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(71) Applicant: **LOHMANN & RAUSCHER GMBH**
[AT/AT]; Kirchengasse 17, 2525 Schönaun/Triesting (AT).

(72) Inventors: **SEIDL, Manuela**; Günsersstraße 61, 7441 Pilgersdorf (AT). **STEINLECHNER, Erik**; Wassergasse 22-26/18, 2500 Baden (AT).

(74) Agent: **SERANSKI, Klaus**; Boehmert & Boehmert
Anwaltspartnerschaft mbB, Pettenkoferstraße 22, 80336 München (DE).

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(54) Title: SURGICAL GOWN, METHOD FOR PUTTING ON A SURGICAL GOWN AND SURGICAL GOWN KIT

Fig. 1

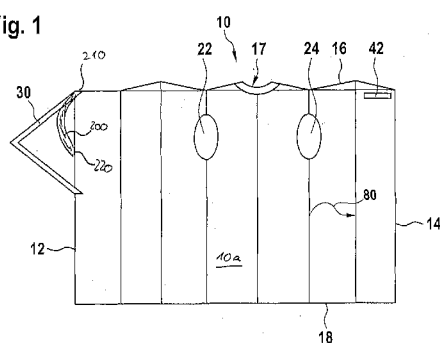
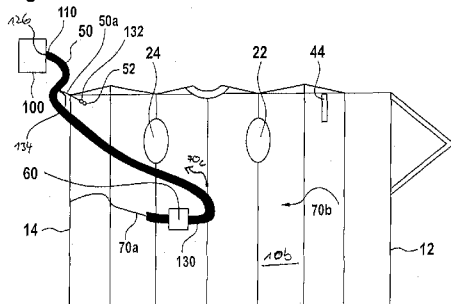


Fig. 2



(57) Abstract: A surgical gown comprising: a material web (10) delimited by a first lateral edge (12) extending in an approximately rectilinear manner and a second lateral edge (14) preferably extending approximately parallel to the first lateral edge, and by an upper edge (16) which connects the two lateral edges to each other and a lower edge (18) which connects the lateral edges to each other; a sleeve starting from a first opening (22) in the material web (10) and applied to the material web (10); and a second sleeve starting from a second opening (24) in the material web (10) and applied to the material web (10), wherein the first opening (22) is arranged between the first lateral edge (12) and the second opening (24) and the openings (22, 24) are arranged closer to the upper edge (16) than the lower edge (18), wherein a fitting aid (30) forming an extension to the material web is formed at least in the area of the top half of at least one lateral edge that is adjacent to the upper edge (16), wherein a holding device, by means of which the upper edge of the material web can be held against the user, preferably against the user's shoulders, when the user grasps the fitting aid, is associated with the material web.

Surgical gown, method for putting on a surgical gown and surgical gown kit

The invention relates to a surgical gown comprising: a material web delimited by a first lateral edge extending in an approximately rectilinear manner and a second lateral edge preferably extending approximately parallel to the first lateral edge, and by an upper edge which connects the two lateral edges to each other and a lower edge which connects the lateral edges to each other; a first sleeve starting from a first opening in the material web and applied to the material web; and a second sleeve starting from a second opening in the material web and applied to the material web, wherein the first opening is arranged between the first lateral edge and the second opening and the openings are arranged closer to the upper edge than the lower edge, wherein a fitting aid forming an extension to the material web is formed at least in the area of the top half of at least one lateral edge that is adjacent to the upper edge.

Relevant hygiene regulations must be observed when putting on a surgical gown. The assistance of a person to help with this is routinely required, as a conventional gown cannot be done up by the wearer without violating the applicable hygiene regulations. With regard to these problems in the prior art, a surgical gown of the type described above that allows the gown to be put on independently in emergency situation, when time is short or when only one person is temporarily present in the operating theatre, is specified in WO 2019/234012. The asymmetric extension of a surgical gown proposed in the aforementioned document enables the user, starting from a lateral edge equipped with the fitting aid, to wrap or turn themselves into the gown such that the wrapping or turning into the gown creates an overlapping area of the lateral edges in which the lateral edges can be fastened to each other without requiring the assistance of

another person. To this end, the known surgical gown can be detachably fastened on its edge opposite the fitting aid, where applicable together with a packaging, to a holder and then grasped and spread out in the area of the fitting aid such that the back of the user is facing the material web. Starting from this position, the user can wrap themselves into the gown by turning around their own body axis such that first the free hand is inserted into the sleeve applied to the first opening and then the hand holding the fitting aid is inserted into the second opening as the body is turned again. Turning again, a means of adhesion on an outer delimiting surface of the material web, in particular in the area of the second edge, can be brought into contact with a means of adhesion on an inner delimiting surface of the material web facing away from the outer delimiting surface and facing the user during use, thus allowing a fastening of the lateral edges of the material web arranged on the user without requiring the assistance of another person. An additional fastening can be achieved with the known gowns as a result of the material web being fitted with a left tie and a right tie that can often be knotted together at the waist once the material web has been put on.

It has become apparent when using known surgical gowns that putting the gowns on in emergency situations without a person to help while also observing the relevant hygiene regulations can be problematic.

In the light of these problems in the prior art, the aim of the invention is to provide a surgical gown that can easily be put on in emergency situations without requiring a person to help.

According to the invention, this aim is achieved with a refinement of known surgical gowns, which refinement is substantially characterised in that a holding device by means of which the upper edge of the material web can be held against the user when the user grasps the fitting aid is associated with the material web.

This invention is based on the knowledge that the problems with the prior art are primarily attributable to the fact that the fitting aid is an extension of the material web which, when the fitting aid is grasped at the start of the process of putting the gown on,

sometimes results in the material web sagging in an undesirable manner if there is no other person to assist, making compliance with the relevant hygiene regulations difficult. Furthermore, when the fitting aid is grasped and the material web fastened on the holder and/or packaging on the other side is spread out, such a great force can be exerted on the connection between the material web and the holder and/or packaging that the connection is prematurely detached. This similarly makes compliance with the relevant hygiene regulations difficult.

As part of the invention, an additional holding device will be provided by means of which the upper edge of the material web can be held against the user at the start of the process of putting on the gown, i.e. when the fitting aid is grasped by a user. The upper edge of the material web is then held against the user at the user's shoulders. This enables undesirable sagging of the material web. At the same time, the force exerted on the connection between the material web and the holder or packaging when the material web is spread out after being held against the user using the holding device is reduced. The risk of premature detachment of the material web from the holder and/or packaging is reduced accordingly.

In embodiments of the invention, the holding device can have a holding arrangement attached to the material web, such as a strap, forming an opening, in particular a loop, through which the user will reach with a hand to grasp the fitting aid. When putting on the surgical gown, the user thus first reaches through the opening or loop of the holding arrangement attached to the material web, such as a loop formed between a strap and the material web, and only then grasps the fitting aid. Early fastening of the material web to the user is thus achieved using the holding arrangement.

The holding arrangement can be attached to the upper edge of the material web to allow the desired fixing of the material web at the user's shoulders. In embodiments of the invention, the holding arrangement configured as a strap can start from a fastening area on the upper edge of the material web and proceed towards the bottom edge of the material web and be attached to the material web at a distance from the fastening area that is shorter than the length of the strap. A loop can simply be formed between the

strap and the material web through which the user can insert an arm at the start of the process of putting the gown on.

In embodiments of the invention, the fitting aid can be formed by creating a first distance between the first opening and the first lateral edge that is greater than a second distance between the second opening and a second lateral edge.

The distance between the opening and the lateral edge is understood to mean the distance between the delimiting line facing the corresponding lateral edge or the edge of the opening and the lateral edge along a straight line connecting the centres of the openings in the material web and generally running perpendicular to the lateral edges is understood.

To provide a sufficiently broad overlapping area, the ratio between the first distance and the second distance is preferably 1.2 or more, in particular 1.4 or more. To avoid excessive material use, the ratio between the first distance and the second distance is advantageously chosen so that it is less than 2.

An overlap of the first lateral edge and second edge can be ensured, without taking into account the dimensions of the openings against which the sleeves are applied, if the ratio between the first distance and the distance between the openings is less than 1.4, preferably less than 1.2. The distance between the edges of the openings facing each other is described as the distance between the openings.

A secure closure of the surgical gown after putting it on, in other words after wrapping or turning into it, can be achieved if a means of connection to create a preferably detachable connection with one delimiting surface of the material web opposite another delimiting surface of the material web, in particular one in the area of the upper edge, is provided on this latter delimiting surface. The means of connection can comprise a means of adhesion, in particular adhesive strips, one delimiting surface of which face the material web and are fastened to the same and the delimiting surfaces of which that

face away from the material web are equipped with a means of adhesion, such as a hook and/or eye strip of a surface fastener and/or an adhesive.

According to one perspective of the invention, for which protection is being sought, regardless of other perspectives, only one means of connection is provided in the area of the first lateral edge or the second lateral edge. In the course of turning into the material web, this means of connection makes contact with a delimiting surface of the material web facing the means of connection and can thus provide a secure closure of the surgical gown if it is fitted with suitable means of connection, such as means of adhesion or elements of a surface fastener. This perspective can make it easier to put on the surgical gown, regardless of whether the holding device proposed in accordance with the invention is provided, because the desired fastening is achieved regardless of having to ensure a suitable alignment of opposite delimiting surfaces of the adhesive strips applied to the material web.

As part of this invention, however, using the proposed holding device, embodiments are also envisaged in which a first adhesive strip is arranged on a first delimiting surface of the material web, preferably facing away from the user when the gown is done up, between the first lateral edge and the first opening and/or a second adhesive strip is arranged in the area of a second delimiting surface, preferably facing the user when the gown is done up, of the material web in the area of the second lateral edge, wherein at least sections of the adhesive strips come into contact with each other such that they overlap when the surgical gown is done up. The adhesive strips can be fitted with an adhesive and/or a hook and eye band. In addition, or as an alternative, they can have press-stud elements.

Possible arrangements of the adhesive strips are specified in WO 2019/234012. The disclosed content of this document with regard to the arrangement of the coating adhesive strips is thus included in this description.

With regard to making it easier to put on a surgical gown according to the invention without a person to assist, it has proved to be particularly advantageous if, in addition

to or as an alternative to the described asymmetric spreading of the material web, an additional fitting aid fitted in the area of the top half, i.e. the half facing the upper edge of the material web, or in the shoulder area, on the back at the top or on the user's shoulder girdle on the first lateral edge, and forming an extension of the material web is provided. To put on the surgical gown, the user can, after reaching through the holding device, resulting in the material web being held against the user, grasp the material web by this additional fitting aid and spread it out, so that at least the upper edge of the material web, usually the entire material web, is unfolded. The user, holding the fitting aid with the hand reaching through the holding device and where necessary standing with their back to the material web, can then turn into the extended material web and insert the other hand into the first opening of the material web and the sleeve applied to this opening. The user can then continue to turn into the material web and insert the hand reaching through the holding device and holding the additional fitting aid into the sleeve applied against the second opening, where applicable together with the additional fitting aid, and finish putting on the gown, wherein a connection between the outer and inner delimiting surface of the material web is automatically created using the means of connection.

In embodiments of the invention, the fitting aid has a band fastened to the material web in an area of the upper end of the first lateral edge, wherein the band forming the fitting aid can preferably be fastened to the material web in the fastening area for the holding band. The end of the band forming the fitting aid facing away from the upper end of the material web can be fastened to the material web in the middle of the first lateral edge and preferably at a larger distance from the upper edge than the end of the holding band facing away from the fastening area of the holding band.

The fitting aid configured as a band can be fastened to the shoulder of the surgical gown and to the waistline of the surgical gown. When attaching the band-shaped fitting aid, it should advantageously be ensured that the tensile force on the shoulders and hip remains similar even after reaching through the holding device and grasping the band-shaped fitting aid.

As part of the invention, it is also envisaged that the fitting aid, where applicable provided in addition to an asymmetric spreading of the material web, be configured as a continuous surface and be integrated into the material web. It is also conceivable that the fitting aid be configured with a grip to be grasped by the fingers (said grip is temporarily clamped between the finger) and/or be fitted with an opening in the material web in which a finger can be inserted to prevent the fitting aid from inadvertently becoming detached. The fitting aid can also be configured so that it is inserted into the corresponding sleeve together with the hand holding the fitting aid and remains in the sleeve. In any case, using the holding device provided in accordance with the invention enables an additional fixing of the material web at the user's shoulders.

To put on the surgical gown, it is routinely removed from a packaging in which it is packaged in sterile conditions. In order to observe the hygiene regulations when putting the surgical gown on independently, it can also be planned that the surgical gown is fastened to a wall or to a fixed building element, such as a shelf or cupboard, at the shoulders at least, preferably roughly at eye level. When putting on the surgical gown independently, it must be ensured that it does not come out of its packaging before it should and fall on the ground. With regard to these requirements, a surgical gown according to the invention advantageously has a fastening arrangement on the material web, which can be used to create a detachable fastening to a holder and/or packaging for the surgical gown, in the area of the upper end of the second lateral edge, i.e. the end of the second lateral edge facing the upper edge.

If the surgical gown is removed from the packaging and spread out using the fitting aid, it can be ensured by means of the fastening arrangement that the surgical gown is held in place at the holder located at shoulder height and/or at a packaging fixed at shoulder height until the user has turned fully into the surgical gown. The connection between the holder and/or the packaging and the fastening arrangement of the surgical gown is detached and the process of putting the gown on can be completed. The surgical gown is advantageously done up using the means of connection before detaching the detachable connection between the fastening arrangement of the surgical gown and the holder or packaging. The holding device provided in embodiments of the invention

certainly reduces the risk of premature detachment of the connection between the surgical gown and the holder and/or packaging.

If the fastening arrangement has a preferably elastic band which is fitted with a means of fastening, such as a press-stud and/or a loop and/or a weakening area for detachable fixing to the packaging and/or the holder, a desired unfolding of the surgical gown can be ensured when it is removed from the packaging and/or after is attached to the holder by tensioning the elastic band placed on the second lateral edge using the fitting aid attached to the first lateral edge, without the fastening arrangement becoming detached from the packaging and/or holder, wherein the use of the means of adhesion provided in accordance with the invention is also beneficial in this context to reduce the risk of premature detachment of the fastening arrangement.

As can be seen from the above explanation, the band of the fastening arrangement can have a fastening arrangement configured for detachable fastening of the band in the area of the upper edge of the material web, such as a press-stud, a specified separating area, a weakening area, a surface fastener or similar, while the material web can be fitted with a counterpart for the fastening arrangement, such as another press-stud element, the other side of the specified separating area or a counterpart for the surface fastener, in the area of the upper edge. The band between the packaging and the fastening element can be formed in part at least from an elastic material.

As part of the invention, it has proved advantageous, in order to ensure problem-free removal of the surgical gown from the packaging and/or problem-free attachment of the surgical gown to a holder, if an elongation limiter for the band, made in part at least of elastic material, is provided to prevent excessive elongation and damage to the band and/or the packaging and/or the holder prior to detachment of the fastening elements from each other. In a particularly preferred embodiment of the invention, the elongation limiter can have a band made of a material with a lower elasticity extending between the fastening element and the holder and/or packaging, the length of which is greater than the length of the band consisting in part at least of an elastic material. The

maximum elongation of the band consisting in part at least of an elastic material is then determined by the difference in length.

In a surgical gown according to the invention, the band and/or the elongation can be accommodated at least partially in a protective tube. The fastening arrangement configured for detachable fastening of the bands in the upper area of the material web can, as already specified above, be designed in the form of a specified separation area. This separation area can be implemented as a specified breaking point, e.g. in the form of a perforation and/or a suitably configured weld seam, so that a detachment of the band from the material web can be effected by tearing.

The band and/or the elongation limiter can extend partially at least through a protective tube, wherein the band and/or the elongation limiter can enter through an opening on a first of two ends of the tube and exit the tube through an exit point, preferably at a lateral surface of the tube, in order to detachably connect the material web to the packaging and/or the attachment. As already specified at the beginning, a surgical gown according to the invention can be additionally fastened after being put on if a left tie is provided, which can be fastened to the material web by a second, fixed end in the area of the second edge and has a first end, wherein the surgical gown preferably also has a right tie, which is fastened to the delimiting surface of the material web facing away from the wearer when the surgical gown has been put on by a fixed end, preferably in the centre of the material web and underneath the openings, in particular approximately in an area located between the openings, and further has a loose end, wherein the left tie and the right tie are configured to do up the surgical gown. The ties are located approximately at waist height once the surgical gown has been put on. They are therefore also referred to as waist ties.

To prevent damage and/or ensure the required sterility, the tube is detachably fastened to the surgical gown at its left tie, which is fastened to the material web by a second fixed end, in particular in the area of the second edge and/or in an area between the openings and has a first loose end, in which tube the left tie is inserted loose end first, so that the tube surrounds at least part of the length of the left tie and the loose end,

thus protecting them. The second end of the tube faces the fixed end of the left tie, wherein the first end of the tube can be facing the holder and/or packaging of the surgical gown. In addition, the second end of the tube is configured to receive the first end of the left tie, wherein the tube forms part of the fastening arrangement and a third means of fastening is attached to the elastic band and/or the elongation limiter in the area of the first end of the tube, wherein the third means of fastening is configured to detachably fasten the band and/or the elongation limiter to the holder and/or packaging.

In embodiments of the invention, the left tie can be detachably connected to the tube such that pulling on the left tie releases the left tie from the tube, wherein the pulling can preferably be applied by the wearer. The detachable connection between the left tie and tube can be effected by a knot that can be undone or with the aid of a transfer card. As part of the invention, however, the detachable connection can also be achieved by means of a means of adhesion on the tube and/or the left tie. The left tie then adheres to the tube in the area of the tube opening and/or within the tube and can be released by pulling from the tube.

As already discussed above, a surgical gown according to the invention can be done up by knotting one left tie with a right tie in the same way as a conventional gown.

According to one perspective of the invention, for which separate protection is being sought, the left tie can be detachably fixed to an outer delimiting surface of the material web facing away from the user when in use without using a right tie. To this end, a fastening area for the left tie on the outer delimiting surface of the material web and/or the left tie itself can be fitted with a means of fastening, such as a means of adhesion, a press-stud, a hook and eye band of a surface fastener or similar. If using a means of adhesion, the means of adhesion can be covered with a covering layer prior to using the surgical gown in order to prevent premature adhesion.

In a method according to the invention for putting on a surgical gown according to the invention, the surgical gown is removed from a packaging and detachably fastened to a

holder and/or packaging for the surgical gown using a first means of fastening. The fastening to a packaging can already be present when the surgical gown is still accommodated in the packaging. The surgical gown is then held by the wearer standing with their back or side to the material web, reaching with one hand through the opening of the holding device and holding the fitting aid. The wearer then turns around their own axis, first putting the other hand into the opening of the material web adjacent to the fitting aid and the sleeve applied thereto as they turn and then, after turning further or continuing to turn in the same direction of rotation, inserting the hand holding the fitting aid, preferably together with the fitting aid, into the other opening of the material web and the sleeve applied thereto, continuing to reaching through the holder as they do so.

In the method according to the invention, the user can, by turning around their own axis in the same direction of rotation, effect a pull on the fastening of the first means of fastening on the holder and/or packaging so that the fastening of the material web on the holder and/or packaging is released and a further pull on the left tie is effected preferably by continuing to turn further in the same direction of rotation, so that the left tie can be released from the fastening arrangement and fixed to an outer delimiting surface of the material web and/or joined to the right tie by the user in order to do up the surgical gown.

Also claimed is a surgical gown comprising a material web delimited by an edge extending in an approximately rectilinear manner and a second lateral edge preferably extending approximately parallel to the first lateral edge, and by an upper edge which connects the two lateral edges to each other and a lower edge which connects the lateral edges to each other; a first sleeve starting from a first opening in the material web and applied to the material web; and a second sleeve starting from a second opening in the material web and applied to the material web, wherein the first opening is arranged between the first lateral edge and the second opening, preferably the openings, are arranged closer to the upper edge than the lower edge, wherein a fitting aid forming an extension to the material web is formed at least in the area of the top half of at least one lateral edge that is adjacent to the upper edge, wherein the surgical gown has a first means of fastening for creating a detachable fastening of the material web to an

attachment for the surgical gown on a delimiting surface of the material web, in particular the delimiting surface facing away from the wearer when the gown is on in the area of the upper edge and/or in the area of the upper end of the second lateral edge and wherein the fastening arrangement of the surgical gown has one or more bands, preferably elastic in part at least, to create the detachable connection of the material web to a packaging and/or attachment or holder, wherein the one or more bands are fitted with a second means of fastening and the one or more bands are configured to be detachably connected to the first means of fastening, wherein preferably the second means of fastening can be released from the first means of fastening by pushing or pulling the first means of fastening and/or second means of fastening or by means of tensile force or tearing at a specified breaking point between the means of fastening, sections at least of the one or more preferably elastic bands preferably extend through a tube protecting the bands, wherein the one or more bands enter the tube through an opening on a first of two ends of the tube and exit from the tube through an exit point, in particular on a lateral surface of the tube, in order to detachably connect the material web to the attachment and/or packaging, the surgical gown has a tie which is fastened to the material web, preferably in the area of the second edge, by a second fixed end and has a first end, and the tube is detachably connected to the tie, and wherein the first end of the tie can be inserted into the tube such that the tube surrounds at least part of the length of the tie and in which a holding device by means of which the material web can be held against a user in the area of the upper edge when the user grasps the fitting aid is associated with the material web.

The holding arrangement can comprise a holding arrangement, such as a strap, forming an opening, in particular a loop, through which a user's arm can reach to grasp the fitting aid, which holding arrangement is attached to the material web and is provided in addition to the fitting aid.

In embodiments of the invention, surgical gloves, possibly detachably connected to the sleeves, can be associated with the ends of the sleeves facing away from the openings. This makes it easier to put on the surgical clothing in compliance with relevant hygiene regulations without requiring persons to assist.

The invention also relates to a kit with surgical gown according to the invention accommodated in a packaging. A kit according to the invention can include surgical gloves accommodated in the packaging, or possibly enclosed separately.

The invention is explained below with reference to the drawing, to which explicit reference is made with regard to all details essential to the invention and not set out in more detail in the description. In the drawing,

Fig. 1 shows a schematic view of a side of the surgical gown according to the invention facing the wearer when in use, and

Fig. 2 shows a schematic view of an outer side of the surgical gown according to Figure 1 facing away from the wearer when the gown is in use.

The surgical gown according to the invention shown in the drawing comprises a material web referred to as a whole with 10 which is delimited by a first lateral edge 12 extending in a rectilinear manner and a second lateral edge 14 extending parallel to the first lateral edge 12, and by a lower edge 18 which connects the two lateral edges to each other and an upper edge 16 which connects the lateral edges to each other. A first opening 22 and a second opening 24 are provided in the material web, to which the sleeves not shown in the drawing are applied.

The surgical gown shown in the drawing is designed asymmetrically such that the distance between the first opening 22 and the first lateral edge 12 is greater than the distance between the second opening 24 and the second lateral edge 14. The distance between the second opening 24 and the second lateral edge 14 is approximately the same as the distance between the openings 22 and 24, in other words the distance between the edges facing each other of the openings 22 and 24. A band-shaped fitting aid 30, arranged on the upper edge of the first lateral edge 12 at shoulder height on the one hand and in the central area of the first lateral edge, in other words approximately at the user's waist, on the other hand, is attached in the area of the first lateral edge 12.

As can be seen in Figure 2, the material web is fitted with a fastening arrangement 50 in the area of the upper end of the second lateral edge 14 with which the material web is detachably fastened to a holder and/or packaging 100. The fastening arrangement of the embodiment of the invention shown in the drawing has an elastic band on the end of which facing away from the material web a means of fastening, such as a press-stud, is arranged. An adhesive strip 42 extending approximately perpendicular to the second lateral edge is arranged at the upper end of the second lateral edge 14 and, when the material web is placed against a user, it comes against the outer delimiting surface 10b of the material web shown in Figure 2 in order to do up the surgical gown thus positioned. In addition to, or alternatively, a second adhesive strip 44 can be arranged on the outer delimiting surface of the material web which, together with the adhesive strip 42, forms a connection of the outer delimiting surface of the material web to the inner delimiting surface 10a of the material web.

As can be seen in Figure 2, a left tie 70a and right tie 70b or 70c can be seen on an outer side 10b, facing away from the wearer when the gown is in use, of the material web 10, by means of which ties the positioned surgical gown can be kept closed at approximately the waistline of the user. If the right tie, as indicated with 70c, is arranged in the area between the sleeve openings 22, 24, the ties 70a, 70c can be connected in front of the body once the surgical gown has been put on in order to create a connection akin to a belt.

As shown in Figure 2, there is a band 110 that is at least partially elastic at a first end of the fastening arrangement 50 with a means of fastening 126, such as a loop and/or a press-stud, with which the fastening arrangement 50 can be fastened to a holder or packaging. The fastening arrangement 50 of the embodiment of the invention shown in the drawing also, in the case of 50a, has an elastic band at the end of which a second means of fastening, for example a specified separating line, a surface fastener or an additional press stud, with which the elastic band 50a can be detachably fastened to the second means of fastening 52 on the outer side 10b of the material web. The means of fastening 52 can be attached to the first delimiting surface or outer delimiting surface 10b of the material web, or to the second delimiting surface or inner delimiting surface 10a of the material web 10. In embodiments of the invention the means of fastening 52,

132 can be configured as a specified breaking point. The fastening arrangement 50 and the material web 10 are then connected to each other by means of the specified breaking point and can be separated by means of a controlled destruction of the material in the area of the specified breaking point 52, 132.

The surgical gown shown in the drawing (Figure 1) is fitted with a holding device in the form of a strap 200 in the area of the first lateral edge 12. The strap 200 is attached to a fastening area 210 at the upper end of the first lateral edge of the delimiting surface 10a of the material web. Starting from the fastening area 210, the strap 200 extends towards the lower edge 18 of the material web and is also attached to a second fastening area 220 of the inner delimiting surface 10a of the material web 10 above the waistline, in other words above the fastening of the fitting aid 30 at the waistline of the material web 10a. The length of the tie 200 is greater than the distance between the fastening areas 210 and 220, in which the strap is fastened to the inner delimiting surface 10a of the material web 10.

An opening is formed between the material web 10 and the strap 200 through which the user can reach with a hand if they grasp the fitting aid 30 to put on the surgical gown. If the user wants to put the surgical gown on, they put a hand through the opening between the strap 200 and the material web 10 and grasp the fitting aid 30, standing with their back or side to the inner delimiting surface 10a of the material web 10. After removing the surgical gown from the packaging, it is detachably held against the packaging 100 and/or a holder by means of the fastening arrangement 50. The elastic band 50a is held against the outer delimiting surface of the material web in this state using the means of fastening 132 and 52.

The fastening arrangement 50 receives at a second end the first end of the left tie 70a in order to connect it detachably to the fastening arrangement 50. The one or more bands 50a and 110 can also be fastened to the tube. The left tie 70a can be detachably fixed inside or to the start of the tube 130 either mechanically or by means of an adhesive bond. Furthermore, it is envisaged in embodiments that the right tie 70b, 70c be replaced with a means of fixing, such as an adhesive surface, surface fastener and/or

other types of quick-release connections which allow a, preferably detachable, fixing of the left tie 70a to the outer side 10b of the material web, in the area of the outer side 10b of the material web 10.

The bands 50a and 110 are preferably both created with one and the same elastic band, so that 50a and 110 form two sections of the one elastic band, wherein these two sections are at different ends of the band. The section 110 is at the first end of the fastening arrangement and protrudes from the tube 130. The band 50a, 110 is inserted into the tube through the end of the tube 130 facing away from the left tie 70a for reference 110, extends through a part of the tube 130 and exits from the tube at an exit point 134 (approximately in the middle of the tube 130), where it forms the section 50a. At a second end of the elastic band 50a, 110 is the second means of fastening 132 in section 50a for detachable fastening to the material web 10. At the other, first end of this elastic band 50a, 110 is the third means of fastening 126 in section 110, which is configured to detachably fasten the band 50a, 110 and therefore also the tube 130 and the material web 10 to the attachment and/or packaging 100. The third fastening element can comprise a loop and/or a press-stud. The second means of fastening 132 can comprise a loop and/or a press-stud and/or a weakening line at the transition between the elastic band 50a, 110 and the outer delimiting surface of the material web.

As shown in Figure 2 by way of example, the arrangement of the fastening arrangement 50 starting from the attachment or packaging 100 is as follows: Starting from the packaging or attachment 100, the fastening arrangement 50 joins onto the packaging or attachment. The fastening arrangement comprises the elastic band 50a, 110 and the tube 130. Starting from the attachment or packaging 100, there is first the third means of fastening 126 of the elastic band 50a, 110, with which the fastening arrangement 50 can be detachably fastened to the packaging or holder 100. The third means of fastening is located at a first end of the band 50a, 110. The second end of the band 50a, 110 is inserted into the first end of the tube 130 and exits the tube 130 at its exit point 134 on a lateral surface of the tube 130 in approximately the middle of the tube 130, in order to be detachably fastened to the material web 10 by its second end, at which the second means of fastening 132 is located, using the first means of fastening 52.

The band 50a, 110 can be detached from the material web by pulling on the second end or second means of fastening 132 of the band 50a, 110. The left tie can be released from the tube 130, where it was previously fastened by means of a detachable connection, such as an adhesive bond, by pulling on the left tie, which is inserted into the end of the tube 130 facing away from the holder or packaging 100. The fastening arrangement 50 is then only connected to the attachment or packaging 100 and the material web 10 is no longer connected to the fastening arrangement 50 and also no longer connected to the packaging or attachment.

The wearer can fully remove the material web 10 from a packaging, for example using the fitting aid 30, detachably fasten the surgical gown, assuming this is not detachably fastened to the packaging, to a holder 100 and fully unfold the surgical gown or material web against the preload force of the band 50a, 110 of the fastening arrangement 50. To grasp the fitting aid 30, the user reaches through the opening formed between the strap 200 and the inner delimiting surface of the material web, in order to fix the material web 10 to the user or wearer approximately at shoulder height. The wearer, starting standing with their back to the material web 10a, can then turn into the material web, wherein the hand grasping the fitting aid 30 or the corresponding arm continues to reach through the holding device. As the wearer is turning, the hand which is not grasping the fitting aid can be inserted into the first opening 22 and the sleeve applied thereto. If the wearer continues to turn, they can insert the hand grasping the fitting aid 30 into the second opening 24 and the sleeve applied thereto, wherein the corresponding arm continues to reach through the opening between the inner delimiting surface 10a and the holding device 200. As the wearer turns in further, the adhesive strip 42 makes contact with the outer delimiting surface of the material web 10 and/or the adhesive strip 44 on the outer delimiting surface of the material web 10. The wearer can by turning around their own axis in the same direction of rotation effect a pull on the fastening of the first means of fastening 52 on the second means of fastening 132, thus detaching the first means of fastening 52 from the second means of fastening, for example by means of a controlled destruction material at a specified point of separation. By turning further or continuing to turn in the same direction of rotation effects a further pulling of the fastening arrangement 50 or of the left tie 70a on the tube, so that the left tie 70a is released from the tube and

can be brought into an adhesive bond with the outer delimiting surface 10b of the material web and/or can be knotted to a right tie 70b, 70c to do up the surgical gown.

The tube together with the elastic band 50a accommodated inside the tube can remain on the attachment or packaging and only be detached during a subsequent tidying process.

It is essential to the invention that the user's arm reaches through the holder 200 or an opening formed between the adhesive strip 200 and the inner delimiting surface 10a of the material web at the start of the process of putting on the material web and grasps the fitting aid 30, so that the material web is held against the user's shoulders by means of the strap 200.

Irrespective of the use of the holding device, it is important for the invention that the left tie 70a can form an adhesive bond with the outer delimiting surface of the material web 10.

Irrespective of the provision of the holding device 200 and the detachable connection of the left tie 70a to the outer delimiting surface 10b of the material web 10, it is important for the invention that the left tie 70a is detachably held against the tube 130, for example by means of an adhesive bond in and/or on the tube.

References

10	Material web
10a	Outer delimiting surface
10b	Inner delimiting surface
12	First lateral edge
14	Second lateral edge
16	Upper edge
18	Lower edge
22	First opening
24	Second opening
30	Fitting aid
42, 44	Adhesive strip
50	Fastening arrangement
50a	Elastic band
52	First means of fastening
70a	Left tie
70b,	Right tie
70c	
100	Holder/packaging
110	Elastic band
126	Third means of fastening
130	Tube
132	Second means of fastening
134	Exit point
200	Strap
210,	Fastening area
220	

Claims

1. A surgical gown comprising: a material web (10) delimited by a first lateral edge (12) extending in an approximately rectilinear manner and a second lateral edge (14) preferably extending approximately parallel to the first lateral edge, and by an upper edge (16) which connects the two lateral edges to each other and a lower edge (18) which connects the lateral edges to each other; a sleeve starting from a first opening (22) in the material web (10) and applied to the material web (10); and a second sleeve starting from a second opening (24) in the material web (10) and applied to the material web (10), wherein the first opening (22) is arranged between the first lateral edge (12) and the second opening (24) and the openings (22, 24) are arranged closer to the upper edge (16) than the lower edge (18), wherein a fitting aid (30) forming an extension to the material web is formed at least in the area of the top half of at least one lateral edge that is adjacent to the upper edge (16), **characterised in that** a holding device by means of which the upper edge of the material web can be held against the user, preferably at the user's shoulders, when the user grasps the fitting aid is associated with the extension of the material web.
2. The surgical gown according to claim 1, characterised in that the holding device has a holding arrangement attached to the material web, such as a strap (200), forming an opening, in particular a loop, through which the user will reach with a hand to grasp the fitting aid.
3. The surgical gown according to claim 2, characterised in that the holding arrangement is attached to the material web in the area of the upper edge.
4. The surgical gown according to claim 3, characterised in that the holding arrangement configured as a strap (200) starts at a fastening area (210) on the upper edge of the material web (10) and extends towards the lower edge (18) of the material web (10) and is fixed to the material web (10) at a distance from the fastening area (210) that is less than the length of the strap (200).

5. The surgical gown according to one of the preceding claims, characterised in that in order to create the fitting aid, a first distance between the first opening (22) and the first lateral edge (12) is greater than a second distance between the second opening (24) and the second lateral edge (14).

6. The surgical gown according to claim 5, characterised in that the ratio between the first distance and the second distance is 1.2 or more, preferably 1.4 or more and/or less than 2.

7. The surgical gown according to claim 5 or 6, characterised in that the ratio between the first distance and the distance between the openings (22, 24) is less than 1.4, preferably less than 1.2.

8. The surgical gown according to one of the preceding claims, characterised in that a means of connection is provided on an inner delimiting surface (10a) of the material web (10), in particular in the area of the upper edge (16), for creating a preferably detachable connection with an outer delimiting surface (10b) of the material web which is opposite said inner delimiting surface.

9. The surgical gown according to claim 8, characterised in that the means of connection has a means of adhesion, in particular adhesive strips, which has one delimiting surface which faces the material web and is fixed to the same and a delimiting surface facing away from material web which is fitted with a means of adhesion, such as a hook and eye band of a surface fastener, and/or an adhesive and/or a press-stud component.

10. The surgical gown according to claim 8 or 9, characterised in that a first adhesive strip (44) is arranged on a first delimiting surface (10b) of the material web (10), which preferably faces away from the user when the gown is in use, between the first lateral edge (12) and the first opening (22), and/or a second adhesive strip (42) is arranged in the area of a second delimiting surface (10a) of the material web (10), which is opposite the first delimiting surface and preferably faces towards the user

when the gown is in use, in the area of the second lateral edge (14), wherein at least parts of the adhesive strips come to overlap each other when the surgical gown is put on.

11. The surgical gown according to one of the preceding claims, characterised in that the fitting aid (30) has a band fastened to the material web (10) in the area of the upper end of the first lateral edge (12), wherein the band forming the fitting aid is preferably fixed in the fastening area (210) for the strap on the material web (10).

12. The surgical gown according to claim 9, characterised in that the band is fastened to the material web (10) by its end facing away from the upper end of the material web (10) in the middle area of the first lateral edge (12) and preferably at a greater distance from the upper edge than the end of the strap (200) facing away from the fastening area of the strap (200).

13. The surgical gown according to one of the preceding claims, characterised in that a fastening arrangement (50) which can be used to produce a detachable fastening to a holder and/or packaging (100) of the surgical gown is provided on the material web (10) in the area of the upper end of the second lateral edge (14).

14. The surgical gown according to claim 13, characterised in that the fastening arrangement (50) has a band, at least part of which is preferably elastic and which is fitted with a means of fastening (126), such as a press-stud and/or a loop at the end facing towards the holder or packaging (100).

15. The surgical gown according to claim 13, characterised in that the band of the fastening arrangement has a fastening element such as a press-stud, specified separation point, surface fastener or similar, which is designed to detachably fasten the band, in the area of the upper edge of the material web (10), and the material web (10) is fitted with a counterpart to the fastening arrangement in the area of the upper edge (16).

16. The surgical gown according to claim 15, characterised in that the band between the holder and/or packaging (100) and the fastening element is made at least in part from an elastic material.

17. The surgical gown according to claim 16, characterised by an elongation limiter for the band, which is made at least in part from an elastic material.

18. The surgical gown according to claim 17, characterised in that the elongation limiter includes a band made from a material of lower elasticity extending between the fastening element and the holder and/or packaging (100), the length of which band is greater than the length of the band made at least in part from the elastic material.

19. The surgical gowns according to one of claims 15 to 17, characterised in that the band and/or the elongation limiter is accommodated at least partially in a protective tube (130).

20. The surgical gown according to one of claims 14 to 19, characterised in that the band and/or the elongation limiter extends at least partially through the protective tube (130), wherein the band and/or the elongation limiter enters the tube through an opening on the first of two ends of the tube (130) and exits the tube through an exit point (134) on a lateral surface of the tube (130), in order to detachably connect the material web (10) to the attachment.

21. The surgical gown according to one of the preceding claims, wherein the surgical gown has a left tie (70a), which is fastened to the material web (10) by a second, fixed end in the area of the second edge (14) and has a first end, wherein the surgical gown preferably also has a right tie (70b), which is fastened by a fixed end to a delimiting surface (10b) of the material web (10) facing away from the wearer when the surgical gown is in use, preferably in the middle and below the openings (22, 24), and also has a loose end, wherein the left tie can be fixed to the outer delimiting surface of the material web and/or the left tie and the right tie are configured to do up the surgical gown.

22. The surgical gown according to claim 21, characterised in that the tube (130) is also provided to protect the left tie (70a), wherein the tube (130) can be detachably fastened to the left tie (70a) and wherein the first end of the left tie (70a) can be pushed into the tube (130) such that the tube (130) surrounds at least part of the length of the left tie (70a).

23. The surgical gown according to claims 19 to 22, characterised in that the second end of the tube (130) is configured to receive the first end of the left tie (70a), wherein the tube (130) is part of the fastening arrangement (50) and a third means of fastening (126) is attached to the elastic band and/or elongation limiter (50a, 110) in the area of the first end of the tube, wherein the third means of fastening (126) is configured to detachably fasten the band and/or elongation limiter (50a, 110) and the tube (130) to the packaging and/or holder (100).

24. The surgical gown according to one of claims 21 to 23, characterised in that the left tie (70a) and the tube (130) are connected to each other by means of a transfer card (60) arranged on a tube and/or by means of a knot (60) arranged on the tube and/or a means of adhesion, wherein the left tie (70a) is detachable from the transfer card (60) and/or the detachable knot (60) and/or the adhesive bond and therefore also from the tube (130) by pulling on the left tie (70a).

25. The surgical gown, in particular according to one of the preceding claims, characterised in that the left tie can be fixed to the material web (10) on an outer delimiting surface (10b) facing away from the user when the gown is in use.

26. The surgical gown according to claim 25, characterised in that a fastening area for the left tie on the outer delimiting surface (10b) of the material web and/or the left tie itself is fitted with a means of fastening, such as a means of adhesion, a press-stud, a hook and eye band of a surface fastener or similar.

27. A method for putting on a surgical gown according to one of claims 1 to 26 in which the surgical gown removed from its packaging is detachably fastened to a holder

and/or packaging (100) for the surgical gown using the first means of fastening (52) and is held by the wearer standing with their back or side towards the material web (10) and holding the fitting aid (30) with a hand reaching through an opening on the holding device, the wearer then turns around their own axis and, in the course of turning, first inserts the other hand into the opening of the material web (10) adjacent to the fitting aid (30) and the sleeve applied to this opening and then, after turning further or continuing to turn in the same direction of rotation, inserts the hand holding the fitting aid (30), preferably together with the fitting aid (30), into the other opening of the material web (10) and the sleeve applied to this opening.

28. The method according to claim 27 in which the wearer, by turning around their own axis in the same direction of rotation, effects a pull on the fastening of the first means of fastening (52) on the holder and/or packaging (100), so as to release the fastening of the material web (10) on the holder and/or packaging (100), and preferably effects a further pull on the left tie (70a) by turning further or continuing to turn in the same direction of rotation, so that the left tie (70a) is released from the fastening arrangement (50) and connected to the right tie (70b) by the wearer to do up the surgical gown and/or forms an adhesive bond with the outer delimiting surface (10b) of the material web (10).

29. A surgical gown comprising: a material web (10) delimited by a first lateral edge (12) extending in an approximately rectilinear manner and a second lateral edge (14) preferably extending approximately parallel to the first lateral edge, and by an upper edge (16) which connects the two lateral edges to each other and a lower edge (18) which connects the lateral edges to each other; a sleeve starting from a first opening (22) in the material web (10) and applied to the material web (10); and a second sleeve starting from a second opening (24) in the material web (10) and applied to the material web (10), wherein the first opening (22) is arranged between the first lateral edge (12) and the second opening (24) and the openings (22, 24) are arranged closer to the upper edge (16) than the lower edge (18), wherein a fitting aid (30) forming an extension to the material web is formed at least in the area of the top half of at least one lateral edge that is adjacent to the upper edge (16), wherein the surgical gown has a first means of fastening (52) for creating a detachable fastening of the material web (10) on

an attachment (100) for the surgical gown on a delimiting surface (10a, 10b) of the material web (10), in particular the outer delimiting surface (10b) facing away from the wearer when the gown is in use, in the area of the upper edge (16) and/or in the area of the upper end of the second lateral edge (14), and wherein the fastening arrangement (50) of the surgical gown has one or more bands (50a, 110), preferably elastic in part at least, to create the detachable connection of the material web (10) to a holder and/or packaging (100), wherein the one or more bands (50a, 110) are fitted with a second means of fastening (132) and the one or more bands (50a, 110) are configured to be detachably connected to the first means of fastening (52), wherein preferably the second means of fastening (132) can be released from the first means of fastening (52) by pushing or pulling the first means of fastening (52) and/or second means of fastening (152) or by means of tensile force or tearing at a specified breaking point between the means of fastening (52, 132), sections at least of the one or more preferably elastic bands (50a, 110) preferably extend through a tube (130) protecting the bands (50a, 110), wherein the one or more bands (50a, 110) enter the tube (130) through an opening on a first of two ends of the tube and exit from the tube through an exit point (143), in particular on a lateral surface of the tube (130), in order to detachably connect the material web (10) to the attachment and/or packaging (100), the surgical gown has a tie (70a) which is fastened to the material web (10), preferably in the area of the second edge (14), by a second fixed end and has a first end, and the tube (130) is detachably connected to the tie (70a), and wherein the first end of the tie (70a) can be inserted into the tube (130) such that the tube (130) surrounds at least part of the length of the tie and in which a holding device (200) with which the material web (10) can be held against a user, in particular against the user's shoulders, in the area of the upper edge (16) when the user grasps the fitting aid (30) is associated with the material web (10).

30. The surgical gown according to one of the preceding claims to the sleeves of which surgical gloves are connected, preferably detachably.

31. A kit comprising a surgical gown according to one of the preceding claims accommodated in a packaging.

32. A kit according to claim 31 comprising a surgical gown according to one of the claims 10 to 30, and where applicable separately packaged surgical gloves, accommodated in a packaging.

Fig. 1

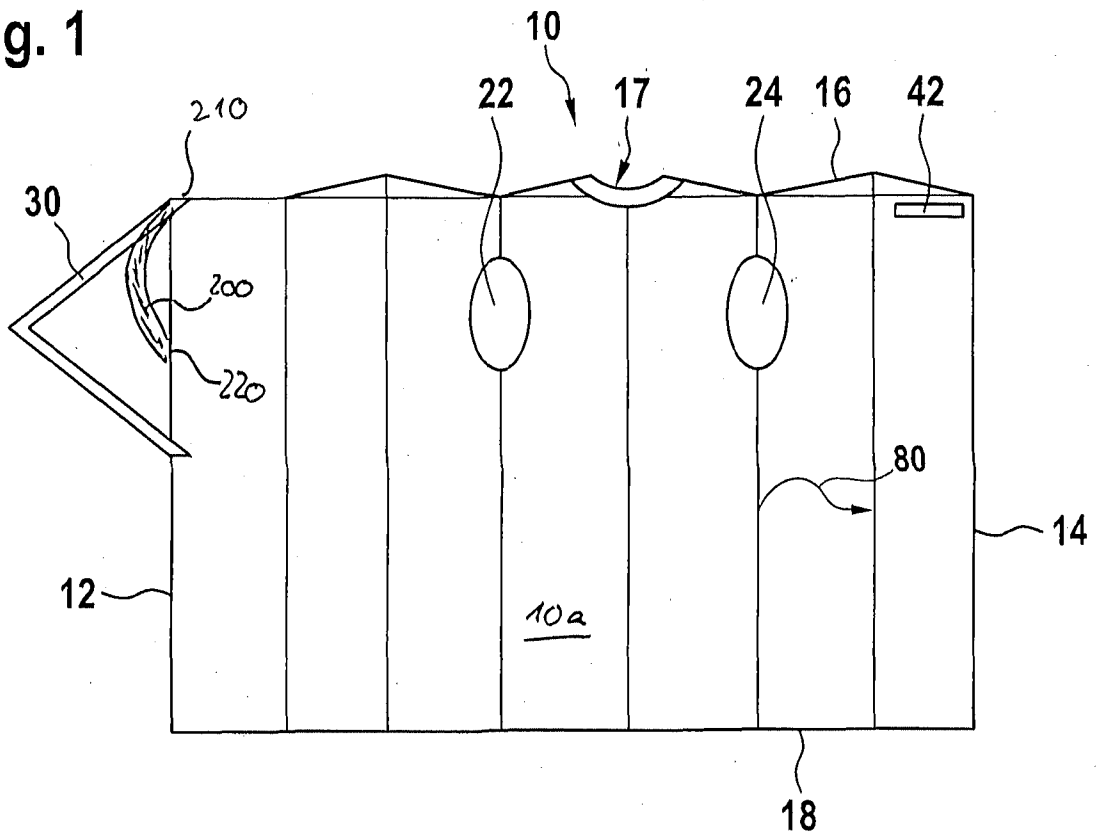
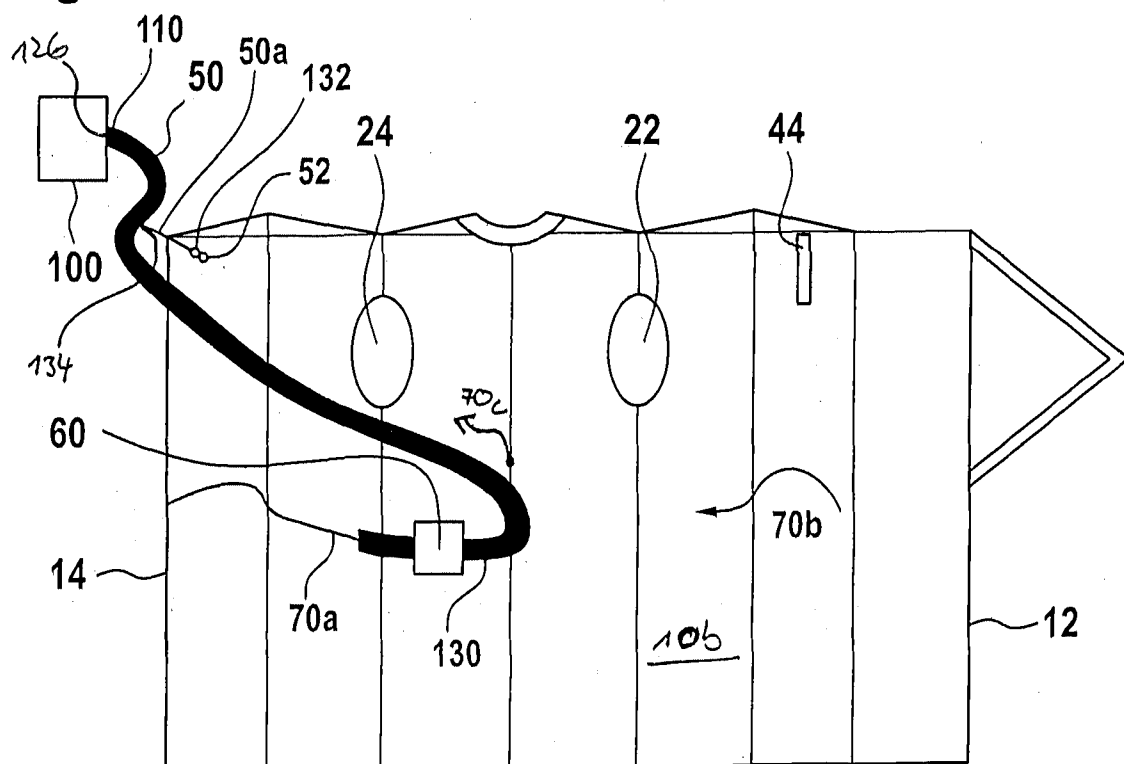


Fig. 2



INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2024/050337

A. CLASSIFICATION OF SUBJECT MATTER INV. A41D13/12 ADD.		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) A41D		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2013/184275 A1 (OPERATING ROOM INNOVATIONS INC [US]) 12 December 2013 (2013-12-12)	1-28
A	figures 1, 6, 28-30 -----	29-32
X	US 4 000 521 A (ZOEPHEL RICHARD L ET AL) 4 January 1977 (1977-01-04) figure 2 -----	1
X	EP 2 716 184 A1 (ELIS [FR]) 9 April 2014 (2014-04-09) figure 4a -----	1, 29
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance;; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance;; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 7 March 2024		Date of mailing of the international search report 21/03/2024
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Krüger, Sophia

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/EP2024/050337

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