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(54) **INFLATABLE CARRYING BAG**

AUFBLASBARE TRAGETASCHE

SAC DE TRANSPORT GONFLABLE

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Description

[0001] The invention relates to a container, such as a carrier bag, manufactured from weldable sheet material and comprising a first, a second, a third and a fourth layer of sheet material which have a substantially mutually corresponding form and which are mutually connected on all their edges, with the exception of a connection between the second and the third layer on the upper side, wherein the space between the first and the second layer and the space between the third and the fourth layer are mutually connected and these spaces together form an air chamber, and wherein a channel extends between the air chamber and the surroundings, which channel at least partly comprises a wall which is manufactured from limp material and which is bounded on its outside by the air chamber.

[0002] Such a container is known from NL-A-1011793.

[0003] Such a container can for instance be applied as carrier bag for fragile products, such as glass bottles and glassware or for products requiring thermally insulated transport, such as deepfreeze products or cooled drinks. Particularly in the case of cooled drinks it is important that the thermal insulation is maintained for a long time, for instance during a day at the beach.

[0004] In this prior art container there occurs minor leakage in the channel serving as closure, so that the pressure prevailing in the interior of the container cannot be maintained sufficiently long enough to ensure a comfortable use of the said container.

[0005] The present invention has for its object to provide such a container wherein the pressure prevailing in the interior can be maintained for a sufficiently long period of time.

[0006] This object is achieved in that the channel comprises a rigid part accessible on the outside which can be closed by a cap.

[0007] Providing a rigid part and a cap will of course have the effect of increasing the cost price, but does result in a much better utility of the container. The limp part of the channel herein acts as a means for reducing the leakage of air through the channel during the period between the end of the inflation and placing of the cap.

[0008] It is pointed out here that a similar configuration is known from FR-A-2121977, but that use is herein made to blow in air of a tube which is removed afterward.

[0009] According to a first embodiment the limp wall of the channel is formed by strips of the first and second layer folded at a sheet edge.

[0010] It hereby becomes structurally simple to integrate the limp part of the channel in the container.

[0011] According to another preferred embodiment the rigid part of the channel is formed by a tube which is enclosed in airtight manner between both strips and which can be closed on its outside by a cap. This embodiment makes it possible during manufacture of a container to slide such a tube in between the layers of

sheet material and to adhere it thereto.

[0012] A particular embodiment teaches that the connecting weld between the folded strips is interrupted at the position of the channel by a layer arranged prior to the welding and blocking the adhesion of the weld.

[0013] In order to seal the space for inflating use is made of a weld between the sheet material and the folded parts thereof. This weld must be interrupted at the position of the channel in order to close the channel to the space for inflating. It is difficult to interrupt a weld once it has been made. This problem is avoided by preventing the weld from being made. Preventing the weld from being formed locally can be achieved by arranging a layer preventing adhesion at the relevant location. An operation is saved by arranging the layer together with the printing.

[0014] The present invention further provides a method for manufacturing such a container, comprising the following steps of: printing one side of a strip of material at least at the position of the channels to be formed, folding the strip of material in two in the length, folding flaps situated on the edges of the strip inward in the length direction, adhering the flaps along their edges to the material lying opposite, folding the strip of material in two once again, adhering the material along the transverse edges, inserting and adhering the tube and cutting off the thus resulting containers.

[0015] Other attractive embodiments of the invention are stated in the remaining sub-claims.

[0016] The present invention will be elucidated hereinbelow with reference to the annexed figures, in which:

figure 1 is a perspective view of an embodiment of a carrier bag according to the present invention; figure 2 is a highly simplified schematic cross-sectional view of the carrier bag shown in figure 1; figure 3 is a partly broken away perspective detail view of the carrier bag shown in figures 1 and 2; figure 4 is a perspective detail view of the carrier bag shown in figures 1-4 during the production process; and figures 5(A-H) show schematic cross-sectional views of the carrier bag according to the invention during the production process.

[0017] Figure 1 shows a carrier bag designated as a whole with 1, which is shown in cross-section in figure 2. The carrier bag is formed by two outer panels 2 respectively 3, and two inner panels 4 respectively 5. Inner and outer panels 2-5 are together formed from one sheet of flexible material. On the upper side of the carrier bag the outer panel 2 and inner panel 4 are connected to two folded strips 6 respectively 7, which also form part of the same sheet of basic material. The folded strip 6 is connected to outer panel 2 by means of a weld 8, while folded strip 7 is connected to inner panel 4 by means of a weld 9. A sealing weld 11 is arranged to seal the space 10 enclosed by panels 2-5. This weld 11 is interrupted

at the position of the air supply device, as will be elucidated in the following. A handgrip 12 respectively 13 is fixed to each of the inner panels 4, 5 by means of welds 14 respectively 15,

[0018] Between panels 2 and 4, respectively between 3 and 5 are further arranged a number of connecting welds which are only shown in figure 2. Side welds 17 respectively 18 are arranged on both sides of carrier bag 1. The thus obtained space 10 is therefore sealed in airtight manner relative to the surroundings, apart from the interruption in weld 11.

[0019] Figure 3 shows how a channel is formed for supplying the air to the space in question. As shown in figure 3, the weld 11 is interrupted for this purpose between folded strips 6 and 7. At the position of this interruption a plastic tube 19 is placed between the folded strips 6 and 7. This tube 19 extends to a position some distance from the interruption of seam 11. The tube is herein sealed fixedly between the folded strips 6 and 7 by means of two seams 20 respectively 21. Seams 20 respectively 21 diverge from the tube to a connection with the original seam 11. Between the interruption in weld 11 and the tube 19 the space between the two strips 6, 7 is sealed by welds 20, 21.

[0020] In order to improve the adherence of tube 19 to folded strips 6, 7, tube 19 is provided with two protrusions 22 respectively 23 extending in the length direction of tube 19.

[0021] Two welds 32 further extend over the tube for airtight sealing of the tube 19.

[0022] The part of inner panel 4 enclosed by welds 11, 20 and side weld 18 is further provided with a perforation 24, whereby a releasable tongue 25 is formed. Formed at the tip of this releasable tongue 25 is a stopper 26 which can be placed into the opening of tube 19 after the perforation has been broken away. A sufficiently precise sealing is hereby obtained.

[0023] Figure 4 shows how the recess in weld 11 is obtained. The relevant part of folded strip 7 is provided for this purpose with a printing 27. This printing can be formed by a colourless printing, for instance by a colourless lacquer, but can equally well be formed by a coloured printing. This printing can be arranged together with the usual printed advertising on outer panel 2.

[0024] In a welding operation taking place after the printing the weld will not adhere at the position of the printing, so that the desired recess in weld 11 is thus obtained.

[0025] The manufacture of a carrier bag according to the invention will now be described with reference to figures 5a-h.

[0026] The starting point is a length of LDPE 28 as shown in figure 5a. Arranged on this length is printed advertising 29 as well as the printing 27 intended for the purpose of forming a recess in weld 11.

[0027] Strips 6 and 7 are subsequently folded as shown in figure 5b. Welds 8 and 9 are then made as shown in figure 5c.

[0028] Yet another fold is made in order to obtain the configuration as shown in figure 5d, whereafter weld 11 is made and a weld 30 can be made as shown in figure 5e. Side welds 17 and 18 are then made, as shown in figure 5f, and tube 19 is inserted as shown in figure 5g.

[0029] Finally, handgrips 12 and 13 are arranged and the thus created carrier bag is folded in two as shown in figure 5h, whereafter only the side welds 17, 18 not shown in the cross-section have to be made to complete the carrier bag.

[0030] It will be apparent that it is possible to depart from the embodiment in numerous ways; it is for instance possible to manufacture a carrier bag from other material or to manufacture a carrier bag with a different shape. This shape can for instance be chosen on the basis of the materials for transporting, for instance glass bottles or deepfreeze products. The carrier bag can also be adapted to serve as a pillow, whether or not it is filled with cans of cooled drinks.

[0031] Although provision has now been made to manufacture the carrier bag from the usual materials such as LDPE, other materials such as composite foils, particularly foils provided with a metal layer, are not precluded.

Claims

1. Container, such as a carrier bag (1), manufactured from weldable sheet material and comprising a first, a second, a third and a fourth layer of sheet material (2,4,5,3) which have a substantially mutually corresponding form and which are mutually connected on all their edges, with the exception of a connection between the second and the third layer on the upper side, wherein the space between the first and the second layer (2,4) and the space between the third and the fourth layer (5,3) are mutually connected and these spaces together form an air chamber (10), and wherein a channel (19) extends between the air chamber (10) and the surroundings, which channel at least partly comprises a wall (6,7) which is manufactured from limp material and which is bounded on its outside by the air chamber (10), **characterized in that** the channel comprises a rigid part (19), a free end of which is accessible from outside and can be closed by a cap (26), that the limp wall (6,7) of the channel is formed by strips of the first and second layer folded at a sheet edge (2,4), and that the connecting weld (11) between the folded strips (6,7) is interrupted at the position of the channel by a layer (27) arranged prior to the welding and blocking the adhesion of the connecting weld (11).
2. Container as claimed in claim 1, **characterized in that** the rigid part of the channel is formed by a tube (19) which is enclosed in airtight manner between

both strips (6,7).

3. Container as claimed in claim 1 or 2, **characterized in that** the limp walls (6,7) of the channel are connected by a pair of confining welds (20, 21) each extending from the connecting weld (11) to the tube (19).
4. Container as claimed in claim 3, **characterized in that** the confining welds (20,21) extend further on either side of the tube (19) and that the extensions of the confining welds (20,21) fix the tube (19) on both sides of the sheet material (6,7).
5. Container as claimed in any of the preceding claims, **characterized in that** the tube (19) is provided with longitudinal protrusions (22,23) lying diametrically opposite each other.
6. Container as claimed in any of the preceding claims, **characterized in that** the cap (26) is connected to a releasable part (25) of the sheet material.
7. Method for manufacturing a container as claimed in any of the foregoing claims, **characterized by** the following steps of:
 - printing one side of a strip of material at least at the position (27) of the channel to be formed (A) ;
 - folding flaps situated on the edges of the strip inward in the length direction (B) ;
 - adhering the flaps along their edges to the material lying opposite (C);
 - folding the strip of material in two in the length (D);
 - folding the strip of material in two once again (H);
 - adhering the material along the transverse edges;
 - inserting and adhering the tube (G) ; and
 - cutting off the thus resulting containers.

Patentansprüche

1. Behälter, wie etwa eine Tragetasche (1), der aus verschweißbarem Blattmaterial hergestellt ist und eine erste, eine zweite, eine dritte und eine vierte Schicht Blattmaterial (2, 4, 5, 3) umfasst, die eine im wesentlichen zueinander korrespondierende Form haben und miteinander an allen ihren Kanten verbunden sind, mit Ausnahme einer Verbindung zwischen der zweiten und der dritten Schicht an der oberen Seite, wobei der Raum zwischen der ersten und der zweiten Schicht (2, 4) und der Raum zwischen der dritten und der vierten Schicht (5, 3) mit-

einander verbunden sind und diese Räume zusammen eine Luftkammer (10) bilden, und wobei sich ein Kanal (19) zwischen der Luftkammer (10) und der Umgebung erstreckt und zumindest teilweise eine Wand (6, 7) umfasst, die aus schlaffem Material hergestellt ist und an ihrer Außenseite von der Luftkammer (10) begrenzt ist, **dadurch gekennzeichnet, dass** der Kanal einen starren Teil (19) umfasst, dessen freies Ende von außen zugänglich ist und mit einer Kappe (26) geschlossen werden kann, dass die schlaffe Wand (6, 7) des Kanals durch Streifen der an einer Blattkante (2, 4) gefalteten ersten und zweiten Schicht gebildet ist und dass die Verbindungsschweißnaht (11) zwischen den gefalteten Streifen (6, 7) an der Position des Kanals durch eine Schicht (27) unterbrochen ist, die vor dem Schweißen angeordnet wird und die Adhäsion der Verbindungsschweißnaht (11) blockiert.

2. Behälter gemäß Anspruch 1, **dadurch gekennzeichnet, dass** der starre Teil des Kanals aus einer Röhre (19) geformt ist, die in luftdichter Weise zwischen den beiden Streifen (6, 7) eingeschlossen ist.
3. Behälter gemäß Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die schlaffen Wände (6, 7) des Kanals durch ein Paar von Sperrschweißnähten (20, 21) verbunden sind, die sich von der Verbindungsschweißnaht (11) zur Röhre (19) erstrecken.
4. Behälter gemäß Anspruch 3, **dadurch gekennzeichnet, dass** sich die Sperrschweißnähte (20, 21) auf jeder Seite der Röhre (19) weiter erstrecken und dass die Erstreckungen der Sperrschweißnähte (20, 21) die Röhre (19) auf beiden Seiten des Blattmaterials (6, 7) fixieren.
5. Behälter gemäß einem der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die Röhre (19) mit länglichen Vorsprüngen (22, 23) versehen ist, die zueinander diametral gegenüber liegen.
6. Behälter gemäß einem der vorstehenden Ansprüche, **dadurch gekennzeichnet, dass** die Kappe (26) mit einem lösbaren Teil (25) des Bogenmaterials verbunden ist.

7. Verfahren zum Herstellen eines Behälters gemäß einem der vorstehenden Ansprüche, **gekennzeichnet durch** die folgenden Schritte:
 - Bedrucken einer Seite eines Streifens aus Material zumindest an der Position (27) des zu bildenden Kanals (A);
 - Falten von Laschen, die an den Kanten des Streifens innen in Längsrichtung liegen (B);
 - Ankleben der Laschen längs ihrer Kanten am gegenüber liegenden Material (C);

- Doppeltfalten des Streifens aus Material in der Länge (D);
- Nochmals Doppeltfalten des Streifens aus Material (H);
- Ankleben des Materials längs der Querkanten;
- Einführen und Ankleben der Röhre (G); und
- Abschneiden des sich so ergebenden Behälters.

Revendications

1. Récipient tel qu'un sac (1), fabriqué à partir d'un matériau en feuilles soudables et comprenant une première, une deuxième, une troisième et une quatrième couche de matériau en feuille (2, 4, 5, 3) ayant une forme mutuellement pratiquement en correspondance et mutuellement reliées au niveau de tous leurs bords, à l'exception d'une liaison entre la deuxième et la troisième couche situées sur le côté supérieur, récipient dans lequel l'espace séparant la première et la deuxième couche (2, 4) et l'espace séparant la troisième et la quatrième couche (5, 3) sont mutuellement reliés et où ces espaces forment conjointement une chambre à air (10), et où un conduit (19) se trouve entre la chambre à air (10) et l'environnement, lequel conduit comprenant au moins en partie une paroi (6, 7) fabriquée à partir d'un matériau souple et limitée sur sa partie extérieure par la chambre à air (10), **caractérisé en ce que** le conduit comprend une partie rigide (19), une extrémité libre accessible depuis l'extérieur et que l'on peut fermer à l'aide d'un bouchon (26), **en ce que** la paroi souple (6, 7) du conduit est formée de bandes de la première et de la deuxième couche pliées au niveau d'un bord de feuille (2, 4) et **en ce que** la soudure de liaison (11) située entre les bandes pliées (6, 7) est coupée à l'emplacement du conduit par une couche (27) disposée avant le soudage et bloquant l'adhérence de la soudure de liaison (11).
2. Récipient conforme à la revendication 1, **caractérisé en ce que** la partie rigide du conduit est formée d'un tube (19) contenu de manière hermétique entre les deux bandes (6, 7).
3. Récipient selon la revendication 1 ou 2, **caractérisé en ce que** les parois souples (6, 7) du conduit sont reliées par une paire de soudures de confinement (20, 21) dont chacune part de la soudure de liaison (11) en direction du tube (19).
4. Récipient conforme à la revendication 3, **caractérisé en ce que** les soudures de confinement (20, 21) se prolongent de part et d'autre du tube (19) et **en ce que** les extensions des soudures de confinement (20, 21) coincent le tube (19) de part et d'autre

du matériau en feuille (6, 7).

5. Récipient selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le tube (19) est doté de protubérances longitudinales (22, 23) situées de manière diamétralement opposée l'une par rapport à l'autre.
6. Récipient selon l'une quelconque des revendications précédentes, **caractérisé en ce que** le bouchon (26) est relié à une partie détachable (25) du matériau en feuille.
7. Procédé de fabrication d'un récipient selon l'une quelconque des revendications précédentes, **caractérisé par** les étapes suivantes :
 - imprimer un côté de bande de matériau au moins à l'emplacement (27) où le conduit doit apparaître (A) ;
 - plier des rabats situés sur les bords de la bande vers l'intérieur sur la direction de sa longueur (B) ;
 - faire adhérer les rabats le long de leurs bords sur le matériau se trouvant en face (C) ;
 - plier la bande de matériau en deux sur sa longueur (D) ;
 - plier la bande de matériau en deux une nouvelle fois (H) ;
 - faire adhérer le matériau le long des bords transversaux ;
 - introduire et faire adhérer le tube (G) ; et
 - détacher les récipients ainsi obtenus.

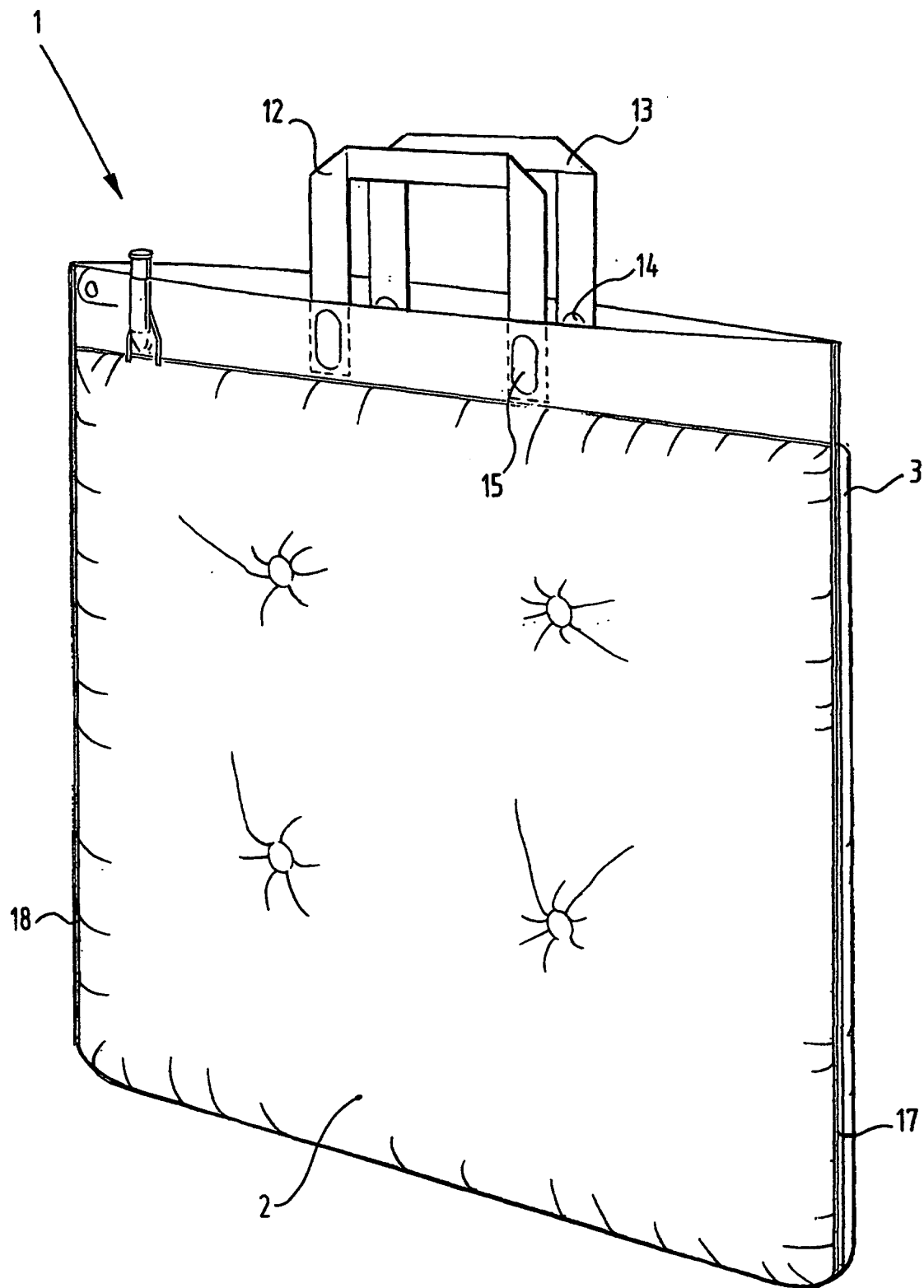


FIG. 1

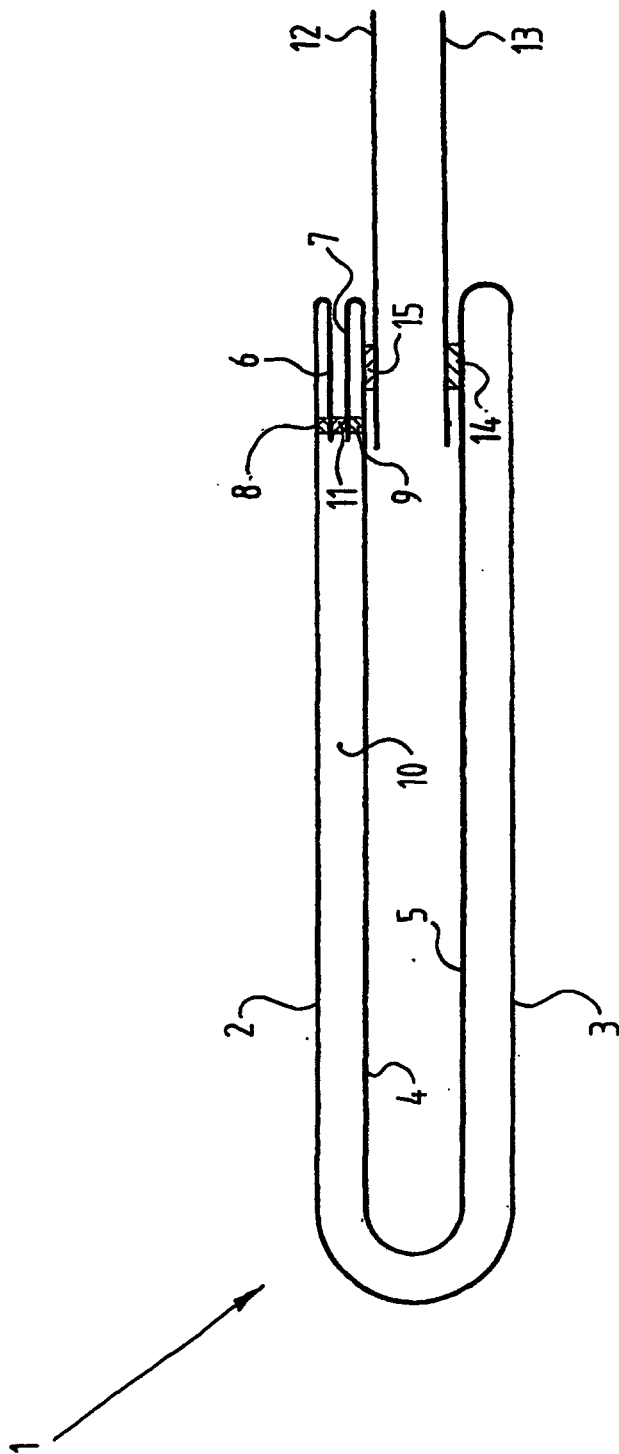


FIG. 2

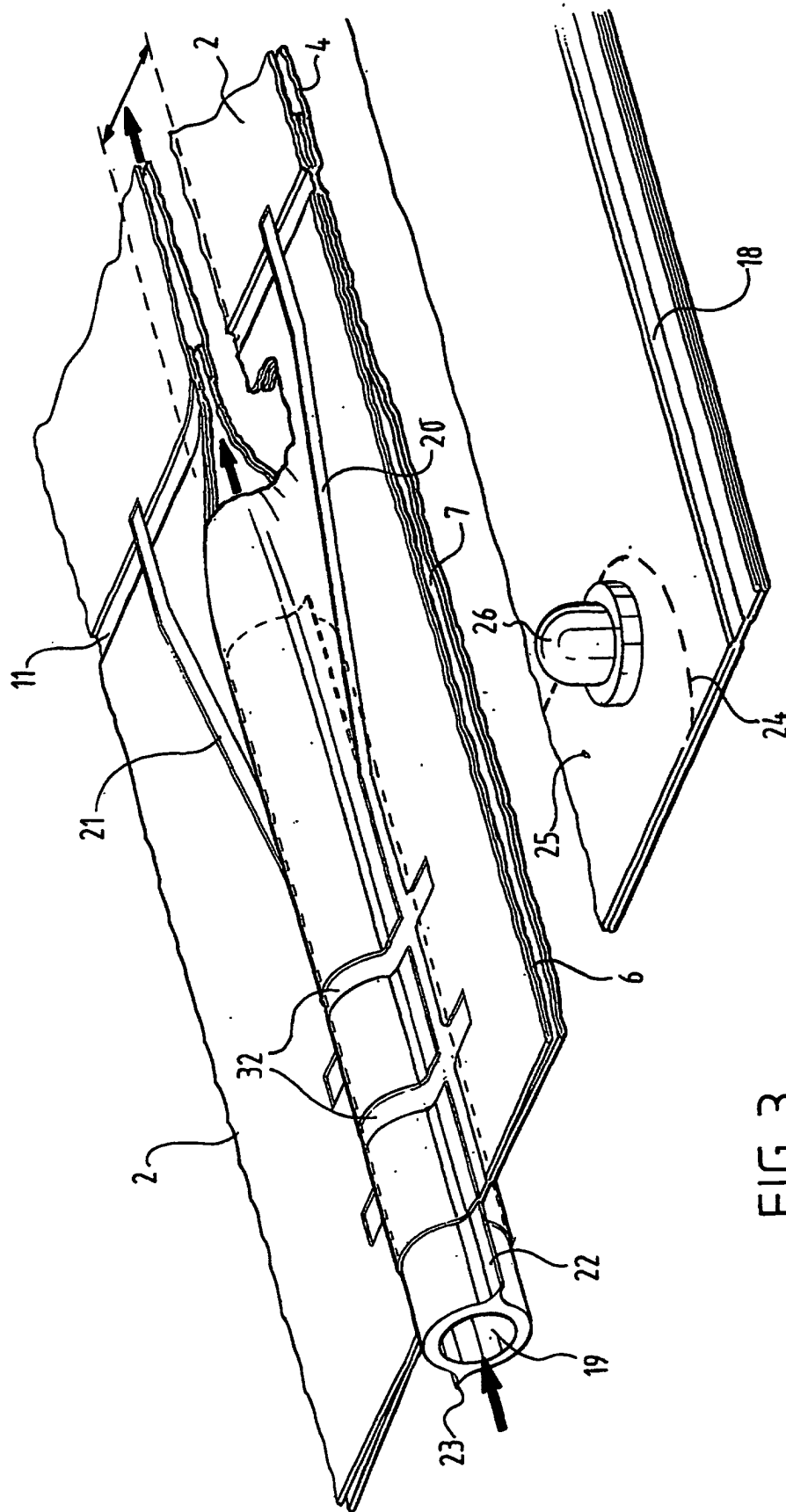


FIG. 3

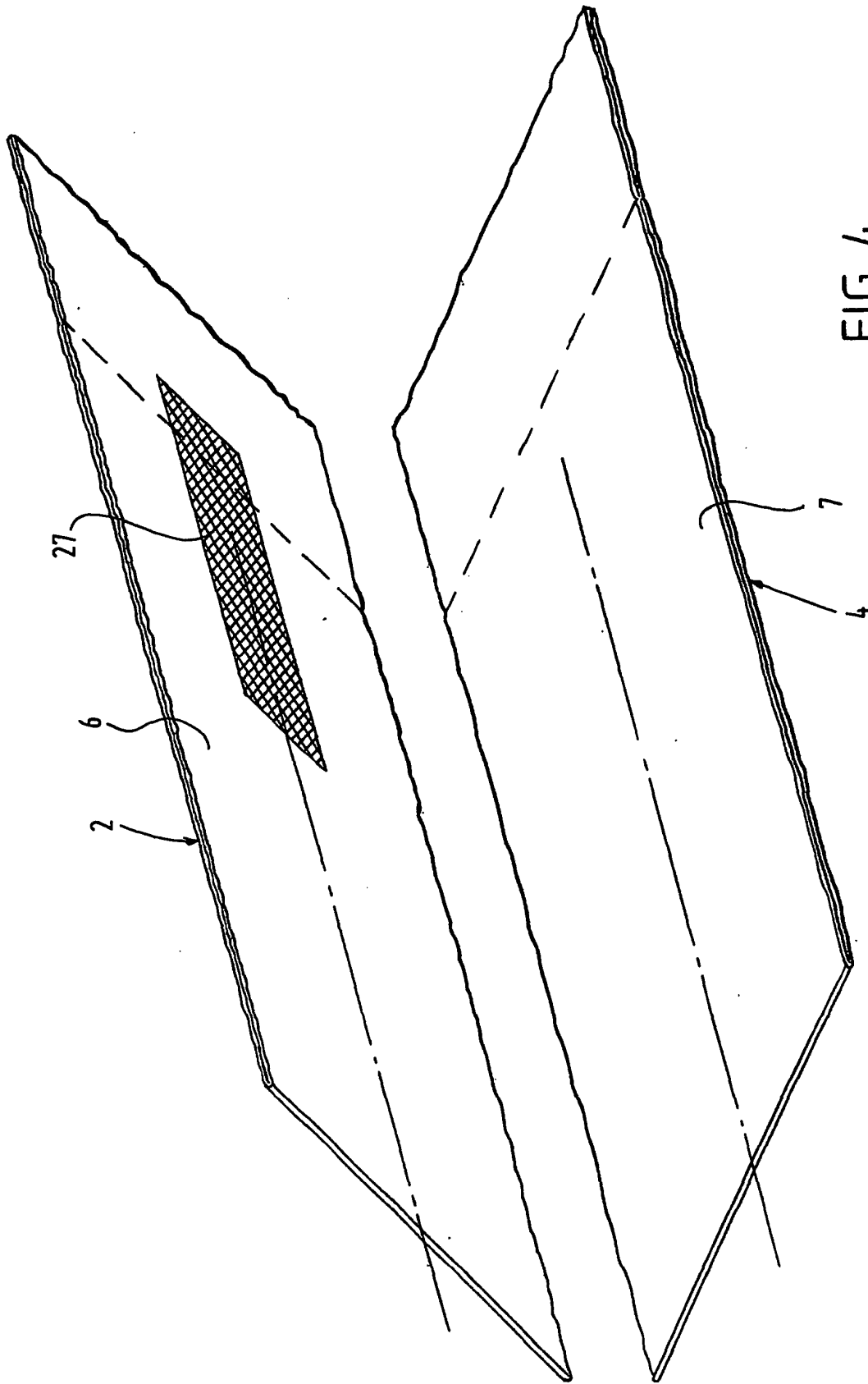


FIG. 4

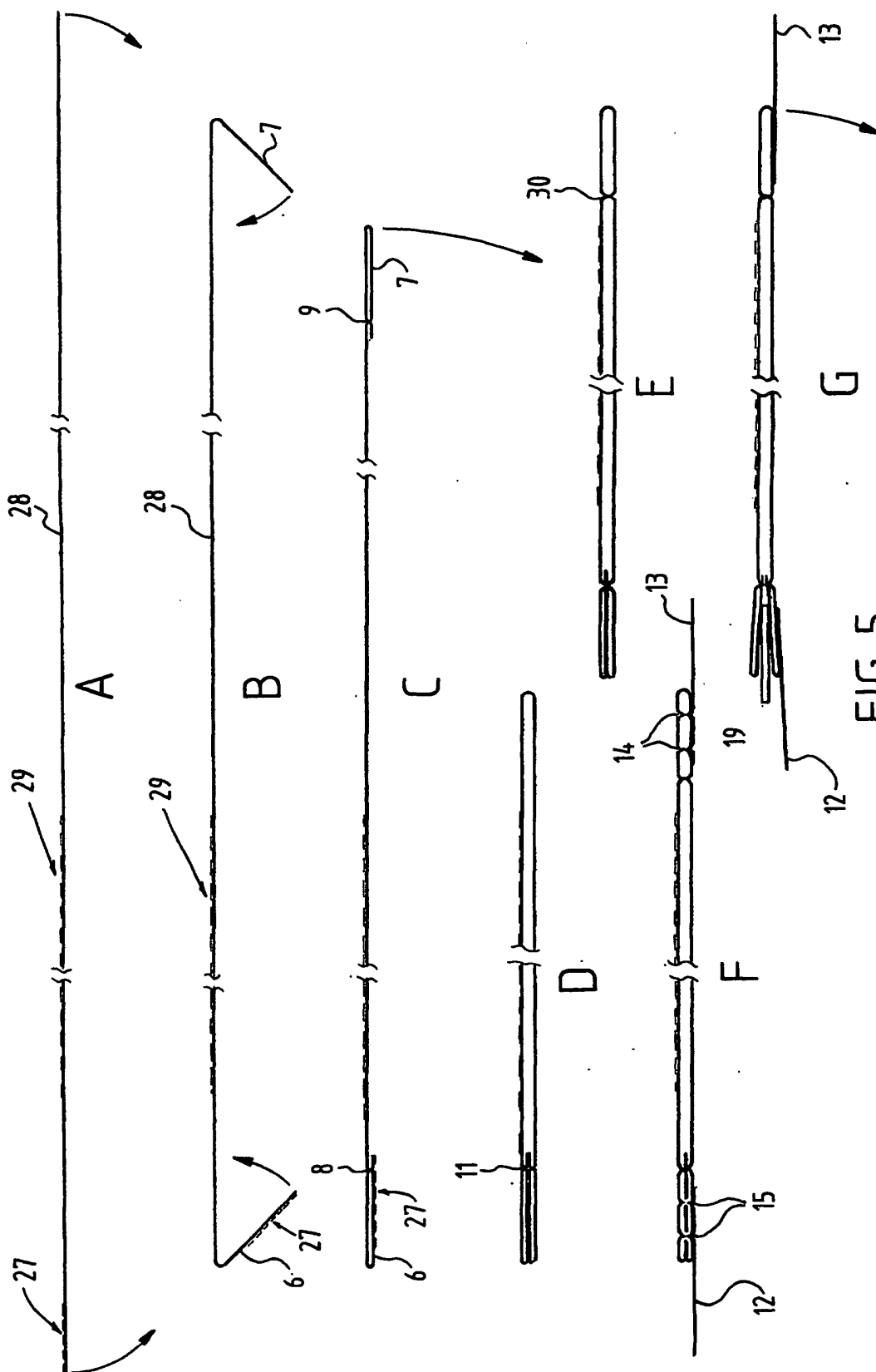


FIG. 5

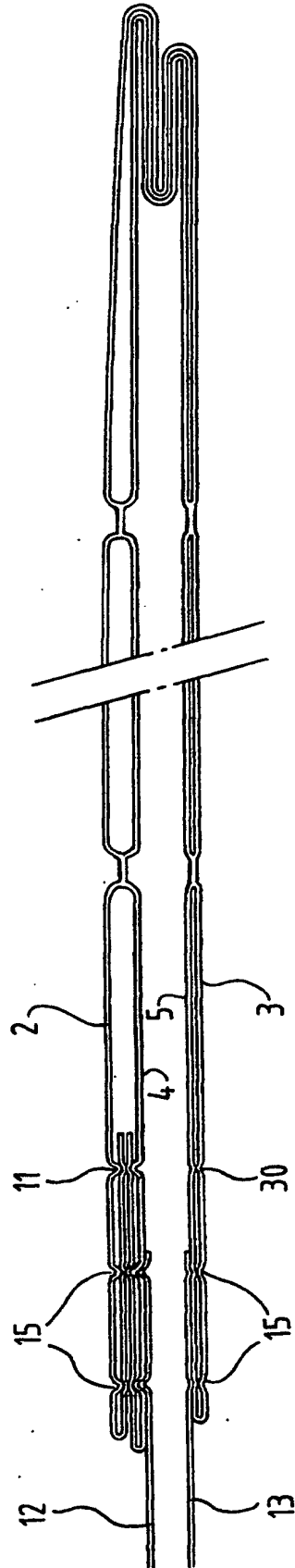


FIG. 5H