



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
09.09.2020 Bulletin 2020/37

(51) Int Cl.:
A61G 1/01 (2006.01) **A61G 1/048 (2006.01)**
A61G 7/10 (2006.01)

(21) Application number: **20161620.8**

(22) Date of filing: **06.03.2020**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

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(30) Priority: **08.03.2019 IT 201900003421**

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(54) **A DISPOSABLE MEDICAL DEVICE FOR LIFT AND TRANSFER OF PATIENTS**

(57) A disposable medical device (1) for lift and transfer of patients between ambulance stretchers (B) and/or hospital stretchers by a healthcare professional (W), which device (1) comprises a sheet support structure (2) having a peripheral portion (3) with longitudinal edges (4) and transverse edges (5). The structure (2) extends to such a length as to be able to support the entire body of a patient, has a top surface (6) that is intended to contact the body of the patient and a bottom surface (7) intended to contact a stretcher (B), wherein the peripheral portion (3) has a plurality of openings (12) adapted to define hand grips for one or more healthcare professionals (W). According to a peculiar aspect of the invention, the openings (12) are conveniently arranged along the edges (4, 5) at predetermined distances (d1, d2, d3, d4) from each other, calculated in combination both with the biometric parameters of the patients being transported and the maximum loads acceptable for healthcare professionals (W) having different muscular strengths, and allowed by injury-prevention regulations.

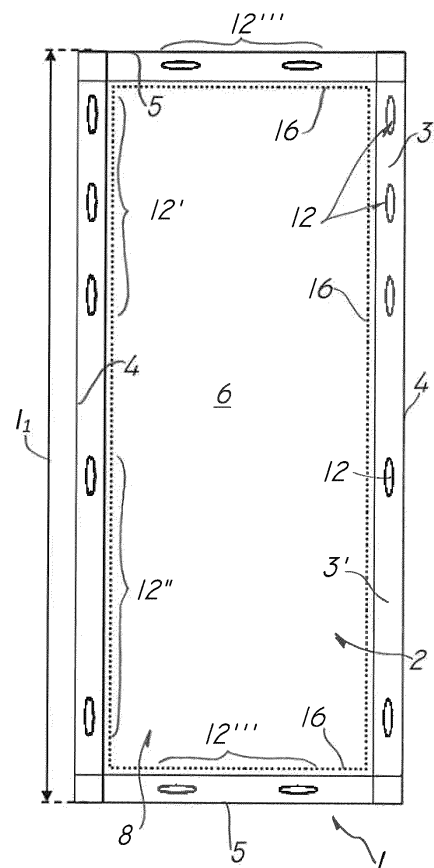


FIG. 1

Description

Field of The Invention

[0001] The present invention generally finds application in the field of medical and paramedical devices and particularly relates to a disposable medical device for lift and transfer of patients between ambulance stretchers and/or hospital stretchers by a healthcare professional.

Background Art

[0002] Devices are known in the field of medical and paramedical devices, which are adapted to be positioned between a patient-supporting surface for a patient and the patient him/herself.

[0003] Generally, these devices comprise a substantially sheet-like support structure which extends to such a length as to be able to support the entire body of the patient, and has a peripheral portion having the longitudinal and the transverse edges.

[0004] Moreover, the support structure comprises a top surface and a bottom surface, which are intended to contact the body of the patient and the surface that supports him/her respectively.

[0005] Preferably, the peripheral portion of such devices has hand grips which are adapted to be grasped by at least one healthcare professional during patient transfer maneuvers between two different support surfaces, preferably between an ambulance stretcher and a hospital stretcher.

[0006] A first drawback of these known devices is that the support structure is made of a material that is reusable after first use and has to undergo washing, disinfection and sterilization treatments, which increase manufacturing and maintenance costs.

[0007] In addition, the reconditioning treatments of these devices require the use of high temperatures and/or chemical cleansing products, that will likely deteriorate the device or increase the risk of contact with hazardous chemicals by the patient and the healthcare professional.

[0008] A further drawback of these devices is that the support structure generally has no liquid-absorbing inserts preventing leakage of body fluids of the patient outside the device, which increases injury hazards for the healthcare professional due to slipping.

[0009] In an attempt to at least partly obviate these drawbacks, devices have been developed which have a sheet structure comprising a plurality of mutually joined layers, at least one whereof is of absorbent type.

[0010] WO2018132776 discloses a device for lift and transfer of patients which comprises a sheet structure with an upper layer having a high liquid-absorbing ability and a lower layer having a relatively low coefficient of friction to facilitate the sliding movement of the patient along a patient-supporting surface.

[0011] The peripheral edge of this known device has

handles formed thereon, which are adapted to be folded inwards toward the sheet structure, to allow the device and the patient to be lifted and moved.

[0012] A first drawback of this solution is that the presence of foldable handles only partially assists the movement of the patient and will not prevent him/her from interfering with the handles as he/she is being moved.

[0013] A further drawback of this solution is that the layers that compose the sheet structure are made of air-permeable polyester fabric and nylon fabric or smooth polyester, respectively, which prevent simple sterilization of the device.

[0014] In an attempt to at least partly obviate these drawbacks, devices for lift and transfer of patients have been developed, which have a plurality of openings adapted to be grasped by one or more healthcare professionals and to assist the movement of the device and the patient.

[0015] GB2484885 discloses a disposable device for lift and transfer of patients that can be used in the medical field and has a multi-layer sheet structure comprising a liquid permeable upper layer intended to contact the patient, an intermediate absorbing layer and a liquid-impermeable lower layer.

[0016] This device also comprises a plurality of handles or openings arranged along the longitudinal extent of the device.

[0017] In addition, the layers of the sheet structure are coupled together by heat sealing on the peripheral portion thereof to avoid leakage of body fluids of the patient outside the device.

[0018] Nevertheless, this solution prevents proper handling of patients by healthcare professionals as it does not account for the maximum loads acceptable for healthcare professionals.

[0019] Furthermore, in this solution the distances between the handles or openings are constant or separate from other support systems, which prevents uniform load distribution along the longitudinal extent of the device.

Technical Problem

[0020] In view of the prior art, the technical problem addressed by the present invention is in short to simplify the operations for lift and transfer of patients between ambulance stretchers and/or hospital stretchers thereby reducing the risk of injury for healthcare professionals.

Disclosure of the invention

[0021] The object of the present invention is to obviate the above drawbacks, by providing a disposable device for lift and transfer of patients between ambulance stretchers and/or hospital stretchers by a healthcare professional, that is highly efficient and relatively cost-effective.

[0022] A particular object of the present invention is to provide a disposable device for lift and transfer of patients

of the aforementioned type that can reduce the risk of injury to the healthcare professionals that are to use it.

[0023] A further object of the present invention is to provide a disposable device for lift and transfer of patients of the aforementioned type that does not require any particular skill of a healthcare professional during the handling operations.

[0024] Another object of the present invention is to provide a disposable device for lift and transfer of patients of the aforementioned type that has reduced overall dimensions.

[0025] A further object the present invention is to provide a disposable device for lift and transfer of patients of the aforementioned type that can prevent leakage of body fluids of the patient outside the device.

[0026] Yet another object of the present invention is to provide a disposable device for lift and transfer of patients of the aforementioned type that can reduce the risk of injury to the healthcare professionals, due to slipping.

[0027] These and other objects, as more clearly explained hereinafter, are fulfilled by a disposable parametric device for lift and transfer of patients between ambulance stretchers and/or hospital stretchers by a healthcare professional as defined in claim 1, which device comprises a sheet support structure having a peripheral portion with longitudinal and transverse edges, which structure extends to such a length as to be able to support the entire body of a patient, a top surface which is intended to contact the body of the patient and a bottom surface intended to contact a stretcher, wherein the peripheral portion has a plurality of openings which are adapted to define hand grips for one or more healthcare professionals.

[0028] According to a peculiar aspect of the invention, the openings are conveniently arranged along the edges at predetermined distances from each other, which are calculated in combination both with the biometric parameters of the patients being transported and the maximum loads that can be acceptable for healthcare professionals having different muscular strengths, and allowed by injury-prevention regulations.

[0029] In addition, the distances are differentiated along the longitudinal extent of the supporting structure and are equal to a substantially constant value proximate to the head and to higher and increasing values proximate to the torso and limbs of the patient.

[0030] This combination of characteristics can simplify the operations for lift and transfer of patients between ambulance stretchers and/or hospital stretchers thereby reducing the risk of injury for healthcare professionals.

[0031] Advantageous embodiments of the invention are as defined in the dependent claims.

Brief description of the drawings

[0032] Further features and advantages of the invention will be more apparent from the detailed description of a preferred, non-exclusive embodiment of a disposa-

ble medical device for lift and transfer of patients, which is described as a non-limiting example with the help of the annexed drawings, in which:

5 FIGS. 1 and 2 are top and bottom plan views respectively of the disposable parametric device for lift and transfer of patients according to the invention;
 FIG. 3 is a side view of a portion of the device of Fig. 2;
 10 FIG. 4 is a schematic side view of the device of Fig. 1;
 FIGS. 5 and 6 are top plan views of a preferred embodiment of the invention.

Detailed description of a preferred exemplary embodiment

15 **[0033]** Particularly referring to the figures, there is shown a disposable medical device, generally designated by numeral 1, for lift and transfer of patients between ambulance stretchers and/or hospital stretchers by a healthcare professional W.

20 **[0034]** The disposable device 1 may be stored within a rescue ambulance having at least one stretcher B and be designed to cover the mattress thereof before the latter will receive a patient.

25 **[0035]** As is known per se, upon arrival at the hospital emergency room, the healthcare professionals W in the ambulance and/or those at the EMS shall transfer the patient from the ambulance stretcher B to the hospital stretcher B for the patient to receive appropriate care.

30 **[0036]** In a preferred embodiment of the invention, the device 1 comprises a sheet support structure 2 extending along a longitudinal direction and to such a length as to be able to support the entire body of a patient.

35 **[0037]** In addition, the support structure comprises a peripheral portion 3 with longitudinal edges 4 and transverse edges 5.

40 **[0038]** As best shown in FIGS. 1 and 2, the device 1 may have a substantially rectangular shape adapted to form a sheet of predetermined thickness s with a pair of longitudinal edges 4 having a length l_1 of about 2120 mm and a pair of transverse edges 5 having a width l_2 of about 900 mm.

45 **[0039]** As is known per se, the support structure 2 comprises a top surface 6 which is intended to contact the body of the patient and a bottom surface 7 intended to contact a stretcher B.

50 **[0040]** In a preferred embodiment of the invention, the sheet structure 2 is formed with a multilayer textile material having at least one first layer 8 and at least one second layer 9, which are coupled together.

[0041] Preferably, the sheet structure 2 may be made of UNECE 118/2012-compliant, latex-free, high-temperature resistant SMMS non-woven fabric.

55 **[0042]** Thus, the disposable device 1 may be belt or rolled on itself to reduce storage space and remain inside the rescue ambulance even under relatively high temperature conditions while avoiding any damage or aging thereof.

[0043] In addition, the first layer 8 and the second layer 9 can be coupled along the longitudinal edges 4 and the transverse edges 5 of the peripheral portion 3 by means of heat or R.F. sealing.

[0044] As shown in FIGS. 1 and 2, the layers 8, 9 may be coupled together also proximate to the edges 4, 5 to define the extent of the peripheral portion 3 and thereby restrict it to a strip 3'.

[0045] Advantageously, the first layer 8 which defines the top surface 6 comprises an absorbent layer that has a maximum carrying capacity of more than 150kg even when wet.

[0046] The first layer 8 includes at least one liquid-absorbing insert 10 inserted in an approximately central position of the support structure 2 corresponding to the lumbar region of the patient.

[0047] Conveniently, the second layer 9 that defines the bottom surface 7 is an impermeable layer to retain liquids collected by the insert 10 and has a longitudinal central portion 11 corresponding to the lumbar region of the patient.

[0048] In the preferred embodiment of the invention, the central portion 11 has a length l_3 that ranges from 800 mm to 1200 mm and is preferably about 1000 mm.

[0049] In order to facilitate the sliding movement of the device 1 as the patient is being lifted and transferred from one stretcher B to the other, the second layer 9 may have a low surface friction coefficient.

[0050] Note that the disposable device 1 falls in the class of non-invasive devices (Class I) suitable for contact with injured skin and used as a mechanical barrier and for the absorption of exudates under Leg. Dec. No. 46/97 (pursuant to EEC Directive 93/42).

[0051] It will be further appreciated that the disposable device 1 helps to reduce the consumption of chemicals for cleaning/disinfection of the mattresses of the stretchers B, and avoids contact with any residues of such substances by the patient and healthcare professionals W, as required by Leg. Dec. No. 81/08 and by S.M.I., namely for healthcare professionals, risk of exposure to chemical agents, Title IX.

[0052] This particular feature can also avoid the microbiological risk for patients and healthcare professionals as required by Leg. Dec. No. 81/08 and S.M.I., namely for healthcare professionals, risk of exposure to infectious agents, Titles I and X.

[0053] Indeed, similar reusable devices, although sanitized or disinfected do not entirely eliminate the above listed risks.

[0054] As shown in the figures, the peripheral portion 3, and hence the strip 3', has a plurality of openings 12 adapted to define hand grips designed to be grasped by one or more healthcare professionals W to facilitate lift and transfer of the patient.

[0055] Conveniently, the openings 12 are arranged along the longitudinal edges 4 and are placed at predetermined distances d_1 , d_2 , d_3 .

[0056] According to a peculiar aspect of the invention,

the predetermined distances d_1 , d_2 , d_3 are differentiated along the longitudinal extent of the support structure 2 with a substantially constant value d_1 proximate to the end zone that is intended to support the head and with progressively increasing values d_2 , d_3 proximate to the end zone intended to support the torso and the lower limbs of the patient.

[0057] In other words, the openings 12 formed along the longitudinal edges 4 of the supporting structure 2 are located at distances d_1 , d_2 , d_3 calculated with the relation $d_1 < d_2 < d_3$.

[0058] Therefore, the support structure 2 will comprise first openings 12' spaced apart from each other at a constant distance d_1 and second openings 12" spaced apart from each other at a distance d_3 and spaced apart from the first openings 12' at a distance d_2 .

[0059] The arrangement of the openings 12 along the longitudinal extent of the support structure 2 is calculated in combination both with the biometric parameters of the patients being transported and the maximum loads acceptable for healthcare professionals W having different muscular strengths, and allowed by injury-prevention regulations.

[0060] As used herein, the term "maximum loads acceptable for healthcare professionals having different muscular strengths" shall be intended as the maximum loads acceptable for healthcare professionals as regulated by Leg. Dec. No. 81/08 and S.M.I., namely, for healthcare professionals, Injury prevention risk, Title III Arts. 69, 70, 71.

[0061] The maximum loads acceptable for healthcare professionals W are also derived from the so-called "lifting risk assessment with the NIOSH" for the assessment of the risk and prevention of musculoskeletal disorders due to professional biomechanical load.

[0062] Thus, the maximum acceptable loads can be directly derived according to a predetermined angle α close to 135° , which is considered as the angle between the shoulders A and each arm B and the angle between the arm B and the forearm C that the healthcare professional W must hold to lift and transfer a patient without incurring musculoskeletal injury, as schematically shown in FIG. 4.

[0063] Therefore, the predetermined distances d_1 , d_2 , d_3 of the openings 12 has been calculated based on the Leg. Dec. No. 81/08, the NIOSH method and experimental field-tests that have led to the determination of the predetermined angle α .

[0064] Furthermore, the predetermined distances d_1 , d_2 , d_3 of the openings 12 have been calculated while accounting for the different sizes and muscular strengths of male healthcare professionals W_1 and female health operators W_2 , as best shown in FIG. 4.

[0065] In the preferred embodiment of the invention, the openings 12 are arranged at a predetermined distance d_1 , about 260 mm at the longitudinal edges 4 and proximate to the zone of the sheet structure 2 that is adapted to receive the head of the patient.

[0066] In this embodiment, the openings 12 formed at the longitudinal edges 4 and proximate to the torso and limbs of the patient are arranged at a predetermined distance d_2 , d_3 of about 550 mm and 710 mm respectively.

[0067] Conveniently, in order to further facilitate lift and transfer of the patient, the openings 12 are formed also at the transverse edges 5 proximate to the head and limbs of the patient.

[0068] As best shown in the figures, the support structure 2 comprises third openings 12''' arranged along the transverse edges 5 and placed at a predetermined distance d_4 , which is preferably shorter than the distance d_2 and longer than the distance d_1 and equal to about 350 mm.

[0069] This combination of features allows a health-care professional W to grasp the openings 12 of the disposable device 1 at shorter distances at the head, torso and lumbar regions of the patient to withstand a heavier load.

[0070] According to another particular aspect of the invention, the sheet support structure 2 comprises a downwardly folded zone 13 at least at one edge 4, 5 of the peripheral portion 3, which zone 13 defines a pocket 14 adapted to engage the stretcher B on which it is laid.

[0071] In particular, the pocket 14 may receive a portion B' of the stretcher B to facilitate positioning of the device 1.

[0072] In the preferred embodiment of the invention as shown in FIG. 3, the pocket 14 has a length l_4 of about 230 mm and a width l_2 equal to that of the device 1.

[0073] In addition, the pocket 14 is formed proximate to the region of the sheet structure 2 that is adapted to receive the head of the patient, thereby allowing the device 1 to be adapted to any type and size of the mattresses of currently available stretchers B.

[0074] As best shown in FIGS. 5 and 6, the device 1 comprises a third cover layer 18 that can be removably coupled to the first layer 8 by a continuous zipper 15 to define an inner compartment adapted to entirely contain and/or protect the patient.

[0075] The inner compartment may be at least partially closed by the continuous zipper 15, for example to allow transfer of the patient to the morgue.

[0076] Preferably, the continuous zipper 15 may comprise toothed edges 16, 17 that can be closed by means of a slider, not shown, to allow the structure 2 to be coupled with the third layer 18.

[0077] In particular, a toothed edge 16 may be rigidly joined to the first layer 8 and the other toothed edge 17 may be rigidly joined to the peripheral edge 19 of the third layer 18.

[0078] In addition, the zipper 15 may be installed proximate to the strip 3' to allow the operator W to grasp the plurality of openings 12 even when the cover layer 18 is coupled to the structure 2.

[0079] Preferably, the third covering layer 18 may be also made of SMMS non-woven fabric associated with polyethylene PE and the zipper 15 may be of imperme-

able type.

[0080] It will be appreciated from the foregoing that the disposable device for lift and transfer of patients fulfills the intended objects, and in particular can simplify the operations for lift and transfer of patients between ambulance stretchers and/or hospital stretchers, thereby reducing the risk of injury for health professionals.

[0081] The disposable device of the invention is susceptible of many changes and variants within the inventive principle disclosed in the annexed claims.

[0082] While the disposable device for lift and transfer of patients has been described with particular reference to the annexed figures, the numerals referred to in the disclosure and claims are only used for the sake of a better intelligibility of the invention and shall not be intended to limit the claimed scope in any manner.

[0083] Reference herein to "one embodiment" or "the embodiment" or "some embodiments" indicates that a particular characteristic, structure or element that is being described is included in at least one embodiment of the inventive subject matter.

[0084] Furthermore, the particular characteristics, structures or elements may be combined together in any suitable manner to provide one or more embodiments.

Industrial Applicability

[0085] The present invention may find application in industry, because it can be produced on an industrial scale in factories for manufacturing class I medical devices.

Claims

1. A disposable medical device (1) for lift and transfer of patients between ambulance stretchers (B) and/or hospital stretchers by a healthcare professional (W), which device (1) comprises a sheet support structure (2) longitudinally extending to such a length as to be able to support the entire body of a patient and a peripheral portion (3) with longitudinal edges (4) and transverse edges (5), said structure (2) having a top surface (6) which is intended to contact the body of the patient and a bottom surface (7) intended to contact a stretcher (B), wherein said peripheral portion (3) has a plurality of openings (12) adapted to define hand grips grasped by one or more healthcare professionals (W), said openings (12) being arranged along said longitudinal edges (4) and placed at predetermined distances (d_1 , d_2 , d_3);
characterized in that said predetermined distances (d_1 , d_2 , d_3) are differentiated along the longitudinal extent of said support structure (2) with a substantially constant value (d_1) proximate to the end zone that is intended to support the head and with progressively increasing values (d_2 , d_3) proximate to the end zone intended to support the torso and the lower

limbs of the patient.

adapted to entirely contain and/or protect the patient.

2. Device as claimed in claim 1, **characterized in that** the sheet structure (2) is formed with a multilayer textile material having at least one first layer (8) and at least one second layer (9), which are coupled together. 5
3. Device as claimed in claim 2, **characterized in that** said first layer (8) defining said top surface (6) comprises an absorbent layer that has a maximum carrying capacity of more than 150 kg even when wet. 10
4. Device as claimed in claim 3, **characterized in that** said first layer (8) includes at least one liquid-absorbing insert (10) in an approximately central position corresponding to the lumbar region of the patient. 15
5. Device as claimed in claim 3, **characterized in that** said second layer (9) is an impermeable layer for retaining the collected liquids and has a longitudinal central portion (11) corresponding to the lumbar region of the patient, said second layer (9) defining said bottom surface (7) and having a relatively low surface friction coefficient. 20
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6. Device as claimed in claim 5, **characterized in that** said central portion (11) has a length that ranges from 800 mm to 1200 mm and is preferably about 1000 mm. 30
7. Device as claimed in claim 1, **characterized in that** said sheet support structure (2) comprises a downwardly folded zone (13) at least at one edge (4, 5) of said peripheral portion (3), which zone (13) defines a pocket (14) adapted to engage the stretcher (B) on which it is laid, a portion (B') of the stretcher (B) being adapted to fit into said pocket (14). 35
8. Device as claimed in claim 7, **characterized in that** said pocket (14) has a length (l_4) of about 230 mm. 40
9. Device as claimed in claim 1, **characterized in that** said sheet support structure (2) is made of a UNECE 118/2012-compliant high-temperature resistant SMMS non-woven fabric. 45
10. Device as claimed in claim 3, **characterized in that** said first layer (8) and second layer (9) are coupled together along said longitudinal edges (4) and transverse edges (5) of said peripheral portion (3) by means of heat-sealing, ultrasonic sealing or R.F. sealing. 50
11. Device as claimed in claim 1, **characterized by** comprising a third cover layer (18) that can be removably coupled to said first layer (8) by means of a continuous zipper (15) to define an inner compartment 55

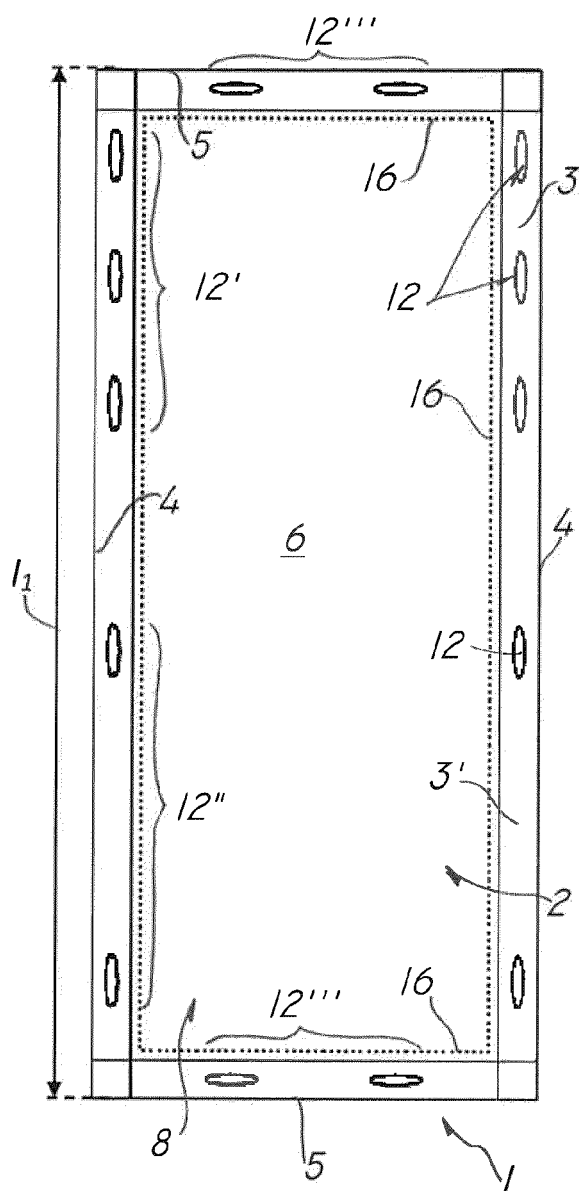


FIG. 1

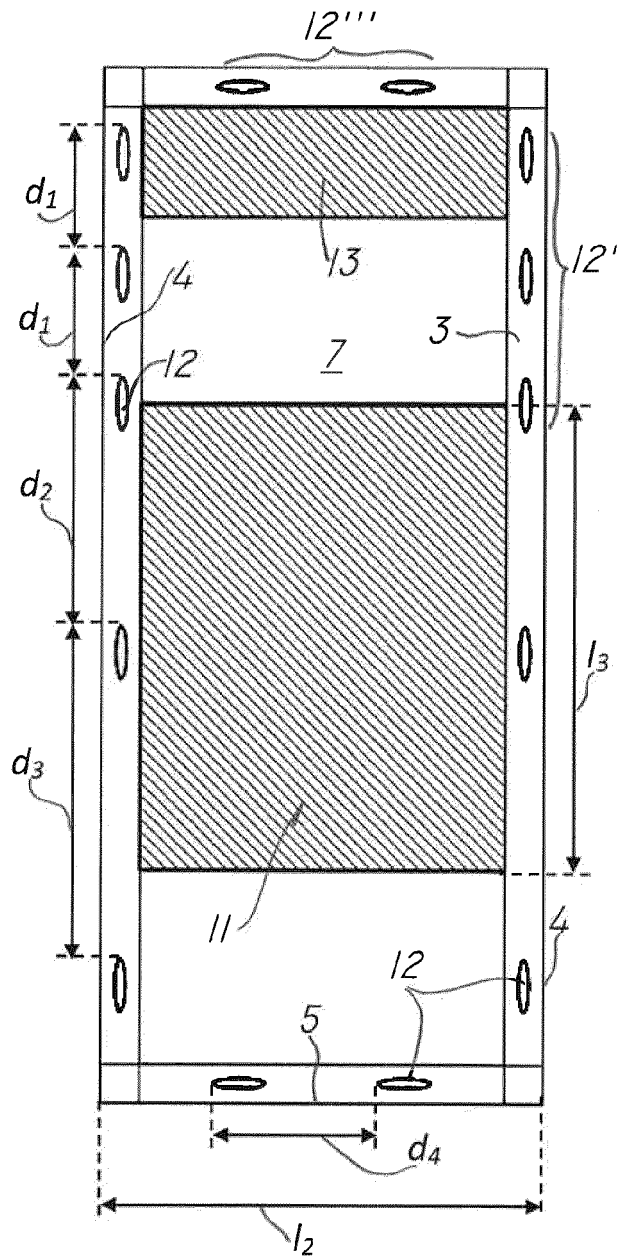


FIG. 2

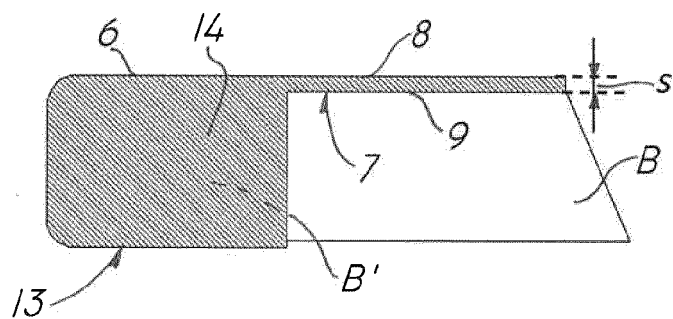


FIG. 3

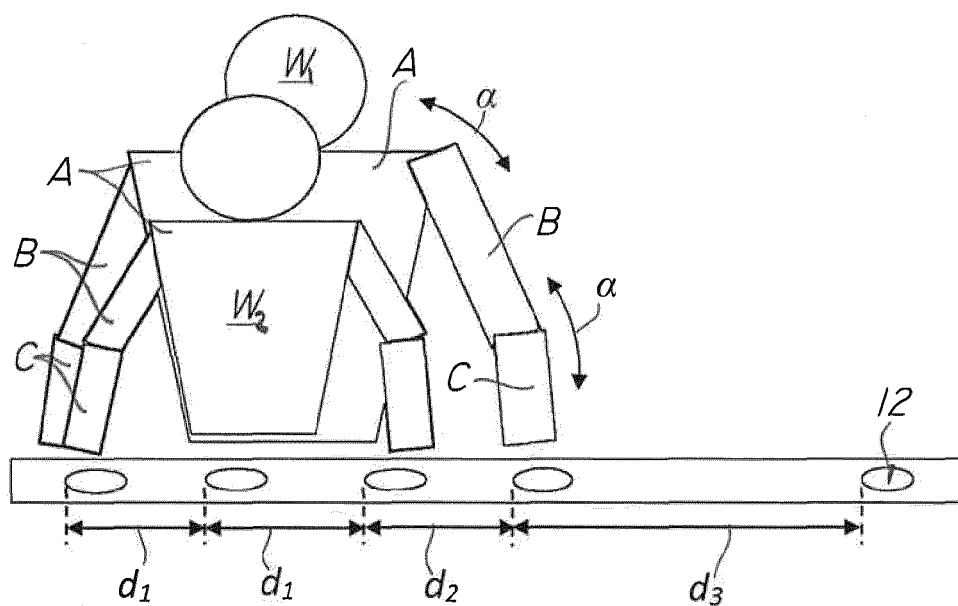


FIG. 4

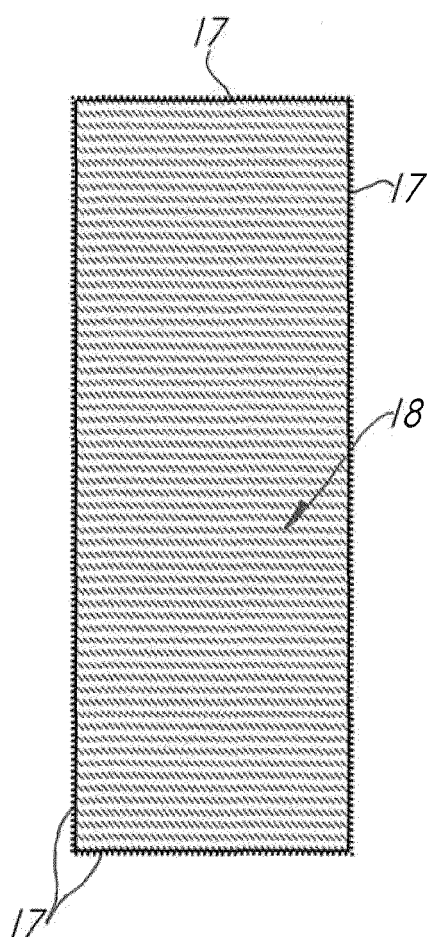


FIG. 5

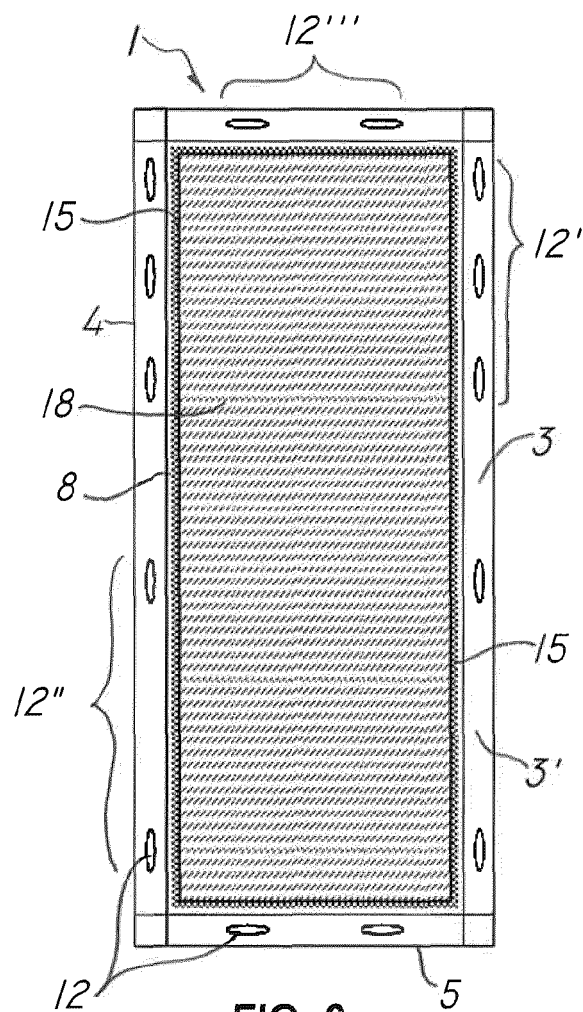


FIG. 6



EUROPEAN SEARCH REPORT

 Application Number
 EP 20 16 1620

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 5 577 281 A (MITAL MARC-HENRI [FR] ET AL) 26 November 1996 (1996-11-26) * figures 1A-7 * * column 1, line 3 - line 5 * * column 1, line 19 - line 24 * * column 2, line 12 - line 44 * * column 2, line 65 - column 3, line 10 *	1,2,9-11	INV. A61G1/01 A61G1/048 A61G7/10
X	GB 554 366 A (FLORENCE LINDORA HEATHER BONN) 30 June 1943 (1943-06-30) * figure 1 * * page 2, line 55 - line 59 * * page 2, line 78 - line 90 *	1	
X,D	GB 2 484 885 A (NASIR MUHAMMED ASLAM [GB]) 2 May 2012 (2012-05-02) * page 13 - page 30 * * figures *	1-6,9,10	
Y		7,8	
Y	US 2011/046588 A1 (JENSEN RONALD [US] ET AL) 24 February 2011 (2011-02-24) * paragraph [0013] - paragraph [0016] * * figures *	7,8	TECHNICAL FIELDS SEARCHED (IPC) A61G
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 3 July 2020	Examiner Koszewski, Adam
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	

EPO FORM 1503 03/82 (P04C01)

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

EP 20 16 1620

5 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
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03-07-2020

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5577281 A	26-11-1996	AT 166568 T	15-06-1998
		AU 675267 B2	30-01-1997
		BR 9307626 A	15-06-1999
		CA 2151514 A1	23-06-1994
		CN 1109734 A	11-10-1995
		DE 69318859 T2	14-01-1999
		DK 0773772 T3	22-03-1999
		EP 0773772 A1	21-05-1997
		ES 2117990 T3	01-09-1998
		FR 2699070 A1	17-06-1994
		JP H08504339 A	14-05-1996
		NZ 258598 A	24-03-1997
		PL 309337 A1	02-10-1995
		US 5577281 A	26-11-1996
		UY 23868 A1	04-01-1995
		WO 9413240 A1	23-06-1994

GB 554366 A	30-06-1943	NONE	

GB 2484885 A	02-05-2012	GB 2484885 A	02-05-2012
		WO 2010020818 A2	25-02-2010

US 2011046588 A1	24-02-2011	CA 2713617 A1	24-02-2011
		US 2011046588 A1	24-02-2011

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- WO 2018132776 A [0010]
- GB 2484885 A [0015]