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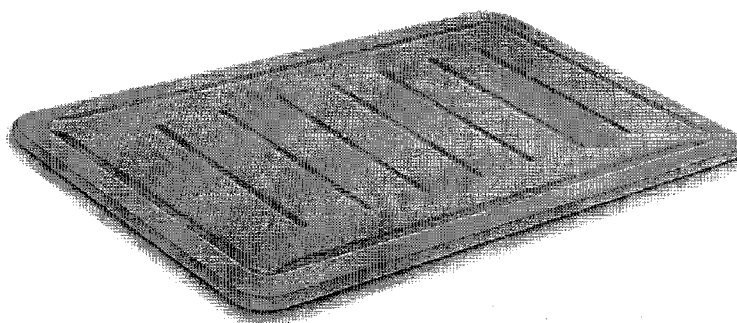


FIGURE 1

(57) Abstract: A mat includes an outer shell made from one or more waterproof materials. A top and bottom layer are sealed together to prevent water from entering the mat. The structure between the top and bottom layers may include one or more chambers at least one of which includes memory foam. The memory foam may be in the form of one or more pads, or may be loose. The chambers may be in fluid communication. The top surface may be made of a flexible material, so that when a user steps on the mat the chambers will be compressed. The chambers are configured so that the memory foam within the chambers can be compressed while allowing air to move freely elsewhere in the enclosed chamber or chambers, thus allowing the characteristics of the memory foam to be felt through the top surface of the mat.



WO 2012/170872 A2

SHOWER MAT

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit and priority of U.S. Provisional Application No.: 61/495628, filed June 10, 2011, U.S. Provisional Application No.: 61/526884, filed August 24, 2011, and U.S. Provisional Application No.: 61/585018, filed January 10, 2012. The foregoing applications are incorporated herein by reference in their entireties.

FIELD OF THE INVENTION

[0002] The invention relates generally to mats for use in the shower or bathtub.

DESCRIPTION OF FIGURES

[0003] FIGURE 1 is a perspective view of a mat formed in accordance with an embodiment of the invention.

[0004] FIGURE 2 is a perspective cross-sectional view of the embodiment of the invention shown in FIGURE 1.

[0005] FIGURE 3 is a perspective view of a mat formed in accordance with a second embodiment of the invention.

[0006] FIGURE 4 is a perspective cross-sectional view of the embodiment of the invention shown in FIGURE 3.

[0007] FIGURES 5A-C are top, side and bottom views of a mat formed in accordance with a third embodiment of the invention.

[0008] FIGURE 6 is a top cross-sectional view of the embodiment of the invention shown in FIGURES 5A-C.

[0009] FIGURE 7 is a side view of the mat of FIGURES 5A-C.

[0010] FIGURE 8 is a top cross-sectional view of the mat of FIGURES 5A-C.

DETAILED DESCRIPTION

[0011] The mat is comprised of one or more waterproof materials forming an outer shell. The top layer and the bottom layer of the mat are sealed together to prevent water from entering between the mat. The structure between the top and bottom layers may comprise one or more chambers. In at least one of the chambers memory foam (visco-elastic foam) is contained. The memory foam may be in the form of one or more pads, or may be loose foam. The chambers may or may not be in fluid communication with each other. The top surface of the mat where a user steps onto the mat may be made of a flexible material, so that when a user steps on the mat the chambers will be compressed. The chambers are configured so that the memory foam within the chambers can be compressed while allowing the air to move freely elsewhere in the enclosed chamber or chambers, thus allowing the characteristics of the memory foam to be felt through the top surface of the mat. As will be appreciated, if the mat is sealed against entry of water, air inside may act to resist pressure placed on the mat, reducing the ability of a user's foot to feel effects of the memory foam.

[0012] In the embodiments shown in FIGURES 1 and 2, the mat has one chamber with a memory foam pad in the middle of the mat, and a second chamber that is around the perimeter of the mat. The two chambers are in fluid communication with each other.

[0013] In the embodiment shown in FIGURES 3 and 4, the mat has multiple chambers that are not in fluid communication with each other, with each chamber having a memory foam pad.

[0014] In the embodiment shown in FIGURES 5A-C and 6, the mat has multiple chambers that are in fluid communication with each other. The upper and lower surfaces may be joined together by a sidewall. The pieces of the shell may be joined by RF welding. Inner walls may define the chambers but do not enclose them, allowing the chambers to be in fluid communication with each other so that air may move from one chamber into another. The inner walls may also be joined to the outer shell by RF welding or other suitable methods. Each chamber may contain a memory foam pad. Suction cups are arrayed on the bottom of the mat.

The outer shell of the mat and the inner walls may be made of flexible PVC material. Other suitable materials for the outer shell and/or inner walls, such as flexible and waterproof plastics, fabrics, or rubber materials, may also be used.

[0015] In the embodiment of FIGURES 7 and 8, the mat may have one or more openings in the sidewall that allow for air to flow in and out of the interior of the mat, with the openings covered by waterproof/water-resistant but air-permeable membranes. In this approach, the use of head space for air flow is less important, and it may be omitted altogether. In an embodiment, the membrane is sized so that its perimeter overlaps the perimeter of the opening, and the membrane is sealed to the sidewall material using an adhesive. In an embodiment, the membrane is adhered to the inner surface of the sidewall. In other embodiments, more or fewer openings in the outer shell may be formed. It is readily appreciated that in other embodiment, the openings can be located elsewhere on the outer shell.

[0016] In an embodiment, the membranes used to cover the openings are comprised of the material used to cover cell phone speakers to make them waterproof/water-resistant. Other suitable materials may be used, and multiple layers of material may be used in order to combine their characteristics. For example, one layer of membrane may be used for its superior waterproof/water-resistant qualities, while another layer may be selected for aesthetic reasons, such as color. Other types of valves that allow for the flow of air while preventing water from entering the interior of the mat may also be used.

[0017] In an embodiment, the top surface of the mat that a user steps onto is made of a material that is flexible but not resilient, so that the top surface of the mat must rely upon the resilience of the memory foam within the chamber or chambers to be restored to its previous state. This allows the slow “bounce-back” characteristics of the memory foam to be seen through the top surface. Alternatively, the top surface of the mat may be made of a material that is flexible but has relatively little resiliency, so that the resiliency of the memory foam aids in restoring the top surface to its original shape/state. Alternatively, the top surface may be laminated, glued, or attached by other methods to the memory foam so that the resilience characteristics of the memory foam influence or control the speed at which the top surface regains its original form. The characteristics of the memory foam, including density and thickness, may be selected to

meet various criteria such as cost, comfort, and/or user preference. It is well understood that other types of filling may also be used instead of or in combination with memory foam.

[0018] The mat may be configured improve the slip-resistant characteristics of the mat. For example, the top surface of the mat may be textured to improve the slip resistance between the top surface and a user's feet. The bottom of the mat may be configured to make the mat resist slipping relative to the bathtub or shower floor that the mat is placed upon. In one embodiment, suction cups are used, but other ways of making the mats slip-resistant may readily be used. Materials to form the top and bottom surfaces of the mat may be selected that improve the slip-resistance characteristics of the top and bottom surfaces.

[0019] Although the invention has been described in detail for the purpose of illustration based on what is currently considered to be the most practical and preferred embodiments, it is to be understood that such detail is solely for that purpose and that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover modifications and equivalent arrangements that are within the spirit and scope of the described embodiments. For example, it is to be understood that the present invention contemplates that, to the extent possible, one or more features of any embodiment can be combined with one or more features of any other embodiment.

I/We Claim:

1. A mat comprising:

an outer shell comprising a top layer and a bottom layer sealed together;

a plurality of chambers sealed between the top and bottom layer; and

at least one of the plurality of chambers comprising a viscoelastic foam material,

wherein the chambers include head space configured and arranged to allow air within the chambers to flow into the head space when weight is applied to the top layer such that the weight compresses the viscoelastic foam material.

2. A mat as in claim 1, wherein at least two of the chambers are in mutual fluid communication such that head space in a first one of the two chambers acts to collect air from a second one of the two chambers when weight is applied to the top layer superposed over the second one of the two chambers.

3. A mat as in any of claims 1 or 2, further comprising an opening in at least one sidewall of the outer shell configured and arranged to allow air to flow out of the mat when weight is applied to the top layer.

4. A mat as in claim 3, wherein the opening further comprises an air permeable membrane.

5. A mat as in any of claims 1-4, wherein the viscoelastic foam comprises a memory foam.

6. A mat as in any of claims 1-5, wherein the mat is water tight.

7. A method of manufacturing the mat of any of claims 1-6.

8. A mat substantially as described and illustrated herein.

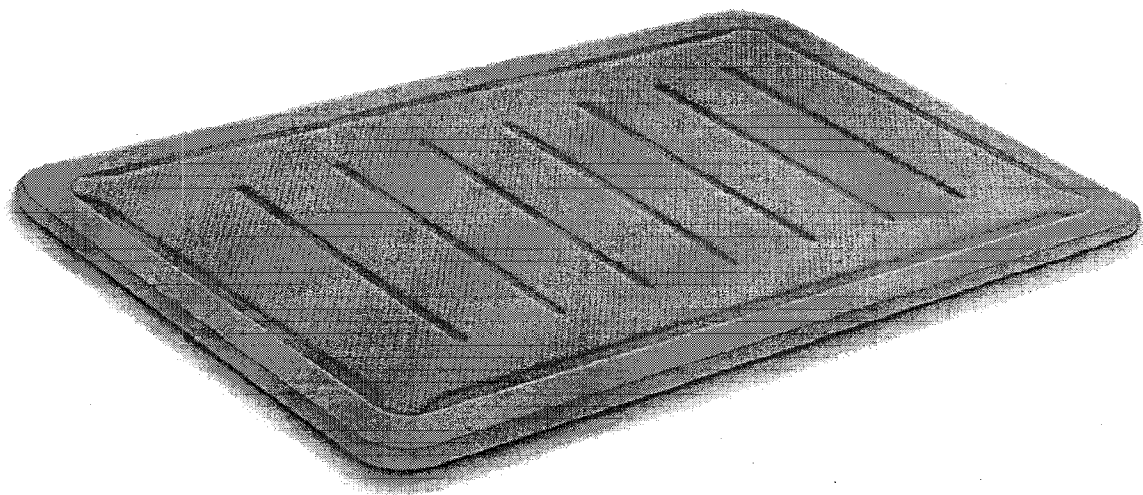


FIGURE 1

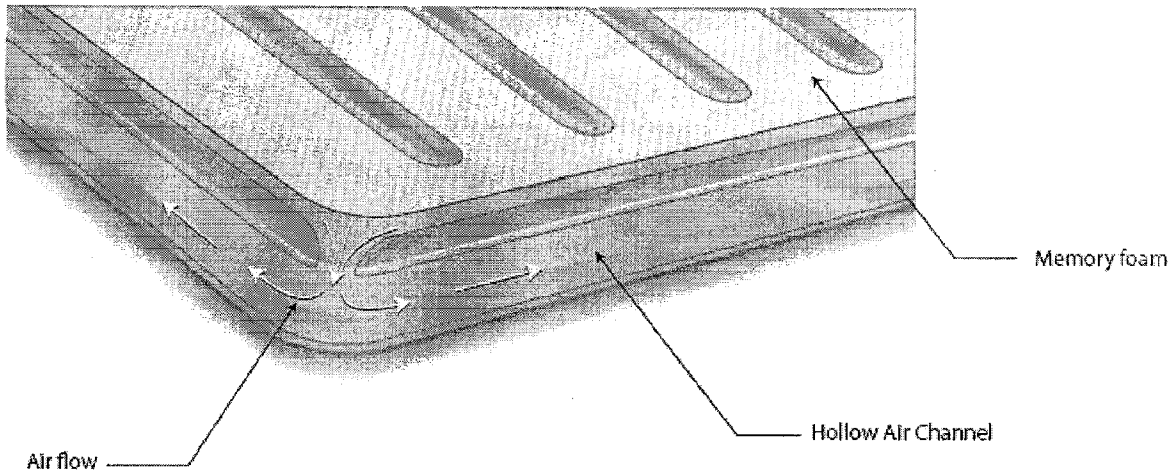


FIGURE 2

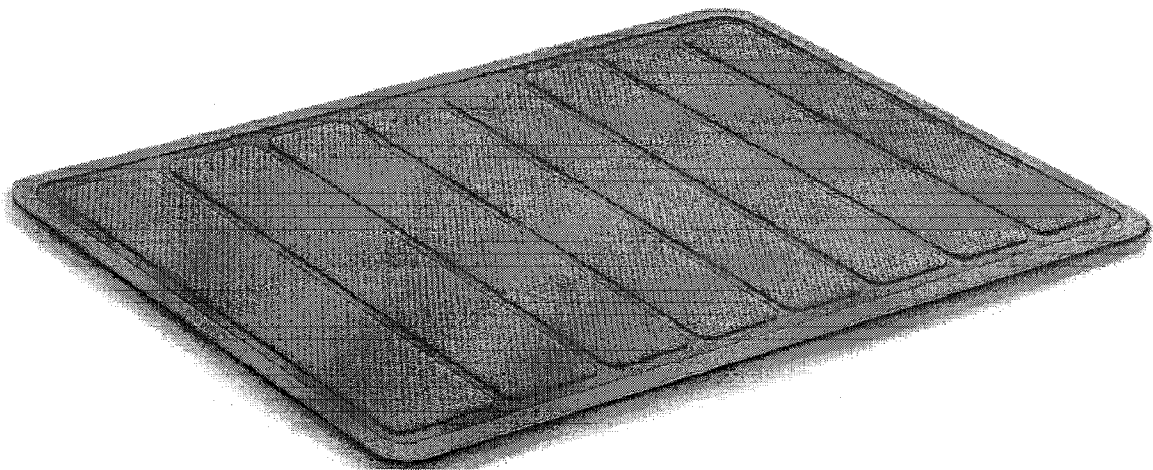


FIGURE 3

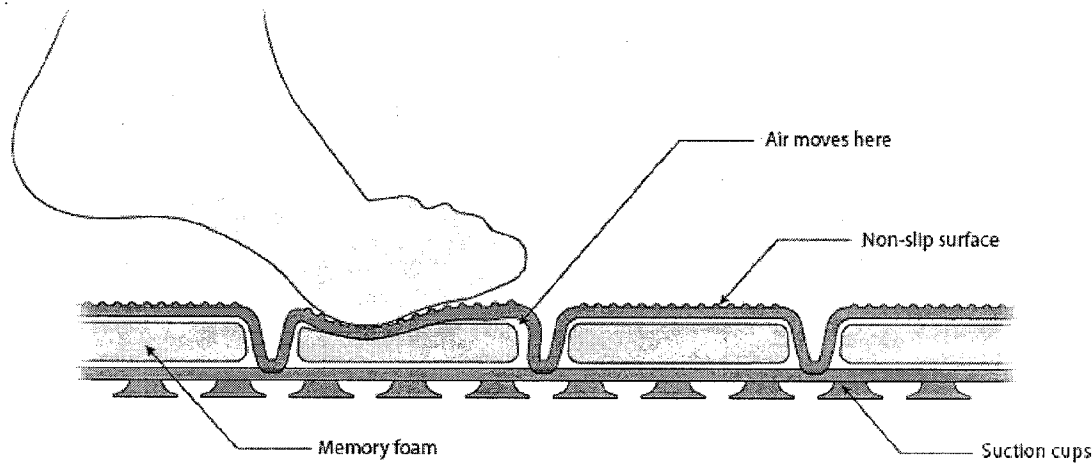


FIGURE 4

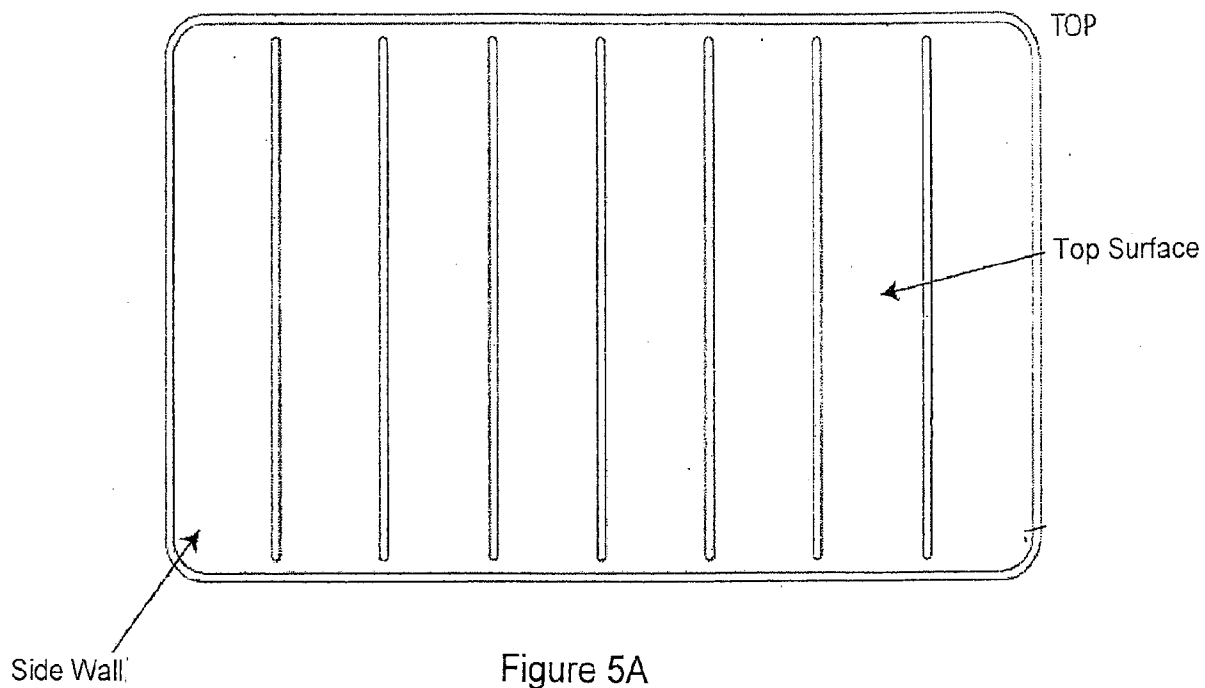


Figure 5A



Figure 5B

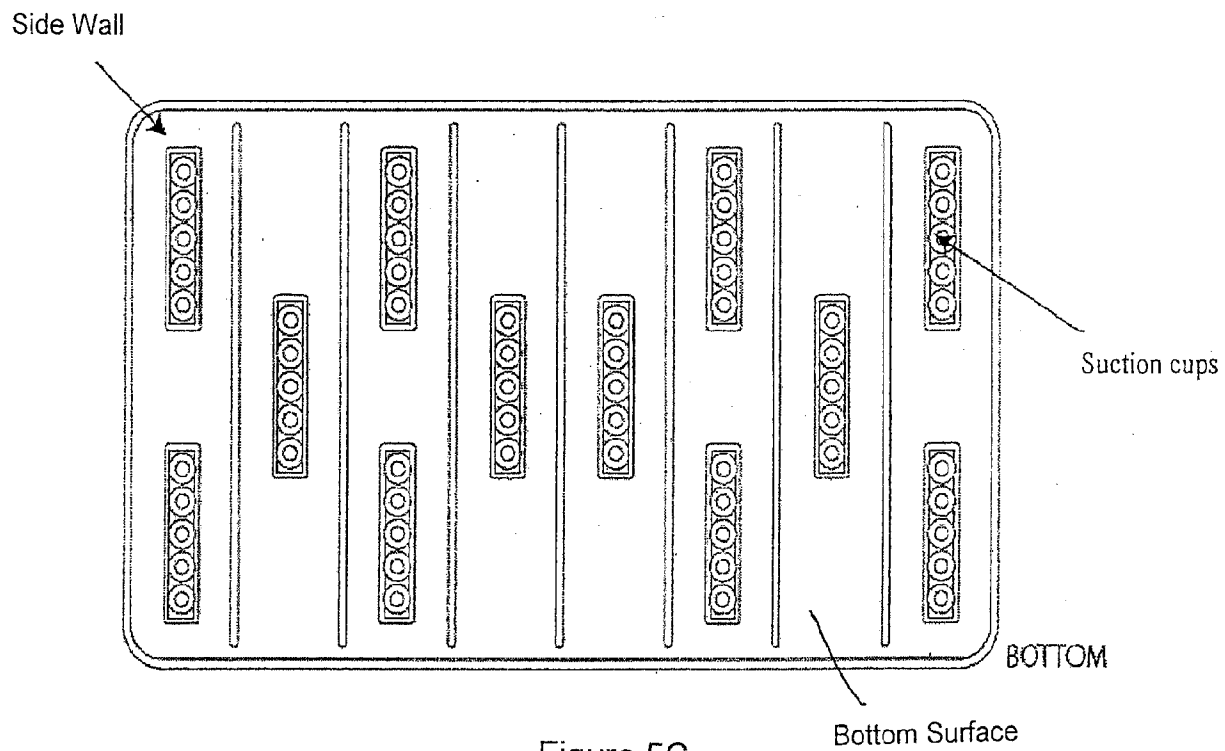


Figure 5C

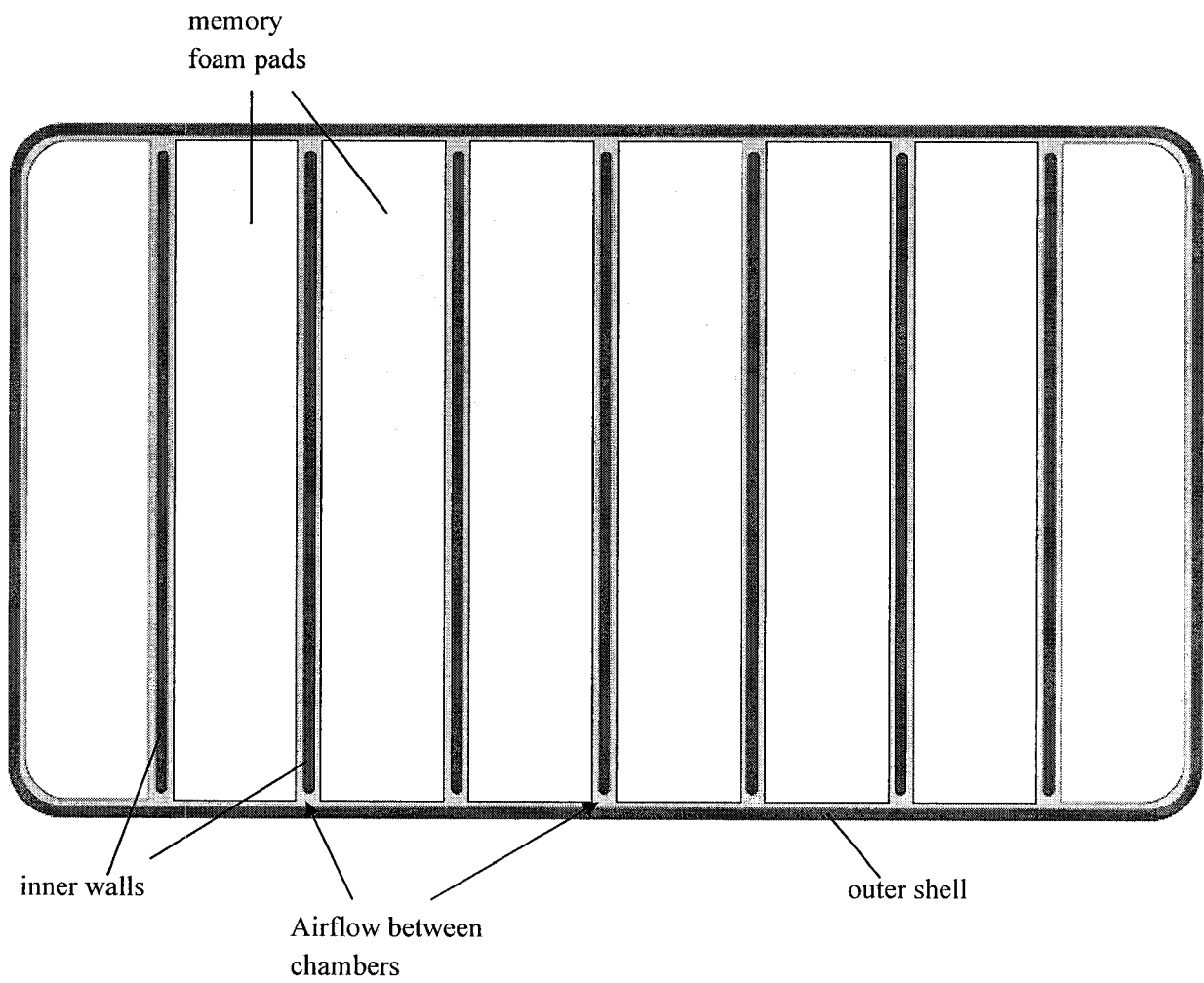


FIGURE 6

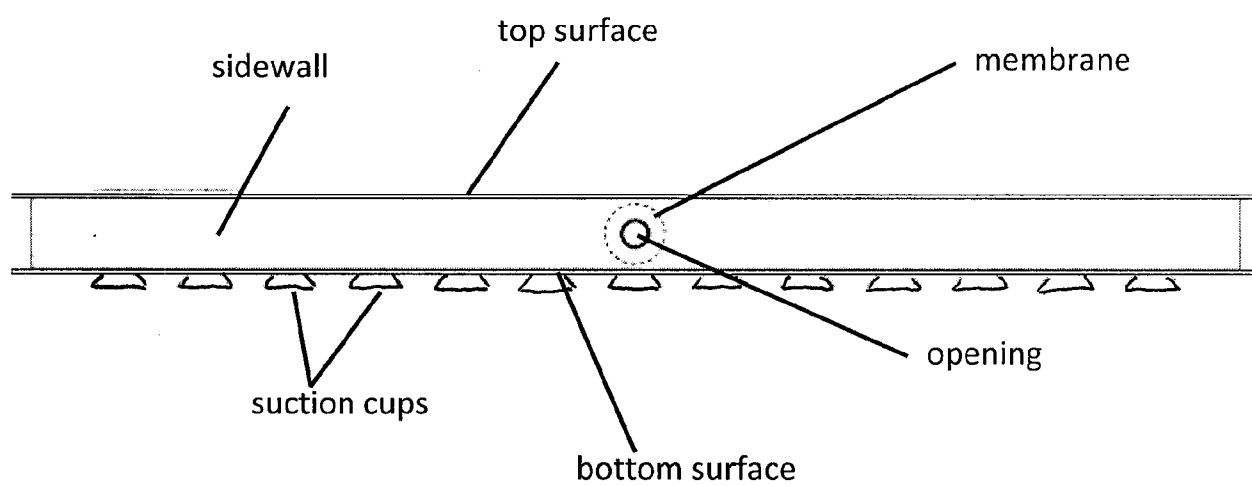


FIGURE 7

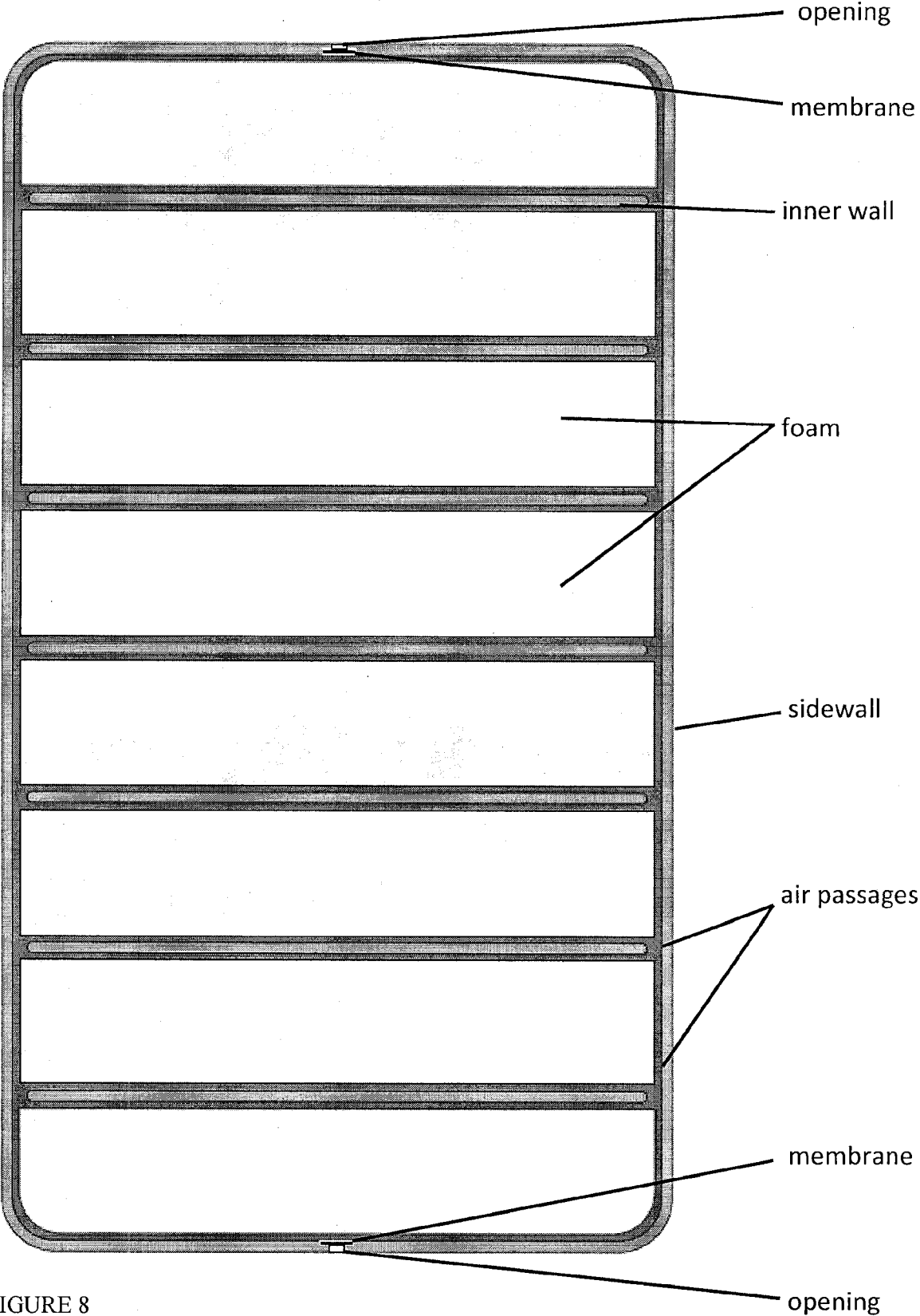


FIGURE 8