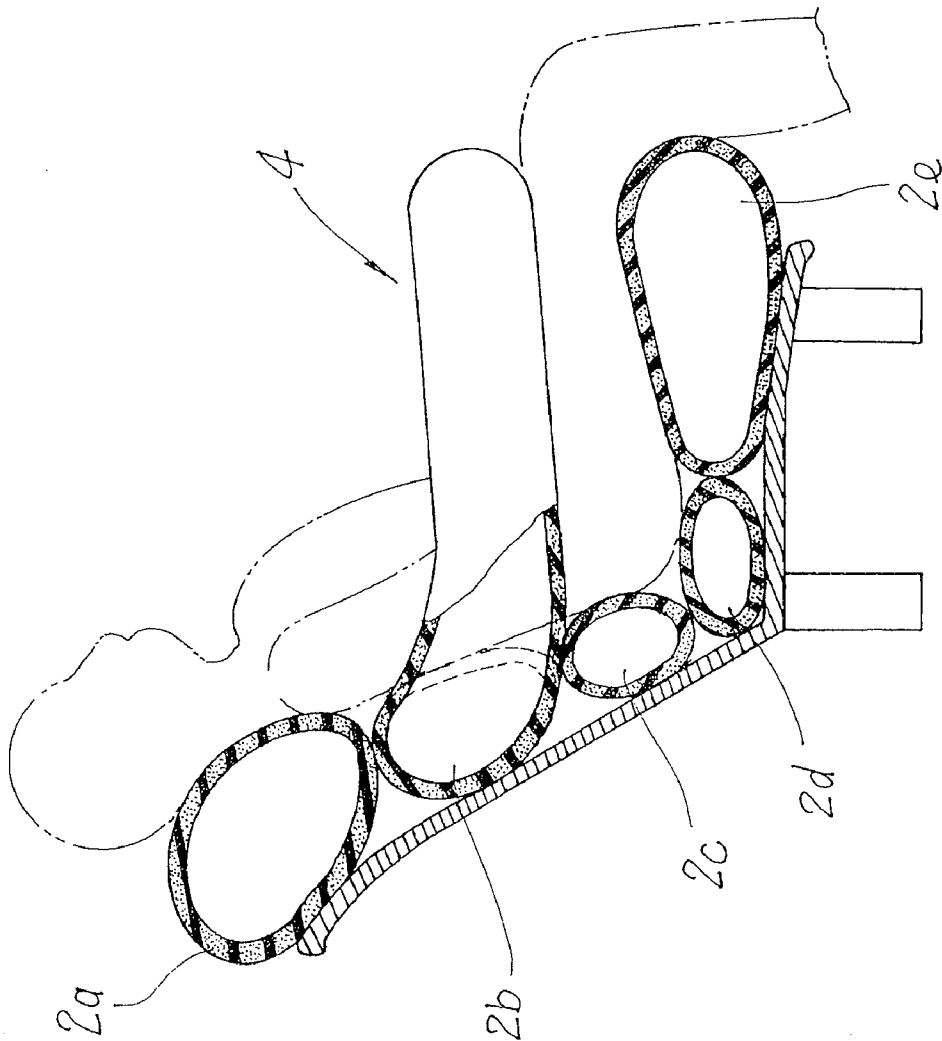


FIG. 6

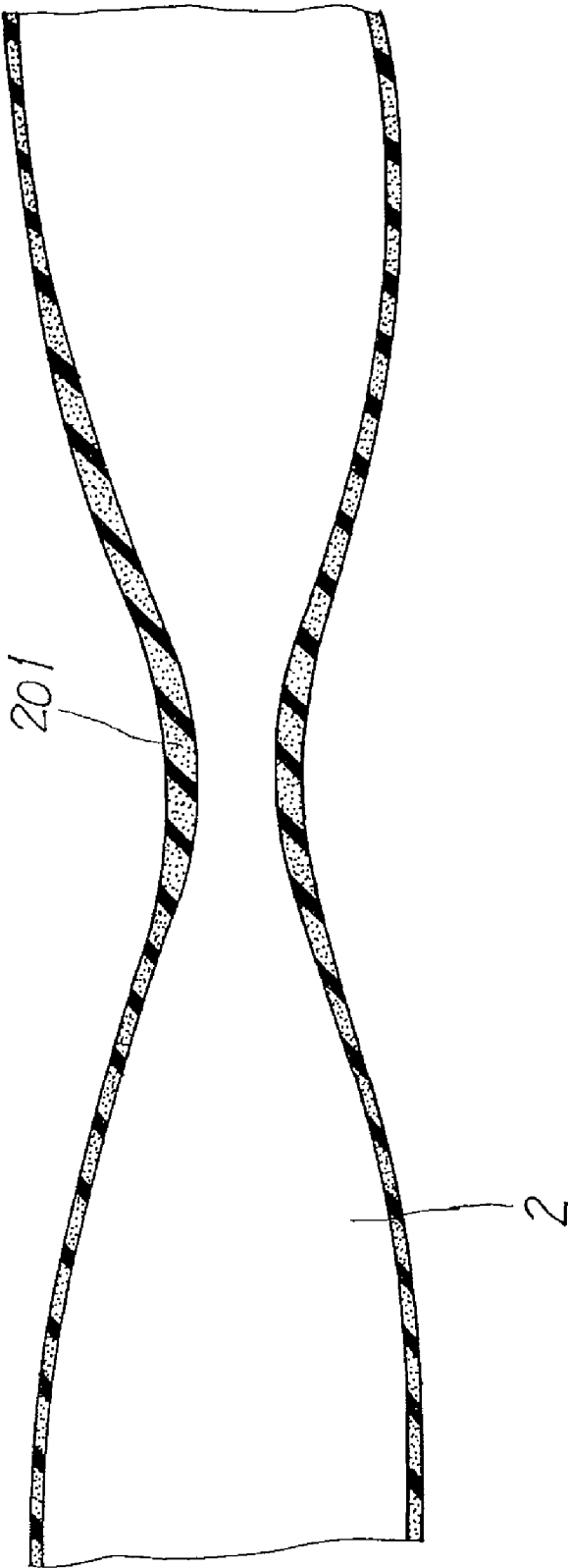


FIG. 7

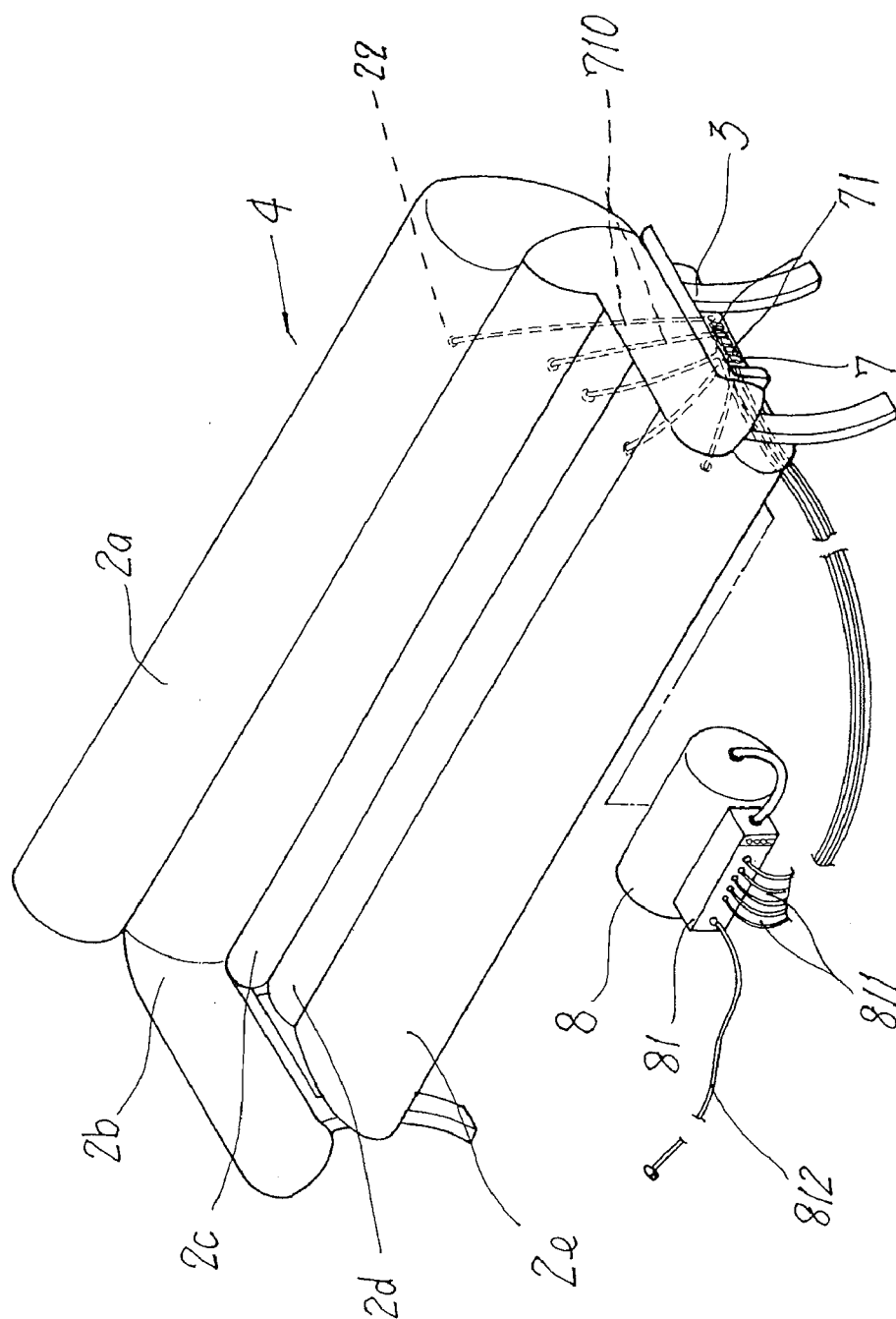


FIG. 8.

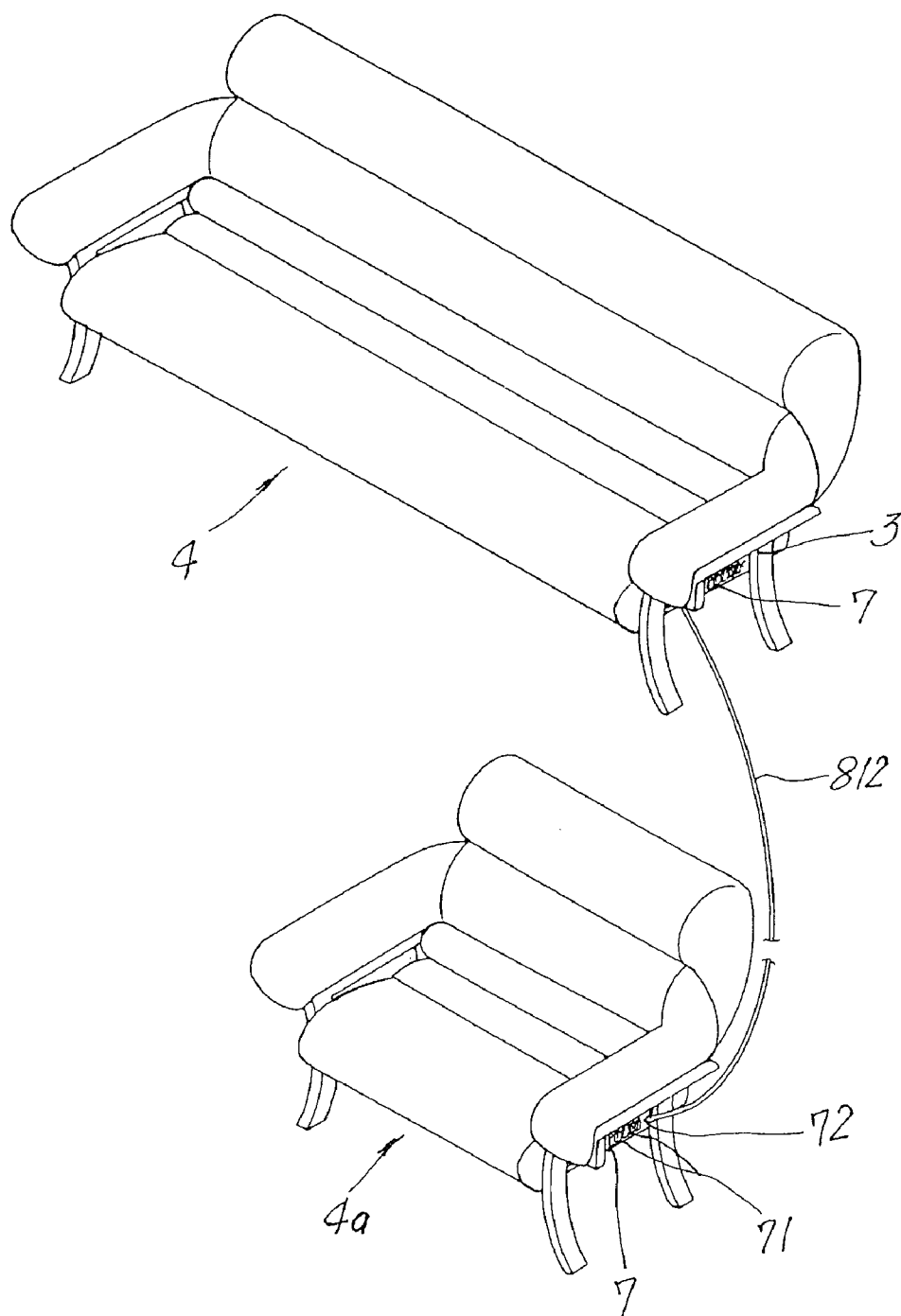


FIG. 9

RUBBER AIR CUSHION SOFA

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a sofa and, more particularly, to a rubber air cushion sofa.

[0003] 2. Description of the Related Art

[0004] A conventional sofa **1** in accordance with the prior art shown in FIG. **1** comprises a seat portion **10**, a back portion **11**, two arms **12** and a plurality of legs **13**. However, each of the seat portion **10** and the back portion **11** has a fixed profile and figure so that the seat portion **10** and the back portion **11** cannot satisfy the ergonomic design, thereby easily causing an uncomfortable sensation to the user when seated on the sofa **1**. In addition, the conventional sofa **1** is made of sponge and wooden material so that the conventional sofa **1** is not fireproof and is easily burnt out in a fire accident. Further, the conventional sofa **1** is not waterproof and will easily mildew or decay when touching water so that it cannot be cleaned by water. Further, when the conventional sofa **1** is immersed in water due to flood or water accident, it has to be thrown away, thereby causing waste of material.

BRIEF SUMMARY OF THE INVENTION

[0005] In accordance with the present invention, there is provided a sofa, comprising a mounting frame, a plurality of air cushions mounted on the mounting frame, a controller connected with the air cushions, and an air compressor connected with the controller to supply air into the air cushions by operation of the controller. The mounting frame is made of metallic material. Preferably, the mounting frame is made of aluminum alloy. Each of the air cushions is made of rubber material and has a hollow inside. Each of the air cushions has a side provided with an air nozzle. The controller includes a plurality of air pipes each connected with the air nozzle of a respective one of the air cushions. The controller regulates an air pressure in each of the air cushions so as to adjust hardness and tension of each of the air cushions. Each of the air cushions has two open end portions each locked onto the mounting frame by one of a plurality of clamping members.

[0006] Preferably, each of the air cushions has an outer wall whose wall thickness is adjustable to adjust a curvature of each of the air cushions.

[0007] Preferably, each of the two open end portions of each of the air cushions has a lower end piece and an upper end piece which has a length greater than that of the lower end piece.

[0008] According to the primary advantage of the present invention, the air cushions have different curvatures and profiles to satisfy the ergonomic design so that when a user is seated on the air cushions, the air cushions can be used to support the user's head, neck, back, hands, waist, hip and legs so as to provide a comfortable sensation to the user.

[0009] According to another advantage of the present invention, each of the air cushions is inflated and deflated individually so that the tension of each of the air cushions can be adjusted freely to satisfy the user's requirements.

[0010] According to a further advantage of the present invention, the mounting frame is made of metallic material, and each of the air cushions is made of rubber material so that the sofa is refractory and fireproof to block a fire accident.

[0011] According to a further advantage of the present invention, the mounting frame is made of aluminum alloy,

and each of the air cushions is made of rubber material so that the sofa has a lighter weight and can function as a float that floats on the water level when a water accident or flood happens.

[0012] According to a further advantage of the present invention, the mounting frame and each of the air cushions are waterproof so that the sofa has a waterproof function and can be washed directly by water to facilitate the user cleaning the sofa.

[0013] Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S)

[0014] FIG. **1** is a perspective view of a conventional sofa in accordance with the prior art.

[0015] FIG. **2** is a perspective view of a sofa in accordance with the preferred embodiment of the present invention.

[0016] FIG. **3** is a locally enlarged view of the sofa as shown in FIG. **2**.

[0017] FIG. **4** is a partially front cross-sectional view of the sofa as shown in FIG. **2**.

[0018] FIG. **5** is a side cross-sectional view of the sofa as shown in FIG. **2**.

[0019] FIG. **6** is a schematic operational view of the sofa as shown in FIG. **5** in use.

[0020] FIG. **7** is a partially cross-sectional view of an air cushion of the sofa as shown in FIG. **2**.

[0021] FIG. **8** is a perspective view of a sofa in accordance with another preferred embodiment of the present invention.

[0022] FIG. **9** is a perspective view of a sofa in accordance with another preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0023] Referring to the drawings and initially to FIGS. **2-5**, a sofa **4** in accordance with the preferred embodiment of the present invention comprises a mounting frame **3**, a plurality of air cushions **2** mounted on the mounting frame **3**, a controller **6** connected with the air cushions **2**, and an air compressor **5** connected with the controller **6** to supply air into the air cushions **2** by operation of the controller **6**.

[0024] The sofa **4** further comprises a covering (not shown) encompassing the air cushions **2**. Preferably, the covering is made of leather or the like.

[0025] The mounting frame **3** is made of metallic material. Preferably, the mounting frame **3** is made of aluminum alloy so that the mounting frame **3** has a lighter weight. The mounting frame **3** has a bottom provided with an antiskid pad (not shown) to increase stability of the mounting frame **3**.

[0026] Each of the air cushions **2** is made of rubber material and has a hollow inside so that each of the air cushions **2** is elastic and flexible. Each of the air cushions **2** has a side provided with an air nozzle **22**. The controller **6** includes a plurality of air pipes **60** each connected with the air nozzle **22** of a respective one of the air cushions **2**. The controller **6** can regulate an air pressure in each of the air cushions **2** so as to adjust hardness and tension of each of the air cushions **2**. The controller **6** further includes a plurality of air taps **61** each connected with a respective one of the air pipes **60**. Thus, each of the air taps **61** of the controller **6** is connected to the air

nozzle 22 of a respective one of the air cushions 2 through a respective one of the air pipes 60.

[0027] The air compressor 5 is mounted on the bottom of the mounting frame 3 and includes a retractable hose 50 which is connected to one of the air taps 61 of the controller 6. The air compressor 5 further includes a plug 52 which is inserted into a socket (not shown) to supply an electric power into the air compressor 5. The retractable hose 50 of the air compressor 5 has a free end provided with a control head 51 which has an inflation terminal 511 and a deflation terminal 512 to fill air into or release air from one of the air taps 61 of the controller 6 so as to inflate or deflate one of the air cushions 2.

[0028] As shown in FIG. 4, the mounting frame 3 is provided with a plurality of mounting slots 30, and each of the air cushions 2 has two open end portions 21 each inserted into and locked in a respective one of the mounting slots 30 of the mounting frame 3 by one of a plurality of clamping members 31. Each of the two open end portions 21 of each of the air cushions 2 has a lower end piece 212 and an upper end piece 211 which has a length greater than that of the lower end piece 212 so that when each of the two open end portions 21 of each of the air cushions 2 is bent and inserted into the respective mounting slot 30 of the mounting frame 3, each of the two open end portions 21 of each of the air cushions 2 has a constant length. In addition, the upper end piece 211 has a length greater than that of the lower end piece 212 so that when each of the air cushions 2 is inflated, each of the two open end portions 21 of each of the air cushions 2 has a curved profile.

[0029] As shown in FIGS. 5 and 6, the air cushions 2 have different curvatures and profiles and include a head cushion 2a that is used to support a user's head and neck, a back cushion 2b that is used to support the user's back and hands, a waist cushion 2c that is used to support the user's waist, a hip cushion 2d that is used to support the user's hip, and a leg cushion 2e that is used to support the user's legs. The air cushions 2 are arranged on a backrest portion 33 and a seat portion 32 of the mounting frame 3 so that when a user is seated on the air cushions 2, the air cushions 2 can be used to support the user's head, neck, back, hands, waist, hip and legs.

[0030] As shown in FIG. 7, each of the air cushions 2 has an outer wall 201 whose wall thickness is adjustable to adjust a curvature of each of the air cushions 2 so that the sofa 4 has determined curvatures and profiles to satisfy the user's figure and stature.

[0031] As shown in FIG. 8, the controller 7 includes a plurality of air pipes 710 each connected with the air nozzle 22 of a respective one of the air cushions 2, and a plurality of push buttons 71 each connected with a respective one of the air pipes 710. Thus, each of the push buttons 71 of the controller 7 is connected to the air nozzle 22 of a respective one of the air cushions 2 through a respective one of the air pipes 710. The air compressor 8 is mounted on the bottom of the mounting frame 3 and includes a regulating device 81, a retractable hose 812 connected to the regulating device 81, and a plurality of connecting hoses 811 each connected to the regulating device 81. The connecting hoses 811 and the retractable hose 812 of the air compressor 8 are connected to the push buttons 71 of the controller 7 respectively. Thus, when one of the push buttons 71 of the controller 7 is pressed, the air from the air compressor 8 is delivered into a respective one of the air nozzle 22 so as to inflate or deflate the respective air cushion 2.

[0032] As shown in FIG. 9, the sofa 4 is connected with a second sofa 4a. The controller 7 on the second sofa 4a further

includes an air valve 72 connected to each of the push buttons 71. The retractable hose 812 of the air compressor 8 on the sofa 4 is connected to the air valve 72 of the controller 7 on the second sofa 4a. Thus, when one of the push buttons 71 of the controller 7 on the second sofa 4a is pressed, the air from the air compressor 8 on the sofa 4 is delivered into a respective one of the air nozzle 22 on the second sofa 4a so as to inflate or deflate the respective air cushion 2 on the second sofa 4a.

[0033] Accordingly, the air cushions 2 have different curvatures and profiles to satisfy the ergonomic design so that when a user is seated on the air cushions 2, the air cushions 2 can be used to support the user's head, neck, back, hands, waist, hip and legs so as to provide a comfortable sensation to the user. In addition, each of the air cushions 2 is inflated and deflated individually so that the tension of each of the air cushions 2 can be adjusted freely to satisfy the user's requirements. Further, the mounting frame 3 is made of metallic material, and each of the air cushions 2 is made of rubber material so that the sofa 4 is refractory and fireproof to block a fire accident. Further, the mounting frame 3 is made of aluminum alloy, and each of the air cushions 2 is made of rubber material so that the sofa 4 has a lighter weight and can function as a float that floats on the water level when a water accident or flood happens. Further, the mounting frame 3 and each of the air cushions 2 are waterproof so that the sofa 4 has a waterproof function and can be washed directly by water to facilitate the user cleaning the sofa 4.

[0034] Although the invention has been explained in relation to its preferred embodiment(s) as mentioned above, it is to be understood that many other possible modifications and variations can be made without departing from the scope of the present invention. It is, therefore, contemplated that the appended claim or claims will cover such modifications and variations that fall within the true scope of the invention.

1. A sofa, comprising:
 - a mounting frame;
 - a plurality of air cushions mounted on the mounting frame;
 - a controller connected with the air cushions; and
 - an air compressor connected with the controller to supply air into the air cushions by operation of the controller;
 wherein the mounting frame is made of metallic material; the mounting frame is made of aluminum alloy; each of the air cushions is made of rubber material and has a hollow inside; each of the air cushions has a side provided with an air nozzle; the controller includes a plurality of air pipes each connected with the air nozzle of a respective one of the air cushions; the controller regulates an air pressure in each of the air cushions so as to adjust hardness and tension of each of the air cushions; each of the air cushions has two open end portions each locked onto the mounting frame by one of a plurality of clamping members.

2. The sofa of claim 1, wherein each of the air cushions has an outer wall whose wall thickness is adjustable to adjust a curvature of each of the air cushions.

3. The sofa of claim 1, wherein each of the two open end portions of each of the air cushions has a lower end piece and an upper end piece which has a length greater than that of the lower end piece.

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