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## EUROPEAN PATENT APPLICATION

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### (54) Rescuing device and related rescuing kit

(57) The present invention is related to Rescuing device (1) devoted to the emergency evacuation of a user, said user being a human or an animal, comprising a safety jacket (2), preferably made of a fireproof mate-

rial, means for inserting the arms or the legs of said user, means for firmly securing the body of said user to said safety jacket (2), and means for attaching said safety jacket (2) to means of transport.

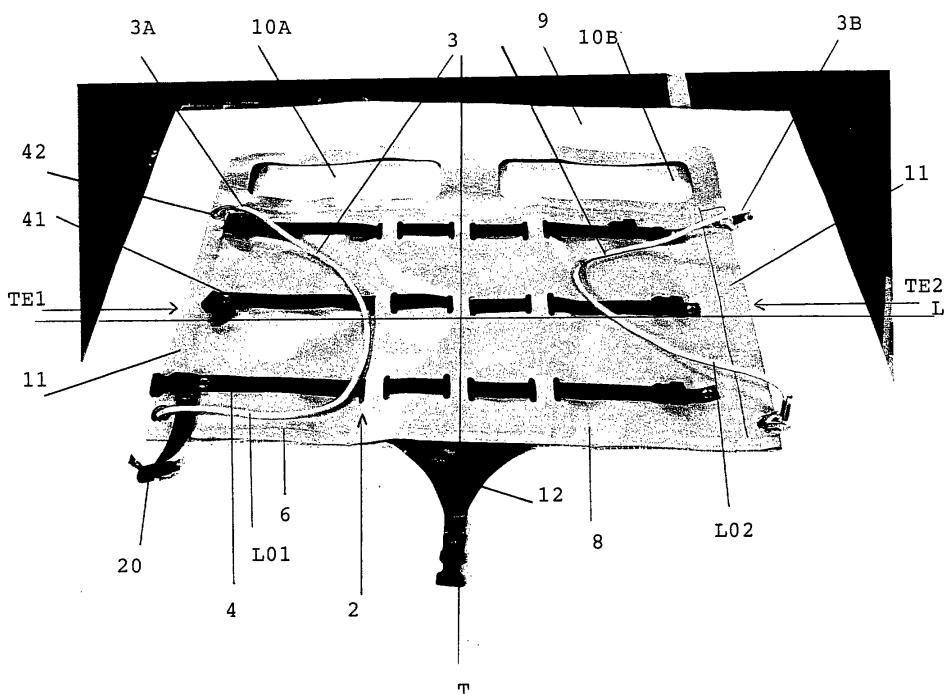


FIG. 1

**Description****Field of the invention**

**[0001]** The present invention is related to a rescuing or safety device for emergency evacuation of people and/or animals, particularly in case of fire.

**[0002]** The present invention is also related to a rescuing or safety kit for emergency evacuation containing said rescuing device.

**State of the art**

**[0003]** Different types of rescuing or safety devices (window-breaker, mask, ladder, ...) have been conceived in order to evacuate people or animals out of buildings in case of fire. However, these classical devices are generally presented separately, are heavy and are difficult to be assembled in the right place. Another drawback is that their structure is usually complex and it is sometimes quite difficult to operate them.

**Aims of the invention**

**[0004]** The present invention aims to provide a rescuing device and a rescuing kit which do not present the drawbacks mentioned hereabove.

**[0005]** In particular, the present invention aims to provide a rescuing device and a rescuing kit which are compact and which can be easily used.

**[0006]** The present invention aims to provide a rescuing device which can be easily and securely attached to the body of the user so that said user can be transported.

**[0007]** Another aim of the invention is to provide a rescuing device which can be adapted to evacuate people or animals of any age that is to say not only adults or children but also babies, small animals (dogs, cats, ...) and valuables (jewellery, money, ...) .

**Summary of the invention**

**[0008]** The present invention is related to a rescuing device not inflatable devoted to the emergency evacuation of a user, said user being a human and/or an animal, comprising a safety jacket, means for inserting the arms or the legs of said user, means for firmly securing the body of said user to said safety jacket, and means for attaching said safety jacket to means of transport.

**[0009]** Preferably, the safety jacket is a strip with longitudinal and transversal axis, transversal edges, a backsheet and a topsheet, a rear and a front, and dimensioned in length to extend at least from the waist up to the base of the user's neck, when the user is an adult human, or along two thirds of the length of the user's flank when worn by a large animal such as a dog.

**[0010]** Preferably, the safety jacket is a strip dimensioned in width at least to fit the waist of an adult human and the waist of a large animal.

**[0011]** Preferably, the safety jacket according to the present invention is made of a fireproof material.

**[0012]** Preferably, means for inserting the arms or legs of said user are holes arranged on the front of the safety jacket, the dimensions and the spacing of said holes being adapted both to the size and shape of a human arm and an animal leg.

**[0013]** Preferably, means for firmly securing the body of said user to said safety jacket and means for attaching said safety jacket to said means of transport comprise at least a harness, said harness corresponding to a system of two cords or equivalent means, each of said cords being bound at the extremities of the transversal edges along one of the transversal edges of the safety jacket and forming a closed loop, one of said loops being preferably adjustable in size.

**[0014]** Preferably, the safety jacket comprises reinforcing means such as metallic bars inserted inside the safety jacket and along the transversal edges of the safety jacket.

**[0015]** Preferably, means for firmly securing the body of said user to said safety jacket further comprise at least a first webbing strap with a buckle or any other equivalent closing means, said strap being preferably arranged on the backsheet of the safety jacket.

**[0016]** Preferably, means for firmly securing the body of said user to said safety jacket further comprise a second webbing strap, preferably arranged at the centre of the rear of the safety jacket so that said second webbing strap forms with said first webbing strap a seat adapted for young children when they are closed.

**[0017]** Preferably, the rescuing device also comprises a bag or pocket with four edges, top and bottom edges and two lateral edges, said bag or pocket being sewn on the topsheet of the safety jacket by all its edges except its top edge, said bag or pocket having at least one extendible gusset, and being preferably closeable at its top edge via the cord with adjustable loop of the harness.

**[0018]** The present invention is also related to a rescuing kit for evacuation of people, animals or valuables in case of fire, said kit comprising the rescuing device according the present invention, a cord or equivalent traction means and a snap hook or equivalent hanging means.

**[0019]** Preferably, the rescuing kit according to the invention further comprises a ladder.

**[0020]** Preferably, said ladder is flexible, is not twistable, has metallic steps with metallic spacers adapted for maintaining the steps of the ladder away from the wall and has cramping means for cramping the extremity of the ladder to an accessible element of a building (such as the frame of a window or a terrace).

**[0021]** Preferably, the rescuing kit according to the invention further comprises one or several elements selected from the group consisting of a window-breaker, a surviving mask with an air-filter, a chemical lamp, gloves and an alarm system.

**[0022]** Moreover, the present invention is also related to a storage box for storing the different elements of the rescuing kit according to the present invention.

**[0023]** In a preferred embodiment, said storage box comprises three compartments: one central compartment and two lateral compartments. Preferably, the compartments are of parallelepiped form and the central compartment has four faces, two lateral faces, a front face and a rear face. Preferably, each lateral compartment is joined to one lateral face of the central compartment by one of their crests around which they can rotate in order to open or close the box.

#### Short description of the drawings

**[0024]** Fig. 1 represents a top view of the rescuing device according to the present invention extended, with the backsheet of the safety jacket above and straps open.

**[0025]** Fig. 2 represents a top view of the rescuing device according to the present invention extended, with the backsheet of the safety jacket above and straps closed.

**[0026]** Fig. 3 represents a top view of the rescuing device according to the present invention extended, with the topsheet of the safety jacket above and straps open.

**[0027]** Fig. 4 represents a face view of the ladder comprised in the rescuing kit according to the invention, partly extended and with the cramping means cramped onto a wall.

**[0028]** Fig. 5 represents a side view of the ladder comprised in the rescuing kit according to the invention, partly extended and with the cramping means cramped onto a wall.

**[0029]** Fig. 6 represents a side view of the storage box for storing the rescuing kit according to one preferred embodiment of the invention, the box being closed.

**[0030]** Fig. 7 represents a top view of the storage box for storing the rescuing kit according to one preferred embodiment of the invention, the lateral compartment on left being closed, the lateral compartment on right being open.

#### Detailed description of the invention

**[0031]** A preferred embodiment of the rescuing device according to the invention is presented on figure 1. The rescuing device 1 comprises a safety jacket 2 made of a fireproof material.

**[0032]** The safety jacket is in fact a strip 2 with longitudinal L and transversal T axis, transversal edges TE1, TE2. The strip 2 comprises a backsheet 6 and a topsheet 7, a rear 8 and a front 9.

**[0033]** The strip is dimensioned in length (dimension along the longitudinal axis L) to extend at least from the waist up to the base of the user's neck, when the user is an adult human, or along two thirds of the length of the user's flank, when worn by a large animal such as a

dog.

**[0034]** The strip is dimensioned in width (dimension along the transversal axis T) at least to fit around the waist of an adult human.

**[0035]** The rescuing device also comprises means for inserting the arms or the legs when the user is a human or an animal, which can take the form of holes 10A and 10B arranged on the front 9 of the strip 2, as illustrated in figure 1. The dimensions of said holes 10A, 10B are adapted to the size and shape of both human arms and animal legs.

**[0036]** The rescuing device 1 also comprises means for firmly securing the body of the user to the safety jacket 2 and means for attaching said safety jacket 2 to means of transport such as a cord with a snap hook.

**[0037]** Said means for firmly securing the body of the user to the safety jacket and means for attaching said safety jacket 2 to means of transport comprise a harness 3 corresponding to a system of two cords 3A, 3B made

of a fireproof material. The cord 3A is bound at the extremities 21A, 21B of the transversal edge TE1 of the strip 2 and forms a closed loop LO1, said loop LO1 being adjustable in size. Similarly, the cord 3B is bound at the extremities 22A, 22B of the transversal edge TE2 of the strip 2 and forms a closed loop LO2 which is however not adjustable in size, as opposed to closed loop LO1.

**[0038]** Means for firmly securing the body of the user to the safety jacket or strip 2 comprise also a first webbing strap 4 with a buckle 20 or any equivalent closing means, said first webbing strap 4 being arranged on the backsheet 6 and along the longitudinal axis L of the safety jacket 2. Said means also comprise other webbing straps 41, 42 arranged parallel to the first webbing strap 4. In the preferred embodiment of the invention, the webbing straps 4, 41 and 42 are flat, have a resistance of 500 kg each and are made of a fireproof material.

**[0039]** In the preferred embodiment of figure 1, means for firmly securing the body of the user to the safety jacket 2 comprise also a second webbing strap 12 of triangular form which is arranged on the rear of safety jacket 2, preferably at the centre of the strip edge. Said second webbing strap 12 is able to form with said first webbing strap 4 a seat adapted for young children when it is folded as shown on figure 2. In fact, the second webbing strap 12 adopts with the first webbing strap 4, when extended, a "Y" configuration, the second webbing 12 being the stem and the right and the left parts being the forks or arms of the "Y" configuration (see figure 1).

**[0040]** Moreover, the rescuing device also comprises reinforcing means taking the form of metallic bars 11 in the preferred embodiment of the invention. Said metallic bars 11 are inserted inside the safety jacket 2 and along the transversal edges TE1, TE2 of the safety jacket 2.

**[0041]** As illustrated in figure 3, in the preferred embodiment of the invention, the rescuing device also comprises a bag or pocket 13 with four edges, a top edge 14, a bottom edge 24 and two lateral edges 34 and 44. Said bag or pocket 13 is sewn or otherwise bound to the

topsheet 7 of the safety jacket 2 by all its edges except the top edge 14 which is free. The bag or pocket 13 has at least one extendible gusset 15 (not shown). The bag or pocket 13 is closeable at its top edge via the cord 3A with the ajustable loop LO1 of the harness 3. The bag or pocket 13 is transparent and may be used indifferently to evacuate babies or valuables such as money or jewellery.

**[0042]** When the rescuing device of the present invention is used to evacuate a human, he has to put on the safety jacket 2 by inserting his arms into holes 10A and 10B and ajusting the webbing straps 4, 41 and 42.

**[0043]** When the rescuing device of the present invention is used to evacuate a child, the second webbing strap 12 in conjunction with the first webbing strap 4 is put in order to form a seat wherein said child can sit down, thus ensuring a complementary security of the rescuing device.

**[0044]** When the rescuing device of the present invention is used to evacuate an animal such as a dog or a cat, one has to insert the legs of the animals into the holes 10A and 10B and the safety jacket 2 is used as a stretcher for carrying said animal, the animal lying on the backsheet 6 of the safety jacket 2.

**[0045]** When the rescuing device of the present invention is used to evacuate smaller animals such as a cobaye or to evacuate a human baby, one has to put them into the pocket or bag or pocket 13, the top edge 14 of which is closed through adjustment of the cord 3A of the harness 3 so that the baby or smaller animal can be securely transported. It should be noticed that the baby or the smaller animal is not afraid during the evacuation thanks to the transparency of the bag or pocket 13 and thanks to the presence of holes 51, 52 into the topsheet 7 as illustrated in figure 2.

**[0046]** In the preferred embodiment of the invention, the rescuing kit comprises the rescuing device hereabove depicted, a snap hook and a cord with a core of continuous polyester, the sheath being made of incombustible wool, and having a 600 kg resistance. It also comprises a ladder 60 as illustrated in figures 4 and 5. Said ladder 60 is flexible as shown on figure 4, has metallic steps 61 with metallic spacers 62. Said spacers 62 maintain the ladder away from the wall down which the rescuing device is lowered for evacuation as illustrated in figure 5. The ladder 60 also comprises metallic cramping means 63 as illustrated in figure 5, thus facilitating the evacuation of the user. The size and shape of said cramping means 63 are adapted so that the upper extremity of the ladder 60 can be cramped to an accessible element of a building such as the frame of a window or a terrace. Said cramping means 63 are yellow, have a resistance of 975 kg without any rupture and satisfy the A.I.B. VINCOTTE INTERNATIONAL tests. The dimensions of the metallic steps 61 are typically: 40x20x0.2 mm, they are 305 mm in length and are made of aluminium. The webbing straps 64 of the ladder 60 are 37 mm in width, 2.55 mm in depth and have a resistance of 3000

kg. The metallic spacers 62 are preferably made of steel, are 80 mm in length, 15 mm in width and 1 mm in depth.

**[0047]** In the preferred embodiment of the invention, the rescuing kit also comprises protecting gloves, chemical lamps SNAPLIGHTS with 10 ml of fluid, the illuminating duration being greater than 20 minutes. The rescuing kit also comprises a window-breaker of 180 g in weight.

**[0048]** The present invention is also related to a storage box for storing the different elements of the rescuing kit according to the present invention. Figures 6 and 7 illustrate the storage box according to one preferred embodiment of the invention.

**[0049]** Said storage box 71 is sufficiently compact and light to be transported easily, the box being provided with a handle 78. Moreover, said box is yellow in order to be easily seen in a smoky room. It is made of steel and has a resistance temperature of 120°C.

**[0050]** Said storage box 71 comprises three compartments: one central compartment 72, and two lateral compartments 73, 74. Preferably, these compartments 72, 73, 74 are of parallelepiped form and the central compartment 72 has four faces, two lateral faces 75a, 75b, a front face 76 and a rear face 77. Preferably, each lateral compartment 73, 74 is joined to one lateral face 75a, 75b of the central compartment 72 by one of their crests 73a, 74a around which they can rotate. Said lateral compartments 73, 74 are arranged relatively to the central compartment 72 as the same manner as shutters relatively to a window so that they are lying upon the central compartment 72 when the box is closed (figure 6) and they are lying on both sides of the central part when the box is open (as illustrated in figure 7 for one of the two lateral compartments). The rear face 77 of the central compartment 72 is higher than the front face 76 so that one can easily see its content when the box is open.

## 40 Claims

1. Rescuing device (1) devoted to the emergency evacuation of a user, said user being a human or an animal, comprising a safety jacket (2), preferably made of a fireproof material, means for inserting the arms or the legs of said user, means for firmly securing the body of said user to said safety jacket (2), and means for attaching said safety jacket (2) to means of transport.
2. Rescuing device according to claim 1, **characterised in that** said safety jacket is a strip (2) with longitudinal (L) and transversal (T) axis, transversal edges (TE1, TE2), a backsheet (6) and a topsheet (7), a rear (8) and a front (9), said strip being dimensioned in length to extend at least from the waist up to the base of the user's neck when the user is an

adult human or along two thirds of the length of the user's flank when the user is a large animal such as a dog and being dimensioned in width at least to fit the waist of an adult human.

3. Rescuing device according to claim 1 or 2, **characterised in that** means for inserting the arms or legs of said user are holes (10A, 10B) arranged on the front (9) of the safety jacket (2), the dimensions and the spacing of said holes (10A, 10B) being adapted both to the size and shape of a human arm and an animal leg.

4. Rescuing device according to any one of the preceding claims, **characterised in that** means for firmly securing the body of said user to said safety jacket and means for attaching said safety jacket (2) to said means of transport comprise at least a harness (3), said harness corresponding to a system of two cords (3A, 3B) or equivalent means, each of said cords (3A, 3B) being bound at the extremities (21A, 21B, 22A, 22B) of the transversal edges (TE1, TE2) along one of the transversal edges (TE1, TE2) of the safety jacket (2) and forming a closed loop (LO1, LO2), one of said loops (LO1) being preferably adjustable in size.

5. Rescuing device according to claim 4, **characterised in that** means for firmly securing the body of said user to said safety jacket further comprise at least a first webbing strap (4) with a buckle (20) or any other equivalent closing means, preferably arranged on the backsheet (6) of the safety jacket (2).

6. Rescuing device according to claim 5, **characterised in that** means for firmly securing the body of said user to said safety jacket further comprise a second webbing strap (12), preferably arranged at the center of the rear (8) of the safety jacket (2) so that said second webbing strap (12) is able to form with said first webbing strap (4) a seat adapted for young children.

7. Rescuing device according to any one of claims 2-6, **characterised in that** it also comprises a bag or pocket (13) with four edges, top (14) and bottom edges and the two lateral edges, said bag or pocket (13) being sewn on the topsheet (7) of the safety jacket (2) by all its edges except its top edge (14), said bag or pocket (13) having at least one extendible gusset (15), and being preferably closeable at its top edge (14) via the cord (3A) with adjustable loop (LO1) of the harness.

8. Rescuing kit for evacuation in case of fire comprising the rescuing device according to any one of claims 1-7, a cord or equivalent traction means and a snap hook or equivalent hanging means, and pos-

sibly a ladder (60).

9. Rescuing kit according to claim 8, **characterised in that** the ladder (60) is flexible, is not twistable, has metallic steps (61) with metallic spacers (62) adapted for maintaining the steps of the ladder (60) away from the wall and has cramping means (63) for cramping the extremity of the ladder to an accessible element of a building (such as the frame of a window or a terrace).

10. Rescuing device according to claim 9, **characterised in that** it further comprises one or several elements selected from the group consisting of a window-breaker, a surviving mask with an air-filter, a chemical lamp, gloves and an alarm system.

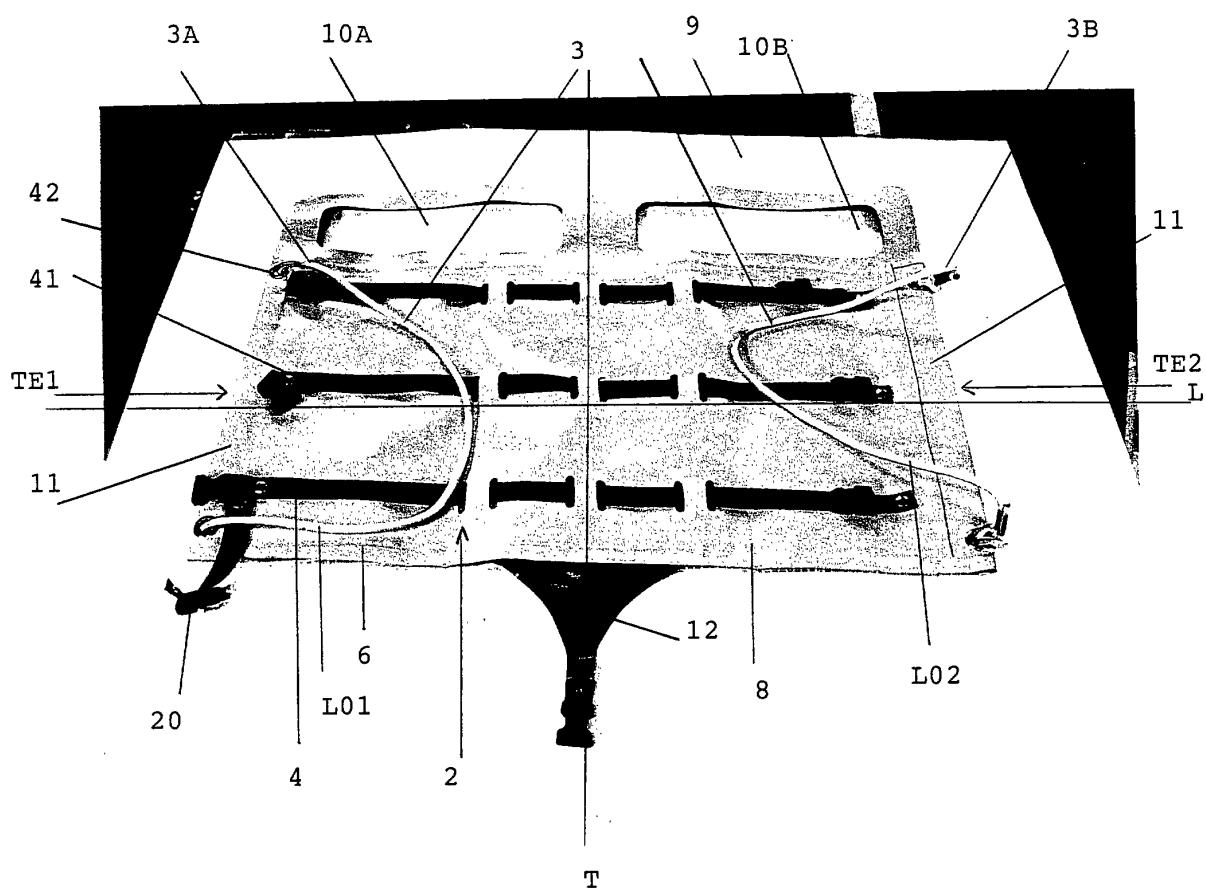


FIG. 1

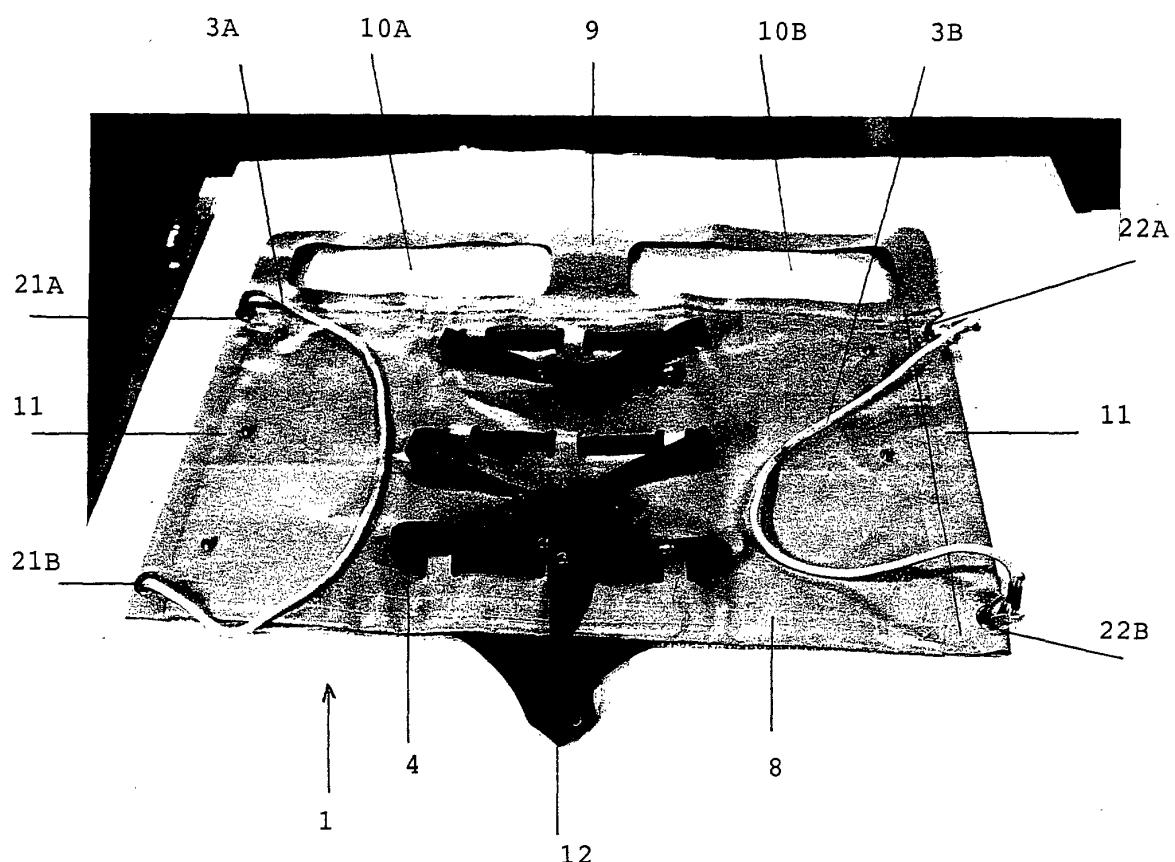


FIG. 2

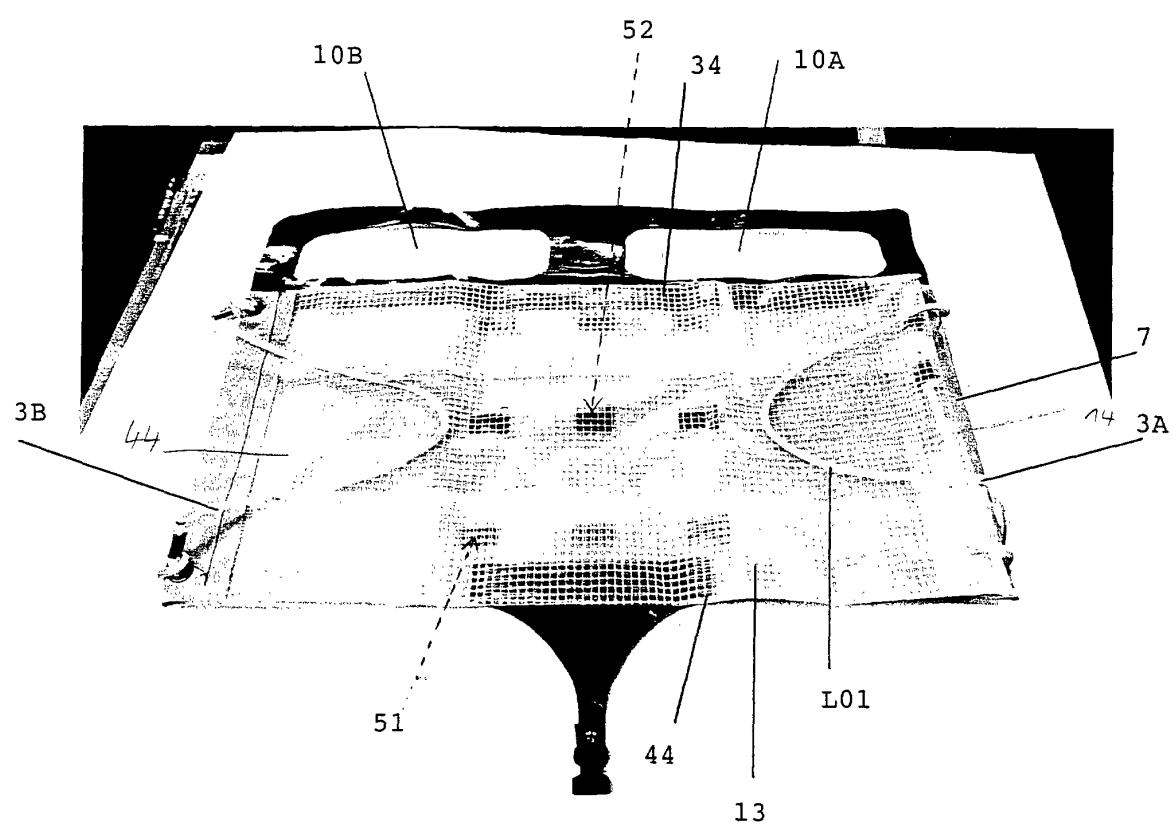


FIG. 3

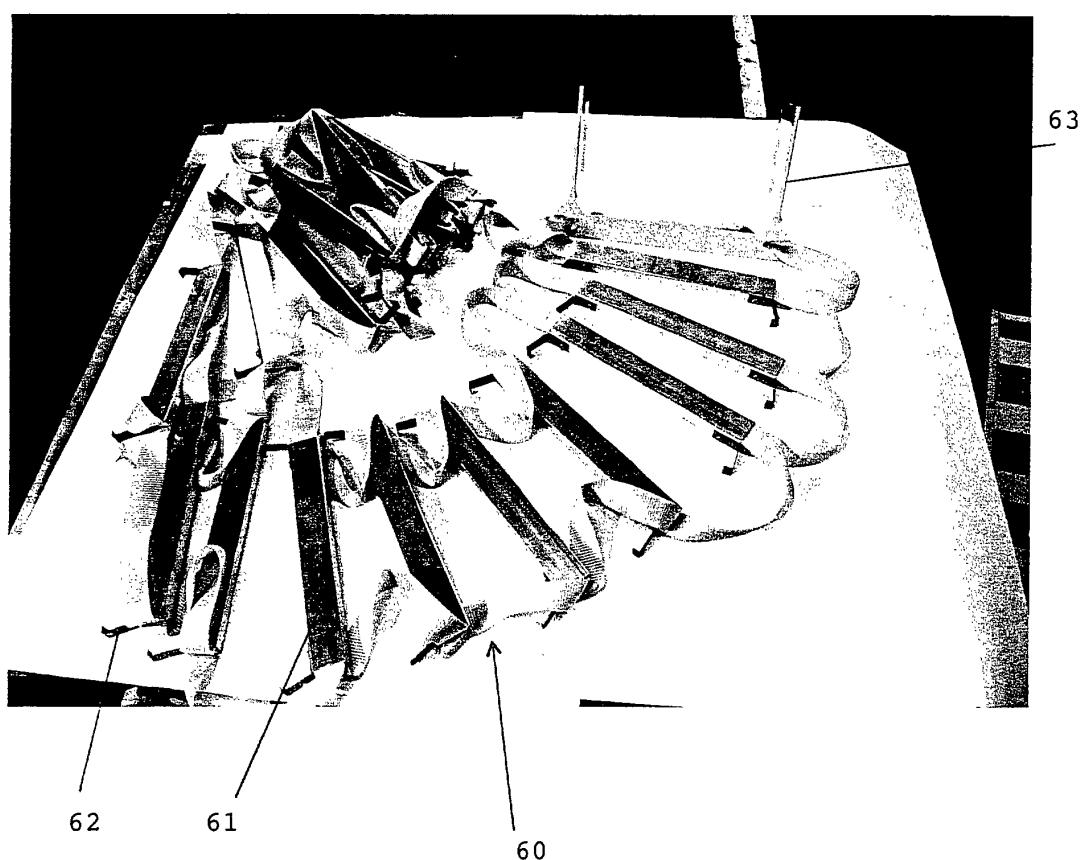


FIG. 4

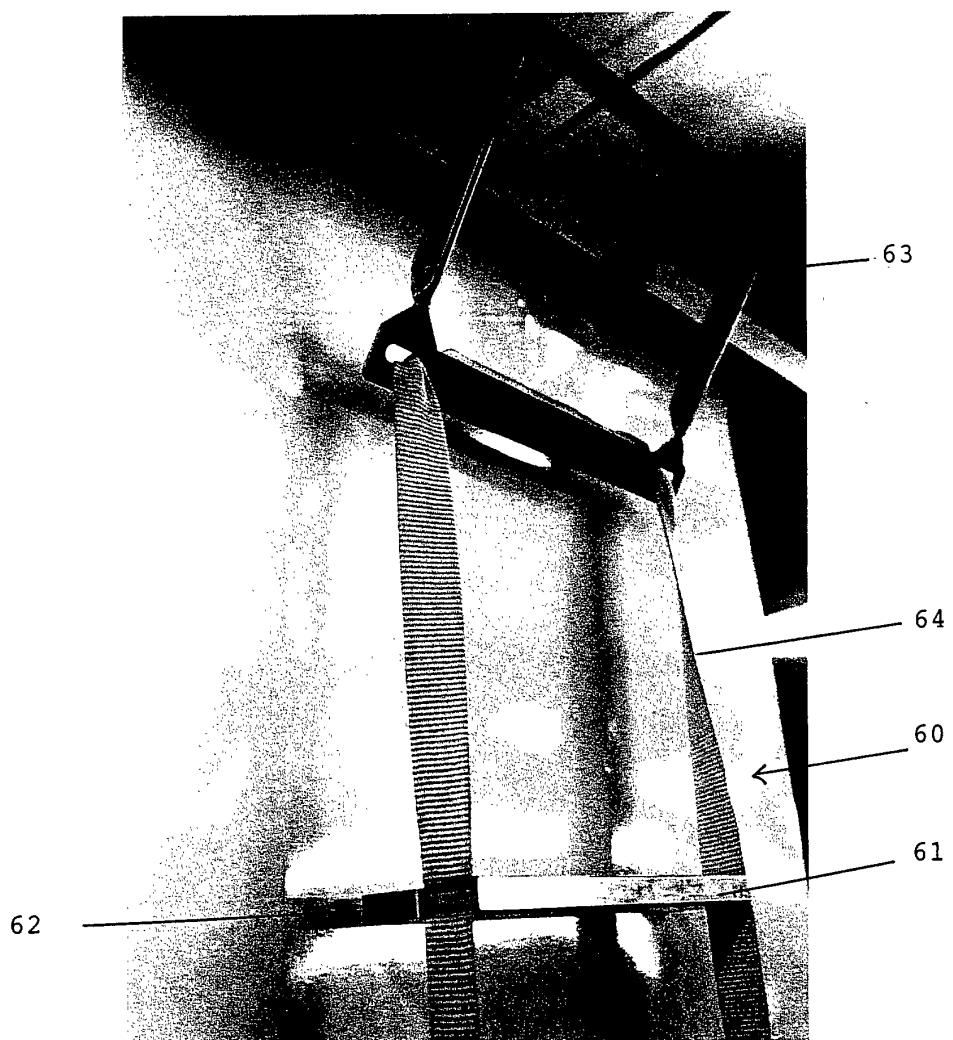


FIG. 5

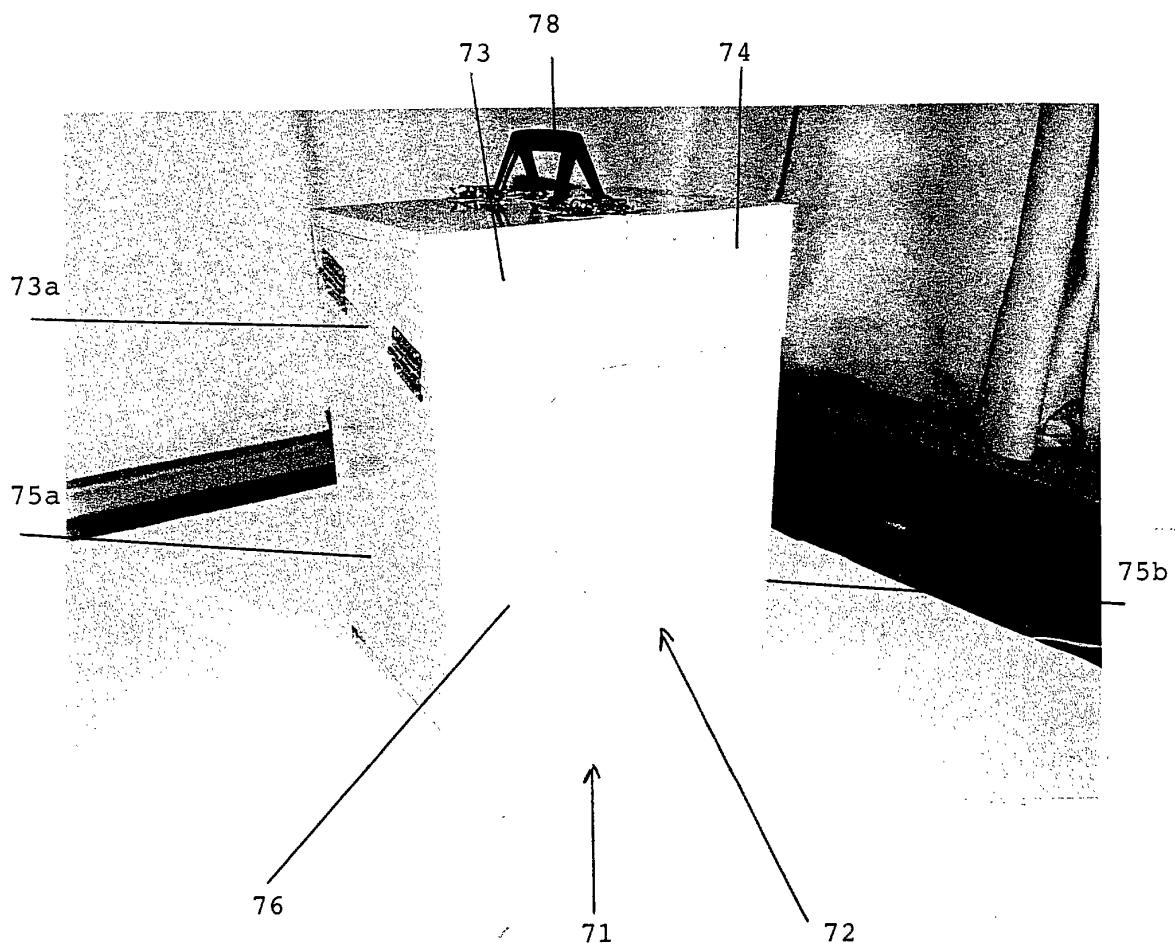


FIG. 6

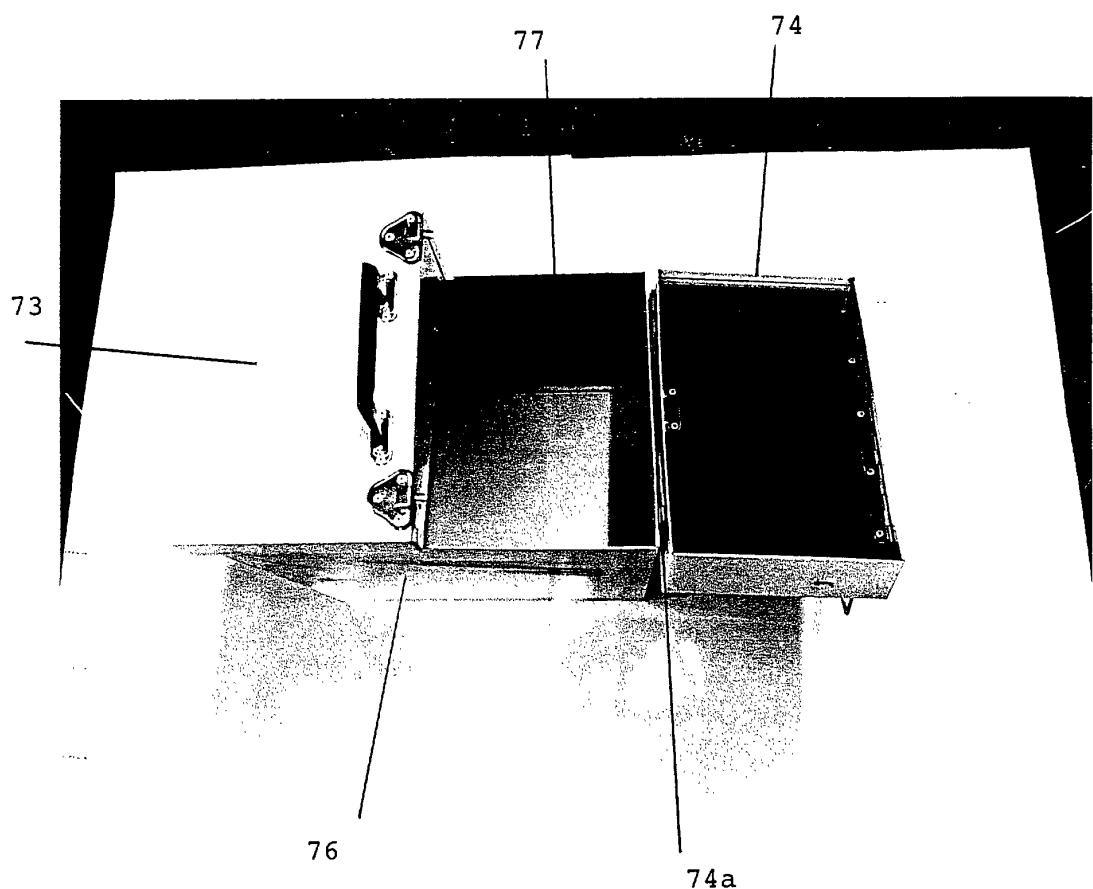


FIG. 7



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## EUROPEAN SEARCH REPORT

Application Number

EP 00 87 0210

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							
A	GB 2 316 325 A (JONES SUSAN) 25 February 1998 (1998-02-25) * abstract; figure 1 *	1-10	A62B35/00 A62B37/00 A62B1/02						
A	GB 2 087 224 A (DOMTEX INTERNATIONAL MARKETING) 26 May 1982 (1982-05-26) * figures 1,2 *	1-10							
A	US 4 452 339 A (RAYMAKER CHARLES A) 5 June 1984 (1984-06-05) * page 6, left-hand column, line 23,24 – right-hand column, line 28,29; figures 1,3 *	1							
A	US 1 630 948 A (ELIZABETH KARIKAS) 31 May 1927 (1927-05-31) * figures 1,2 *	1							
A	US 5 539 945 A (ROSENBERG NORMAN ET AL) 30 July 1996 (1996-07-30)		TECHNICAL FIELDS SEARCHED (Int.Cl.7) A62B						
<p>The present search report has been drawn up for all claims</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Place of search</td> <td style="width: 33%;">Date of completion of the search</td> <td style="width: 34%;">Examiner</td> </tr> <tr> <td>THE HAGUE</td> <td>18 January 2001</td> <td>van Bilderbeek, H.</td> </tr> </table> <p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>				Place of search	Date of completion of the search	Examiner	THE HAGUE	18 January 2001	van Bilderbeek, H.
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**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 87 0210

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.

18-01-2001

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