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(54) **ADJUSTABLE POSITIONING DEVICE**

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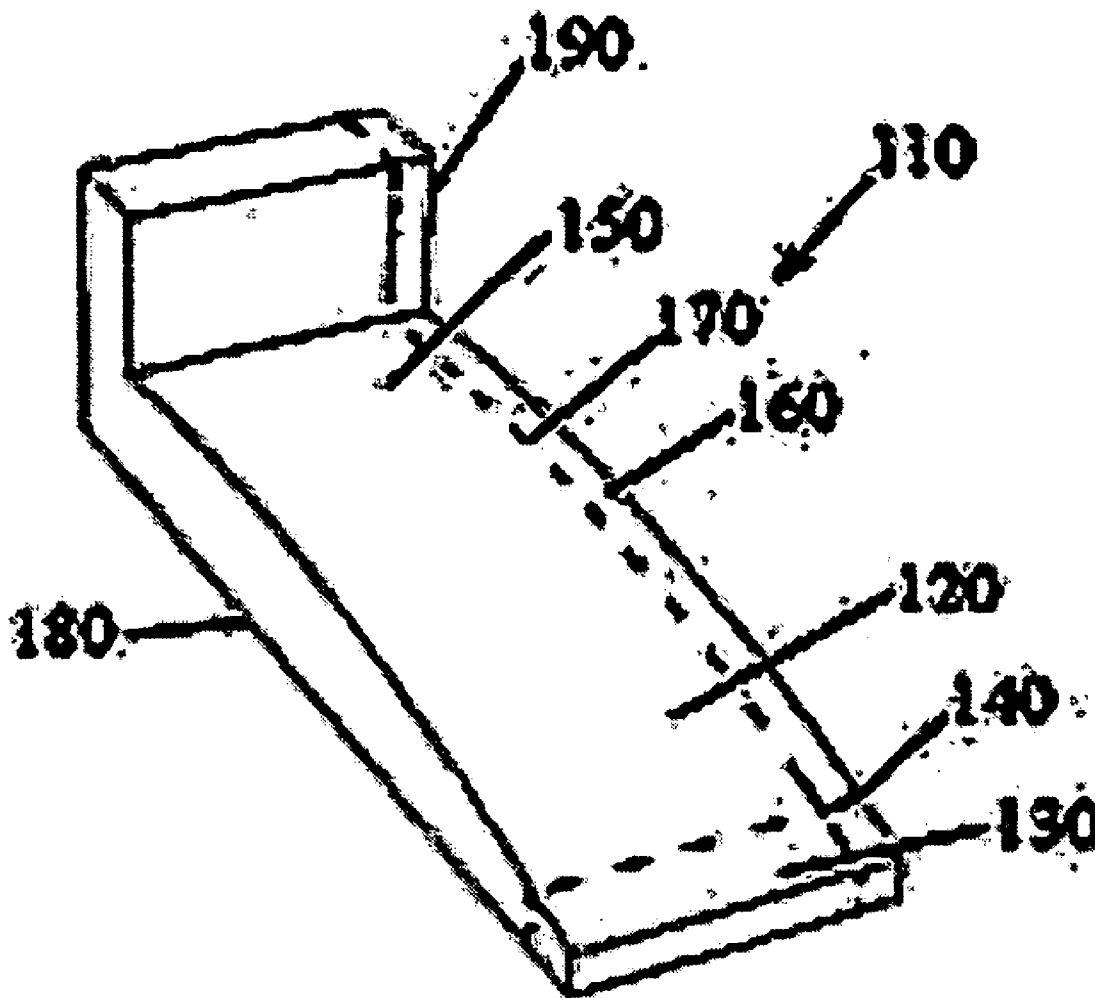
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(57) **ABSTRACT**

A medical positioning device having at least one removable portion is disclosed. A medical positioning device with at least one removably connected portion configured to support a limb, head, or body of a patient is provided. A medical positioning device for airway management having a removable portion is disclosed. A method of using the device according to the disclosure is also disclosed.



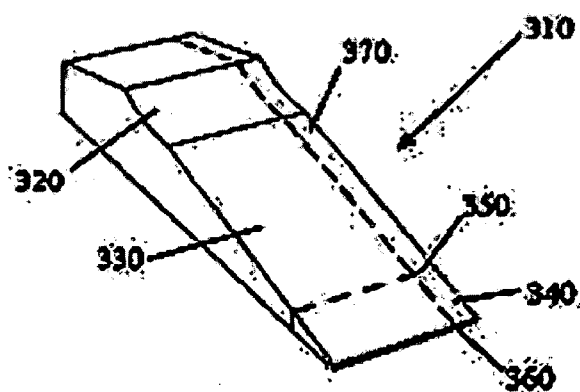
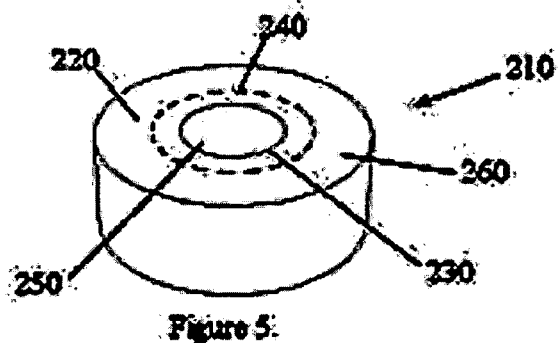
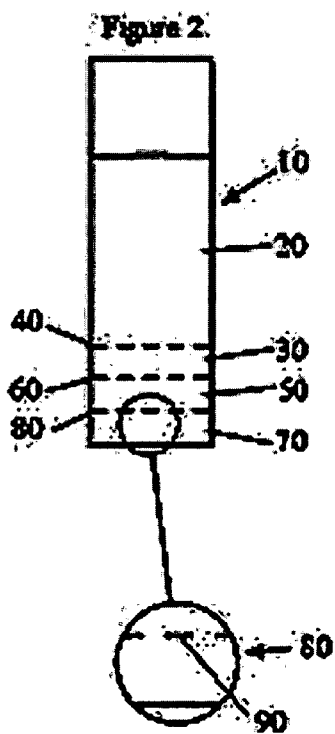
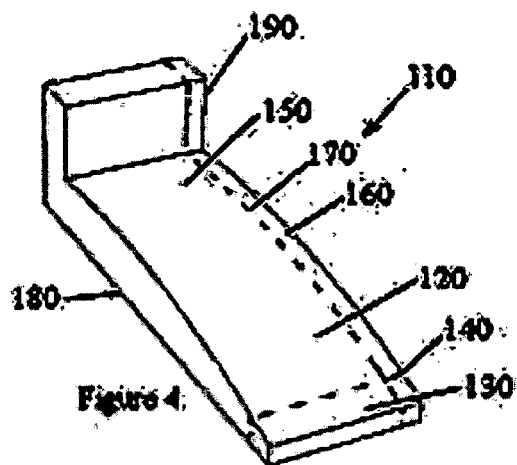
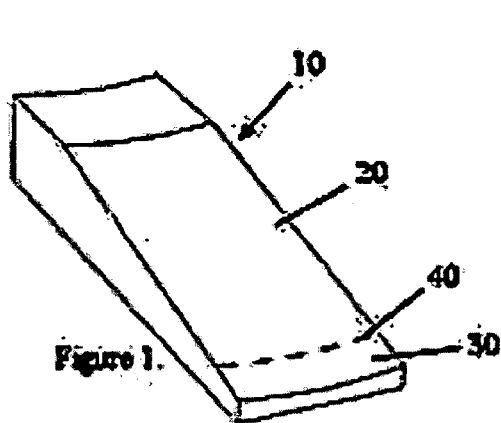


Figure 3.

Figure 6.

## ADJUSTABLE POSITIONING DEVICE

### FIELD OF THE INVENTION

[0001] This invention relates generally to positioning devices, more particularly to medical positioning devices that have at least one removable portion to allow the positioning device to be utilized for a variety of patient anatomies.

### BACKGROUND OF RELATED ART

[0002] During surgery and other medical procedures it is necessary for clinicians to stabilize patients in a position appropriate for the medical procedure. Proper positioning restricts patient movement and reduces patient injury, such as nerve damage, by providing pressure relief. Clinicians use foam positioning devices to stabilize various parts of the body during medical procedures. These foam positioning devices are used to support, protect, and properly align the head, body, arms, and legs.

[0003] Positioning devices are frequently used for airway management. Airway management is necessary to maintain open air passages for breathing during surgical procedures. This is particularly important where anesthesia is administered. Clinicians must externally manage the airway to eliminate the possibility that the airway will become closed or obstructed. Such devices used for airway management are well known in the art.

[0004] Foam positioning devices are available in a variety of sizes to accommodate patients of various sizes. Foam positioning devices are used for infants, children, and adults of various heights and weights. Because patients vary greatly in size and shape, it is necessary for clinicians to have multiple sizes of foam positioning devices available. Having many different sizes of foam positioning devices available requires a large amount of space for storage. In addition to needing large amounts of storage space, in a surgical environment reducing patient preparation time is advantageous. If a clinician selects the wrong device or size of device for the patient, the clinician may require using additional towels and other devices to achieve the required patient position. Therefore, what is needed is a positioning device that is adjustable so clinicians do not have to store multiple sizes of the same positioning device. Additionally, what is needed is a positioning device that includes at least one removable portion so the device can be adjusted to fit a selected patient in a timely manner.

### SUMMARY

[0005] The present disclosure relates to a positioning device comprising a first portion and at least one removably connected second portion. In more detail, the device may be made of foam, preferably polyurethane. The second portion of the device can be removably connected to the first portion by at least one perforation. In one embodiment, the first portion is configured to support a limb. When the device is configured to support a limb, the first portion may have a planar bottom and a curved top. In another embodiment the first portion is configured to support a head. When the device is configured to support a head, the first portion comprises at least one ring.

[0006] In another embodiment, the positioning device is configured for airway management and includes a head and neck support, a body support connected to the head and neck

support, and a removable portion connected to the body support. In more detail the positioning device for airway management may be made of foam, preferably polyurethane. The removable portion may be connected to the body support, the head and neck support or both by at least one perforation. Also, the present disclosure relates to a method of using the device according to the present disclosure.

[0007] Additional features of the invention will become apparent to those skilled in the art upon consideration of the following detailed description of the preferred embodiments exemplified in the best mode of carrying out the invention as presently perceived.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a perspective view of a positioning device according to the present disclosure.

[0009] FIG. 2 is a plan view of a positioning device according to the present disclosure.

[0010] FIG. 3 is a partial enlarged view of a score line removably connection portions of the position device according to the present disclosure.

[0011] FIG. 4 is a perspective view of another embodiment of a positioning device according to the present disclosure.

[0012] FIG. 5 is a perspective view of another embodiment of a positioning device according to the present disclosure.

[0013] FIG. 6 is perspective view of yet another embodiment of a positioning device according to the present disclosure.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] This invention relates generally to positioning devices, more particularly to medical positioning devices that have at least one removable portion to allow the positioning device to be utilized for a variety of patient anatomies. With reference to the drawings, the positioning device according to the present disclosure comprises a first portion and at least one removably connected second portion. The device may be made of foam, preferably polyurethane. The second portion of the device can be removably connected to the first portion by at least one perforation. In one embodiment, the first portion is configured to support a limb. When the device is configured to support a limb the first portion may have a planar bottom and a curved top. In another embodiment, the first portion is configured to support a head. When the device is configured to support a head, the first portion is made of at least one ring. In yet another embodiment, the positioning device is for airway management and includes a head and neck support, a body support connected to the head and neck support and a removable portion connected to the body support. The positioning device for airway management may be made of foam, preferably polyurethane. The removable portion may be connected to the body support, the head and neck support or both by at least one perforation. In an additional embodiment, the present disclosure relates to a method of using the device according to the present disclosure.

[0015] With reference to the drawings, FIGS. 1-6 illustrate a positioning device in accordance with the present disclosure. The positioning device 10 includes a first portion 20. First portion 20 is removably connected to a second portion

**30.** In FIG. 1, first portion **20** is removably connected to second portion **30** by perforation line **40**. While FIG. 1 shows perforation line as a series of perforations, one perforation or partial die cut may be sufficient to allow clinician to remove second portion **30**. A plan view of positioning device **10** is shown in FIG. 2. As shown in FIG. 2, positioning device **10** includes multiple perforation lines **40**, **60**, and **80**. In FIG. 2, first portion **20** is removably connected to second portion **30** by perforation line **40**. Second portion **30** is removably connected to a third portion **50** by perforation line **60**. Third portion **50** is removably connected to a forth portion **70** by perforation line **80**. There may be one or several perforation lines depending on the configuration of the positioning device.

**[0016]** A clinician may remove one or more portions of positioning device **10** to fit the needs of the patient. Positioning device **10** may be configured to support a limb, head, or provide overall body support. To provide overall body support the device could be placed under the trunk of a person. For example, a tall patient may not need any portions removed whereas a child may need several of the portions removed. A variety of positioners are currently being marketed under the DEVON brand name and are available from the Ludlow Technical Products Division of Tyco Healthcare Group LP, Mansfield, Mass.

**[0017]** FIG. 3 shows perforation line **80** in detail. Perforation line **80** as shown in FIG. 3 includes a series of perforations. Perforation line **80** may only include one perforation **90**. Perforation **90** may or may not completely penetrate through positioning device **10**. Perforation **90** may also be one uniform partial die cut or slit that does not penetrate through positioning device **10**. The perforations need only to be deep enough to allow for the portions of positioning device **10** be separated into portions making it possible to adjust the size of the positioning device accordingly.

**[0018]** The positioning device shown in FIGS. 1-6 is preferably formed from structural foam or other material capable of supporting various body weights, including patients of size. The positioning device is preferably formed from polyurethane but may be formed from polyurethane foam, elastomeric material, or combinations thereof. The positioning device may consist of foam of a variety of densities to assist with position and ease of removability of the portions of positioning device **10**.

**[0019]** Another embodiment is shown in FIG. 4. Positioning device **110**, shown in FIG. 4, is configured to support a patient's leg. Positioning device **110** has a planar bottom surface **180** and an upright foot support **190**. Positioning device **110** has a curved non-planar surface. Positioning device **110** includes at least a perforation line **140** along the width of the positioning device **110** or a perforation line **170** along the length of positioning device **110**. A first portion **120** is removably connected to at least one second portion **130** by perforation line **140**. Additionally or in the alternative, a first portion **150** is removably connected to a second portion **160** by perforation line **170**. Perforation line **170** allows for a clinician to adjust the width of positioning device **110**, while perforation line **140** allows for a clinician to adjust the length of positioning device **110**. This makes it possible for the positioning device of the present disclosure to fit a range of patient sizes from a child to an adult, including patients of size.

**[0020]** Another alternative embodiment is shown in FIG. 5. FIG. 5 shows positioning device **210**. Positioning device **210** is configured to support a head. Positioning device **210** includes at least one ring **260** to provide support for a patient's head and neck. Positioning device **210** includes a circular perforation line **240**. Perforation line **240** allows for a second portion **230** to be removed from a first portion **220** to make a head opening **250** larger to fit a patient with a larger head.

**[0021]** Alternatively, a positioning device to be used for airway management is shown in FIG. 6. FIG. 6 shows positioning device **310**. Positioning device **310** includes a head and neck support **320**. The head and neck support **320** is connected to a body support **330** and is configured to put the body in correct alignment to aid in airway management. Positioning device **310** includes removable portion **340** that is coupled to body support **330**. Positioning device **310** also includes a removable portion **370** that is coupled to body support **330** and the head and neck support **320**. Positioning device **310** can include one or more removable portions that can be coupled to body support **330**, head and neck support **320**, or both. Positioning device **310** includes perforation line **350** and perforation line **360**. Perforation line **350** allows a clinician to remove portion **340** to adjust the length of positioning device **310**. Perforation line **360** allows a clinician to remove portion **370** to adjust the width of positioning device **310**.

**[0022]** The positioning device shown in FIGS. 1-6 can be manufactured by cutting a large block of foam into the desired shape of the positioning device. Such cutting processes are well known in the art. The positioning device manufactured by this method may be one piece with different portions. Alternatively, the positioning device according to the present disclosure may be made of multiple pieces that are connected together.

**[0023]** In light of the foregoing disclosure of the invention and description of the preferred embodiments, those skilled in this area of technology will readily understand that various modifications and adaptations can be made without departing from the scope and spirit of the invention.

We claim:

1. A device for medical purposes comprising:
  - a positioning device having a first portion and at least one removeably connected second portion.
2. The device of claim 1 wherein the first portion is configured to support a limb.
3. The device of claim 2 wherein the first portion has a planar bottom surface and a curved top surface.
4. The device of claim 1 wherein the first portion is configured to support a head.
5. The device of claim 4 wherein the first portion comprises at least one ring.
6. The device of claim 1 wherein the first portion is configured to support a trunk.
7. The device of claim 1 wherein the second portion is removably connected to the first portion by at least one perforation.
9. The device of claim 1 wherein the positioning device is foam.
10. The device of claim 1 wherein the positioning device is elastomeric material.
11. The device of claim 9 wherein the foam is polyurethane.

**12.** A positioning device for airway management comprising:

a head and neck support;  
a body support coupled to the head and neck support; and  
at least one removable portion coupled to the body support.

**13.** The positioning device of claim **12** wherein the removable portion is coupled to the body support and the head and neck support.

**14.** The positioning device of claim **12** wherein the removable portion is connected by at least one perforation.

**15.** The device of claim **12** wherein the positioning device is made of foam.

**16.** The device of claim **12** wherein the positioning device is made of elastomeric material.

**17.** The device of claim **16** wherein the foam is polyurethane.

**18.** A method of using the device of claim **1** for the purpose of positioning a patient during a medical procedure.

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