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(54) **ASYMMETRIC BODY PILLOW FOR USE IN THE 3/4 PRONE POSITION**

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(57) **ABSTRACT**

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The pillow (10) comprises two adjacent portions, a lower portion (12) with an elongated shape extending in a longitudinal direction substantially parallel to the human subject's body and a truncular portion (14) extending the lower portion on the proximal side. The lower portion is intended for supporting a right or left subject's lower limb (42), while the truncular portion, extending transversely and in a dissymmetrical manner relative to the lower portion, supports the homolateral side of the thorax as well as the homolateral upper limb (38) of the subject. The distal edge (46) of the truncular portion forms a resting edge for the top of the subject's thorax, and the pillow is essentially devoid of a portion for supporting the subject's head (44).

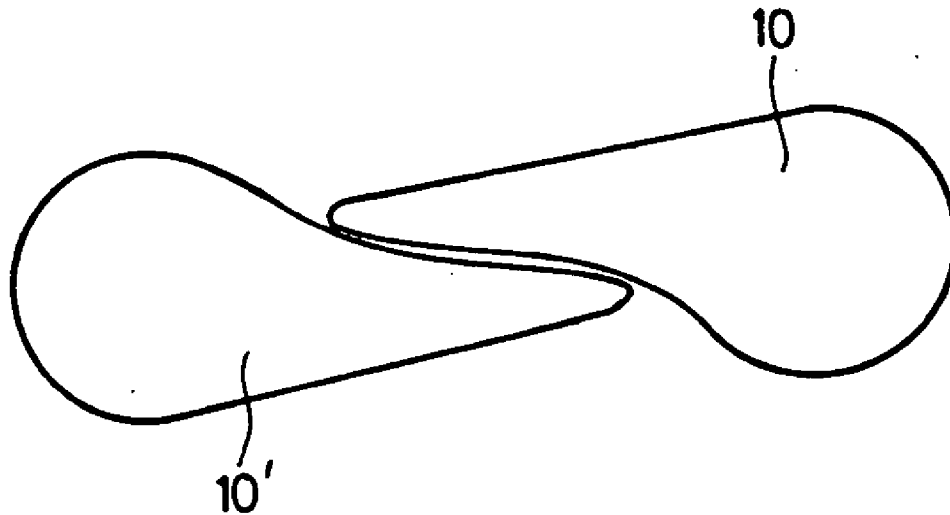
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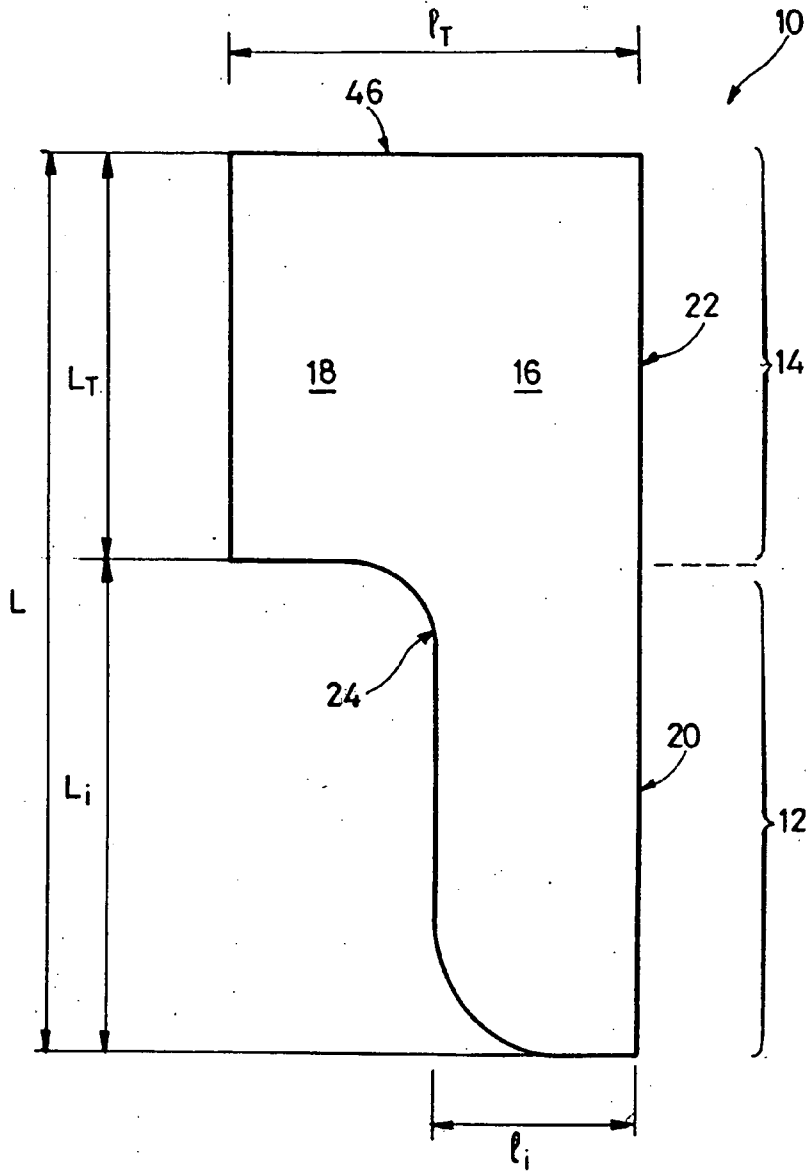
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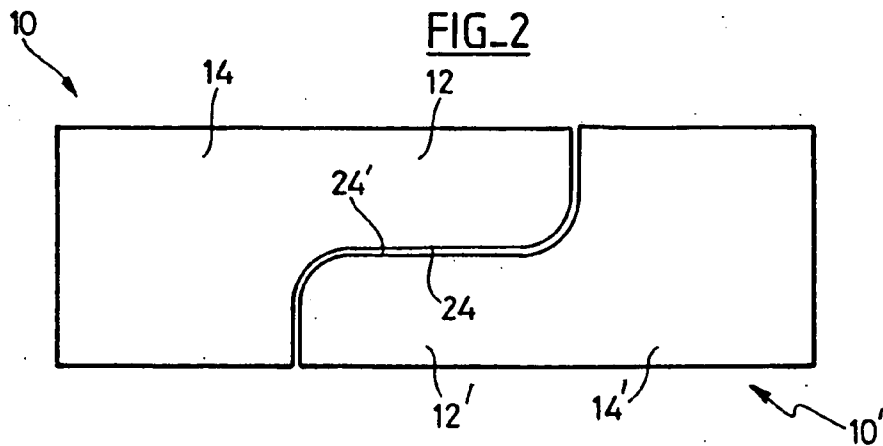
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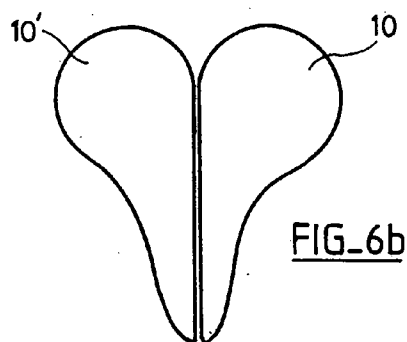
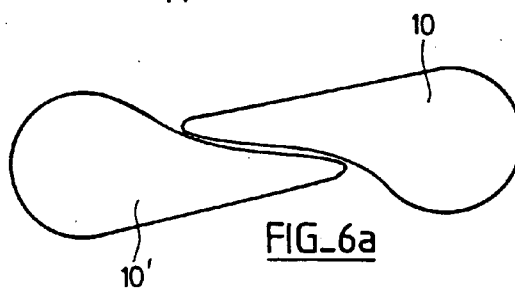
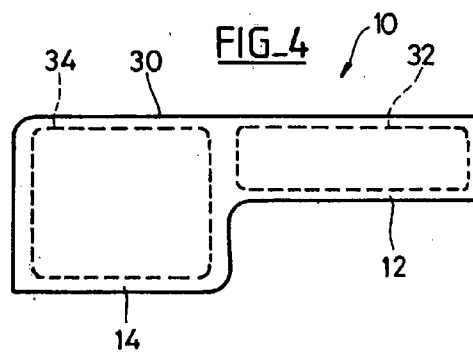
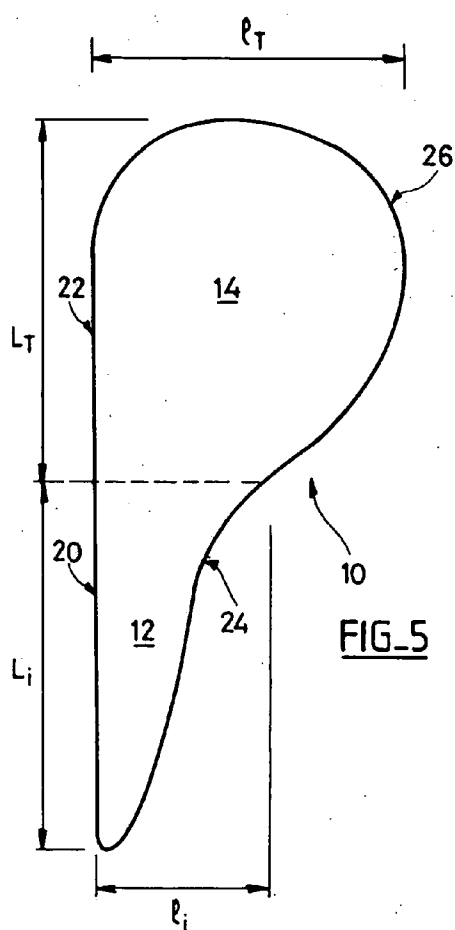
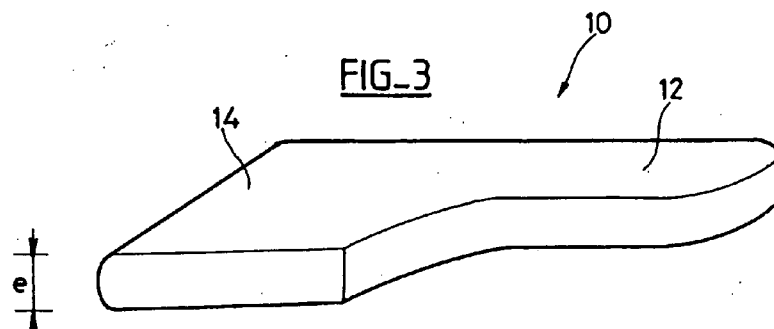


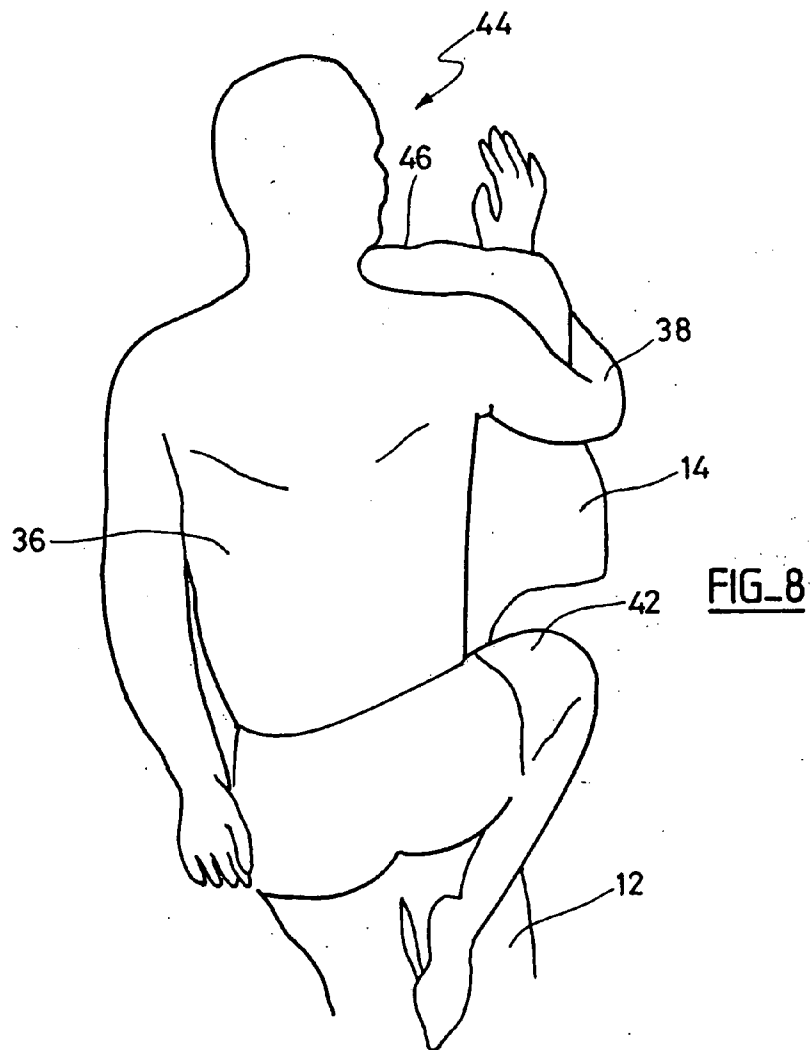
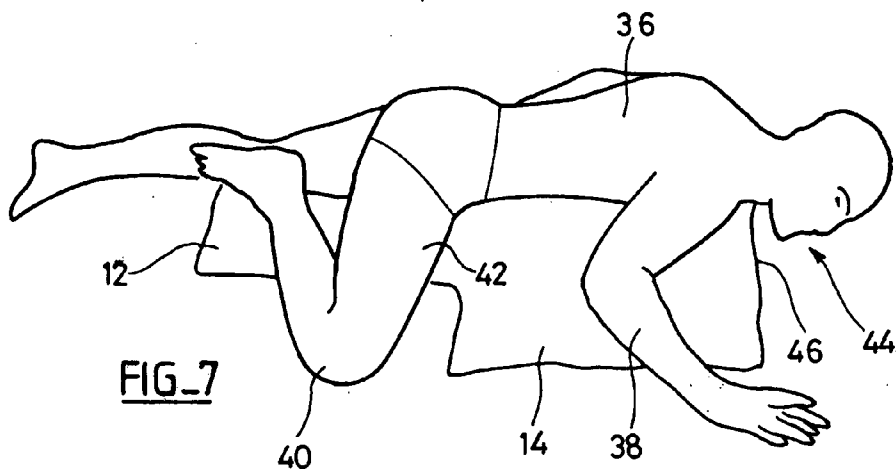


FIG\_1



FIG\_2





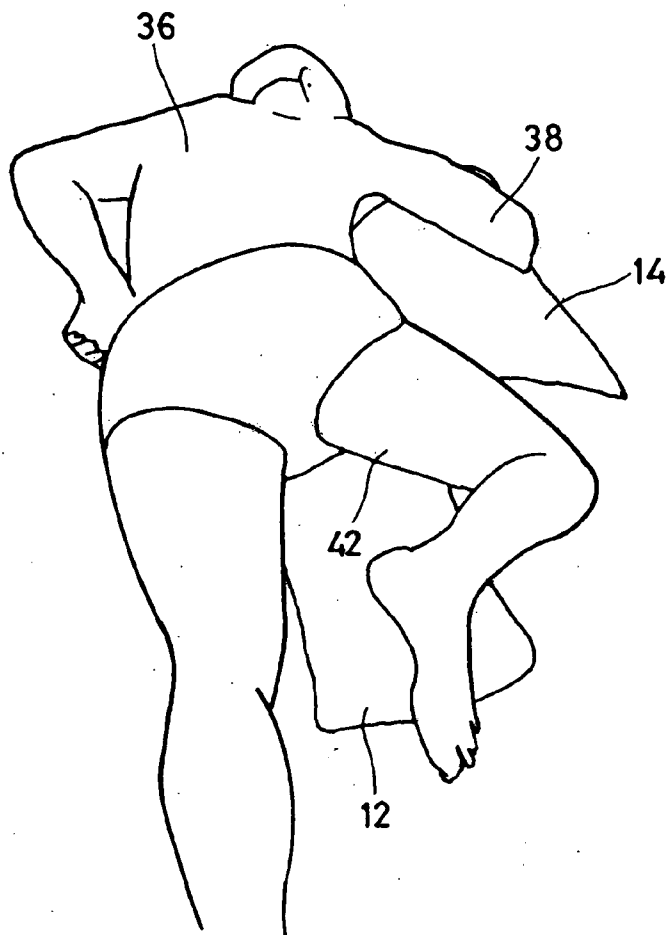


FIG. 9

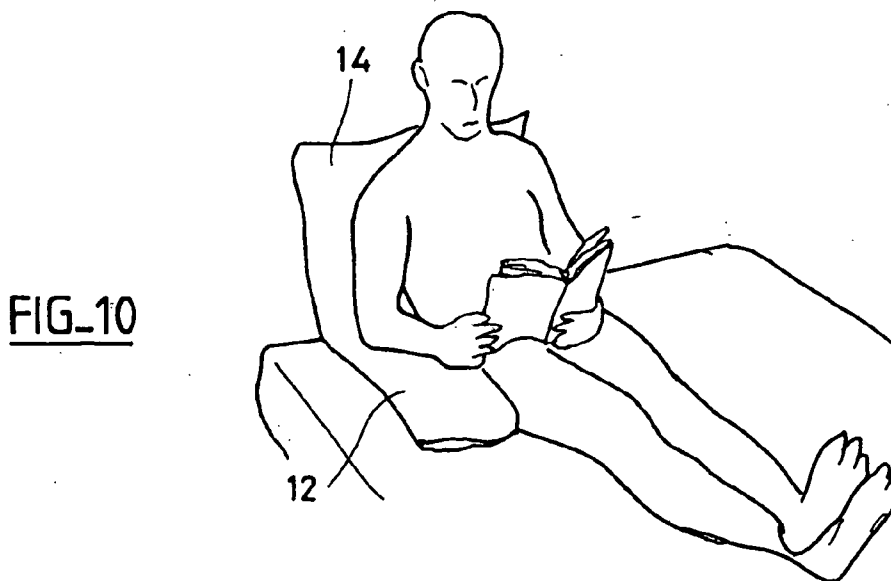


FIG. 10

### ASYMMETRIC BODY PILLOW FOR USE IN THE 3/4 PRONE POSITION

**[0001]** The invention relates to a bedding piece of the body pillow type, that is an asymmetric body pillow comprising a malleable cover filled with a soft filler material.

**[0002]** Such a pillow is intended for being interposed between the reclined body of a human subject and a horizontal surface such as a mattress top or the ground on which the subject reclines.

**[0003]** Generally, such body pillows are intended for allowing subjects to rest the most comfortably on their back (dorsal decubitus) and/or on their side (lateral decubitus) while being given a support in this position.

**[0004]** So U.S. Pat. No. 4,574,412 A describes an L-shaped pillow comprising a support (the transverse part of the “L”) for the subject’s head and neck. This pillow can be used by the subject reclining either in the back position (the transverse part then serving as a bed pillow) or the three-quarter back position (in which case the longitudinal part of the “L” also provides subject’s back support). Using this pillow for a prone resting position is not suggested anywhere therein—quite the reverse, the pillow-to-mattress side fasteners would provide discomfort to the subject using the pillow in this position.

**[0005]** U.S. Pat. No. 2,720,660 A describes a pillow intended for head and neck support, with a different pillow positioning according to the position the subject chooses: in the back position, the pillow is placed transversely like a bed pillow or a bolster, providing additionally a neck support; in the prone position, the pillow is placed diagonally with one pillow-half under the head and the other half under the thorax; finally, in the side position, the pillow is placed for subject’s face support. In all the contemplated positions, the pillow’s function is a total or partial subject’s head support.

**[0006]** U.S. Pat. No. 4,731,890 A describes a pillow for use by a seated mother with her baby in her arms. The pillow has a generally L-shape, one arm of the “L” being placed between the mother’s back and the armchair back while the other arm is brought back in front of the mother, serving as a cushion for the baby.

**[0007]** CA 2 244 167 A1 describes a body pillow for a pregnant woman in a lateral decubitus position. A portion of the pillow provides abdominal support, while another portion is placed between the knees to relieve hip pain.

**[0008]** WO 2007/048236 A1 describes a pillow more particularly adapted to be used by a person suffering from snoring to sleep in the lateral safety position. This pillow is intended for use in a strict lateral decubitus position and prevents the user from toppling into the prone position (or even the back position), these positions being considered harmful. The pillow also comprises an end portion for subject’s head support.

**[0009]** U.S. Pat. No. D 453,653 S illustrates a reverse J-shaped pillow with a rounded portion very likely intended for subject’s head surrounding support.

**[0010]** Other pillows, specifically designed for the lateral decubitus position, are described for example in U.S. Pat. No. 6,499,164 A, U.S. Pat. No. 5,097,551 A, U.S. Pat. No. 4,901,384 A, U.S. Pat. No. 6,874,183 A or U.S. Pat. No. 7,089,614 A.

**[0011]** An object of the invention is another type of body pillow.

**[0012]** Indeed, the body pillow according to the invention is adapted to a ventral decubitus position, i.e. a position in which the patient’s thorax (and no longer his/her side) rests against the ground or the mattress, a position also called “ $\frac{3}{4}$  ventral” or “ $\frac{3}{4}$  prone” position.

**[0013]** In that case, the main difficulty is to provide a correct head position, notably while minimizing cervical strains, so as to prevent any occurrence of pain or development of arthrosis in this area.

**[0014]** Among the hereinabove mentioned documents, U.S. Pat. No. 2,720,660 A alone mentions the possibility of use in the prone position (among other positions). But in this document, a subject’s head support is always contemplated whatever the subject’s position is. Besides, the various other hereinabove mentioned documents aim at the same goal.

**[0015]** Otherwise, the supports until now specifically proposed for the ventral decubitus position all contemplate a particularly conformed head support. So, U.S. Pat. No. 7,017,213 A provides a support comprising two longitudinally and transversely offset elements, a first element forming a bed pillow for the head to rest and a second element placed along the body. The elements are both wedge-shaped but with opposite inclinations so as to define two different sloping planes, one for the body and the other for the head. U.S. Pat. No. 6,047,420 A describes another type of support adapted to the ventral decubitus position, comprising an element for head support at the forehead, supplemented with elements for shoulder support. The space between the forehead and the neck is kept away from the supporting surface so as to allow air flow around the subject’s face.

**[0016]** In concrete terms, these supports, which are mainly designed for hospital use, prove rather uncomfortable and do not suit a daily common use for a person looking above all for a comfortable  $\frac{3}{4}$  prone sleeping position during the night.

**[0017]** The invention provides a new type of body pillow, specifically adapted to a resting or sleeping position in which the subject’s body faces the ground or the mattress.

**[0018]** The starting point of the invention is the observation that, contrary to what could be expected, a head support by the pillow is not essential to provide a support morphologically adapted to that particular position.

**[0019]** One of the main characteristics of the pillow according to the invention is, as will be seen hereinafter, that it does not support the subject’s head.

**[0020]** This runs counter to the preconceived opinion that, to prevent or relieve cervical strains, it is necessary to provide a correct support of the subject’s head when the latter is in a prone position (just as well as in a back or side position). The merit of the invention is to go beyond this preconceived opinion, showing it is possible to offer a pillow for use in a three-quarter prone position without any head support but providing nevertheless many advantages that will be explained hereinafter, such as very great comfort, lordosis flattening providing cervical and lumber pain prevention, etc.

**[0021]** The pillow according to the invention is a bedding piece of the general type described in the above mentioned U.S. Pat. No. 4,574,412 A, i.e. in the form of a substantially flat asymmetric body pillow, comprising a malleable cover filled with a soft filler material. This pillow is suited to be interposed between the reclined body of a human subject and a surface such as a mattress face or the ground supporting the subject’s body, and comprises two adjacent portions connected by one of their edges, each of these portions extending continuously within the boundaries of a substantially rectan-

gular or round contour. A first portion has an elongated shape extending in a longitudinal direction substantially parallel to the subject's body, while a second portion extends the lower portion on the proximal side, this second portion having an elongated shape extending transversely and in a dissymmetrical manner relative to the lower portion.

**[0022]** Characteristically, according to the invention, the pillow is suited to be used with the subject reclined in the  $\frac{3}{4}$  prone position on the supporting surface, and is essentially devoid of a portion for supporting the subject's head. The first portion is a lower portion suited to support a right or left subject's lower limb, while the second portion is a truncular portion suited to support the homolateral side of the thorax as well as the homolateral upper limb of the subject, and the longitudinally distal edge of the truncular portion forms a resting edge for the top of the subject's thorax.

**[0023]** In other words, the pillow according to the present invention is essentially characterized by:

**[0024]** the purpose of the pillow, which is suited to be used by a subject in the three-quarter prone position;

**[0025]** the absence of a portion for supporting the subject's head;

**[0026]** the fact that the upper portion ("second portion") is intended for supporting the subject's thorax and homolateral upper limb: this characteristic is behind the phrase "truncular portion", the upper edge of this truncular portion thus forming the resting edge for the top of the subject's thorax (and not for his/her head); and

**[0027]** the rest of the pillow ("first portion" or "lower portion") being intended for supporting the subject's homolateral lower limb.

**[0028]** According to various advantageous subsidiary characteristics:

**[0029]** the pillow does not have any thickness discontinuity in the connecting area between the truncular portion and the lower portion;

**[0030]** the pillow thickness is substantially constant over the whole extent of the lower portion and the truncular portion;

**[0031]** the ratio between the mean thickness of the pillow and the mean transverse width of the truncular portion is  $1:3\pm 20\%$ ;

**[0032]** the truncular portion extends transversely essentially on only one side relative to the lower portion;

**[0033]** the truncular portion edge opposite to said side connects without discontinuity to the adjacent edge of the lower portion, these edges being preferably straight and lined up;

**[0034]** in the longitudinal direction, the ratio between the mean length of the lower portion and the mean length of the truncular portion is  $60:50\pm 20\%$ ;

**[0035]** the lower portion connects to the adjacent area of the truncular portion forming a transverse width discontinuity;

**[0036]** in the transverse direction, the width of the lower portion and/or the truncular portion is substantially constant;

**[0037]** in the transverse direction, the ratio between the mean width of the lower portion and the mean width of the truncular portion is  $1:2\pm 20\%$ ;

**[0038]** in a variant, the pillow width can decrease continuously in the transverse direction from the truncular portion to the lower portion, and/or the truncular portion has a substantially rounded shape.

**[0039]** Another object of the invention is a method for positioning a reclined subject on a supporting surface, such as a mattress face or the ground, with a body pillow as above mentioned interposed therebetween, wherein the subject carries out the following steps: a) arranging the pillow longitudinally along his/her body, with the head beyond the truncular portion; b) placing the right or left pillow-half under his/her thorax up to be in a  $\frac{3}{4}$  prone position; c) straddling the lower portion with the homolateral lower limb and crossing the proximal portion of the lower portion with the inner side of the thigh; and d) putting the cheek on the supporting surface.

**[0040]** An embodiment example of the device according to the invention will now be described, with reference to the appended drawings in which the same reference numerals are used throughout the different figures to designate identical or functionally similar elements.

**[0041]** FIG. 1 is a plane view of a body pillow according to an embodiment of the invention;

**[0042]** FIG. 2 shows how to place two identical pillows similar to that of FIG. 1 in a head-to-tail arrangement, when these pillows are not in use;

**[0043]** FIG. 3 is a perspective view of the pillow of FIG. 1, showing the thickness thereof;

**[0044]** FIG. 4 is a variant of the pillow of FIG. 1, wherein the latter is made from two elements enclosed into a common pillow case;

**[0045]** FIG. 5 shows another embodiment of the pillow according to the invention;

**[0046]** FIGS. 6a and 6b show two ways of arranging two identical pillows similar to that of FIG. 5 in a side-by-side arrangement, when these pillows are not in use;

**[0047]** FIGS. 7 to 9 show, in different views, how the pillow of FIG. 1 is used with the subject reclined in a  $\frac{3}{4}$  prone position;

**[0048]** FIG. 10 shows a possible use of the pillow of FIG. 1 as a support in reading position.

**[0049]** FIGS. 1 to 3 show an embodiment example of a pillow according to the teachings of the invention. However, this example is for illustrative purpose only and many shape and dimension variants are possible without departing from the scope of the invention.

**[0050]** Body pillow 10 is made of only one part, with two separable or not adjacent portions 12, 14.

**[0051]** The first portion, hereinafter called "lower portion" 12, has an elongated shape intended for receiving the subject's lower limb (thigh, knee, leg and/or foot, according to the flexion of the limb).

**[0052]** The second portion, hereinafter called "truncular portion" 14, extending the lower part on the proximal side, is intended for receiving the subject's trunk as well as his/her homolateral upper limb (i.e. the right arm if the right leg rests on the lower portion, or conversely the left arm and the left leg in a symmetrical position).

**[0053]** Truncular portion 14 comprises a first area 16 in the extension of lower portion 12, and another area 18 transversely extending the area 16 in a dissymmetrical manner relative to the lower portion. In the illustrated example, respective edges 20, 22 of both lower portion 12 and truncular portion 14 on the opposite side relative to area 18 are substantially straight and lined up, that is, in the transverse direction, truncular portion 14 laterally projects on only one side relative to lower portion 12. However, this configuration is not limitative and a configuration in which truncular portion 14 comprises a projecting area opposite to area 18, thus giving

the whole pillow **10** a general dissymmetrical T-shaped configuration in place of a general L-shaped configuration, is also possible.

**[0054]** The surfaces of each of lower portion **12** and truncular portion **14** are surfaces that extend continuously within the boundaries of a contour devoid of local concavity; that is a contour, substantially rectangular in the example of FIG. 1, defining for the whole body pillow a general L-shape or dissymmetrical T-shape, but not a U-shape, J-shape or S-shape.

**[0055]** The pillow is typically made from a cover defining the illustrated shape, filled with a suitable filler material. The cover may be made of fabric, plastic material or leather, or any other material according to the specific intended use and based on the comfort and/or health practical indications. The filler material also varies according to the use. It can be foam, water, balls . . . , the most suitable matter for the comfort of a European sleeper being goose feather and down, or an equivalent filler material, for reasons of consistency, thermal control, morphological adaptation, bulk memory after use, and lightness.

**[0056]** Advantageously, lower portion **12** and truncular portion **14** have respective longitudinal length  $L_T$  and  $L_T'$  the ratio of which is 6:5, whatever the total length  $L$  of the pillow is. Length  $L_T$  of lower portion **12** is about a third of the subject's size, namely about 60 cm for a 1.80 m tall subject, which gives a length  $L_T=50$  cm for truncular portion **14** and thus a total length  $L=110$  cm for the pillow.

**[0057]** In the transverse direction, width  $l_T$  of truncular portion **14** is about twice the width  $l_T'$  of lower portion **12**. For an approximately square-shaped truncular portion **14**, widths are thus  $l_T=50$  cm and  $l_T'=25$  cm.

**[0058]** The thickness  $e$  (FIG. 3) varies for the different models but, for a same model, it is preferably approximately constant over the whole extent of the body pillow **10** (except, of course, near the edges). The thickness is preferably a third of width  $l_T$  of truncular portion **14**.

**[0059]** The above mentioned dimensions are of course given only by way of example and can notably vary in function of:

**[0060]** the subject's size, age, weight or condition (pregnant woman), sex, possible medical pathology (orthopaedic, respiratory or neurological), possible handicap or deficiency;

**[0061]** the bed or support size;

**[0062]** the appearance;

**[0063]** the prevention of certain affections, diseases or deformations.

**[0064]** Generally, the bulk of the body pillow according to the invention is notable for the asymmetry thereof.

**[0065]** Besides the functional aspect thereof that will be explained hereinafter, this asymmetry can be used, as illustrated in FIG. 2, through joining of two identical pillows **10**, **10'** in a head-to-tail arrangement so that the two respective contours **24**, **24'** match together and fit into each other, connecting the lower portion to the truncular portion. In particular, if the lower portion **12**, **12'** has a width of half that of the truncular portion, the assembly of two pillows forms an approximately rectangular set with a length of  $110+50=160$  cm, which is a suitable dimension for a standard mattress width. Two pillows so joined can be disposed at bedside when they are not in use, just like a bolster.

**[0066]** In a simplified form illustrated in FIG. 4, the pillow according to the invention is obtained through combining in a

common cover **30** a first elongated element **32** corresponding to a half bolster and a substantially squared element **34** corresponding to a conventional 50x50 cm bed pillow. The pillow then consists of pillow case **10** enveloping these two elements **32**, **34**.

**[0067]** Different shape variants are also possible, such as those illustrated in FIG. 5 and FIGS. 6a and 6b. In this variant, pillow **10** is approximately half-heart-shaped, with a truncular portion **14** the outer contour **26** of which is rounded and connects without discontinuity to an also rounded contour **24** of lower portion **12**. On the other hand, edges **20**, **22** of both lower portion **12** and truncular portion **14** are substantially straight and lined up. Two identical elements **10**, **10'** can be joined either in a head-to-tail arrangement to form a bolster-shaped elongated set as illustrated in FIG. 6a, or in a side-by-side arrangement of their respective straight edge forming a whole heart-shape as illustrated in FIG. 6b.

**[0068]** How to use the pillow according to the invention will now be explained with reference to FIGS. 7 to 9 which show a subject reclined in the  $\frac{3}{4}$  prone position, with a body pillow such as that illustrated in FIG. 1 interposed between him/her and the mattress.

**[0069]** So as to position himself/herself, subject **36** lies down laterally just against the longest length of lower portion **12**; he/she covers truncular portion **14** with his/her homolateral arm **38** (right arm in FIGS. 7 to 9) and place about about half of truncular portion **14** under his/her thorax. The homolateral lower limb **40** (right leg in the example of FIGS. 7 to 9) straddles lower portion **12**, the inner side of the left thigh **42** crossing the proximal portion of lower portion **12**. The flexion of the hip is according to the subject's desire. The face **44** is placed just beyond the upper edge **46** of the pillow truncular portion **14** and the cheek rests directly on the mattress or another support, the contact being a direct contact without the pillow interposed, the latter supporting the neck but not the head.

**[0070]** The body pillow according to the invention has many advantages, notably:

**[0071]** a very great comfort;

**[0072]** an easy side-changing operation (to shift from one side to the other, the subject has just to move over the pillow and to make it turn upside down);

**[0073]** the pillow enables the subject to go on sleeping face down in the prone position as long as possible throughout his/her life;

**[0074]** various psychological advantages are obtained, such as: feeling less alone, reassuring contact with the mattress, feeling of having one's face laid on a place without space limitation (unlike a cervical pillow for example), etc.;

**[0075]** thermal control;

**[0076]** snoring prevention;

**[0077]** spinal analgesia;

**[0078]** lordosis flattening providing a cervical and lumbar pain prevention (relative to a full ventral decubitus position without a body pillow, the rotation in the cervical and lumbar area is far lesser);

**[0079]** bronchial drainage stimulation (a better position than a full dorsal or ventral decubitus position);

**[0080]** abdominal support (obesity or pregnancy);

**[0081]** lateral safety position (notably in a hospital environment).

**[0082]** A subsidiary advantage of the invention, illustrated in FIG. 10, is the possibility of using it as a pillow for a



half-seated reading position on the bed, truncular portion **14** being used similarly to a bed pillow for resting of the patient's back, while the arm rests on lower portion **12**.

**1.** A bedding piece in the form of an asymmetric body pillow (**10**) comprising a malleable cover filled with a soft filler material, said pillow being suited to be interposed between the reclined body of a human subject (**36**) and a surface such as a mattress face or the ground supporting the subject's body, wherein the pillow is a substantially flat pillow comprising two adjacent portions connected by one of their edges, each of these portions extending continuously within the boundaries of a substantially rectangular or round contour, with:

a first portion (**12**) with an elongated shape extending in a longitudinal direction substantially parallel to the subject's body; and

a second portion (**14**) extending the lower portion on the proximal side, said second portion having an elongated shape extending transversely and in a dissymmetrical manner relative to the lower portion,

said bedding piece being characterized in that:

the pillow is suited to be used with the subject reclined in the ¾ prone position on the supporting surface;

the pillow is essentially devoid of a portion for supporting the subject's head;

the first portion is a lower portion suited to support a right or left subject's lower limb;

the second portion is a truncular portion suited to support the homolateral side of the thorax as well as the homolateral upper limb of the subject; and

the longitudinally distal edge of the truncular portion forms a resting edge for the top of the subject's thorax.

**2.** The bedding piece according to claim **1**, wherein the pillow does not have any thickness discontinuity in the connecting area between the truncular portion and the lower portion.

**3.** The bedding piece according to claim **2**, wherein the thickness of the pillow is substantially constant over the whole extent of the lower portion and the truncular portion.

**4.** The bedding piece according to claim **3**, wherein the ratio between the mean thickness (e) of the pillow and the mean transverse width (L<sub>T</sub>) of the truncular portion is 1:3±20%.

**5.** The bedding piece according to claim **1**, wherein the truncular portion (**14**) extends transversely essentially on only one side (**18**) relative to the lower portion.

**6.** The bedding piece according to claim **5**, wherein the truncular portion edge (**22**) opposite to said side (**18**) connects without discontinuity to the adjacent edge (**20**) of the lower portion.

**7.** The bedding piece according to claim **6**, wherein the truncular portion edge (**22**) opposite to said side (**18**) and the adjacent edge (**20**) of the lower portion are substantially straight and lined up.

**8.** The bedding piece according to claim **1**, wherein, in the longitudinal direction, the ratio between the mean length (L<sub>T</sub>) of the lower portion and the mean length (L<sub>T</sub>) of the truncular portion is 60:50±20%.

**9.** The bedding piece according to claim **1**, wherein the lower portion connects to the adjacent area of the truncular portion forming a transverse width discontinuity.

**10.** The bedding piece according to claim **9**, wherein the transverse width (l<sub>T</sub>) of the lower portion is substantially constant.

**11.** The bedding piece according to claim **9**, wherein the transverse width (l<sub>T</sub>) of the truncular portion is substantially constant.

**12.** The bedding piece according to claim **9**, wherein, in the transverse direction, the ratio between the mean width (l<sub>T</sub>) of the lower portion and the mean width (l<sub>T</sub>) of the truncular portion is 1:2±20%.

**13.** The bedding piece according to claim **1**, wherein, in the transverse direction, the pillow width decreases continuously from the truncular portion to the lower portion.

**14.** The bedding piece according to claim **13**, wherein the truncular portion has a substantially rounded shape.

**15.** A method for positioning a reclined subject (**36**) on a supporting surface, such as a mattress face or the ground, with, interposed therebetween, a bedding piece in the form of a body pillow (**10**) according to claim **1**,

characterized in that the subject carries out the following steps:

- a) arranging the pillow longitudinally along his/her body, with the head (**44**) beyond the truncular portion (**14**);
- b) placing the right or left pillow-half under his/her thorax up to be in a ¾ prone position;
- c) straddling the lower portion (**12**) with the homolateral lower limb (**40**) and crossing the proximal portion of the lower portion with the inner side of the thigh; and
- d) putting the cheek on the supporting surface.

\* \* \* \* \*