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Description**Field of the Invention**

[0001] The present invention relates generally to the field of reduction of snoring and sleep apnea back pain, osteoarthritis, and health and safety issues related to resting positioning through the avoidance of either supine or prone position sleeping. This invention relates to pillows, specifically to a body support pillow with integrated and semi-rigid yet flexible support for a person's head, back, and legs while lying on their side thereby encouraging either left or right side position sleeping.

[0002] A body support pillow according to the preamble of claim 1 is known from US-A-6 455 164 and US-A-6 874 183.

Background of the Invention

[0003] Numerous techniques have been developed previously by way of efforts to discourage supine or prone position sleeping. They include the positioning of uncomfortable objects in the area of the back such as by having a tennis ball sewn into a person's pajama top, or by tying a tennis ball to a person's back by straps or belt. In addition, early pillows served to prop up the head when a person would sleep or to serve as a supporting bolster for other parts of the body, such as the torso or legs the recognition of the pillow as an important body support has persisted over the years. Recent studies of body ergonomics and renewed attention to the benefits of quality rest and sleep have, in fact, highlighted the utilitarian function of supportive pillows.

[0004] The pillows of U.S. Patent No. 5987674, and U.S. Patent No. 6874183 represent recent body pillows that provide integrated support to the head, back and legs of a user but fail provide direct support to the back in a manner that positively encourages a side-lying position. The pillow of U.S. Patent No. 6874183 aims to provide support for a user in a wide range of positions and consequently is neither shaped or sufficiently semi-rigid to provide positive support that encourages the beneficial side-lying position. The pillow of U.S. Patent No. 5987674 requires the user to embrace the pillow to achieve support and thus like many such pillows require the user to embrace the pillow, thereby blocking the ventral side of the body and frustrating the dissipation of heat by the body.

Summary of the Invention

[0005] The invention is an integrated body support pillow as defined in claim 1, that encourages side sleeping by urging a user to rest and sleep on their side, with a pillow section for the head, a pillow section for leg support and a connecting back support pillow, integrated into a pillow for the body.

[0006] The invention is a simple solution to structural

obstructive sleep apnea that assists in the reduction of apnea events associated with either supine or prone sleep positions or unrestricted sleep, aids in reducing snoring, aids in alleviating back pain and reducing hip pain, reduces restless leg syndrome and ameliorates the pain of osteoarthritis. The use of the invention body support pillow encourages side lying, by urging a user to rest and sleep on their side, to promote better, more restful sleep and reduces apnea events associated with a supine or prone sleep position. It operates to position and then maintain a user in a side lying position for rest or sleep. It also aids in reducing snoring, and the consequent disruptive effects on others commonly associated with snoring. It also aids in alleviating lower back pain and reducing hip pain, reduces restless leg syndrome and ameliorates the pain of osteoarthritis. The invention body support pillow may be used in conjunction with other therapies, treatments, apparatus or surgery aimed at treating sleep apnea. When used alone as a therapeutic device the negative aspects, discomfort and potential health risks associated with other therapies are avoided. Such alternate therapies include dental appliances, CPAP machines, surgery, etc. It is a device that is portable, and superior to other products for encouraging side sleeping. It also reduces the risks associated with individuals who have difficulty breathing or who may be at risk of vomiting or having their windpipe close in their sleep.

[0007] The connection of neck, back and leg supports into an integrated body support pillow when used encourages side sleep by urging a user to rest and sleep on their side, and thereby positioning and maintaining a user in a side lying position for rest or sleep and reducing roll over to either supine or prone sleeping.

[0008] This invention consists of an integrated body support pillow for use by an adult or child. It is capable of providing a person with head, back and leg support in a manner that encourages side sleeping on either the left or right side while allowing for movement of the head, arms, and legs.

[0009] In addition to encouraging side sleeping, the integrated body support pillow of the invention eliminates the need for more than one pillow to support the head, back and legs and can directly support the head, back and legs during side lying in a way that allows the front of the body to be free of obstruction.

[0010] In use, it can support the thighs, knees, legs, ankles, and feet in normal anatomical relation while it can maintain normal position for the joints of the hips, knees and ankles. It can allow for varied flexion of both at the hip and the knees and also separate the pressure points of the knees and ankles.

[0011] In another embodiment, the body support pillow is made so as to be folded in two for further ease of storage or transport.

[0012] Of course, the body support pillow, like any pillow, can have a number of variable internal chambers, or other means in order to control the movement of the

compressible material within the casing. In turn, the compressible material can be made of various materials depending on the degree of desired support ranging for example, from natural fibre or synthetic fibre, foam, or down, or combinations, or even air or other fluids provided suitable casing is used. The body support pillow also could be covered with various types of fabric, so as to enhance durability, texture, comfort, and even aesthetic appeal. The body support pillow could also include a removable, washable slipcover over the casing.

[0013] According to an aspect of the invention, we provide a body support pillow according to claim 1. Optional features are recited in the dependent claims.

[0014] Further objects and advantages of the body support pillow will become apparent from a consideration of the drawings and ensuing description.

Brief Description of the Drawings

[0015] The present invention may be further understood by reference to the following detailed description of the embodiments of the invention, taken in conjunction with the accompanying drawings, in which:

Figure 1 (hereafter FIG. 1) shows a left side elevation view of an embodiment of the body support pillow;

Figure 2 (hereafter FIG. 2) shows a side elevation view of the body support pillow, corresponding to the left side of another embodiment of the body support pillow;

Figure 3 (hereafter FIG. 3) shows a side elevation view of the body support pillow, corresponding to the left side of a further embodiment of the body support pillow;

Figure 4 (hereafter FIG. 4) shows a side elevation view of the body support pillow, corresponding to the left side of a still further embodiment of the body support pillow;

Figure 5 (hereafter FIG. 5) shows a perspective view of an embodiment of the body support pillow as it supports a user in a side-lying position; and

Figure 6 (hereafter FIG. 6) shows a perspective view of the body support pillow of FIG. 5 as it supports the user using a body strap, in a side-lying position.

Detailed Description of the Invention

[0016] The description, which follows, and the embodiment described therein, are provided by way of illustration of an example, or examples of particular embodiments of principles and aspects of the present invention. These examples are provided for the purposes of explanation, and not of limitation, of those principles and of

the invention. In the description that follows, like parts are marked throughout the specification and the drawings with the same respective reference numerals.

[0017] FIG. 1 and FIG. 2 show views of basic versions of the body support pillow according to the invention. The pillow 5 is an integrated, semi-rigid yet flexible, resilient and contoured article having a distinctive shape, The body support pillow 5 structure comprises substantially block-shaped head support section 10 and leg support section 20, which are joined by a substantially straight elongate substantially block-shaped back section 15 comprising two portions namely, main portion 16 and length portion 17. The head support section 10 is joined perpendicularly to the back support section 15 and the leg support section 20 is joined perpendicularly to a forward angled length portion 17 of the back support section 15 in a manner so as to create an elongated C - shaped contour overall. Alternatively, the back support section can comprise one or more portions with a straight alignment having no forward angled length portion. The cross-sectional shape of each of these three sections 10, 15, and 20 is generally rectangular in nature, and consist of a fabric case 7 with openings 8 having covering flaps 9, as shown in FIG 1 and FIG.2, encasing materials of varying degrees of compressibility.

[0018] As may be noted in FIG. 2 and FIG. 3, the head support section 10 generally terminates in a somewhat enlarged end, zone 27. Each side of the head support section 10 incorporates portions, zones 25, that can each accommodate the side of a person's head with shallow compressible indentations. These zones 25 are made of compressible material, located substantially at midpoint on both the left and right sides of the section, each located substantially three-quarters of the way down from the top of the section, having a substantially oval shape, each having a depth of about 2.54 cm (one inch) and compressible to a further depth of about 2.54 cm (one inch) and having a width of about 15 cm (six inches). The portions of the section beneath and adjacent the zones 25 and extending to the bottom of the section, consist of another zone 26, that can accommodate a person's neck by forming shallower indentations. These zones 26 are made of material compressible to a depth of about one inch and having a width of about 15 cm (six inches). The remaining portions of the section, zones 27, sandwich zones 25 and zones 26 and are made of material firmer than the respective compressible material of zones 25 and zones 26. Alternately, zones 25 can be flush with the adjoining zones 27 and made of material compressible to a depth of about 5 cm (two inches). Zones 26 are also contoured to create space 28 in order to accommodate the shoulder of a user.

[0019] As may be noted further in FIG. 2, the leg support section 20 alternatively incorporates portions, zones 30, made of compressible material that can accommodate a person's legs. These zones 30 are located substantially at midpoint on both the left and right sides of the section, each traversing the section from top to bot-

tom, each compressible to a depth of about 5 cm (2 inches) and having a width of about 15 cm (six inches).

[0020] Of course, the dimensions of the body support pillow can be custom tailored to fit the frame of a particular user, or made to fit set categories of dimensions such as small, medium, tall, etc. Generally, the length of the body support pillow substantially corresponds to the height of the user. The head support section 10 is about 46 cm (eighteen A inches) along its top and the leg support section 20 is about 30 cm (twelve inches) along its bottom. Zone 16 of the back section 15 is about 10-13 cm (four to five inches) from back to front. Back section 15 has the same firmness as the zones 27.

[0021] To aid in the adjustment of the body support pillow, or in the handling, storage or transport of the body support pillow, an alternative embodiment allows length portion 10 and leg support section 20 to each be detachably secured to the back section 15 by suitable fastener means 70, such as zippers, buttons or VELCRO (RTM) fasteners, as shown in FIG. 2.

[0022] In a still further alternative embodiment, as shown in FIG.3, back section 15 has a portion located at substantially midpoint, zone 35. Zone 35 is about 30 cm (one foot) in length and made with sufficiently compressible material that it can act as a folding zone and permit the folding of the back section in two so that the upper portion of the back section may be placed onto the lower section or vice verse to aid in handling, storage or transport of the body support pillow.

[0023] In a further alternative embodiment, back support section 15 incorporates means to discourage prone or supine resting or sleeping on the back support section. These means include a plurality of protrusions or a projecting ridge or ridges provided along the lengths of the left and right sides of the body support pillow to provide an uncomfortable surface on which to lie so as to inhibit a user from rolling over the body support pillow. The protrusions or projecting ridge can be provided, by embedding them within the back section 15, or, as shown in FIG. 4, by mounting them on the appropriate surface of the back section 15 by means of placing an insert 18 that has projecting ridges or protruding portions within a suitable pocket 19 located on the appropriate surface of the back section 15. Thus if one lies on the back section 15 with such protrusions or ridges, it will be uncomfortable and will cause one to shift off it to the appropriate and comfortable side sleeping position.

[0024] The degree of desired firmness or support will influence the cross-sectional dimension of the three support sections and the compressible material chosen for the three different sections such as natural, synthetic or blended fibre. The height of the body support pillow ranges from 15-20 cm (six to eight inches), with the back support section 15 having somewhat greater height than the head support section 10 and the leg support section 20.

[0025] The case 7 encasing the compressible material of the body support pillow is formed by suitable panels

of fabric joined together along seams by known methods of sewing or other means of joining panels, and with suitable openings 8, having covering flaps 9 fastened by suitable means such as zippers, buttons, etc., to facilitate the encasing of the body support pillow 5 as well as the removable of the case 7 for cleaning, mending or replacement.

[0026] As shown in FIG. 5, the principal manner of using the body support pillow as a body support is in a side-lying position of the user 50 which thereby encourages side sleeping. One side of the head support section 10 of the body fits under the head of the user 50, with the respective zone 25 providing a head rest and the respective zone 26 providing a neck rest, while the user 50's back is directly bolstered by the back support section 15. The leg support section 20 of the body support pillow 5 fits between the legs of the user 50, with zones 30 thus providing support between the thighs, legs, and feet. The substantially block shape of the sections of the body support pillow resists dislodgement of the body support pillow from the preferred side-lying operating attitude on the resting or sleeping platform by bodily movements of the user.

[0027] The body support pillow 5 also permits a range of motion for the head, arms and legs of the user while encouraging side sleeping. The zones 25 and 26 of the head support section 10 allow the user to adjust the position of the head while the arms are able to be positioned as in normal side sleeping. The leg support section 20 permits leg extension or bending with support of the ankles of user.

[0028] Use of the invention body support pillow encourages and enables a person to rest or sleep in a comfortable and anatomically natural side lying position on either the left side or the right side while discouraging supine or prone position sleeping. A user of the invention body support pillow obtains direct, integrated support to the head, back and legs during side lying while allowed varied, natural movement of the arms and legs of the user of the invention body support pillow.

[0029] In addition, the body support pillow can be fitted with means to fasten the body support pillow to the resting or sleeping platform in order to restrain the dislodgement of the body support pillow from the preferred side-lying operating attitude on the resting or sleeping platform, such as VELCRO fasteners or straps that cooperate with suitable harness on the resting or sleeping platform. In this regard, other means can be used to keep the body support pillow in its preferred attitude including weighting the side of the body support pillow to rest on the resting or sleeping platform or propping the body support pillow into its preferred attitude.

[0030] In an alternative embodiment, the body support pillow can be fitted with means to fasten the body support pillow to a user such as chest strap 55 held by belt straps 57, as shown in FIG. 1 and FIG. 4 and FIG. 6.

[0031] In an alternative embodiment, the body support pillow has means to provide heat to the different support

sections of the invention body support pillow such as pockets in the casings to hold hot water bottles in order to aid in alleviating muscle ache or pain or strain, restless leg syndrome, the ache of arthritis, promote increased circulation, and further encourage relaxation and restful sleep.

[0032] In an alternative embodiment, the body support pillow has means to provide sound (or music), massage, vibration, sources of scents or aromas, and/or heat to the different support sections of the invention body support pillow such as pockets in the casings to hold hot water bottles in order to aid in alleviating muscle ache or pain or strain, restless leg syndrome, the ache of arthritis, promote increased circulation, and further encourage relaxation and restful sleep.

[0033] In an alternative embodiment, the body support pillow has means to sense certain physical functions of the user, such as breathing effort, respiratory effort, respiratory events, apnea or hyponea events, brain or neural activity, snoring event, snoring sound intensity, vibrations or movement in limbs, temperature, blood pressure, pulse rate, and oxygen and CO₂ saturation levels in the user. These means can include heart rate monitors, blood pressure monitors, electroencephalography, neural sensors, physical sensors, eye movement sensors, nasal or mouth breathing sensors, blood composition sensors, muscle sensors, or other polysomnographic sensors.

[0034] In an alternative embodiment, the body support pillow has means to record the sensors or display results of the sensors to others or the user.

[0035] In an alternative embodiment, the body support pillow has means to monitor the user and allow self assessment, third-party or professional assessment, such by means of a physical, telecommunication or internet system, which may relay the sensed results of the user whereby they are forwarded on to a medical site, or computerized medical center to allow for consistent, intermittent or alarm-based medical monitoring. For example in the event that the users sleep apnea creates dangerously low oxygen levels or the user's detected recordings indicates they are suffering from a serious medical condition, such as heart attack or stroke, the sensing and diagnostic system may contact emergency or non-emergency medical services.

Claims

1. An integrated, semi-rigid yet flexible, resilient body support pillow (5) of compressible material, conforming substantially to a user's bodily skeletal dimensions, comprising:
 - a. a block-shaped head support section (10),
 - b. a block-shaped leg support section (20), hav-

c. an elongate, block-shaped back support section (15) with a substantially straight alignment comprising one or more joined portions (16, 17) connected substantially perpendicularly at a first end to said proximate end of said head support section (10) to form an L- or C- shaped semi-rigid, yet flexible and resilient support, and connected at a second end of said back support section (15) to said proximate end of said leg support section (20),

characterised in that

said head support section (10) comprises a shallow indentation (25) comprising a first compressible material, wherein said indentation is adapted to accommodate a side of said user's head,

said back support portion (15) comprises a second compressible material that is firmer than said first compressible material in said shallow indentation (25), said pillow (5) is shaped so that a head, back and legs of said user are simultaneously and flexibly supported by said pillow when said user is in a side-lying position, said pillow (5) allows for a range of user body motion, and

substantially all of said user's front chest and abdomen remains unobstructed by said pillow (5) when said user is in said side-lying position, thereby promoting side-lying sleeping while discouraging prone or supine sleeping.

2. A body support pillow (5) according to claim 1, wherein said back support section (15) comprises two joined portions, namely, a main portion (16), which is substantially straight, and a length portion (17), which angles forward.
3. A body support pillow (5) according to claim 1 or claim 2, further incorporating on each head support surface (25) sides of said head support section, a shallow, compressible neck indentation (26), which is adapted to accommodate said user's neck, and which is located below said indentation (25) and contoured to define a free space adapted to accommodate a shoulder of said user.
4. A body support pillow (5) according to claim 1, wherein said leg support section (20) incorporates on each side a compressible portion (30) adapted to accommodate a user's legs, located substantially at midpoint on the respective side of said leg support section (20), and traversing said leg support section (20) from top to bottom.
5. A body support pillow (5) according to claim 1, incorporating means (18) with the back support section (15) to further discourage prone or supine sleeping.

6. A body support pillow (5) according to claim 5, wherein said means (18) to discourage prone or supine sleeping comprise one or more protrusion provided along the length of one or more of the sides of said back support section (15) to provide an uncomfortable surface on which to lie so as to inhibit a user from rolling over the body support pillow. 5
7. A body support pillow (5) according to claim 1, further including a casing (7), said casing (7) conforming to the shape of said pillow (5), made of durable washable fabric, with openings (8) having covering flaps (9) to facilitate the encasing of said body support pillow (5) as well as the removable of the casing (7) for cleaning, mending or replacement. 10
8. A body support pillow (5) according to claim 1, further incorporating means to detachably secure said body support pillow (5) to the sleeping platform in order to prevent dislodgement of said body support pillow (5) from preferred side-lying attitude on said sleeping platform. 15
9. A body support pillow (5) according to claim 1, incorporating means to provide heat to one or more of said support sections (10, 15, 20) of said body support pillow, in order to aid in alleviating muscle ache or pain or strain, or restless leg syndrome, or ache of arthritis, promote increased circulation, and further encourage relaxation and restful sleep, for said user. 20
10. A body support pillow (5) according to claim 1, wherein said back support section (15) is sufficiently compressible at a joint between said main portion (16) and said length portion (17) to permit said back support section (15) to fold such that said main portion (16) is placed onto said length section (17) to aid handling, storage or transport of said body support pillow (5). 25
11. A body support pillow (5) according to claim 10, wherein said back support section (15) is detachably secured to said leg support section (20), to further aid in the adjustment of said body support pillow (5), and in the handling, storage or transport of said body support pillow (5). 30
12. A body support pillow (5) according to claim 1, having an internal chamber to restrain movement of said compressible materials within said body support pillow (5). 35
13. A body support pillow (5) according to claim 13, wherein said internal chamber comprises two or more internal chambers. 40
14. A body support pillow (5) according to claim 1, incor-

porating means to provide one or more of sounds, vibration, or aromas to the different support sections of said body support pillow to further encourage relaxation and restful sleep.

15. A body support pillow (5) according to claim 1, incorporating means to sense one or more physical function of said user including breathing effort, respiratory effort, respiratory events, apnea events, hypoxia events, brain or neural activity, snoring events, snoring sound intensity, vibrations or movement in limbs, temperature, blood pressure, pulse rate, and oxygen and CO₂ saturation levels in said user. 45
16. A body support pillow (5) according to claim 15, incorporating means to record results sensed by said sensors. 50
17. A body support pillow (5) according to claim 16, having means to monitor said physical functions of said user and assessment by others by communication of said sensed results to others including medical services personnel to allow for medical monitoring of said functions of said user. 55

Patentansprüche

1. Integriertes, halbsteifes, aber flexibles, elastisches Körperstützkissen (5) aus einem komprimierbaren Material, dessen Form im Wesentlichen an Skelettmaße eines Anwenders angepasst ist, aufweisend:
- a. einen blockförmigen kopfstützenden Abschnitt (10) mit einem proximalen Ende und einem distalen Ende,
 - b. einen blockförmigen beinstützenden Abschnitt (20) mit einem proximalen Ende und einem distalen Ende,
 - c. einen länglichen, blockförmigen rückenstützender Abschnitt (15) mit einer im Wesentlichen geraden Ausrichtung, der einen oder mehrere zusammengefügte Teile (16, 17) umfasst und der an einem ersten Ende im Wesentlichen senkrecht mit dem proximalen Ende des kopfstützenden Teils (10) verbunden ist, um eine L- oder C-förmige, halbsteife, aber flexible und elastische Stütze zu bilden, und der an einem zweiten Ende des rückenstützenden Abschnitts (15) mit dem proximalen Ende des beinstützenden Abschnitts (20) verbunden ist,

dadurch gekennzeichnet, dass

der kopfstützende Abschnitt (10) eine flache Mulde (25) aufweist, die ein erstes komprimierbares Material aufweist, wobei die Mulde dafür ausgelegt ist, eine Seite des Kopfes eines Anwenders aufzunehmen,

- der rückenstützende Teil (15) ein zweites komprimierbares Material aufweist, das fester ist als das erste komprimierbare Material in der flachen Mulde (25), wobei das Kissen (5) so geformt ist, dass der Kopf, der Rücken und die Beine des Anwenders von dem Kissen gleichzeitig und flexibel gestützt werden, wenn der Anwender in Seitenlage liegt, das Kissen (5) einen Bereich von Körperbewegungen des Anwenders zulässt, und im Wesentlichen die gesamte Brust und der Bauch des Anwenders von dem Kissen (5) nicht behindert werden, wenn der Anwender in Seitenlage liegt, wodurch ein Schlafen in Seitenlage gefördert wird, während ein Schlafen in Bauchlage oder Rückenlage erschwert wird.
2. Körperstützkissen (5) nach Anspruch 1, wobei der rückenstützende Abschnitt (15) zwei zusammengefügte Teile aufweist, nämlich einen Hauptteil (16), der im Wesentlichen gerade ist, und einen Längenteil (17), der nach vorne abgewinkelt ist.
3. Körperstützkissen (5) nach Anspruch 1 oder 2, ferner auf jeder Seite einer kopfstützenden Oberfläche (25) des kopfstützenden Abschnitts eine flache, komprimierbare Halsmulde (26) aufweisend, die in der Lage ist, den Hals eines Anwenders aufzunehmen, und die sich unterhalb der Mulde (25) befindet und so konturiert ist, dass sie einen freien Raum definiert, der die Schulter des Anwenders aufnehmen kann.
4. Körperstützkissen (5) nach Anspruch 1, wobei der beinstützende Teil (20) auf jeder Seite einen komprimierbaren Teil (30) aufweist, der in der Lage ist, die Beine eines Anwenders aufzunehmen, und der auf der jeweiligen Seite des beinstützenden Teils (20) im Wesentlichen in der Mitte angeordnet ist und der von oben nach unten durch den beinstützenden Abschnitt (20) verläuft.
5. Körperstützkissen (5) nach Anspruch 1, eine Einrichtung (18) mit dem rückenstützenden Abschnitt (15) aufweisend, die ein Schlafen in Bauchlage oder Rückenlage weiter erschwert.
6. Körperstützkissen (5) nach Anspruch 5, wobei die Einrichtung (18), die ein Schlafen in Bauchlage oder Rückenlage erschwert, einen oder mehrere Vorsprünge aufweist, die in Längsrichtung auf einer oder mehreren von den Seiten des rückenstützenden Abschnitts (15) vorgesehen sind, um eine zum Liegen unbequeme Oberfläche zu bilden, um einen Anwender daran zu hindern, sich über das körperstützende Kissen zu wälzen.
7. Körperstützkissen (5) nach Anspruch 1, ferner einen Bezug (7) aufweisend, wobei der Bezug (7) der Form des Kissens (5) angepasst ist und aus strapazierfähigem, waschbarem Stoff besteht, mit Öffnungen (8) mit Abdecklaschen (9), um das Beziehen des Körperstützkissens (5) ebenso wie das Abziehen des Bezugs (7) zum Reinigen, Reparieren oder Austauschen zu erleichtern.
8. Körperstützkissen (5) nach Anspruch 1, ferner eine Einrichtung aufweisend zum lösbaren Befestigen des Körperstützkissens (5) an der Liegefläche, um ein Verrutschen des Körperstützkissens (5) aus der eine Seitenlage bevorzugenden Anordnung auf der Liegefläche zu verhindern.
9. Körperstützkissen (5) nach Anspruch 1, eine Einrichtung aufweisend, die einem oder mehreren der stützenden Abschnitte (10, 15, 20) des Körperstützkissens Wärme zuführt, um die Linderung von Muskelkater oder -schmerzen oder -verspannungen oder des Restless-Leg-Syndroms oder von Arthritis-schmerzen zu unterstützen, den Kreislauf anzuregen und ferner die Entspannung und den ruhigen Schlaf des Anwenders zu fördern.
10. Körperstützkissen (5) nach Anspruch 1, wobei der rückenstützende Abschnitt (15) an einer Verbindungsstelle zwischen dem Hauptteil (16) und dem Längenteil (17) ausreichend komprimierbar ist, damit der rückenstützende Abschnitt (15) so gefaltet werden kann, dass der Hauptteil (16) über den Längenteil (17) gelegt wird, um die Handhabung, die Aufbewahrung oder den Transport des Körperstützkissens (5) zu erleichtern.
11. Körperstützkissen (5) nach Anspruch 10, wobei der rückenstützende Abschnitt (15) lösbar am beinstützenden Abschnitt (20) befestigt ist, um die Anpassung des Körperstützkissens (5) und die Handhabung, die Aufbewahrung oder den Transport des Körperstützkissens (5) weiter zu erleichtern.
12. Körperstützkissen (5) nach Anspruch 1 mit einer Innenkammer, um ein Wandern des komprimierbaren Materials innerhalb des Körperstützkissens (5) zu beschränken.
13. Körperstützkissen (5) nach Anspruch 13, wobei die Innenkammer zwei oder mehr Innenkammern aufweist.
14. Körperstützkissen (5) nach Anspruch 1, eine Einrichtung aufweisend, die Töne und/oder Vibration und/oder Aromen für die verschiedenen stützenden Abschnitte des Körperstützkissens bereitstellt, um die Entspannung und den ruhigen Schlaf weiter zu fördern.
15. Körperstützkissen (5) nach Anspruch 1, eine Einrichtung aufweisend, die eine oder mehrere Körperfunk-

tionen des Anwenders erfasst, wozu Atemtätigkeit, respiratorische Tätigkeit, respiratorische Ereignisse, Apnoe-Ereignisse, Hypopnoe-Ereignisse, Gehirn- oder neuronale Aktivität, Schnarchereignisse, Schnarchlautstärke, Zittern oder Bewegungen der Glieder, Temperatur, Blutdruck, Pulsrate und Sauerstoff- und CO₂-Sättigungsgrad des Anwenders gehören.

16. Körperstützkissen (5) nach Anspruch 15, eine Einrichtung aufweisend, die Ergebnisse, die von den Sensoren erfasst werden, aufzeichnet.

17. Körperstützkissen (5) nach Anspruch 16, mit einer Einrichtung, mit der die Körperfunktionen des Anwenders von anderen Personen überwacht und bewertet werden können, durch Übermitteln der erfassten Ergebnisse an andere Personen, beispielsweise an medizinisches Personal, um eine medizinischen Überwachung der Funktionen des Anwenders zu ermöglichen.

Revendications

1. Un oreiller de soutien corporel élastique, semi-rigide néanmoins souple, intégré (5) d'un matériau compressible, épousant sensiblement les dimensions du squelette corporel d'un utilisateur, comprenant :

a. une section de soutien de la tête en forme de bloc (10), possédant une extrémité proximale et une extrémité distale,

b. une section de soutien de jambe en forme de bloc (20), possédant une extrémité proximale et une extrémité distale, **caractérisé par**

c. une section de soutien du dos allongée en forme de bloc (15) avec un alignement sensiblement rectiligne comprenant une ou plusieurs parties assemblées (16, 17) raccordées de manière sensiblement perpendiculaire à une première extrémité de ladite extrémité proximale de ladite section de soutien de la tête (10) de façon à former un soutien élastique semi-rigide néanmoins souple en forme de L ou en forme de C, et raccordées à une deuxième extrémité de ladite section de soutien du dos (15) à ladite extrémité proximale de ladite section de soutien de jambe (20),

caractérisé en ce que

ladite section de soutien de la tête (10) comprend une indentation peu profonde (25) contenant un premier matériau compressible, où ladite indentation est adaptée de façon à loger un côté de la tête dudit utilisateur,

ladite section de soutien du dos (15) comprend un deuxième matériau compressible qui est plus ferme

que ledit premier matériau compressible dans ladite indentation peu profonde (25), ledit oreiller (5) est façonné de sorte qu'une tête, dos et jambes dudit utilisateur soient soutenus simultanément et de manière souple par ledit oreiller lorsque ledit utilisateur est dans une position couchée sur le côté, ledit oreiller (5) permet un éventail de mouvements corporels de l'utilisateur, et sensiblement la totalité de l'abdomen et de la poitrine avant dudit utilisateur reste non obstruée par ledit oreiller (5) lorsque ledit utilisateur est dans ladite position couchée sur le côté, favorisant ainsi un sommeil couché sur le côté tout en décourageant un sommeil couché sur le ventre ou sur le dos.

2. Un oreiller de soutien corporel (5) selon la Revendication 1, où ladite section de soutien du dos (15) comprend deux parties assemblées, à savoir, une partie principale (16), qui est sensiblement rectiligne, et une partie longitudinale (17), qui forme un angle vers l'avant.

3. Un oreiller de soutien corporel (5) selon la Revendication 1 ou 2, comprenant en outre sur chaque côté de surface de soutien de tête (25) de ladite section de soutien de la tête, une indentation de cou compressible, peu profonde (26), qui est adaptée de façon à loger le cou dudit utilisateur, et qui est placée sous ladite indentation (25) et profilée de façon à définir un espace libre adapté de façon à loger une épaule dudit utilisateur.

4. Un oreiller de soutien corporel (5) selon la Revendication 1, où ladite section de soutien de jambe (20) comprend sur chaque côté une partie compressible (30) adaptée de façon à loger les jambes d'un utilisateur, placée sensiblement à un point médian sur le côté respectif de ladite section de soutien de jambe (20), et traversant ladite section de soutien de jambe (20) du haut jusqu'au bas.

5. Un oreiller de soutien corporel (5) selon la Revendication 1, comprenant un moyen (18) avec la section de soutien du dos (15) destiné à décourager encore un sommeil couché sur le ventre ou sur le dos.

6. Un oreiller de soutien corporel (5) selon la Revendication 5, où ledit moyen (18) destiné à décourager un sommeil couché sur le ventre ou sur le dos comprend une ou plusieurs protubérances positionnées le long de la longueur d'un ou plusieurs des côtés de ladite section de soutien du dos (15) de façon à fournir une surface inconfortable sur laquelle se coucher de façon à empêcher un utilisateur de rouler par dessus l'oreiller de soutien corporel.

7. Un oreiller de soutien corporel (5) selon la Revendication 1, comprenant en outre un boîtier (7), ledit

- boîtier (7) épousant la forme dudit oreiller (5), fabriqué dans un tissu lavable durable, avec des ouvertures (8) possédant des rabats de recouvrement (9) destinés à faciliter la mise en boîtier dudit oreiller de soutien corporel (5) ainsi que le retrait du boîtier (7) pour nettoyage, réparation ou remplacement.
- 5
8. Un oreiller de soutien corporel (5) selon la Revendication 1, comprenant en outre un moyen de fixer de manière détachable ledit oreiller de soutien corporel (5) à la plateforme de couchage afin d'empêcher le délogement dudit oreiller de soutien corporel (5) de l'attitude couchée sur le côté préférée sur ladite plateforme de couchage.
- 10
9. Un oreiller de soutien corporel (5) selon la Revendication 1, comprenant un moyen de fournir de la chaleur à une ou plusieurs desdites sections de soutien (10, 15, 20) dudit oreiller de soutien corporel (5), afin d'aider à soulager des maux, douleurs ou contraintes musculaires, ou un syndrome des jambes sans repos, ou des douleurs d'arthrite, à promouvoir une circulation accrue et à encourager encore la relaxation et un sommeil reposant pour ledit utilisateur.
- 15
- 20
10. Un oreiller de soutien corporel (5) selon la Revendication 1, où ladite section de soutien du dos (15) est suffisamment compressible au niveau d'une jonction entre ladite partie principale (16) et ladite partie longitudinale (15) de façon à permettre à ladite section de soutien du dos (15) de se plier de sorte que ladite partie principale (16) soit placée sur ladite section longitudinale (17) de façon à aider la manipulation, le rangement ou le transport dudit oreiller de soutien corporel (5).
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- 30
- 35
11. Un oreiller de soutien corporel (5) selon la Revendication 10, où ladite section de soutien du dos (15) est fixée de manière détachable à ladite section de soutien de jambe (20), de façon à aider encore à l'ajustement dudit oreiller de soutien corporel (5) et à la manipulation, le rangement ou le transport dudit oreiller de soutien corporel (5).
- 40
12. Un oreiller de soutien corporel (5) selon la Revendication 1, possédant une chambre interne destinée à restreindre le déplacement desdits matériaux compressibles à l'intérieur dudit oreiller de soutien corporel (5).
- 45
- 50
13. Un oreiller de soutien corporel (5) selon la Revendication 13 (sic), où ladite chambre interne comprend deux ou plus chambres internes.
- 55
14. Un oreiller de soutien corporel (5) selon la Revendication 1, comprenant un moyen de fournir un ou plusieurs éléments parmi sons, vibrations ou arômes aux différentes sections de soutien dudit oreiller de
- soutien corporel de façon à encourager encore la relaxation et un sommeil reposant.
15. Un oreiller de soutien corporel (5) selon la Revendication 1, comprenant un moyen de détection d'une ou plusieurs fonctions physiques dudit utilisateur comprenant effort de respiration, effort respiratoire, événements respiratoires, événements d'apnée, événements d'hypopnée, activité neurale ou cérébrale, événements de ronflement, intensité sonore de ronflement, vibrations ou déplacement des membres, température, pression sanguine, fréquence du pouls et niveaux de saturation en oxygène et CO₂ chez ledit utilisateur.
16. Un oreiller de soutien corporel (5) selon la Revendication 15, comprenant un moyen d'enregistrement des résultats détectés par lesdits capteurs.
17. Un oreiller de soutien corporel (5) selon la Revendication 16, possédant un moyen de surveillance desdites fonctions physiques dudit utilisateur et une évaluation par d'autres personnes par la communication desdits résultats détectés à d'autres personnes comprenant le personnel de services médicaux de façon à permettre une surveillance médicale desdites fonctions dudit utilisateur.

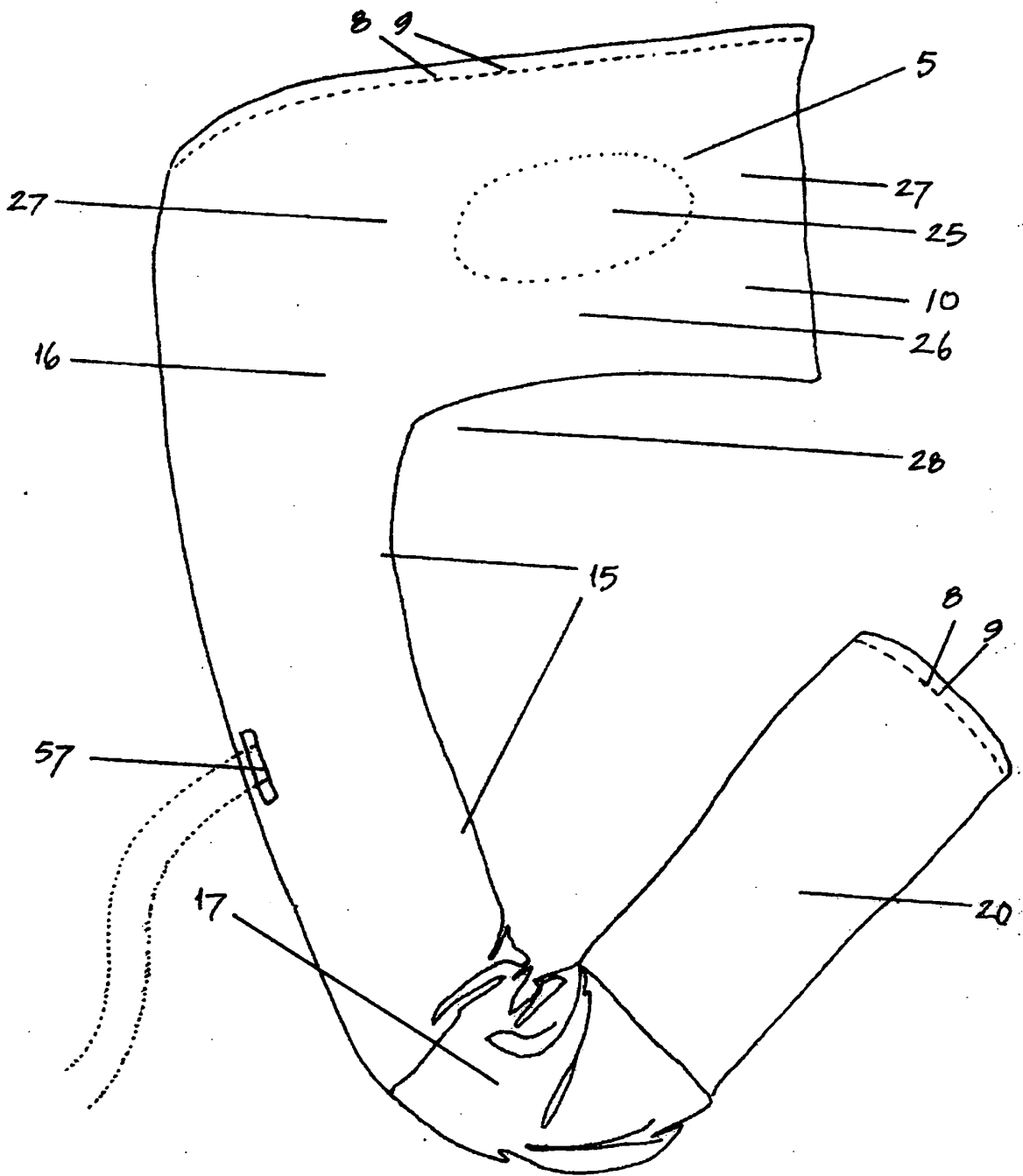


Figure 1.

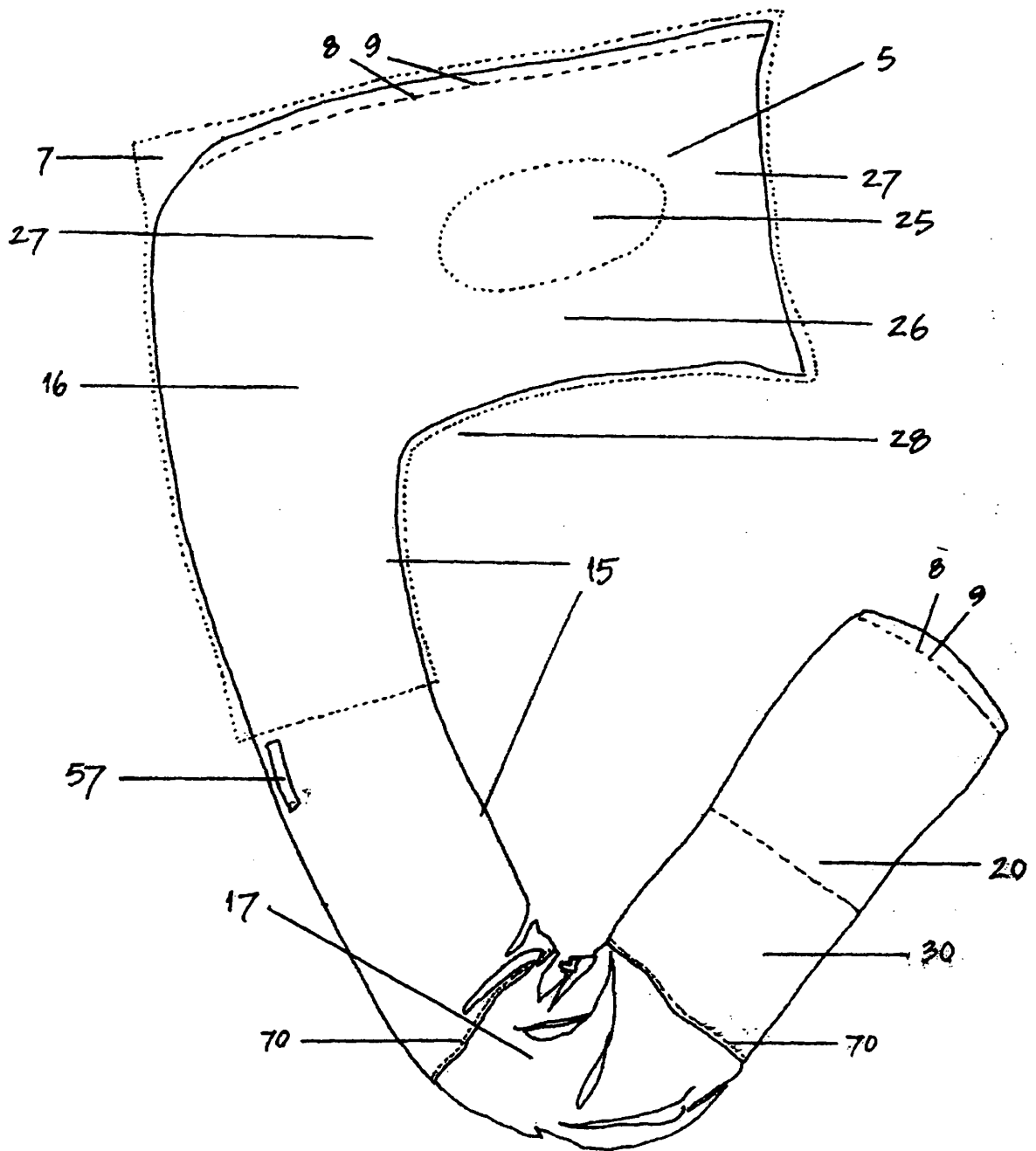


Figure 2.

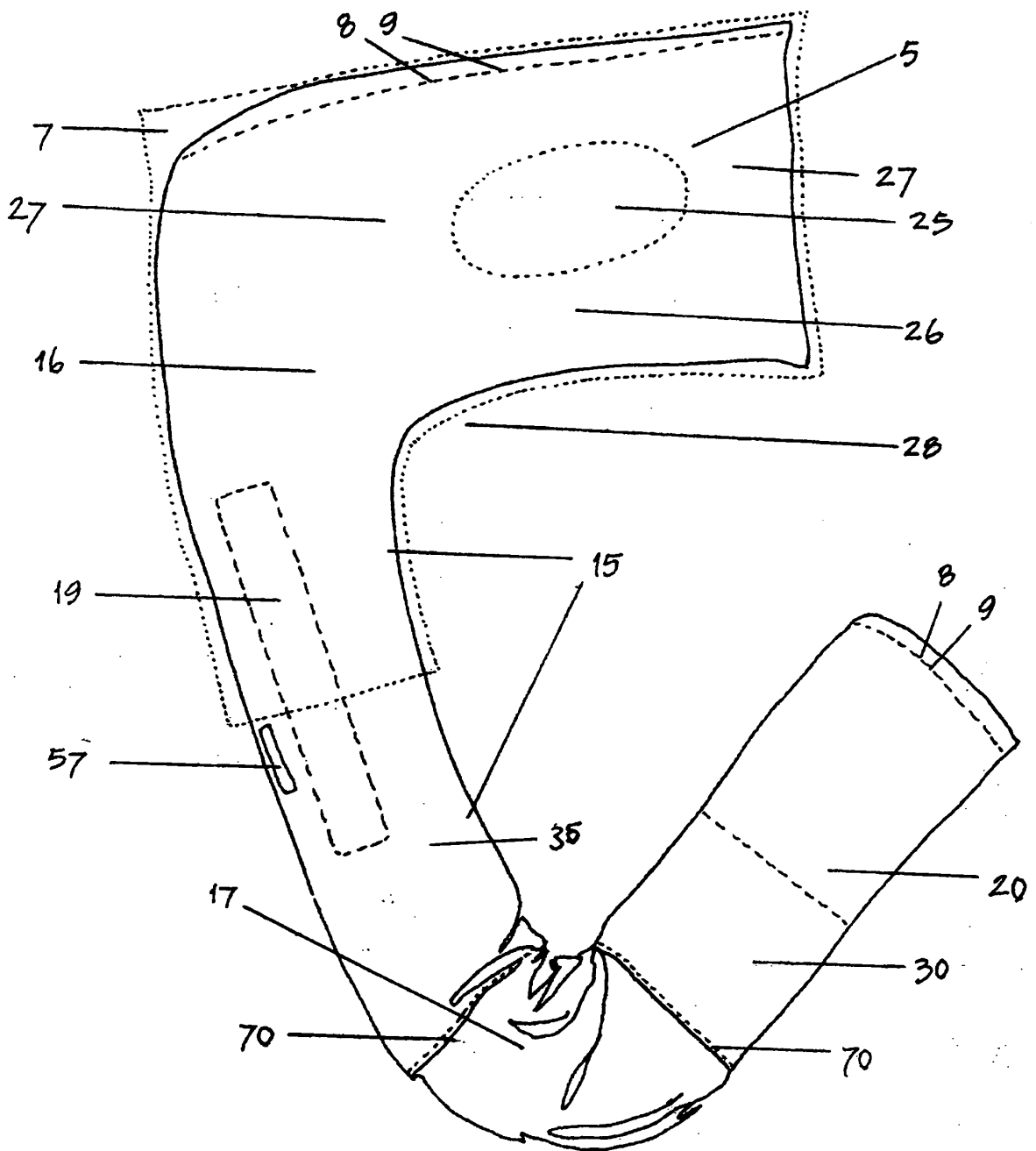


Figure 3.

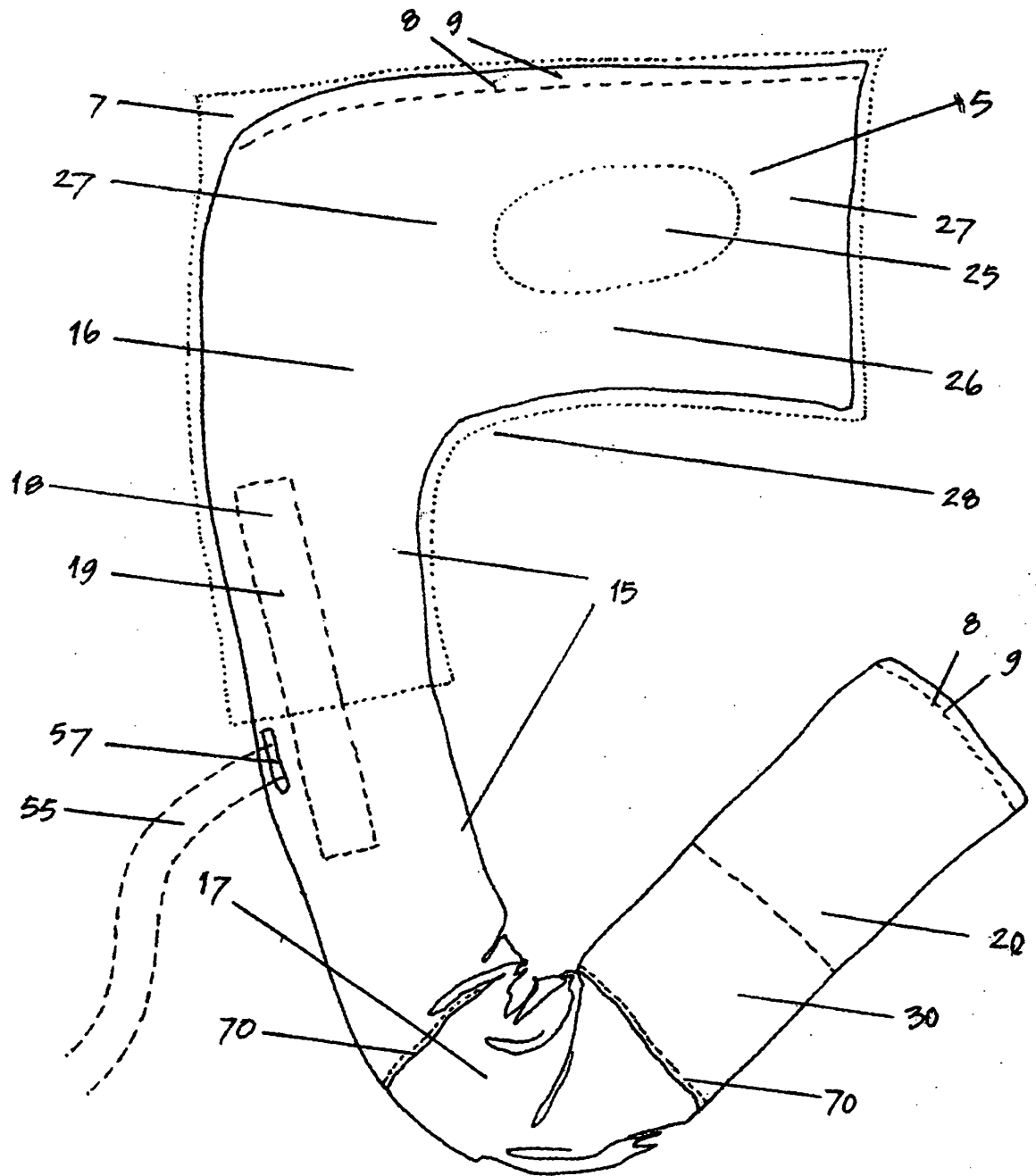


Figure 1.

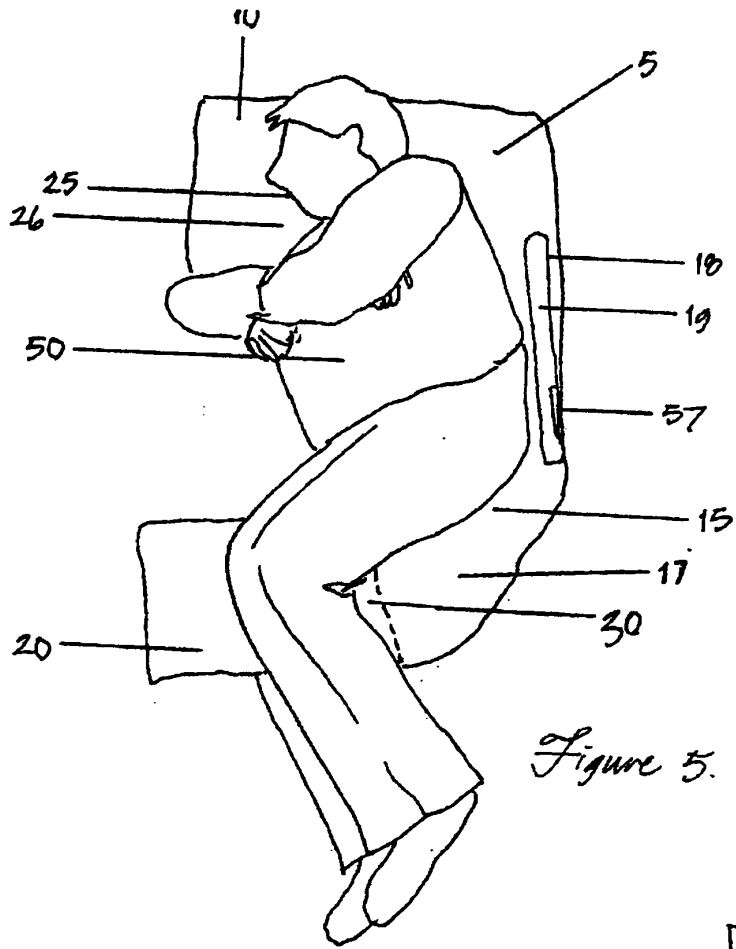


Figure 5.

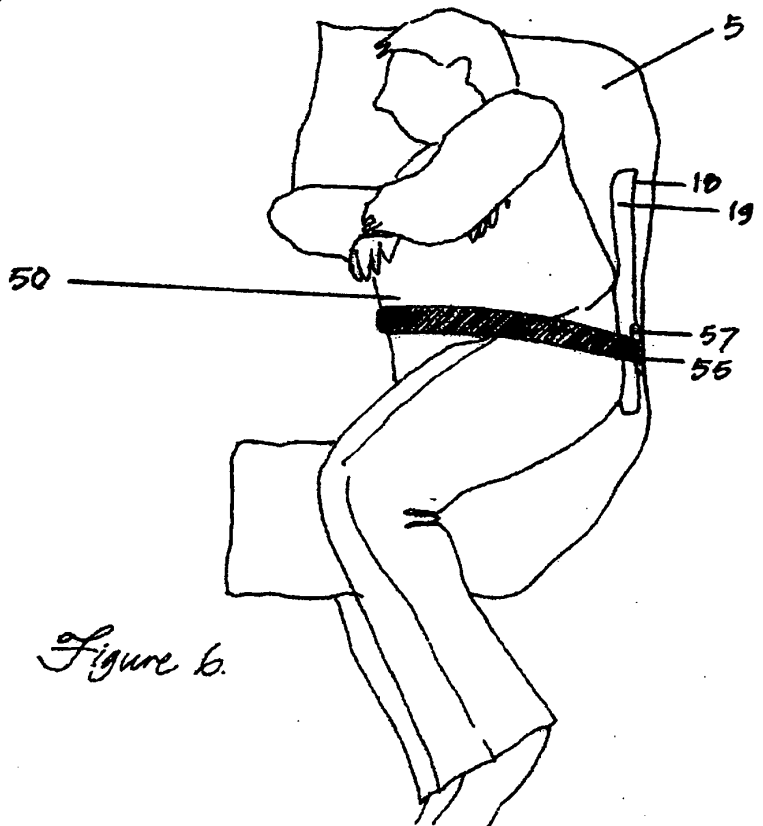


Figure 6.

REFERENCES CITED IN THE DESCRIPTION

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摘要(译)

身体支撑枕头技术领域本发明涉及一种身体支撑枕头，该身体支撑枕头的形状和轮廓形成为促进侧卧以减少打nor并消除睡眠呼吸暂停和症状的后果。它由一个身体支撑枕头组成，该枕头具有一体的，半刚性的但灵活的支撑，可以侧卧在人的头部，背部和腿部，从而促进左侧或右侧位置的睡眠。

