

(19)



Europäisches Patentamt

European Patent Office

Office européen des brevets



(11)

EP 1 552 770 A2

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

13.07.2005 Bulletin 2005/28

(51) Int Cl.7: **A47C 4/54**, A47C 3/16,
A47C 27/08

(21) Application number: **05250100.4**

(22) Date of filing: **11.01.2005**

(84) Designated Contracting States:

**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU MC NL PL PT RO SE SI SK TR**

Designated Extension States:

AL BA HR LV MK YU

(72) Inventors:

- **Armstrong, John c/o Worlds Apart Ltd
Trekennig St Solumb Major Cornwall TR9 (GB)**
- **Jacklin, Steve c/o Worlds Apart Ltd
Trekennig St Columb Major Cornwall, TR9 (GB)**

(30) Priority: **12.01.2004 GB 0400545**

(74) Representative: **Wood, Graham**

**Bailey Walsh & Co,
5 York Place
Leeds LS1 2SD (GB)**

(71) Applicant: **Worlds Apart Ltd
Trekennig, St. Columb Major,
Cornwall, TR9 6SF (GB)**

(54) **Configurable inflatable device**

(57) The invention which is the subject of the application is a support device (2) for supporting a person in comfort when lying or sitting thereon. The device is adaptable to be moved to different configurations for use, said configurations including a sleeping configuration when the device is laid flat to act as a mattress and a seating configuration where part of the support device

is upstanding with respect to the remainder of the device. The device includes an inflatable structure which is split into sections (26,28,30) by a series of portions (34,36) which act as hinge points to allow the sections to be relatively moved to provide the required configuration of the device.

EP 1 552 770 A2

Description

[0001] The invention to which this application relates is to an inflatable device of the type which is typically, although not necessarily exclusively, formed of an inflatable structure provided within a flexible housing such as that formed of fabric or other suitable material. The inflatable structure includes a plastic casing which defines a cavity provided for the reception of inflating air or other gas therein so as to move the structure to an inflated in-use condition.

[0002] The provision of inflatable structures of the type which are provided to receive an inflating gas, is well known. The same can be provided to form a mattress with the housing for the same having a separate cavity which can be used as a sleeping bag to allow a person to sleep therein and on the inflated mattress rather than directly on the floor. This also allows the person to have the benefit of the warmth that the housing, which can include padding or other warmth providing material can provide. This advantageous combination of an air mattress and a sleeping bag, is disclosed in the applicant's co-pending Application No. GB02250666.1

[0003] However, the provision of this form of this single purpose structure for sleeping means that the usage of the device can be limited and sporadic and that after use the device is required to be deflated, rolled up and stored away which can become frustrating for the user if it is required to be done frequently.

[0004] The aim of the present invention is to provide an improved device which contains the advantages to be obtained from utilising the inflatable structure, in combination with a sleeping bag structure and, in addition, allows the inflatable structure and housing to be utilised for further usage other than simply being used to sleep upon. By providing the additional utility which is herein described, so the level of usage and different potential uses of the device can be increased and, as a result, the attractiveness of the device to potential purchasers is also increased.

[0005] In a first aspect of the invention there is provided a support device, said device having an elongate inflatable structure which can be inflated to an in-use condition, said inflatable structure having a series of sections, adjacent sections defined and separated by portions extending substantially across the width of the structure, characterised in that the said portions allow the sections to be selectively movable about said portions to move the device between at least first and second configurations for use.

[0006] Typically the portions are provided so as to allow the movement of the said sections about the same when the structure is inflated.

[0007] Typically, at least one of the sections includes a retaining means for the reception of at least part of one of said other sections so as to retain the device in at least one of the configurations.

[0008] In one embodiment, the retaining means is

provided on the face of the section which opposes the face to be sat or laid upon by the user. In one embodiment the retaining means is movable between an open or extended position which allows a portion of the section which is to be retained to be positioned, and a closed or holding condition in which the said section is retained in the position. In one embodiment the retaining means includes an elasticated band which depends across the width of said sections, said elasticated band extendable to a size so as to allow a part of one of the other sections of the inflatable structure to pass between the band and the face of the section to which the band is attached. In this configuration the device is in the form of a self supporting seat. The retaining means can in one embodiment include sheet material which encloses that part of the section which has passed between the band and the face of the said section.

[0009] In one embodiment, the device is capable of being moved into three configurations, a first being a flat configuration with the sections in line and in the form of an elongate mattress for sleeping thereon; a second configuration wherein at least one of the sections abuts an upstanding surface and is thereby held in a substantially vertical plane so as to form a first seat form; and a third configuration in which the same is in a self supporting seat configuration with at least part of one of the sections retained by retaining means provided on another of the said sections.

[0010] In one embodiment, the retaining means is provided as an enclosure having an opening, the opening being defined by an elasticated band and in a preferred embodiment, the enclosure is of sufficient size so as to receive the device therein for storage, when in a deflated condition.

[0011] Typically, the portions which separate the sections of the inflatable structure are provided as relatively flattened portions. In one embodiment the portion which lies closest to the section which acts as the head or pillow section is wider than the other portions so as to allow and accommodate a greater degree of pivotal movement of the sections which depend from said portion. In one embodiment at each portion the upper and lower surfaces of the casing of the inflatable structure are welded together to form the flattened portion and include one or a series of channels or ports which pass between adjacent sections so as to allow the passage of air for the inflation or deflation of the said respective sections via a single valve in one of said sections.

[0012] Typically, the inflatable structure is formed by a plastic casing with the casing including, in one section at an end thereof, a portion which, when the air mattress is inflated, is higher than the remainder of the top surface of the casing, said portion forming the pillow of the air mattress.

[0013] Typically the inflatable structure is received within the housing, said housing comprising a first pocket for the location of the inflatable structure and, attached thereto, further material to form a second pocket

or cavity into which the person can get.

[0014] Typically all or a significant portion of the housing is formed of a fabric material and, yet further, can include padding and/or other warmth providing materials, such that, if, for example, the device is to be used to sleep in, sufficient warmth is provided to the person or persons therein. Zips or other releasable means can be provided along all or part of one or both sides of the housing so as to allow the person to get in and out of the cavity in the housing. In addition, releasable means are provided to allow the inflatable structure to be placed into and removed from the cavity on the housing for the same.

[0015] Typically, the device can be of any suitable size to meet particular user requirements such as, for example, a range of device can be provided for child size, adult size, a single person size or a two-person size. In each size or shape however, the basic concept as herein described is adopted.

[0016] In one embodiment, the device comprises a series of air mattresses and housings therefore, said housings selectively joined along a longitudinal edge thereof so as to form a larger structure and each of the inflatable structures is separately manipulable to a particular configuration without adverse affect to the other of said air mattresses connected therewith so that a first air mattress can be in a first configuration and a second air mattress can be in a second configuration to suit particular user's requirements at that instant.

[0017] In a further aspect of the invention, there is provided a support device having an inflatable structure, a housing for said inflatable structure, said housing having further material to define a cavity for the reception of a person said inflatable structure comprises a series of sections, said sections separated from adjacent section (s) by a portion formed across the width of the inflatable structure, said sections selectively positionable with respect to each other to allow movement of the device to a series of user configurations and characterised in that retaining means are provided for the selective location of at least one of said sections so as to retain the device in one of the selected configurations.

[0018] In one embodiment there is provided a support device characterised in that the retaining means are provided on one of the sections and allow the selective location of part of one of the other sections when moved around at least one of the portions to abut the retaining means. Typically the retaining means is in the form of a bag structure with an opening defined by an elasticated band.

[0019] Another aspect of the invention relates to a multi-position support device including a sheet material housing having an opening into a cavity defined therein, an inflatable structure received and substantially enclosed within the cavity of the sheet material housing, said structure movable between an inflated in-use condition and a deflated storage condition said housing includes a cover portion which defines a sleeping area in

which a person can lie and be supported by the mattress, said cover portion movable between a first position to substantially enclose the person within the sleeping area and a second position to allow the person to get into or out of the sleeping area, said inflatable structure having spaced portions which extend transversely of the longitudinal axis of the structure to define sections of the structure and characterised in that the portions act as hinges that allow the structure to be moved between at least a substantially flat sleeping configuration and a seating configuration in which at least one section is upstanding.

[0020] In one embodiment there is provided a support device wherein two sections of the inflatable structure are held in an upstanding position, with at least one of the sections held in position by retaining means.

[0021] In a further aspect of the invention there is provided a method of forming a user configurable inflatable support device, said device manipulable between a configuration in which a user can lie on the same and at least one further configuration where the user can sit on the device in a supported manner, said device including an inflatable structure which when inflated provides the support for the user, said structure including a plurality of sections, adjacent sections separated by portions which pass across the width of the inflatable structure and characterised in that the inflatable structure is moved to the required configuration by selectively moving the sections of the inflatable structure about hinge locations defined by the said portions.

[0022] In one embodiment in at least one of the configurations at least one of the sections is held in position by retaining means.

[0023] Specific embodiments of the invention are now described with reference to the accompanying drawings, wherein: -

Figure 1 illustrates an inflatable structure in accordance with one embodiment of the invention;

Figures 2a and b illustrate a housing in accordance with an embodiment of the invention;

Figure 3 illustrates the inflatable structure and housing of Figures 1 and 2 respectively in combination to form the device in accordance with the invention in a first configuration;

Figure 4 illustrates the device of Figure 3 in a second configuration;

Figures 5a and b illustrate the device of Figures 3 and 4 in a third configuration;

Figure 6 is a top perspective view of an embodiment of a multi-position inflatable structure, the inflatable structure in a sleeping position;

Figure 7 is a top perspective view of the inflatable structure shown in Figure 10, the inflatable structure in a propped-up position;

Figure 8 is a top perspective view of the inflatable structure shown in Figure 10, the inflatable structure in a seating position;

Figure 9 is a perspective view of an inflatable mattress of the inflatable structure shown in Figure 10, the inflatable mattress in a sleeping position;

Figure 10 is a side view of the inflatable mattress shown in Figure 13, the inflatable mattress in a sleeping position;

Figure 11 is a perspective view of the inflatable mattress shown in Figure 13, the inflatable mattress in a propped-up position;

Figure 12 is a perspective view of the inflatable mattress shown in Figure 13, the inflatable mattress being held in a seating position;

Figure 13 is a bottom perspective view of the inflatable structure shown in Figure 10 illustrating a retaining pouch of the inflatable structure;

Figure 14 is a perspective view of the inflatable structure shown in Figure 10, the inflatable structure being folded into a seating position; and

Figure 15 is a side view of the inflatable structure shown in Figure 10, the inflatable structure being maintained in a seating position by the retaining pouch.

[0024] Referring firstly to Figure 1, there is illustrated an inflatable structure in accordance with the invention. The structure 2 comprises top, bottom, side and end walls 4, 6, 8, 10, 12, 14 respectively, which define, between the same, an interior cavity for the reception of an inflating gas such as air, introduced by a pump, via a valve 15 to move the inflatable structure to an inflated, in-use condition as shown in Figure 1. Preferably, although not necessarily exclusively, the inflation can be achieved by the single valve 15. On the top surface 4 of the structure, there is provided at one end, a pillow area 20 which is a raised portion designed to receive a person's head and support the same at a comfortable height.

[0025] The inflatable structure is formed in three sections 26, 28, 30 with the adjacent sections defined and spaced by portions 34, 36 which extend across the width of the structure as shown. The portions also act as hingeable portions and the portion 36 is wider than the portion 34 as, for reasons which will later be shown, a greater degree of pivotal movement, and space, is re-

quired between sections 28, 30 than sections 26, 28. The portions are formed typically by welding together the top and bottom walls 4, 6 of the structure at the appropriate locations to define thin wall portions. However, air channels 22 are provided which extend between the adjacent sections so as to allow the passage of air between the said sections and hence allow the same to be inflated and deflated as required via the single valve 15. The provision of the portions with thin walls, allows the same to act as hinges in that the adjacent sections can be pivotally moved about said portions so as to allow the structure to be moved into different configurations as will be described.

[0026] Figures 2a and b illustrate a housing 38 in accordance with the invention in one embodiment. In order to show the features the housing is illustrated in a partially formed condition. The housing is formed of fabric or other flexible material and comprises a first pocket 40 into which the inflatable structure 2 of Figure 1 is inserted via the opening 39 as indicated by arrow 41 and, when received in said pocket, the inflatable structure forms a base of the device in the orientation shown in Figure 2a with Figure 2b showing the device upside down.

[0027] The housing also includes a further section 50 which depends upwardly from the first housing as shown. This portion is provided to define a cavity or pocket 52 into which a person can get to sleep or be generally warm in use. Preferably, this portion has side walls and a top wall with the side walls and/or top wall being formed or including material which can provide a warming effect. The base 54 of this pocket 52 can be common with the top wall of the pocket 40 in which the inflatable structure is received. Alternatively the pocket base may be formed by an additional layer to that which is provided to form the top of the housing for the inflatable structure. The base may also selectively be provided with padding or other fabric so as to provide a padding effect, in addition to that which is provided by the inflatable structure when inflated.

[0028] The outer surface of the housing can be provided with material thereon which can link the device to particular licensed characters, sports teams or a generally attractive design.

[0029] In addition, on the bottom or rear face 56 of the housing and, externally thereof, there is provided a retaining means 58, one embodiment of which is illustrated. The retaining means comprises, in this embodiment, a bag 60 formed by an outer wall which is attached along its edges 62 to the housing and which has an opening 64 which is defined by an elasticated band 66 so that the opening can be extended to an enlarged opening condition.

[0030] The particular use of the retaining means is described with reference to Figures 3 to 5b but the same is positioned such that when the inflatable structure is positioned in the housing the retaining means is positioned to lie within the areas defined by the middle sec-

tion 28 of the inflatable structure 2.

[0031] In Figure 3, there is illustrated the device 68 formed and in a first configuration. As shown, the inflatable structure 2, the side wall of which is indicated in broken lines is located within the pocket 40 of the housing so as to form the device. In this first configuration, the three sections 26, 28, 30 of the inflatable structure are in line and define a flat base on the floor 70 so as to form a mattress with a sleeping bag formed by pocket 52. A person can then get into the pocket and use the same as a sleeping bag with a comfortable air mattress under the same. In practise, it is found that the full inflation of the inflatable structure means that the thin wall portions 34, 36 which separate the sections of the inflatable mattress, are not held and therefore do not provide discomfort to the user when lying on the structure. Furthermore, the retaining means 58 lies on the underside of the device and cannot be felt by a person lying on the inflatable structure.

[0032] As already stated, in accordance with the invention, the device can be moved to a number of configurations for different usages and Figure 4 illustrates a second configuration wherein the section 30 has been moved with respect to section 28 by pivotal movement about portion 36 as indicated by arrow 72 to form a seat arrangement of a first arrangement. In this arrangement, there is provided a base by the sections 26, 28 on which the person can sit and a back rest is provided by section 30 with said back rest section being supported by, for example, a wall 74 or, alternatively an item of furniture or generally some form of vertical support.

[0033] Typically the housing is provided with zips or other releasable means 76 along one or preferably both elongate sides of the pocket 52 so as to allow the cavity to be opened further to allow easy manoeuvre of a person in an out of the same and/or generally increase the comfort of a person when in the same in different configurations of the device.

[0034] Figures 5a and b illustrate a further configuration of the device wherein, once more, a seating arrangement is provided.

[0035] However, in this case, the seating arrangement is self supporting inasmuch that the same does not need to be placed against a wall or the like to support the same. This is achieved by utilising the retaining means 58. In Figure 5a the device is shown partially moved to the required configuration in which section 28 of the inflatable structure has been pivotally moved with respect to section 26 as indicated by arrow 78 and section 30 has been pivotally moved with respect to section 28 about portion 36 as indicated by arrow 80. To then complete the movement, the retaining means band 66 is required to be pulled outwardly to extend the same as indicated by arrow 82 and the free end of section 30 can be moved as indicated by arrow 84 to lie within the retaining means and be held therein as indicated in Figure 5b. As the retaining means receives at least part of the said section, so the section is effectively trapped and

this acts to lock the other sections in position and hence provides a self-supporting back rest 86 with the section 26 forming the base 88. This therefore means that in this configuration, the device can be placed wherever the user desires without the need for supporting structures to be in the vicinity.

[0036] The device which is illustrated in these figures, is for a single person. However, it should be appreciated that the device can be extended in terms of width and/or length to suit particular size requirements and/or provide a device for use by two people. In one arrangement, when used by two people, two separate inflatable structure arrangements can be provided side by side with the same joined together via the housing which can be zipped or otherwise attached together but in a manner such that, for example, the first structure can be provided in a first configuration and the second in a second configuration thereby allowing each person to select their own particular configuration of the inflatable structure and hence their part of the device at each instant. In certain configurations, it may be necessary to at least partially release the join between the two inflatable structures.

[0037] In addition to allowing the retention of at least part of a section to allow the configuration of Figures 5b to be achieved, the retaining means can also form a function of storage in that the same is sized and dimensioned so as to receive a folded or rolled up device for storage purposes with the inflatable structure still held, if required, within the housing but moved to a deflated condition. Thus, the retaining means acts a two-function arrangement.

[0038] It should also be appreciated that it is of significant advantage to be able to achieve the manipulation of the device between the configurations while the inflatable structure is inflated and contained within the housing.

[0039] Figures 6-15 illustrate a further embodiment of a multi-position inflatable structure 200 in accordance with the invention. In this embodiment, the inflatable structure 200 is configured such that it may be folded or rearranged into a plurality of positions including a sleeping position (as shown in Figure 6) a propped-up position (as shown in Figure 7), and a seating or lounge position (as shown in Figures 8 to 15). This configuration of the inflatable structure 200 allows the user to assume multiple resting positions on the inflatable structure 200, as will be further discussed below.

[0040] Similar to the sleeping means described above, the inflatable structure 200 includes a sheet material envelope 202 having an opening into a cavity defined therein, as best shown in Figs, 6, 8 and 15. The cavity is used to receive and substantially enclose an inflatable mattress 208 (see Figures 9-12) therein which extends the length of the cavity.

[0041] A cover portion 206 which, in conjunction with the top surface of the envelope 202, defines a sleeping area in which a person can lie and be supported by the

mattress 208 within the envelope 202. The cover portion 206 is movable between a first position to substantially enclose the person within the sleeping area and a second position to allow the person to get into or out of the sleeping area of the inflatable structure 200. The top surface of the envelope 202 and the cover portion 206 may each include a filling material to insulate the sleeping area.

[0042] In the illustrated embodiment, one side edge 210 and a foot end edge 220 of the cover portion 206 is attached to the sheet material envelope 202 and an opposing side edge 216, opposite the one side edge 210, is selectively and releasably attached to the sheet material envelope 202 by a zipper 290 to retain the cover portion 206 in the first position. However, additional zippers may be provided to releasably attach the cover portion 206 to the sheet material envelope 202. Also, any other suitable releasable fastening structure may be used to releasably attach the cover portion 206 to the sheet material envelope 202.

[0043] The sheet material envelope 202 has formed therein a pillow receiving portion 222 for the acceptance of a pillow portion 227 provided on the mattress 208.

[0044] In the illustrated embodiment the cover portion 206 includes an image thereon. The cover portion 206 may include any other suitable image of a character, animal or shape, for example.

[0045] Also, the pillow receiving portion 222 may be provided with at least one three-dimensional element attached thereto to depict a character, animal or shape that may be associated with the character, animal or shape depicted by the cover portion 206.

[0046] The mattress 208 is inflatable between an inflated in-use condition and a deflated storage condition. As shown in Figures 9-12, the mattress 208 includes the pillow portion 227 which is inflatable as part of the mattress 208 and the sheet material envelope 202 has formed therein the pillow receiving portion 222 for the acceptance of the pillow portion 227 of the mattress 208.

[0047] The mattress 208 includes a series of side by side inflatable sections 231 and, at one end thereof, the pillow portion 227. The longitudinal side walls of the side by side inflatable sections 231 run perpendicularly to the longitudinal side walls of the pillow portion 227.

[0048] The side by side inflatable sections 231 and the pillow portion 227 are interconnected to allow the passage of air for inflation and deflation via a valve 224. When inflated, the height of the pillow portion 227 is greater than the height of a remainder of the mattress 208. In the illustrated embodiment, the mattress 208 has a single valve 224. However, additional valves may be provided for inflation and deflation of the mattress 208.

[0049] In the illustrated embodiment, the valve 224 is located on the pillow portion 227 of the mattress 208. Also, the valve 224 extends through a flap opening 218 provided in the pillow receiving portion 222 of the sheet material envelope 202. This arrangement allows the sheet material envelope 202 and mattress 208 to be

rolled as one towards the opened valve 224 thus allowing rapid collapse of the entire inflatable structure 200.

[0050] Also, the inflatable mattress 208 has a pair of transversely extending hinges 250, 252 that separate the mattress 208 into a first portion 254, a second portion 256, and third portions 258.

[0051] The first portion 254 includes the pillow portion 227. The hinges 250, 252 allow the mattress 208 and hence the inflatable structure 200 to be folded into different positions.

[0052] In the illustrated embodiment, the hinges 250, 252 on the mattress 208 are pinch welded hinges, i.e. top and bottom surfaces of the mattresses are welded together. The hinges 250, 252 each have "weld gaps" along the hinge that allow the passage of air throughout the whole mattress 208, thus allowing the mattress 208 to inflate and deflate through a single valve 224.

[0053] The hinge 250 is a wider hinge than the hinge 252 (e.g. see Figure 10), which enables the first portion 254 to fold back and substantially adjacent to the second portion 256.

[0054] Specifically, Figures 9-12 illustrate the inflatable mattress 208 removed from the sheet material envelope 202. Figures 9 and 10 illustrate the inflatable mattress 208 in a substantially flat sleeping position, Figure 11 illustrates the inflatable mattress 208 in a propped-up position wherein the first portion 254 of the mattress 208 is folded upwardly with respect to the second and third portions 256, 258 that remain substantially flat, and Figure 12 illustrates the inflatable mattress 208 in a seating or lounge position wherein the second portion 256 is folded upwardly with respect to the third portion 258 that remain substantially flat, and the first portion 254 is folded downwardly with respect to the second portion 256 such that it is substantially adjacent to the second portion 256.

[0055] As shown in Figures 8 and 13-15, the bottom side of the sheet material envelope 202 includes a retaining pouch 270 secured thereto. The retaining pouch 270 allows the inflatable structure 200 to retain its seating or lounge position. That is, the inflatable mattress 208 should be positioned within the sheet material envelope 202 when in at least the seating or lounge position so that the retaining pocket 270 can retain the mattress 208 in its seating position.

[0056] The retaining pouch 270 includes a pouch portion 272 that is secured to the bottom side of the sheet material envelope 202. The edge 274 of the pouch portion 272 near the open end thereof is resiliently biased into the sheet material envelope 202. In the illustrated embodiment, the edge 274 has a sewn-in elastic band that resiliently biases the edge 274 inwardly.

[0057] The retaining pouch 270 is used to hold the inflated first portion 254 in the seating position. The resiliently biased edge 274 on the retaining pouch 270 facilitates maintaining the first portion 254 within the retaining pouch 270. Also, the resiliently biased edge 274 helps to pull the retaining pouch 270 flush to the bottom

side of the sheet material envelope 202 when not in use to hold the inflatable structure in a seating position.

[0058] Figures 6-8 and 15 illustrate the inflatable structure 200 in the sleeping, propped-up, and seating position. Specifically, Figure 6 illustrates the inflatable structure 200 in a substantially flat sleeping position to allow the user to assume a sleeping position thereon. Figure 7 illustrates the inflatable structure 200 in a propped-up position wherein the first portion 254 of the mattress 208 is folded upwardly with respect to the second and third portions 256, 258 that remain substantially flat. In the propped-up position, the first portion 254 may rest against a wall as illustrated to allow the user to assume a resting position with the user's head propped-up by the first portion 254 and pillow portion 227 thereof. Figures 8 and 15 illustrate the inflatable structure 200 in a seating or lounge position wherein the second portion 256 of the mattress 208 is folded upwardly with respect to the third portion 258 that remains substantially flat, and the first portion 254 is folded downwardly with respect to the second portion 256 such that it is substantially adjacent to the second portion 256. The first portion 254 is inserted into the retaining pouch 270 to maintain the seating position of the inflatable structure 200. In the seating position, the user may assume a seating position on the inflatable structure 200 with the user's back supported by the first and second portions 254, 256 of the mattress 208, within the sheet material envelope 202.

[0059] When the inflatable structure 200 is not in use, the pillow receiving portion 222 may be usable as a storage area so that the mattress 208 and remaining sheet material envelope 202 may be moved into the pillow receiving portion 222 for storage therein. Alternatively, the retaining pouch 270 may be suitably sized and positioned such that the mattress 208 and remaining sheet material envelope 202 may be moved into the retaining pouch 270 for storage therein. Additionally, a carrying handle or strap may be secured to the sheet material envelope 202 for carrying purposes.

[0060] It can thus be appreciated that embodiments of the present invention have now been fully and effectively accomplished. The foregoing embodiments have been provided to illustrate the structural and functional principles of the present invention, and are not intended to be limiting. To the contrary, the present invention is intended to encompass all modifications, alterations and substitutions within the spirit and scope of the appended claims.

Claims

1. A support device, said device having an elongate inflatable structure which can be inflated to an in-use condition, said inflatable structure having a series of sections, adjacent sections defined and separated by portions extending substantially across

the width of the structure, **characterised in that** the said portions allow the sections to be selectively movable about said portions to move the device between at least first and second configurations for use.

2. A support device according to claim 1 **characterised in that** the portions are provided to allow the movement of the said sections about the portions when the sections are inflated.

3. A support device according to claim 1 **characterised in that** at least one of the sections includes a retaining means for the reception of at least part of one of said other sections so as to retain the device in at least one of the selected configurations.

4. A support device according to claim 3 **characterised in that** the retaining means is provided on the face of the section which opposes the face contacted by the user when the device is in use.

5. A support device according to claim 3 **characterised in that** the retaining means is movable between an extended position which allows a portion of the section which is to be retained to be positioned therein and a holding position in which the said section is retained in the retaining means.

6. A support device according to claim 5 **characterised in that** the retaining means includes an elasticated band which depends substantially across the width of said section.

7. A support device according to claim 5 **characterised in that** the retaining means includes sheet material which encloses that part of the section held by the retaining means.

8. A support device according to claim 3 **characterised in that** when a section is held by the retaining means the device is in the configuration of a seat having a base and a backrest.

9. A support device according to claim 1 **characterised in that** the device is capable of being moved into a first configuration where the sections lie inline to form a substantially flat support face and at least one further configuration where at least one of the sections is supported or held in an upstanding manner so as to form a device with a substantially horizontal support face and an inclined support face leading from an end thereof.

10. A support device according to claim 9 **characterised in that** the further configuration of the device is a second configuration in which the section is retained in the upstanding position by placing the

same against a vertical support surface or article.

11. A support device according to claim 9 **characterised in that** the further configuration of the device is a third configuration with at least part of one of the sections retained in a position by retaining means provided on another of the said sections thereby providing the upstanding support face. 5

12. A support device according to claims 9-11 **characterised in that** the device can be selectively moved to any of the first, second or third configurations. 10

13. A support device according to claim 1 **characterised in that** the device includes an enclosure which allows the reception therein of at least part of the device therein for storage when the device is deflated. 15

14. A support device according to claim 13 **characterised in that** the enclosure also acts as a retaining means for the selective reception of part of one of the sections, when the section is inflated to allow the device to be held in a selected configuration. 20 25

15. A support device according to claim 1 **characterised in that** the sections of the device comprise a head end section which includes a raised pillow area when inflated, a middle section and a foot end section. 30

16. A support device according to claim 15 **characterised in that** the portion which lies closest to the head end section is wider than the other portions so as to allow and accommodate a greater degree of pivotal movement of the sections which depend from said portion. 35

17. A support device according to claim 1 **characterised in that** the portions which separate the sections of the inflatable structure are provided as non inflatable double wall thickness portions. 40

18. A support device according to claim 17 **characterised in that** at each portion the upper and lower sheets of the casing which define the inflatable cavities at each section, are welded together to form the non inflatable double wall thickness. 45

19. A support device according to claim 17 **characterised in that** the portions each include one or a series of channels or ports which pass between adjacent sections so as to allow the passage of air for the inflation or deflation of the said respective sections via a single valve located at one of said sections. 50 55

22. A support device according to claim 1 **characterised in that** the inflatable structure is received within a housing, said housing forming the outer surface of the device.

23. A support device according to claim 22 **characterised in that** the housing has a first pocket for the location of the inflatable structure and a second pocket or cavity into which a person can get when using the device.

24. A support device according to claim 22 **characterised in that** all or a portion of the housing is formed of a fabric material.

25. A support device according to claim 22 **characterised in that** the housing includes padding and/or other warmth providing materials positioned to provide warmth to the person using the device.

26. A support device according to any of the preceding claims **characterised in that** the in a first configuration the device acts as a mattress for sleeping thereon and in the second or third configurations acts as a seat for a person to sit on.

27. A support device according to claim 1 **characterised in that** the device includes a series of inflatable structures and housings therefore, said housings selectively joined together along a longitudinal edge thereof so as to form a larger structure and each of the inflatable structures is movable to a selected configuration independently of the configuration of the other structures.

28. A support device having an inflatable structure, a housing for said inflatable structure, said housing having further material to define a cavity for the reception of a person said inflatable structure comprises a series of sections, said sections separated from adjacent section(s) by a portion formed across the width of the inflatable structure, said sections selectively positionable with respect to each other to allow movement of the device to a series of user configurations and **characterised in that** retaining means are provided for the selective location of at least one of said sections so as to retain the device in one of the selected configurations.

29. A support device according to claim 28 **characterised in that** the retaining means are provided on one of the sections and allow the selective location of part of one of the other sections when moved around at least one of the portions to abut the retaining means.

30. A support device according to claim 28 **characterised in that** the retaining means is in the form of

a bag structure with an opening defined by an elasticated band.

31. A multi-position support device including a sheet material housing having an opening into a cavity defined therein, an inflatable structure received and substantially enclosed within the cavity of the sheet material housing, said structure movable between an inflated in-use condition and a deflated storage condition said housing includes a cover portion which defines a sleeping area in which a person can lie and be supported by the mattress, said cover portion movable between a first position to substantially enclose the person within the sleeping area and a second position to allow the person to get into or out of the sleeping area, said inflatable structure having spaced portions which extend transversely of the longitudinal axis of the structure to define sections of the structure and **characterised in that** the portions act as hinges that allow the structure to be moved between at least a substantially flat sleeping configuration and a seating configuration in which at least one section is upstanding.

32. A support device according to claim 31 **characterised in that** two sections of the inflatable structure are held in an upstanding position, with at least one of the sections held in position by retaining means.

33. A method of forming a user configurable inflatable support device, said device manipulable between a configuration in which a user can lie on the same and at least one further configuration where the user can sit on the device in a supported manner, said device including an inflatable structure which when inflated provides the support for the user, said structure including a plurality of sections, adjacent sections separated by portions which pass across the width of the inflatable structure and **characterised in that** the inflatable structure is moved to the required configuration by selectively moving the sections of the inflatable structure about hinge locations defined by the said portions.

34. A method according to claim 33 **characterised in that** in at least one of the configurations at least one of the sections is held in position by retaining means.

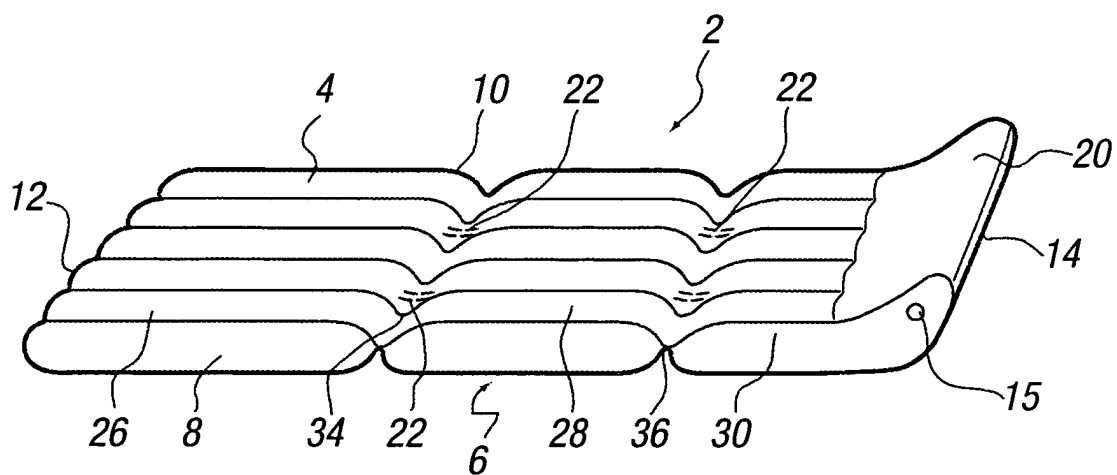


FIG. 1

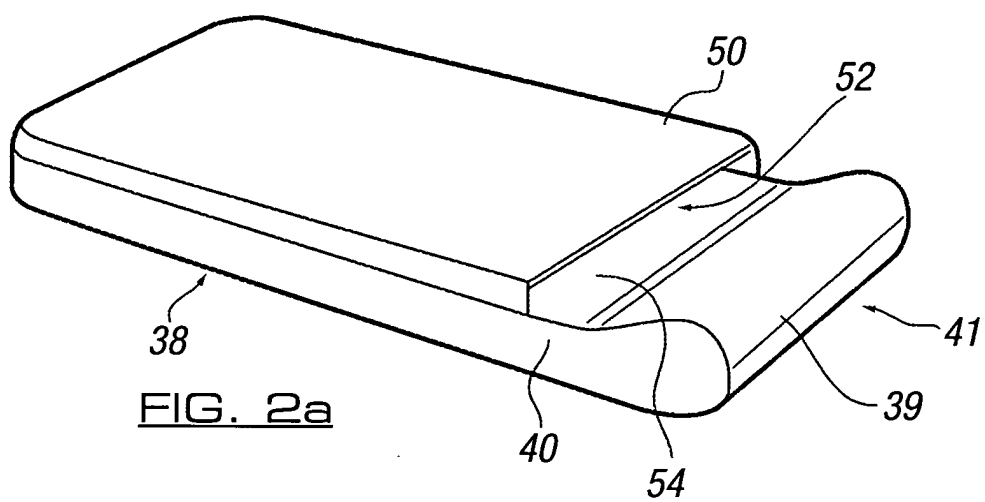


FIG. 2a

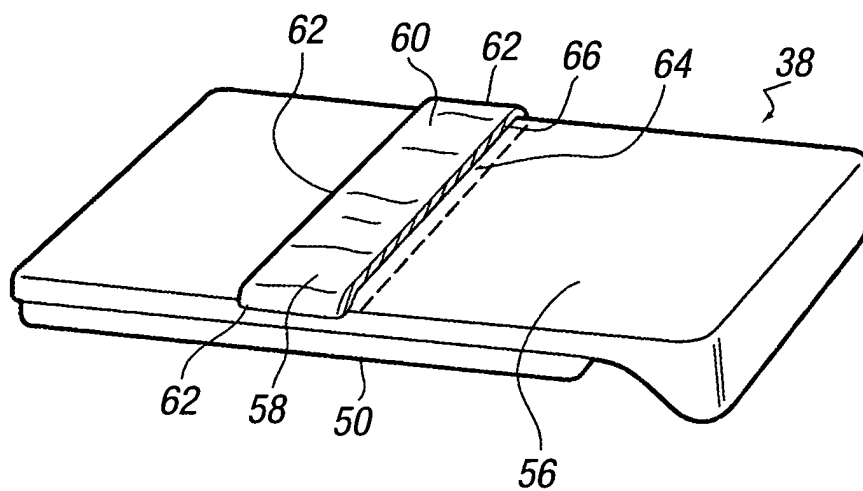


FIG. 2b

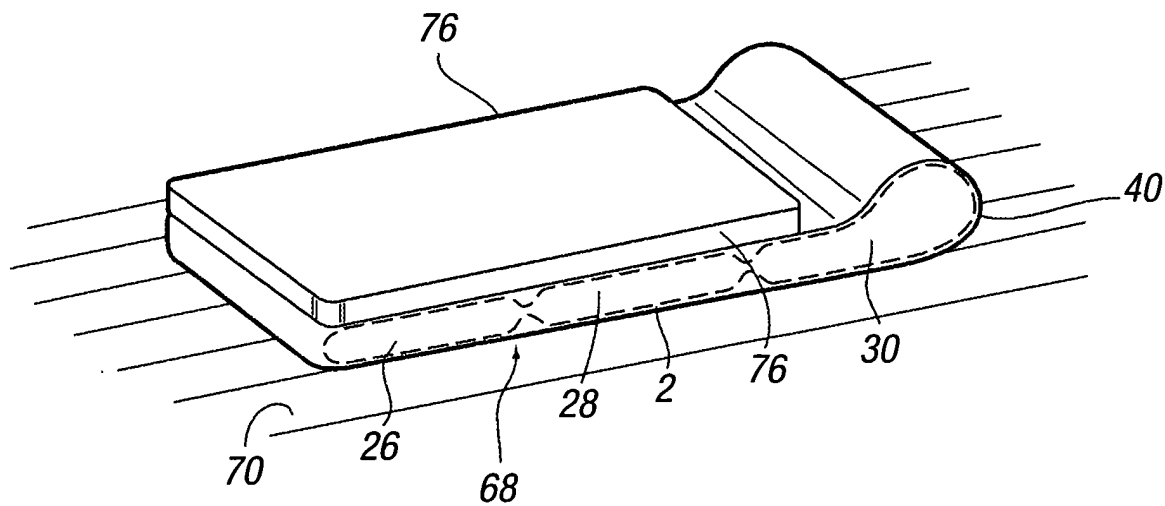


FIG. 3

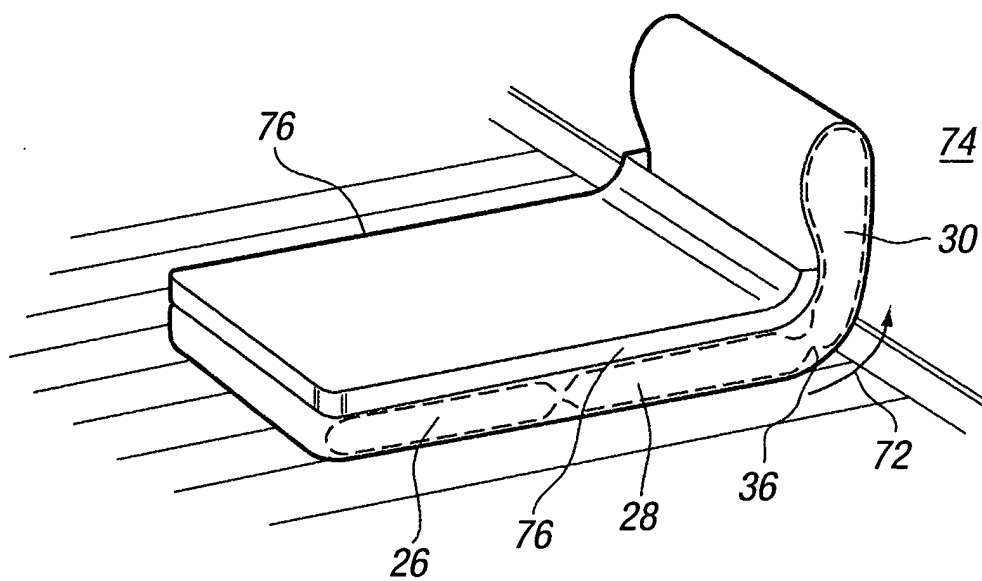
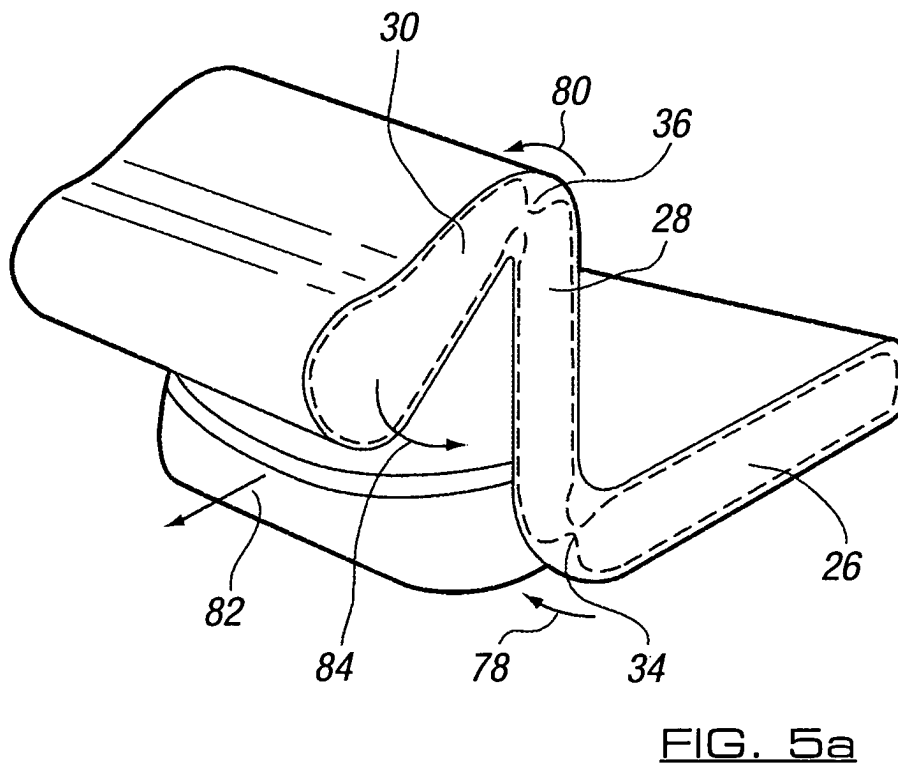
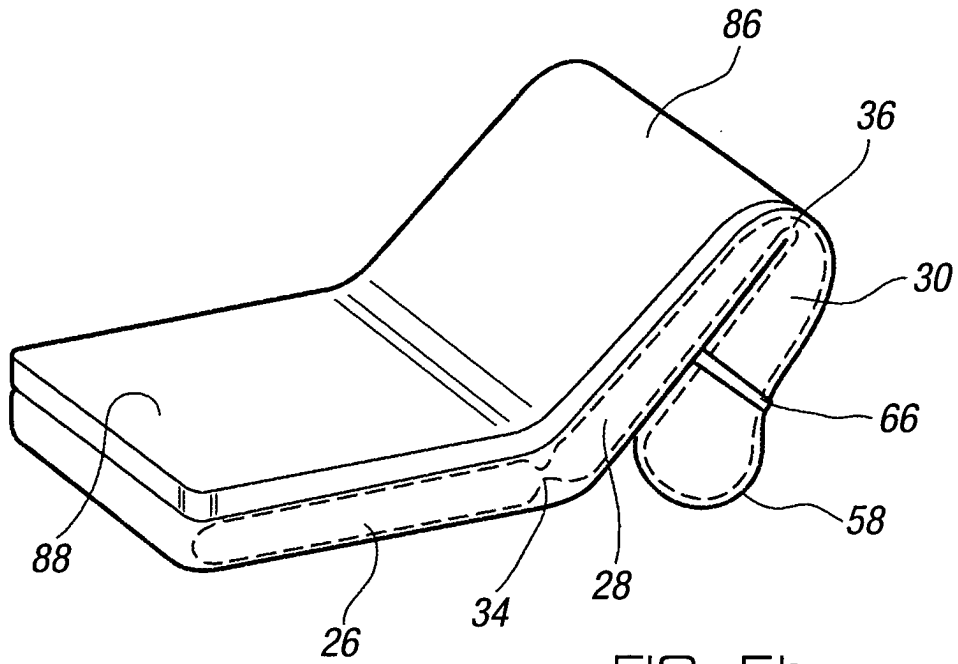


FIG. 4



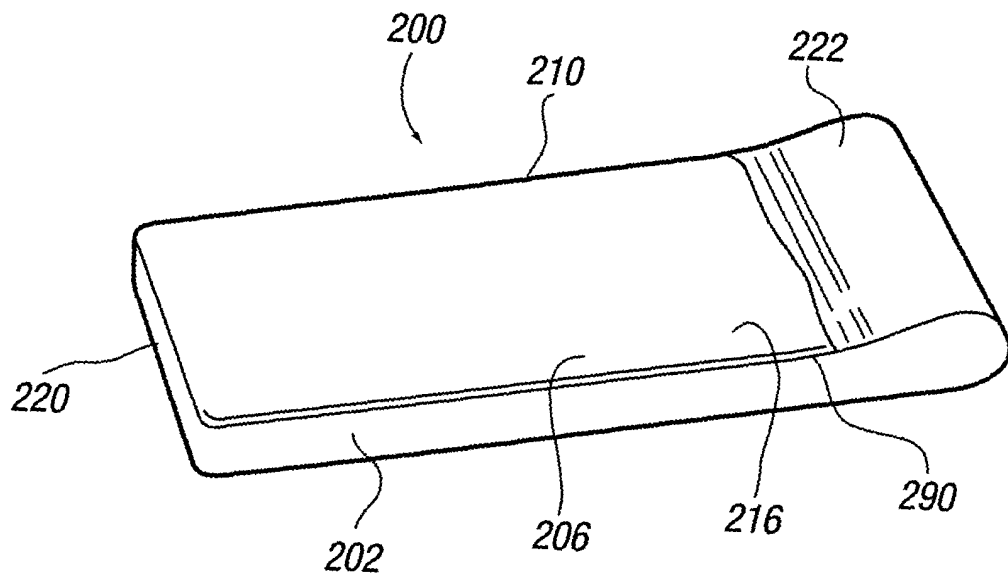


FIG. 6

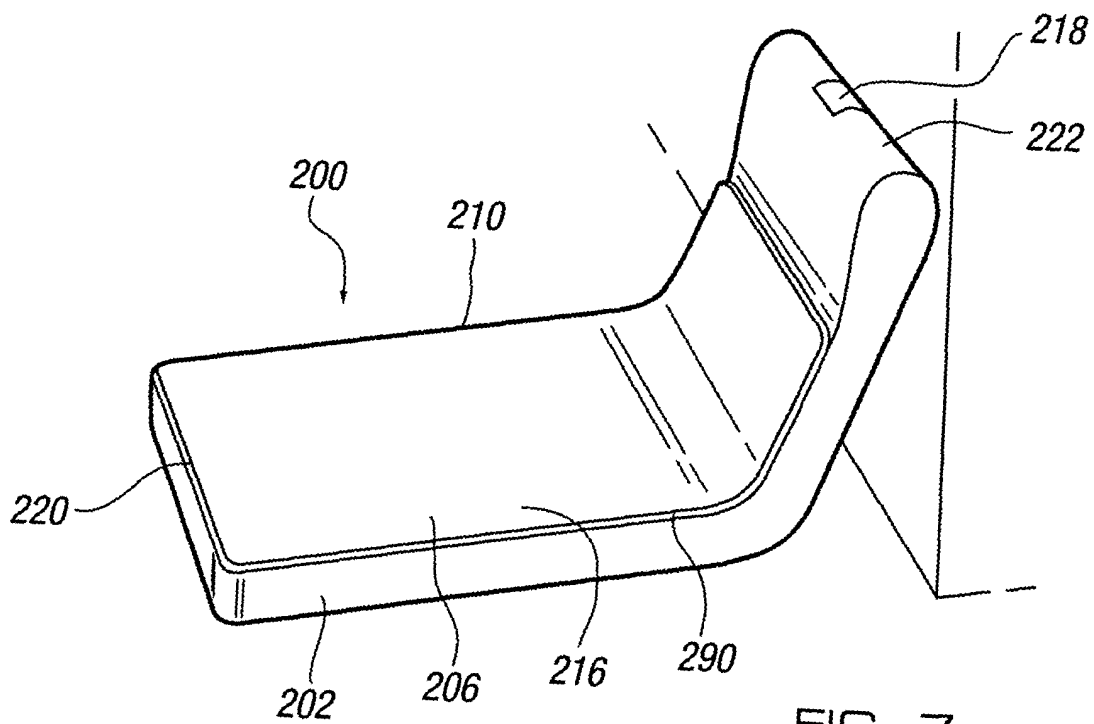


FIG. 7

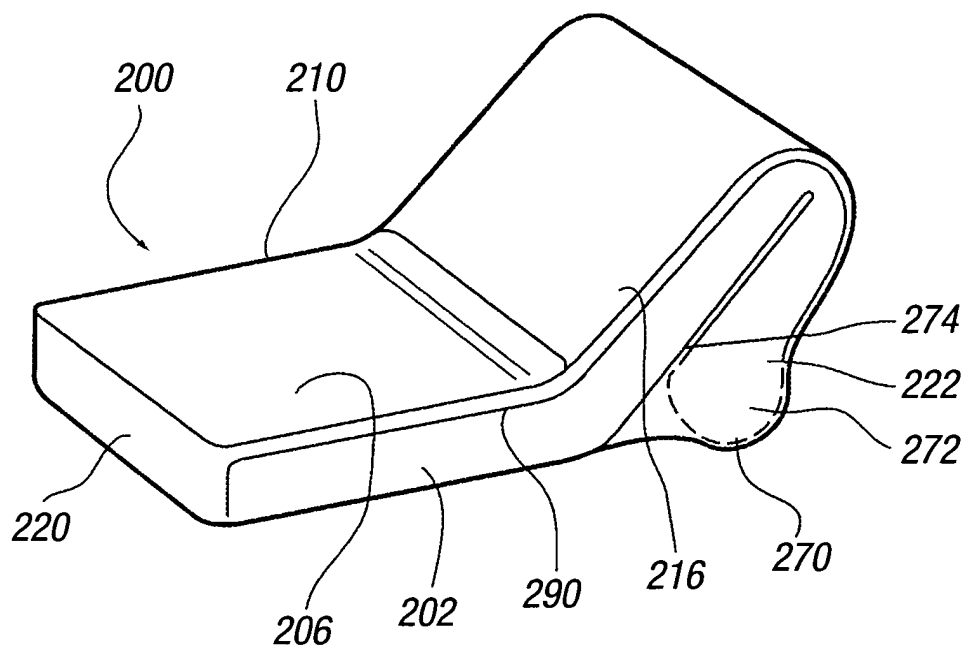


FIG. 8

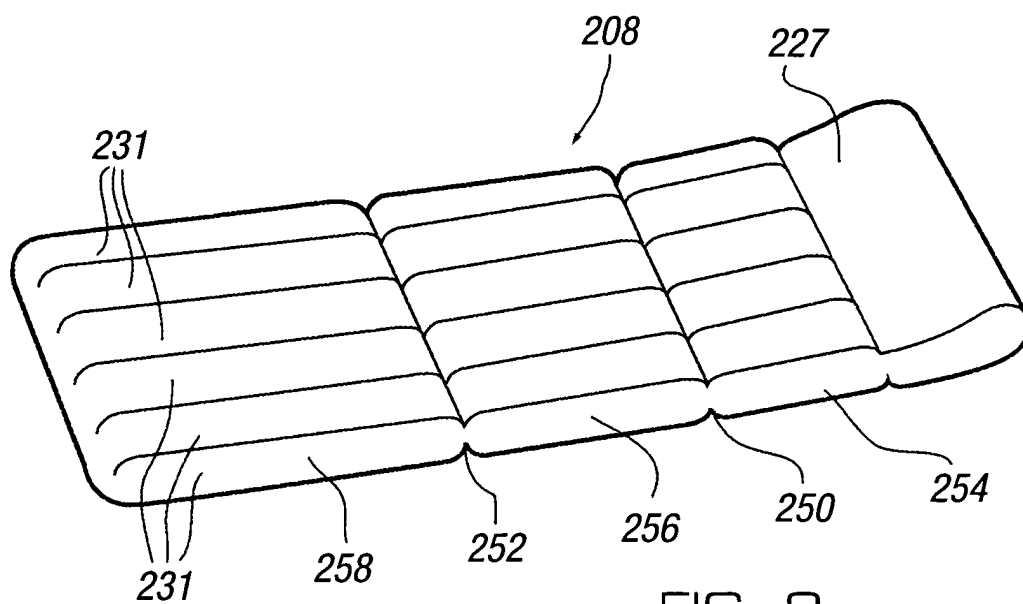


FIG. 9

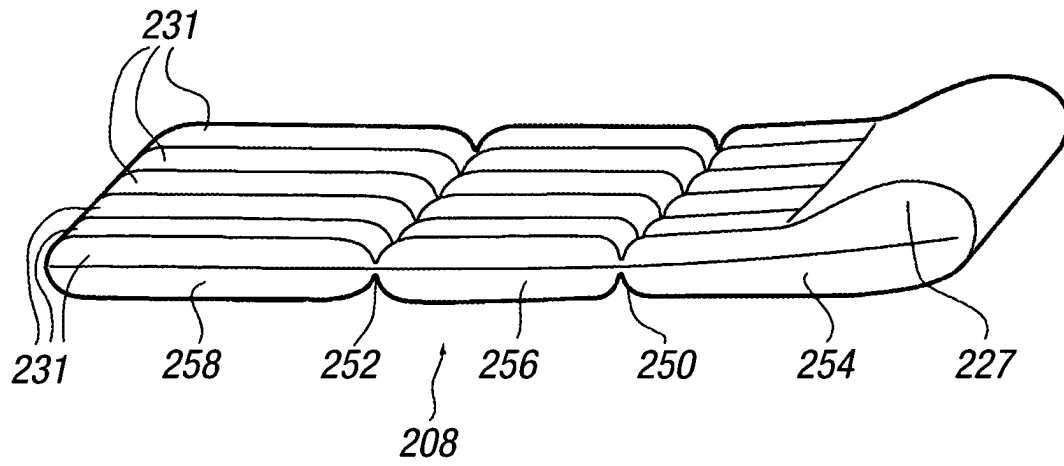


FIG. 10

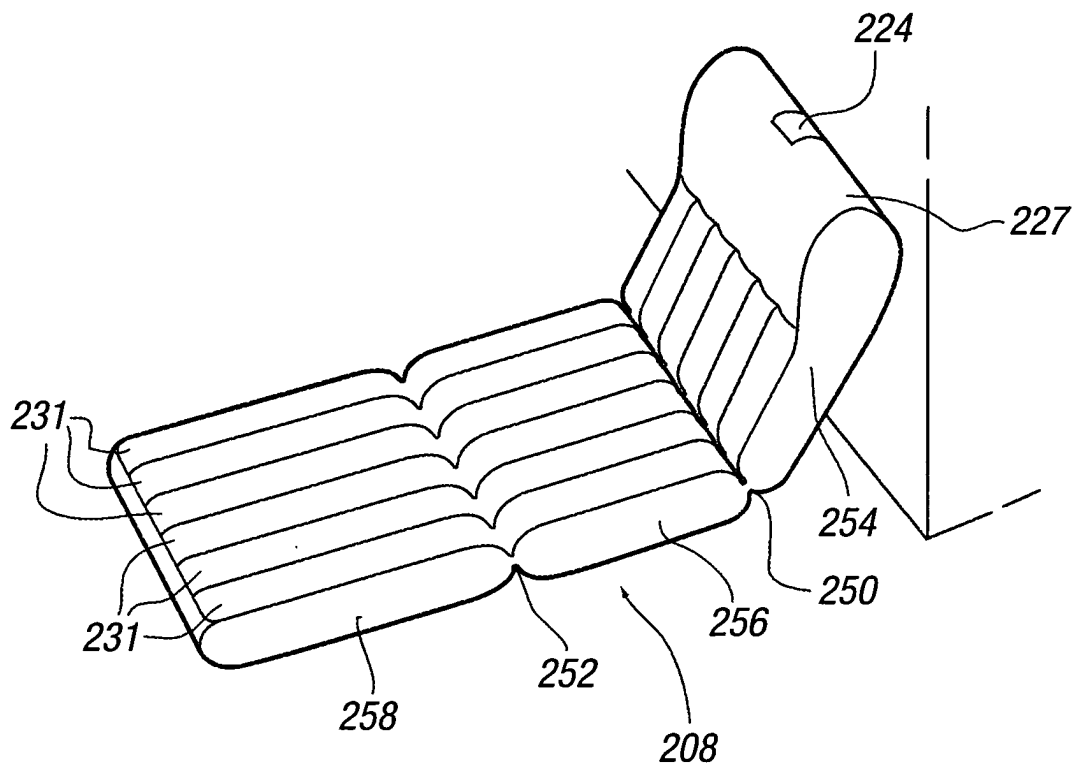
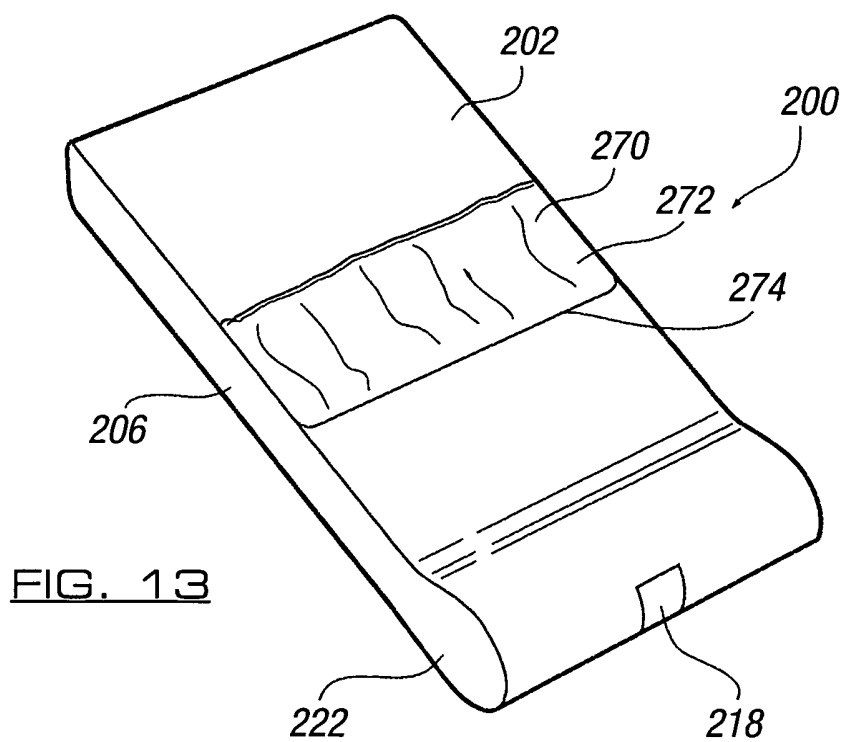
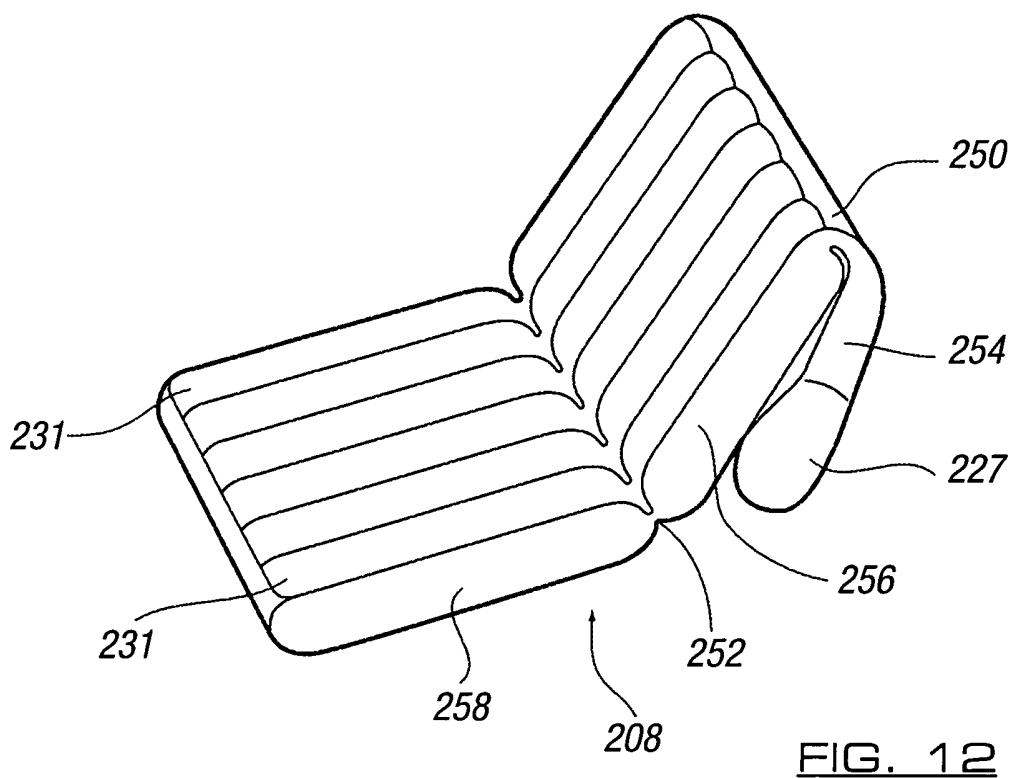


FIG. 11



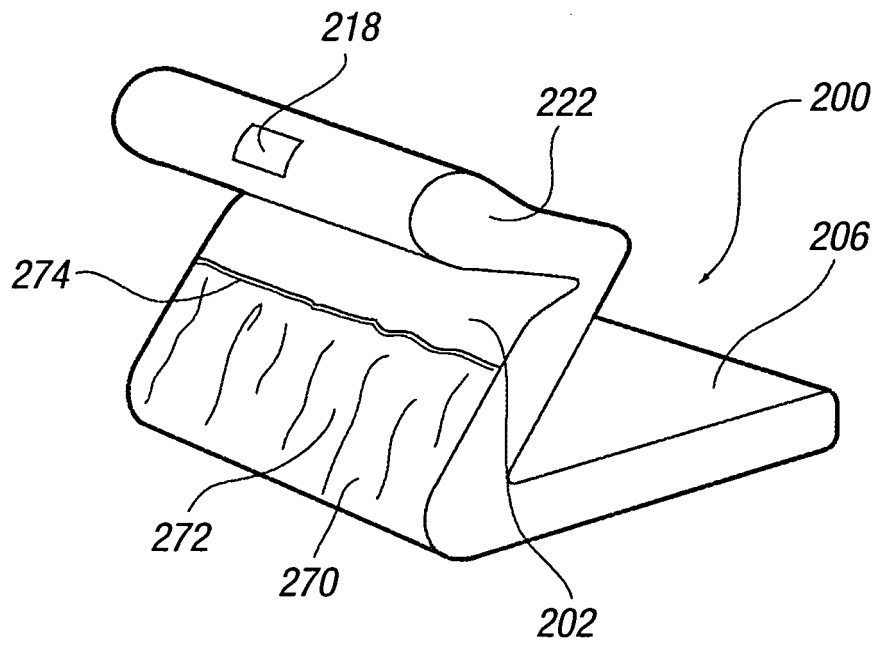


FIG. 14

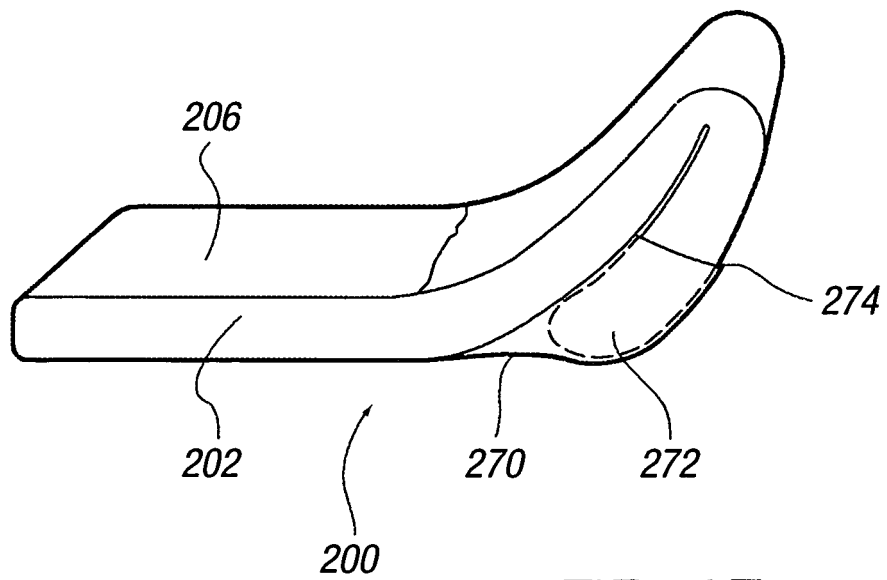


FIG. 15