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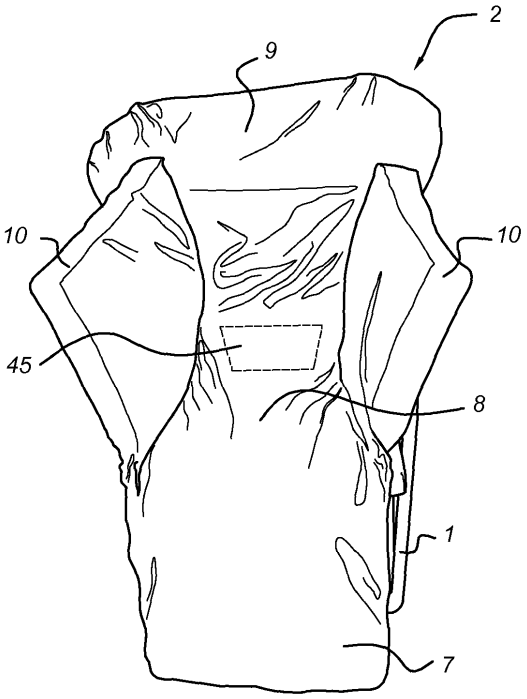
(54) **Support cushion**

(57) Support cushion for a chair or the like. Such support cushion is of cruciform shape and can be curved along four folding lines, thus producing a backrest part, a seat part, a leg part and two armrest parts adjoining the seat part. This can be used in combination with seating furniture, such as a chair, wheelchair or the like. It is proposed to vary the thickness of the cushions of the support cushion depending on the desired degree of support for the seated person. This may be achieved by using support cushions of different sizes on the basis of a certain size of the seating furniture. It is also possible to provide the support cushion with a cover into which filling material is introduced. The filling material may comprise different filling cushions and these may be fitted in a removable manner. The properties may be changed by replacing the entire contents of the cover, that is to say the filling, with a filling having different properties or by only changing parts of said filling. In addition, it is possible to provide the support cushion with hoisting straps, as a result of which said support cushion can be used in combination with a hoist lift or the like.

Fig 1



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Description

[0001] The present invention relates to a support cushion according to the preamble of Claim 1.

[0002] Such a support cushion is known from US 4826242 which discloses a cushion for use in stadiums and the like.

[0003] EP 0726046 discloses a garden chair comprising a seat and a back cushion with different properties. US 2005/0225134 discloses the use of a cushion in combination with a chair frame in which the armrest parts can be attached to the arm parts of the chair frame by means of hook and loop fasteners.

[0004] The present invention relates in particular to support cushions which are used in the healthcare sector. Patients may, for a variety of reasons, require more support than conventional seating furniture can offer.

[0005] The term seating furniture is understood to mean any piece of furniture on which a person can sit, such as a chair, a wheelchair and the like.

[0006] In the prior art, a support cushion for providing additional support to patients has been proposed which is of cruciform shape, comprising a seat part and an adjoining leg part and backrest part situated opposite one another, while armrest parts are provided on the other sides of the seat part. By means of such a support cushion, it is possible to provide improved support to patients.

[0007] However, it has been found that said support cushion does not provide optimum support under all circumstances.

[0008] It is therefore an object of the present invention to provide an improved support cushion by means of which, depending on the circumstances, the patient or any other person sitting in the seating furniture is given optimum support.

[0009] This object is achieved in the above-described support cushion by a support cushion comprising the features of Claim 1.

[0010] According to the invention, a support cushion having particular properties is chosen depending on the respective seating furniture and the patient. These properties will generally relate to the thickness and/or stiffness of the filling, but may also relate to incorporated reinforcements and the like.

[0011] There are various ways of achieving this modification of the support cushion and adapting it to the respective furniture and patient.

[0012] According to a first variant embodiment of the invention, a series of support cushions each having different properties is provided. Depending on the requirements (and size) of the patient, the optimum support cushion from the range can be chosen in combination with the particular seating furniture.

[0013] According to another variant of the invention, a single support cushion is used and this is optimized for the patient by means of local modifications. This optimization can be effected in a variety of ways.

[0014] Thus, it is possible for the support cushion to comprise a cover which surrounds a filling. The different properties can be achieved by changing the filling while retaining the same cover. In this case, it is possible to change the entire filling, but it is also possible to change parts of the filling. Preferably, such parts of the filling correspond to the above-described armrest filling, backrest filling, seat filling and leg filling. It is possible for all parts of the filling to be releasably attached to one another, for example by means of a zip, hook and loop fastener (Velcro) and the like, and thus to be replaceable. It is also possible to insert additional filling parts in order to change the properties of the support cushion. It is for example possible to use parts of different sizes for the left-hand and right-hand armrest filling in order thus to influence the position of the person sitting in the chair or other piece of seating furniture.

[0015] According to a further variant, the support cushion comprises the abovementioned armrest parts, backrest part, seat part and leg part, and these are releasably attached to one another at the folding line between the various parts. Such an attachment may likewise comprise a hook and loop fastener, a zip and the like. With this variant, it is for example possible for an armrest part which comprises both a filling part and a cover part to be replaced in its entirety by an armrest part having different supporting properties.

[0016] According to a further variant, it is possible to change the dimensions as well as the stiffness and prestress by adding inflatable parts. This may be achieved by using a simple air pump or the like. It is also possible to change the properties of the filling in other ways. It is possible to add partitions in the filling and to tilt these by means of, for example, a cable, thus changing the properties of the filling. Other systems which comprise compressing the filling in a certain direction, thus causing the dimensions in the direction at right angles thereto to increase are likewise possible. In addition, it is possible to manufacture certain parts, such as the seat part, from different materials compared to the other parts. Thus, it is for example possible to use foam material for the seat part. However, it is also possible to use a system consisting of two end layers between which vertical columns extend. By displacing such end layers with respect to one another in the plane of these end layers, the distance between these end layers can be varied, so that these connecting columns start to lean over more and more, from a perpendicular position as a result of which the distance between them decreases. In this way, it is possible to modify, inter alia, the seat height, thus making it possible to adjust the latter to the individual circumstances of the user.

[0017] In the above-described manner, it is possible to meet the individual requirements of the patient and thus to provide optimum support. In addition, it is possible to provide the armrest part and/or seat part with (attachments for) lifting loops in order thus to be able to lift the patient seated in a chair and to move him or her. Due to the excellent supporting properties of the supporting

cushion, there is no risk of the patient becoming injured, a risk which is often present in the case of the lifting belts and the like known from the prior art.

[0018] The present invention also relates to a combination of a support cushion and seating furniture comprising a part which is of a cruciform design in the unfolded position and which can be folded along four lines, in which the central part forms a seat part, delimited on one side by a backrest part and delimited on the opposite side by a leg part, in which two opposite armrest parts are fitted to the seat part which are at right angles to the backrest part and the leg part, in which said support cushion comprises a cover containing filling material, said filling material comprising various cushions. This cushion may have the above-described properties with regard to cover, cushion parts and the like.

[0019] It is possible to configure the filling material and/or the filling cushions differently, depending on the position, such as seat, leg, back or arm. Parts which are continuously in contact with the patient may, for example, comprise an anti-decubitus cushion.

[0020] Obviously, the various parts of the support cushion may be made from a material which can easily be cleaned and which, moreover, meets all the requirements of the healthcare sector.

[0021] As a result of the present invention, custom-made chairs can, in many cases, be omitted, since it is possible to provide optimum support for the patient on the basis of a standard chair or other piece of seating furniture by varying the properties of the cushion in a relatively inexpensive way. This relates both to (laterally) enclosing the patient in the chair and to providing sufficient support to the arms and head. In addition, it is readily possible for the user to take the support cushion according to the invention with him, so that he or she can sit comfortably in an optimum seating position anywhere.

[0022] In addition to adjusting a standard chair to a patient in an optimum manner, it is also possible to incorporate devices in the cushion which positively effect the person using the piece of seating furniture. In this context, consideration may be given to massage means and other muscle-stimulating devices. These can be fitted, for example, in such a manner that they affect the upright posture of the patient. If desired, such a construction may be controlled by sensors.

[0023] The invention will be described in more detail below with reference to exemplary embodiments illustrated in the drawing, in which:

Fig. 1 shows a combination according to the invention in front view;
Fig. 2 shows the combination from Fig. 1 in side view;
Fig. 3 shows the support cushion shown in Figs. 1 and 2 in the unfolded position;
Fig. 4 shows the support cushion from Fig. 3 with the cover partially removed;
Fig. 5 shows a piece of seating furniture with a series of support cushions;
Fig. 6 shows an example of a filling;
Fig. 7 shows a further variant of the invention;
Fig. 8 shows a particular embodiment of the invention;
Fig. 9 shows a series of armrest parts; and
Figs. 10a and b show an example of an embodimentof a seat part.

[0024] In Figs. 1 and 2, a piece of seating furniture, in this case a chair, is denoted overall by reference numeral 1. This chair is a standard chair, that is to say it is not custom made, and is provided with a support cushion 2 according to the present invention.

[0025] According to the present invention, the spaces delimited within the chair (armrests) and the support cushion is modified in an optimum manner to suit the patient sitting in the chair by varying the dimensions of the support cushion. Examples thereof will be given below. The armrest part 10 or the stiffness thereof can be adapted to the individual requirements. In addition, it is readily possible to subsequently make further modifications by adding or removing air. Moreover, two sensors 44 are provided which monitor whether the person in question is sitting correctly, i.e. symmetrically, in the chair by measuring the pressure. A vibrating device 45 is fitted which is able to produce different reactions on the left-hand armrest part and on the right-hand armrest part 10, thus stimulating the person sitting in the chair to sit straight in the chair.

[0026] Fig. 3 shows the support cushion 2 from Figs. 1 and 2 in the unfolded position in order to illustrate the different parts thereof more clearly. The support cushion consists of a central seat part 8 which is separated from a backrest part 9, an armrest part 10, a seat part 7 and another armrest part 10 by means of folding edges 3-6. The armrest parts 10 are fitted substantially at right angles to the 'line' defined by leg part, seat part and backrest part. Adjoining the backrest part 9 is an optional headrest part 11 which may be slightly wider.

[0027] According to a first variant illustrated in Fig. 4, the filling 14 can be removed from the cover 13 of the support cushion. To this end, the cover has a reclosable opening 31 at the free end of the leg part 7 which can be closed by means of a hook and loop fastener, zip or the like. As a result thereof, the filling 14 can easily be replaced by a filling having other, more desirable properties. This may be a thicker or thinner filling which may optionally be provided with other reinforcements or parts having special properties (anti-decubitus).

[0028] Fig. 5 shows another variant as a result of which it is possible to optimize the patient's circumstances. On the basis of the piece of seating furniture 1, a series of different support cushions are provided which are denoted by reference numerals 16, 17 and 18. Each of these support cushions has different properties, for example regarding thickness and stiffness, and depending on the patient's build and the desired degree of support, a certain cushion may be chosen. Each support cushion is

complete as such.

[0029] Fig. 6 shows a variant of the invention. This is a modification to the embodiment illustrated in Fig. 4. In this variant, filling 14 is composed of a number of filling parts which correspond to the above-mentioned armrest parts, backrest part, seat part and leg part. These are connected to one another by partitions 19-23. These partitions are detachable and may, for example, comprise zips, hook and loop fasteners and the like. As a result thereof, it is possible to replace only parts of the filling and to modify the latter to the desired circumstances in an optimum manner.

[0030] Fig. 7 shows a variant of the support cushion denoted by reference numeral 24, with the filling and the optional cover being seen as a combination. As a result thereof, it is no longer necessary to separate cover and filling and it is possible to achieve the desired structure of the support cushion quickly by combining individual units.

[0031] Fig. 8 shows a further support cushion denoted by reference numeral 33, in which a lifting loop 32 (or the loop fastening, not shown) is attached to the seat part and/or arm part. As a result thereof, a patient can be lifted and moved using a hoist lift or hand lift or the like without the risk of injury.

[0032] With all the above-described embodiments, it is, of course, possible to separate the cover from the filling in order to clean it.

[0033] Fig. 9 shows three different armrest parts 10, 10', 10" of increasing thickness. Starting from the variant shown in Figs. 3 and 4, the support cushion consists of either a cover 13 (as illustrated) into which various fillings to be connected to one another, such as a backrest filling, an armrest filling and a seat filling, can be placed. However, it is also possible to use two or more cover parts which are (optionally detachably) connected to one another instead of one single cover. In the case of cover parts, the cover part with filling can be replaced as a single unit in order to provide optimum characteristics of the support cushion. Obviously, it is possible for zips, hook and loop fasteners and the like to be present for this purpose.

[0034] Figs. 10a, b show a seat part 47 which consists of a readily deformable material through which a cable 48 extends. On one side of the seat part, this cable is retained by a disc 49, and on the other side a disc 50 is likewise present by means of which the cable can be connected in various positions. By pulling the cable, the seat part 47 will become shorter and higher and, in this manner, its properties can be modified.

[0035] According to a further embodiment of the invention, the backrest part may be embodied such that it not only provides support in the backward direction, but also gives the possibility of offering support in a lateral direction. As a result thereof, it is easier for the user to rotate his or her torso in order thus to be able to take up different positions.

[0036] Upon reading the above, those skilled in the art will immediately be able to think of several variants which are obvious in view of the above and fall within the scope of the claims.

Claims

1. Support cushion (2, 16, 17, 18, 24, 33) for seating furniture, which support cushion comprises, in the unfolded position, an assembly of cruciform shape which can be folded along four folding lines (3-6), wherein a central part forms a seat part (8), delimited on one side by a backrest part (9) and delimited on the opposite side by a leg part (7), wherein two opposite armrest parts are fitted to the seat part which are at right angles to the backrest part and the leg part, the thickness of one of said parts of said support cushion being adapted to the user, wherein said cruciform assembly comprises a cover containing seat filling, backrest filling, leg filling and armrest fillings, wherein the cover is provided with a closable opening for changing said fillings.

2. Support cushion according to Claim 1, wherein the backrest part (9) comprises an extension which forms a headrest part (11).

3. Support cushion according to Claim 2, wherein the headrest part (11) is widened with respect to the backrest part.

4. Support cushion according to one of the preceding claims, wherein hoisting loops (32) are attached to said seat part (8) or said armrest part (10).

5. Support cushion according to one of the preceding claims, wherein said fillings comprise different fillings.

6. Support cushion according to one of the preceding claims, wherein said filling comprises local reinforcements.

7. Support cushion according to one of the preceding claims, wherein said filling comprises a decubitus cushion.

8. Support cushion according to one of the preceding claims, wherein said opening can be closed by means of a zip.

9. Support cushion according to one of the preceding claims, wherein said opening can be closed by means of a hook and loop fastener (Velcro).

10. Support cushion according to one of the preceding claims, wherein said armrest parts (10) are freely displaceable with respect to the backrest part.

11. Support cushion according to one of the preceding claims, wherein said filling can be modified mechanically in order to change the supporting properties thereof.

12. Set of fillings (10, 10' 10") of increasing thickness or stiffness, wherein each filling can be fitted in the same position in a cover of a support cushion according to one of the preceding claims.

Fig 1

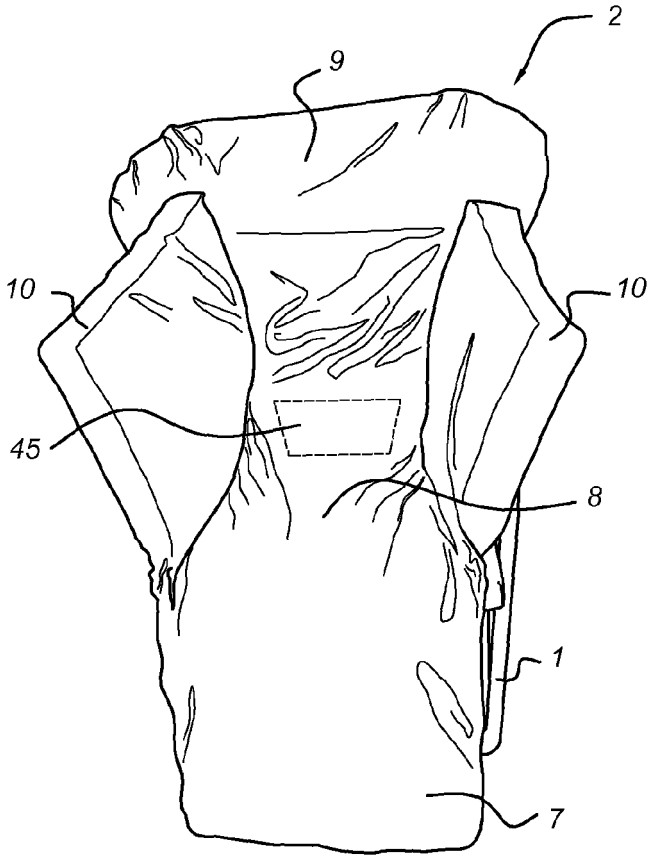


Fig 2

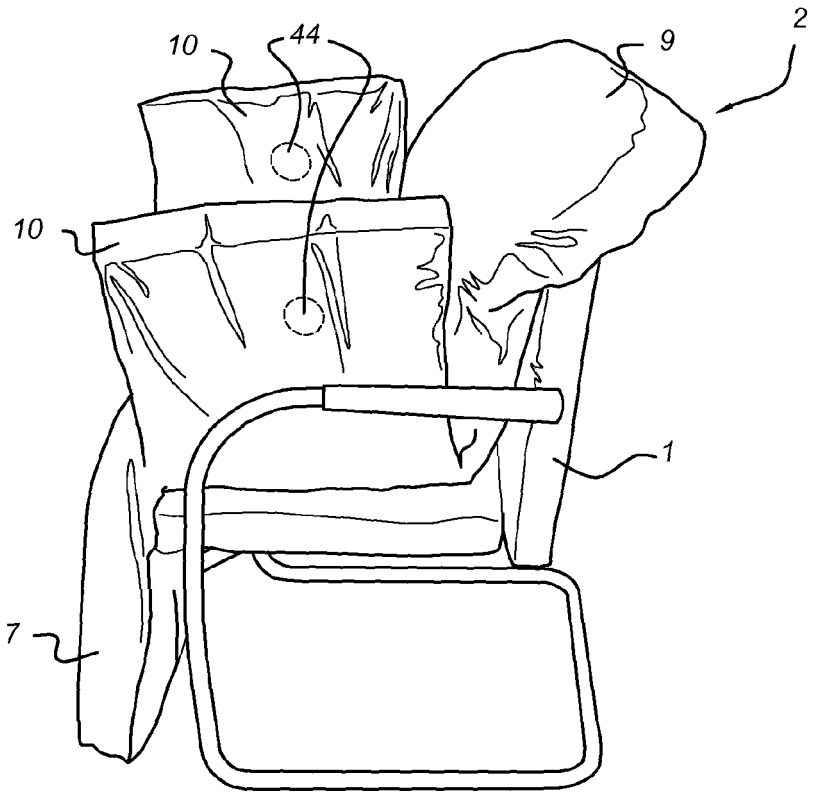


Fig 3

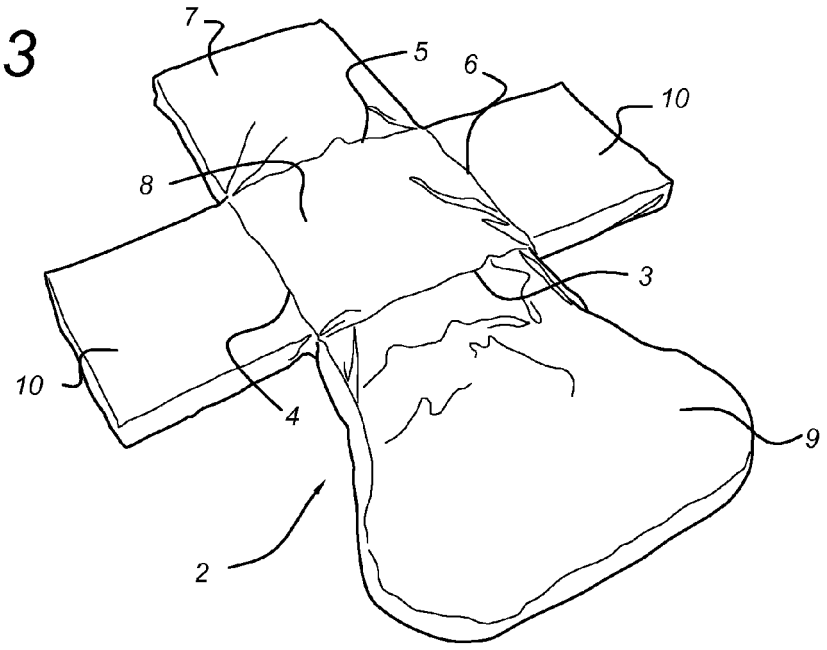


Fig 4

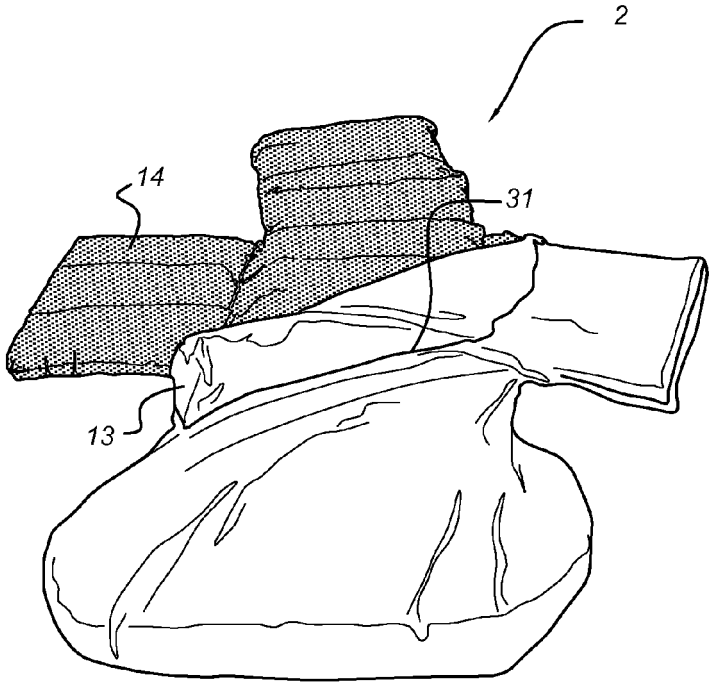


Fig 5

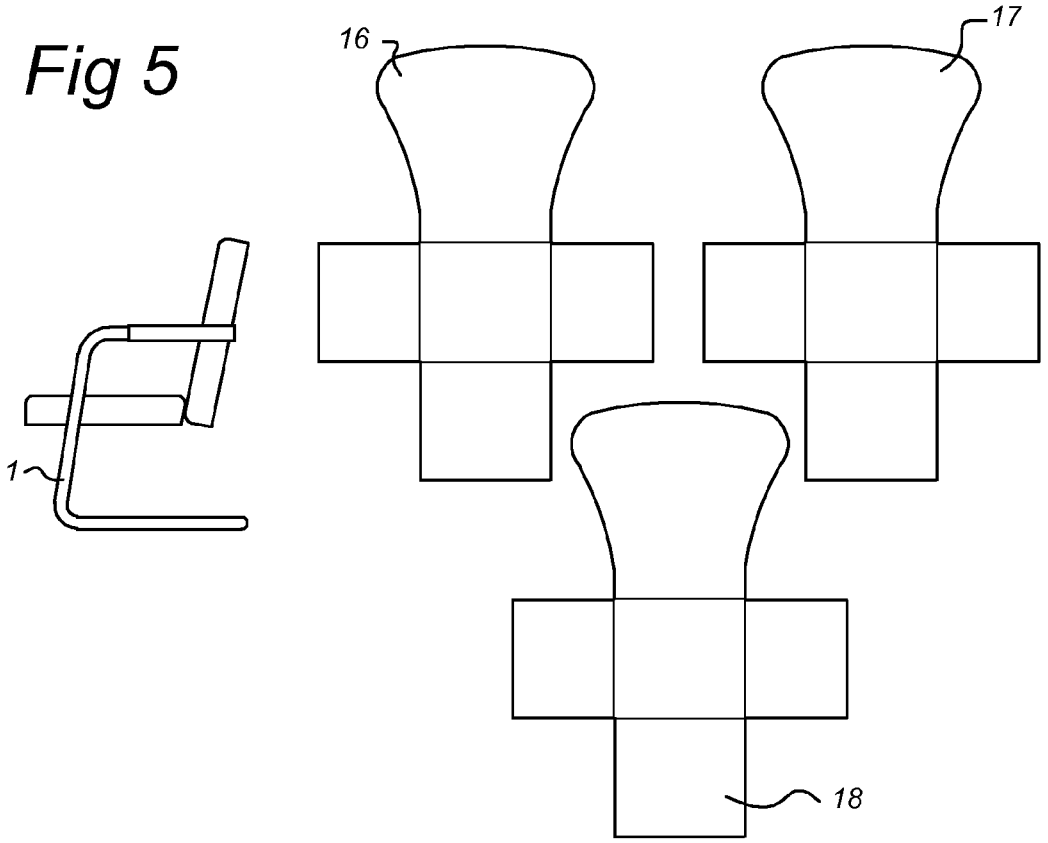


Fig 6

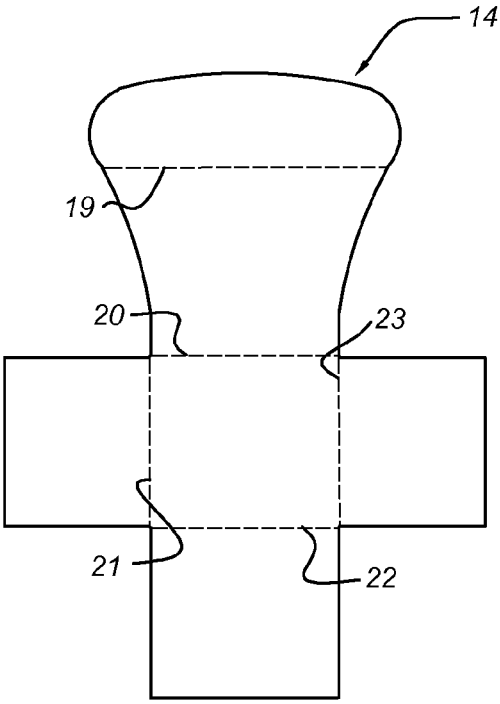


Fig 7

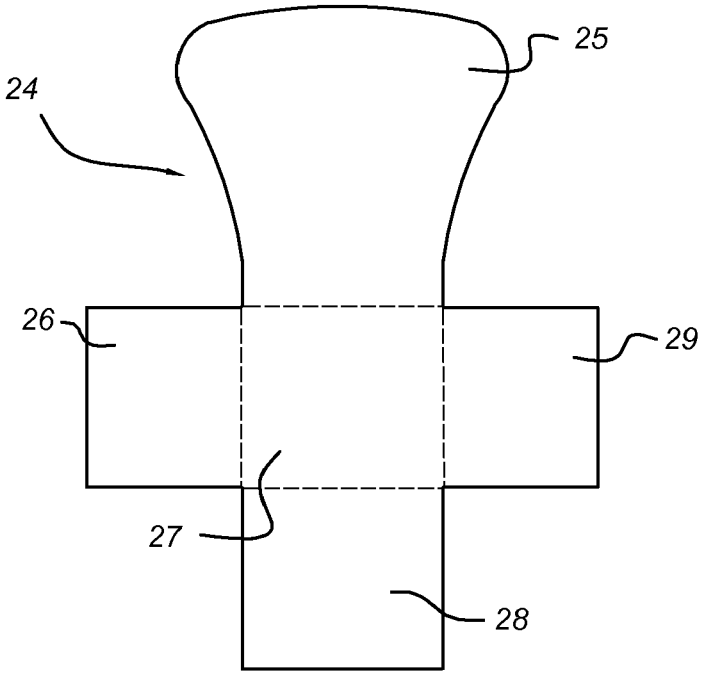


Fig 8

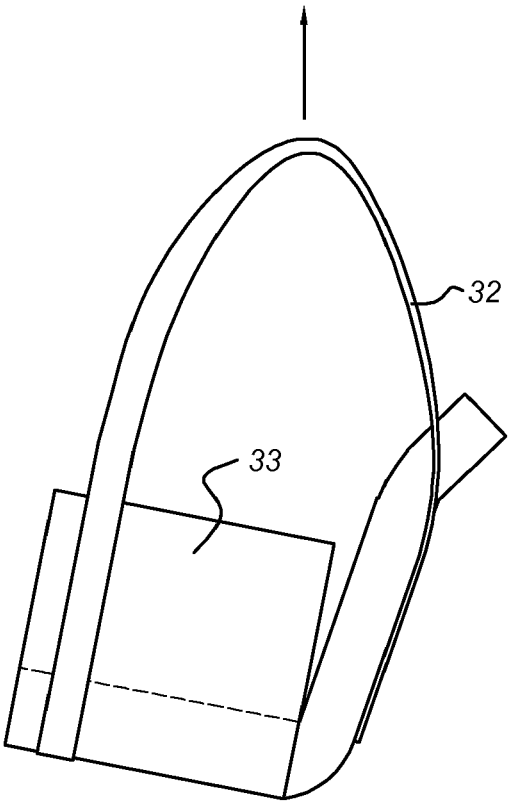


Fig 9

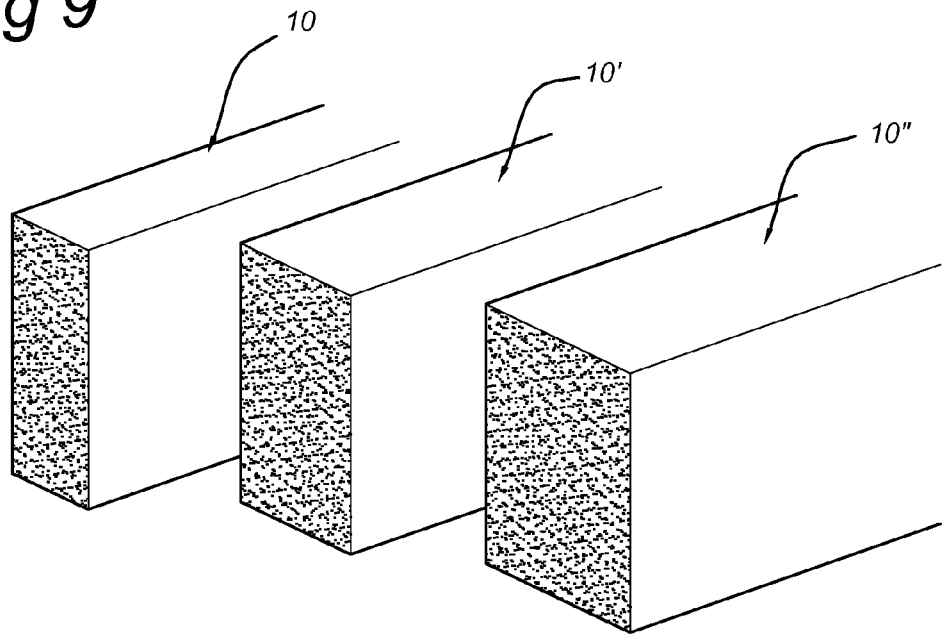


Fig 10a

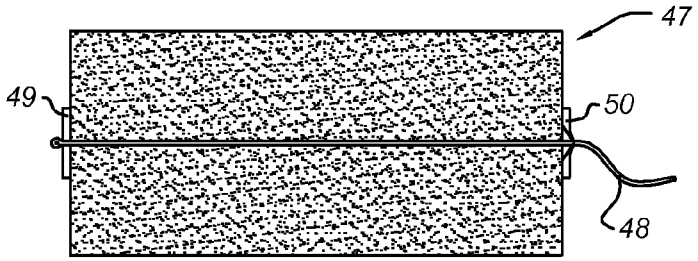
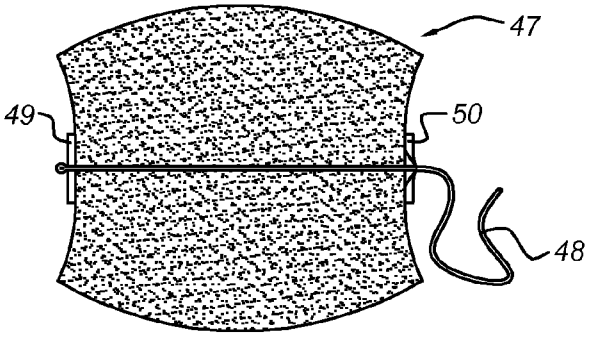


Fig 10b



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 4826242 A **[0002]**
- EP 0726046 A **[0003]**
- US 20050225134 A **[0003]**