

(19)



Europäisches Patentamt

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(11)

EP 1 600 085 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
30.11.2005 Bulletin 2005/48

(51) Int Cl. 7: A47G 9/08

(21) Application number: 04253100.4

(22) Date of filing: 26.05.2004

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PL PT RO SE SI SK TR
Designated Extension States:
AL HR LT LV MK

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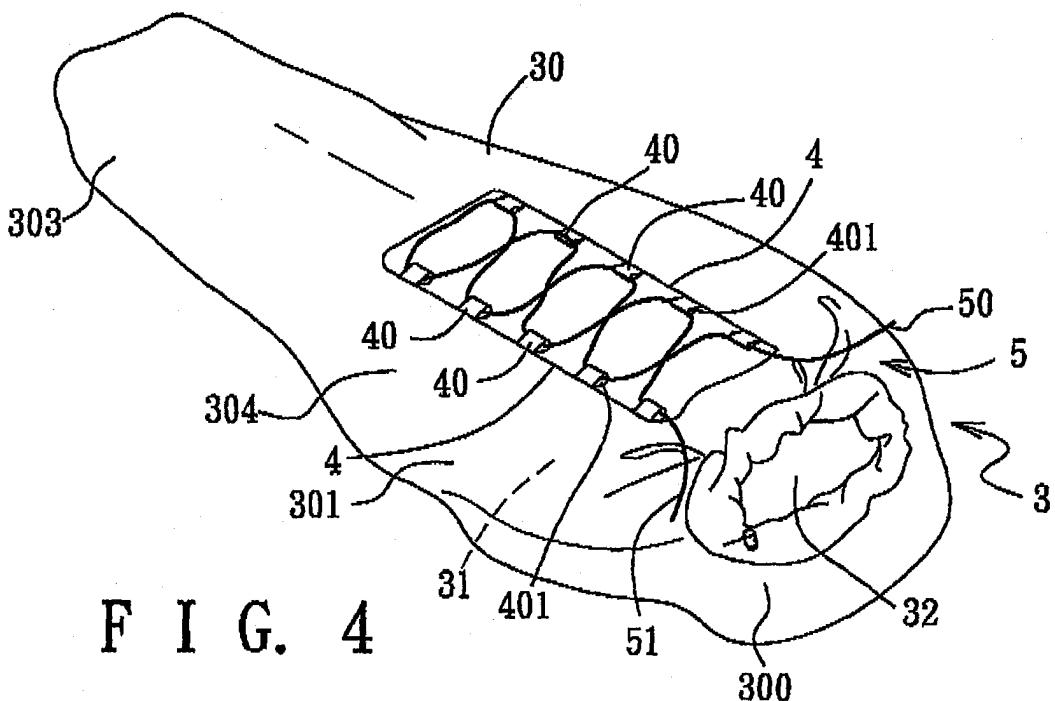
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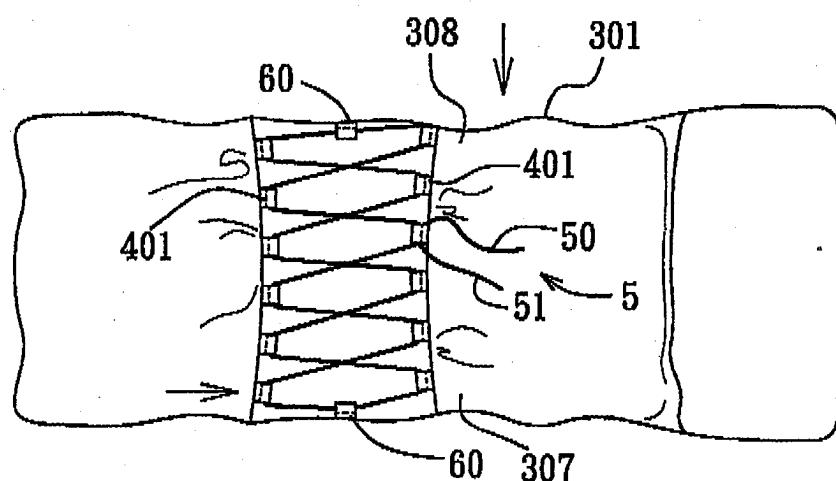
(54) Sleeping Bag

(57) A sleeping bag includes a flexible shell body (30) defining an accommodation chamber (31) for receiving a user herein. A middle portion (301) of the shell body (30) has a front major area (304) defining first and second tightened lines (4) which are spaced apart from each other in a longitudinal or transverse direction. A plurality of first eyelets (401) are displaced from one an-

other along the first tightened line (4). A plurality of second eyelets (401) are displaced from one another along the second tightened line (4). A pull string (5) is disposed to successively and alternately pass through the first and second eyelets (401) such that pulling of the string (5) brings the first and second tightened lines (4) to displace toward each other, thereby enabling the shell body (30) to fit around the user's body.



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F I G. 12

Description

[0001] This invention relates to a sleeping bag, more particularly to a sleeping bag having a shell body with a pull string which can be drawn to adjust the shape of the shell body so as to fit different users.

[0002] Mummy-style sleeping bags are intended mainly for use in cold weather since they are more effective in conserving heat. Fig. 1 shows a conventional mummy-style sleeping bag, which is formed with an inner volume for fittingly accommodating the user's body. However, as the inner volume is fixed, the sleeping bag cannot fit users of varying height and build. To solve this problem, another conventional sleeping bag 1 is proposed, as shown in Fig. 2, and includes a plurality of resilient rings 13 formed by elastic bands or threads, which are stitched to an outer shell body 10. The resilient rings 13 are displaced from one another from a head end portion 11 to a foot end portion 12 such that the outer shell body 10 can be constricted suitably to fit around the user's body in use. However, the sleeping bag 1 is disadvantageous in that freedom of movement of the user and comfort of the sleeping bag 1 are relatively limited.

[0003] Fig. 3 shows still another conventional sleeping bag 2, which has a V-shaped opening that is formed in a chest portion 21 of an outer shell body, and that is covered with a fabric 25. Two zipper tracks 22,23 of a zipper unit are respectively stitched to two edges 210,211 of the opening such that a slide fastener 24 is movable to close the zipper unit so as to bring the edges 210,211 to displace toward each other. As such, the inner volume of the sleeping bag 2 at the chest portion 21 is adjustable. However, this adjustment is limited so that the sleeping bag 2 is not suitable for different users.

[0004] The object of the present invention is to provide a sleeping bag with an accommodation chamber the volume of which can be adjusted conveniently so as to fit different users.

[0005] According to this invention, the sleeping bag includes an elongated shell body which is made from a flexible material, and which defines an accommodation chamber therein. The accommodation chamber extends in a longitudinal direction of the shell body for receiving a user therein, and has an opening for access to the accommodation chamber. The shell body includes head and foot end portions which are disposed opposite to each other along the longitudinal direction, which are proximate to and distal from the opening, respectively, and which correspond in position to the user's head and feet, and a middle portion which is disposed between the head and foot end portions. The middle portion has a front major area which defines first and second tightened lines that are spaced apart from each other in one of the longitudinal direction and a transverse direction relative to the longitudinal direction. A plurality of first eyelets are displaced from one another along the first tightened line. A plurality of second eye-

lets are displaced from one another along the second tightened line. A pull string is disposed to successively and alternately pass through the first and second eyelets such that pulling of the pull string brings the first and second tightened lines to displace toward each other in a respective one of the longitudinal and transverse directions.

[0006] Other features and advantages of the present invention will become apparent in the following detailed description of the preferred embodiments of the invention, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of a conventional mummy-style sleeping bag;
 Fig. 2 is a schematic view of another conventional sleeping bag;
 Fig. 3 is a schematic view of still another conventional sleeping bag;
 Fig. 4 is a perspective view of the first preferred embodiment of a sleeping bag according to this invention;
 Fig. 5 is a perspective view of the first preferred embodiment when a pull string is in a tensioned state;
 Fig. 6 is a top view of the second preferred embodiment of a sleeping bag according to this invention;
 Fig. 7 is a top view of the third preferred embodiment of a sleeping bag according to this invention;
 Fig. 8 is a top view of the fourth preferred embodiment of a sleeping bag according to this invention;
 Fig. 9 is a top view of the fifth preferred embodiment of a sleeping bag according to this invention;
 Fig. 10 is a top view of the sixth preferred embodiment of a sleeping bag according to this invention;
 Fig. 11 is a top view of the seventh preferred embodiment of a sleeping bag according to this invention; and
 Fig. 12 is a top view of the seventh preferred embodiment when a string is in a tensioned state.

[0007] Before the present invention is described in greater detail, it should be noted that same reference numerals have been used to denote like elements throughout the specification.

[0008] Referring to Fig. 4, the first preferred embodiment of a sleeping bag 3 according to the present invention is shown to be a mummy-style bag, and comprises an elongated shell body 30 which is made from a flexible material, and which defines an accommodation chamber 31 therein. The accommodation chamber 31 extends in a longitudinal direction of the shell body 30 for receiving a user therein, and has an opening 32 for access to the accommodation chamber 31. The shell body 30 includes head and foot end portions 300,303 which are disposed opposite to each other along the longitudinal direction, which are proximate to and distal from the opening 32, respectively, and which correspond in position to the user's head and feet, and a mid-

dle portion 301 which is disposed between the head and foot end portions 300,303. The middle portion 301 has a front major area 304 which defines first and second tightened lines 4 that are spaced apart from each other in a transverse direction relative to the longitudinal direction and that extend parallel to each other. A plurality of first tabs 40 and a plurality of second tabs 40 are stitched to the front major area 304. The first tabs 40 are displaced from one another along the first tightened line 4, and are formed with first eyelets 401. The second tabs 40 are displaced from one another along the second tightened lines 4, and are formed with second eyelets 401. A pull string 5 with first and second ends 50,51 is disposed to successively and alternately pass through the first and second eyelets 401 in such a manner that the pull string 5 is extended through the first eyelet 401 at a first position of the first tightened line 4 nearest to the head end portion 300, the second eyelet 401 at a second position of the second tightened line 4, the first eyelet 401 at a third position of the first tightened line 4, the second eyelet 401 at a fourth position of the second tightened line 4, the first eyelet 401 at a fifth position of the first tightened line 4, and the second eyelet 401 at a fifth position of the second tightened line 4, and is then extended through the first eyelet 401 at a fourth position of the first tightened line 4, the second eyelet 401 at a third position of the second tightened line 4, the first eyelet 401 at a second position of the first tightened line 4, and the second eyelet 401 at a first position of the second tightened line 4. At this time, the first and second ends 50,51 hang loosely at the first and second eyelets 401 at the first positions. In use, the first and second ends 50,51 can be pulled to bring the first and second tightened lines 4 to displace toward each other in the transverse direction, thereby placing the pull string 5 in a tensioned state, as shown in Fig. 5. It is noted that the first and second ends 50,51 can be tied into a knot or tightened in position by a conventional fastening means such that the pull string 5 can be held in the tensioned state.

[0009] Since the pull string 5 is extended alternately through the first and second eyelets 401 which are arranged along the first and second tightened lines 4 that extend in the transverse direction, the shell body 30 can be constricted appropriately by pulling of the first and second ends 50,51 of the pull string 5 such that the shell body 30 fits comfortably around the user's body for enhanced warmth.

[0010] Fig. 6 shows the second preferred embodiment of a sleeping bag 3 according to this invention. In this embodiment, the sleeping bag 3 is a rectangular bag and includes a rectangular shell body 31 with a front major area 304 at the middle portion 301. The front major area 304 has proximate and distal regions 305,306 relative to the head end portion 300 and corresponding to the trunk and the legs of the user. The first and second eyelets 401 are arranged to extend from the proximate region 305 to the distal region 306.

[0011] Referring to Fig. 7, the third preferred embodiment of a sleeping bag according to this invention is shown to be similar to the second embodiment in construction. In this embodiment, a third tightened line 7 is

5 defined at the foot end portion 303 and extends in the transverse direction to join the first and second tightened lines 4. At least one third tab with a third eyelet 70 is disposed at the third tightened line 7 to permit the pull string 5 to pass therethrough between the first and second eyelets 401 at a last position. As such, pulling of the pull string 5 can bring the third tightened line 7 to displace towards the head end portion 300 in the longitudinal direction, thereby adjusting the length of the shell body 31. As such, this embodiment can fit users of different height. In addition, a pocket 81 is disposed adjacent to the head end portion 300 for receiving the exposed first and second ends 50,51 of the pull string 5.

[0012] Fig. 8 shows the fourth preferred embodiment of this invention. In this embodiment, the first and second eyelets 401 are disposed at the proximate region 305. The distal region 306 defines fourth and fifth tightened lines 8 which are spaced apart from each other in the transverse direction. A plurality of fourth tabs with fourth eyelets 80 are displaced from one another along 10 the fourth tightened line 8. A plurality of fifth tabs with fifth eyelets 80 are displaced from one another along the fifth tightened line 8. Further, the distal region 306 defines a sixth tightened line 9 which is disposed at a position remote from the proximate region 305 and which 15 extends in the transverse direction to join the fourth and fifth tightened lines 8. At least one sixth tab with a sixth eyelet 90 is disposed at the sixth tightened line 9 to permit the pull string 5 to pass therethrough between the fourth and fifth eyelets 401 at a last position such that 20 pulling of the pull string 5 can bring the fourth and fifth eyelets 80 to displace toward each other in the transverse direction, and can bring the sixth tightened line 9 to displace toward the head end portion 300 in the longitudinal direction. Moreover, the fourth and fifth tightened lines 8 define a distance (W1) which is larger than 25 a distance (W2) between the first and second tightened lines 4. As such, the distal region 306 can be constricted to be narrower than the proximate region 305 so as to fit around the legs of the user.

[0013] Alternatively, in the fifth preferred embodiment of this invention as shown in Fig. 9, when the sleeping bag is configured as a mummy-style bag which has a tapered shell body 31 from the middle portion 301 to the foot end portion 303, the distance between the fourth and fifth tightened lines 8 is slightly larger than the distance between the first and second tightened lines 4.

[0014] Fig. 10 shows the sixth preferred embodiment of a sleeping bag according to this invention. In this embodiment, the front major area 304 of the middle portion 301 has three sets of eyelets 401,70 (each set including a plurality of first and second eyelets 401 and a third eyelet 70) which are displaced from one another in the longitudinal direction. Three pull strings 5 are disposed

to pass through the eyelets 401,70 of each set in a manner as described herein above so as to separately adjust three parts of the middle portion 301 which correspond in position to the chest region, the abdominal region and the leg region of the user.

[0015] Referring to Figs. 11 and 12, the seventh preferred embodiment of a sleeping bag according to this invention is shown to have first and second tightened lines 4 which are spaced apart from each other in the longitudinal direction, and which extend in the transverse direction such that pulling of the pull string 5 can bring the first and second tightened lines 4 to displace toward each other in the longitudinal direction. In addition, seventh and eighth tightened lines 6 are defined respectively on two lateral ends 307,308 of the front major area 304 opposite to each other in the transverse direction, and extend in the longitudinal direction to join the first and second tightened lines 4. seventh and eighth tabs with seventh and eighth eyelets 60 are disposed on the seventh and eighth tightened lines 6, respectively, to permit the pull string 5 to pass therethrough such that pulling of the pull string 5 can bring the lateral ends 307,308 to displace toward each other in the transverse direction. Thus, after tightening of the pull string 5, the middle portion 301 can fit around the abdominal part of the user.

Claims

1. A sleeping bag comprising:

an elongated shell body (30) which is made from a flexible material, and which defines an accommodation chamber (31) therein, said accommodation chamber (31) extending in a longitudinal direction of said shell body (30) for receiving a user therein, and having an opening (32) for access to said accommodation chamber (31), said shell body (30) including head and foot end portions (300,303) which are disposed opposite to each other along the longitudinal direction, which are proximate to and distal from said opening (32), respectively, and which correspond in position to the user's head and feet, and a middle portion (301) which is disposed between said head and foot end portions (300,303), **characterized in that:**

said middle portion (301) has a front major area (304) which defines first and second tightened lines (4) that are spaced apart from each other in one of the longitudinal direction and a transverse direction relative to the longitudinal direction; a plurality of first eyelets (401) which are displaced from one another along said first tightened line (4);

a plurality of second eyelets (401) which are displaced from one another along said second tightened line (4); and a pull string (5) which is disposed to successively and alternately pass through said first and second eyelets (401) such that pulling of said pull string (5) brings said first and second tightened lines (4) to displace toward each other in a respective one of the longitudinal and transverse directions.

- 5 2. The sleeping bag of Claim 1, **characterized by** a plurality of first tabs (40) which are secured on said front major area (304), which are displaced from one another along said first tightened line (4), and each of which is formed with a respective one of said first eyelets (401), and a plurality of second tabs (40) which are secured on said front major area (304), which are displaced from one another along said second tightened line (4), and each of which is formed with a respective one of said second eyelets (401).
- 10 3. The sleeping bag of Claim 2, **characterized in that** said first and second tightened lines (4) are spaced apart from each other in the transverse direction, and extend in the longitudinal direction.
- 15 4. The sleeping bag of Claim 3, **characterized in that** said front major area (304) further defines a third tightened line (7) which is disposed at a position remote from said head end portion (300) and which extends in the transverse direction to join said first and second tightened lines (4), said sleeping bag further comprising a third eyelet (70) which is disposed at said third tightened line (7) to permit said pull string (5) to pass therethrough such that pulling of said pull string (5) brings said third tightened line (7) to displace toward said head end portion (300) in the longitudinal direction.
- 20 5. The sleeping bag of Claim 3, **characterized in that** said front major area (304) has proximate and distal regions (305,306) relative to said head end portion (300), said front major area (304) further defining fourth and fifth tightened lines (8) which are disposed on said distal region (306) and which are spaced apart from each other in the transverse direction, said first and second tightened lines (4) being disposed on said proximate region (305), said sleeping bag further comprising a plurality of fourth eyelets (80) which are displaced from one another along said fourth tightened line (8), and a plurality of fifth eyelets (80) which are displaced from one another along said fifth tightened line (8) such that said pull string (5) passes through said fourth and fifth eyelets (80) and is pulled to bring said fourth and fifth tightened lines (8) to displace toward each
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other in the transverse direction.

6. The sleeping bag of Claim 5, **characterized in that** said distal region (306) further defines a sixth tightened line (9) which is disposed at a position remote from said proximate region (305) and which extends in the transverse direction to join said fourth and fifth tightened lines (8), said sleeping bag further comprising a sixth eyelet (90) disposed at said sixth tightened line (9) to permit said pull string (5) to pass therethrough such that pulling of said pull string (5) brings said sixth tightened line (9) to displace toward said head end portion (300) in the longitudinal direction. 5

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7. The sleeping bag of Claim 6, **characterized in that** said fourth and fifth tightened lines (8) define a distance (W1) therebetween which is larger than a distance (W2) between said first and second tightened lines (4). 20

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8. The sleeping bag of Claim 2, **characterized in that** said first and second tightened lines (4) are spaced apart from each other in the longitudinal direction, and extend in the transverse direction such that the pulling of said pull string (5) brings said first and second tightened lines (4) to displace toward each other in the longitudinal direction.

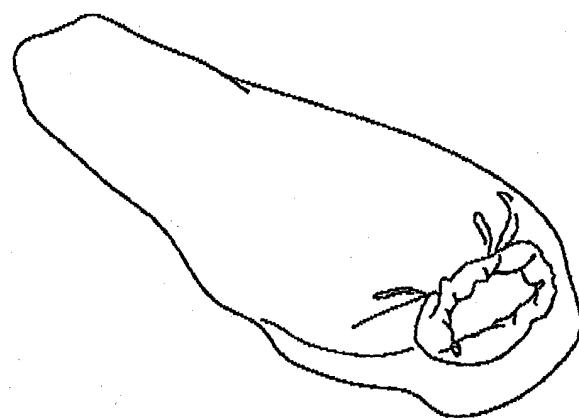
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9. The sleeping bag of Claim 8, **characterized in that** said front major area (304) has two lateral ends (307,308) which are opposite to each other in the transverse direction and which respectively define seventh and eighth tightened lines (6) that extend in the longitudinal direction to join said first and second tightened lines (4), said sleeping bag further comprising seventh and eighth eyelets (60) disposed respectively on said seventh and eighth tightened lines (6) to permit said pull string (5) to pass therethrough such that pulling of said pull string (5) brings said lateral ends (307,308) to displace toward each other in the transverse direction. 35 40

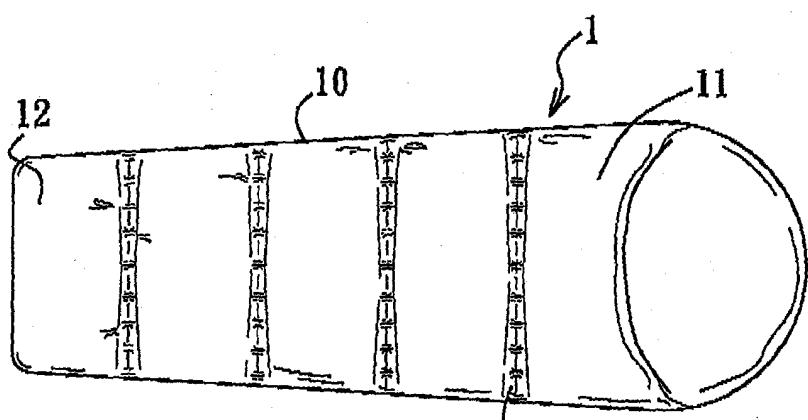
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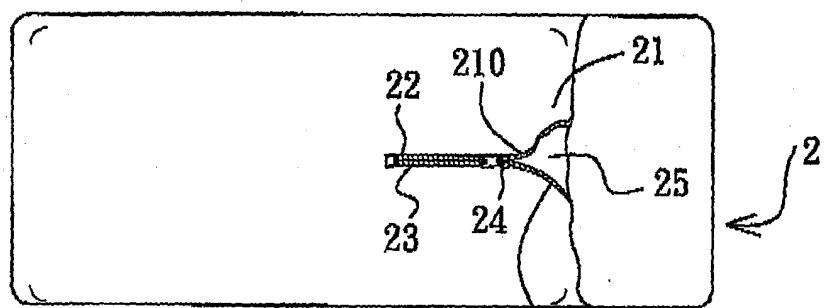
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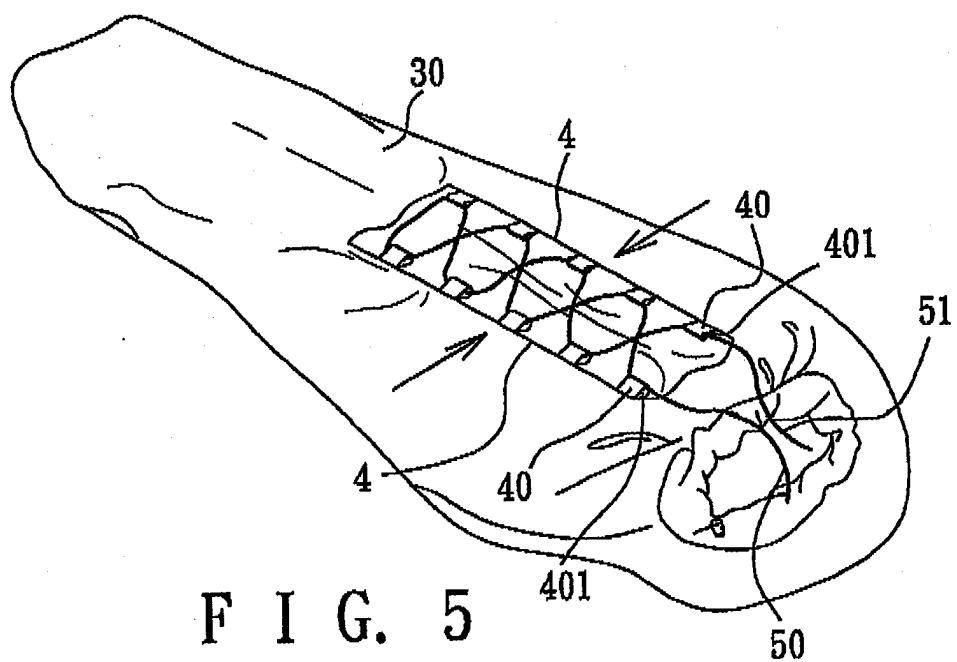
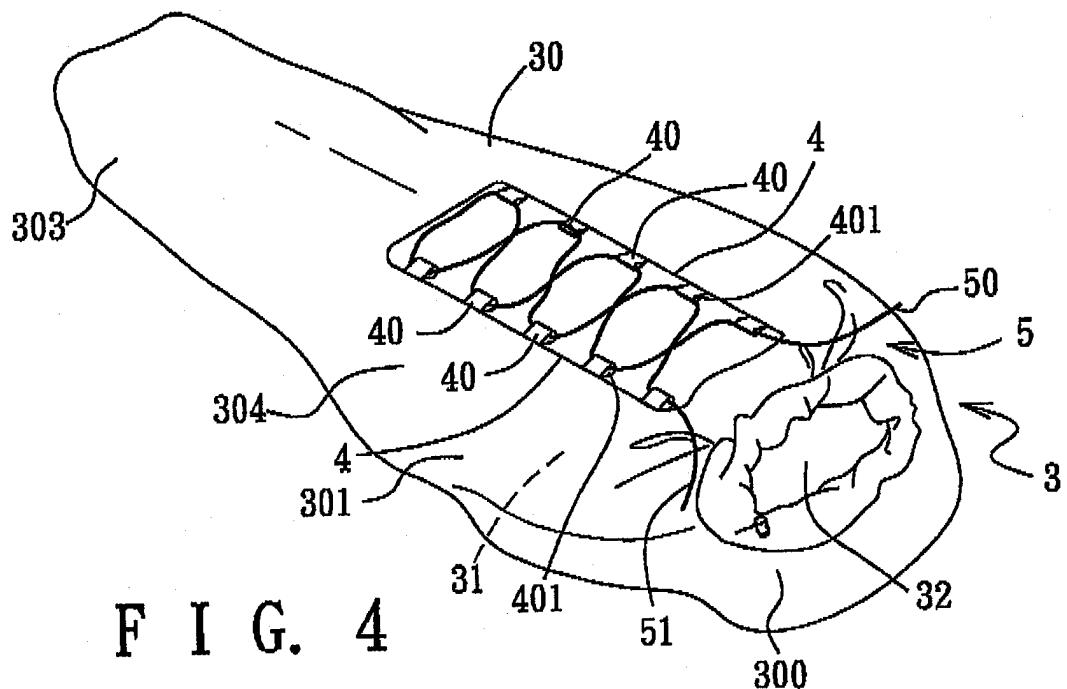
F I G. 1
PRIOR ART

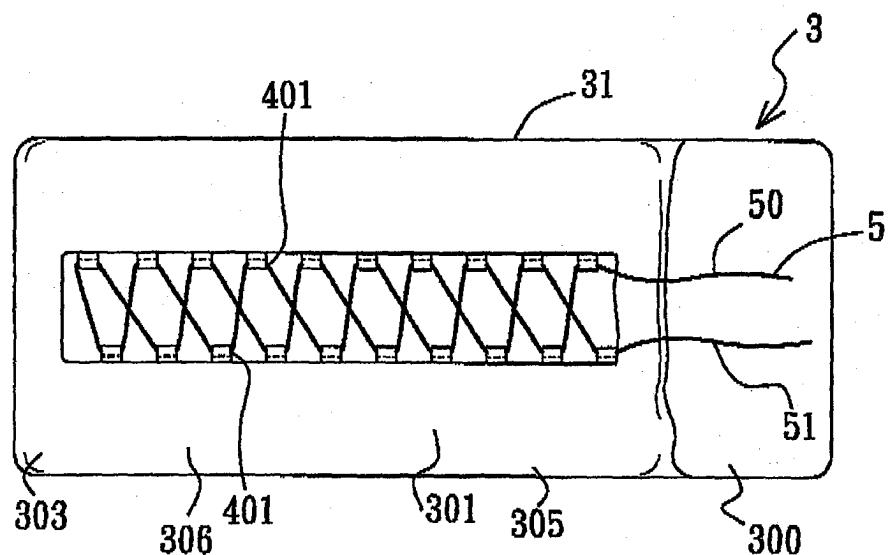


F I G. 2
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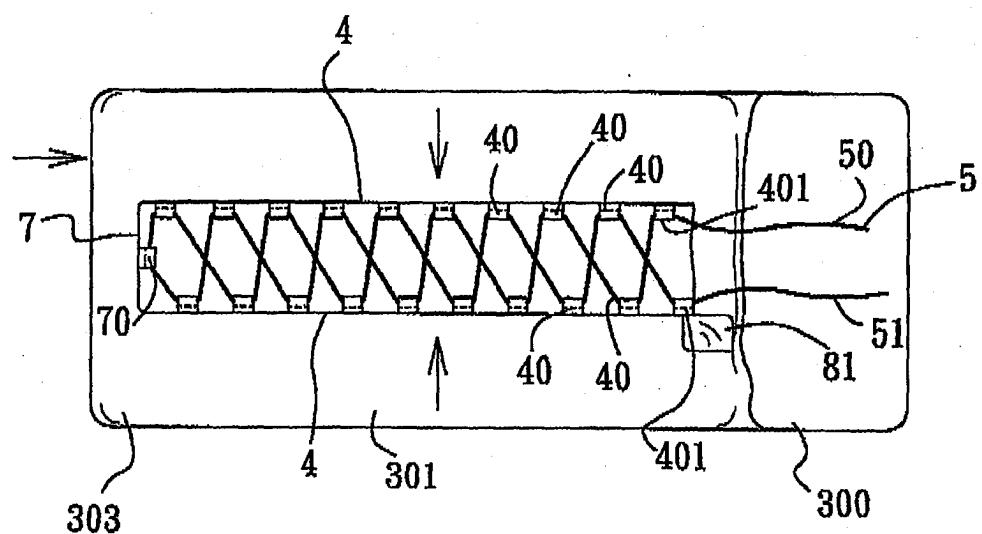


F I G. 3
PRIOR ART

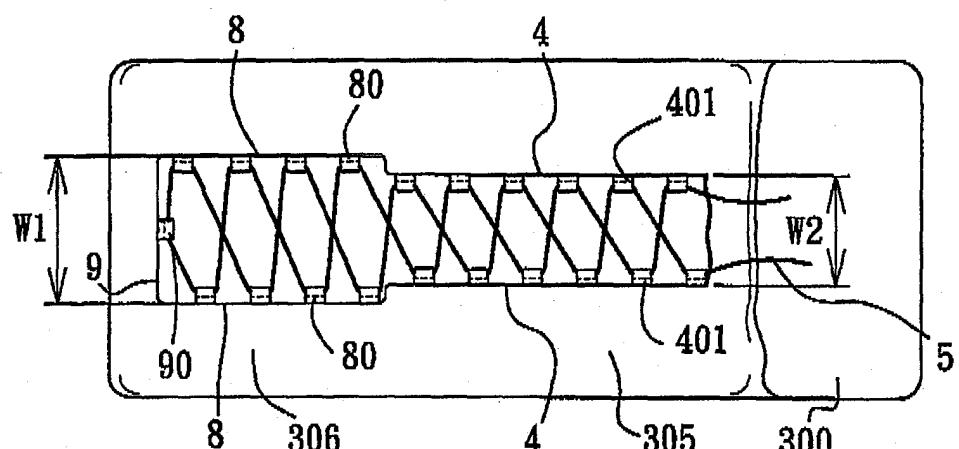




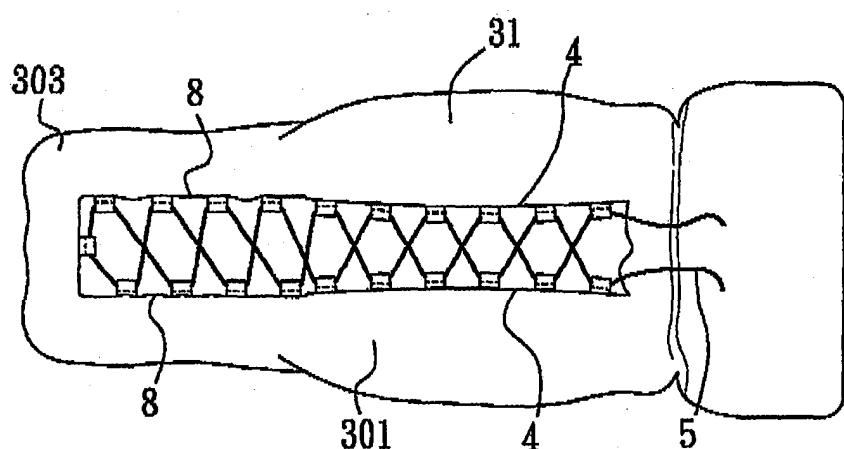
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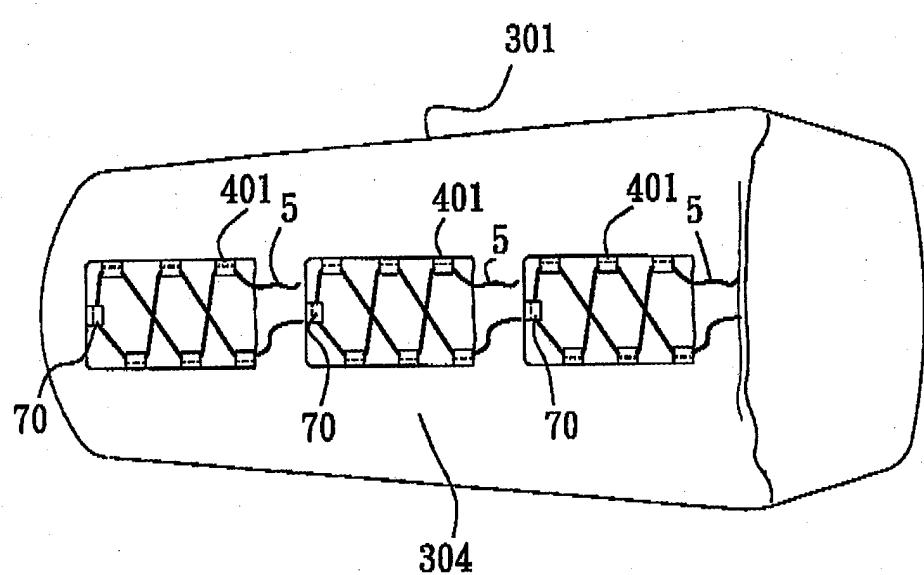
F I G. 7



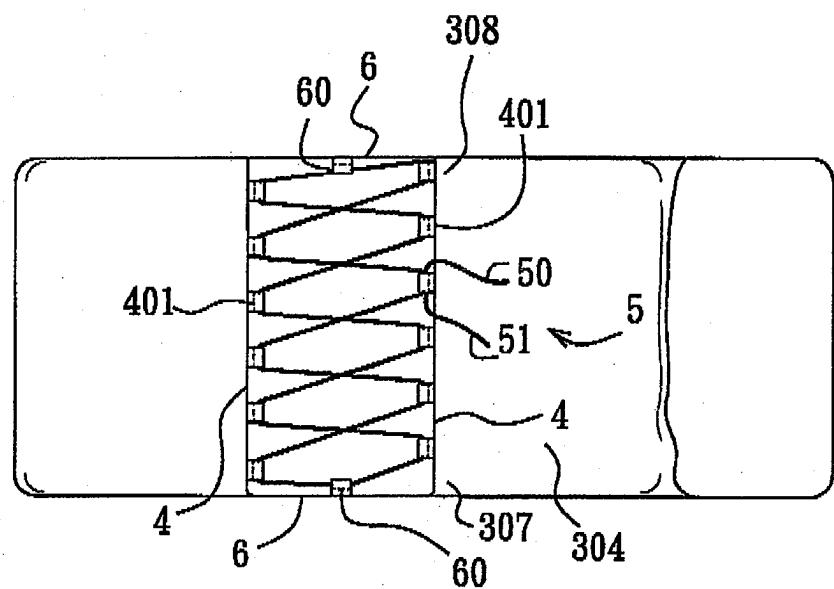
F I G. 8



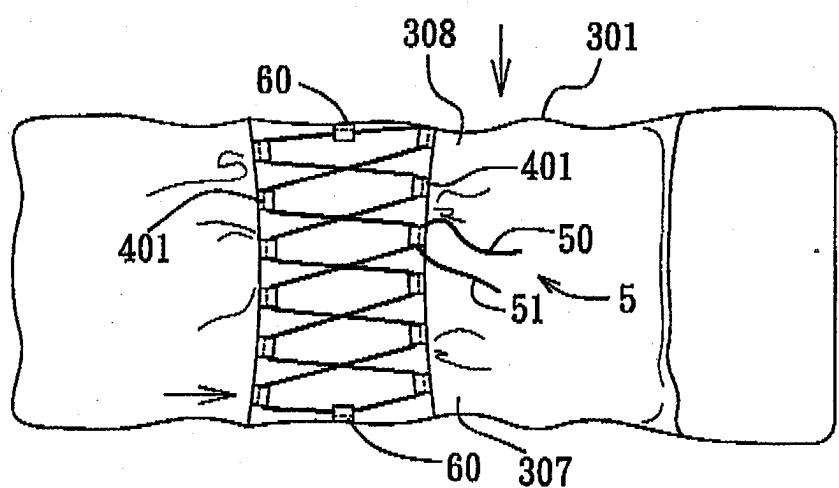
F I G. 9



F I G. 10



F I G. 11



F I G. 12



DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	US 1 863 256 A (SNODDY EDWARD C) 14 June 1932 (1932-06-14) * page 1, line 7 - line 11 * * page 1, line 44 - line 50 * * page 1, line 54 - line 57 * * figures 3,4 *	1-6	A47G9/08
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A	----- US 6 018 830 A (HOWE) 1 February 2000 (2000-02-01) * abstract; figures * * claim 20 *	1,8,9	
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A	----- DE 199 34 821 A (FISCHER WOLFGANG) 25 January 2001 (2001-01-25) * column 2, line 3 - line 8 * * claims 1-3,6; figure 2 *	1	A47G
X	----- GB 2 183 148 A (HOBART ROSE LIMITED) 3 June 1987 (1987-06-03) * page 1, line 87 - line 94 *	1-6	
The present search report has been drawn up for all claims			
2	Place of search The Hague	Date of completion of the search 14 October 2004	Examiner van Overbeek, K
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			
T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

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