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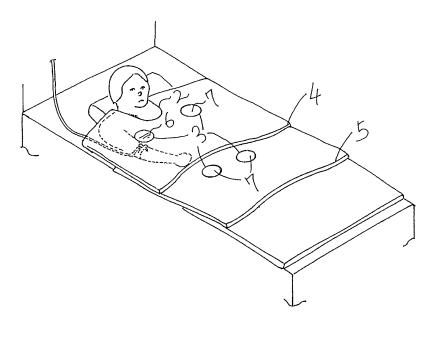
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(54) Medical body cover

(57) The present invention provides a human body cover wherein a human body cover main unit such as a quilt or a blanket is divided into a plurality of parts in a longitudinal direction thereof, and the divided parts are detachably formed to overlap in such a manner that the

part closer to an upper side of a human body is positioned on the top of the part subsequent thereto, whereby the intravenous drip administered part can be exposed and a condition of the drip infusion can be checked without pulling off the human body cover main unit.

Fig.9



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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention relates to a human body cover intended for use in medical institutions, wherein a human body cover main unit is divided into a plurality of parts in a longitudinal direction thereof, and the fact that the human body cover main unit is wet is proved at a glance when it is wet for some reason, thereby providing a function to prevent accidents due to coming off of a drip infusion or the like in the medical institutions or in households with a person who needs care.

2. Description of the Related Art

[0002] In medical institutions, there have heretofore exist specially-designed beds but no specially-designed quilts, so that the quilts used in the medical institutions are totally the same as conventional ones for household use. Thus, when an intravenous drip injection is given to a patient, a health care worker needs, for the purpose of accident prevention, to pull the quilt off the sleeping patient even at night in order to check whether or not a drip infusion line has come off. However, it is painful for anyone including those after surgery or those having a disease to be awaken by having the guilt pulled off many times at night. Alternatively, the health care worker can only recognize that the accident has not occurred by forcing the patient to sleep while a part where the intravenous drip is administered is placed out on the quilt. However, if a hand or leg is left lying on the quilt, this part is exposed to an outside air to cause the patient to feel cold and insecure, which is painful for the patient after the surgery or having the disease. Especially when the intravenous drip is administered into a forearm, a shoulder has also to be exposed on the quilt together with the forearm, which can cause stiffness or a pain in the shoulder due to the cold. Not only having the quilt pulled off but also sleeping while a part of a body is placed on the quilt is painful for the patient.

[0003] A prior art to enhance safety in the intravenous drip includes an invention that has been achieved to provide a simple and reliable method of detecting a condition of a drip infusion in order to ensure that the health care worker can be informed thereof, to remove the insecurity of the patient and to reduce burdens on nurses and the patient. (Japanese Patent Publication Laid-open No. 09-024094 (detailed description, drawings))

[0004] However, in the aforementioned invention, the patient needs to report by himself on a condition of a blood transfusion, and, for example, when the patient is asleep, the health care workers still need to pull off the quilt to check the drip infusion line under the quilt.

[0005] Furthermore, an arm heat-retaining device used during the intravenous drip administration has been

invented wherein when the intravenous drip is administered in an arm, the entire arm is kept warm by covering it with a heat-retaining cover such as the quilt or a blanket, and the arm is also actively warmed up, so that a pain can be more relived when the intravenous drip at room temperature is administered into a blood vessel at the arm while it is possible to prevent accidental displacement of a needle or a tube of a drip infusion due to contact with the heat-retaining cover. (Japanese Patent Publication Laid-open No. 2001-095916 (detailed description, drawings))

[0006] In the aforementioned invention, when the drip infusion line is set up at the arm or leg, the burden on the patient due to, for example, cold can be reduced even if that part where the drip infusion line is set up is exposed. However, as in the invention of Patent document 1, for example, when the patient is asleep, the health care workers still need to pull off the quilt to check the condition of the drip infusion line under the quilt, or the part where the intravenous drip is administered has to be left exposed for the check, resulting in no reduction in the burdens on the patient and the health care worker.

[0007] As described above, when the patient is asleep, there is no choice but to pull off the quilt or leave the intravenous drip administered part exposed so as to check the current condition of the drip infusion line, and therefore, there is not any method to check the drip infusion line which reduces the burdens on the patient and the health care worker. Consequently, in many medical institutions, the health care workers are only mentally encouraged to be careful to prevent accidents, and even when it is impossible to check whether abnormalities have occurred because the part where the intravenous drip is administered is actually hidden under the quilt, a checking operation may not performed considering on the basis of experience and speculation that no abnormalities have occurred. This is the best course of action that the health care workers can take so that the patient will not be awaken and suffer by having the quilt pulled off at night, but behind this, several medical accidents have actually occurred leading to death due to the fact that the drip infusion line has come off in an invisible area under the quilt.

45 SUMMARY OF THE INVENTION

[0008] There is thus a need in medical institutions for a specially-designed quilt which, when, for example, a intravenous drip is administered, reduces a burden on a patient and which prevents accidents resulting from disconnection of a juncture which is a drip infusion line due to some mechanism that happens in a invisible area under a quilt.

[0009] It is an object of the invention to provide a quilt which reduces a part exposed when a drip infusion is checked so as to relieve the burden on the patient, for example, during the intravenous drip administration and which is provided with a portion to enable the drip infusion

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line to be directly observed in order to prevent the accidents resulting from the disconnection of the juncture which is the drip infusion line due to some mechanism that happens in the invisible area.

[0010] To solve the above-mentioned problems, the present invention provides a human body cover wherein a human body cover main unit such as a quilt or a blanket is divided into a plurality of parts in a longitudinal direction thereof, and the divided parts are detachably formed to overlap in such a manner that the part closer to an upper side of a human body is positioned on the top of the part subsequent thereto, whereby the intravenous drip administered part can be exposed and a condition of the drip infusion can be checked without pulling off the human body cover main unit.

[0011] Furthermore, the human body cover according to claim 1 is provided wherein the divided parts of the human body cover main unit are formed so that an arm can be at least partially or totally exposed, thereby making it possible to check the condition of the drip infusion at the arm where the intravenous drip is often administered, without pulling off the human body cover main unit. [0012] Furthermore, the human body cover according to claim 1 is provided wherein the divided parts of the human body cover main unit are formed so that a leg can be at least partially or totally exposed, thereby making it possible to check the condition of the drip infusion at the leg where the intravenous drip is often administered similarly to the arm, without pulling off the human body cover main unit.

[0013] Furthermore, the human body cover according to claim 1, 2 or 3 is provided wherein through-holes are provided in the parts of the human body cover main unit corresponding to right and left subclavians and/or to right and left femoral inguinal regions, thereby making it possible to check the condition of the drip infusion at the right and left subclavians and/or the right and left femoral inguinal regions where the drip infusion line to a large vessel is often set up, without pulling off the human body cover main unit.

[0014] Furthermore, the human body cover according to claim 1, 2 or 3 is provided wherein a transparent airbag is detachably installed into the through-hole, in order to make it possible to check the condition of the drip infusion at the right and left subclavians and/or the right and left femoral inguinal regions without exposing a body of the patient to an outside air.

[0015] Furthermore, the human body cover according to claim 1, 2 or 3 is provided wherein non-transparent hole closing members are detachably installed into the through-holes other than the through-hole into which the transparent airbag is installed, so that the body of the patient is not unnecessarily exposed to the outside air.

[0016] Furthermore, the human body cover according to claim 1, 2 or 3 is provided wherein the transparent airbag has a multi-layer structure to increase a warmth retaining property, which allows the patient to suffer less when the intravenous drip is checked.

[0017] Furthermore, the human body cover according to claim 1, 2, 3, 4, 5, 6 or 7 is provided wherein a sheet comprising a water absorption sensor function is provided on a rear surface of the transparent airbag installed in the through-hole, and it is thus possible to recognize a liquid spilled from the disconnected drip infusion line under the human body cover even if the liquid is colorless. [0018] Furthermore, the human body cover according to claim 1, 2, 3, 4, 5, 6 or 7 is provided wherein the sheet comprising the water absorption sensor function is processed to change color or produce a colored pattern when it is wet, and it is thus possible to more clearly recognize the liquid spilled from the disconnected drip infusion line under the human body cover even if the liquid is colorless. [0019] The human body cover main unit is divided into the plurality of parts in the longitudinal direction thereof, and this provides such advantages that a hand or leg can

and this provides such advantages that a hand or leg can be put out from under the corresponding divided part, that medical practices such as the intravenous drip administration in a medical field can be easily implemented, and that reading can be easily enjoyed in a recumbent posture, for example, in general households.

[0020] In particular, the human body cover main unit

[0020] In particular, the human body cover main unit is divided into the plurality of parts in the longitudinal direction thereof, so that the intravenous drip administered part can only be exposed by pulling off the divided part of the human body cover main unit to check the condition of the drip infusion, thereby making it possible to reduce the burden caused by leaving the intravenous drip administered part exposed or the burden on the patient such as disturbance of a good sleep caused by having the human body cover pulled off during sleep.

[0021] Furthermore, the divided parts are detachably formed to overlap in such a manner that the part closer to a upper side of a human body is positioned on the top of the part subsequent thereto, which allows the divided parts to be modified to suit a body shape of the patient. [0022] The through-holes are provided in the parts of the human body cover main unit corresponding to the right and left subclavians and/or to the right and left femoral inguinal regions, so that it is possible to recognize at a glance the condition of the drip infusion at the right and left subclavians and/or the right and left femoral inguinal regions where the drip infusion line to the large vessel is often set up, without pulling off the human body cover main unit or without actually touching a wet portion when the human body cover main unit has gotten wet for some reason, resulting in a reduction of the burden on the health care workers as well as the burden on the patient. Moreover, the drip infusion line under the human body cover can be frequently checked, and even when an accident has occurred to cause bleeding due to the disconnection of the drip infusion line, it can be early detected and immediately dealt with, and it can thus be expected to prevent medical accidents due to the disconnection of the drip infusion line in the invisible area under the human body cover and to improve safety.

[0023] The transparent airbag is detachably installed

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into the through-hole, so that when the drip infusion line is set up at any one of the positions corresponding to the right and left subclavians and/or the right and left femoral inguinal regions, it is possible to check the condition of the part where the drip infusion line is set up without exposing the body of the patient to the outside air, and the burden on the patient due to, for example, cold can be reduced. Moreover, the transparent airbag is made detachable, so that even if the drip infusion line is set up in a different manner at these positions corresponding to the right and left subclavians and/or the position corresponding to the right and left femoral inguinal regions, the transparent airbag can be installed suitably to where the drip infusion line is set up.

[0024] The non-transparent hole closing members are detachably installed into the through-holes other than the through-hole into which the transparent airbag is installed, so that parts of the body of the patient other than a part where the drip infusion line is set up are not unnecessarily shown or exposed to the outside air, which can reduce the burden on the patient both physically and mentally.

[0025] The transparent airbag has the multi-layer structure to increase the warmth retaining property, which allows the patient to suffer much less from the cold from the through-holes.

[0026] Furthermore, the sheet comprising the water absorption sensor function is used on the rear surface of the transparent airbag installed in the through-hole, so that for example, when the drip infusion line is disconnected under the human body cover main unit to cause wetting for some reason, for example, due to the spilled liquid, it is possible to recognize at a glance this part without actually touching it even if the liquid is colorless and transparent, and it can be early detected and immediately dealt with, thus making it possible to expect the prevention of medical accidents and the improved safety. [0027] Furthermore, the sheet comprising the water absorption sensor function is processed to change color or produce the colored pattern when it is wet, and it is thus possible to easily recognize a change even when the drip infusion line is disconnected under the human body cover to cause the wetting for some reason, for example, due to the spilled of the liquid.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028]

FIG. 1 is a plan view of a human body cover showing one example of the present invention;

FIG. 2 is a side view of the human body cover showing one example of the present invention;

FIG. 3 is a perspective view of the human body cover showing one example of the present invention;

FIG. 4 is a perspective view of a transparent disk-shaped airbag having three layers showing one example of the present invention;

FIG. 5 is a sectional view of an example of using the transparent disk-shaped airbag having the three layers, showing one example of the present invention; FIG. 6 is a perspective view in which connections of the human body cover are velcro straps, showing one example of the present invention;

FIG. 7 is a perspective view in which the connections of the human body cover are snap fasteners, showing one example of the present invention;

FIG. 8 is a perspective view in which the connections of the human body cover are the velcro straps, showing one example of the present invention;

FIG. 9 is a diagram showing a use in one example of the present invention; and

FIG. 10 is a diagram showing a use in one example of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0029] One example of the present invention will be described with reference to the drawings.

[0030] FIG. 1 is a plan view of a human body cover showing one example of the present invention. FIG. 2 is a side view of the human body cover showing one example of the present invention. FIG. 3 is a perspective view of the human body cover showing one example of the present invention. FIG. 4 is a perspective view of a transparent disk-shaped airbag having three layers showing one example of the present invention. FIG. 5 is a sectional view of an example of using the transparent disk-shaped airbag having the three layers, showing one example of the present invention. FIG. 6 is a perspective view in which connections of the human body cover are velcro straps, showing one example of the present invention. FIG. 7 is a perspective view in which the connections of the human body cover are snap fasteners, showing one example of the present invention. FIG. 8 is a perspective view in which the connections of the human body cover are the velcro straps, showing one example of the present invention. FIG. 9 is a diagram showing a use in one example of the present invention. FIG. 10 is a diagram showing a use in one example of the present invention.

[0031] As shown in FIG. 1, a portion 2 to be hooked on a neck is provided in a human body cover main unit 1 at a position corresponding to an upper side of a human body. When the human body cover main unit 1 is put over the human body, a head comes out from the portion 2 to be hooked on the neck. This reduces exposure of shoulders and can increase a heat-retaining effect in the shoulders at night.

[0032] The human body cover main unit 1 is divided into a plurality of parts in a longitudinal direction thereof, for example, into a divided part 4 and a divided part 5, and the divided part 4 and the divided part 5 are formed so that they can be connected to overlap in such a manner that the part closer to the upper side of the human body

is positioned on the top of the part subsequent thereto.

[0033] The divided part 4 of the human body cover main unit 1 is formed so that an arm can be at least partially or totally exposed and so that when a drip infusion line is set up at the arm, a check can be made only by pulling off this divided part without pulling off the entire human body cover or without leavening the part where the drip infusion line is set up exposed.

[0034] The divided part 5 of the human body cover main unit 1 is formed so that an leg can be at least partially or totally exposed and so that when a drip infusion line is set up at the leg, a check can be made only by pulling off this divided part without pulling off the entire human body cover or without leavening the part where the drip infusion line is set up exposed.

[0035] For example, the velcro straps shown in FIG. 6 or the snap fasteners shown in FIG. 7, that is, detachable connection means are used for connections 4a and 5a of the divided parts.

[0036] Through-holes 3 are provided in the parts of the human body cover main unit 1 corresponding to right and left subclavians and/or to right and left femoral inguinal regions, and are arranged so that a check can be made without pulling off the human body cover when the drip infusion line is set up at the part corresponding to the right and left subclavians or the right and left femoral inguinal regions.

[0037] A sheet comprising a water absorption sensor function is provided on a rear surface of the transparent airbag installed in the through-hole of the human body cover 1. For example, a pattern emerging printed material (manufactured by Hiramatsu Sangyo Corporation) or a color changing printed material (Hiramatsu Sangyo Corporation) is used for the sheet comprising the water absorption sensor function. The former pattern emerging printed material (manufactured by Hiramatsu Sangyo Corporation) appears to have no pattern in a dry state, but it is a sheet which has been subjected to a printing process so that a pattern emerges when it is wet. The latter color changing printed material (Hiramatsu Sangyo Corporation) is a sheet which has been subjected to a printing process so that the color changes when a portion subjected to the printing process is wet. The sheet comprising these water absorption sensor functions is used, so that in a case where an accident occurs in which the drip infusion line is disconnected when the drip infusion line is set up at the part corresponding to the right and left subclavians and/or the right and left femoral inguinal regions, it is possible to recognize from the through-holes 3 a spilled liquid even if the liquid is colorless and transparent unlike colored blood.

[0038] A detachable transparent airbag 6 is installed into one of the through-holes 3 which corresponds to the part where the drip infusion line is set up, in order to make it possible to check a condition of the drip infusion line without exposing a body of the patient directly to an outside air. The airbag 6 and the through-hole 3 are provided with a detachable connection 6a and a detachable con-

nection 3a such as the velcro straps.

[0039] Non-transparent hole closing members 7 are detachably installed into the through-holes 3 other than the through-hole 3 into which the transparent airbag 6 is installed, so as to prevent the body of the patient from being exposed directly to the outside air and from being shown. The non-transparent hole closing member 7 is made of the same material as that of the human body cover and sized equally to the through-hole 3, for example. The non-transparent hole closing member 7 and the through-hole 3 are provided with a detachable connection 7a and the detachable connection 3a such as the velcro straps in the same manner as the airbag 6.

[0040] The transparent airbag 6 is provided with a plurality of intermediate layers 6a and has a multi-layer structure, as shown in FIG. 4 and FIG. 5. Having the multi-layer structure increases the heat-retaining effect and allows the patient to suffer less from cold from the through-hole 3.

[Embodiment 1]

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[0041] FIG. 9 is a diagram showing a use in one example of the present invention, which represents an embodiment wherein a drip infusion line is set up at an arm. As shown in FIG. 9, the arm is placed under an overlapping portion of a divided part 4 of a human body cover 1 so as to set up the drip infusion line at the arm. This upper divided part may be pulled off to check a condition of the drip infusion line.

[0042] The embodiment described above concerns a case where the drip infusion line is set up at the arm, but the drip infusion line is also set up in many cases at a leg. In this case, the arm is placed under an overlapping portion of a divided part 5 of the human body cover 1 so as to set up the drip infusion line at the arm. The upper divided part may be pulled off to check the condition of the drip infusion line.

[0043] In addition, the drip infusion line is also set up at right and left subclavians and/or right and left femoral inguinal regions. When the drip infusion line is to be set up at these parts, one of these four parts is generally chosen to set it up. The human body cover 1 of the present invention is put over a patient, and an airbag 4 is installed into a through-hole 3 corresponding to the part where the drip infusion line is set up. Non-transparent hole closing members 7 are installed into the other through-holes 3. A bed sheet or bed cover is used under the human body cover 1 of the present invention, in which case a material is used whose color changes when it absorbs water, and therefore, when the drip infusion line is disconnected, a spilled liquid can be recognized even if it is transparent. When a check is made at night, a flashlight is used to light up the airbag 3 installed in the human body cover 1 to check whether or not the color has changed.

[Embodiment 2]

[0044] FIG. 10 is a diagram showing a use in one example of the present invention. This example of usage employs one example of the present invention in FIG. 8. A divided part 4 of a human body cover main unit 1 is formed so that an arm can be at least partially or totally exposed, and therefore allows a hand to put out from under the corresponding divided part as shown in FIG. 10, which facilitates reading in a recumbent posture, for example, in general households.

9. The human body cover according to claim 1, 2, 3, 4, 5, 6 or 7, wherein the sheet comprising the water absorption sensor function is processed to change color or produce a colored pattern when it is wet.

Claims

1. A human body cover, wherein a human body cover main unit such as a quilt or a blanket is divided into a plurality of parts in a longitudinal direction thereof, and the divided parts are detachably formed to overlap in such a manner that the part closer to an upper side of a human body is positioned on the top of the part subsequent thereto.

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2. The human body cover according to claim 1, wherein the divided parts of the human body cover main unit are formed so that an arm can be partially or totally exposed.

3. The human body cover according to claim 1 or 2, wherein the divided parts of the human body cover main unit are formed so that a leg can be partially or totally exposed.

4. The human body cover according to claim 1, 2 or 3, wherein through-holes are provided in the parts of the human body cover main unit corresponding to right and left subclavians and/or to right and left femoral inguinal regions.

5. The human body cover according to claim 1, 2 or 3, wherein a transparent airbag is detachably installed into the through-hole.

6. The human body cover according to claim 1, 2 or 3, wherein non-transparent hole closing members are detachably installed into the through-holes other than the through-hole into which the transparent airbag is installed.

7. The human body cover according to claim 1, 2 or 3, wherein the transparent airbag has a multi-layer structure.

8. The human body cover according to claim 1, 2, 3, 4, 5, 6 or 7, wherein a sheet comprising a water absorption sensor function is provided on a rear surface of the transparent airbag installed in the through-hole.

Fig.1

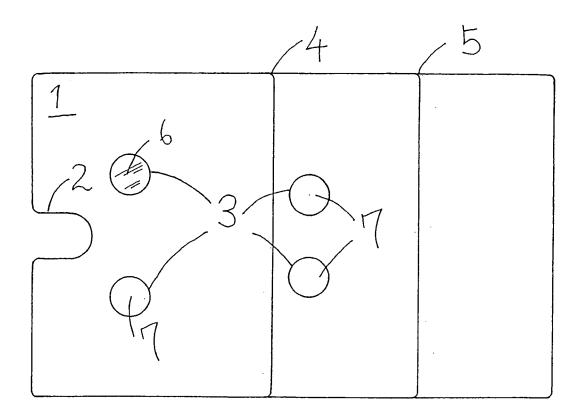


Fig.2



Fig.3

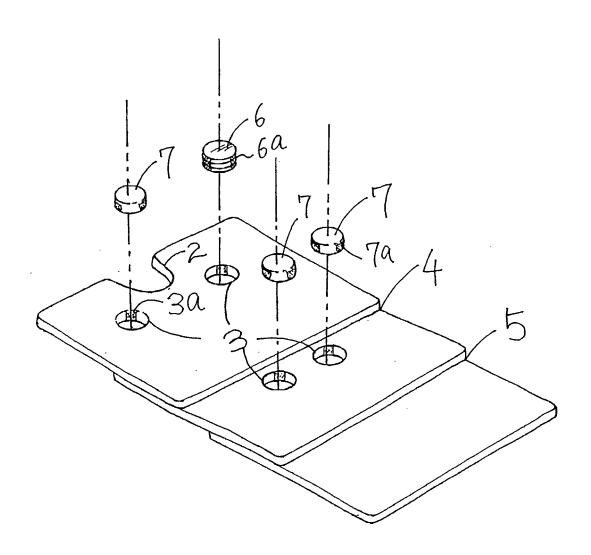


Fig.4

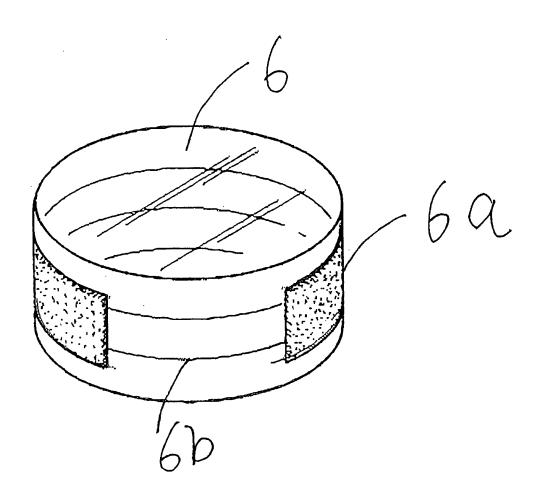
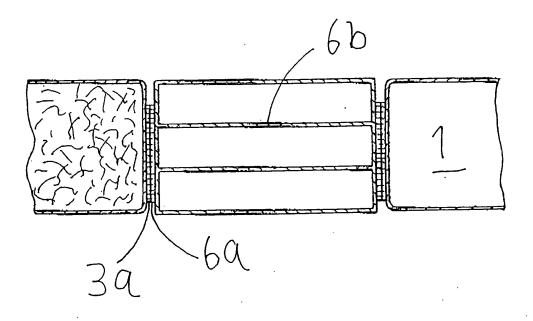


Fig.5





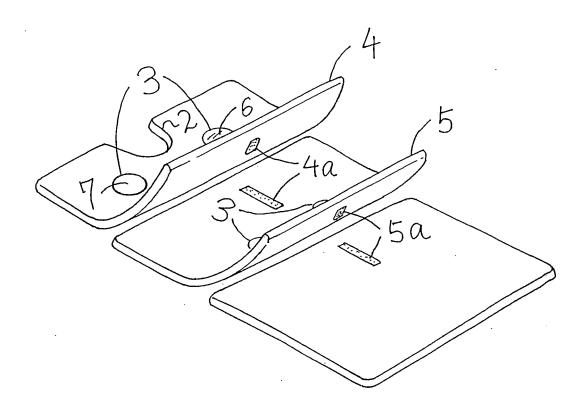


Fig.7

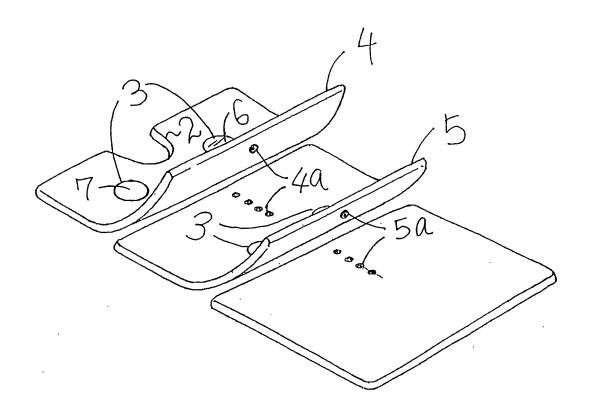


Fig.8

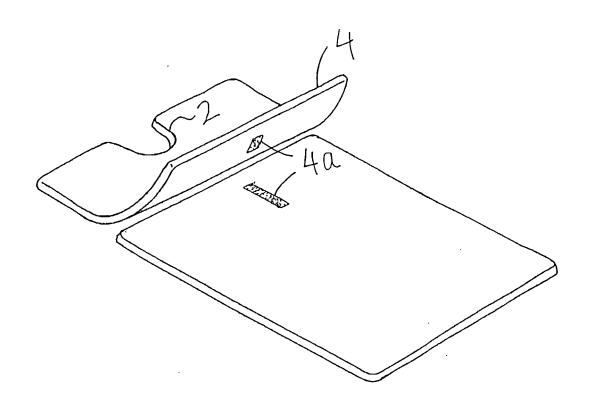


Fig.9

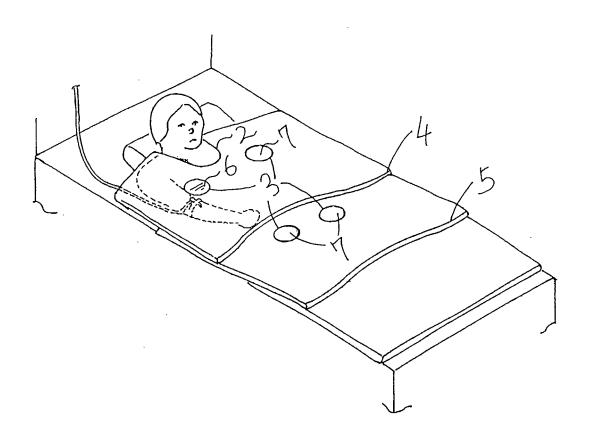
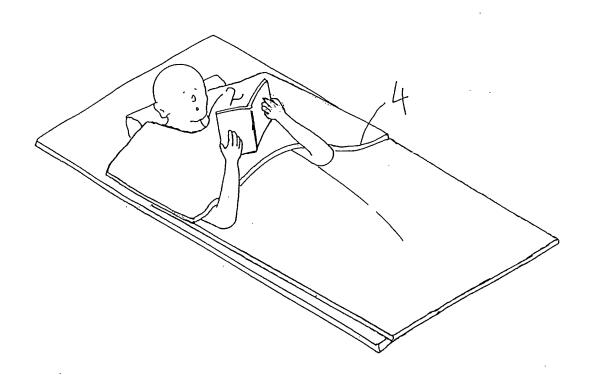


Fig.10





EUROPEAN SEARCH REPORT

Application Number EP 05 01 3887

Х	of relevant passages		to claim	APPLICATION (Int.CI.7)	
	US 3 856 006 A (KRZEW: 24 December 1974 (1974 * the whole document?	1-12-24)	1,2,4	A47G9/02 A61B19/08	
Х	US 4 027 665 A (SCRIVI 7 June 1977 (1977-06-0 * the whole document	97)	1,4		
Х	DE 89 04 426 U1 (SENGI GMBH) 18 May 1989 (198 * figure 2 *		1,3		
X	DE 26 57 520 A1 (PAUL 22 June 1978 (1978-06 * the whole document ?	-22)	1,3		
				TECHNICAL FIELDS SEARCHED (Int.Cl.7)	
				A47G A61B	
	The present search report has been	drawn un for all claims			
	Place of search	Date of completion of the search	·		
Munich		28 July 2005	Rei	Reichhardt, 0	
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		T : theory or principl E : earlier patent do after the filing dat D : document oited i L : document oited f	T: theory or principle underlying the i E: earlier patent document, but public after the filing date D: document cited in the application L: document cited for other reasons		

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

EP 05 01 3887

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28-07-2005

	atent document d in search report		Publication date		Patent family member(s)		Publication date
US	3856006	A	24-12-1974	AT AU CA EG ES GB IN JP JP PH RO ZA ZM	357663 633074 7181274 1032426 11500 223903 1476258 142237 1159642 50071187 57058944 10954 69055 7404935 12274	A A A A Y A A A B A A A A A A A A A A A	25-07-1980 15-12-1979 05-02-1976 06-06-1977 16-06-1977 10-06-1977 18-06-1977 25-07-1983 12-06-1975 11-12-1982 13-10-1977 26-06-1981 31-03-1976 22-11-1976
US	4027665	Α	07-06-1977	AU AU BE CA DE FR GB IE JP JP NL SE SE ZA	1080410	A A1 A1 A2 A1 A1 A B1 B C A B B C A B A	10-07-1980 07-09-1978 01-09-1977 17-03-1981 01-09-1981 08-09-1977 30-08-1979 10-02-1982 16-05-1985 13-03-1986 08-09-1977 11-07-1985 06-09-1977 16-07-1984 04-09-1977 18-11-1981 25-10-1978
DE	8904426	U1	18-05-1989	NONE			
DE	2657520	A1	22-06-1978	BE CH NL	862017 625954 7713972	A5	14-04-1978 30-10-1981 20-06-1978