(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 698 327 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
28.09.2016 Bulletin 2016/39

(21) Application number: **12770555.6**

(22) Date of filing: **13.04.2012**

(51) Int Cl.:
B65D 81/34 *(2006.01)* *B65D 33/25* *(2006.01)*
B65D 75/58 *(2006.01)* *F24J 1/00* *(2006.01)*
F25D 5/02 *(2006.01)*

(86) International application number:
PCT/KR2012/002781

(87) International publication number:
WO 2012/141508 (18.10.2012 Gazette 2012/42)

(54) POUCH COMPRISING MEANS FOR HEATING OR COOLING ITS CONTENTS

BEUTEL MIT MITTELN ZUM ERWÄRMEN ODER ABKÜHLEN DES BEUTELINHALTS

SACHET COMPRENANT DES MOYENS POUR ÉCHAUFFER OU RÉFRIGÉRER SA CONTENANCE

(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

(30) Priority: **15.04.2011 KR 20110035032**
30.06.2011 KR 20110064741
30.08.2011 KR 20110087150
19.10.2011 KR 20110106931
19.10.2011 KR 20110106930

(43) Date of publication of application:
19.02.2014 Bulletin 2014/08

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to a pouch, and more particularly to a pouch, in which contents can be conveniently heated or cooled.

BACKGROUND ART

[0002] In general, a pouch includes an accommodating section which accommodates a temperature controllable object, a temperature control agent which is packaged in a container separated from the accommodating section and heats or cools the temperature controllable object accommodated in the accommodating section, and a liquid reactant bag filled with a liquid reactant for exothermically or endothermically reacting with the temperature control agent.

[0003] If a user breaks the liquid reactant bag, the exothermic or endothermic reaction occurs to thereby heat or cool contents.

[0004] In a conventional pouch that includes the liquid reactant bag filled with the liquid reactant for reacting with the temperature control agent, the liquid reactant bag is so easily broken that unexpected exothermic or endothermic reaction may occur.

[0005] Meanwhile, if a heating space accommodating a heating element is opened, water or the like liquid reactant may be added while contents are put into the pouch and then sterilized.

[0006] A pouch according to the preamble of claim 1 is known from US 2011/083662 A1.

[0007] KR 2008 0109153 A, KR 101 000 509 B1 and KR 2008 0064700 A are further examples of portable heating pouch assemblies for food. Food located in a container of the respective pouch assemblie may be heated via heat from a reaction of a reactant liquid with heating elements positioned in a heating space attached to the food container. To activate the heating function, the reactant liquid has to be introduced into the heating space.

DISCLOSURE OF INVENTION

[0008] An aspect of the invention is to provide a pouch, which can be easily carried and kept.

[0009] Another aspect of the invention is to provide a pouch, which can basically prevent an unexpected exothermic or endothermic reaction.

[0010] Still another aspect of the invention is to provide a pouch, which can prevent foreign materials from being introduced into a heating space (i.e., a temperature control space) while the contents are put in and then sterilized.

[0011] Yet another aspect of the invention is to provide a pouch, in which sealing work can be easily performed when the pouch is manufactured.

[0012] Still another aspect of the invention is to provide a pouch, in which an optimal exothermic or endothermic reaction can occur.

[0013] Yet another aspect of the invention is to provide a pouch, which can prevent a liquid reactant remaining after a reaction from leaking out when the pouch is turned upside down.

[0014] The foregoing and/or other aspects of the present invention are achieved by a pouch according to claim 1. The dependent claims describe advantageous embodiments of the invention.

[0015] According to a non-claimed example, a pouch includes: a contents-accommodating section which can accommodate contents; a temperature controller which includes a temperature control agent arranged in a temperature control space provided at least one between front and back sides with respect to the contents-accommodating section, and a liquid reactant entrance arranged to be lower than an upper end of the contents-accommodating section and through which a liquid reactant for exothermically or endothermically reacting with the temperature control agent is put into the temperature control space; and a sealing portion which seals up the liquid reactant entrance so that the liquid reactant entrance can be opened when force of not less than a certain magnitude is applied.

[0016] An upper end of the liquid reactant entrance may be spaced apart at a predetermined distance from the contents-accommodating section, and the sealing portion is arranged between the contents-accommodating section and the temperature controller in a lower portion of the space.

[0017] The liquid reactant entrance may further include a grip portion which is arranged to be higher than the sealing portion to open the liquid reactant entrance.

[0018] The sealing portion may include an adhesive tape which seals up the upper end of the liquid reactant entrance and includes an extended portion extended to be gripped at one side.

[0019] The pouch may further include a transparent window for checking whether the contents-accommodating section is sealed up or not, with naked eyes.

[0020] The pouch may further include a pouch stand coupled to at least one lower side between the contents-accommodating section and the temperature controller so that the contents-accommodating section can stand.

[0021] According to another non-claimed example, a pouch includes: a contents-accommodating section in which contents are accommodated; a temperature controller which includes a temperature control agent arranged in a temperature control space provided at least one between front and back sides with respect to the contents-accommodating section and heating or cooling the contents, and a temperature control space forming member including a liquid reactant entrance arranged to be lower than an upper end of the contents-accommodating section and through which a liquid reactant for exothermically or endothermically reacting with the tem-

perature control agent is put into the temperature control space and forming a temperature control space arranged in at least one side between the front and back sides of the contents-accommodating section and accommodating the temperature control agent; and a sealing portion which is interposed between the liquid reactant entrance and the contents-accommodating section, seals up the liquid reactant entrance and the contents-accommodating section by heat so that the liquid reactant entrance can be opened when force of not less than a certain magnitude is applied for spacing the liquid reactant entrance and the contents-accommodating section apart from each other.

[0022] The sealing portion may have an adhesive strength of 200gf/ cm^2 or stronger and 5kgf/cm^2 or weaker.

[0023] The liquid reactant entrance may further include a grip portion arranged to be higher than the sealing portion and gripping the liquid reactant entrance.

[0024] The grip portion may include an upper end portion of the temperature control space forming member, which is not sealed with the contents-accommodating section by the sealing portion.

[0025] Adhesive strength due to the sealing portion between the liquid reactant entrance and the contents-accommodating section may be weaker than contact strength between the temperature control space forming member and the contents-accommodating section except the liquid reactant entrance.

[0026] According to another non-claimed example, a method of manufacturing a pouch includes: combining a contents-accommodating section accommodating contents therein, a temperature control space forming member arranged in at least one side between front and back sides of the contents-accommodating section and having an upper end positioned to be lower than an upper end of the contents-accommodating section, and a sealing portion interposed between the temperature control space forming member and the contents-accommodating section; thermally adhering an upper end region of the temperature control space forming member with the sealing portion to the contents-accommodating section by a sealing bar heated at a first temperature; inserting a temperature control agent between the temperature control space forming member and the contents-accommodating section; and thermally adhering left, right and lower end regions of the temperature control space forming member with the temperature control agent to the contents-accommodating section by the sealing bar heated at a second temperature.

[0027] The first temperature may be lower than the second temperature.

[0028] The first temperature may include 150°C or higher and 220°C or lower, and the second temperature includes 230°C or higher and 300°C or lower.

[0029] According to another non-claimed example, a pouch includes: a contents-accommodating section which accommodates contents; a temperature controller which includes a temperature control agent arranged in a temperature control space provided in at least one side between front and back sides with respect to a contents-accommodating section, a liquid reactant container arranged in the temperature control space and containing a liquid reactant exothermically or endothermically reacting with the temperature control agent, and a liquid reactant entrance arranged to be lower than an upper end of the contents-accommodating section and through which the liquid reactant container is taken out from the temperature control space and the liquid reactant contained in the liquid reactant container is put in; and a sealing portion which seals up the liquid reactant entrance so that the liquid reactant entrance can be open when force of not less than a certain magnitude is applied.

[0030] The upper end of the liquid reactant entrance may be spaced apart at a predetermined distance from the contents-accommodating section.

[0031] The pouch may further include a grip portion arranged to be upper than the sealing portion to open the liquid reactant entrance.

[0032] The amount of liquid reactant contained in the liquid reactant container may be proportional to the amount of temperature control agent, and the liquid reactant container may be torned only when a user cuts the liquid reactant container with his/her hand.

[0033] The pouch may further include a transparent window for checking whether the contents-accommodating section is sealed or not, with naked eyes.

EFFECTS OF THE INVENTION

[0034] With the foregoing configuration, the pouch and the manufacturing method thereof have at least one among the following effects.

[0035] First, it is easy to carry and keep the pouch.

[0036] Second, it is possible to prevent an unexpected exothermic or endothermic reaction.

[0037] Third, it is possible to prevent foreign materials from being introduced into the heating space (i.e., the temperature control space) while the contents are put in and then sterilized.

[0038] Fourth, it is possible to perform the sealing work when the pouch is manufactured.

[0039] Fifth, it is possible to make the optimal exothermic or endothermic reaction occur.

[0040] Sixth, it is possible to prevent the liquid reactant remaining after the reaction from leaking out when the pouch is turned upside down.

BRIEF DESCRIPTION OF THE DRAWINGS

[0041]

FIG. 1 is a schematic perspective view of a pouch according to a first non-claimed example,

FIG. 2 is a rear view of the pouch of FIG. 1,

FIG. 3 is a schematic section view of the pouch, taken

along line A-A of FIG. 1,
FIG. 4 is a schematic section view for explaining an alternative configuration of a liquid reactant entrance in the pouch of FIG. 1,
FIG. 5 is a longitudinal-section view of a pouch according to a second non-claimed example,
FIG. 6 is a schematic perspective view of a pouch according to a third non-claimed example,
FIG. 7 is a schematic section view of the pouch, taken along line B-B of FIG. 5,
FIG. 8 is a longitudinal-section view of a pouch according to a fourth non-claimed example,
FIG. 9 is a longitudinal-section view of a pouch according to a fifth non-claimed example,
FIG. 10 is a perspective view of a pouch according to a sixth non-claimed example,
FIG. 11 is a section view, taken along line A2-A2 of FIG. 10,
FIG. 12 is a section view showing that the pouch shown in FIG. 11 is filled with the temperature controllable object,
FIG. 13 is a section view showing that a sealing portion is opened to put a liquid reactant into the temperature control space of the pouch shown in FIG. 11,
FIG. 14 is a section view of a pouch according to a seventh non-claimed example,
FIG. 15 is a section view showing that a temperature controllable object is filled in the pouch shown in FIG. 14,
FIG. 16 is a perspective view of a pouch according to an eighth non-claimed example,
FIG. 17 is a section view of a pouch according to a ninth non-claimed example,
FIG. 18 is a perspective view of a pouch according to a tenth non-claimed example,
FIG. 19 is a section view of the pouch, taken along line A3-A3 of FIG. 18,
FIG. 20 and FIG. 21 are a schematic section view showing that the pouch of FIG. 18 is filled with the temperature controllable object (i.e., the contents) and a schematic section view showing that the temperature control space of the pouch of FIG. 20 is opened, respectively,
FIG. 22 is a schematic section view of a pouch according to an eleventh non-claimed example,
FIG. 23 is a schematic section view of a pouch according to a twelfth non-claimed example,
FIG. 24 is a schematic section view of a pouch according to a thirteenth non-claimed example,
FIG. 25 is a schematic section view of a pouch according to a fourteenth non-claimed example,
FIG. 26A and FIG. 26B are longitudinal-section views showing a center portion of a pouch according to a fifteenth non-claimed example and showing that one side portion separated from the center portion is cut-opened, respectively,
FIG. 27A is a schematic perspective view of a pouch according to a sixteenth non-claimed example,
FIG. 27B is a schematic longitudinal-section view of the pouch of FIG. 27A,
FIG. 28A, 28B and 28C are an exploded perspective view and assembled perspective views for explaining a method of manufacturing the pouch according to the fourteenth non-claimed example,
FIG. 29 is a flowchart of manufacturing a pouch according to a non-claimed example,
FIG. 30 is a schematic perspective view of a pouch according to a seventeenth non-claimed example,
FIG. 31 is a schematic section view of the pouch, taken along A4-A4 of FIG. 30,
FIG. 32 is a schematic section view showing that the pouch of FIG. 30 is filled with the temperature controllable object (i.e., the contents),
FIG. 33 is a schematic section view for explaining a process of putting the liquid reactant in the state that the temperature control space of the pouch of FIG. 30 is opened,
FIG. 34 is a schematic section view of a liquid reactant container internally provided in the pouch of FIG. 30,
FIG. 35 is a schematic perspective view of a pouch according to an eighteenth non-claimed example,
FIG. 36 is a rear view of the pouch of FIG. 35,
FIG. 37 is a schematic section view, taken along line A5-A5 of FIG. 35,
FIG. 38 is a schematic perspective view of a pouch according to a nineteenth non-claimed example,
FIG. 39 is a schematic section view, taken along line A6-A6 of FIG. 38,
FIG. 40 is a schematic section view of a pouch according to a twentieth non-claimed example,
FIG. 41 is a schematic section view of a pouch according to a twenty-first non-claimed example,
FIG. 42 is a schematic section view of a pouch according to a twenty-second non-claimed example,
FIG. 43 is a schematic section view of a pouch according to a first exemplary embodiment of the invention,
FIG. 44 is a schematic longitudinal-section view, taken along line A8-A8 of FIG. 43,
FIG. 45 to FIG. 47 are schematic longitudinal-section views for explaining a method of using the pouch of FIG. 43,
FIG. 48 is an enlarged plan view of a liquid reactant portion selectively embedded in the pouch of FIG. 43,
FIG. 49 is a schematic perspective view of a pouch according to a second exemplary embodiment of the invention,
FIG. 50 is a schematic longitudinal-section view, taken along line A10-A10 of FIG. 49, and
FIG. 51 is a schematic longitudinal-section view for explaining a method of using the pouch of FIG. 49.

MODES FOR CARRYING OUT THE INVENTION

[0042] Hereinafter, non-claimed examples and pouches will be described in detail with reference to accompanying drawings.

<First non-claimed example>

[0043] As shown in FIGs. 1 to 3, a pouch 200 according to a first non-claimed example includes a contents-accommodating section 210 having a contents-accommodating space S1 for accommodating contents; a temperature controller 220 placed in at least one side between a front side and a rear side with respect to the contents-accommodating section 210 in order to heat or cool the contents-accommodating section 210; and a sealing portion 230 sealing up a liquid reactant entrance 222 communicating with temperature control spaces S2, S3 inside the temperature controller 220.

[0044] Here, the contents may include food such as boiled rice, Bibimbap, soup, stew or dry milk; a pad containing medicine for taking a hot massage or a cold massage, or a mask pad containing beauty ingredients. Besides, the contents may be varied as long as it has to be instantly heated or cooled.

[0045] The contents-accommodating section 210 includes a first front film 211 and a first back film 213 placed in front and back to form the contents-accommodating space S1.

[0046] The first front film 211 and the first back film 213 may be made of a plastic film. In more detail, the plastic film may include polyethylene (PE), polypropylene (PP), or a polyethyelene terephthalate (PET). Besides, the first front film 211 and the first back film 213 may be made of well-known synthetic resin films of various materials.

[0047] The temperature controller 220 couples with the contents-accommodating section 210, in more detail, couples with the contents-accommodating section 210 so as to form the temperature control spaces S2, S3 provided in at least one side between the front and rear sides with respect to the contents-accommodating space S1.

[0048] FIGs. 1 to 3 illustrate that the temperature control spaces S2, S3 are formed in front and back, but not limited thereto. As necessary, the temperature control spaces S2, S3 may be formed at only one side.

[0049] The temperature controller 220 includes a second front film 221 coupled in the front of the contents-accommodating section 210 and forming the temperature control space S2 in a front side; and a second back film 224 coupled in the back of the contents-accommodating section 210 and forming the temperature control space S3 in a back side.

[0050] The second front film 221 and the second back film 224 made of a plastic film such as polyethylene (PE), polypropylene (PP), or a polyethyelene terephthalate (PET). Besides, the second front film 221 and the second back film 224 may be made of well-known synthetic resin films of various materials.

[0051] Here, the temperature control spaces S2, S3 are isolated from the contents-accommodating space S1.

[0052] The front and back temperature control spaces S2, S3 can communicate with each other through a communication space S4. The communication space S4 may be formed by arranging the contents-accommodating section 210 so that the lower end portion 211c of the contents-accommodating section 210 can be spaced apart from the lower end portion C1 of the temperature controller 220. In this case, the lower end portion C1 of the temperature controller 220 is a part where the respective lower end portions of the second front film 221 and the second back film 224 are coupled by ultrasonic waves or thermal welding. Of course, coupling between the plastic films may be achieved various well-known methods besides the foregoing ultrasonic waves or thermal welding.

[0053] Meanwhile, the contents-accommodating section 210 and the temperature controller 220 may be coupled with each other at left and right end portions C1, C2 by ultrasonic waves or thermal welding.

[0054] The temperature controller 220 includes a plurality of temperature control agents 223, 225 respectively arranged in the plurality of temperature control spaces S2, S3.

[0055] As described above, if the temperature control spaces S2, S3 are formed at only one side between front and back sides, the temperature control agents 223, 225 may be arranged at only one corresponding side.

[0056] Here, the temperature control agents 223, 225 includes heating elements 223a, 225a to exothermically react with the liquid reactant, and absorption fabrics 223b, 225b surrounding the heating elements 223a, 225a and absorbing the liquid reactant to make the exothermic reaction smoothly.

[0057] As necessary, the absorption fabrics 223b, 225b may be omitted.

[0058] Also, a heat absorption agent endothermically reacting with the liquid reactant may be used instead of the heating elements 223a, 225a. The heating element and the heat absorption agent react with the liquid reactant to heat and cool the contents accommodated in the contents-accommodating space S1.

[0059] The heating element may include at least one among calcium oxide, calcium hydroxide, magnesium chloride, iron, and aluminum. Of course, the foregoing substances may be replaced or changed by other substances as long as it can react with the liquid reactant.

[0060] The heat absorption agent may include at least one of ammonium nitrate (NH4NO3), sodium acetate and urea.

[0061] Here, the plurality of temperature control agents 223, 225 may all include only the heating elements, or only the heat absorption agent.

[0062] As necessary, in the plurality of temperature control agents 223, 225, the front temperature control agent 223 may include only the heating element, and the

back temperature control agent 225 may include only the heat absorption agent. In this case, the front and back temperature control spaces S2, S3 may not communicate with each other but isolated from each other with the contents-accommodating space S1 therebetween.

[0063] The temperature controller 220 may further include a liquid reactant entrance 222 through which the liquid reactant is put into the temperature control spaces S2, S3.

[0064] The liquid reactant entrance 222 is to put the liquid reactant capable of reacting with the temperature control agents 223, 225.

[0065] The liquid reactant entrance 222 is sealed up but openable in the sealing portion 230 to be described later.

[0066] Also, the liquid reactant entrance 222 is arranged at a lower side of the contents-accommodating section 210 rather than an upper end thereof. That is, an upper edge of the liquid reactant entrance 222 is lower than the upper end of the contents-accommodating section 210 so that a user can easily check the position of the liquid reactant entrance 222 with his/her naked eyes.

[0067] The liquid reactant entrance 222 may be formed as a partial upper end section G of the second front film 221 of the temperature controller 220 is not coupled with the first front film 211. At this time, the second front film 221 of the remaining upper end section C3 may be permanently sealed up with the first front film 211.

[0068] Here, the drawings illustrate the liquid reactant entrance 222 is formed in the partial upper end section G of the second front film 221. As necessary, the liquid reactant entrance 222 may be formed in the entire upper end section of the second front film 221.

[0069] Also, the height of the liquid reactant entrance 222 from the lower end of the pouch may be relatively greater than that of the remaining section C3 of the second front film 221 from the lower end of the pouch. Of course, the liquid reactant entrance 222 may have the same height as the remaining section C3 of the second front film 221.

[0070] The liquid reactant entrance 222 may include a grip portion extended frontward to be griped by a user's hand. Thus, a user can easily open the liquid reactant entrance 222.

[0071] Here, the grip portion 222a may be as shown in FIG. 3 formed to be folded down from the first front film 211.

[0072] As necessary, instead of the grip portion 222a of FIG. 3, the upper end of the second front film 221 may be as shown in FIG. 4 provided as it is spaced from the contents-accommodating section 210, specifically from the first front film 211 by a predetermined space K. Thus, a user puts his/her fingers in the space K and broadens the liquid reactant entrance 222, thereby opening the liquid reactant entrance 222.

[0073] Meanwhile, the sealing portion 230 seals up the liquid reactant entrance 222. Thus, it is possible to prevent foreign materials from entering the liquid reactant entrance 222 while the contents is put into and sterilized in the contents-accommodating section S1 of the pouch 200. Such sterilization is essential when a retort pouch is produced by putting stew, soup, boiled rice and the like instant foods into the pouch 200.

[0074] Accordingly, the pouch 200 according to a non-claimed example facilitates the manufacture of the retort pouch.

[0075] As shown in FIG. 3, the sealing portion 230 may be provided between the second front film 221 and the first front film 211 at a side lower than the grip portion 222a of the liquid reactant entrance 222.

[0076] The sealing portion 230 may be provided to allow opening between the first front film 211 and the second front film 221 when force of not less than a predetermined magnitude is applied thereto. In other words, if external force of not less than a predetermined magnitude is applied, the sealing portion 230 may open the liquid reactant entrance 222. Thus, if a user grips and then pulls the grip portion 222a by force of not less than a predetermined magnitude, the liquid reactant entrance 222 is opened.

[0077] A user puts the liquid reactant (for example, water) into the opened liquid reactant entrance 222, thereby heating or cooling the contents accommodated in the contents-accommodating space S1.

[0078] In particular, it is convenient for a user because the liquid reactant entrance 222 is easily opened to put the liquid reactant therein.

[0079] The sealing portion 230 may include an adhesive or a double-sided tape. As necessary, the sealing portion 230 may be formed by fusing the first front film 211 and the second front film 221 through thermal welding or ultrasonic waves. At this time, the first front film 211 and the second front film 221 may be fused to such an extent as to be separated from each other when the sealing portion 230 receives external force of a predetermined magnitude.

[0080] Of course, the sealing portion 230 may be varied as long as it can seal up the liquid reactant entrance and prevent foreign materials, such as liquid (e.g., water), from being introduced therein if there is no external force of not less than a predetermined magnitude.

[0081] Meanwhile, the pouch 200 may further include a ziplock 260 to selectively seal up the upper portion of the contents-accommodating section 210.

[0082] The ziplock 260 includes a female zipper 261 formed inside the first front film 211 and a male zipper 263 formed inside of the first back film 213. Of course, the positions of the female zipper 261 and the male zipper 263 may be exchanged.

[0083] Also, various well-known sealing means may be employed instead of the ziplock 260 as long as it can selectively seal up the contents-accommodating section 210.

[0084] Meanwhile, the pouch 200 may further include a transparent window 215, 216, 217 for checking whether the contents-accommodating space S1 is sealed up or

not. That is, the defect of the contents-accommodating section 210 can be determined by naked eyes through the transparent windows 215, 216, 217.

[0085] As shown in FIG. 1, the transparent window 215 may be arranged between the liquid reactant entrance 222 and the upper end of the first front film 211. Through the transparent window 215, contact between the first front film 211 and the contents accommodated therein is checked by naked eyes, and it is thus possible to determine whether a product is defective or not. For example, if solid food is put into the contents-accommodating section 210 and then the contents-accommodating space S1 is vacuumized, it is possible to determine by naked eyes through the transparent window 215 whether there is a trouble in the vaccumization.

[0086] Meanwhile, the transparent window 216 may be as shown in FIGs. 1 and 2 formed in a lower portion of the pouch 200. If the contents accommodated in the contents-accommodating section 210 is liquid and the liquid leaks out because the contents-accommodating section 210 is defective, it is possible to determine by naked eyes through the transparent window 216 of the lower portion whether the product is defective or not. To make it easier to determine through the transparent window 216 of the lower portion whether the contents-accommodating section 210 is sealed up or not, a corresponding region of the second front film 221 formed with the transparent window 216 may be transparently formed, but a corresponding region of the first front film 221 may be opaque. For example, the second front film 221 may be entirely made of a transparent film, while the first front film 221 may be entirely made of an opaque film.

[0087] Also, the transparent window 217 formed in a vertical direction may be as shown in FIG. 1 formed at one side between left and right sides of the pouch 200 along a lengthwise direction. Thus, a user leans the pouch 200 and checks by his/her naked eyes through the transparent window 217 whether the contents accommodated in the contents-accommodating section 210 leak out or not, thereby determining whether a product is defective or not.

[0088] The plurality of transparent windows 215, 216, 217 are to check whether the contents-accommodating space S1 of the contents-accommodating section 210 is surely isolated from the temperature control spaces S2, S3. If it is checked through the plurality of transparent windows 215, 216, 217 that there is no defect in a product, the contents of the contents-accommodating space S1 is not affected by a byproduct produced by the exothermic or endothermic reaction within the temperature control spaces S2, S3.

[0089] The drawings show the plurality of transparent windows 215, 216, 217, but the number and positions of the transparent windows 215, 216, 217 may be varied.

[0090] Meanwhile, the foregoing description illustrates that the liquid reactant entrance 222 is formed at only one side between the front and back sides, but not limited thereto. Alternatively, the liquid reactant entrance 222 may be formed at both the front and back sides.

<Second non-claimed example>

[0091] Meanwhile, a pouch 200a according to a second non-claimed example may as shown in FIG. 5 include a contents-accommodating section 210a, a temperature controller 220 and a sealing portion 230.

[0092] The contents-accommodating section 210a of the pouch 200 according to the first non-claimed example has the lower end 211c spaced apart from the lower end of the temperature controller 220 as shown in FIG. 3. On the other hand, in the pouch 200a according to the second non-claimed example, as shown in FIG. 5, the lower end of the contents-accommodating section 210a is extended to the lower end of the temperature controller 220 so that the contents-accommodating section 210a and the temperature controller 220 can be coupled with each other in a lower region by ultrasonic waves or thermal welding.

[0093] A communication hole 211b, 213b may be formed in the contents-accommodating section 210a so that the front and back temperature control spaces S2, S3 can communicate with each other. Here, the edge of the communication hole 211b, 213b is sealed up to prevent the contents accommodated in the contents-accommodating space S1 from leaking out through the communication hole 211b, 213b.

<Third non-claimed example>

[0094] A pouch 200b according to a third non-claimed example may as shown in FIGs. 6 and 7 include a contents-accommodating section 210, a temperature controller 220 and a sealing portion 240.

[0095] According to the third non-claimed example, the contents-accommodating section 210 and the temperature controller 220 except the sealing portion 240 are the same as those of the first non-claimed example.

[0096] According to the third non-claimed example, the sealing portion 240 may include an adhesive tape 240 to seal up the upper end of the liquid reactant entrance 222. Thus, it is possible to prevent foreign materials (in particular, liquid) from being introduced into the temperature control spaces S2, S3 while the contents are put into the contents-accommodating section S1 and sterilized after the upper end of the contents-accommodating section S1 is sealed up.

[0097] Meanwhile, the adhesive tape 240 includes an extended portion 241 extended so that one side there of can be gripped. Thus, a user can easily put the liquid reactant into the pouch 200b by pulling the extended portion 241 and removing the adhesive tape 240.

<Fourth non-claimed example>

[0098] A pouch 200c according to a fourth non-claimed example includes a contents-accommodating section

210; a temperature controller 220; a sealing portion 230 and a pouch stand 250 as shown in FIG. 8.

[0099] The pouch 200c according to the fourth non-claimed example allows the contents-accommodating section 210 to stand by itself without any separate standing device as compared with the pouches 200, 200a, 200b according to the first to third non-claimed examples.

[0100] The pouch stand 250 is coupled to a lower side of the pouch 200c so that the pouch 200c can stand.

[0101] In more detail, one end of the pouch stand 250 is coupled to the lower end portion of the second front film 221a, thereby forming a front lower edge. Also, the other end of the pouch stand 250 is coupled to the lower end of the second back film 224a, thereby forming a back lower edge spaced apart from the front lower edge. Thus, the lower edges of the pouch 200c are broadened so that the pouch 200c can stand by itself without any separate device.

[0102] Here, if it is desired to change the pouch 200a as shown in FIG. 4 in a standable form, the pouch stand 250 may be interposed between the lower end of the first front film 211a and the lower end of the first back film 213a.

[0103] Meanwhile, the pouch stand 250 may include a transparent window 253 through which the inside of the pouch 200c can be seen. In the case of the standable pouch 200c according to the fourth non-claimed example, a bottom formed by the pouch stand 250 may have a transparent window 253 besides the plurality of transparent windows 215, 216, 217 described in the first non-claimed example. The transparent window 253 may be formed by making at least one region of the pouch stand 250 with a transparent substance. As necessary, the pouch stand 250 may be entirely made of a transparent substance. Thus, a user can determine whether a product is defective or not with his/her naked eyes through the transparent window 253 formed on the bottom of the pouch 200c.

[0104] When the contents-accommodating section 210 is filled with the contents, the lower portion of the contents-accommodating section 210 may be expanded toward the pouch stand 25. In more detail, the lower portion of the contents-accommodating section 210 is creased so that the contents-accommodating section 210 can expand toward the pouch stand 25 when the contents-accommodating section 210 is filled with the contents.

[0105] Also, the lower portion of the contents-accommodating section 210 is arranged near to the inside of the pouch stand 25 so that both the pouch stand 25 and the contents-accommodating section 210 can expand toward the bottom supporting the pouch 200 by the weight of the contents accommodated in the contents-accommodating section 210.

<Fifth non-claimed example>

[0106] A pouch 200d according to a fifth non-claimed example as shown in FIG. 9 includes a contents-accommodating section 210b; a temperature controller 220; a sealing portion 230 and a pouch stand 250.

[0107] According to the fifth non-claimed example, the contents-accommodating section 210b may be formed by sealing up a first front film 211b, an inner bottom film 218 and a first back film 213b. In more detail, one end and the other end of the inner bottom film 218 are respectively sealed and coupled to the lower end of the first front film 211b and the lower end of the first back film 213b, thereby forming the contents-accommodating section 210b. The inner bottom film 218 surely secures a lower space of the contents-accommodating section 210b so that the contents-accommodating space S1 can be filled with more contents.

<Sixth non-claimed example>

[0108] FIG. 10 is a perspective view of a pouch according to a sixth non-claimed example, FIG. 11 is a section view, taken along line A2-A2 of FIG. 10, FIG. 12 is a section view showing that the pouch shown in FIG. 11 is filled with the temperature controllable object, and FIG. 13 is a section view showing that a sealing portion is opened to put a liquid reactant into the temperature control space of the pouch shown in FIG. 11.

[0109] As shown in FIGs. 10 to 13, a pouch 100 according to the sixth non-claimed example includes an accommodating section 110, a temperature controller 130 provided with a temperature control agent 131, a sealing portion 140, a grip portion 150, a supporter 160, a sealing-bar attachment-preventing portion 170 and a cutting portion 180. The pouch 100 according to the sixth non-claimed example does not include the temperature control agent 131 and the liquid reactant W for the exothermic or endothermic reaction. That is, the liquid reactant W is put into the pouch 100 from the outside in order to control the temperature of the temperature controllable object 10.

[0110] Here, the temperature controllable object 10 includes various instant food such as the retort pouch. For example, the contents may include food such as boiled rice, Bibimbap, soup, stew or dry milk; a pad containing medicine for taking a hot massage or a cold massage, or a mask pad containing beauty ingredients. Besides, the contents may be varied as long as it has to be instantly heated or cooled.

[0111] The accommodating section 110 includes a first accommodating section film 112 and a second accommodating section film 114. An accommodating space 116 for accommodating the temperature controllable object 10 is formed between the first accommodating section film 112 and the second accommodating section film 114. Here, the first accommodating section film 112 and the second accommodating section film 114 may be made of a heat-resistant plastic film.

[0112] In more detail, the accommodating section 110 may be made of the plastic film such as polyethylene

(PE), polypropylene (PP), or a polyethyelene terephthalate (PET). Of course, the first accommodating section film 112 and the second accommodating section film 114 constituting the accommodating section 110 may be made of well-known synthetic resin films of various materials.

[0113] For example, the first accommodating section film 112 may include a CPP film having a thickness of 60μm, an aluminum film having a thickness of 9μm, or a combination film between a nylon film having a thickness of 15μm and a CPP film having a thickness of 60μm. Of course, this is nothing but illustrative. The first accommodating section film 112 may include a combination film of various materials, or as necessary include a film of a single material. The second accommodating section film 114 may be made of the same material as that of the first accommodating section film 112.

[0114] The first accommodating section film 112 and the second accommodating section film 114 form an envelope shape as the other side and both sides connecting one side and the other side are adhered and sealed so as to open one side. As the first accommodating section film 112 and the second accommodating section film 114 are adhered, the accommodating space 116 accommodating the temperature controllable object 10 is formed. Trough an opening side of the accommodating section 110, the temperature controllable object 10 is filled in the accommodating space 116, and the opening side is sealed up by the sealing-bar attachment-preventing portion 170 to be described later after the temperature controllable object 10 is completely filled.

[0115] The temperature controller 130 may be formed at one side between both sides of the accommodating section 110. The temperature control agent 131 is accommodated in between the temperature controller 130 and the outer side of the accommodating section 110, and exothermally or endothermally reacts with the liquid reactant w to be inserted, thereby heating or cooling the temperature controllable object 10.

[0116] The temperature controller 130 according to the sixth non-claimed example includes the temperature control agent 131 arranged at least one side between front and back sides of the accommodating section 110 and heating or cooling the temperature controllable object (i.e., the contents); and a temperature control space forming member 132 provided in a lower side of the accommodating section 110 rather than an upper side thereof, having the liquid reactant entrance 136 through which the liquid reactant w is inserted, and forming a temperature control space 134 where the exothermic or endothermic reaction occurs.

[0117] The temperature control agent 131 includes a reactant 131b and a reactant accommodating section 131a. According to the sixth non-claimed example, the temperature control agent 131 is arranged at one side between both sides of the accommodating section 110. The temperature control agent 131 may be arranged at a side facing the first accommodating section film 112. The temperature control agent 131 reacts with the liquid reactant w such as water inserted from the outside.

[0118] The reactant 131b includes the heating element or the heat absorption agent in accordance with whether to heat or cool the temperature controllable object 10 accommodated in the accommodating section 110. The reactant 131b may include at least one as the heating element among calcium oxide (CaO), calcium hydroxide (Ca(OH)2), magnesium chloride (MgCl2), iron (Fe) and aluminum (Al). Here, the reactant 131b may be replaced or changed by other substances as long as it can exothermally react with the liquid reactant w.

[0119] On the other hand, the reactant 131b may include at least one as the heat absorption agent among ammonium nitrate (NH4NO3), sodium acetate (CH3COONa) and (urea). Of course, the reactant 131b may be replaced or changed by other substances as long as it can endothermally react with the liquid reactant w.

[0120] The reactant accommodating section 131a accommodates the reactant 131b. The reactant accommodating section 131a includes a body 131a1 and a partition 131a2. The reactant accommodating section 131a is provided as an absorption fabric to quickly absorb the liquid reactant w. As necessary, the reactant accommodating section 131a may be made of not the absorption fabric but other substances.

[0121] The body 131a1 is provided to accommodate the reactant 131b. Here, the body 131a1 according to an example is partitioned into four accommodating regions by the partition 131a2. Thus, the reactant 131b is accommodated in each of the plurality of accommodating regions partitioned by the partition 131a2, thereby preventing the reactant 131b from being leaning by its own weight. Also, the reactant 131b is accommodated in each of the plurality of accommodating regions, and thus the divided reactant 131b individually contacts the liquid reactant w, thereby making a temperature control reaction quickly.

[0122] The temperature control space forming member 132 together with the first accommodating section film 112 forms the temperature control space 134 to accommodate the temperature control agent 131. The temperature control space 134 is a space where the exothermic or endothermic reaction occurs when the liquid reactant w is inserted, and has a margin space to accommodate the liquid reactant w in addition to the temperature control agent 131.

[0123] Here, the temperature control space forming member 132 may be made of a transparent synthetic resin film so that the liquid reactant w and the temperature control agent 131 to be inserted can be checked by naked eyes. Of course, the temperature control space forming member 132 may be partially made of the transparent synthetic resin film checkable by naked eyes. Of course, checkability by naked eyes is optional, and thus an opaque film may be used as necessary. The temperature controller 130 may be provided smaller than the accommodating section 110 so that an upper opening of the

accommodating section 110 for inserting the temperature controllable object 10 can be exposed. According to an example, the height of the temperature control space forming member 132 may be eight tenth with respect to the height of the accommodating section 110.

[0124] The temperature control space forming member 132 may have an upper end lower than that of the contents-accommodating section 110.

[0125] The temperature control space forming member 132 may be made of the plastic film. For example, the temperature control space forming member 132 may be the plastic film where a PET film having a thickness of 12μm and a CPP film having a thickness of 60μm are combined. Of course, this is nothing but illustrative. Alternatively, the plastic film may be a combination film where films of various well-known substances are combined or a single material film.

[0126] Meanwhile, the temperature controller 130 adjacent to the opening of the accommodating section 110 includes a liquid reactant insertion portion 136 for opening and closing the temperature control space 134 to insert the liquid reactant therethrough. The liquid reactant insertion portion 136 is coupled to the contents-accommodating section 110 by the sealing portion 140 to be described later, and seals up the temperature control space 134.

[0127] The liquid reactant insertion portion 136 may be spaced part from the sealing portion 140 or the first accommodating section film 112 when force of not less than a predetermined magnitude is applied for inserting the liquid reactant w in the temperature control space 134. Thus, the upside of the temperature control space 134 is opened so that the liquid reactant w can be inserted in the temperature control space 134.

[0128] The sealing portion 140 seals up the accommodating section 110 and the temperature controller 130, specifically, the liquid reactant insertion portion 136, thereby sealing up the temperature control space 134. Here, the sealing portion 140 seals up the accommodating section 110 and the liquid reactant insertion portion 136 with predetermined intensity of adhesion so that the temperature control space 134 can be opened when force of not less than a predetermined magnitude is applied for spacing the liquid reactant insertion portion 136 apart from the accommodating section 110. That is, when the liquid reactant insertion portion 136 is pulled by force of not less than a predetermined magnitude strong enough to overcome the adhesion, the temperature control space 134 is opened. On the other hand, if force of not less than a predetermined magnitude is not applied, the sealing is maintained so that foreign materials including the liquid reactant cannot be introduced into the temperature control space 134.

[0129] Here, the sealing portion 140 may have an adhesive strength of not less than 200gf/cm^2 and not more than 5kgf/cm^2. In experimental results, if the adhesive strength is less than 200gf/cm^2, the sealing may not be maintained when the temperature controllable object 10 is filled and then heated to expand the temperature control space 134. On the other hand, the adhesive strength is more than 5kgf/cm^2, it is difficult for a regular adult to open the temperature control space 134.

[0130] Preferably, the sealing portion 140 may have a adhesive strength of 500gf/cm^2 ~ 3kgf/cm^2.

[0131] According to an example, the sealing portion 140 is placed on the planar surface of the first accommodating section film 112, and seals up between the liquid reactant insertion portion 136 of the temperature controller 130and the first accommodating section film 112. Thus, the sealing portion 140 seals up between the first accommodating section film 112 and the liquid reactant insertion portion 136, and prevents foreign materials from being introduced into the temperature control space 134 while the temperature controllable object 10 is filled in the accommodating space 116 of the accommodating section 110 and then sterilized. Such sterilization is essential when a retort pouch is produced by putting stew, soup, boiled rice and the like instant foods into the pouch 100.

[0132] Meanwhile, the sealing portion 140 may be released from the sealing with the liquid reactant insertion portion 136 when force of not less than a certain magnitude is applied for inserting the liquid reactant w into the temperature control space 134 as temperature control is required for the temperature controllable object 10. Then, the liquid reactant insertion portion 136 is opened to open the temperature control space 134, so that the liquid reactant w can be inserted in the temperature control space 134. Accordingly, the exothermic or endothermic reaction occurs between the temperature control agent 131 and the liquid reactant w.

[0133] Here, the sealing portion 140 may include at least one among liquid adhesive for adhering the first accommodating section film 112 and the liquid reactant insertion portion 136, a solid adhesive tape, and an easy peel film provided between the first accommodating section film 112 and the liquid reactant insertion portion 136.

[0134] Here, the solid adhesive tape may be a film type tape, one or both sides of which the adhesive is applied to.

[0135] The easy peel film couples both films thereof with predetermine thermal adhesion when heat of a predetermined temperature range is applied. Here, the coupling force or adhesion may be controlled by adjusting the temperature range of heat applied to the easy peel film.

[0136] Here, the adhesive strength due to the sealing portion 140 between the liquid reactant entrance 136 and the accommodating section 110 is weaker than contact strength between the temperature control space forming member 132 and the accommodating section 110 besides the liquid reactant entrance 136.

[0137] In more detail, the liquid reactant entrance 136 is expected to be opened so as to insert the liquid reactant in the temperature control space 134, and therefore the adhesive strength of the partial sealing portion C6 between the liquid reactant entrance 136 and the accom-

modating section 110 may be weaker than the adhesive strength of the partial sealing portion C7 in a lateral edge between the temperature control space forming member 132 and the accommodating section 110. This may be achieved by changing the temperature range of the sealing bar used when sealing the partial sealing portions C7, C6. Such temperature range will be described later.

[0138] Meanwhile, the grip portion 150 is provided to grip the liquid reactant insertion portion 136 of the temperature controller 130. The grip portion 150 is extended from the liquid reactant insertion portion 136 and formed integrally with the liquid reactant insertion portion 136.

[0139] The grip portion 150 may protrude from the liquid reactant insertion portion 136. The grip portion 150 may be provided in a center region of the liquid reactant insertion portion 136. The grip portion 150 protrudes from the center region of the liquid reactant insertion portion 136 and is gripped by a user. In particular, the grip portion 150 is gripped by a user and transfers a user's force to the liquid reactant insertion portion 136 so that the liquid reactant insertion portion 136 can be released from the accommodating section 110. To make a user easily grip the grip portion 150 and efficiently transfer his/her force, the grip portion 150 may protrude from the center portion of the liquid reactant insertion portion 136.

[0140] Of course, the grip portion 150 may be provided at both sides of the liquid reactant insertion portion 136.

[0141] The supporter 160 is provided in at least one of the outer side of the accommodating section 110 forming the temperature control space 134 and the inner side of the temperature controller 130. The supporter 160 supports the temperature control agent 131 in the temperature control space 134 and prevents the temperature control agent 131 from moving. That is, the supporter 160 prevents the temperature control agent 131 from moving during a distribution process of the pouch 100. The supporter 160 is not essential for the pouch 100, and may be omitted as necessary.

[0142] According to an example, the supporter 160 is placed on an inner side of the temperature control space forming member 132 and supports the temperature control agent 131. Of course, the supporter 160 may be placed on an outer side of the first accommodating section film 112 and support the temperature control agent 131. The supporter 160 may be made of various adhesive materials such as the adhesive tape in order to support the temperature control agent 131 against the temperature control space forming member 132.

[0143] Meanwhile, when the sealing-bar attachment-preventing portion 170 seals up the upper ends of the first accommodating pack film 112 and the second accommodating pack film 114 by the sealing bar 131a2 having a predetermined sealing temperature in order to seal up the upper side of the accommodating section 110, the first accommodating pack film 112 is attached to and not separated from the sealing bar.

[0144] In more detail, the first accommodating pack film 112 is as described above made of a single CPP film or a combination film where the CPP film is exposed. The CPP film may be attached to and not well separated from the sealing bar, and to prevent this, the sealing-bar attachment-preventing portion 170 may be provided in the accommodating section 110 contacting the sealing bar.

[0145] The PET substance may be used as a material not well attached to the sealing bar. The sealing-bar attachment-preventing portion 170 may include a film of which a part exposed frontward is combined with the PET film, or a single PET film.

[0146] For example, the sealing-bar attachment-preventing portion 170 may be the same plastic film as the temperature control space forming member 132, where the PET film having a thickness of 12μm and the CPP film having a thickness of 60μm are combined. Here, the PET film has to be arranged to be exposed frontward so that the PET film can contact the sealing bar.

[0147] Here, it is just illustrative that the PET is used as a material for the sealing-bar attachment-preventing portion 170. The PET may be replaced by the plastic films of various well known materials as long as it cannot well attached to the sealing bar.

[0148] The cutting portion 180 is provided between the liquid reactant insertion portion 136 and the sealing-bar attachment-preventing portion 170.

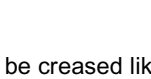
[0149] The cutting portion 180 may include a notch cut in a transverse direction at one or both sides of the accommodating section 110 so that the accommodating section 110 can be torn when transverse force of not less than a certain magnitude is applied.

[0150] The cutting portion may be so thin that the portion cut by the notch can be easily torn.

[0151] As shown in FIG. 11, since the first accommodating section film 112 and the second accommodating section film 114 exist in the cutting portion AA1 formed with the notch, it is thinner than three layered films of the sealing-bar attachment-preventing member 170, and the first and second accommodating section films 112, 114 placed above the accommodating section 110.

[0152] Also, total four layered films of the temperature control space forming member 132, the sealing portion 140, the first accommodating section film 112 and the second accommodating section film 114 exist below the cutting portion AA1, and therefore the cutting portion AA1 having total two layered films is relatively thin. Thus, the cutting portion AA1 can be more easily torn.

[0153] Meanwhile, the supporter 160, the sealing-bar attachment-preventing portion 170 and the cutting portion 180 described above are not essential, and all or a part of them 160, 170, 180 may be omitted as necessary.

[0154] Meanwhile, the foregoing illustrates that the lateral edges C7 of the first accommodating section film 112 and the second accommodating section film 114 of the accommodating section 110 are directly sealed up. As necessary, the cross section of the lateral edges may be creased like "" so that a user can more easily

grip the lateral side of the pouch 100. This may be achieved by interposing a separate film between the lateral edges of the first accommodating section film 112 and the second accommodating section film 114 and thus broadening both edges.

<Seventh non-claimed example>

[0155] FIG. 14 is a section view of a pouch according to a seventh non-claimed example, and FIG. 15 is a section view showing that a temperature controllable object is filled in the pouch shown in FIG. 14

[0156] As shown in FIG. 14 and FIG. 15, a pouch 300 according to the seventh non-claimed example includes a temperature controller 330 provided with a plurality of temperature control agents 131 respectively arranged in the first accommodating section film 112 and the second accommodating section film 114 of the accommodating section 110. Here, among the elements of the pouch 300 according to the seventh non-claimed example, the accommodating section 110, the temperature control agent 131, the supporter 160, the sealing-bar attachment-preventing portion 170 and the cutting portion 180 are the same as those of the sixth non-claimed example, and thus repetitive descriptions thereof will be avoided.

[0157] The temperature controller 330 includes a first temperature control space forming member 331, a second temperature control space forming member 332, a first liquid reactant insertion portion 337 and a second liquid reactant insertion portion 338. The first temperature control space forming member 331 and the second temperature control space forming member 332 respectively accommodate the first accommodating section film 112 and the second accommodating section film 114. Between the first temperature control space forming member 331 and the second temperature control space forming member 332 and between the first accommodating section film 112 and the second accommodating section film 114 are formed the first temperature control space 334 and the second temperature control space 335, respectively. Here, each of the first temperature control space 334 and the second temperature control space 335 accommodate the temperature control agent 131.

[0158] Further, the upper regions of the first temperature control space forming member 331 and the second temperature control space forming member 332 are provided with the first liquid reactant insertion portion 337 and the second liquid reactant insertion portion 338 to open and close the temperature control spaces 334, 335, respectively.

[0159] The sealing portion 340 is provided to allow the first liquid reactant insertion portion 337 and the second liquid reactant insertion portion 338 to seal up the first temperature control space 334 and the second temperature control space 335, respectively. The sealing portion 340 includes the first sealing portion 342 for sealing up between the first accommodating section film 112 and the first liquid reactant insertion portion 337, and a second sealing portion 344 for sealing up between the second accommodating section film 114 and the second liquid reactant insertion portion 338. Here, the first sealing portion 342 and the second sealing portion 344 may include the liquid adhesive or the solid adhesive tape or the easy peel film like the sealing portion 140 according to the sixth non-claimed example.

[0160] The grip portion 350 includes a first grip portion 352 and a second grip portion 354 to be gripped so that the first liquid reactant insertion portion 337 and the second liquid reactant insertion portion 338 can open the first temperature control space 334 and the second temperature control space 335, respectively. The first grip portion 352 may be placed in the center region of the first liquid reactant insertion portion 337, and the second grip portion 354 may be placed in the center regionthe second liquid reactant insertion portion 338. The first grip portion 352 and the second grip portion 354 have the same shape as that of the grip portion 150 according to the sixth non-claimed example. Of course, the first grip portion 352 and the second grip portion 354 may have a different shape from the grip portion 150 according to the sixth non-claimed example.

[0161] As described above, the pouch 300 according to the seventh non-claimed example accommodates two temperature control agents 131 in two temperature control spaces 334, 335 on the contrary to the sixth non-claimed example, and thus can more quickly control the temperature of the temperature controllable object 10 than the pouch 100 according to the sixth non-claimed example.

<Eighth non-claimed example>

[0162] FIG. 16 is a perspective view of a pouch according to an eighth non-claimed example.

[0163] A pouch 500 according to the eighth non-claimed example as shown in FIG. 16 includes a grip portion 550 different from those of the pouches 100, 300 according to the first and seventh non-claimed examples.

[0164] The grip portion 550 according to the eighth non-claimed example includes a grip body 552 and a cutting line 554. The grip body 552 is provided in a transverse direction of the drawing at the upper opening of the temperature control space 134, that is, a region to be sealed up by the sealing portion 140. The cutting line 554 is provided to open the temperature control space 134 when force of not less than a certain magnitude is applied to the grip body 552. That is, the cutting line 554 is removed from the temperature controller 130 when transverse force is applied to the grip body 552, and opens the temperature control space 134.

[0165] Here, in the pouch according to the eighth non-claimed example, foreign materials may enter the temperature control space 134 through the cutting line 554 during a sterilization process. Therefore, the pouch according to the eighth non-claimed example can be used when there is no need of the sterilization process after

the temperature controllable object (i.e., the contents) is filled in the accommodating section 110 of the pouch 500. For example, if the temperature controllable object (i.e., the contents) is solid dried food or a liquid or solid beauty product, the sterilization process may be not needed.

[0166] Here, a partial region of the grip body 552 may protrude from the accommodating section 110 so that a user can easily grip it.

[0167] The grip portion 550 according to the eighth non-claimed example is provided with the cutting line 554 at the opening side of the temperature controller 130, thereby improving the sealing of the temperature control space 134 and convenience when opening the temperature control space 134.

<Ninth non-claimed example>

[0168] FIG. 17 is a section view of a pouch according to a ninth non-claimed example.

[0169] The pouch 700 according to the ninth non-claimed example may be applied to the pouches 100, 300, 500 according to the first to eighth non-claimed examples. The pouch 700 according to the ninth non-claimed example includes a pouch stand 790 so as to make the accommodating section 110 stand.

[0170] The pouch stand 790 according to an example is provided between the first accommodating section film 112 and the second accommodating section film 114 of the accommodating section 110. Here, the pouch stand 700 may be made of a film thicker than the first accommodating section film 112 and the second accommodating section film 114 constituting the accommodating section 110. Of course, the pouch stand 790 may be placed between the accommodating section 110 and the temperature controller 130, but may be placed between the first accommodating section film 112 and the second accommodating section film 114 constituting the accommodating section 110 according to an example in order to stably keep a standing state the pouch 700.

[0171] Thus, the pouch stand 790 is provided to make the pouch 700 stand, so that the temperature control for the temperature controllable object inside the pouch 700 can be stably performed.

<Tenth non-claimed example>

[0172] A pouch 100a according to a tenth non-claimed example as shown in FIG. 18 to FIG. 20 includes an accommodating section 110; a temperature controller 130 including a temperature control agent 131, a liquid reactant entrance 136 and a temperature control space forming member 132; a sealing portion 140, a cutting portion 180 and a pouch stand 790.

[0173] The pouch 100a according to the tenth non-claimed example does not include the supporter 160 and the sealing-bar attachment-preventing portion 170 as compared with that 100 of the sixth non-claimed example.

[0174] As shown in FIG. 19, in the state that the upper end portions of the first and second accommodating section films 112, 114 are not sealed up and the upper portion of the accommodating section 110 is being opened, the temperature controllable object 10 is inserted in the accommodating section 110 along an inserting direction D.

[0175] To heat or cool the temperature controllable object 10 accommodated in the accommodating section 110, a user first grips the grip portion 150 as shown in FIG. 21, and pulls the liquid reactant entrance 136 in a direction F, thereby spacing it apart from the accommodating section 110. At this time, if force of not less than a predetermined magnitude is applied for spacing the liquid reactant entrance 136 apart from the accommodating section 110, the liquid reactant entrance 136 is opened. As described above, the thermal adhesive strength in the sealing region C6 due to the sealing portion 150 is weaker than the thermal adhesive strength of the edge portion C7 of the accommodating section 110, and therefore the liquid reactant entrance 136 can be more easily opened than other portions.

[0176] In the state that the temperature control space 134 is being opened, the liquid reactant is inserted in a direction H. Accordingly, the exothermic or endothermic reaction occurs between the liquid reactant and the temperature control agent 131 within the temperature control space 134, and thus the temperature controllable object 10 accommodated in the accommodating space 116 is heated or cooled.

[0177] After a lapse of predetermined time, a user uses the grip portion 180 to cut open the upper end of the accommodating section 110. Thus, a user takes in, takes out or uses the heated or cooled temperature controllable object 10 through the accommodating section 110 having the opened upper portion.

<Eleventh non-claimed example>

[0178] A pouch 300a according to an eleventh non-claimed example as shown in FIG. 22 includes an accommodating section 110; a temperature controller 330 provided with a plurality of temperature control agents 131 respectively arranged in a first accommodating section film 112 and the second accommodating section film 114; and a sealing portion 140a for sealing up a plurality of temperature control spaces 334, 335 accommodating a plurality of temperature control agents 131.

[0179] As compared with the pouch 300 according to the seventh non-claimed example shown in FIG. 14, the pouch 300a according to the eleventh non-claimed example does not include the supporter (160 in FIG. 14) and the sealing-bar attachment-preventing portion (170 in FIG. 14) of the seventh non-claimed example. Also, the pouch 300a according to the eleventh non-claimed example is different in including a pouch stand 790 and standing from that 300 of the seventh non-claimed example.

[0180] The sealing portion 140 includes a first sealing

portion 141 for sealing up the first temperature control space 334 and a second sealing portion 143 for sealing up the second temperature control space 335.

[0181] The first and second sealing portions 141, 143 may be made of the same substance as that of the foregoing sealing portion 140.

[0182] The first and second sealing portions 141, 143 seal up between the first temperature control space forming member 331 and the first accommodating section film 112 and between the second temperature control space forming member 332 and the second accommodating section film 114 so that the first and second liquid reactant entrances 337, 338 can be opened when force of not less than a certain magnitude is applied for spacing the first and second liquid reactant entrances 337, 338 and the contents-accommodating section 110 apart from each other.

[0183] Here, a user employs the plurality of first grip portion 352 and second grip portion 354 as shown in FIG. 22 to respectively open the first and second temperature control spaces 334, 335, and inserts the liquid reactant therein, thereby heating or cooling the temperature controllable object within the accommodating space 116.

<Twelfth non-claimed example>

[0184] A pouch 300b according to a twelfth non-claimed example as shown in FIG. 23 includes an accommodating section 110a including a first accommodating section film 112, a second accommodating section film 114 and a spacing film 115 spaced apart from the pouch stand 790; a temperature controller 230 including the plurality of temperature control agents 131 respectively arranged in the first accommodating section film 112 and the second accommodating section film 114; a sealing portion 140 for sealing up one among the plurality of temperature control spaces 234, 235 accommodating the plurality of temperature control agents 131; a grip portion 150; and a cutting portion (180 in FIG. 1).

[0185] The pouch 300b according to the twelfth non-claimed example does not include the supporter (600 in FIG. 14) as compared with the pouch 300 according to the seventh non-claimed example shown in FIG. 14. Also, the pouch 300b according to the twelfth non-claimed example is different from that 300 of the seventh non-claimed example in that it includes the pouch stand 790 and is capable of standing, that the lower portion of the accommodating section 110a is spaced apart from the pouch stand 790, that the sealing portion 140 is arranged at one side among the plurality of temperature control spaces 234, 235, that the sealing-bar attachment-preventing portion 170 is arranged at one side between the front and back sides of the pouch 300b, and that the plurality of temperature control spaces 234, 235 communicate with each other.

[0186] The first and second accommodating section films 112, 114 and the spacing film 115 of the accommodating section 110a may be provided as a single material film. As necessary, they may be manufactured as individually separately cut-open films and then sealed up.

[0187] The temperature controller 230 includes first and second temperature control space forming members 231, 232 sealed with the first and second accommodating section films 112, 114 to form the first and second temperature control spaces 234, 234; and the plurality of temperature control agents 131 respectively accommodated in the first and second temperature control spaces 231, 232.

[0188] The upper end of the first temperature control space forming member 231 is lower than the upper end of the contents-accommodating section 110.

[0189] The first temperature control space forming member 231 includes a liquid reactant entrance 237 through which the liquid reactant for exothermically or endothermically reacting with the temperature control agent 131 can be inserted in the first temperature control space 231.

[0190] The sealing portion 140 is provided between the liquid reactant entrance 237 of the first temperature control space forming member 231 and the first accommodating section film 112.

[0191] The liquid reactant entrance 237, the sealing portion 140 and the first accommodating section film 112 are thermally adhered by heat and thus sealed up.

[0192] After the temperature controllable object (i.e., the contents) is filled in the state that the accommodating section 110a is being opened, the sealing bar heated up to a predetermined temperature applies heat along the upper end edges of the accommodating section 110 toward the sealing-bar attachment-preventing portion 170, thereby sealing up the upper end of the accommodating section 110. Accordingly, it is possible to prevent the accommodating section 110 from being attached to the sealing bar.

[0193] The sealing-bar attachment-preventing portion 170, the first temperature control space forming member 231 and the second temperature control space forming member 232 may be all made of the same material. For example, the sealing-bar attachment-preventing portion 170, the first temperature control space forming member 231 and the second temperature control space forming member 232 may be made of the plastic film where the PET film having a thickness of 12μm and the CPP film having a thickness of 60μm are combined.

[0194] To heat or cool the temperature controllable object, a user grips the grip portion 150 and applies force to the liquid reactant entrance 237, thereby opening the first temperature control space 234. Further, the liquid reactant is inserted in the opened first temperature control space 234. The liquid reactant put into the first temperature control space 234 is introduced into a second temperature control space 235 through a communication space J between the accommodating section 110 and the pouch stand 790. Thus, the exothermic or endothermic reaction can occur between the liquid reactant and the temperature control agent 131 within even the second

temperature control space 235.

[0195] In the case of the pouch 300b according to the twelfth non-claimed example, even though a user opens not both the temperature control spaces 234, 235 but one of them to insert the liquid reactant, the inserted liquid reactant can be transferred to the unopened space. Accordingly, it is convenient for a user.

<Thirteenth non-claimed example>

[0196] A pouch 100b according to a thirteenth non-claimed example as shown in FIG. 24 includes the accommodating section 110, the temperature controller 130, the sealing portion 240, the grip portion 150, the sealing-bar attachment-preventing portion 170 and the cutting portion (refer to 180 in FIG. 1).

[0197] As compared with the pouch 100 according to the sixth non-claimed example, the pouch 100b according to the thirteenth non-claimed example does not include the supporter 160 and has the sealing portion 240 different in shape from the sealing portion 140 according to the sixth non-claimed example. Also, as compared with the pouch 100 according to the sixth non-claimed example, the pouch 100b according to the thirteenth non-claimed example further includes the pouch stand 790 and thus is standable.

[0198] The sealing portion 240 may be provided to cover the entire of the first accommodating section film 112 of the accommodating section 110.

[0199] While the sealing portion 140 of the pouch 100 according to the sixth non-claimed example has a predetermined width as shown in FIG. 2, the pouch 100b according to the thirteenth non-claimed example includes the sealing portion 240 provided to cover the entire of the accommodating section 110.

[0200] Here, the sealing portion 240 may be provided as at least one between the liquid or solid adhesive tape for adhering the first accommodating section film 112 and the liquid reactant insertion portion 136, and the easy peel film provided between the first accommodating section film 112 and the liquid reactant insertion portion 136.

[0201] Here, the solid adhesive tape may include a film type tape, one-side or double-sides of which the adhesive is applied.

[0202] The easy peel film couples both films thereof with predetermined thermal adhesive strength when heat of a predetermined temperature range is applied thereto. Here, the coupling force or adhesive force can be controlled by adjusting a sealing temperature of sealing up the easy peel film.

[0203] According to the thirteenth non-claimed example, the sealing portion 240 is provided to cover the entire of the first accommodating section film 112, and therefore there is no need of any separate position adjusting device for interposing the sealing portion 240 between the liquid reactant entrance 136 and the first accommodating section film 112.

<Fourteenth non-claimed example>

[0204] A pouch 300c according to a fourteenth non-claimed example as shown in FIG. 25 includes the accommodating section 110; the temperature controller 330; the sealing-bar attachment-preventing portion 170; the cutting portion (refer to 180 in FIG. 1); the sealing portion 240a and the grip portion 350.

[0205] As compared with the pouch according to the seventh non-claimed example shown in FIG. 14, the pouch 300c according to a fourteenth non-claimed example further includes the pouch stand 790 and is standable. Also, the sealing portion 240a according to the fourteenth non-claimed example has the sealing portion 340 different in shape from that of the seventh non-claimed example shown in FIG. 14.

[0206] The sealing portion 240a includes a first sealing portion 241 for convering the outer side, i.e., the front of the first accommodating section film 112; and a second sealing portion 243 for covering the outer side, i.e., the back of the second accommodating section film 114.

<Fifteenth non-claimed example>

[0207] A pouch 300c according to the fifteenth non-claimed example as shown in FIG. 26A and FIG. 26B includes a accommodating section 110b capable of accommodating the temperature controllable object; a temperature controller 430; a sealing portion 245; a sealing-bar attachment-preventing portion 170; a cutting portion (refer to 180 in FIG. 1) ; and the grip portion 150.

[0208] The accommodating section 110b includes a first accommodating section film 115 and a second accommodating section film 117 to form the accommodating space 116 for accommodating the temperature controllable object.

[0209] The first and second accommodating section films 115, 117 may be made of the same material as those 112, 114 of the sixth non-claimed example.

[0210] The first and second accommodating section films 115, 117 include communication holes 115a, 117a for communicating the first temperature control space 434 and the second temperature control space 436 of the temperature controller 430 with each other

[0211] The temperature controller 430 includes the plurality of temperature control agents 131 respectively arranged at both sides of the accommodating section 110b to heat or cool the temperature controllable object; a liquid reactant entrance 437 through which the liquid reactant exothermically or endothermically reacting with the temperature control agent 131 is insertable; and first and second temperature control space forming members 431, 432 forming the first and second temperature control spaces 434, 436 to accommodate the plurality of temperature control agents 131, respectively.

[0212] The sealing-bar attachment-preventing portion 170 is as described above to prevent the accommodating section 110b from being attached to the sealing bar when

the upper end of the accommodating section 110b is thermally adhered by the sealing bar heated up to a predetermined temperature.

[0213] The sealing-bar attachment-preventing portion 170 may be as described above made of the same material as that of the first temperature control space forming member 431.

[0214] The sealing portion 245 may be provided to cover the outer side, i.e., the front side of the first accommodating section film 115, like the sealing portion 240 of the thirteenth non-claimed example.

[0215] The sealing portion 245 may also include a sealing portion communication hole 245a formed at a position corresponding to the communication holes 115a, 117a in the accommodating section 110a so that the first temperature control space 434 and the second temperature control space 436 can communicate with each other.

[0216] Thus, when the grip portion 150 is gripped to space the liquid reactant entrance 437 apart from the accommodating section 110b and the liquid reactant is put into the first temperature control space 434, the inserted liquid reactant can be introduced into the second temperature control space 436 via the communication holes 245a, 115a, 117a.

<Sixteenth non-claimed example>

[0217] A pouch 100c according to a sixteenth non-claimed example as shown in FIG. 27A and FIG. 27B includes the accommodating section 110 accommodating the temperature controllable object; the temperature controller 130; the sealing portion 140; the grip portion 150; the pouch stand 790 and a spout cap 170.

[0218] The pouch 100c according to the sixteenth non-claimed example does not include the cutting portion 180, the supporter 160 and the sealing-bar attachment-preventing portion 170 as compared with the pouch according to the sixth non-claimed example.

[0219] The pouch 100c according to the sixteenth non-claimed example includes the spout cap 170 instead of the cutting portion (refer to 180 in FIG. 1). If there is the cutting portion (refer to 180 in FIG. 1) like the sixth non-claimed example, a user cuts the cutting portion (refer to 180 in FIG. 1) and opens the accommodating section 110, thereby taking in or using the temperature controllable object 10a filled therein. On the other hand, in the eleventh non-claimed example, a user opens the spout cap 170 instead of cutting the cutting portion (refer to 180 in FIG. 1) and then takes in the temperature controllable object 10a.

[0220] Here, the spout cap 170 may be replaced by a straw hole (not shown) for receiving a straw and a soft tape attached to the hole. In this case, a user puts the straw through the tape and takes in the temperature controllable object 10a in the accommodating section 110 through the hole.

[0221] The temperature controllable object 10a may include coffee, soup or the like beverage, or food.

[0222] Meanwhile, a method of manufacturing the pouch 100a according to the fourteenth non-claimed example will be described below with reference to FIG. 25 and FIG. 28A to FIG. 28C.

[0223] First, the first temperature control space forming member 331, the first sealing portion 241 and the first accommodating sectionfilm 112 are combined to form the front side, i.e., the outer skin. Here, the sealing-bar attachment-preventing portion 170 may also be placed on an upper side of the first sealing portion 241.

[0224] If the first temperature control space forming member 331 and the sealing-bar attachment-preventing portion 170 are made of the same PET film, the PET films are cut and arranged at predetermined positions before combination, so that the first temperature control space forming member 331 and the sealing-bar attachment-preventing portion 170 can be arranged.

[0225] A back outer skin opposite to the front outer skin is formed with the pouch stand 790 therebetween. The back outer skin is symmetrical to the front outer skin with the pouch stand 790 therebetween, and the second accommodating section film 114, the second sealing portion 243 and the second temperature control space forming member 332 are arranged in sequence from the upside.

[0226] Here, the temperature control agent 131 may be inserted between the first sealing portion 241 and the first temperature control space forming member 331 and between the second sealing portion 243 and the second temperature control space forming member 332.

[0227] Meanwhile, the first and second temperature control space forming members 331, 332, the temperature control agent 131 and the sealing-bar attachment-preventing portion 170 may be wored by the following process. That is, in more detail, the pouch stand 790, the first and second accommodating section films 112, 114 and the first and second sealing portions 241, 243 are first sealed in the form of an envelope except their upper regions, and then the first and second temperature control space forming members 331, 332 and the sealing-bar attachment-preventing portion 170 are arranged on the outer side of the envelop and then secondarily sealed up.

[0228] In the state of being combined as shown in FIG. 28A, the edges of the other regions D2, D3 and D4 are sealed up except the edge D1 corresponding to an upper opening of the contents-accommodating space as shown in FIG. 28B. At this time, the sealing may be achieved by thermal adhesion using the sealing bar heated within a predetermined second temperature range. Thus, the first and second accommodating section films 112, 114 form the contents-accommodating space 116.

[0229] At this time, the predetermined second temperature range may be 230°C or higher and 300°C or lower.

[0230] Next, the upper end region L of the first temperature control space forming member 331 is thermally adhered to the first sealing portion 241 and the first accommodating section film 112 by the sealing bar heated within

a predetermined first temperature range. In more detail, the region to be sealed by the sealing bar is a predetermined section S5 from a position spaced apart by a predetermined width K1 from the upper end 331a of the first temperature control space forming member 331 toward the temperature control agent 331.

[0231] Here, the sealing of the sealing bar is not performed up to a section spaced part by a predetermined width w from the upper end 331a of the first temperature control space forming member 331. This region corresponds to the foregoing grip portion 150. The center region upper end portion 331b of the temperature control space forming member 331 is provided to protrude so that the grap portion (see 150 in FIG. 1) can be formed in the form of the protruded center portion.

[0232] Here, the first temperature range may be 150°C or higher and 220°C or lower.

[0233] Since the first temperature range is lower than the second temperature range, the sealing region J sealed up by the sealing bar of the first temperature control space forming member 331 within the first temperature range has a thermal adhesive strengthsealing weaker than those of the edge regions (refer to D1, D2, D3, D4 in FIG. 28B) sealed up by the sealing bar of the second temperature range.

[0234] The sealing region J of the first temperature control space forming member 331 corresponds to the foregoing liquid reactant entrance 337. Accordingly, a user can easily open the liquid reactant entrance 337 having a relatively weak thermal adhesive strength.

[0235] After sealing up the sealing region J of the first temperature control space forming member 331, the edge region D1 is not being sealed but opened so that the temperature controllable object can be inserted through such an opend opening.

[0236] Next, after the temperature controllable object is completely inserted, the opened edge region D1 is thermally adhered by the sealing bar heated within the second temperature range.

[0237] At this time, the predetermined second temperature range may be 230°C or higher and 300°C or lower.

[0238] Meanwhile, the method of thermally adhering the second temperature control space forming member 332 to the second accommodating section film 114 and the second sealing portion 243 is the same as that for the first temperature control space forming member 332, and the repetitive descriptions thereof will be avoided.

[0239] Meanwhile, in the foregoing, the temperature control agent 131 is inserted between the first temperature control space forming member 331 and the first sealing portion 241 and the edges D2, D3, D4 are sealed up, and then the temperature controllable object is filled in the accommodating space between the first and second accommodating section films 112, 114.

[0240] However, in the case where the edges D2, D3, D4 of the first and second accommodating section films 112, 114 first undergo the sealing work, and then the first and second sealing portions 241, 243 and the first and second temperature control space forming members 331, 332 undergo the following sealing process, the contents-accommodating space is already formed, and therefore the accommodating space is first filled with the temperature controllable object and then filled with the temperature control agent 131. Accordingly, the sealing work for the edges D2, D3, D4 may be performed once again. That is, the contents filling and sealing process and the temperature control agent filling and sealing process may be exchanged in order.

[0241] Here, if the temperature controllable object (i.e., the contents) is coffee, soup or the like liquid food needed to be sterilized, the contents filling and sealing processes may be previously performed to the temperature control agent filling and sealing process so as to make the contents filling process more safety.

[0242] The sealing of the upper end edge D1 of the pouch may be performed after the temperature controllable object (i.e., the contents) is filled. As necessary, the upper end edge D1 may not be sealed if the temperature controllable object (i.e., the contents) is hardly affected by an external environment or if there is no need of sealing the contents-accommodating space because its expiration date is short.

[0243] Meanwhile, a method of manufacturing the pouch will be described below with reference to FIG. 18 to FIG. 21 and FIG. 29.

[0244] First, the contents-accommodating section 110 capable of accommodating the contents therein, the temperature control space forming member 132 arranged in at least one side between the front and back sides of the contents-accommodating section 110 and having the upper end lower than that of the contents-accommodating section, and at least one sealing portion 140 inserted between the temperature control space forming member and the contents-accommodating section are combined (S10).

[0245] Then, the upper end region of the temperature control space forming member 132 with the sealing portion 140 is thermally adhered to the contents-accommodating section 110 by the sealing bar heated at the first temperature (S20). Here, the upper end region, which corresponds to the liquid reactant entrance 136 of the temperature control space forming member 132, seals up the liquid reactant entrance 136.

[0246] Here, the first temperature may be 150°C or higher and 220°C or lower. If the first temperature for heating the sealing bar to thermally adhere the upper end region is lower than 150°C, the thermal adhesive strength of the liquid reactant entrance 136 is so weak that the sealing of the temperature control space 134 is deteriorated between the temperature control space forming member 131 and the contents-accommodating section 110, thereby allowing foreign materials (e.g., moisture or the like) to be introduced.

[0247] On the other hand, if the first temperature is higher than 220°C, the thermal adhesive strength of the liquid reactant entrance 136 is so strong that it is difficult

for a user to open the temperature control space 134.

[0248] Next, the temperature control agent 131 is inserted in the temperature control space forming member 131 and the contents-accommodating section 140 (S30).

[0249] Next, the left and right sides and the lower sides of the temperature control space forming member 132 filled with the temperature control agent 131 are thermally adhered to the contents-accommodating section 110 by the sealing bar heated up to the second temperature (S40).

[0250] Here, the second temperature may be 230°C or higher and 300°C or lower.

[0251] Here, the first temperature is lower than the second temperature. As described above, this is to make a user easily open the temperature control space 134 while keeping its sealing as the thermal adhesive strength of the liquid reactant entrance 136 expected to be open is weaker than the other portions (i.e., the left, right and lower edges).

[0252] Meanwhile, the combination of S10 includes primarily sealing the left, right and lower edges of the contents-accommodating section 110 and the sealing portion 140 so that the upper end of the contents-accommodating section 110 can be open, by combining the contents-accommodating section 110 and the sealing portion 140 (S11); and combining the temperature control space forming member 132 to the front side of the primarily sealed sealing portion 140 (S12). Thus, the accommodating space 116 is formed to accommodate the temperature controllable object 10 in the state that the upper end of the contents-accommodating section 110 is opend.

[0253] Here, in the primarily sealing (S11), only the contents-accommodating section 110 may be combined and sealed without the sealing portion 140. In this case, the sealing portion 140 together with the temperature control space forming member 132 may be sequentially combined to the contents-accommodating section 110 in the combination (S12).

[0254] Meanwhile, the operation of putting the temperature controllable object 10 in the accommodating space 116 formed by the primarily sealing may be performed between the primarily sealing (S11) and the combination of the temperature control space forming member 132 (S12).

[0255] As necessary, the operation of putting the temperature controllable object 10 may be performed after the operation S40 of thermally adhering the left, right and lower end regions of the temperature control space forming member 132.

<Seventeenth non-claimed example>

[0256] As shown in FIG. 30 to FIG. 32, a pouch 2100 according to the seventeenth non-claimed example includes a temperature controller 2130 provided with a contents-accommodating section 2110, a temperature control agent 2131 and a liquid reactant container 2190; a sealing portion 2140, a grip portion 2150 and a pouch cutting portion 2180.

[0257] The contents-accommodating section 2110 is provided to accommodate the contents, that is, the temperature controllable object 10.

[0258] Here, the temperature controllable object 10 includes various instant food such as the retort pouch. For example, the contents may include food such as boiled rice, Bibimbap, soup, stew or dry milk; a pad containing medicine for taking a hot massage or a cold massage, or a mask pad containing beauty ingredients. Besides, the contents may be varied as long as it has to be instantly heated or cooled.

[0259] The contents-accommodating section 2110 includes a first accommodating section film 2112 and a second accommodating section film 2114. Between the first accommodating section film 2112 and the second accommodating section film 2114 is formed an accommodating space 2116 for accommodating the temperature controllable object 10. Here, the first accommodating section film 2112 and the second accommodating section film 2114 may be made of a heat resistant plastic film.

[0260] In more detail, the contents-accommodating section 2110 may include the plastic film such as polyethylene (PE), polypropylene (PP), or a polyethyelene terephthalate (PET).

[0261] Of course, the first accommodating section film 2112 and the second accommodating section film 2114 constituting the contents-accommodating section 2110 may be made of well-known synthetic resin films of various materials.

[0262] For example, the first accommodating section film 2112 may include a CPP film having a thickness of 60μm, an aluminum film having a thickness of 9μm, or a combination film between a nylon film having a thickness of 15μm and a CPP film having a thickness of 60μm. Of course, this is nothing but illustrative. The first accommodating section film 112 may include a combination film of various materials, or as necessary include a film of a single material. The second accommodating section film 2114 may be made of the same material as that of the first accommodating section film 2112.

[0263] The first accommodating section film 2112 and the second accommodating section film 2114 form an envelope shape as the other side and both sides connecting one side and the other side are adhered and sealed so as to open one side. As the first accommodating section film 2112 and the second accommodating section film 2114 are adhered, the accommodating space 2116 accommodating the temperature controllable object 10 is formed. Trough an opening side of the accommodating section 2110, the temperature controllable object 10 is filled in the accommodating space 2116, and the opening side is sealed up by the sealing-bar attachment-preventing portion 2170 to be described later after the temperature controllable object 10 is completely filled.

[0264] The temperature controller 2130 may be formed

at one side between both sides of the accommodating section 2110.

[0265] The temperature controller 2130 according to the seventeenth non-claimed example as shown in FIG. 30 to FIG. 32 and FIG. 34 includes the temperature control agent 2131 arranged in a temperature control space 2134 provided in at least one side between front and back sides of the contents-accommodating section 2110 and heating or cooling the temperature controllable object (i.e., the contents); a liquid reactant container 2190 arranged in the temperature control space 2134 and containing the liquid reactant for exothermically or endothermically reacting with the temperature control agent 2131; and a temperature control space forming member 2132 forming the temperature control space 2134 in which the exothermic or endothermic reaction occurs.

[0266] The temperature control agent 2131 includes the reactant 2131b and the reactant accommodating section 2131a. The temperature control agent 2131 according to the seventeenth non-claimed example is arranged at one side between both sides of the contents-accommodating section 2110. The temperature control agent 2131 according to an example is arranged at a side facing the first accommodating section film 2112. The temperature control agent 2131 reacts with the liquid reactant w such as water inserted from the outside.

[0267] The reactant 2131b includes the heating element or the heat absorption agent in accordance with whether to heat or cool the temperature controllable object 10 accommodated in the accommodating section 2110. The reactant 2131b may include at least one as the heating element among calcium oxide (CaO), calcium hydroxide (Ca(OH)2), magnesium chloride (MgCl2), iron (Fe) and aluminum (Al). Here, the reactant 131b may be replaced or changed by other substances as long as it can exothermally react with the liquid reactant w.

[0268] On the other hand, the reactant 2131b may include at least one as the heat absorption agent among ammonium nitrate (NH4NO3), sodium acetate (CH3COONa) and (urea). Of course, the reactant 131b may be replaced or changed by other substances as long as it can endothermally react with the liquid reactant w.

[0269] The reactant accommodating section 2131a accommodates the reactant 2131b. The reactant accommodating section 131a includes a body 2131a1 and a partition 2131a2. The reactant accommodating section 2131a is provided as an absorption fabric to quickly absorb the liquid reactant w. As necessary, the reactant accommodating section 2131a may be made of not the absorption fabric but other substances.

[0270] The body 2131a1 is provided to accommodate the reactant 2131b. Here, the body 2131a1 according to an example is partitioned into four accommodating regions by the partition 2131a2. Thus, the reactant 2131b is accommodated in each of the plurality of accommodating regions partitioned by the partition 2131a2, thereby preventing the reactant 2131b from being leaning by its own weight. Also, the reactant 2131b is accommodated in each of the plurality of accommodating regions, and thus the divided reactant 2131b individually contacts the liquid reactant W1, thereby making a temperature control reaction quickly.

[0271] The temperature control space forming member 2132, as shown in FIG. 30, is arranged in a lower side rather than an upper end of the contents-accommodating section 2110. In more detail, the upper end of the temperature control space forming member 2132 is lower than the upper end of the contents-accommodating section 2110.

[0272] The temperature control space forming member 2132 includes a liquid reactant entrance 2136 through which the liquid reactant container 2190 is taken out from the temperature control space 2134 and the liquid reactant W1 contained in the liquid reactant container 2190 is put in.

[0273] The temperature control space forming member 2132 together with the first accommodating section film 2112 forms the temperature control space 2134 to accommodate the temperature control agent 2131 and the liquid reactant container 2190. The temperature control space 2134 is a space where the exothermic or endothermic reaction occurs when the liquid reactant W1 contained in the liquid reactant container 2190 is inserted, and has a margin space to accommodate the liquid reactant W1 in addition to the temperature control agent 2131.

[0274] Here, the temperature control space forming member 2132 may be made of a transparent synthetic resin film so that the liquid reactant W1, the liquid reactant container 2190 and the temperature control agent 131 to be inserted can be checked by naked eyes. Of course, the temperature control space forming member 2132 may be made of the transparent synthetic resin film with regard to only a part that can be checked by naked eyes. Of course, the temperature control space forming member 132 may be partially made of the transparent synthetic resin film checkable by naked eyes. Of course, checkability by naked eyes is optional, and thus an opaque film may be used as necessary. The temperature controller 2130 may be lower than the accommodating section 2110 so that an upper opening of the accommodating section 2110 for inserting the temperature controllable object 10 can be exposed. According to an example, the height of the temperature control space forming member 132 may be eight tenth with respect to the height of the accommodating section 110.

[0275] The temperature control space forming member 2132 may have an upper end lower than that of the contents-accommodating section 2110.

[0276] The temperature control space forming member 2132 according to an example may be arranged to have a height from the lower end of the contents-accommodating section 2110 to the upper end of the temperature control space forming member 2132, which is lower by 20% than the hight from the same position to the upper end of the contents-accommodating section 2110.

[0277] The temperature control space forming member 2132 may be made of the plastic film. For example, the temperature control space forming member 132 may be the plastic film where a PET film having a thickness of 12μm and a CPP film having a thickness of 60μm are combined. Of course, this is nothing but illustrative. Alternatively, the plastic film may be a combination film where films of various well-known substances are combined or a single material film.

[0278] The liquid reactant container 2190 as shown in FIG. 34 includes a liquid reactant accommodating section 2191 forming the accommodating space to accommodate the liquid reactant W1; a liquid reactant outlet 2193 through which the accommodated liquid reactant flows out; and a liquid reactant container cutting portion 2195 for cutting the liquid reactant outlet 2193.

[0279] The liquid reactant container 2190 may be made of soft or hard plastic film. According to an example, the liquid reactant container 2190 may be an envelope made of a soft plastic film. As necessary, the liquid reactant container 2190 may be achieved by sealing a hard plastic film (or plate) and a soft plastic film with each other.

[0280] The liquid reactant outlet 2193 may have a width narrower than the liquid reactant accommodating section 2191. Thus, through the liquid reactant outlet 2193 having a relatively narrow width, the liquid reactant W1 can easily flow out in a predetermined direction.

[0281] The liquid reactant container cutting portion 2195 may include a notch formed at one side of the liquid reactant outlet 2193. The notch may be replaced by a cutting groove formed along the cutting direction. Besides, the notch may have various shapes as long as it can be cut with a hand gripping the liquid reactant outlet 2193.

[0282] The liquid reactant container cutting portion 2195 may be cut when a user artificially applies shear force in a width direction with his/her two hands. Thus, it is possible to prevent the liquid reactant container cutting portion 2195 from being cut by mistake while carrying the pouch 22100a.

[0283] The liquid reactant insertion portion 2136 is coupled to the contents-accommodating section 2110 by the sealing portion 2140 to be described later, and closes the temperature control space 2134.

[0284] Also, the liquid reactant insertion portion 2136 is provided to open the temperature control space 2134 closed by the sealing portion 2140 so that the liquid reactant container 2190 can be taken out and the liquid reactant W1 contained in the liquid reactant container 2190 can be put in.

[0285] In more detail, the liquid reactant insertion portion 2136 can be spaced apart from the sealing portion 2140 or the first accommodating section film 2112 when force of not less than a predetermined magnitude is applied, in order to take out the liquid reactant container 2190 from the temperature control space 2134 and put the liquid reactant W1 of the liquid reactant container 2190. Thus, the upper side of the temperature control space 2134 is opened so that the liquid reactant W1 can be put in the temperature control space 2134.

[0286] The sealing portion 2140 seals up the accommodating section 2110 and the temperature controller 2130, specifically, the liquid reactant insertion portion 2136, thereby sealing up the temperature control space 2134. Here, the sealing portion 2140 seals up the accommodating section 2110 and the liquid reactant insertion portion 2136 with predetermined intensity of adhesion so that the temperature control space 2134 can be opened when force of not less than a predetermined magnitude is applied for spacing the liquid reactant insertion portion 2136 apart from the accommodating section 2110. That is, when the liquid reactant insertion portion 2136 is pulled by force stronger than the adhesive strength of the sealing portion 2140, the temperature control space 2134 is opened. On the other hand, if force of not less than a predetermined magnitude is not applied, the sealing due to the sealing portion 2140 is maintained, thereby maintaining the sealed state of the temperature control space 2134

[0287] Here, the sealing portion 2140 may have an adhesive strength of not less than 2200gf/cm^2 and not more than 5kgf/cm^2. In experimental results, if the adhesive strength is less than 2200gf/cm^2, the sealing may not be maintained when the temperature controllable object 10 is filled and then heated to expand the temperature control space 2134. On the other hand, the adhesive strength is more than 5kgf/cm^2, it is difficult for a regular adult to open the temperature control space 2134.

[0288] Preferably, the sealing portion 2140 may have a adhesive strength of 500gf/cm^2 ~ 3kgf/cm^2.

[0289] According to an example, the sealing portion 2140 is placed on the planar surface of the first accommodating section film 2112, and seals up between the liquid reactant insertion portion 136 of the temperature controller 130and the first accommodating section film 2112. Thus, the sealing portion 2140 seals up between the first accommodating section film 2112 and the liquid reactant insertion portion 2136, and prevents foreign materials from being introduced into the temperature control space 134 while the temperature controllable object 10 is filled in the accommodating space 2116 of the accommodating section 2110 and then sterilized. Such sterilization is essential when a retort pouch is produced by putting stew, soup, boiled rice and the like instant foods into the pouch 2100.

[0290] Meanwhile, the sealing portion 2140 may be released from the sealing with the liquid reactant insertion portion 2136 when force of not less than a certain magnitude is applied for inserting the liquid reactant W1 into the temperature control space 1134 as temperature control is required for the temperature controllable object 10. Then, the liquid reactant insertion portion 2136 is opened to open the temperature control space 2134, so that the liquid reactant w can be inserted in the temperature control space 2134. Accordingly, the exothermic or endothermic reaction occurs between the temperature control

agent 2131 and the liquid reactant W1.

[0291] Here, the sealing portion 2140 may include at least one among liquid adhesive for adhering the first accommodating section film 2112 and the liquid reactant insertion portion 2136, a solid adhesive tape, and an easy peel film provided between the first accommodating section film 2112 and the liquid reactant insertion portion 2136.

[0292] Here, the solid adhesive tape may be a film type tape, one or both sides of which the adhesive is applied to.

[0293] The easy peel film couples both films thereof with predetermine thermal adhesion when heat of a predetermined temperature range is applied. Here, the coupling force or adhesion may be controlled by adjusting the temperature range of heat applied to the easy peel film.

[0294] Here, the adhesive strength due to the sealing portion 2140 between the liquid reactant entrance 2136 and the accommodating section 2110 is weaker than contact strength between the temperature control space forming member 132 and the accommodating section 2110 besides the liquid reactant entrance 2136.

[0295] In more detail, the liquid reactant entrance 2136 is expected to be opened so as to insert the liquid reactant in the temperature control space 2134, and therefore the adhesive strength of the partial sealing portion C10 between the liquid reactant entrance 2136 and the accommodating section 2110 may be weaker than the adhesive strength of the partial sealing portion C9 in a lateral edge between the temperature control space forming member 2132 and the accommodating section 2110. This may be achieved by changing the temperature range of the sealing bar used when sealing the partial sealing portions C9, C10. Such temperature range will be described later.

[0296] The upper end region of the temperature control space forming member 2132 and the contents-accommodating section 2110 between which the sealing portion 2140 is interposed are may be thermally adhered by the sealing bar heated at the first temperature. Here, the upper end region, which corresponds to the liquid reactant entrance 2136 of the temperature control space forming member 2132, seals up the liquid reactant entrance 2136.

[0297] Here, the first temperature may be 150°C or higher and 220°C or lower. If the first temperature of the sealing bar thermally adhering the upper end regions is lower than 150°C, the thermal adhesive strength of the liquid reactant entrance 2136 is so weak that the sealability of the temperature control space 2134 between the temperature control space forming member 2131 and the contents-accommodating section 2110 is deteriorated to thereby allowing external foreign materials (e.g., moisture or the like) to be introduced therein.

[0298] On the other hand, if the first temperature is higher than 220°C, the thermal adhesive strength of the liquid reactant entrance 2136 is so strong that it is difficult for a user to open the temperature control space 2134.

[0299] Meanwhile, the partial sealing portion C9 of the left, right and lower edge regions between the temperature control space forming member 2132 and the contents-accommodating section 2110 may be thermally adhered by the sealing bar heated at the second temperature.

[0300] Here, the second temperature may be 230°C or higher and 2300°C or lower.

[0301] Here, the first temperature is lower than the second temperature. As described above, this is to make a user easily open the temperature control space 134 while keeping its sealing as the thermal adhesive strength of the liquid reactant entrance 136 expected to be open is weaker than the other portions (i.e., the left, right and lower edges).

[0302] Meanwhile, the grip portion 2150 is provided to allow a user to easily grip the liquid reactant insertion portion 2136 of the temperature controller 2130. The grip portion 2150 may be extended from the liquid reactant insertion portion 2136 and may be formed integrally with the liquid reactant insertion portion 2136.

[0303] The grip portion 2150 may protrude from the liquid reactant insertion portion 2136. The grip portion 2150 may be provided in the center region of the liquid reactant insertion portion 2136. The grip portion 2150 protrudes from the center region of the liquid reactant insertion portion 2136 and is gripped by a user. In particular, the grip portion 2150 is gripped by a user and transfers a user's force to the liquid reactant insertion portion 2136 so that the liquid reactant insertion portion 2136 can be released from the accommodating section 2110. To make a user easily grip the grip portion 2150 and efficiently transfer his/her force, the grip portion 2150 may protrude from the center portion of the liquid reactant insertion portion 2136.

[0304] Of course, the grip portion 2150 be plurally provided at both sides of the liquid reactant insertion portion 136.

[0305] As shown in FIG. 31, the upper end portions of the first and second accommodating section films 2112, 2114 are not sealed so that the temperature controllable object 10 can be put into the contents-accommodating section 2110 along the inserting direction B1 in the state that the upper portion of the contents-accommodating section 2110 is opened.

[0306] To heat or cool the temperature controllable object 10 accommodated in the contents-accommodating section 2110, as shown in FIG. 33, a user first grips the grip portion 2150 and pulls the liquid reactant entrance 2136 in a direction of FI, thereby spacing it apart from the accommodating section 2110. At this time, if force of not less than a predetermined magnitude is applied for spacing the liquid reactant entrance 2136 apart from the accommodating section 2110, that is, stronger than the adhesive strength due to the sealing portion 2140, the liquid reactant entrance 2136 is opened. As described above, the thermal adhesive strength in the sealing region C10 due to the sealing portion 150 is weaker than the thermal adhesive strength of the edge portion C9 of

the accommodating section 2110, and therefore the liquid reactant entrance 2136 can be more easily opened than other portions.

[0307] In the state that the temperature control space 2134 is being opened, the liquid reactant container 2190 is taken out from the temperature control space 2134 and the liquid reactant container 2190 is cut using the liquid reactant container cutting portion 2195 of the liquid reactant container 2190. From the cut liquid reactant container 2190, the liquid reactant is put into the temperature control space 2134. Accordingly, the exothermic or endothermic reaction occurs between the liquid reactant and the temperature control agent 2131 within the temperature control space 2134, so that the temperature controllable object 10 accommodated in the accommodating space 2116 can be heated or cooled. As a proper amount of the liquid reactant contained in the liquid reactant container 2190 reacts with the temperature control agent 2131, the optimal exothermic or endothermic reaction may occur.

[0308] After a lapse of predetermined time, a user uses the grip portion 2180 to cut open the upper end of the accommodating section 2110. Thus, a user takes in, takes out or uses the heated or cooled temperature controllable object 10 through the accommodating section 2110 having the opened upper portion.

[0309] Meanwhile, the foregoing illustrates that the lateral edges D6 of the first accommodating section film 2112 and the second accommodating section film 2114 of the contents-accommodating section 2110 are directly sealed up. As necessary, the cross section of the lateral edges may be creased like "" so that a user can more easily grip the lateral side of the pouch 2100. This may be achieved by interposing a separate film between the lateral edges of the first accommodating section film 2112 and the second accommodating section film 2114 and thus broadening both edges.

<Eighteenth non-claimed example>

[0310] A pouch 2200 according to an eighteenth non-claimed example, as shown in FIG. 35 to FIG. 37 includes a contents-accommodating section 2210 having a contents-accommodating space S6 to accommodate the contents; a temperature controller 2220 provided in at least one side between the front and back sides of the contents-accommodating section 2210 to heat or cool the contents-accommodating section 2210; and a sealing portion 2230 sealing up a liquid reactant entrance 2222 communicating the temperature control spaces S7, S8 in the temperature controller 2220.

[0311] The contents-accommodating section 2210 includes a first accommodating section film 2211 and a second accommodating section film 2213 to form the contents-accommodating space S6.

[0312] The first accommodating section film 2211 and the second accommodating section film 2213 may be made of a plastic film. In more detail, the plastic film may include polyethylene (PE), polypropylene (PP), or a polyethyelene terephthalate (PET). Besides, the first accommodating section film 2211 and the second accommodating section film 2213 may be made of well-known synthetic resin films of various materials.

[0313] The temperature controller 2220 couples with the contents-accommodating section 2210, in more detail, couples with the contents-accommodating section 2210 so as to form the temperature control spaces S7, S8 provided in at least one side between the front and rear sides with respect to the contents-accommodating space S6.

[0314] FIG. 35 to FIG. 37 illustrate that the temperature control spaces S7, S8 are formed in front and back, but not limited thereto. As necessary, the temperature control spaces S7, S8 may be formed at only one side.

[0315] The temperature controller 2220 includes a second front film 2221 coupled in the front of the contents-accommodating section 2210 and forming the temperature control space S7 in a front side; and a second back film 2224 coupled in the back of the contents-accommodating section 2210 and forming the temperature control space S8 in a back side.

[0316] The first temperature control space forming member 2221 and the second temperature control space forming member 2224 may be made of a plastic film such as polyethylene (PE), polypropylene (PP), or a polyethyelene terephthalate (PET). Besides, the first temperature control space forming member 2221 and the second temperature control space forming member 2224 may be made of well-known synthetic resin films of various materials.

[0317] Here, the temperature control spaces S7, S8 are isolated from the contents-accommodating space S6.

[0318] The front and back temperature control spaces S7, S8 can communicate with each other through a communication space S9. The communication space S9 may be formed by arranging the contents-accommodating section 2210 so that the lower end portion 2211c of the contents-accommodating section 2210 can be spaced apart from the lower end portion D6 of the temperature controller 2220. In this case, the lower end portion D6 of the temperature controller 2220 is a part where the respective lower end portions of the first temperature control space forming member 2221 and the second temperature control space forming member 2224 are coupled by ultrasonic waves or thermal welding. Of course, coupling between the plastic films may be achieved various well-known methods besides the foregoing ultrasonic waves or thermal welding.

[0319] Meanwhile, the contents-accommodating section 2210 and the temperature controller 2220 may be coupled with each other at left and right end portions D6, D7 by ultrasonic waves or thermal welding.

[0320] The temperature controller 2220 includes a plu-

rality of temperature control agents 2223, 2225 respectively arranged in the plurality of temperature control spaces S7, S8.

[0321] As described above, if the temperature control spaces, S8 are formed at only one side between front and back sides, the temperature control agents 2223, 2225 may be arranged at only one corresponding side.

[0322] Here, the temperature control agents 2223, 2225 includes heating elements 2223a, 2225a to exothermically react with the liquid reactant, and absorption fabrics 2223b, 2225b surrounding the heating elements 2223a, 2225a and absorbing the liquid reactant to make the exothermic reaction smoothly.

[0323] As necessary, the absorption fabrics 223b, 225b may be omitted.

[0324] Also, a heat absorption agent endothermically reacting with the liquid reactant may be used instead of the heating elements 2223a, 2225a. The heating element and the heat absorption agent react with the liquid reactant to heat and cool the contents accommodated in the contents-accommodating space S6.

[0325] The heating element may include at least one among calcium oxide, calcium hydroxide, magnesium chloride, iron, and aluminum. Of course, the foregoing substances may be replaced or changed by other substances as long as it can react with the liquid reactant.

[0326] The heat absorption agent may include at least one of ammonium nitrate (NH_4NO_3), sodium acetate and urea.

[0327] Here, the plurality of temperature control agents 2223, 2225 may all include only the heating elements, or only the heat absorption agent.

[0328] As necessary, in the plurality of temperature control agents 2223, 2225, the front temperature control agent 2223 may include only the heating element, and the back temperature control agent 2225 may include only the heat absorption agent. In this case, the front and back temperature control spaces S7, S8 may not communicate with each other but isolated from each other with the contents-accommodating space S6 therebetween.

[0329] The temperature controller 2220 may further include the liquid reactant container 2190 arranged in the temperature control spaces S7, S8.

[0330] If the temperature control spaces S7, S8 communicate with each other, the liquid reactant container 2190 may be provided in only the temperature control space S7 formed with the liquid reactant entrance 2222 to be described later. If the liquid reactant entrances 2222 are respectively formed at both sides of the plurality of temperature control space S7, S8, the liquid reactant container 2190 may be provided in each of the temperature control spaces S7, S8.

[0331] The temperature controller 2220 may further include the liquid reactant entrance 2222 through which the liquid reactant container 2190 is taken out from the temperature control spaces S7, S8 and the liquid reactant (refer to W1 of FIG. 34) of the liquid reactant container 2190 is put in.

[0332] The liquid reactant entrance 2222 is sealed up by the sealing portion 2230 so as to be openable.

[0333] Also, the liquid reactant entrance 2222 is arranged at a lower side of the contents-accommodating section 2210 rather than an upper end thereof. That is, an upper edge of the liquid reactant entrance 2222 is lower than the upper end of the contents-accommodating section 2210 so that a user can easily check the position of the liquid reactant entrance 2222 with his/her naked eyes.

[0334] The liquid reactant entrance 222 may be formed as a partial upper end section G1 of the first temperature control space forming member 2221 of the temperature controller 2220 is not coupled with the first accommodating section film 2211. At this time, the first temperature control space forming member 2221 of the remaining upper end section D8 may be permanently sealted up with the first accommodating section film 2211.

[0335] Here, the liquid reactant entrance 222 the partial upper end section G of the second front film 221. As necessary, the liquid reactant entrance 222 may be formed in the entire upper end section of the second front film 221.

[0336] Here, the drawings illustrate the liquid reactant entrance 2222 is formed in the partial upper end section G1 of the first temperature control space forming member 2221. As necessary, the liquid reactant entrance 222 may be formed in the entire upper end section of the first temperature control space forming member 2221.

[0337] Also, the height of the liquid reactant entrance 2222 from the lower end of the pouch may be relatively greater than that of the remaining section D8 of the first temperature control space forming member 2221 from the lower end of the pouch 2200. Of course, the liquid reactant entrance 2222 may have the same height as the remaining section D8 of the first temperature control space forming member 2221.

[0338] The pouch 2200 may include a grip portion 2222a extended frontward so that a user can easily grip the liquid reactant entrance 2222 with his/her hand. Thus, a user can easily grip and open the liquid reactant entrance 2222.

[0339] Here, the grip portion 2222a may be as shown in FIG. 37 formed to be folded down from the first accommodating section film 2211.

[0340] As necessary, instead of the grip portion 2222a of FIG. 37, the upper end of the first temperature control space forming member 2221 may be provided as it is spaced apart from the contents-accommodating section 2210, specifically from the first accommodating section film 2211 by a predetermined space K. Thus, a user puts his/her fingers in the space and broadens the liquid reactant entrance 2222, thereby opening the liquid reactant entrance 2222.

[0341] Meanwhile, the sealing portion 2230 seals up the liquid reactant entrance 2222 as long as the liquid reactant entrance 2222 is not spaced from the contents-

accommodating section 2210 by force of not less than a predetermined magnitude. Thus, it is possible to prevent foreign materials from entering the liquid reactant entrance 2222 while the contents is put into and sterilized in the contents-accommodating section S6 of the pouch 2200. Such sterilization is essential when a retort pouch is produced by putting stew, soup, boiled rice and the like instant foods into the pouch 2200.

[0342] Accordingly, the pouch 2200 according to an example facilitates the manufacture of the retort pouch.

[0343] As shown in FIG. 37, the sealing portion 2230 may be provided between the first temperature control space forming member 2221 and the first accommodating section film 2211 at a side lower than the grip portion 2222a of the liquid reactant entrance 2222.

[0344] The sealing portion 2230 may be provided to allow opening between the first accommodating section film 2211 and the first temperature control space forming member 2221 when force of not less than a predetermined magnitude is applied thereto. In other words, if external force of not less than a predetermined magnitude is applied, the sealing portion 2230 may open the liquid reactant entrance 2222. Thus, if a user grips and then pulls the grip portion 2222a by force of not less than a predetermined magnitude, the liquid reactant entrance 2222 is opened.

[0345] A user takes out and cuts the liquid reactant container 2190 from the open liquid reactant entrance 2222, and puts the liquid reactant (refer to W1 of FIG. 34, for example, water) into the temperature control space S7, thereby heating or cooling the contents accommodated in the contents-accommodating space S6.

[0346] Here, the liquid reactant (refer to W1 of FIG. 34) put into the temperature control space S7 causes the exothermic or endothermic reaction while moving to another temperature control space S8 through the communication space S9.

[0347] Also, since the liquid reactant entrance 2222 is easily opened to put the liquid reactant, it is convenient for a user.

[0348] The sealing portion 2230 may be made of the same material as the sealing portion 2140 of the foregoing seventeenth non-claimed example. In more detail, the sealing portion 2230 may include at least one among liquid adhesive, a solid adhesive tape, and an easy peel film arranged between the first accommodating section film 2112 and the liquid reactant insertion portion 2136.

[0349] As necessary, the sealing portion 2230 may be formed by fusing the first accommodating section film 2211 and the first temperature control space forming member through thermal welding or ultrasonic waves. At this time, the first accommodating section film 2211 and the first temperature control space forming member 2221 may be fused to such an extent as to be separated from each other when the sealing portion 2230 receives external force of a predetermined magnitude.

[0350] Of course, the sealing portion 2230 may be varied as long as it can seal up the liquid reactant entrance and prevent foreign materials, such as liquid (e.g., water), from being introduced therein if there is no external force of not less than a predetermined magnitude.

[0351] Meanwhile, the pouch 2200 may further include a ziplock 2260 to selectively seal up the upper portion of the contents-accommodating section 2210. As necessary, the ziplock 2260 may be omitted.

[0352] The ziplock 2260 includes a female zipper 2261 formed inside the first accommodating section film 2211 and a male zipper 2263 formed inside of the second accommodating section film 2213. Of course, the positions of the female zipper 2261 and the male zipper 2263 may be exchanged.

[0353] Also, various well-known sealing means may be employed instead of the ziplock 2260 as long as it can selectively seal up the contents-accommodating section 2210.

[0354] Meanwhile, the pouch 2200 may further include a transparent window 2215, 2216, 2217 for checking whether the contents-accommodating space S6 is sealed up or not. That is, the defect of the contents-accommodating section 210 can be determined by naked eyes through the transparent windows 2215, 2216, 2217.

[0355] As shown in FIG. 35, the transparent window 2215 may be arranged between the liquid reactant entrance 2222 and the upper end of the first accommodating section film 2211. Through the transparent window 2215, contact between the first accommodating section film 2211 and the contents accommodated therein is checked by naked eyes, and it is thus possible to determine whether a product is defective or not. For example, if solid food is put into the contents-accommodating section 2210 and then the contents-accommodating space S6 is vacuumized, it is possible to determine by naked eyes through the transparent window 2215 whether there is a trouble in the vaccumization.

[0356] Meanwhile, the transparent window 216 may be as shown in FIG. 35 and FIG. 36 formed in a lower portion of the pouch 2200. If the contents accommodated in the contents-accommodating section 2210 is liquid and the liquid leaks out because the contents-accommodating section 2210 is defective, it is possible to determine by naked eyes through the transparent window 2216 of the lower portion whether the product is defective or not. To make it easier to determine through the transparent window 2216 of the lower portion whether the contents-accommodating section 2310 is sealed up or not, a corresponding region of the first temperature space forming member 2221 formed with the transparent window 2216 may be transparently formed, but a corresponding region of the first temperature space forming member 2221 may be opaque. For example, the first temperature space forming member 2221 may be entirely made of a transparent film, while the first accommodating section film 2211 may be entirely made of an opaque film.

[0357] Also, the transparent window 2217 formed in a vertical direction may be as shown in FIG. 35 formed at one side between left and right sides of the pouch 2200

along a lengthwise direction. Thus, a user leans the pouch 2200 and checks by his/her naked eyes through the transparent window 2217 whether the contents accommodated in the contents-accommodating section 2210 leak out or not, thereby determining whether a product is defective or not.

[0358] The plurality of transparent windows 2215, 2216, 2217 are to check whether the contents-accommodating space S6 of the contents-accommodating section 2210 is surely isolated from the temperature control spaces S7, S8. If it is checked through the plurality of transparent windows 2215, 2216, 2217 that there is no defect in a product, the contents of the contents-accommodating space S6 is not affected by a byproduct produced by the exothermic or endothermic reaction within the temperature control spaces S7, S8.

[0359] The drawings show the plurality of transparent windows 2215, 2216, 2217, but the number and positions of the transparent windows 2215, 2216, 2217 may be varied.

[0360] Meanwhile, the foregoing description illustrates that the liquid reactant entrance 2222 is formed at only one side between the front and back sides, but not limited thereto. Alternatively, the liquid reactant entrance 222 may be formed at both the front and back sides.

<Nineteenth non-claimed example>

[0361] The pouch 2200a according to the nineteenth non-claimed example as shown in FIG. 38 and FIG. 39 includes the contents-accommodating section 2210; the temperature controller 2220 and a sealing portion 2240.

[0362] The nineteenth non-claimed example is the same as the eighteenth non-claimed example except that the ziplock 2260 is omitted and the sealing portion 2240 is arranged in a different position.

[0363] The sealing portion 2240 of the nineteenth non-claimed example may includes an adhesive tape 2240 attached to the upper end outside of the liquid reactant entrance 2222 and sealing up the temperature control space S7. Thus, it is possible to prevent foreign materials (in particular, liquid) from being introduced into the temperature control spaces S7, S8 while contents are put into the contents-accommodating section S6 and sterilized after the upper end of the contents-accommodating section S6 is sealed up.

[0364] Meanwhile, the adhesive tape 2240 includes a tape grip portion 2241 extended so that its one side can be gripped. Thus, if a user pulls the tape grip portion 2241 and removes the adhesive tape 2240, the liquid reactant of the liquid reactant container 2190 accommodated in the temperature control space S7 can be easily put into the pouch 2200b.

<Twentieth non-claimed example>

[0365] A pouch 2300 according to a twentieth non-claimed example as shown in FIG. 40 includes a contents-accommodating section accommodating section 2110; a temperature controller 2330 provided with a plurality of temperature control agents 2131 respectively arranged in a first accommodating section film 2112 and a second accommodating section film 2114; a sealing portion 2140 sealing up the plurality of temperature control spaces 2334, 2335 accommodating the plurality of temperature control agents 2131 and the plurality of liquid reactant container 2190; and a pouch stand 2790 arranged in lower portions of the first accommodating section film 2112 and the second accommodating section film 2114 and allowing the pouch 2300 to stand.

[0366] The temperature controller 2330 includes a first temperature control space forming member 2331, a second temperature control space forming member 2332, a first liquid reactant insertion portion 2337 and a second liquid reactant insertion portion 2338.

[0367] The first temperature control space forming member 2331 and the second temperature control space forming member 2332 are respectively opposite to the first accommodating section film 2112 and the second accommodating section film 2114. Between the first temperature control space forming member 2331 and the first accommodating section film 2112 and between the second temperature control space forming member 2332 and the second accommodating section film 2114 are respectively formed a first temperature control space 2334 and a second temperature control space 2335. Here, the first temperature control space 2334 and the second temperature control space 2335 accommodate the temperature control agent 2131 and the liquid reactant container 2190, respectively.

[0368] Further, the first liquid reactant insertion portion 2337 and the second liquid reactant insertion portion 2338 are provided in the upper regions of the first temperature control space forming member 2331 and the second temperature control space forming member 2332 to open and close the respective temperature control spaces 2334, 2335.

[0369] The sealing portion 340 is provided to seal up the first temperature control space 2334 and the second temperature control space 2335 by the first liquid reactant insertion portion 2337 and the second liquid reactant insertion portion 2338, respectively. The sealing portion 340 includes the first sealing portion 2342 for sealing up between the first accommodating section film 2112 and the first liquid reactant insertion portion 2337, and the second sealing portion 2344 for sealing up between the second accommodating section film 2114 and the second liquid reactant insertion portion 2338. Here, the first sealing portion 2342 and the second sealing portion 2344 may include the liquid adhesive, the solid adhesive tape or the easy peel film, like the sealing portion 2140 of the seventeenth non-claimed example.

[0370] The grip portion 2350 includes the first grip portion 2352 and the second grip portion 2354 respectively connected to the first liquid reactant insertion portion 2337 and the second liquid reactant insertion portion

2338 and gripped to open the first temperature control space 2334 and the second temperature control space 2335. The first grip portion 2352 may be arranged in the center region of the first liquid reactant insertion portion 2337, and the second grip portion 2354 may also be arranged in the center region of the second liquid reactant insertion portion 2338. The first grip portion 2352 and the second grip portion 2354 have the same shape as the grip portion 2150 of the seventeenth non-claimed example. Of course, the first grip portion 2352 and the second grip portion 2354 may have different shapes from that of the grip portion 2150 of the seventeenth non-claimed example.

[0371] As described above, the pouch 2300 according to the twentieth non-claimed example accommodates two temperature control agents 2131 in two temperature control spaces 2334, 2335 as opposed to the seventeenth non-claimed example. Accordingly, the pouch 2300 according to the twentieth non-claimed example can more quickly control the temperature of the temperature controllable object 10 than the pouch 2100 according to the seventeenth non-claimed example.

[0372] Meanwhile, the sealing portion 2140 includes the first sealing portion 2141 for sealing the first temperature control space 2334, and the second sealing portion 2143 for sealing the second temperature control space 2335.

[0373] The first and second sealing portions 141, 143 may be made of the same material as the sealing portion 2140 according to the foregoing seventeenth non-claimed example.

[0374] The first and second sealing portions 2141, 2143 seal up between the first temperature control space forming member 2331 and the first accommodating section film 2112 and between the second temperature control space forming member 2332 and the second accommodating section film 2114 so that the first and second liquid reactant entrances 2337, 2338 can be opened when force of not less than a certain magnitude is applied to space the first and second liquid reactant entrances 2337, 2338 apart from the contents-accommodating section 2110.

[0375] Here, as shown in FIG. 40, a user may use the first grip portion 2352 and the second grip portion 2354 to open the first and second temperature control spaces 2334, 2335, respectively. In the state that the first and second temperature control spaces 2334, 2335 are opened, the liquid reactant container 2190 is taken out and cut, and the liquid reactant therein is put into the first and second temperature control spaces 2334, 2335. Thus, the exothermic or endothermic reaction occurs in the first and second temperature control spaces 2334, 2335, thereby heating or cooling the temperature controllable object within the accommodating space 2116.

<Twenty-first non-claimed example>

[0376] A pouch 2300a according to a twenty-first non-claimed example as shown in FIG. 41 includes a contents-accommodating section 2110a including the first accommodating section film 2112, the second accommodating section film 2114 and the spacing film 115 spaced apart from the pouch stand 2790; the temperature controller 230 provided with the plurality of temperature control agents 2131 respectively arranged in the first accommodating section film 2112 and the second accommodating section film 2114; the sealing portion 2140 for sealing up one among the plurality of temperature control spaces 2234, 2235 accommodating the plurality of temperature control agents 2131; the grip portion 2150; the sealing-bar attachment-preventing portion 2170, and the pouch cutting portion (refer to 2180 in FIG. 30).

[0377] The first and second accommodating section films 2112, 114 and the spacing film 115 of the contents-accommodating section 2110a may be all provided a single film. As necessary, they may be manufactured with individually cut films and then sealed.

[0378] The temperature controller 2230 includes the first and second temperature control space forming members 2231, 2232 respectively sealed with the first and second accommodating section films 2112, 114 to form the first and second temperature control spaces 2234, 2234; the plurality of temperature control agents 2131 respectively accommodated in the first and second temperature control spaces 2231, 2232; and the liquid reactant container 2190 accommodated in the first temperature control space 2231.

[0379] The first temperature control space forming member 2231 has an upper end arranged to be lower than the upper end of the contents-accommodating section 2110.

[0380] The first temperature control space forming member 2231 includes the liquid reactant entrance 2237 through which the liquid reactant exothermically or endothermically reacting with the temperature control agent 2131 can be inserted in the first temperature control space 231.

[0381] The sealing portion 2140 is provided between the liquid reactant entrance 2237 and the first accommodating section film 2112 of the first temperature control space forming member 2231.

[0382] The liquid reactant entrance 2237, the sealing portion 2140 and the first accommodating section film 2112 are thermally adhered by heat to be sealed.

[0383] When the upper ends of the first accommodating section film 2112 and the second accommodating section film 2114 are sealed up by the sealing bar having a predetermined sealing temperature in order to seal up the upside of the contents-accommodating section 2110, the first accommodating sectionfilm 2112 may be attached to and not separated from the sealing bar.

[0384] The sealing-bar attachment-preventing portion 2170 prevents the first accommodating section film 2112 from being attached to and not separated from the sealing bar.

[0385] In more detail, the first accommodating section film 2112 is as described above made of a single CPP film or a combination film where the CPP film is exposed. The CPP film may be sticked to and not well separated from the sealing bar, and to prevent this, the sealing-bar attachment-preventing portion 2170 may be provided on the first accommodating section film 2112 contacting the sealing bar.

[0386] The PET substance may be used as a material not well attached to the sealing bar. The sealing-bar attachment-preventing portion 2170 may include a film of which a part exposed in a direction of pressing the sealing bar, i.e, frontward is combined with the PET film, or a single PET film.

[0387] For example, the sealing-bar attachment-preventing portion 2170 may be the same plastic film as the foregoing temperature control space forming member 2132, where the PET film having a thickness of 12μm and the CPP film having a thickness of 60μm are combined. Here, the PET film has to be arranged to be exposed frontward so that the PET film can contact the sealing bar.

[0388] Here, it is just illustrative that the PET is used as a material for the sealing-bar attachment-preventing portion 2170. The PET may be replaced by the plastic films of various well known materials as long as it cannot well attached to the sealing bar.

[0389] After the temperature controllable object (i.e., the contents) is filled while the accommodating section 2110a is being opend, the sealing bar heated at a predetermined temperature applies heat toward the sealing-bar attachment-preventing portion 2170 along the upper edges of the accommodating section 2110, thereby sealing up the upper end of the accommodating section 2110. Accordingly, it is possible to prevent the accommodating section 2110 from being attached to the sealing bar.

[0390] The sealing-bar attachment-preventing portion 2170, the first temperature control space forming member 2231 and the second temperature control space forming member 2232 may be all made of the same material. For example, each of the sealing-bar attachment-preventing portion 2170, the first temperature control space forming member 2231 and the second temperature control space forming member 2232 may be the plastic film where the PET film having a thickness of 12μm and the CPP film having a thickness of 60μm are combined.

[0391] Meanwhile, the pouch cutting portion 2180 may be provided between the liquid reactant insertion portion 2237 and the sealing-bar attachment-preventing portion 2170.

[0392] The pouch cutting portion 2180 may include a notch in a transverse direction at one or both sides of the contents-accommodating section 2110 so that the contents-accommodating section 2110 can be torn when transverse force of not less than a certain magnitude is applied.

[0393] The cutting portion may be arranged in a relatively thin position so that the pouch cutting portion (refer to 2180 in FIG. 30) can be easily torn through the notch.

[0394] In more detail, as shown in FIG. 41, the sealing-bar attachment-preventing member 2170 and the liquid reactant insertion portion 2237 may be spaced apart from each other so that a cutting region A7 where the pouch cutting portion (refer to 2180 in FIG. 30) with the notch is provided can be relatively thin.

[0395] That is, the cutting region A7 includes only the first accommodating section film 2112 and the second accommodating section film 2114, and it is therefore thinner than three layered films of the sealing-bar attachment-preventing member 170, the first and second accommodating section films 2112, 2114 provided at the upper side of the contents-accommodating section 2110.

[0396] Also, total four films of the temperature control space forming member 2231, the sealing portion 2140, the first accommodating section film 2112 and the second accommodating section film 2114 are provided under the cutting region A7, and therefore the cutting region A7 having two layered films is relatively thin. Thus, the contents-accommodating section 2110a can be more easily cut by the pouch cutting portion (see 2180 in FIG. 30) formed in the cutting region A7.

[0397] To heat or cool the temperature controllable object, a user grips the grip portion 2150 and applies force to the liquid reactant entrance 2237, thereby opening the first temperature control space 2234. Further, the liquid reactant container 2190 is taken out and cut from the open first temperature control space 2234, and the liquid reactant is inserted in the opened first temperature control space 2234. The liquid reactant put into the first temperature control space 2234 is introduced into a second temperature control space 235 through a communication space H1 between the liquid reactant the accommodating section 2110 and the pouch stand 2790. Thus, the exothermic or endothermic reaction can occur between the liquid reactant and the temperature control agent 2131 within even the second temperature control space 2235.

[0398] In the case of the pouch 300b according to the twenty-first non-claimed example, even though a user opens not both the temperature control spaces 2234, 2235 but one of them to insert the liquid reactant, the inserted liquid reactant can be transferred to the unopened space. Accordingly, it is convenient for a user.

[0399] Meanwhile, the sealing-bar attachment-preventing portion 2170 and the pouch cutting portion 2180 described above are not essential, and all or a part of the foregoing elements 2170, 2180 may be omitted.

<Twenty-second non-claimed example>

[0400] The pouch 2100b according to the sixth non-claimed example as shown in FIG. 42 includes the contents-accommodating section 2110, the temperature controller 2130, the sealing portion 2240, the grip portion 2150, the sealing-bar attachment-preventing portion

2170 and the cutting portion (see 2180 in FIG. 30).

[0401] The pouch 2100b according to the twenty-second non-claimed example is different from the pouch 2100 of the seventeenth non-claimed example in the shape of the sealing portion 2140 according to the seventeenth non-claimed example.

[0402] The sealing portion 2240 may be provided to conver the entire of the first accommodating section film 2112 of the contents-accommodating section 2110.

[0403] In the case of the pouch 2100 according to the seventeenth non-claimed example, the sealing portion 2140 has a predetermined width as shown in FIG. 31. On the other hand, the sealing portion 2240 according to the eighth non-claimed example is provided to cover the entire front side of the contents-accommodating section 2110.

[0404] Here, the sealing portion 2240 may include at least one among the liquid or solid adhesive tape for adhesion between the first accommodating section film 2112 and the liquid reactant insertion portion 2136, and the easy peel film arranged between the first accommodating section film 2112 and the liquid reactant insertion portion 2136.

[0405] Here, the solid adhesive tape may be a film type tape, one or both sides of which the adhesive is applied to.

[0406] The easy peel film couples both films thereof with predetermine thermal adhesion when heat of a predetermined temperature range is applied. Here, the coupling force or adhesion may be controlled by adjusting the temperature range of heat applied to the easy peel film.

[0407] In the case of the twenty-second non-claimed example, the sealing portion 2240 is provided to cover the entire of the first accommodating section film 2112, and therefore there is no need of position control work for positioning the sealing portion 2240 to a certain position between the liquid reactant entrance 2136 and the first accommodating section film 2112. For reference, in the case of the sealing portion 2140 according to the seventeenth non-claimed example shown in FIG. 31, it is positioned at only a specific potion, and therefore there is a need of work for positioning the sealing portion 2140 to the corresponding position.

<First exemplary embodiment of the invention>

[0408] A pouch 1000 according to a first exemplary embodiment of the invention as shown in FIG. 43 and FIG. 44 includes a contents-accommodating section 1100 for accommodating contents, and a temperature controller 1200 provided with temperature control agent 1210 and the liquid reactant insertion portions 1230, 1240.

[0409] The contents CA1 may include retort pouch such as solid boiled rice, Bibimbap, liquid soup, stew or dry milk; a pad containing medicine for taking a hot massage or a cold massage, or a mask pad containing beauty ingredients. Besides, the contents may be variously selected as long as it has to be instantly heated or cooled. Besides the foregoing retort pouch, the food needed for sterilization for prolong expiration date may also be included in the contents CA1 regardless of the kind or types.

[0410] The contents-accommodating section 1100 may form a contents-accommodating space SP1 where the contents CA1 are accommodated.

[0411] The contents-accommodating section 1100 includes the first accommodating section film 1110 and the second accommodating section film 1120.

[0412] The first accommodating section film 1110 and the second accommodating section film 1120 may be made of the plastic film.

[0413] In more detail, the first accommodating section film 1110 and the second accommodating section film 1120 may be made of the plastic film such as polyethylene (PE), polypropylene (PP), or a polyethyelene terephthalate (PET). Of course, the first accommodating section film 1110 and the second accommodating section film 1120 constituting the accommodating section 1100 may be made of well-known synthetic resin films of various materials.

[0414] For example, the first accommodating section film 1110 may include a CPP film having a thickness of 60μm, an aluminum film having a thickness of 9μm, or a combination film between a nylon film having a thickness of 15μm and a CPP film having a thickness of 60μm. Of course, this is nothing but illustrative. The first accommodating section film 1110 may include a combination film of various materials, or as necessary include a film of a single material. The second accommodating section film 1120 may be made of the same material as that of the first accommodating section film 1110. As necessary, the second accommodating section film 1120 may be made of different materials from the first accommodating section film 1110.

[0415] The left, right and lower ends SA2, SA3, SA4 of the first accommodating section film 1110 and the second accommodating section film 1120 are sealed up to form the contents-accommodating space SP1.

[0416] The upper end of the contents-accommodating space SP1 may be opened to put the contents CA1 therein. After the contents CA1 is put in the contents-accommodating space SP1, the upper end of the contents-accommodating space SP1 may be sealed. A sealing method may include a method of using the sealing bar to fuse two films 1110, 1120 with heat, or a method of fusing two films 1110, 1120 with ultrasonic waves or microwaves. Besides, if the contents are not food, two films 1110, 1120 may be sealed up by adhesive or an adhesive film. Besides the foregoing sealing methods, well-known various sealing methods may be employed.

[0417] As necessary, if the contents CA1 are solid food or a pad for beauty or treatment, the upper end of the contents-accommodating space SP1 may not be sealed. Also, in the case that food to be heated or cooled is put into the contents-accommodating space SP1 of the

pouch 1000 and then directly the liquid reactant is inserted in the temperature control space SP2 formed by the temperature controller 1200, the upper end of the contents-accommodating space SP1 may not be sealed.

[0418] As shown in FIG. 44, the temperature controller 1200 is arranged in a front side of the contents-accommodating section 1100 and forms the temperature control space SP2. Of course, as necessary, the temperature controllers 1200 may be arranged in the back side as well as the front side, and thus form the temperature control space at opposite sides with the contents-accommodating section 1100 therebetween.

[0419] The temperature controller 1200 includes the temperature control agent 1210 to be accommodated in the temperature control space SP2; and the temperature control space forming member 1220 forming the temperature control space SP2 where the exothermic or endothermic reaction occurs.

[0420] The temperature control agent 1210 reacts with the liquid reactant (refer to W2 in FIG. 45) put into the temperature control space SP2, thereby causing the exothermic or endothermic reaction. Here, the temperature control agent 1210 may include the liquid reactant (refer to W2 in FIG. 45).

[0421] The temperature control agent 1210 includes the reactant 1211 exothermically or endothermically reacting with the liquid reactant (refer to W2 in FIG. 45) and the reactant accommodating section 1213. The reactant 1211 includes the heating element or the heat absorption agent causing the exothermic or endothermic reaction.

[0422] The reactant 1211 may include at least one as the heating element among calcium oxide (CaO), calcium hydroxide (Ca(OH)2), magnesium chloride (MgCl2), iron (Fe) and aluminum (A1). Here, the reactant 1211 may be replaced by various materials as long as it can exothermically react with the liquid reactant W2.

[0423] Meanwhile, the reactant 1211 may include at least one as the heat absorption agent among ammonium nitrate (NH4NO3), sodium acetate (CH3COONa) and (urea). Of course, the reactant 1211 may be replaced or changed by other substances as long as it can endothermally react with the liquid reactant W2.

[0424] The reactant accommodating section 1213 accommodates the reactant 1211. The reactant accommodating section 1213 may be provided as an absorption fabric to absorb or transmit the liquid reactant W2. As necessary, the reactant accommodating section 1213 may be made of various materials that can absorb or transmit the liquid reactant W2.

[0425] The temperature control space forming member 1220 is opposite to the first accommodating section film 1110 of the contents-accommodating section 1100 and forms the temperature control space SP2 for accommodating the temperature control agent 1210 therebetween.

[0426] The temperature control space forming member 1220 may be made of a transparent synthetic resin film so that the liquid reactant W2 and the temperature control agent 1210 to be inserted can be checked by naked eyes. Of course, the temperature control space forming member 1220 may be partially made of the transparent synthetic resin film checkable by naked eyes. Of course, checkability by naked eyes is optional, and thus an opaque film may be used as necessary.

[0427] The upper end sealing regions SA1 of the temperature control space forming member 1220 and the first accommodating section film 1110 may be aligned with each other and then sealed up as shown in FIG. 44. As necessary, the upper end of the temperature control space forming member 1220 may be positioned lower than the upper end of the first accommodating section film 1110m abd tge yooer end of the temperature control space forming member 1220 may be coupled to the first accommodating section film 1110.

[0428] The temperature control space forming member 1220 may be provided as the plastic film such as PP, PE, PET, etc. For example, the temperature control space forming member 1220 may include the plastic film where the PET film having a thickness of 12μm and the CPP film having a thickness of 60μm are combined. Of course, this is nothing but illustrative. Alternatively, the plastic film may be a combination film where films of various well-known substances are combined or a single material film.

[0429] Meanwhile, the temperature control space forming member 1220 is arranged to be lower than the upper end of the contents-accommodating section 1110, and includes the liquid reactant insertion portions 1230, 1240 into which the liquid reactant (refer to W2 in FIG. 45) can be put.

[0430] The liquid reactant insertion portions 1230, 1240 includes a first folding portion 1230 where the temperature control space forming member 1220 is folded outward; and a first cutting portion 1240 for cutting the first folding portion 1230.

[0431] Here, the first folding portion 1230 may be folded inward as opposed to that shown in FIG. 44. In this case, the first folding portion 1230 may be partially exposed to the outside so that a user can take out the inward folded first folding portion 1230 before cutting the first folding portion 1230.

[0432] The first folding portion 1230 may protrude to have an end being gradually inclined downward as shown in FIG. 44. Thus, it is possible to prevent the liquid reactant remaining after the reaction from leaking out through the cut first folding portion 1230.

[0433] The first cutting portion 1240 may include notches respectively arranged at opposite edges of the first folding portion 1230. As necessary, the notch may be formed at only one side.

[0434] The first cutting portion 1240 may include a cutting groove (not shown) extended along a cutting direction instead of the shown notch. To prevent foreign materials from being introduced into the temperature control space SP2 through the cutting groove (not shown), the cutting groove (not shown) may be not a slit completely

penetrating the temperature control space forming member 1220 but a groove where the temperature control space forming member 1220 is relatively thin.

[0435] Meanwhile, the temperature control space forming member 1220 may further include a second folding portion 1250 to be expanded by vapor generated by the exothermic reaction in the temperature control space SP2. Here, the second folding portion 1250 may be omitted as necessary.

[0436] Below, use of the pouch 1000 according to the foregoing first exemplary embodiment of the invention will be described with reference to FIG. 45 to FIG. 47.

[0437] As described above, the contents CA1 may be put in by a manufacturer or may be put in the opened contents-accommodating section 1100 of the pouch 1000 by a user. In the state that the contents CA1 to be controlled with regard to temperature are accommodated in the contents-accommodating section 1100, a user cuts the first folding portion 1230 through the first cutting portion 1240.

[0438] Thus, as shown in FIG. 45, the first folding portion 1230 is divided into a first upper folding part 1231 and a first lower folding part 1233. Thus, the temperature control space SP1 is opened. The liquid reactant W2 is put in between divided first upper and lower folding parts 1231, 1233.

[0439] As shown in FIG. 46, the put liquid reactant exothermically or endothermically reacts with the temperature control agent 1210. Here, if the exothermic reaction occurs, vapor is generated and the generated vapor is discharged to the outside through the divided first upper and first lower folding parts 1231, 1233 while expanding the second folding portion 1250.

[0440] Here, even though an abnormal state that vapor is suddenly and explosively generated happerns during the exothermic process, it can be damped as the second folding portion 1250 expands. Thus, it is possible to prevent the temperature control space forming member 1220 from being torn as it cannot stand vapor pressure, and prevent the temperature control space SP2 from being opened in other sealing portion except the liquid reactant insertion portions 1230, 1240 and the liquid reactant W2 from flowing out.

[0441] As necessary, a user may transfer the heated or cooled contents CA1 by the exothermic or endothermic reaction to a separate external container A9 in order to take it in. In this case, as shown in FIG. 47, the liquid reactant W3 remaining in the temperature control space SP2 after the reaction is blocked by the upper end sealing regions SA1 of the temperature control space forming member 1220 and the first accommodating section film 1110 and does not leak out. As described above, the first folding portions 1231, 1233 protrude being inclined downward, and thus the first folding portions 1231, 1233 are inclined upward when the pouch 1000 is turned upside down as shown in FIG. 47, thereby further preventing the liquid reactant W3 from leaking out.

[0442] Here, the upper end sealing regions SA1 of the temperature control space forming member 1220 and the first accommodating section film 1110 are used as a liquid reactant leaking-out preventing portion.

[0443] Meanwhile, the foregoing is described under conditions that the liquid reactant is not accommodated in the pouch 1000, but not limited thereto. As necessary, the liquid reactant may be accommodated and sealed in the temperature control space SP2 of the pouch 1000.

[0444] In more detail, as shown in FIG. 48, the liquid reactant portion 1300 including the liquid reactant W2; and a liquid reactant bag 1310 for packing the liquid reactant W2 may be provided inside the temperature control space SP2.

[0445] The liquid reactant bag 1310 may include an accommodating space portion 1313 for forming the accommodating space to accommodate the liquid reactant W2; a liquid reactant discharging portion 1311 through which the accommodated liquid reactant W2 can be discharged; and a cut portion 1314 for cutting the upper end of the liquid reactant discharging portion 1311. The liquid reactant discharging portion 1311 may be narrower than the accommodating space portion 1313. Thus, the liquid reactant can be easily discharged toward a predetermined target.

[0446] The amount of liquid reactant for optimally reacting with the temperature control agent 1210 is defined. If a general user is allowed to put the liquid reactant into the temperature control space SP2, the exothermic or endothermic reaction may not occur as originally designed since a random amount of liquid reactant is put.

[0447] Thus, as necessary, the liquid reactant portion 1300 containing the optimal amount of liquid reactant for reacting with the temperature control agent 1210 provided in the temperature control space SP2 may be internally provided.

[0448] The liquid reactant portion 1300 together with the temperature control agent 1210 may be placed in the temperature control space SP2. At this time, the temperature control space SP2 may be sealed up in the state that the liquid reactant portion 1300 and the temperature control agent 1210 are both placed.

[0449] The liquid reactant portion 1300 is not open if a user artificially cuts the cut portion 1314, and therefore the liquid reactant does not leak out from the liquid reactant bag 1310.

[0450] A method of using the pouch provided with both the liquid reactant portion 1300 and the temperature control agent 1210 is as follows. Using the first cutting portion 1240 shown in FIG. 43, the first folding portion 1230 is cut to open the temperature control space SP2.

[0451] From the open temperature control space SP2, the liquid reactant bag 1310 is taken out and its cut portion 1314 is cut. Then, the liquid reactant W2 contained in the liquid reactant bag 1310 is put into the temperature control space SP2.

[0452] Thus, the exothermic or endothermic reaction occurs in the temperature control space SP2 so that the contents CA1 filled in the contents-accommodating sec-

tion 1110 can be heated or cooled.

[0453] Except for taking out and putting the liquid reactant portion 1300 containing the liquid reactant, the other using methods are the same as the foregoing pouch using method, and thus repetitive descriptions will be avoided.

[0454] Meanwhile, the foregoing illustrates that the liquid reactant portion 1300 is accommodated in the temperature control space SP2, but not limited thereto. As necessary, the liquid reactant portion 1300 may be detachably attached to the pouch 1000 by adhesive or the like on the outer surface. Besides, the liquid reactant portion 1300 may be couled to the pouch 1000 in various forms as long as it can together with the pouch 1000 be carried.

<Second exemplary embodiment of the invention >

[0455] A pouch 1000a according to a second exemplary embodiment of the invention as shown in FIG. 49 and FIG. 50 includes a contents-accommodating section 1100a; a temperature controller 1200a; a liquid reactant portion 1300; and a pouch stand 1400.

[0456] The pouch 1000a according to the second exemplary embodiment of the invention is different from that of the foregoing first exemplary embodiment of the invention in that the contents-accommodating section 1100a is formed as a single body, in that the temperature control space SP3, SP4 and the temperature control agent 1210 are arranged at both front and back sides with the contents-accommodating section 1100a therebetween, and in that the pouch 1000a can stand by itself. Here, the liquid reactant portion 1300 may be not accommodated in the pouch 1000a as described above.

[0457] The contents-accommodating section 1100a includes a first accommodating section film 1110a and a second accommodating section film 1120a. The first and second accommodating section films 1110a, 1120a may be formed as a single body. That is, the contents-accommodating section 1100a may be provided in the form of folding one sheet of film so as to form the contents-accommodating space SP1. The contents-accommodating section 1100a according to the first exemplary embodiment of the invention is formed by thermally sealing up two films of the first accommodating section film 1110 and the second accommodating section film 1120. On the other hand, the contents-accommodating section 1100a according to the second exemplary embodiment of the invention is formed as a single body.

[0458] The lower end 1130 of the contents-accommodating section 1100a is spaced apart from a standing portion 1400. Thus, the liquid reactant to be put into the temperature controller 1200a can flow out from the first temperature control space SP3 to the second temperature control space SP4 through the communication space SP5 between the lower end 1130 of the contents-accommodating section 1100a and the standing portion 1400.

[0459] The temperature controller 1200a according to the second exemplary embodiment of the invention includes a first temperature control space forming member 1220 opposite to the first accommodating section film 1110 of the contents-accommodating section 1100 and forming the first temperature control space SP3; a second temperature control space forming member 1260 opposite to the second accommodating section film 1120 of the contents-accommodating section 1100; a plurality of temperature control agents 1210 respectively arranged in the first and second temperature control spaces SP3, SP4; the liquid reactant insertion portions 1230, 1240 formed in the first temperature control space forming member 1220; and the second folding portion 1250.

[0460] As described above, the liquid reactant insertion portion 1230 includes a plurality of first folding portion 1230; and a first cutting portion (refer to 1240 in FIG. 43) for respectively utting the plurality of first folding portion 1230. Here, when the plurality of first folding portions 1230 are respectively cut and the liquid reactant cause the exothermic reaction, generated reaction gas may discharge cold air from the first and second temperature control space to the outside through the plurality of first folding portions 1231, 1233 cut at opposite sides. Thus, the contents CA1 can be quickly heated and thermal efficiency can be improved.

[0461] The plurality of first folding portion 1230 may protrude from the first temperature control space forming member 1220 and the second temperature control space forming member 1260, respectively.

[0462] As necessary, the plurality of first folding portion 1230 may be provided in only one of the first temperature control space forming member 1220 and the second temperature control space forming member 1260.

[0463] The plurality of first folding portion 1230 may have a protruding end being inclined down.

[0464] Here, as described above, the second folding portion 1250 may be omitted as necessary.

[0465] The pouch 1000a according to the second exemplary embodiment of the invention as shown in FIG. 43 and FIG. 44 further includes an upper end sealing portion SA1 for sealing up the upper end portion of the contents-accommodating section 1100a; a liquid reactant leak-out preventing portion SA5 placed between the upper end sealing portion SA1 and the first folding portion 1230 and preventing the put liquid reactant from leaking outward from the temperature control space SP3; and a second cutting portion 1010 placed between the upper end sealing portion SA1 and the liquid reactant leak-out preventing portion SA5 and cutting the upper end sealing portion SA1 from the contents-accommodating section 1100a to open the contents-accommodating section 1100a.

[0466] The upper end sealing portion SA1 may be as shown in FIG. 44 sealed up with the upper end portions of the first and second temperature control space forming members 1210, 1260 as well as the contents-accommodating section 1100a.

[0467] As necessary, the upper ends of the first and

second temperature control space forming members 1210, 1260 may be placed to be lower than the upper end of the contents-accommodating section 1100a. The upper ends of the first and second temperature control space forming members 1210, 1260 may be regarded as the upper end of the liquid reactant leak-out preventing portion SA5.

[0468] The liquid reactant leak-out preventing portion SA5 includes the sealing portion SA5 for sealing up between the contents-accommodating section 1100a and the first temperature control space forming member 1220 along a transverse direction at a position spaced apart from the first folding portion 1230 in a longitudinal direction in order to prevent the liquid reactant from leaking out.

[0469] The contents-accommodating section 1100a, the first and second temperature control space forming members 1210, 1260 are coupled by sealing up the respective left and right ends SA2, SA3 thereof.

[0470] The standing portion 1400 is arranged between the first and second temperature control space forming members 1210, 1260 so that the lower end portions of the first and second temperature control space forming members 1210, 1260 can be spaced apart from each other. Thus, it forms a lower region closed curve of the pouch 1000a according to the second exemplary embodiment of the invention, so that the pouch 1000a can stand by itself without any separate device.

[0471] In more detail, the standing portion 1400 includes a first end SA4 sealing-coupled to the first temperature control space forming member 1210, and a second end SA6 sealing-coupled to the second temperature control space forming member 1260.

[0472] The process of using the pouch 1000a according to the foregoing second exemplary embodiment of the invention will be described with reference to FIG. 51. Using the first cutting portion 1240, the first folding portion 1230 is cut.

[0473] Through the cut first folding portions 1231, 1233, the liquid reactant portion 1300 is taken out from the first temperature control space SP3.

[0474] The cut portion (refer to 1314 in FIG. 48) of the taken-out liquid reactant portion 1300 is cut. Further, the liquid reactant bag 1310 is squeezed to inject the liquid reactant W2 into the first temperature control space SP3 through the cut first folding portions 1231, 1233.

[0475] The injected liquid reactant W2 causes the exothermic or endothermic reaction in the first temperature control space SP3. Meanwhile, the unreaded and remaining liquid reactant W2 is discharged to the second temperature control space SP4 through the communication space SP5. The discharged liquid reactant exothermically or endothermically reacts again with the temperature control agent 1210 provided in the second temperature control space SP4.

[0476] Thus, the contents CA1 accommodated in the contents-accommodating section 1100a can be heated or cooled.

[0477] To take out or take in the heated or cooled contents CA1, the second cutting portion (refer to 1010 in FIG. 49) is cut to open the contents-accommodating section 1100a.

[0478] At this time, if the pouch 1000a is turned upside down in order to transfer the contents CA1 accommodated in the contents-accommodating section 1100a to a separate external container (refer to A in FIG. 47), the liquid reactant W3 remaining in the first temperature control space SP3 after the reaction is blocked by the liquid reactant leak-out preventing portion SA5 and prevented from leaking out.

[0479] Although a few exemplary embodiments have been shown and described, it will be appreciated by those skilled in the art that changes may be made in these exemplary embodiments without departing from the invention, the scope of which is defined in the appended claims.

Claims

1. A pouch (1000, 1000a) comprising:

a contents-accommodating section (1100, 1100a) in which contents (CA1) are accommodated, the contents-accommodating section (1100, 1100a) extending from a lower end (1130) to an upper end;

a temperature controller (1200, 1200a) which comprises a temperature control agent (1210) arranged at at least one side among a front side and a back side of the contents-accommodating section (1100, 1100a) and adapted for heating or cooling the contents (CA1), and a temperature control space forming member (1220, 1260) forming a temperature control space (SP2, SP3, SP4) arranged at the at least one side among the front side and the back side of the contents-accommodating section (1100, 1100a) to accommodate the temperature control agent (1210) and comprising a liquid reactant entrance through which liquid reactant (W2) for exothermically or endothermically reacting with the temperature control agent (1210) is put in,

characterized in that

the liquid reactant entrance is provided between the lower end (1130) and the upper end of the contents-accommodating section (1100, 1100a) and comprises a first folding portion (1230) where the temperature control space forming member (1220, 1260) is folded outward, and a first cutting portion (1240) for cutting the first folding portion (1230) such that the first folding portion (1230) is divided into a first upper folding part (1231) and a first lower folding part (1233), thus opening the temperature control space (SP2, SP3, SP4).

2. The pouch according to claim 1, wherein the temperature control space forming member (1220, 1260) further comprises a second folding portion (1250) folded to be expandable by vapor generated due to an exothermic reaction in the temperature control space (SP2, SP3, SP4).

3. The pouch according to claim 1 or 2, further comprising:

an upper end sealing portion (SA1) which seals up the upper end of the contents-accommodating section (1100, 1100a);
a liquid reactant leak-out preventing portion (SA5) which is arranged between the upper end sealing portion (SA1) and the first folding portion (1230) and prevents the put liquid reactant (W2) from leaking out from the temperature control space (SP2, SP3, SP4), wherein the liquid reactant leak-out preventing portion (SA5) comprises a liquid reactant leak-out preventing sealing portion which seals up between the contents-accommodating section (1100, 1100a) and the temperature control space forming member (1220, 1260) along a transverse direction at a position spaced apart from the first folding portion (1230) in a longitudinal direction; and
a second cutting portion (1010) which is arranged between the upper end sealing portion (SA1) and the liquid reactant leak-out preventing portion (SA5) and cuts the upper end sealing portion (SA1) from the contents-accommodating section (1100, 1100a) to open the contents-accommodating section (1100, 1100a).

4. The pouch according to any one of the previous claims, further comprising: a liquid reactant portion (1300) which contains the amount of liquid reactant (W2) corresponding to the amount of temperature control agent (1210) and is arranged inside the temperature control space (SP2, SP3, SP4).

Patentansprüche

1. Beutel (1000, 1000a), umfassend:

einen Inhalte aufnehmenden Abschnitt (1100, 1100a), in welchem Inhalte (CA1) untergebracht werden, wobei sich der Inhalte aufnehmende Abschnitt (1100, 1100a) von einem unteren Ende (1130) zu einem oberen Ende erstreckt;
einen Temperaturregler (1200, 1200a), der ein Temperaturregelungsmittel (1210) aufweist, das an zumindest einer Seite zwischen einer Vorderseite und einer Rückseite des Inhalte aufnehmenden Abschnitts (1100, 1100a) angeordnet und so ausgestaltet ist, die Inhalte (CA1) zu erwärmen und zu kühlen, und ein einen Temperaturregelungsraum bildendes Element (1220, 1260), das einen Temperaturregelungsraum (SP2, SP3, SP4) bildet, der an der zumindest einen Seite zwischen der Vorderseite und der Rückseite des Inhalte aufnehmenden Abschnitts (1100, 1100a) angeordnet ist, um das Temperaturregelungsmittel (1210) aufzunehmen und einen Einlass für flüssigen reagierenden Stoff aufweist, durch den flüssiger reagierender Stoff (W2) zur exothermischen oder endothermischen Reaktion mit dem Temperaturregelungsmittel (1210) eingebracht wird,
dadurch gekennzeichnet, dass
der Einlass für flüssigen reagierenden Stoff zwischen dem unteren Ende (1130) und dem oberen Ende des Inhalte aufnehmenden Abschnitts (1100, 1100a) vorgesehen ist und ein erstes Faltstück (1230) umfasst, wo das den Temperaturregelungsraum bildende Element (1220, 1260) nach außen gefaltet ist, und ein erstes Schneidstück (1240) zum Schneiden des ersten Faltstücks (1230), so dass das erste Faltstück (1230) in einen ersten oberen Faltteil (1231) und einen ersten unteren Faltteil (1233) geteilt wird, womit der Temperaturregelungsraum (SP2, SP3, SP4) geöffnet wird.

2. Beutel nach Anspruch 1, wobei das einen Temperaturregelungsraum bildende Element (1220, 1260) des Weiteren ein zweites Faltstück (1250) umfasst, das so gefaltet ist, dass es durch Dampf, der infolge einer exothermischen Reaktion in dem Temperaturregelungsraum (SP2, SP3, SP4) erzeugt wird, dehnbar ist.

3. Beutel nach Anspruch 1 oder 2, des Weiteren umfassend:

ein das obere Ende abdichtendes Teil (SA1), welches das obere Ende des Inhalte aufnehmenden Abschnitts (1100, 1100a) abdichtet;
ein den Austritt von flüssigem reagierendem Stoff verhinderndes Teil (SA5), das zwischen dem das obere Ende abdichtenden Teil (SA1) und dem ersten Faltstück (1230) eingerichtet ist und verhindert, dass der eingebrachte flüssige reagierende Stoff (W2) aus dem Temperaturregelungsraum (SP2, SP3, SP4) austritt, wobei das den Austritt von flüssigem reagierendem Stoff verhindernde Teil (SA5) einen Dichtungsabschnitt des den Austritt von flüssigem, reagierendem Stoff verhindernden Teils umfasst, der zwischen dem Inhalte aufnehmenden Abschnitt (1100, 1100a) und dem den Temperaturregelungsraum bildenden Element (1220, 1260) längs einer Querrichtung in einer Position abdichtet, die im Abstand von dem ersten Faltstück

(1230) in einer Längsrichtung angeordnet ist; und

ein zweites Schneidstück (1010), das zwischen dem das obere Ende abdichtenden Teil (SA1) und dem den Austritt von flüssigem, reagierendem Stoff verhindernden Teil (SA5) eingerichtet ist und das das obere Ende abdichtende Teil (SA1) von dem Inhalte aufnehmenden Abschnitt (1100, 1100a) schneidet, um den Inhalte aufnehmenden Abschnitt (1100, 1100a) zu öffnen.

4. Beutel nach einem der vorhergehenden Ansprüche, des Weiteren umfassend: einen flüssigen, reagierenden Stoffanteil (1300), der die Menge flüssigen, reagierenden Stoffs (W2) enthält, die der Menge von Temperaturregelungsmittel (1210) entspricht und im Innern des Temperaturregelungsraums (SP2, SP3, SP4) angeordnet ist.

Revendications

1. Poche (1000, 1000a) comprenant :

une section d'accueil de contenus (1100, 1100a) dans laquelle les contenus (CA1) sont logés, la section d'accueil de contenus (1100, 1100a) s'étendant depuis une extrémité inférieure (1130) jusqu'à une extrémité supérieure ; un dispositif de contrôle de la température (1200, 1200a) qui comprend un agent de contrôle de température (1210) disposé au niveau d'au moins un côté parmi un côté avant et un côté arrière de la section d'accueil de contenus (1100, 1100a) et adapté au chauffage ou au refroidissement des contenus (CA1), et un élément de formation d'un espace de contrôle de température (1220, 1260) formant un espace de contrôle de température (SP2, SP3, SP4) disposé au niveau du au moins un côté parmi le côté avant et le côté arrière de la section d'accueil de contenus (1100, 1100a) pour accueillir l'agent de contrôle de température (1210) et comprenant une entrée de réactif liquide à travers laquelle le réactif liquide (W2) pour la réaction de manière exothermique ou de manière endothermique avec l'agent de contrôle de température (1210) est placé,

caractérisée en ce que

l'entrée de réactif liquide est prévue entre l'extrémité inférieure (1130) et l'extrémité supérieure de la section d'accueil de contenus (1100, 1100a) et comprend une première partie de pliage (1230) où l'élément de formation d'un espace de contrôle de température (1220, 1260) est plié vers l'extérieur, et une première partie de coupe (1240) pour couper la première partie de pliage (1230) de sorte que la première partie de pliage (1230) soit divisée en une première partie de pliage supérieure (1231) et une première partie de pliage inférieure (1233), ouvrant ainsi l'espace de contrôle de température (SP2, SP3, SP4).

2. Poche selon la revendication 1, où l'élément de formation d'un espace de contrôle de température (1220, 1260) comprend en outre une seconde partie de pliage (1250) pliée pour être expansée par la vapeur générée du fait d'une réaction exothermique dans l'espace de contrôle de température (SP2, SP3, SP4).

3. Poche selon la revendication 1 ou 2, comprenant en outre :

une partie de scellement d'extrémité supérieure (SA1) qui ferme hermétiquement l'extrémité supérieure de la section d'accueil de contenus (1100, 1100a) ;

une partie empêchant la fuite de réactif liquide (SA5) qui est disposée entre la partie de scellement d'extrémité supérieure (SA1) et la première partie de pliage (1230) et qui empêche le réactif liquide placé (W2) de s'échapper de l'espace de contrôle de température (SP2, SP3, SP4), où la partie empêchant la fuite de réactif liquide (SA5) comprend une partie de scellement empêchant la fuite de réactif liquide qui ferme hermétiquement entre la section d'accueil de contenus (1100, 1100a) et l'élément de formation d'un espace de contrôle de température (1220, 1260) le long d'un sens transversal à une position espacée de la première partie de pliage (1230) dans un sens longitudinal ; et

une seconde partie de coupe (1010) qui est disposée entre la partie de scellement d'extrémité supérieure (SA1) et la partie empêchant la fuite de réactif liquide (SA5) et qui coupe la partie de scellement d'extrémité supérieure (SA1) de la section d'accueil de contenus (1100, 1100a) pour ouvrir la section d'accueil de contenus (1100, 1100a).

4. Poche selon l'une quelconque des revendications précédentes, comprenant en outre : une partie réactif liquide (1300) qui contient la quantité de réactif liquide (W2) correspondant à la quantité d'agent de contrôle de température (1210) et qui est disposée à l'intérieur de l'espace de contrôle de température (SP2, SP3, SP4).

FIG. 1

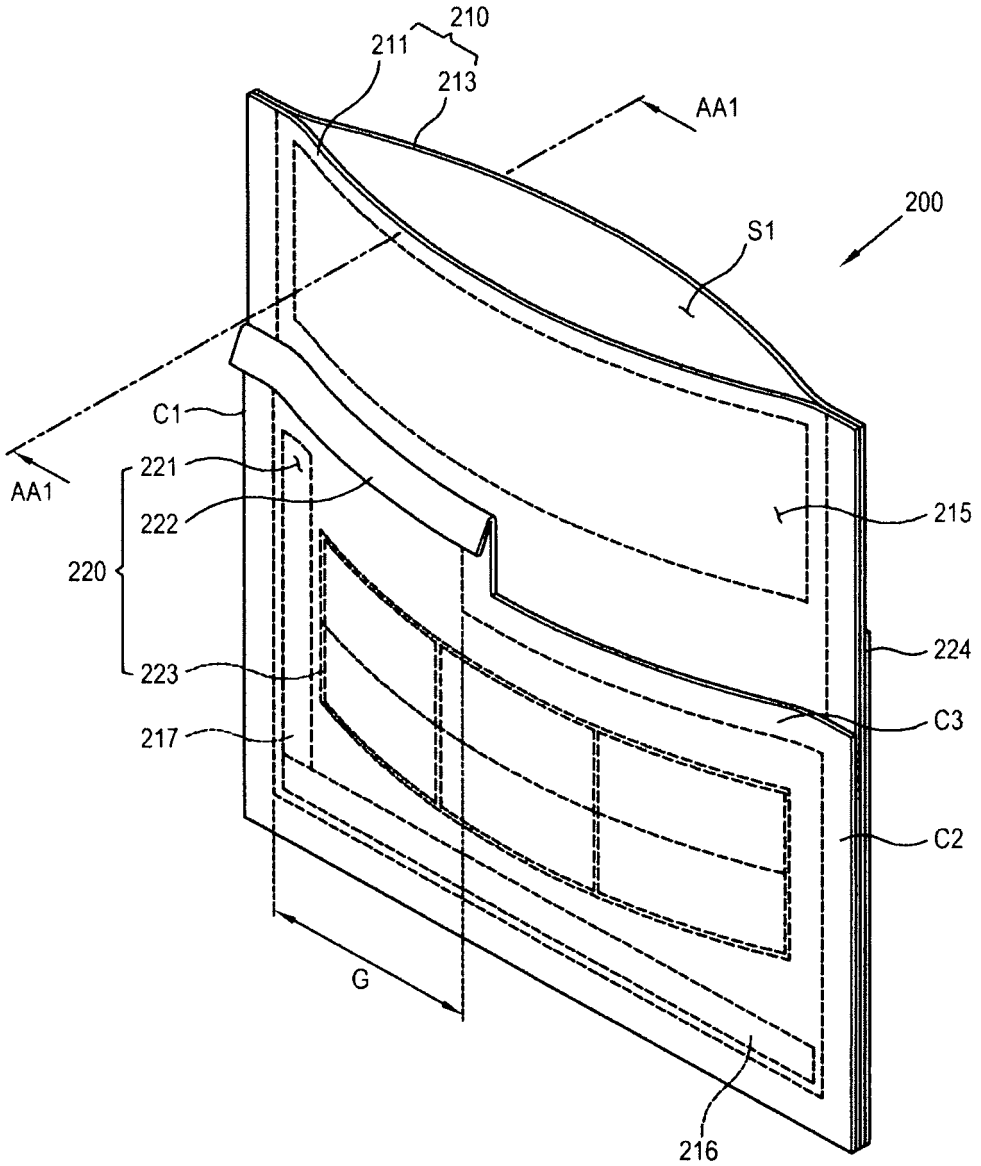

210
211
213
AA1
200
S1
C1
AA1
221
222
220
223
217
215
224
C3
C2
G
216

FIG. 2

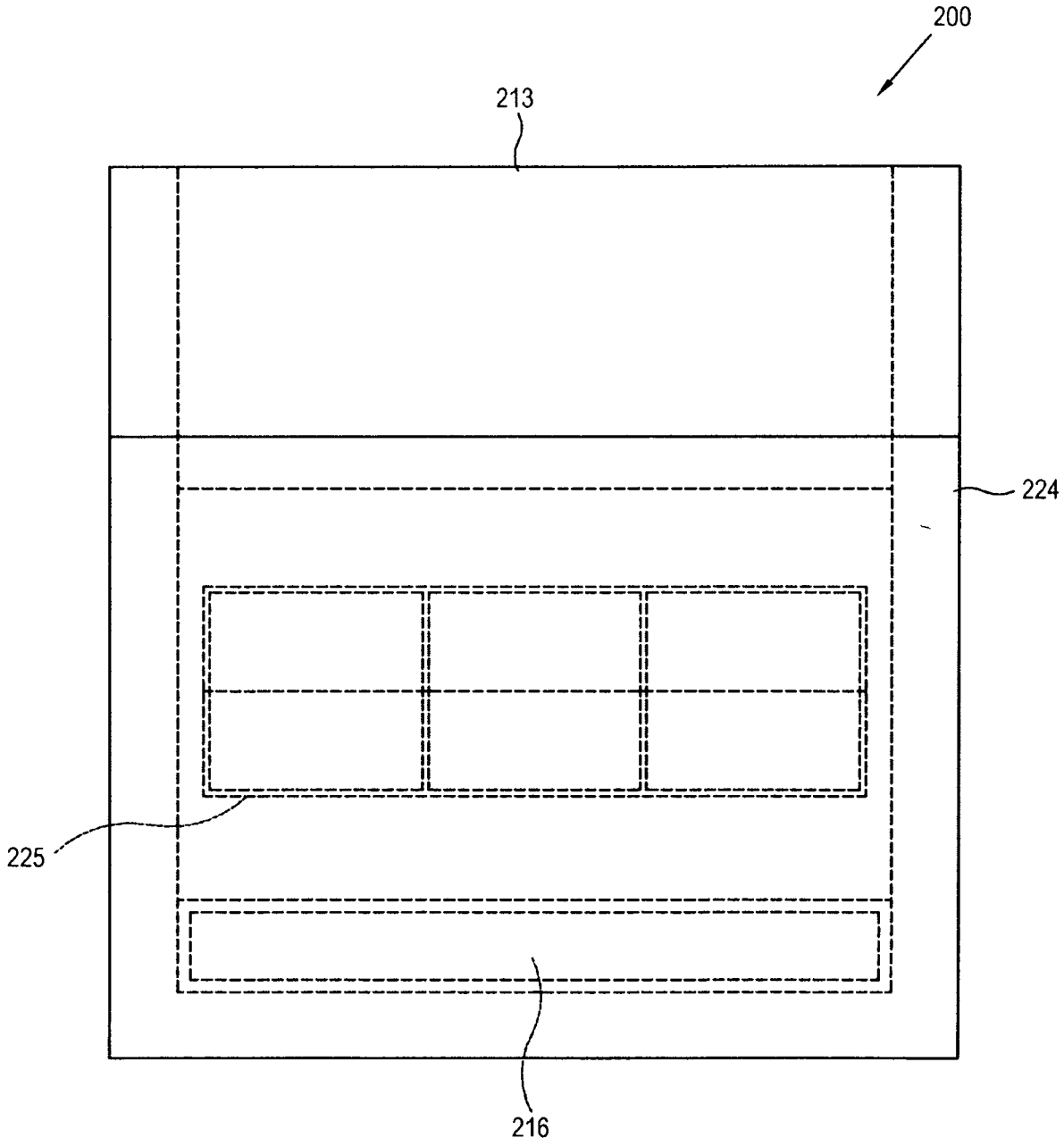


FIG. 3

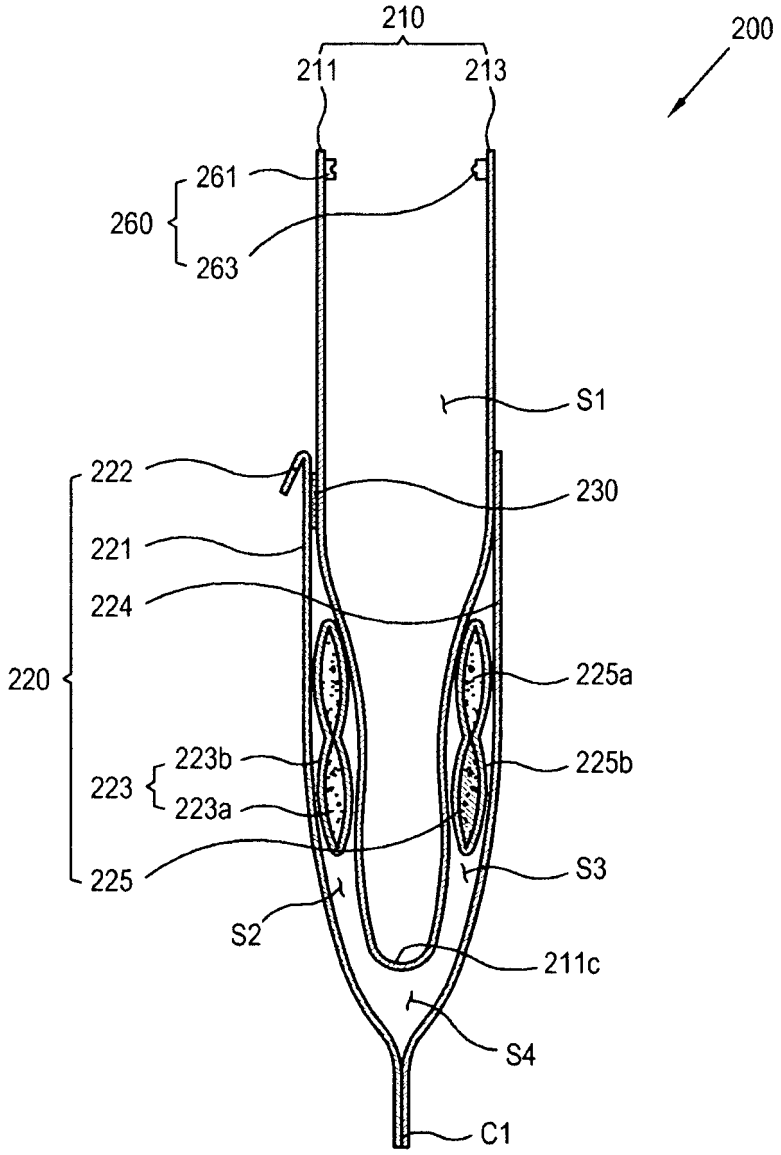

210
200
211
213
261
260
263
S1
222
230
221
224
220
225a
223b
225b
223
223a
225
S3
S2
211c
S4
C1

FIG. 4

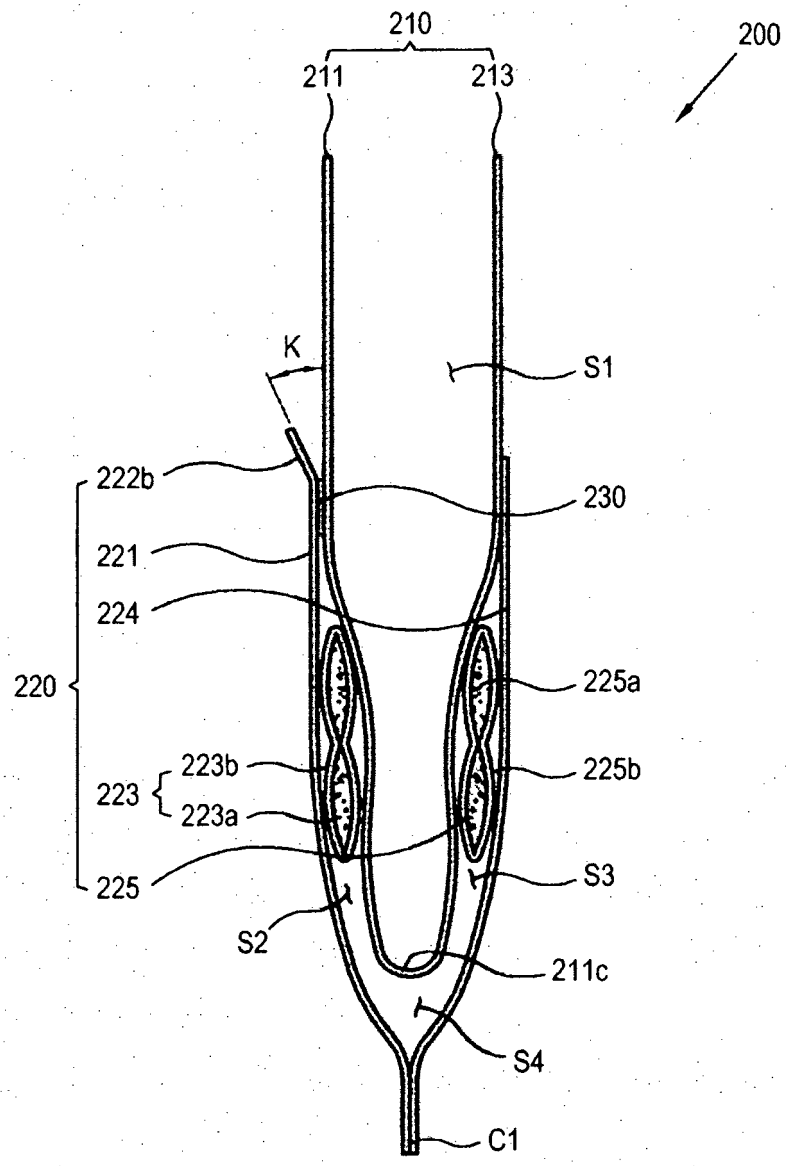

210
200
211
213
K
S1
222b
230
221
224
220
225a
223b
225b
223
223a
225
S3
S2
211c
S4
C1

FIG. 5

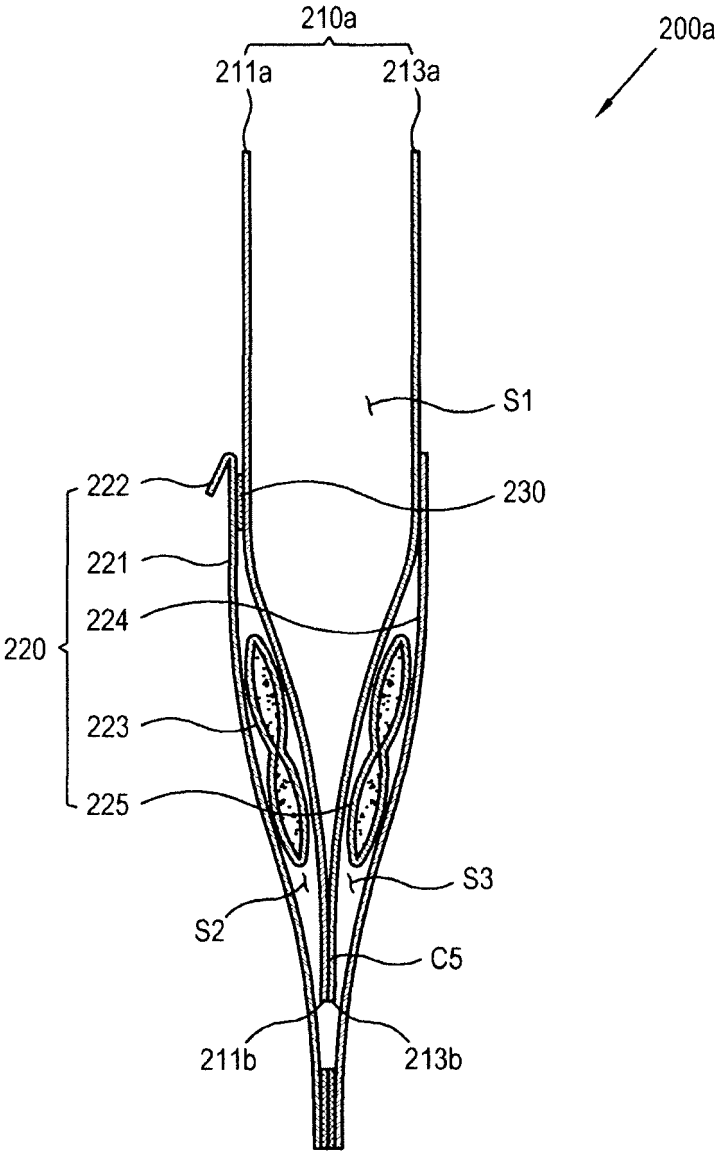

210a
211a
213a
200a
S1
222
230
221
224
220
223
225
S3
S2
C5
211b
213b

FIG. 6

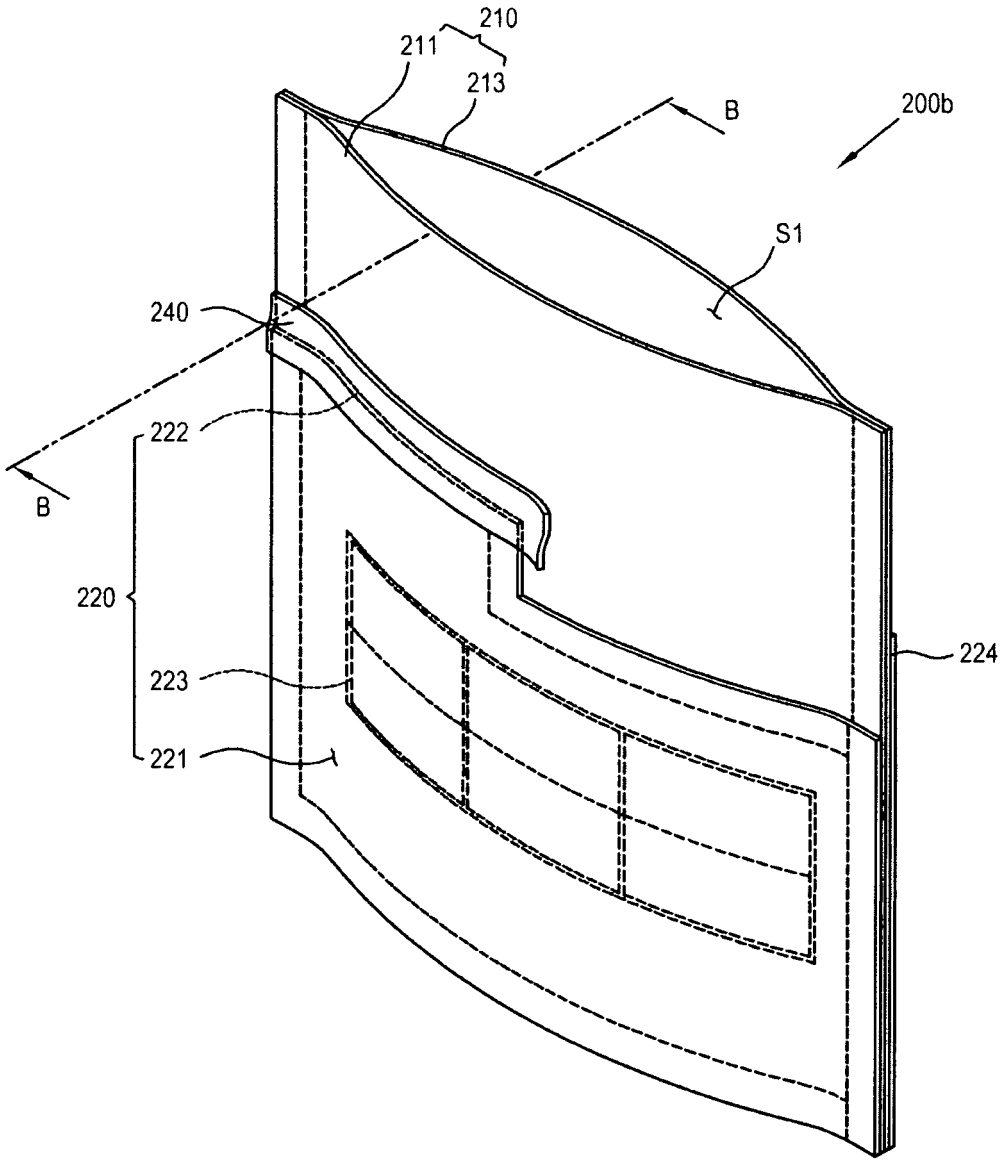


FIG. 7

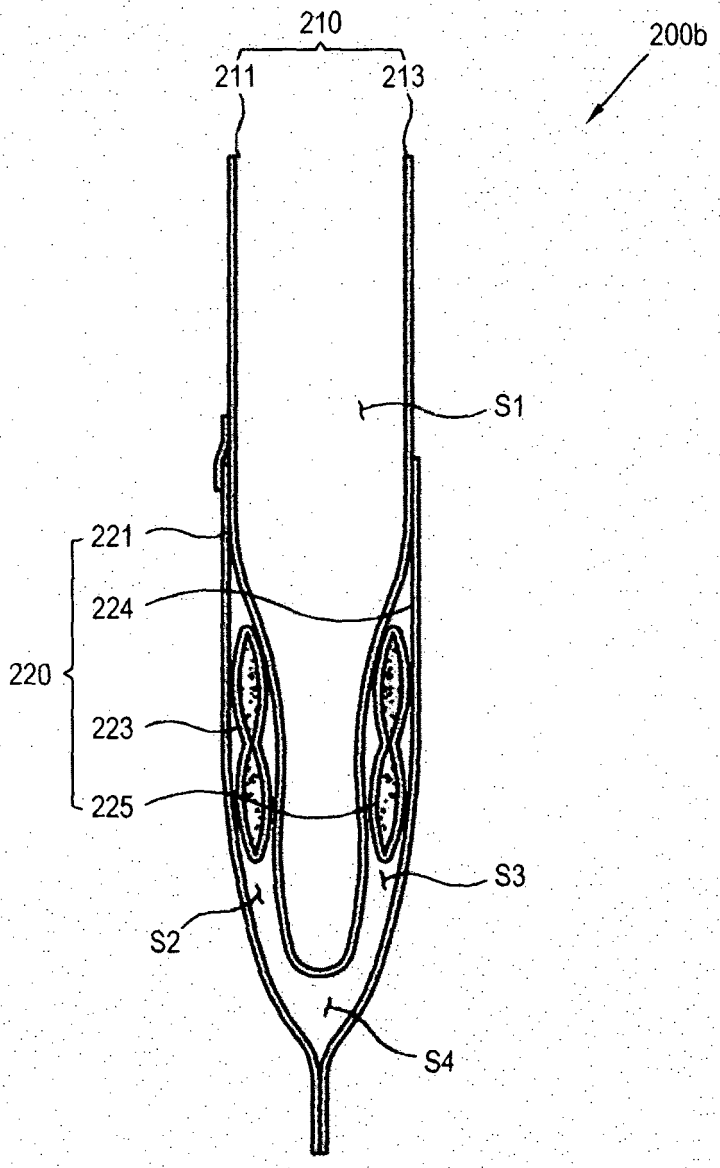


FIG. 8

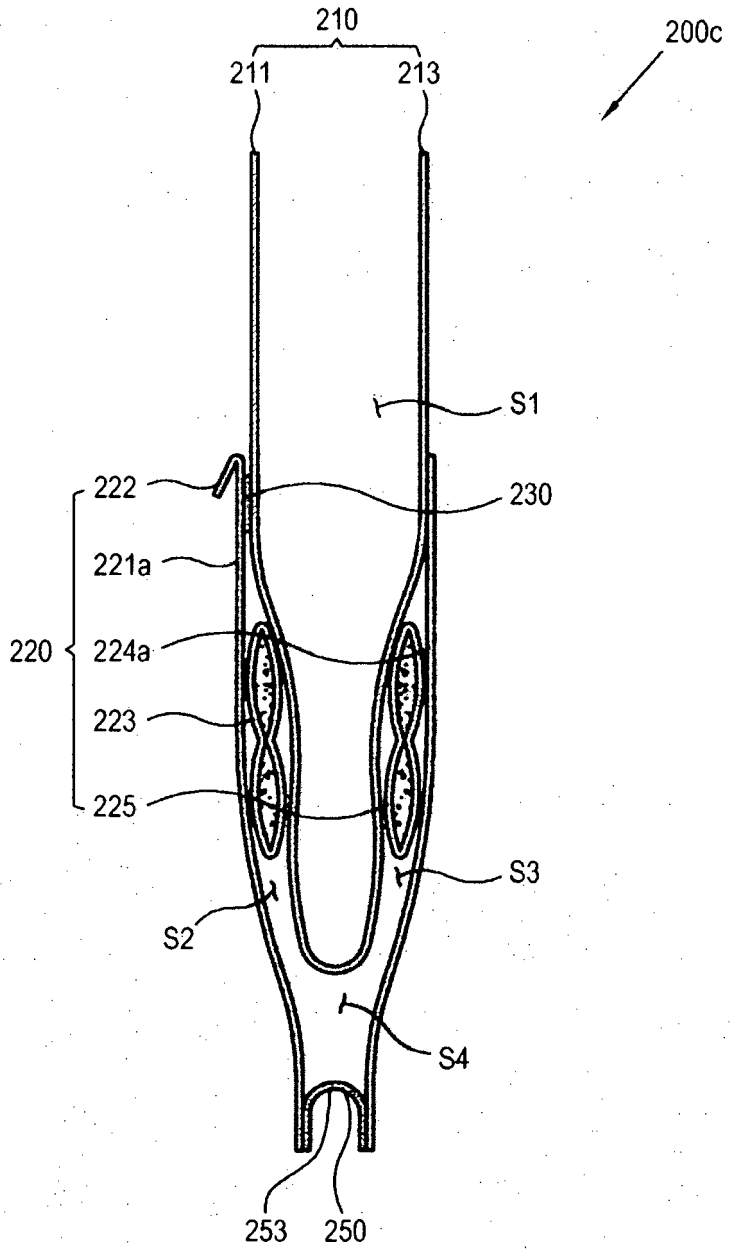

210
211
213
200c
S1
222
230
221a
220
224a
223
225
S3
S2
S4
253
250

FIG. 9

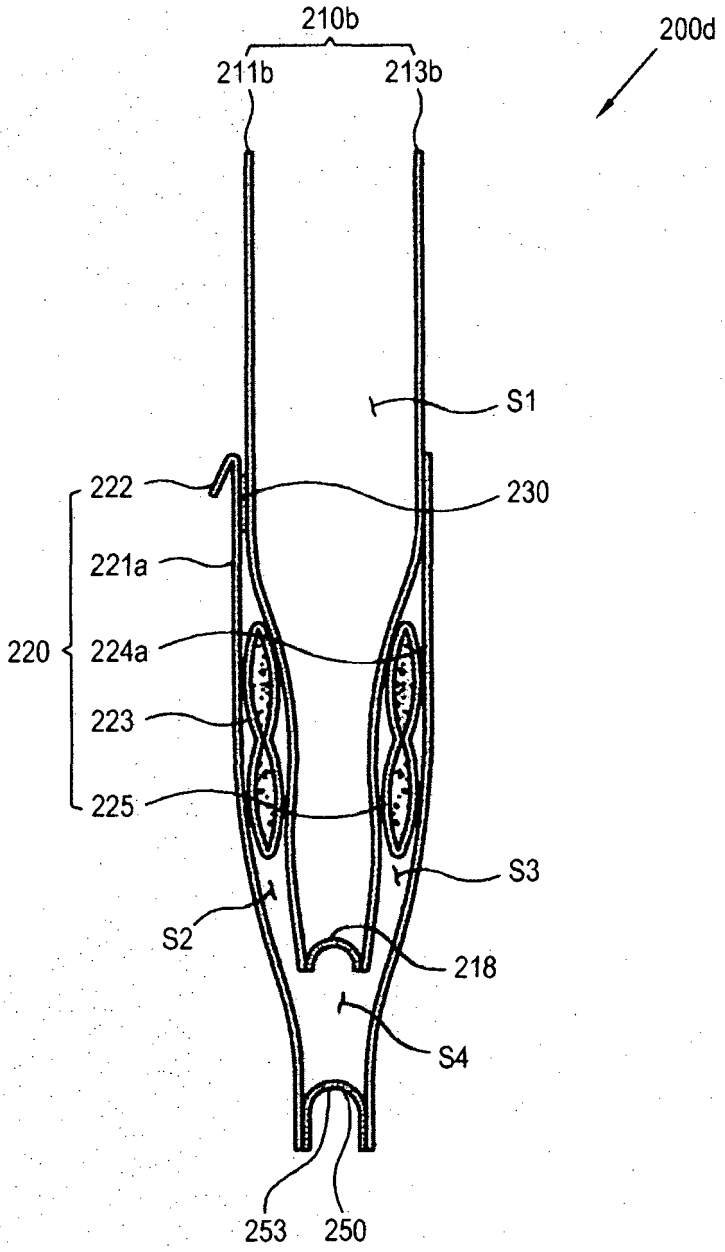

210b
211b
213b
200d
S1
222
230
221a
220
224a
223
225
S3
S2
218
S4
253
250

FIG. 10

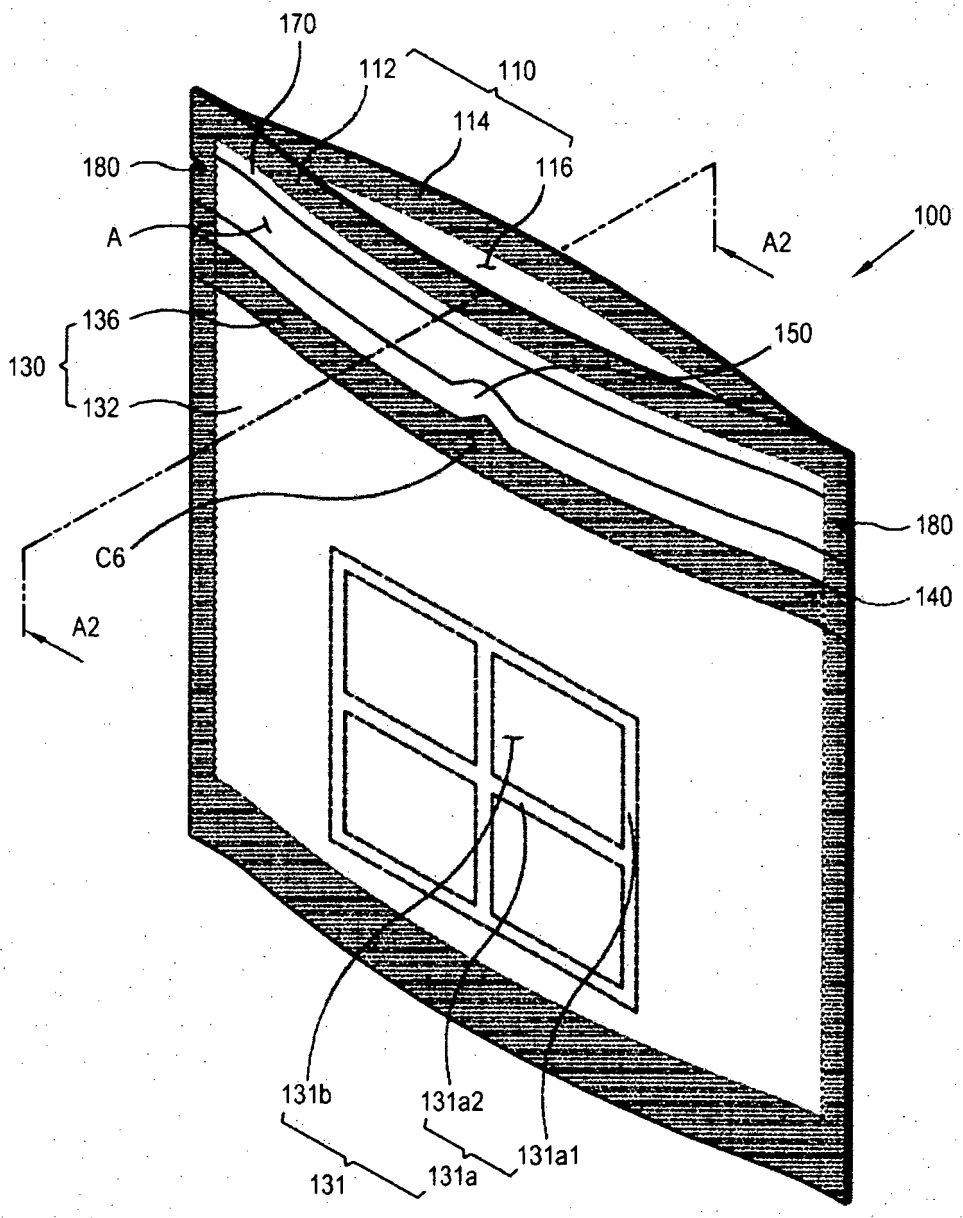

170
112
110
114
180
116
A
A2
100
136
130
132
150
C6
180
140
A2
131b
131a2
131a1
131
131a

FIG. 11

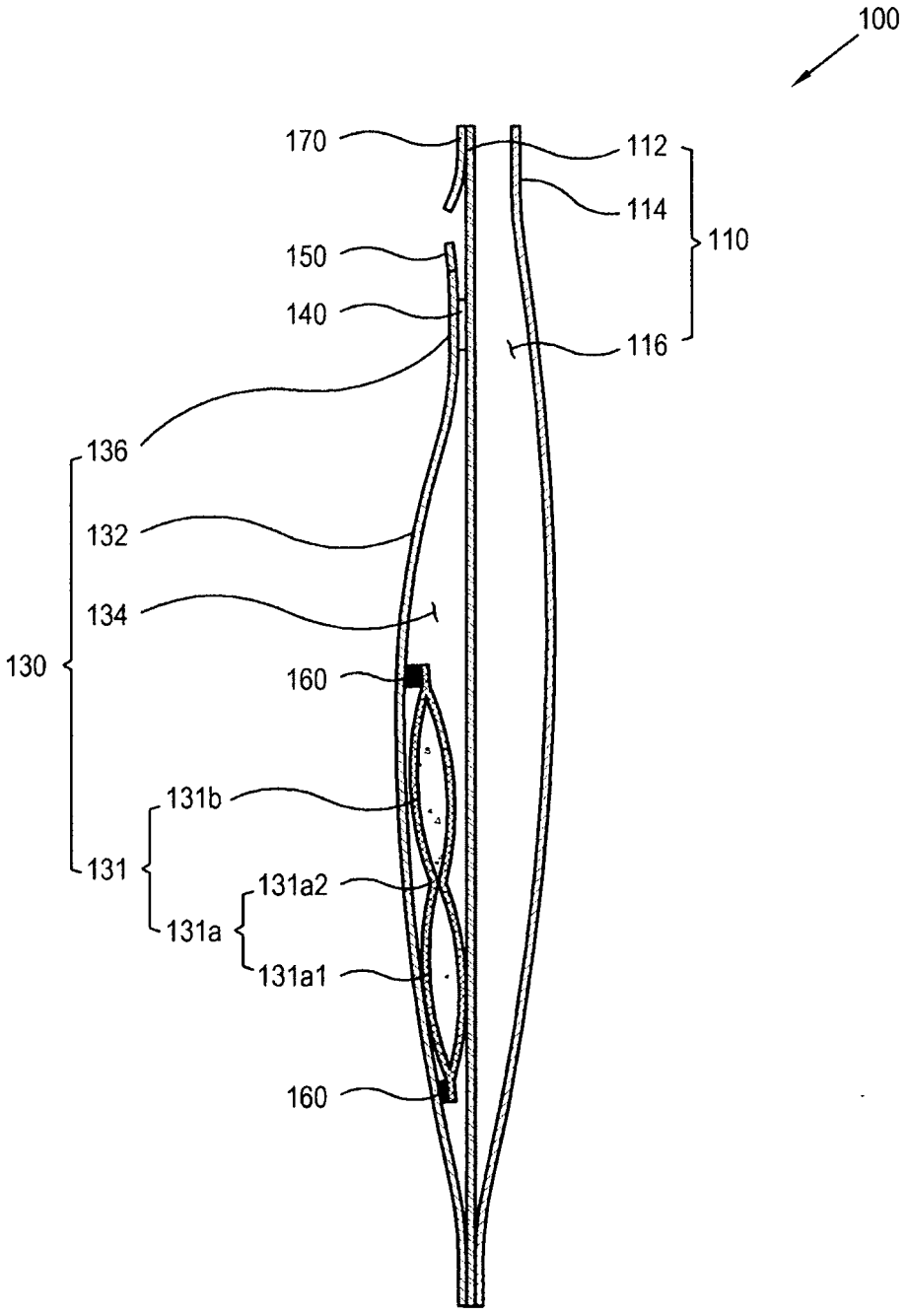

100
170
112
114
110
150
140
116
136
132
134
130
160
131b
131
131a2
131a
131a1
160

FIG. 12

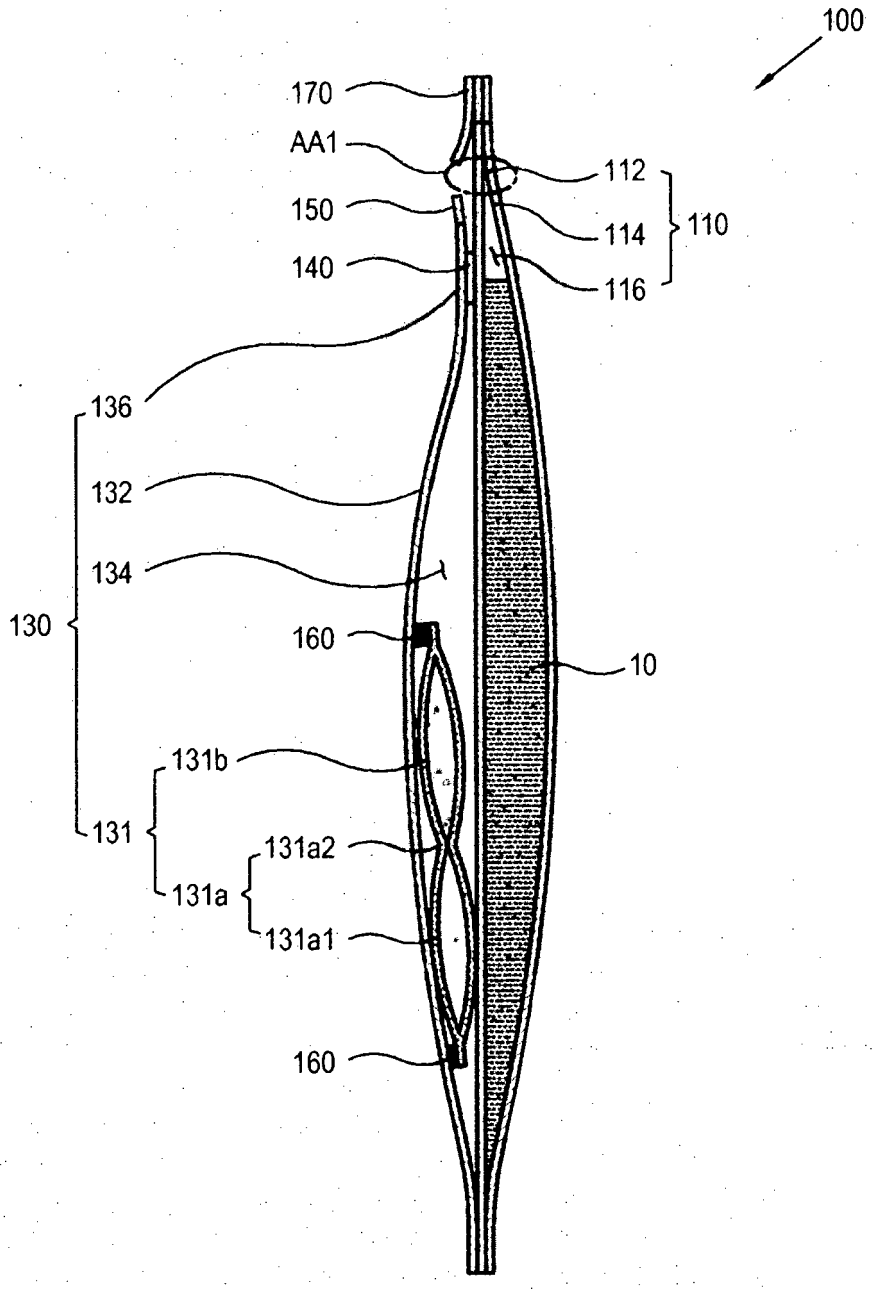

100
170
AA1
150
140
136
132
134
130
160
131b
131
131a2
131a
131a1
160
112
114
116
110
10

FIG. 13

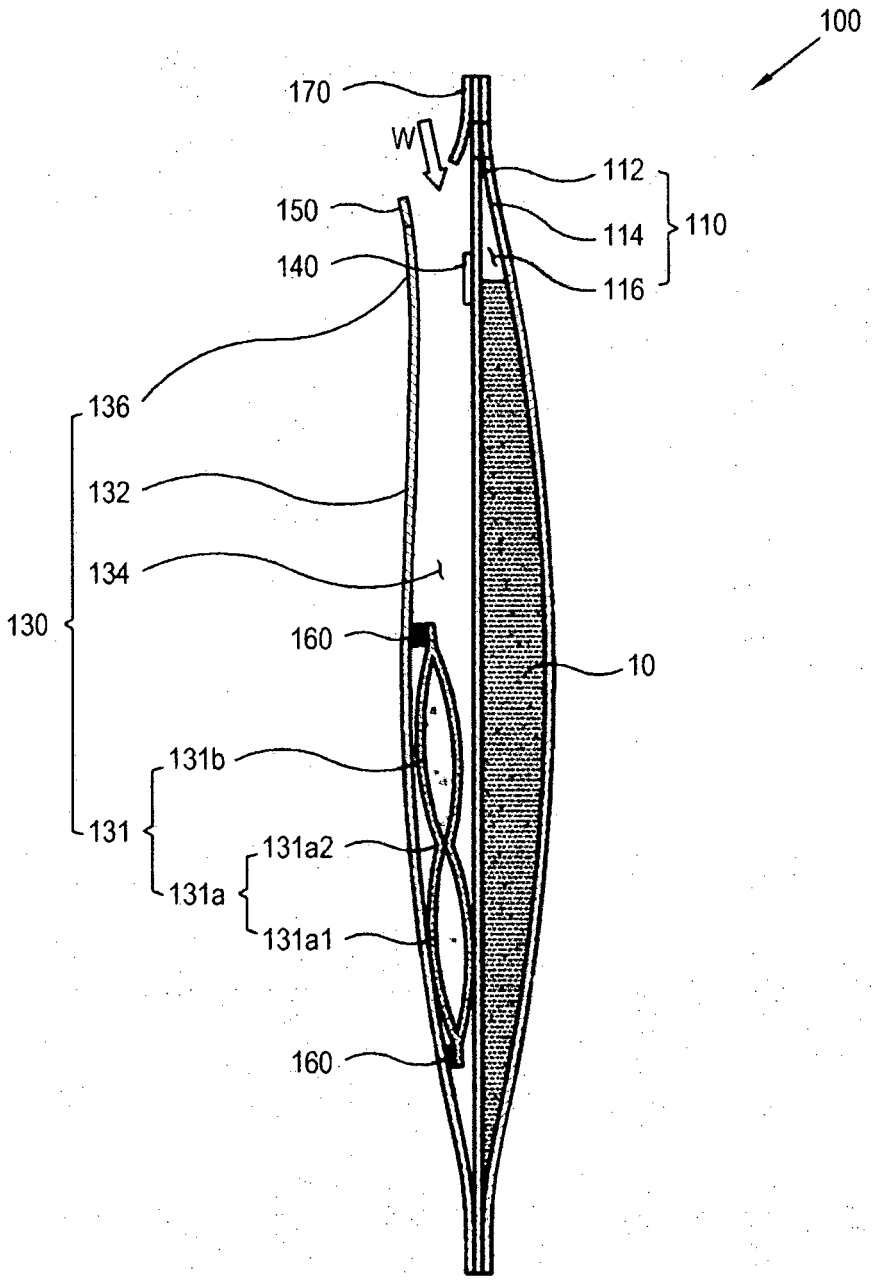

100
170
W
112
150
114
110
140
116
136
132
134
130
160
10
131b
131
131a2
131a
131a1
160

FIG. 14

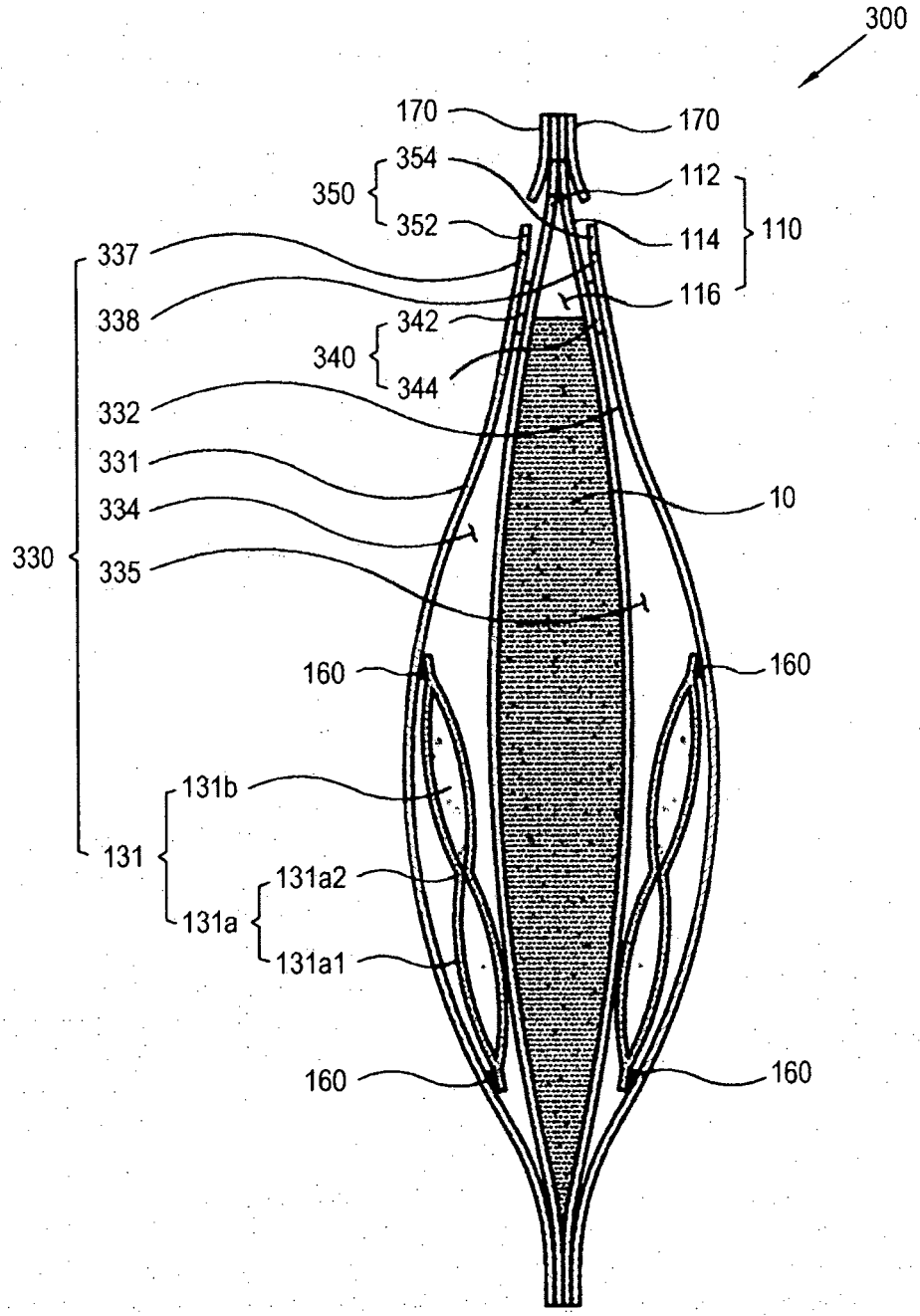

300
170
170
354
350
352
112
114
110
116
337
338
342
340
344
332
331
334
330
335
10
160
160
131b
131
131a2
131a
131a1
160
160

FIG. 15

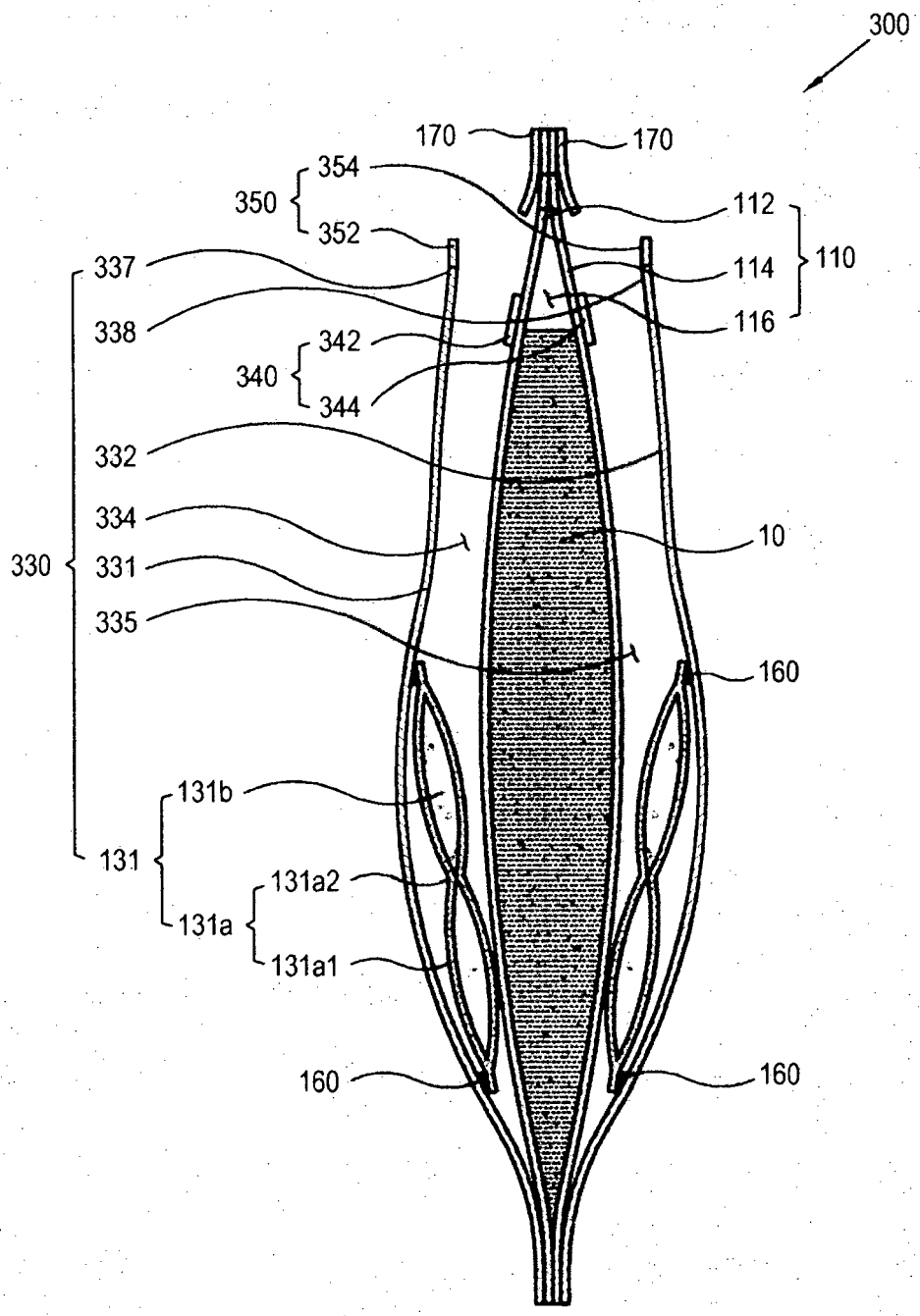

300
170
170
354
350
352
112
114
110
116
337
338
342
340
344
332
334
330
331
335
10
160
131b
131
131a2
131a
131a1
160
160

FIG. 16

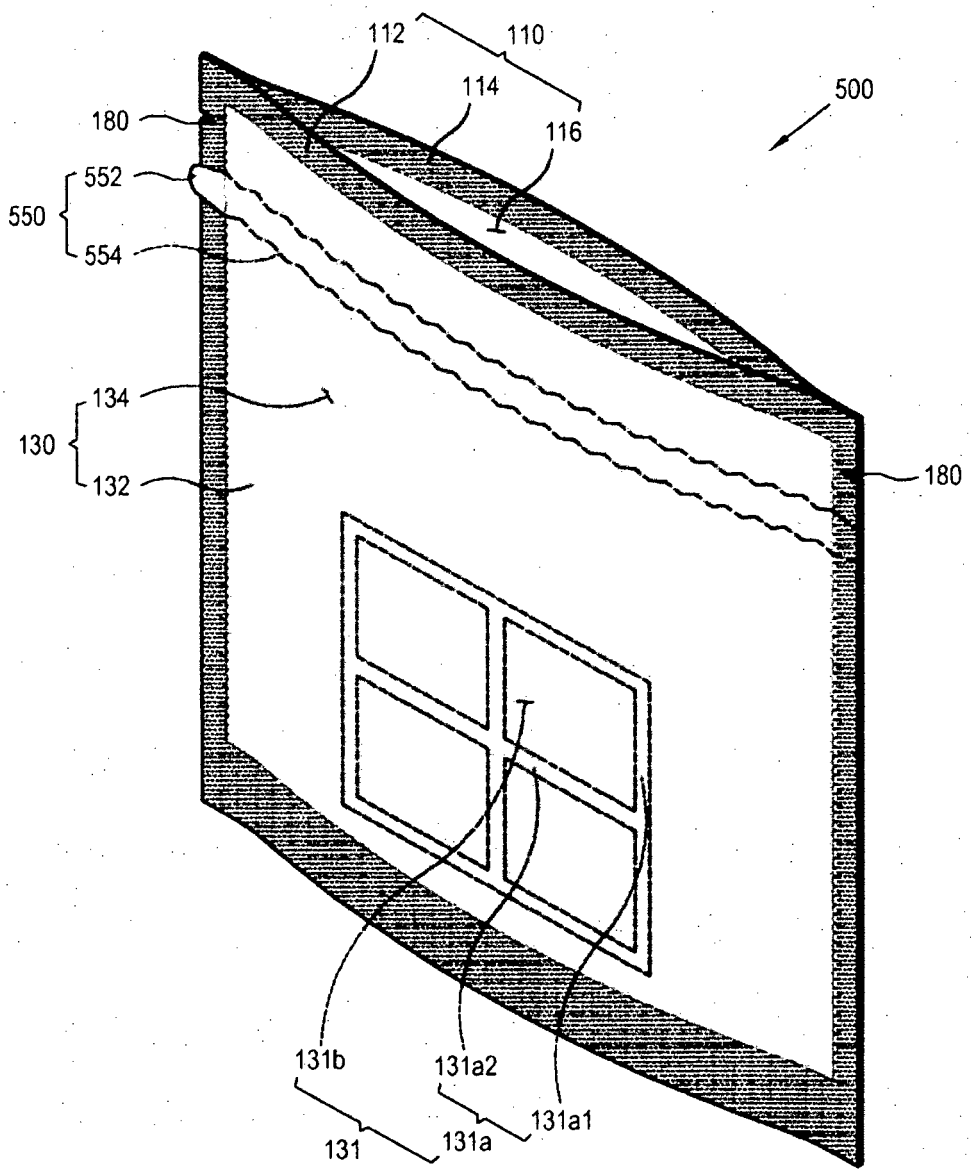

112
110
114
116
500
180
552
550
554
134
130
132
180
131b
131a2
131a1
131
131a

FIG. 17

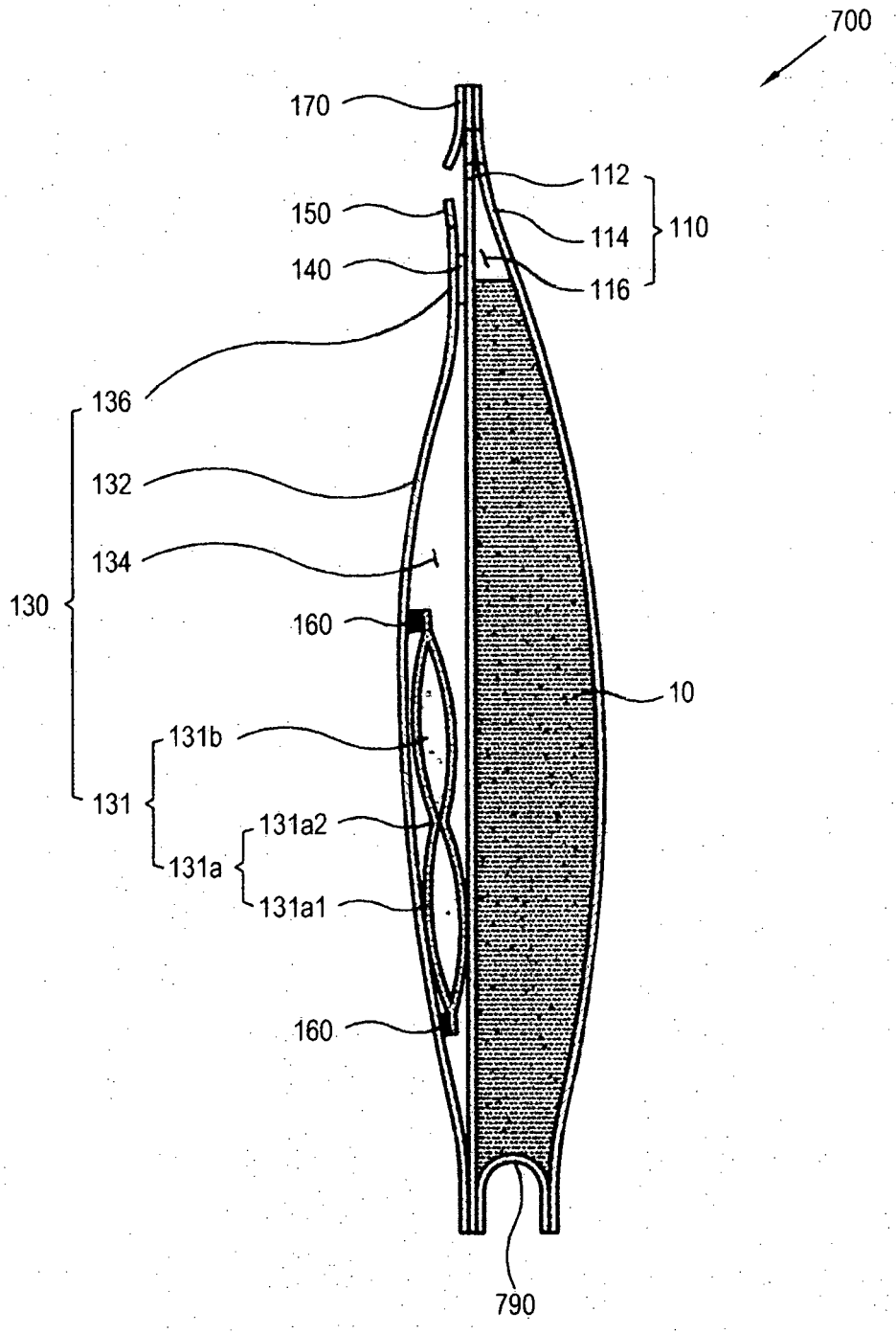

700
170
112
150
114
110
140
116
136
132
134
130
160
10
131b
131
131a2
131a
131a1
160
790

FIG. 18

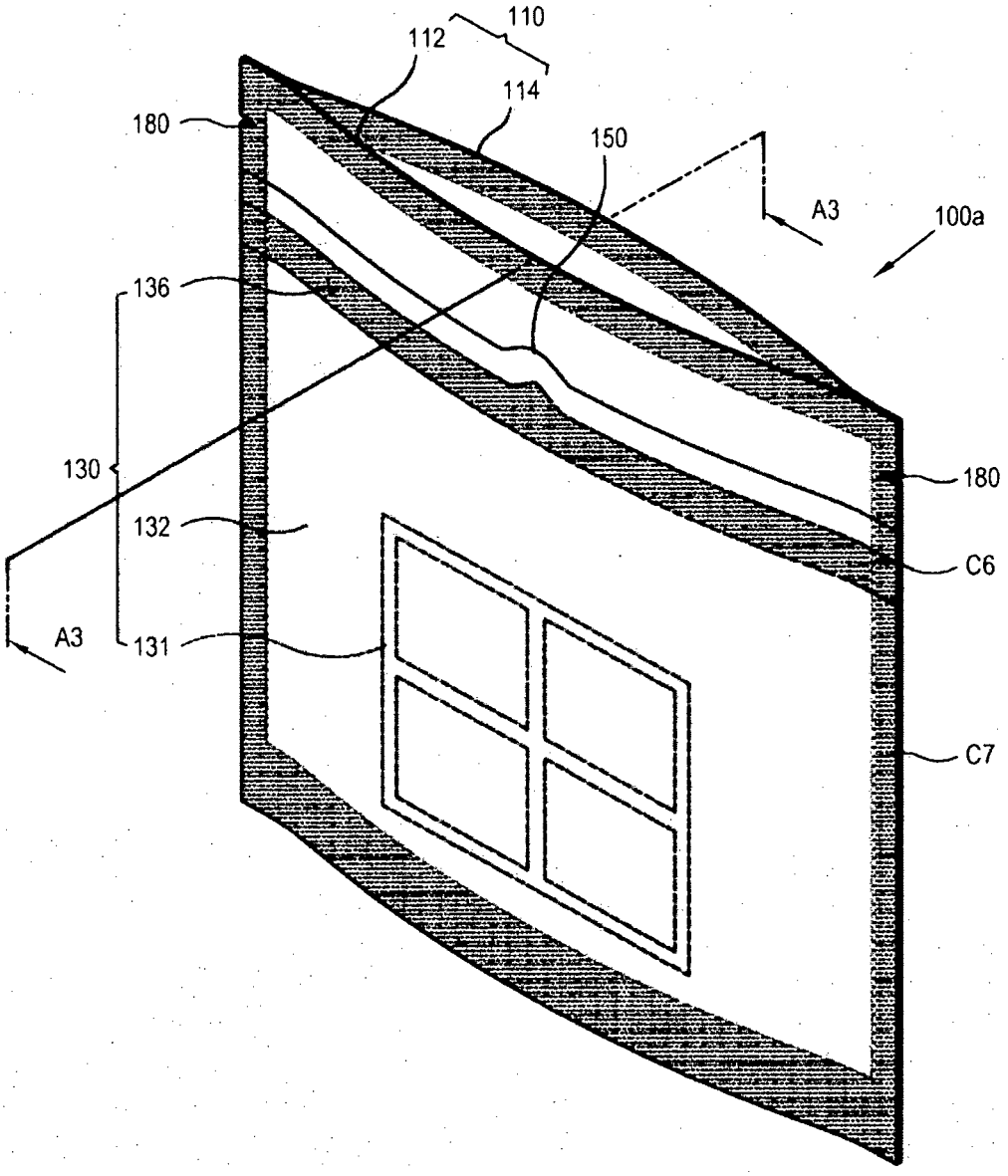


FIG. 19

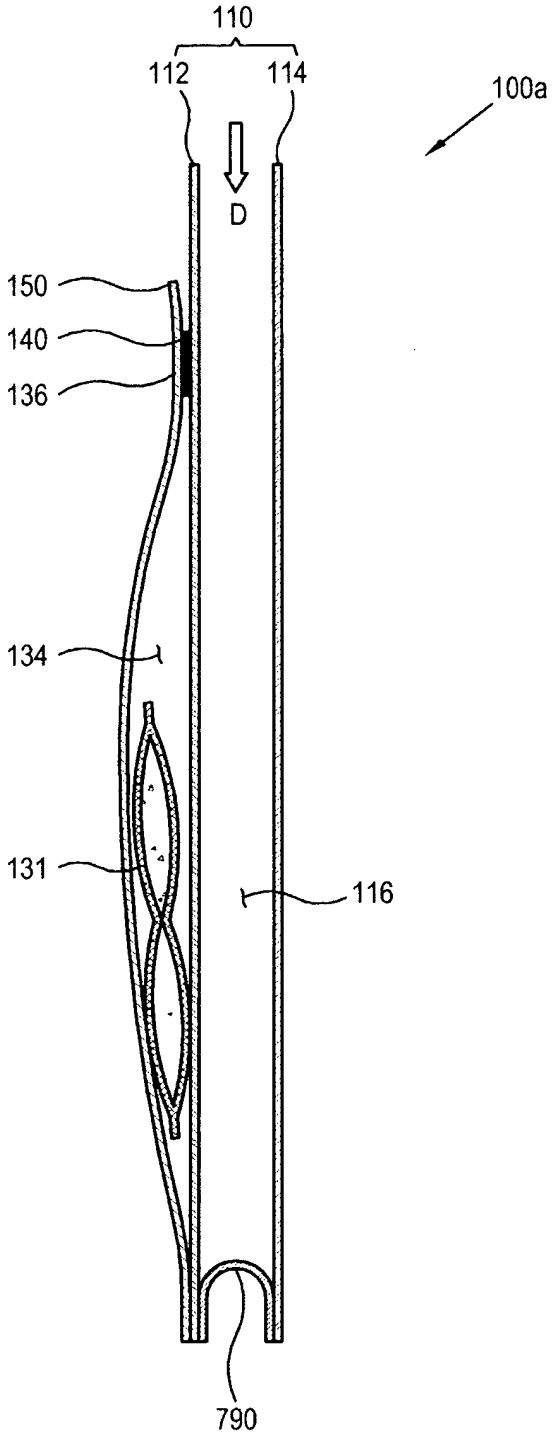


FIG. 20

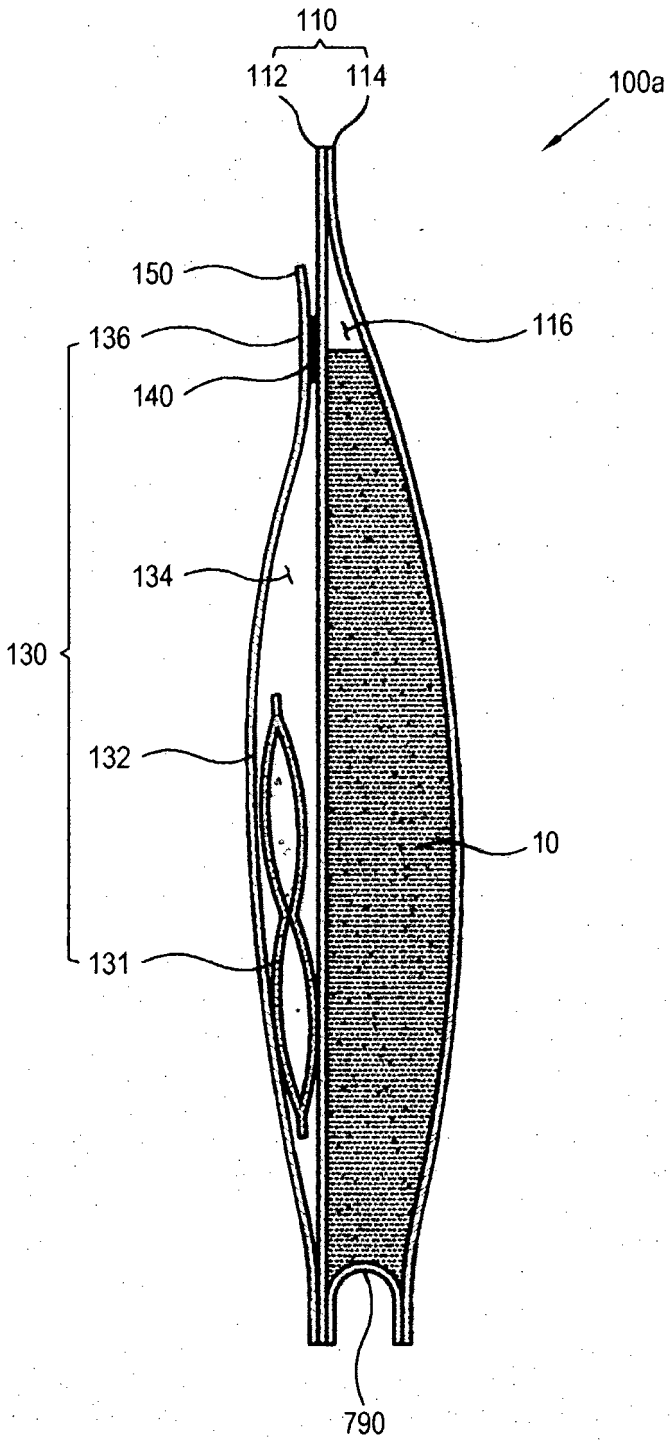


FIG. 21

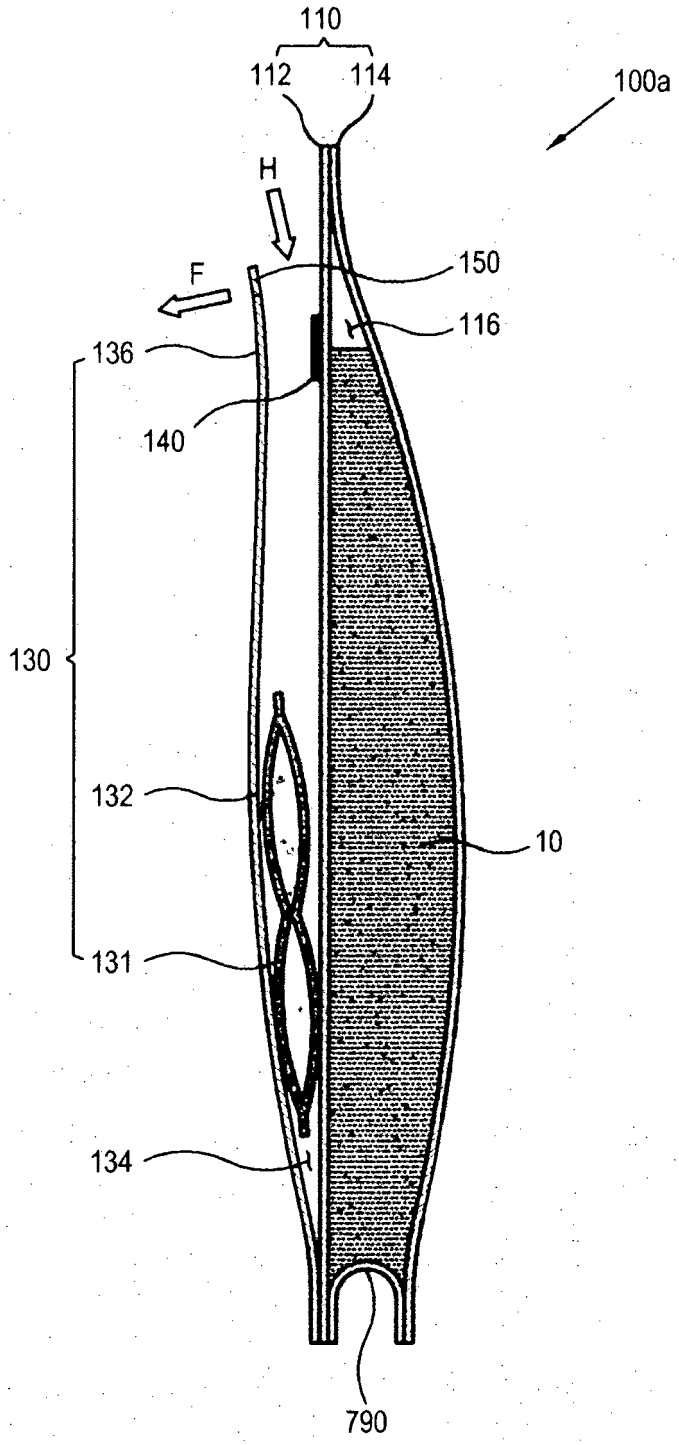


FIG. 22

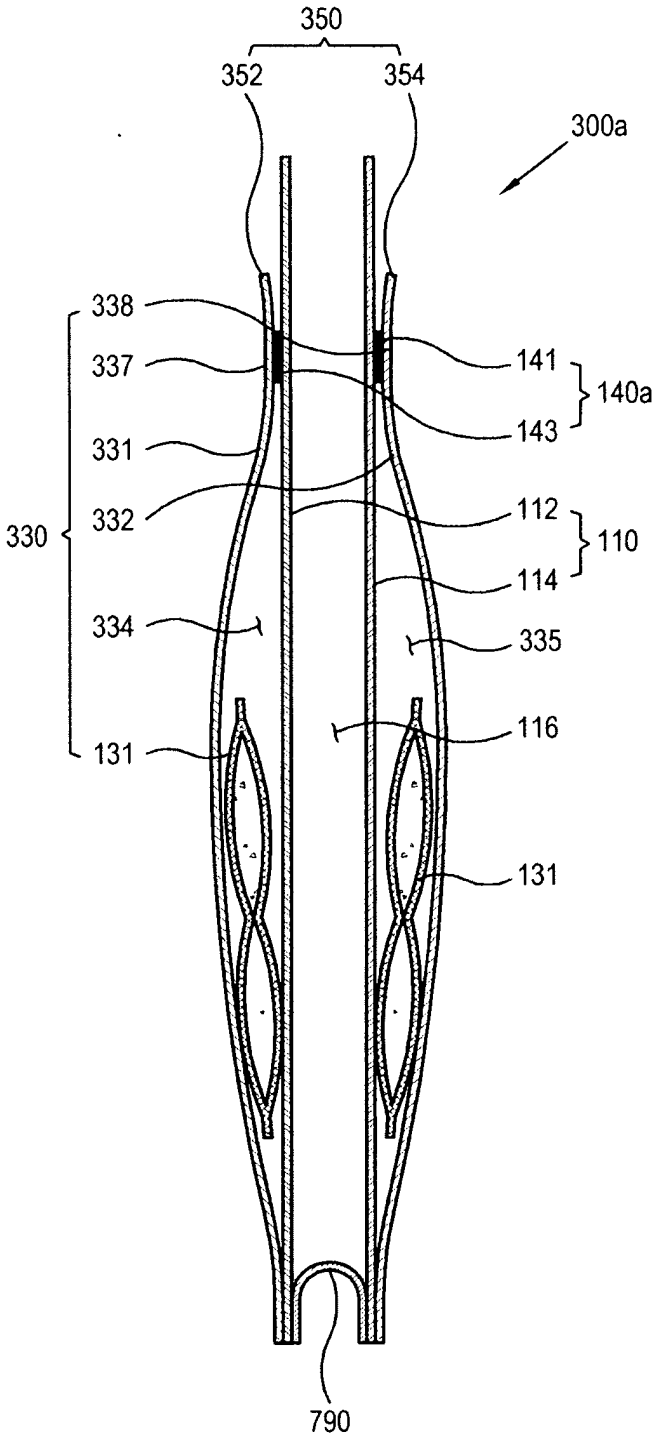

350
352
354
300a
338
337
331
332
330
334
131
141
140a
143
112
110
114
335
116
131
790

FIG. 23

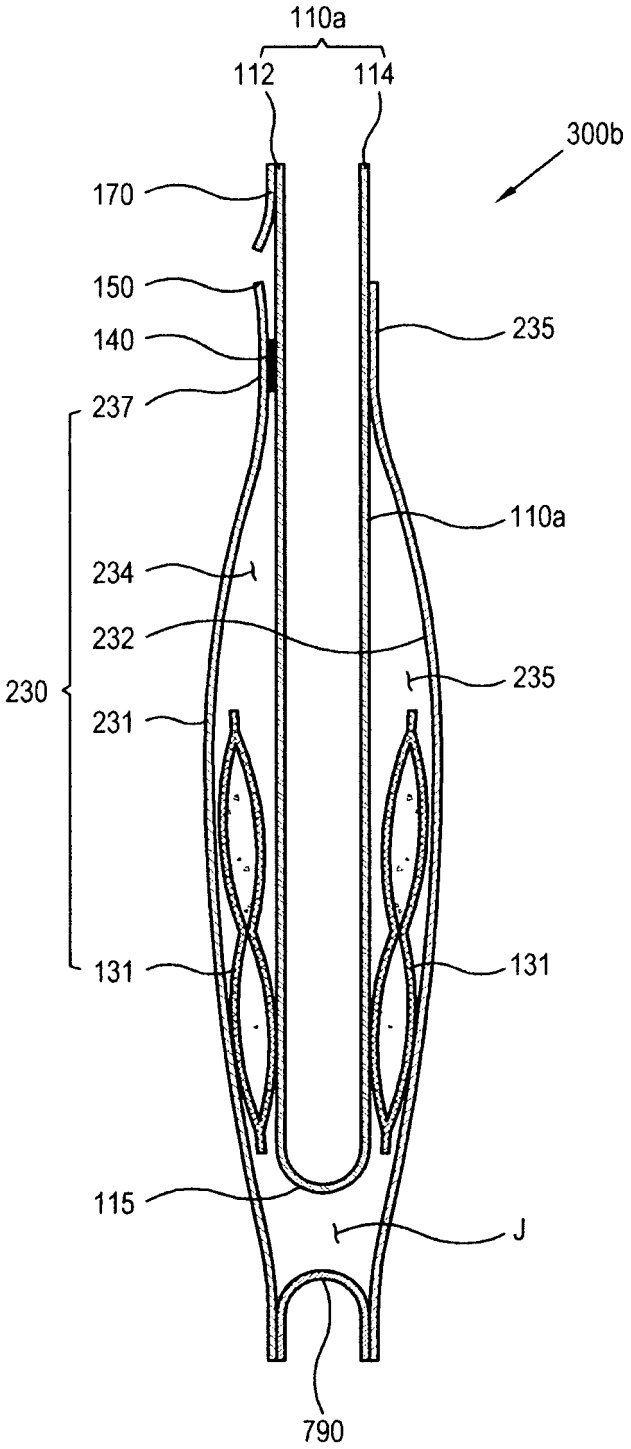

110a
112
114
300b
170
150
140
237
235
110a
234
232
235
230
231
131
131
115
J
790

FIG. 24

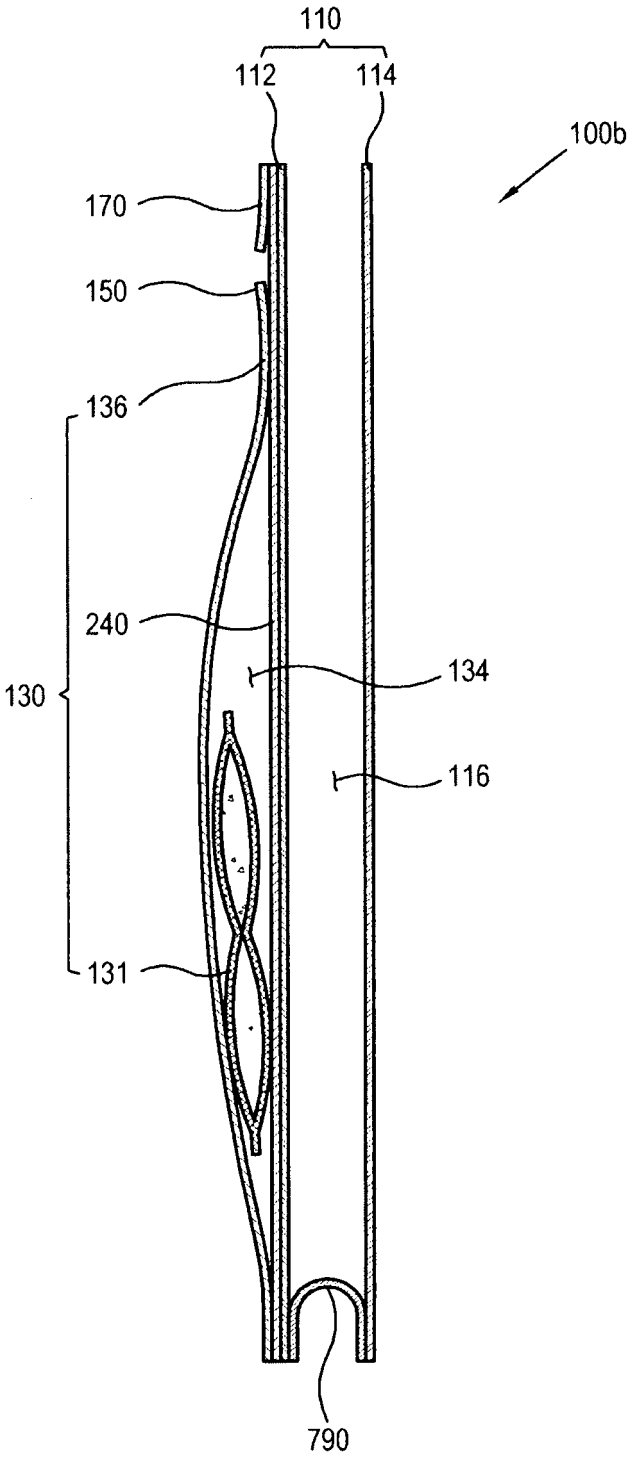


FIG. 25

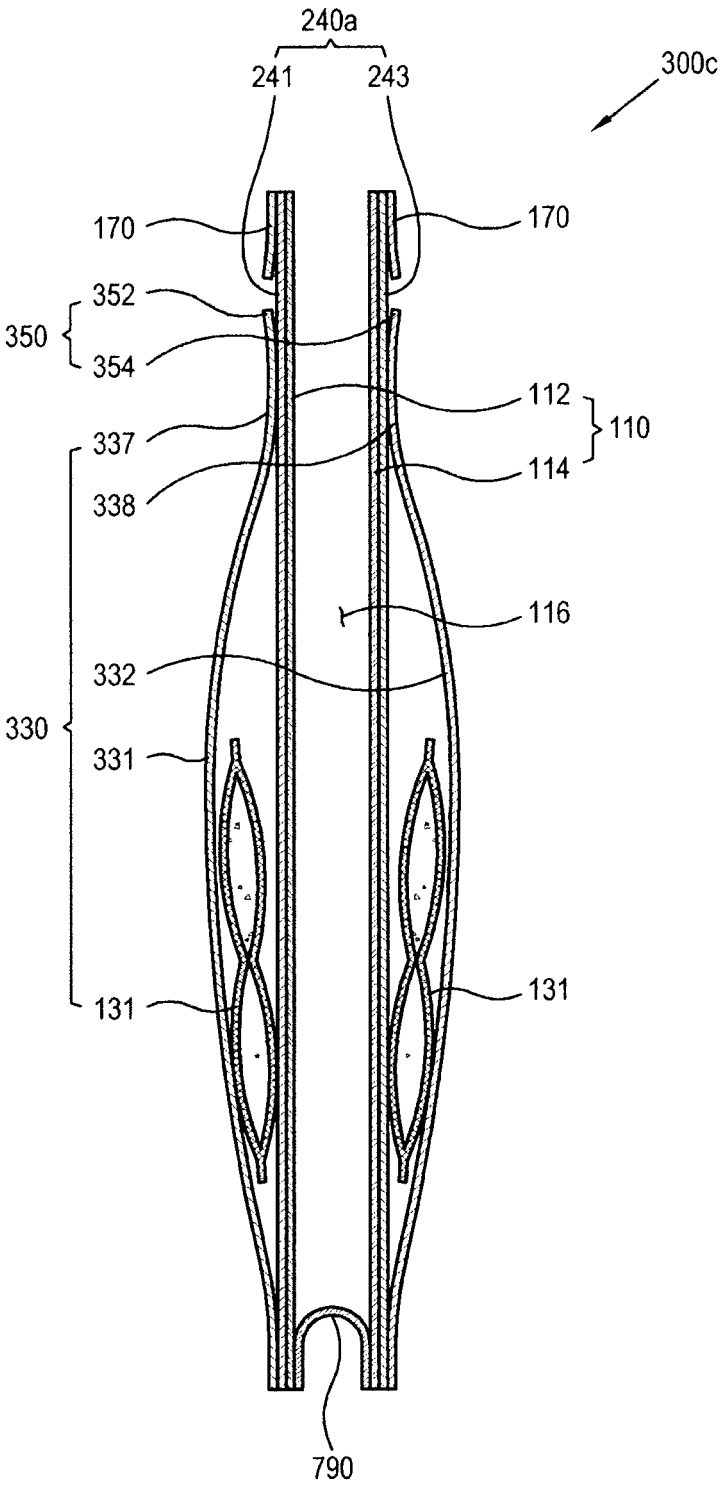

240a
241
243
300c
170
170
352
350
354
112
110
337
114
338
116
332
330
331
131
131
790

FIG. 26A

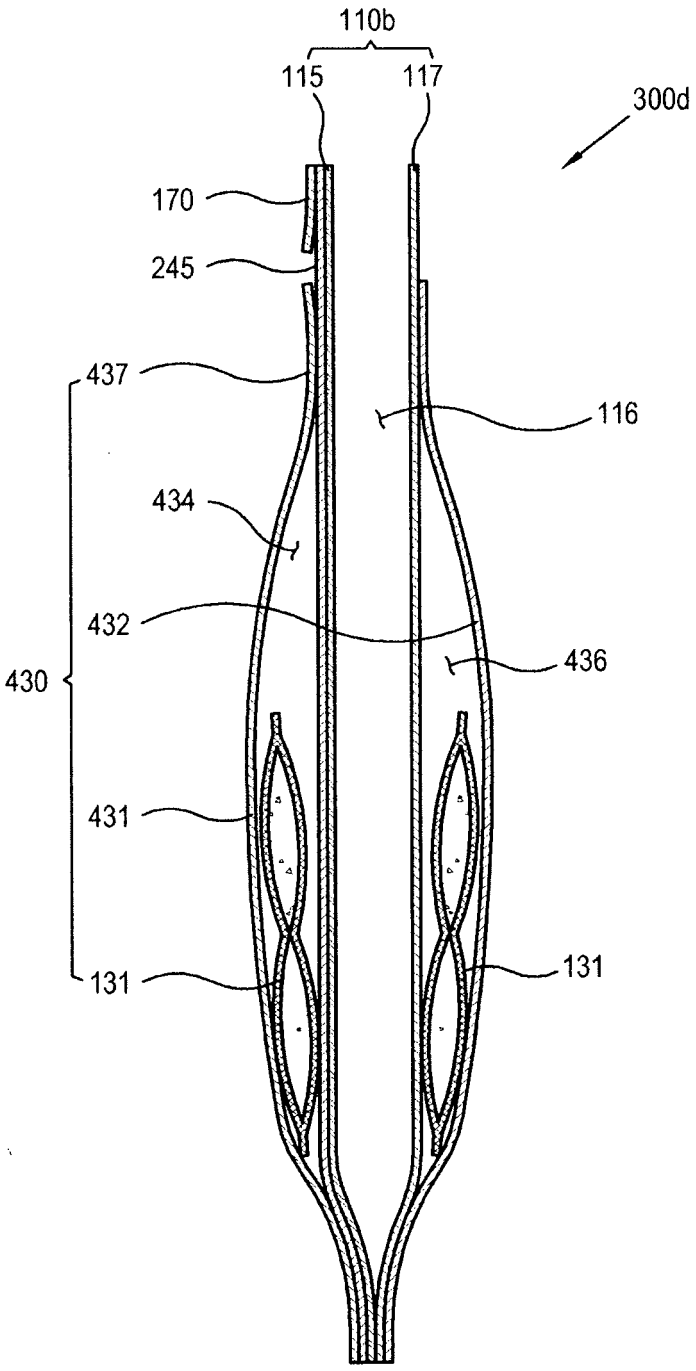


FIG. 26B

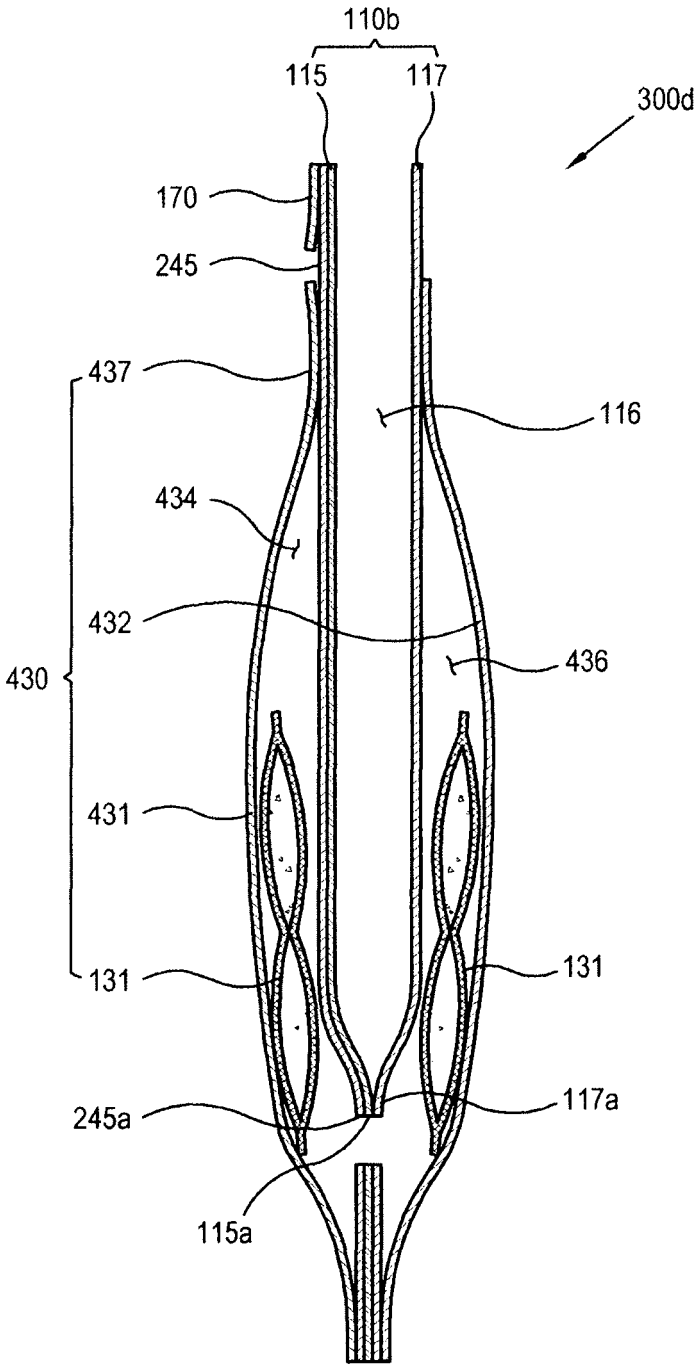

110b
115
117
300d
170
245
437
116
434
432
436
430
431
131
131
245a
117a
115a

FIG. 27A

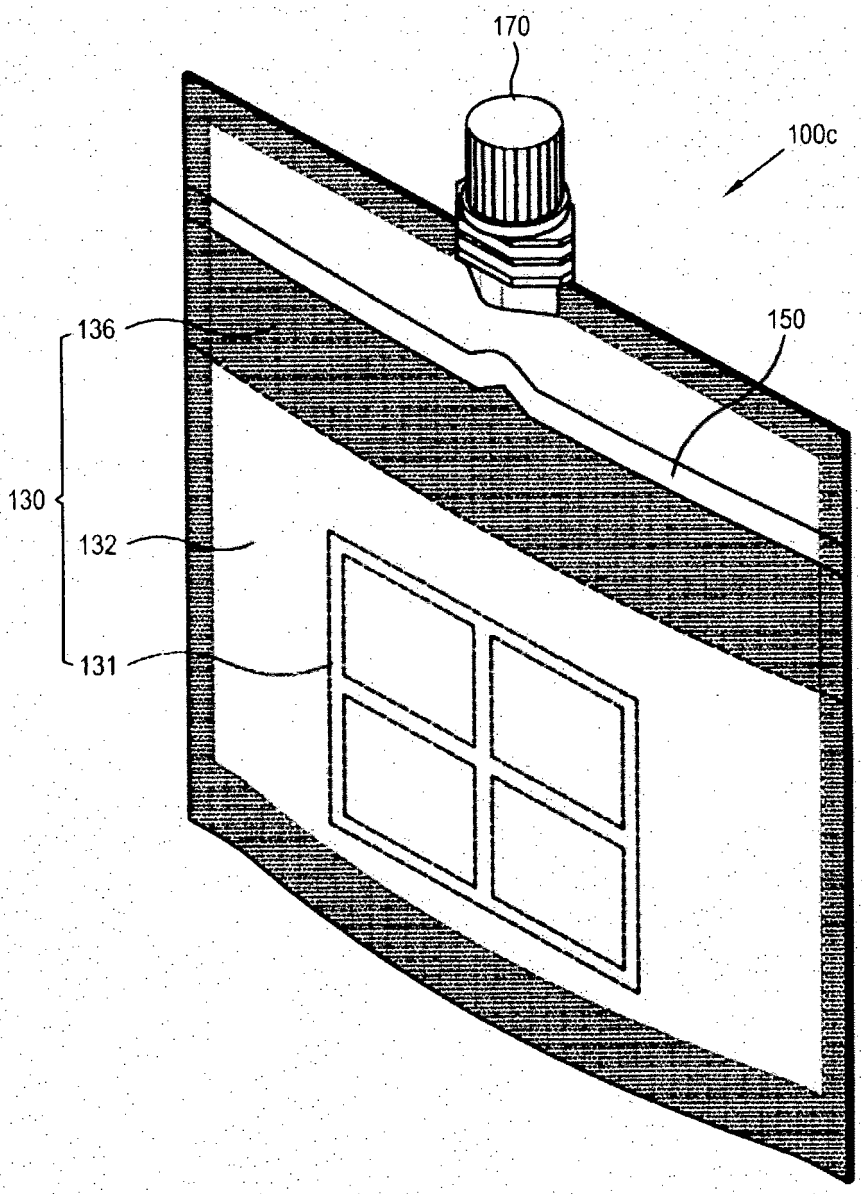


FIG. 27B

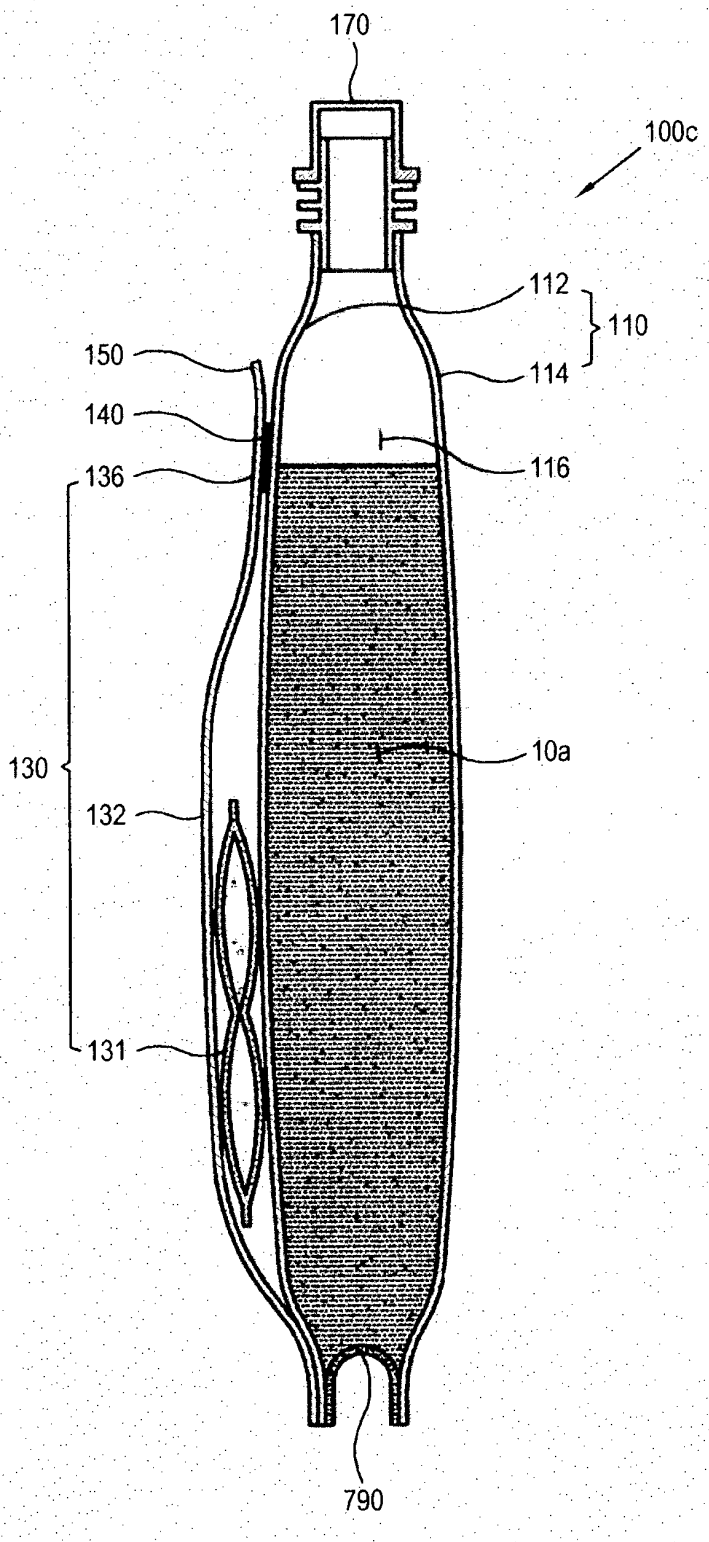


FIG. 28A

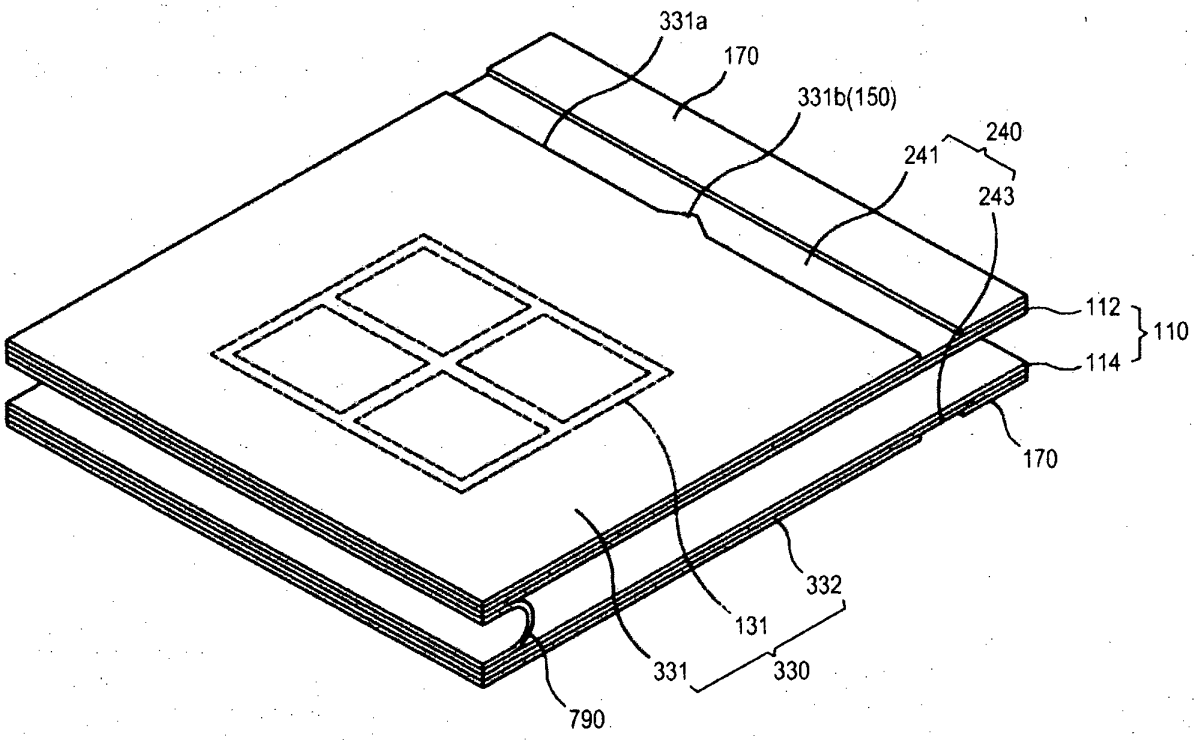

331a
170
331b(150)
240
241
243
112
110
114
170
332
131
331
330
790

FIG. 28B

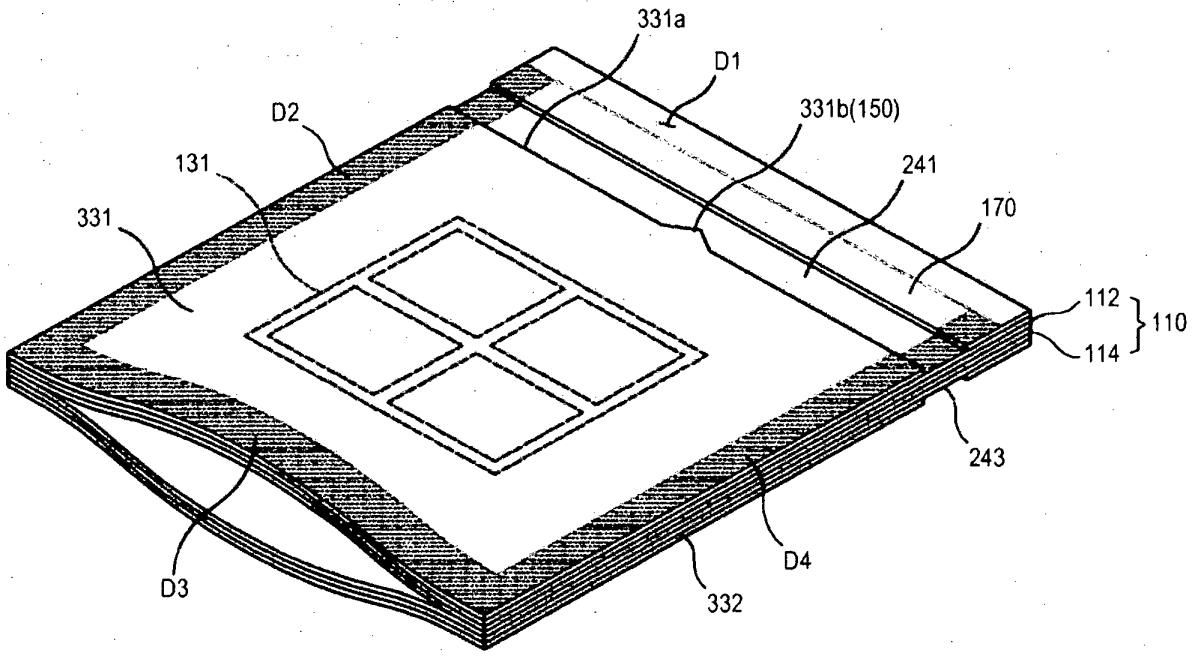


FIG. 28C

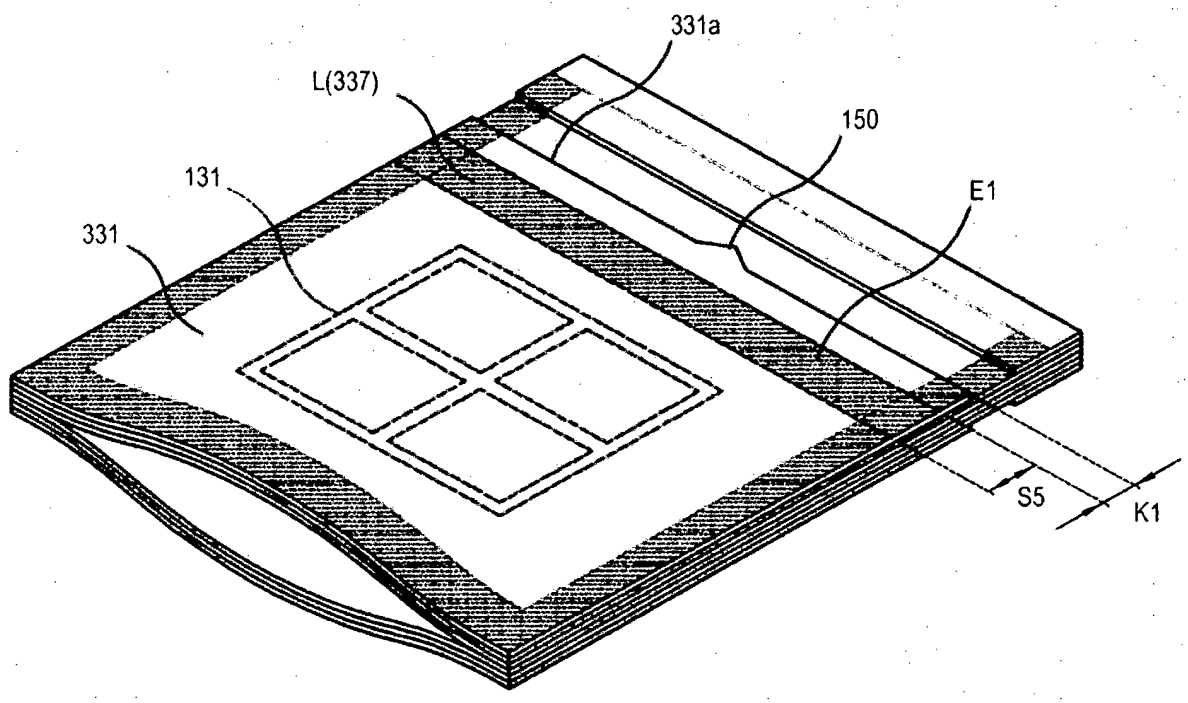


FIG. 29

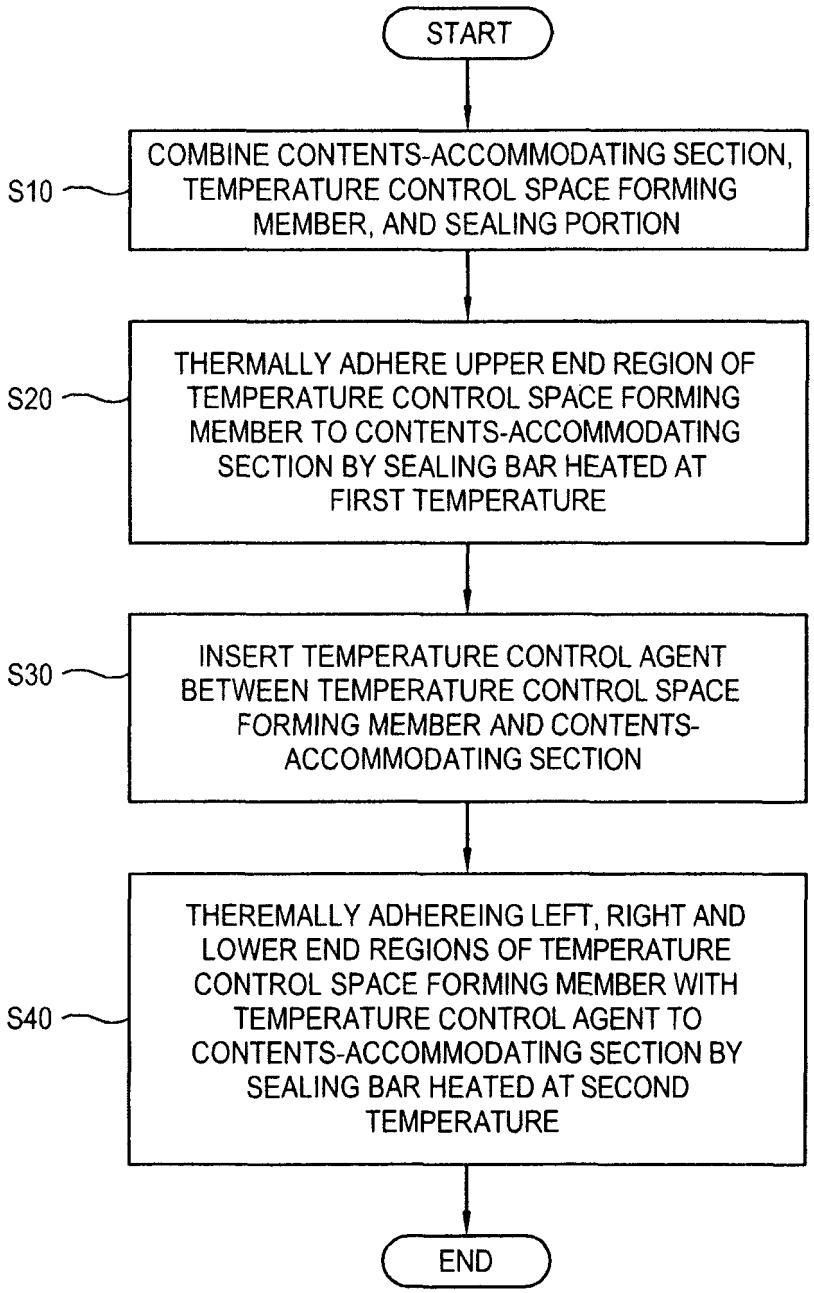

START
S10
COMBINE CONTENTS-ACCOMMODATING SECTION, TEMPERATURE CONTROL SPACE FORMING MEMBER, AND SEALING PORTION
S20
THERMALLY ADHERE UPPER END REGION OF TEMPERATURE CONTROL SPACE FORMING MEMBER TO CONTENTS-ACCOMMODATING SECTION BY SEALING BAR HEATED AT FIRST TEMPERATURE
S30
INSERT TEMPERATURE CONTROL AGENT BETWEEN TEMPERATURE CONTROL SPACE FORMING MEMBER AND CONTENTS-ACCOMMODATING SECTION
S40
THEREMALLY ADHEREING LEFT, RIGHT AND LOWER END REGIONS OF TEMPERATURE CONTROL SPACE FORMING MEMBER WITH TEMPERATURE CONTROL AGENT TO CONTENTS-ACCOMMODATING SECTION BY SEALING BAR HEATED AT SECOND TEMPERATURE
END

FIG. 30

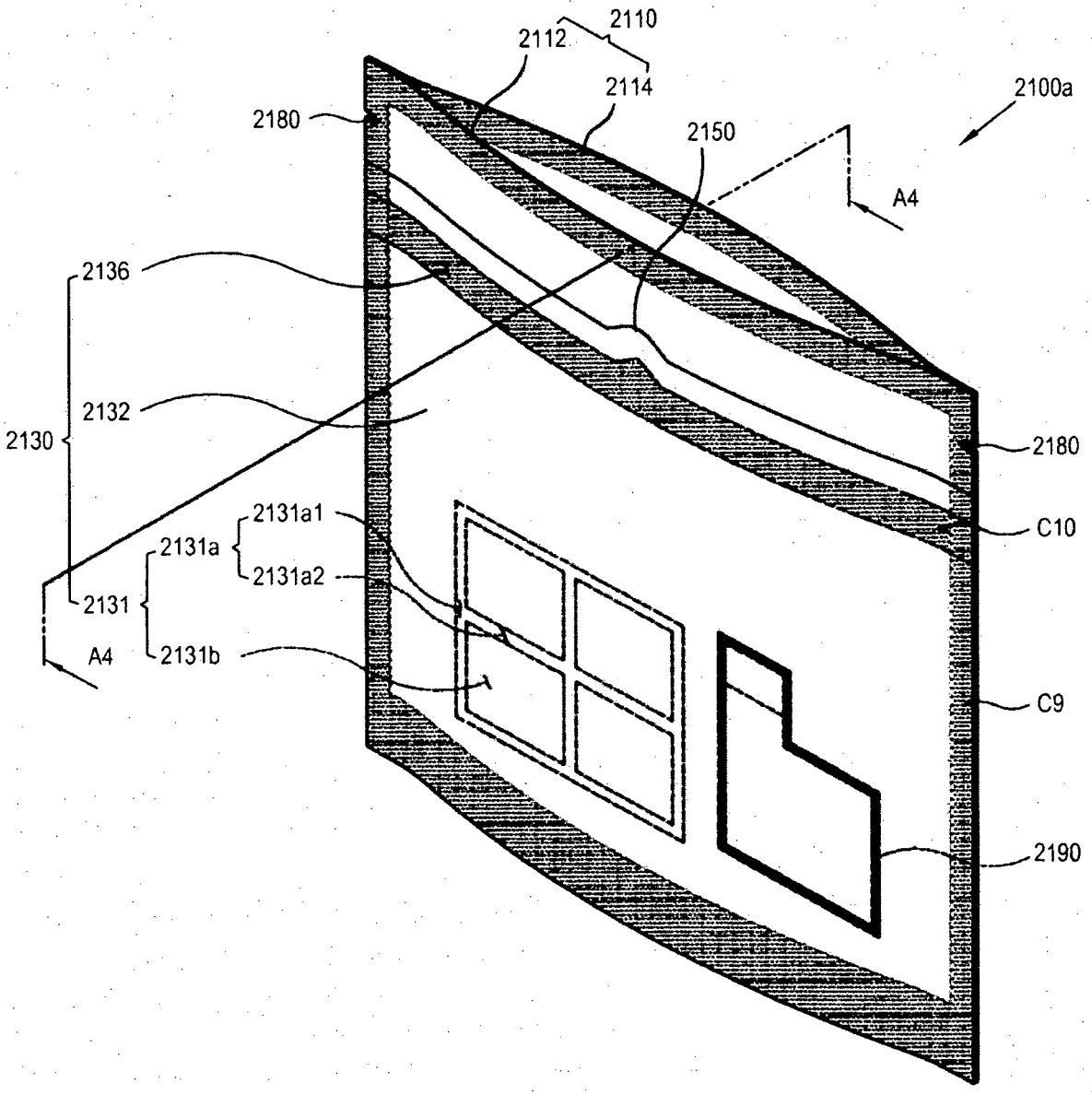

2110
2112
2114
2180
2150
2100a
A4
2136
2130
2132
2131a1
2131a
2131a2
2131
A4
2131b
2180
C10
C9
2190

FIG. 31

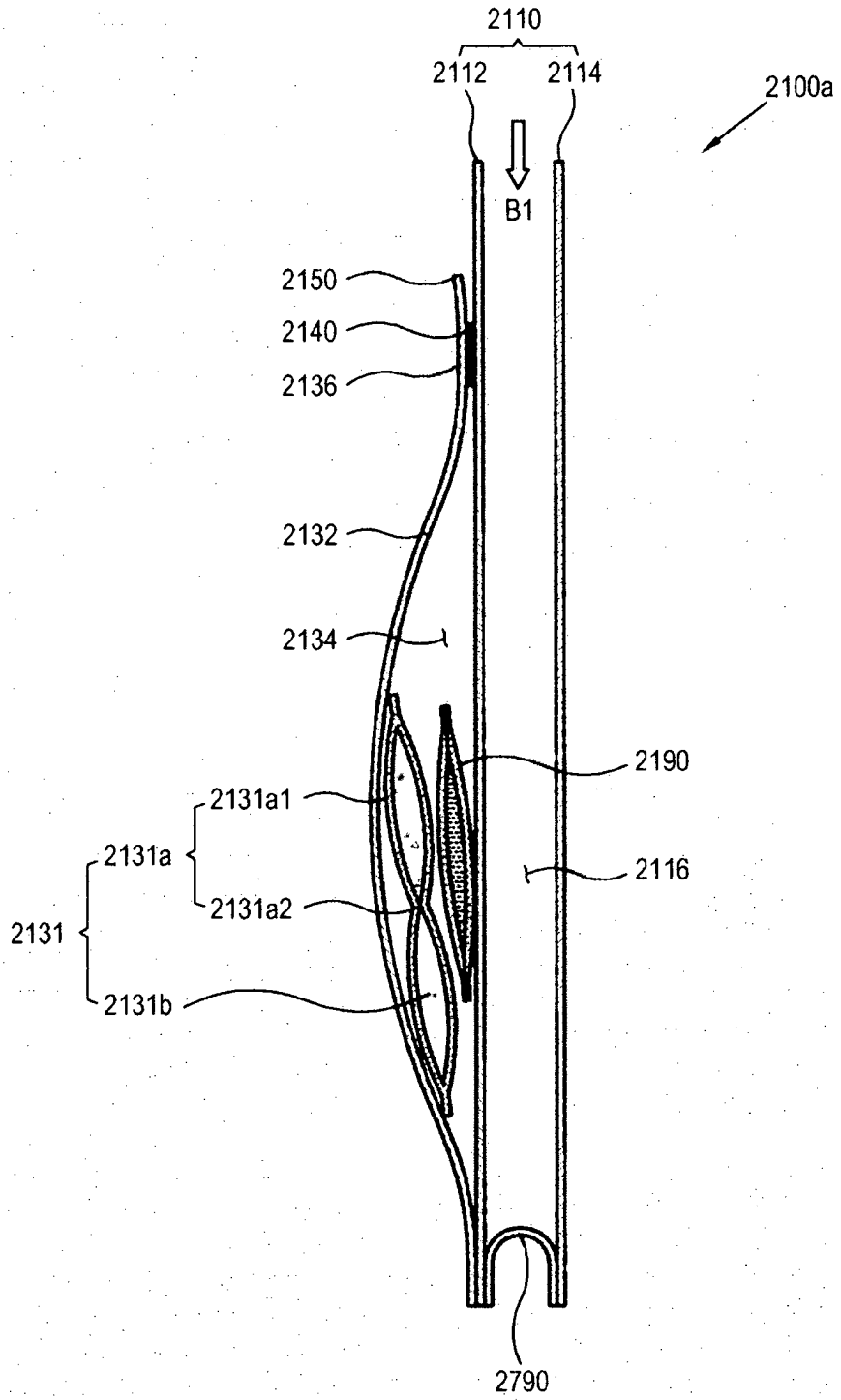

2110
2112
2114
2100a
B1
2150
2140
2136
2132
2134
2190
2131a1
2131a
2131
2131a2
2131b
2116
2790

FIG. 32

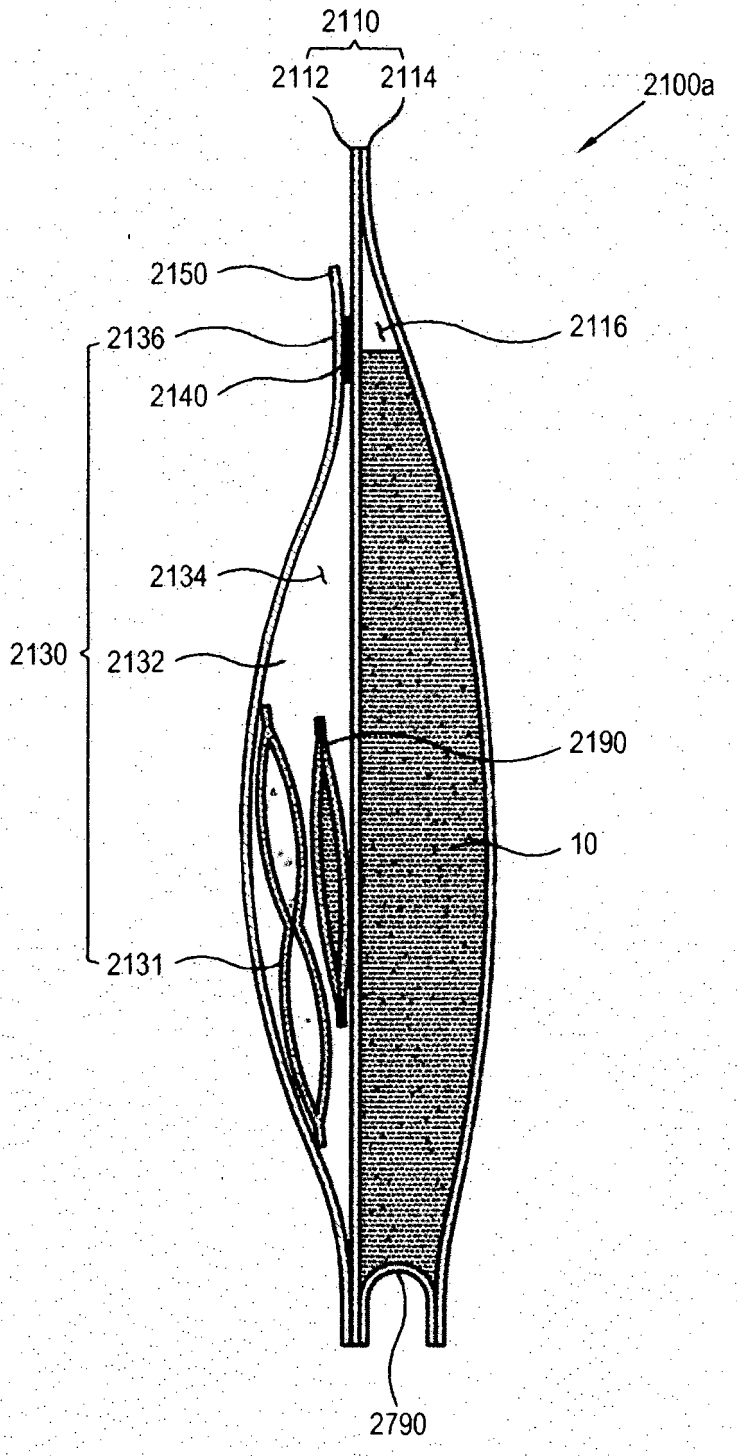

2110
2112
2114
2100a
2150
2116
2136
2140
2134
2130
2132
2190
10
2131
2790

FIG. 33

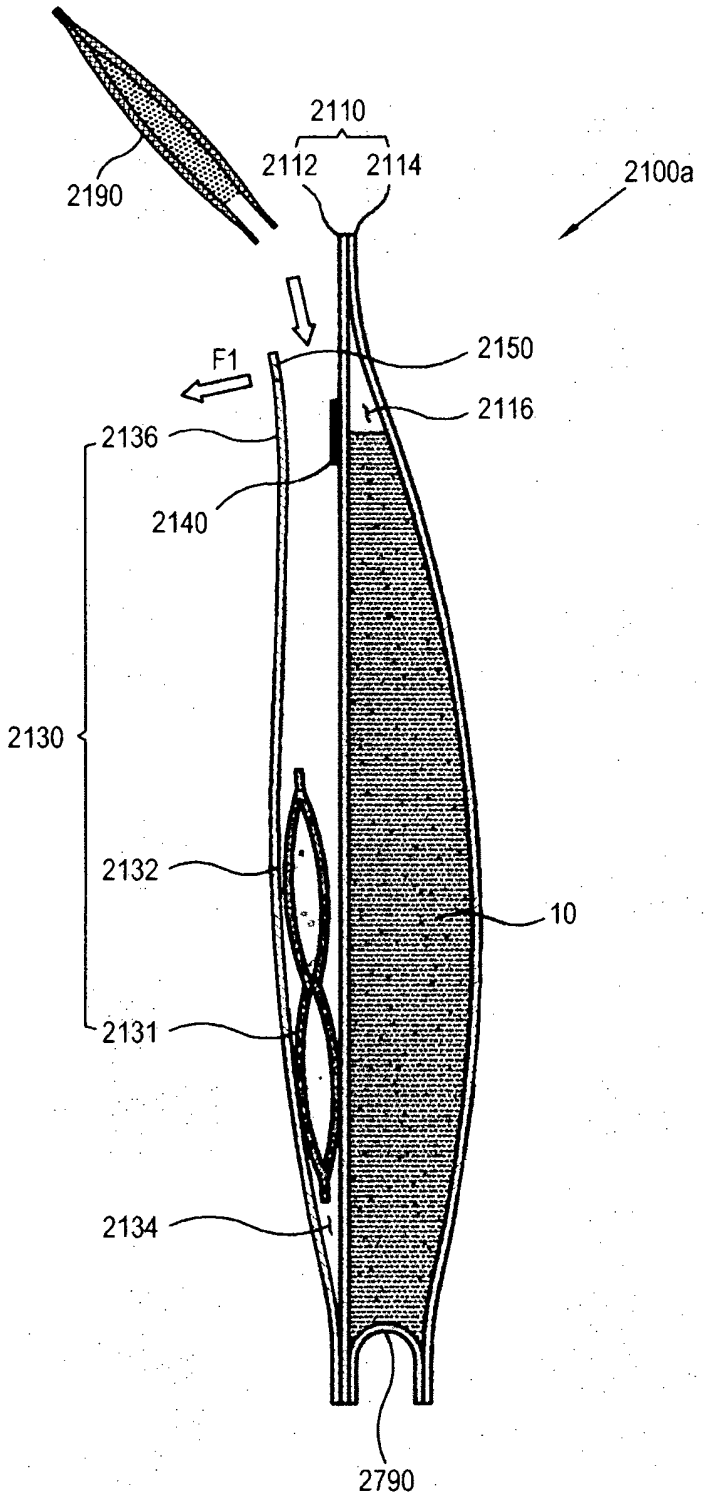

2110
2112
2114
2190
2100a
F1
2150
2116
2136
2140
2130
2132
10
2131
2134
2790

FIG. 34

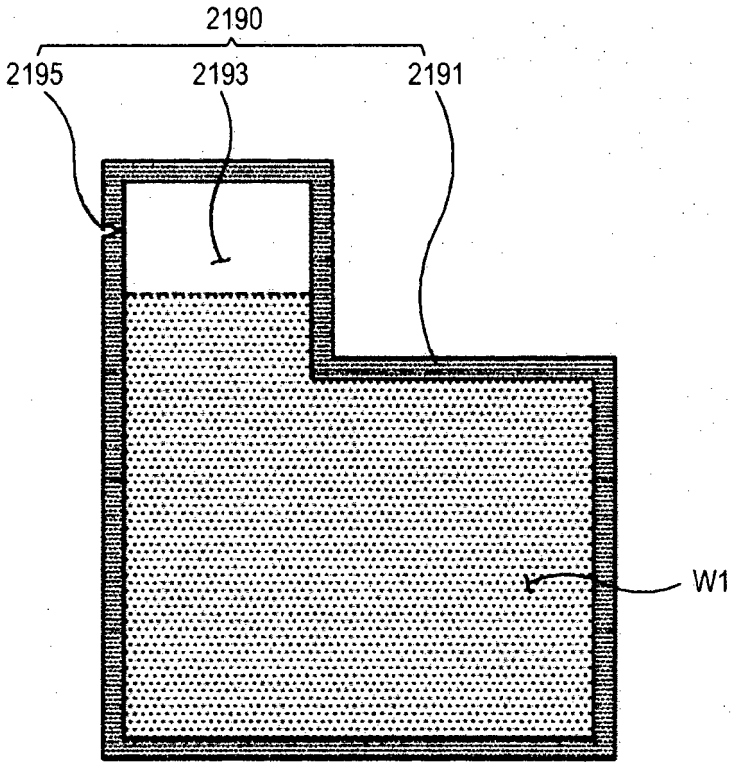


FIG. 35

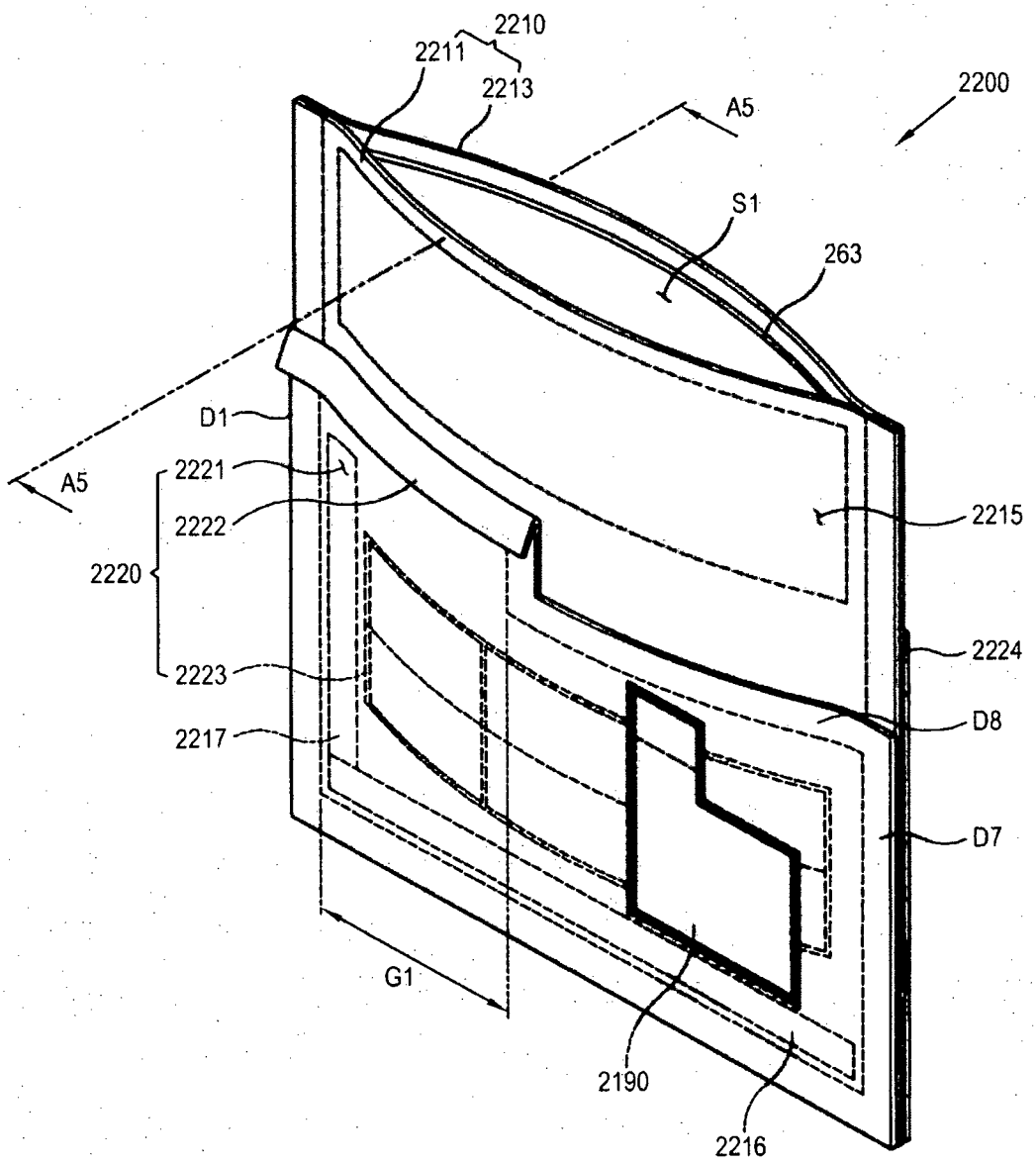

2210
2211
2213
2200
A5
S1
263
D1
A5
2221
2222
2220
2215
2224
2223
D8
2217
D7
G1
2190
2216

FIG. 36

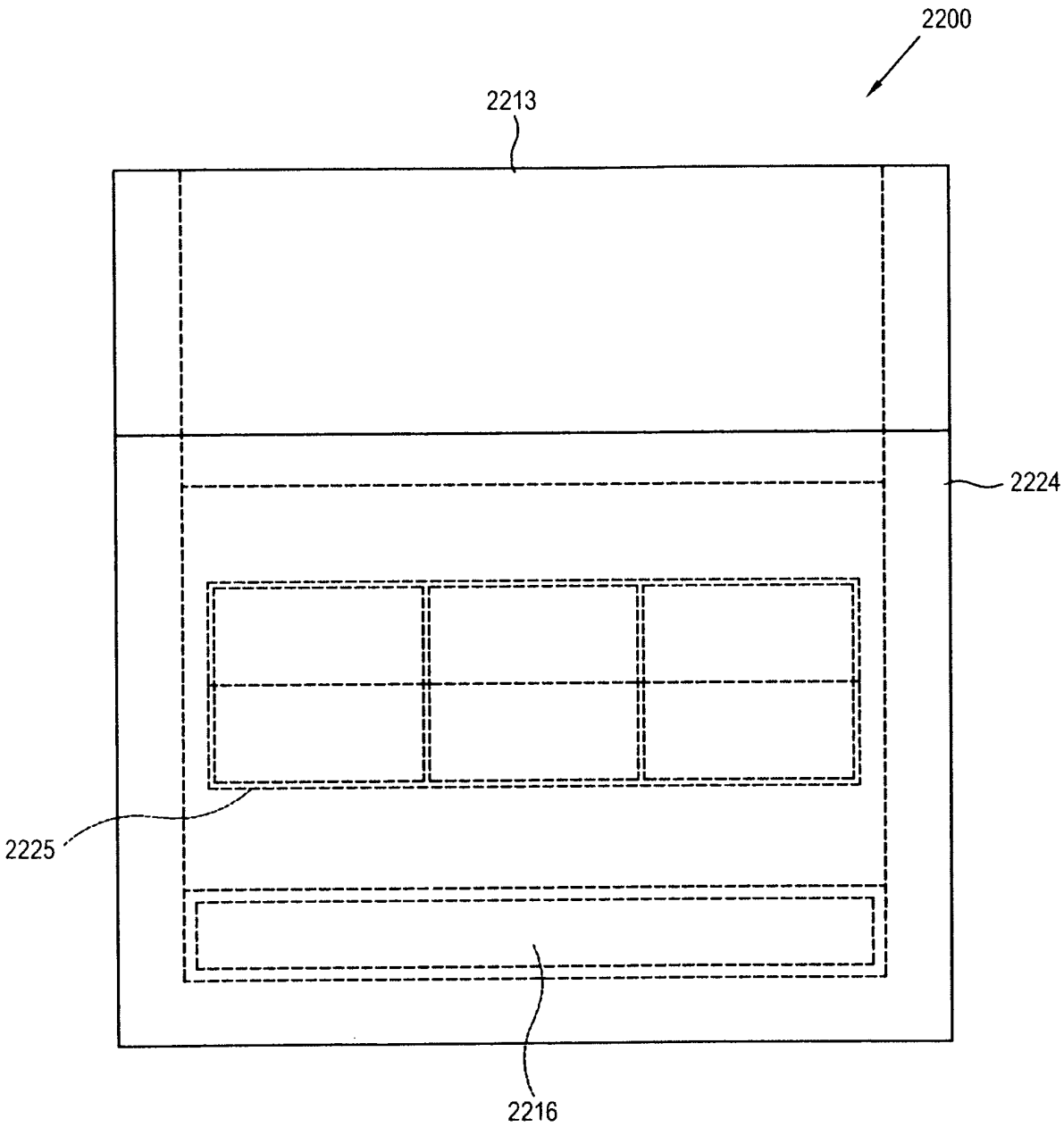


FIG. 37

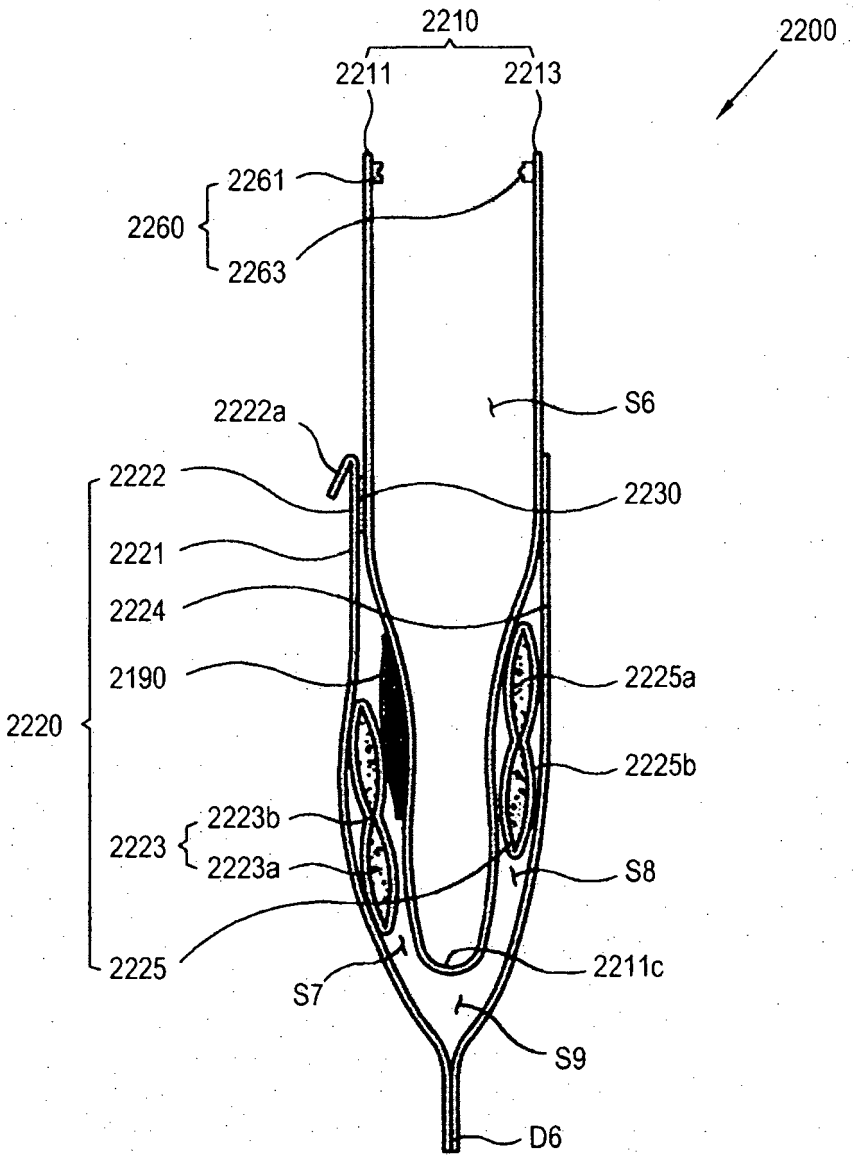

2210
2200
2211
2213
2261
2260
2263
2222a
S6
2222
2230
2221
2224
2190
2225a
2220
2225b
2223b
2223
2223a
S8
2225
S7
2211c
S9
D6

FIG. 38

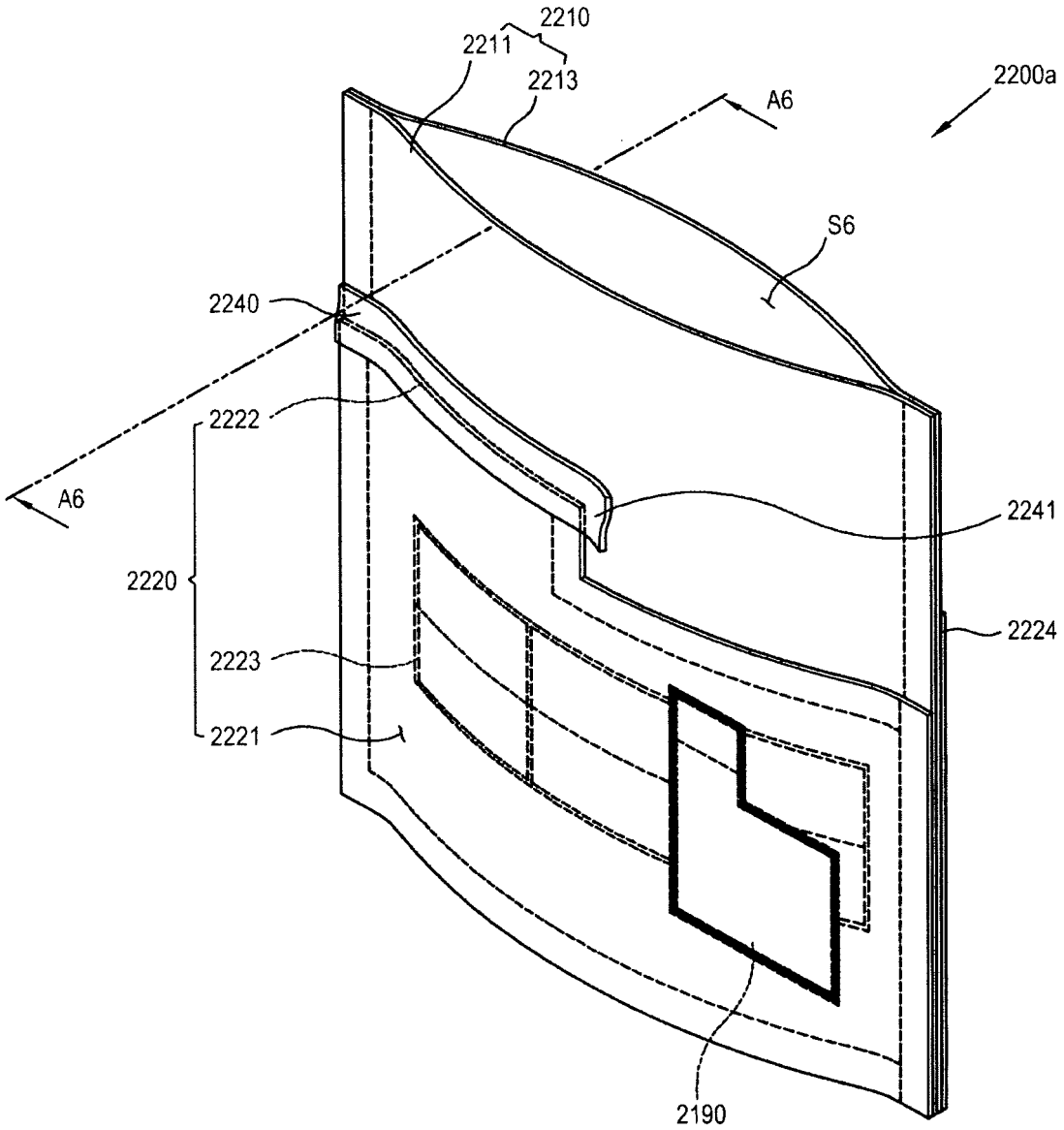

2210
2211
2213
2200a
A6
S6
2240
2222
A6
2241
2220
2224
2223
2221
2190

FIG. 39

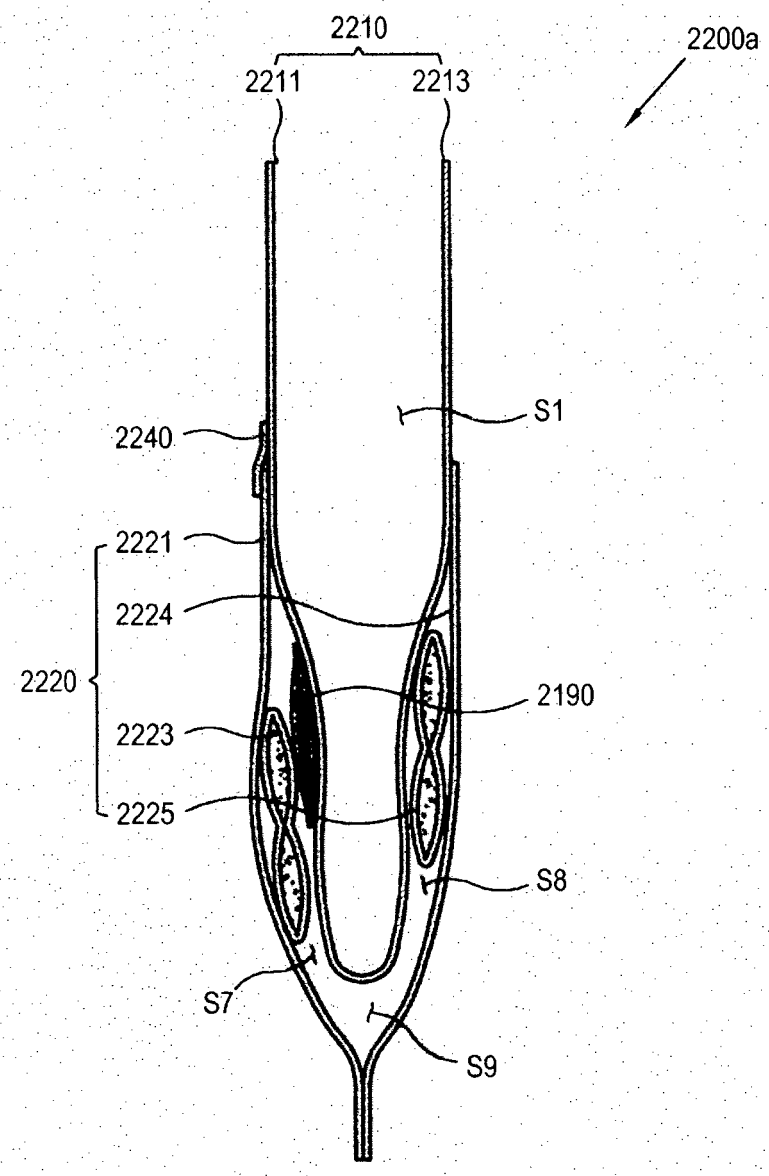

2210
2211
2213
2200a
S1
2240
2221
2224
2220
2190
2223
2225
S8
S7
S9

FIG. 40

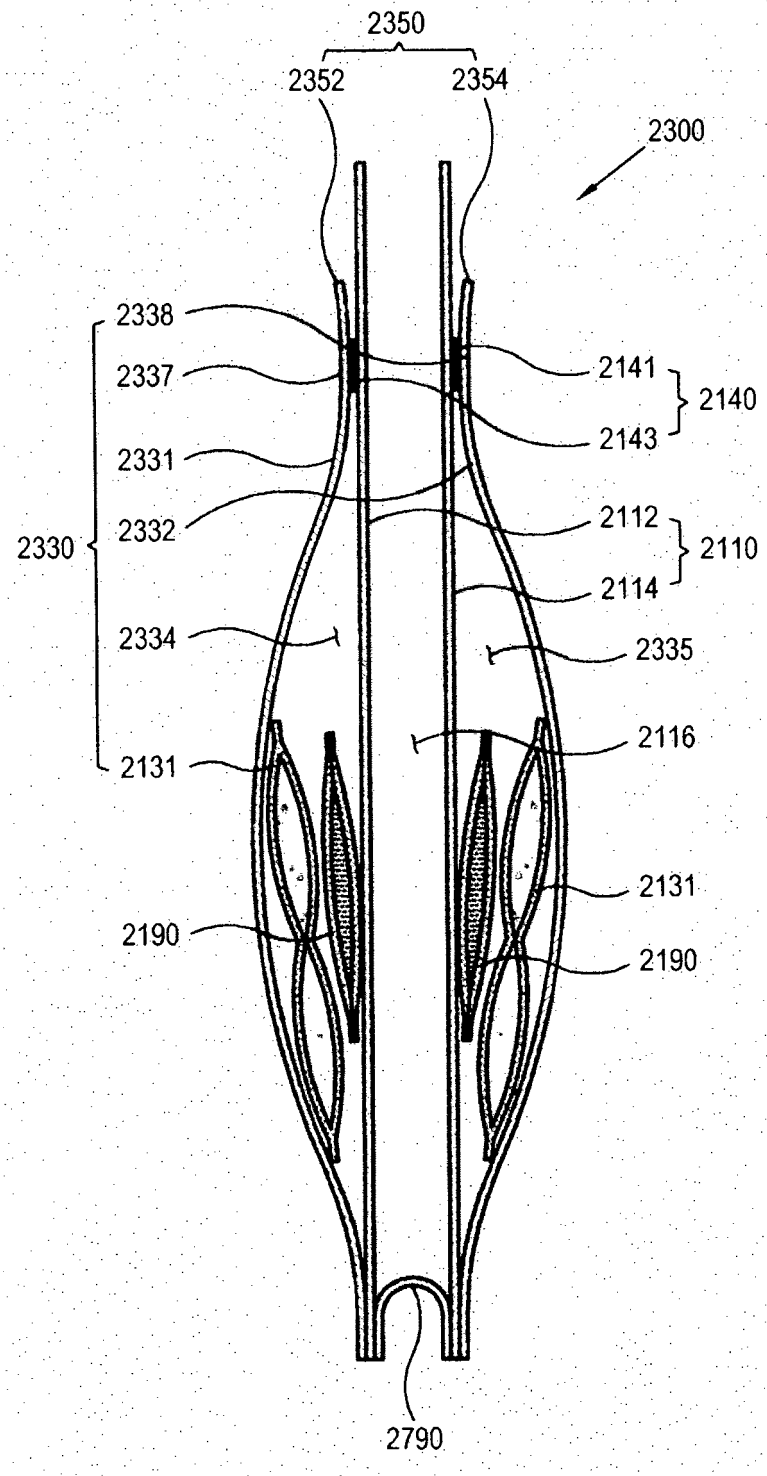

2350
2352
2354
2300
2338
2337
2331
2332
2330
2334
2131
2190
2141
2143
2140
2112
2114
2110
2335
2116
2131
2190
2790

FIG. 41

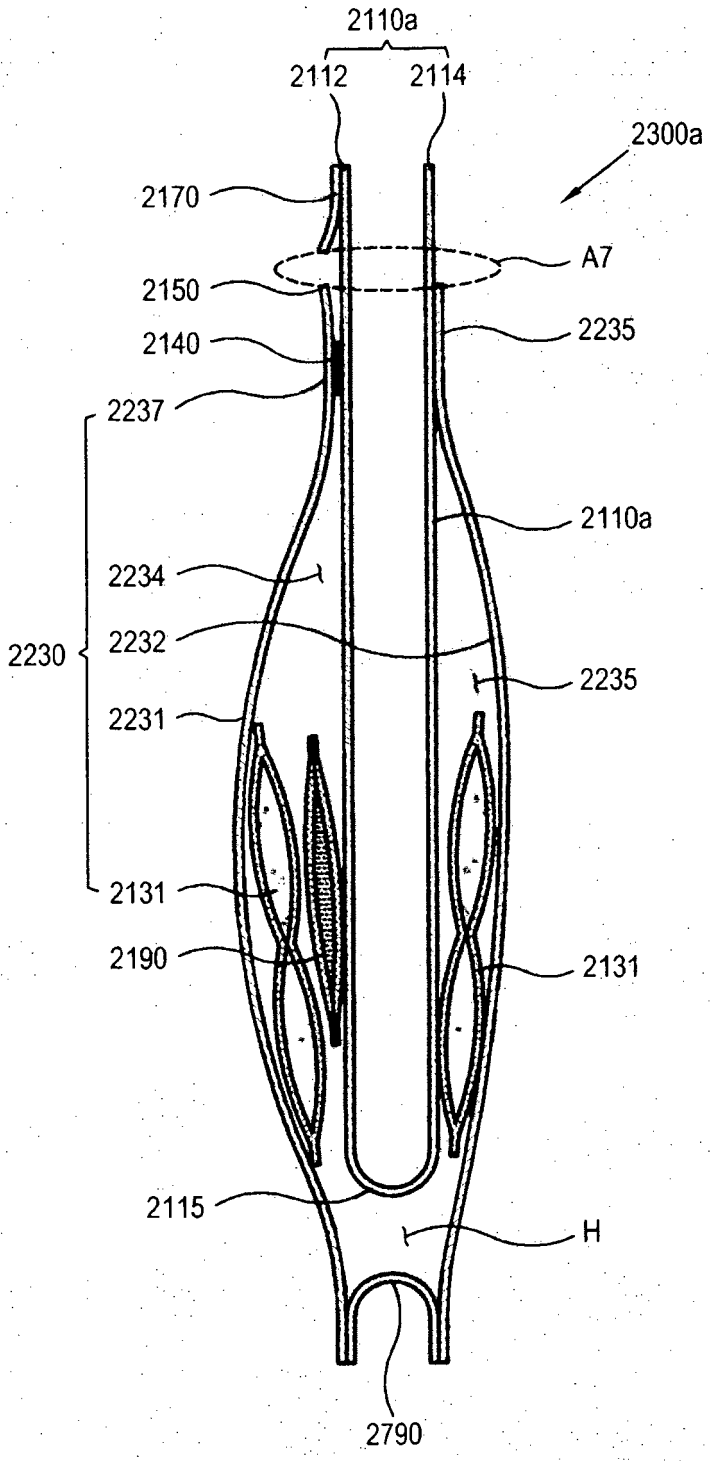

2110a
2112
2114
2300a
2170
A7
2150
2235
2140
2237
2110a
2234
2230
2232
2235
2231
2131
2190
2131
2115
H
2790

FIG. 42

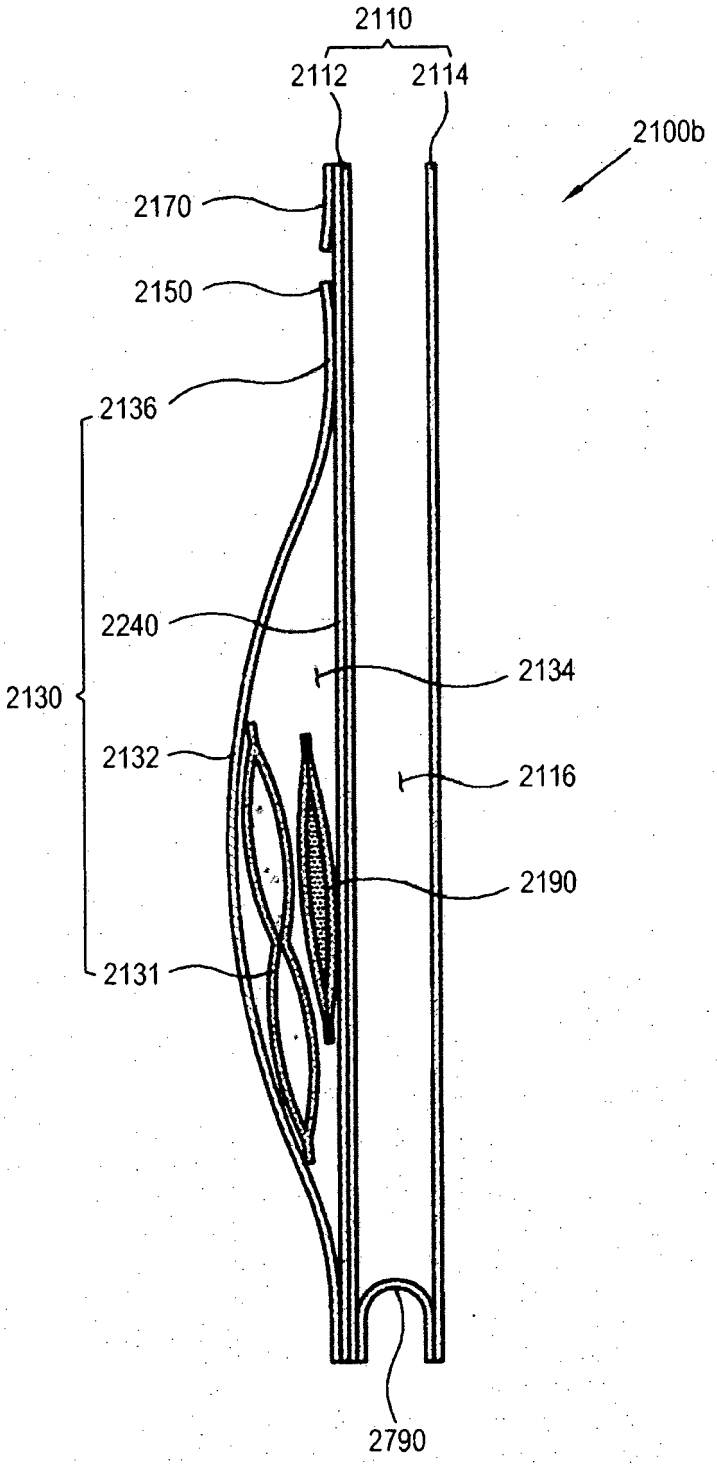

2110
2112
2114
2100b
2170
2150
2136
2240
2130
2132
2131
2134
2116
2190
2790

FIG. 43

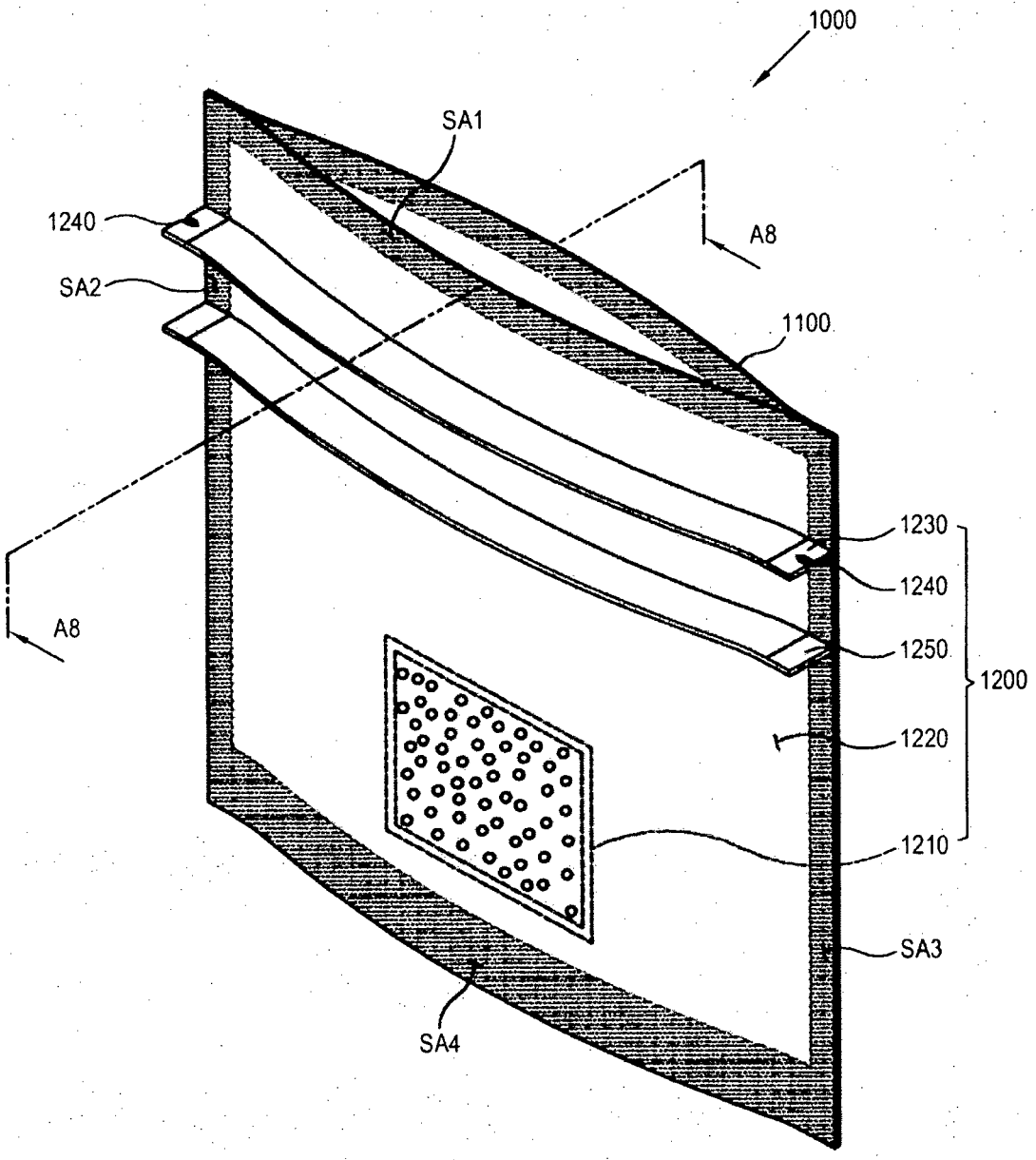

1000
SA1
1240
A8
SA2
1100
1230
1240
1250
1200
A8
1220
1210
SA3
SA4

FIG. 44

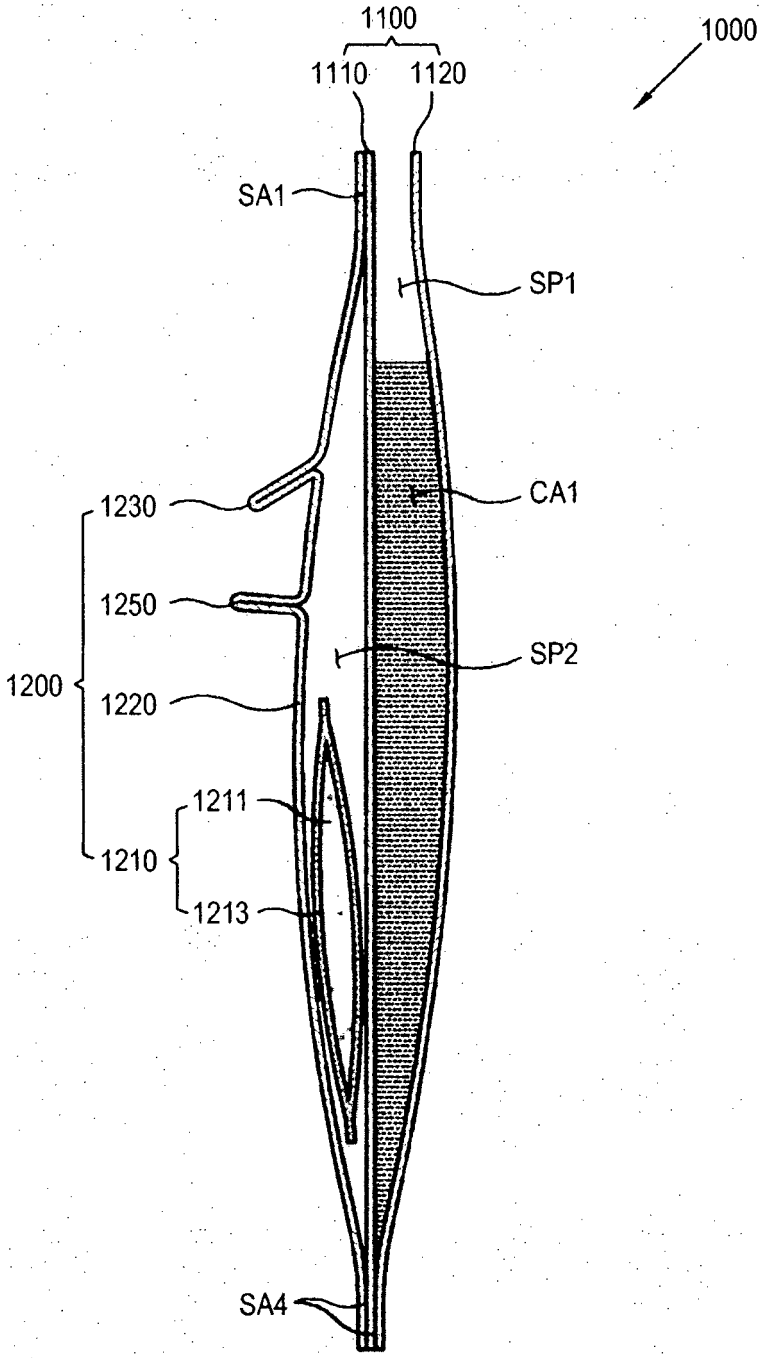

1100
1110
1120
1000
SA1
SP1
CA1
1230
1250
SP2
1200
1220
1211
1210
1213
SA4

FIG. 45

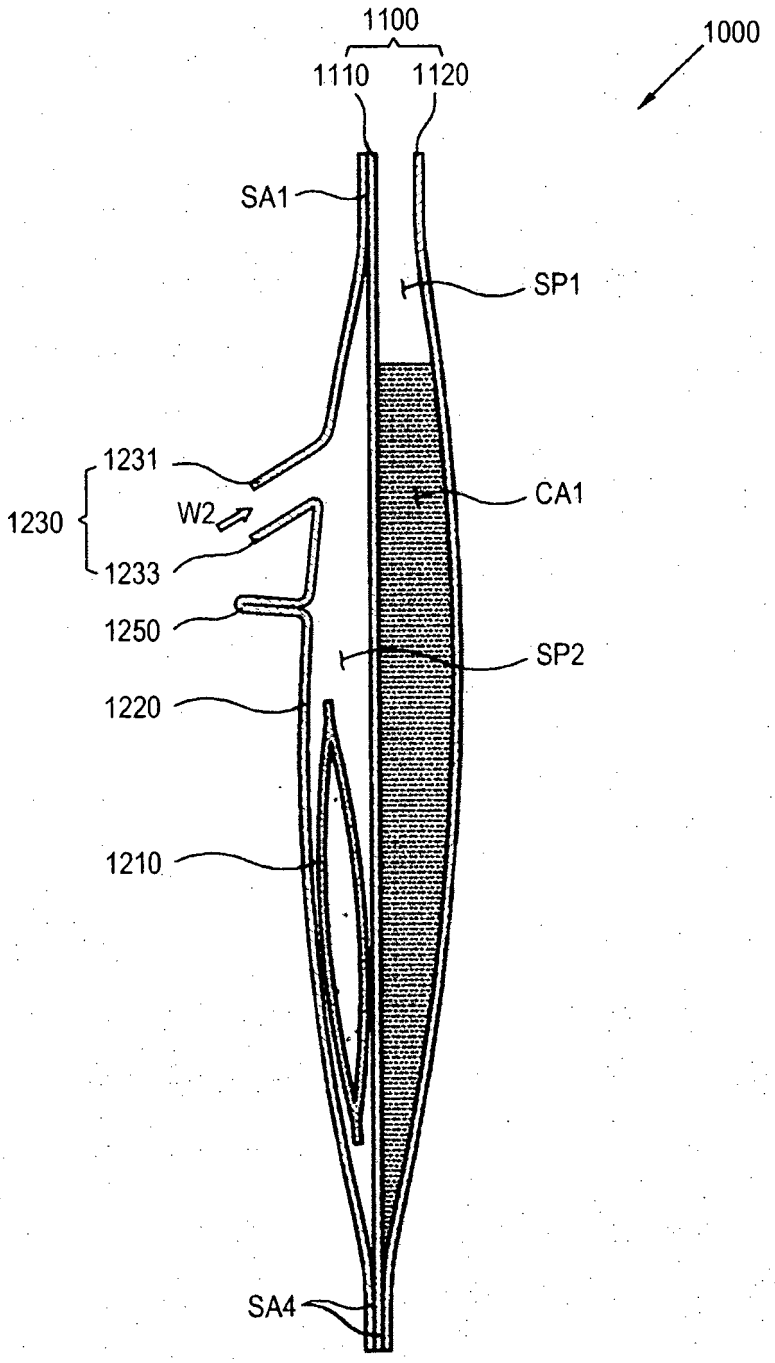

1100
1110
1120
1000
SA1
SP1
1231
1230
W2
1233
CA1
1250
SP2
1220
1210
SA4

FIG. 46

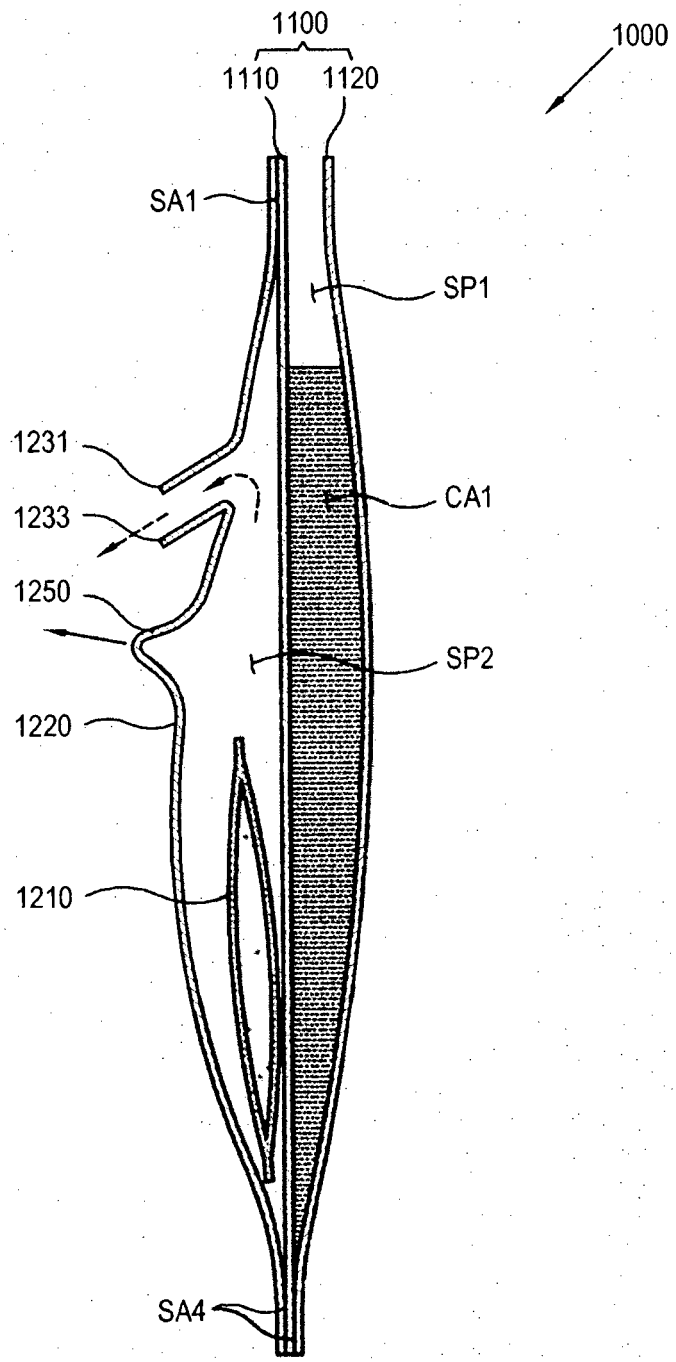

1100
1110
1120
1000
SA1
SP1
1231
1233
CA1
1250
SP2
1220
1210
SA4

FIG. 47

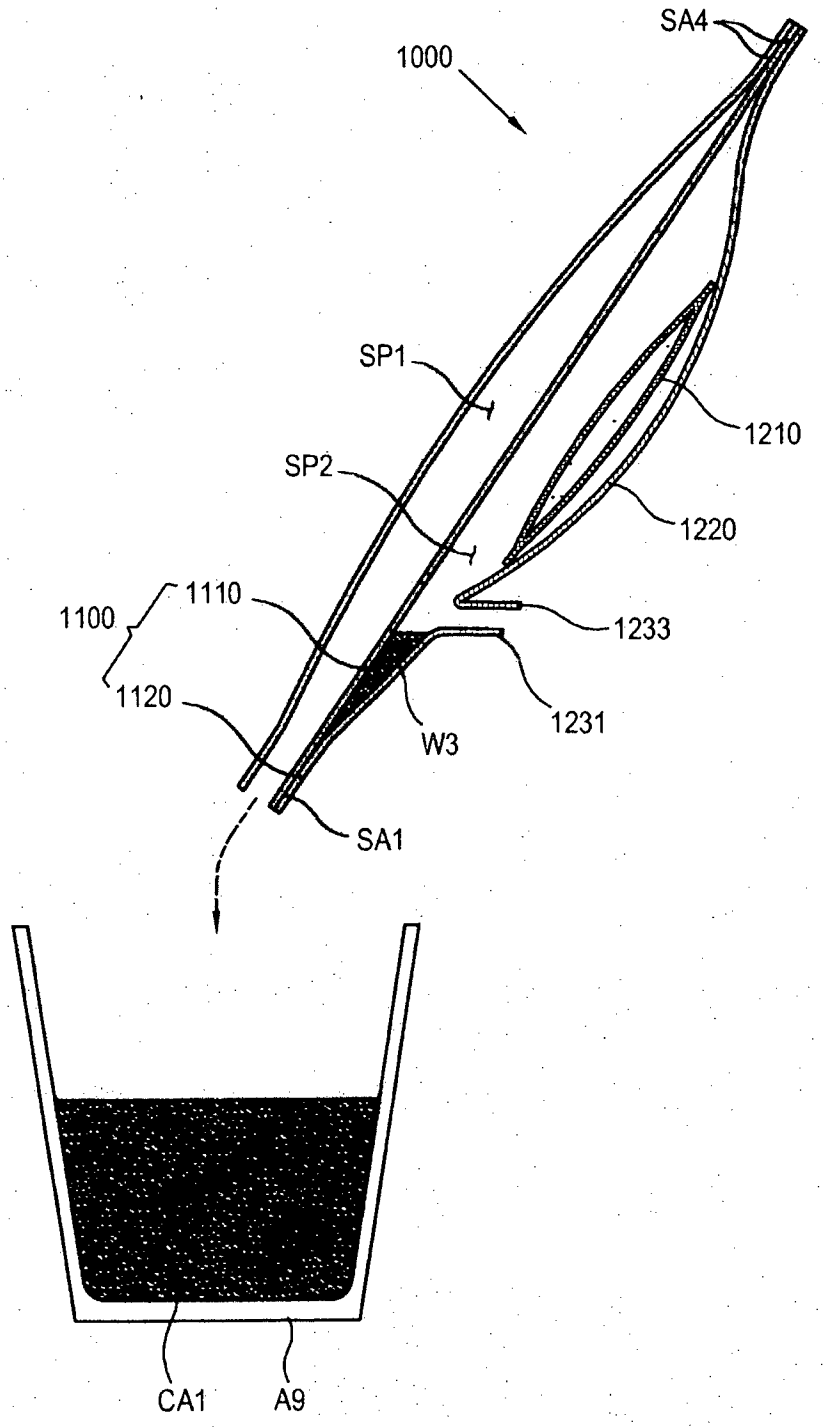

SA4
1000
SP1
1210
SP2
1220
1100
1110
1233
1120
1231
W3
SA1
CA1
A9

FIG. 48

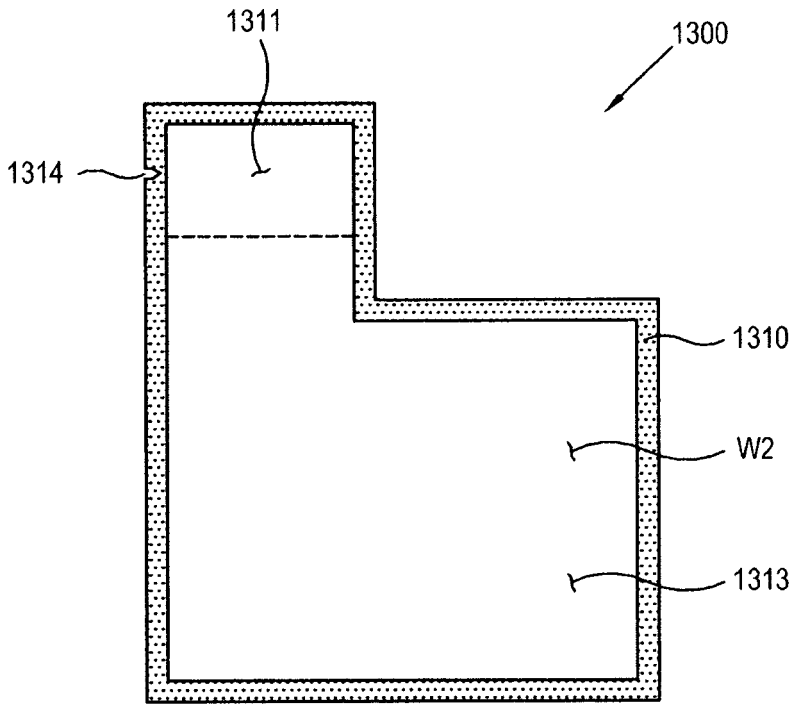


FIG. 49

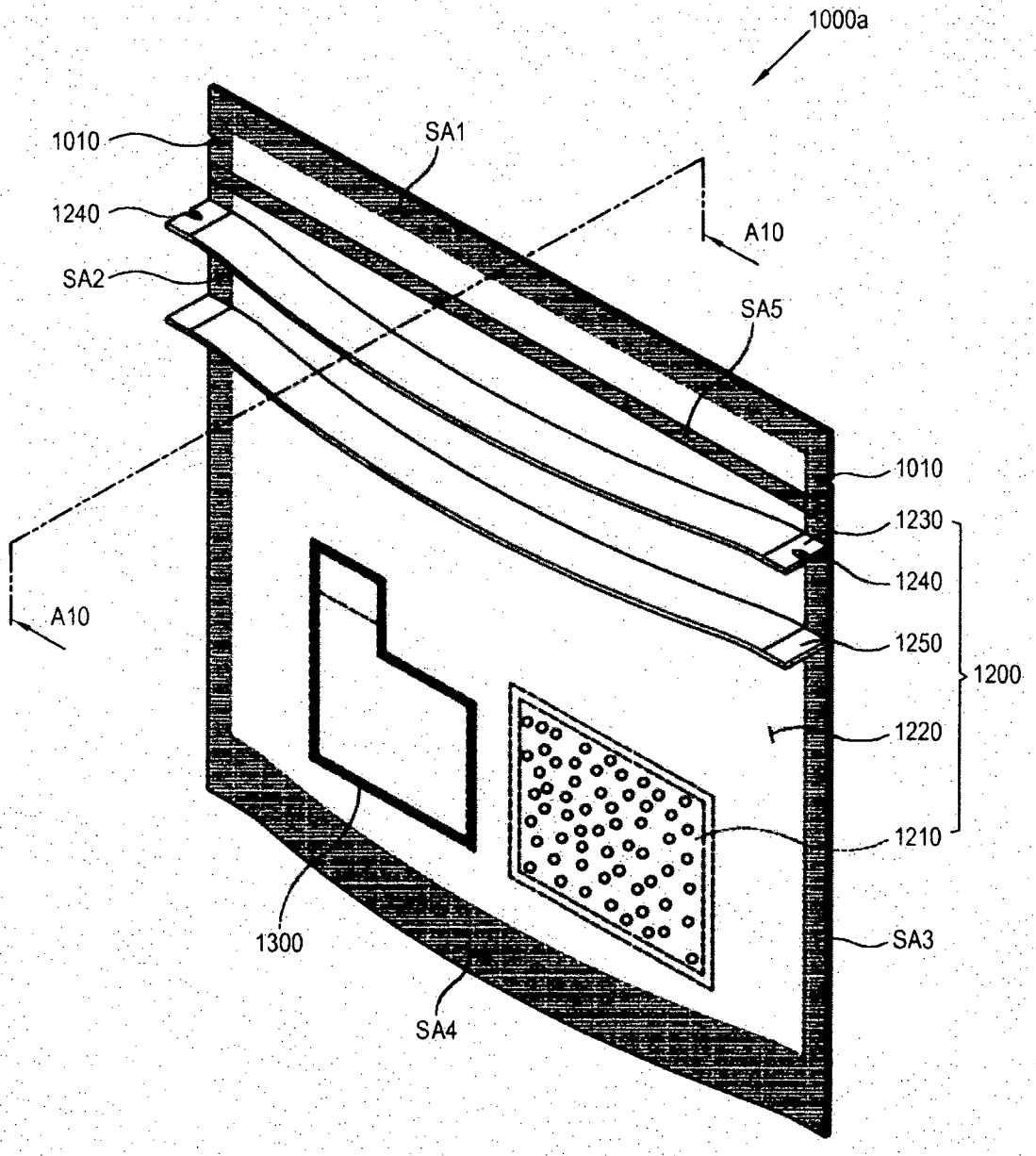

1000a
1010
SA1
1240
A10
SA2
SA5
1010
1230
1240
1250
1200
A10
1220
1210
1300
SA3
SA4

FIG. 50

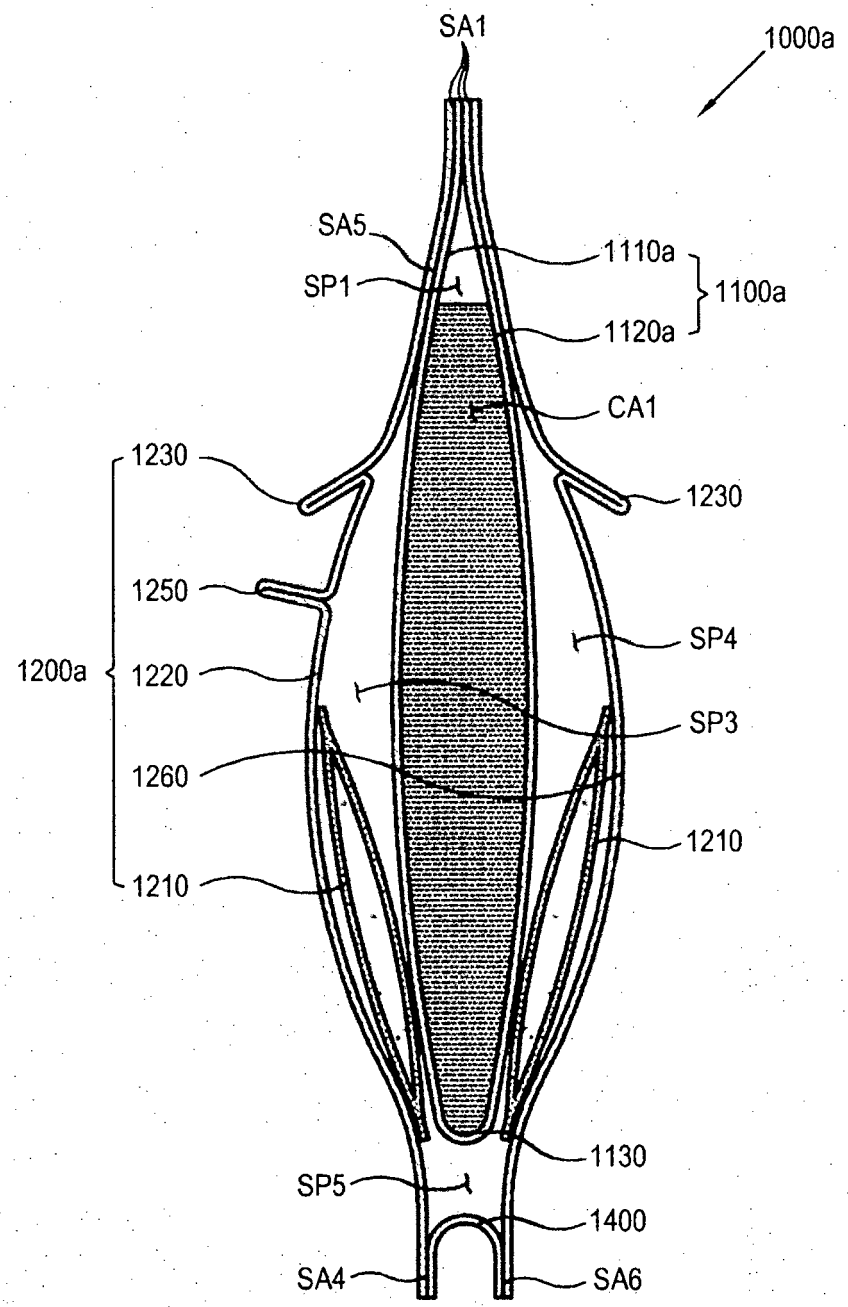
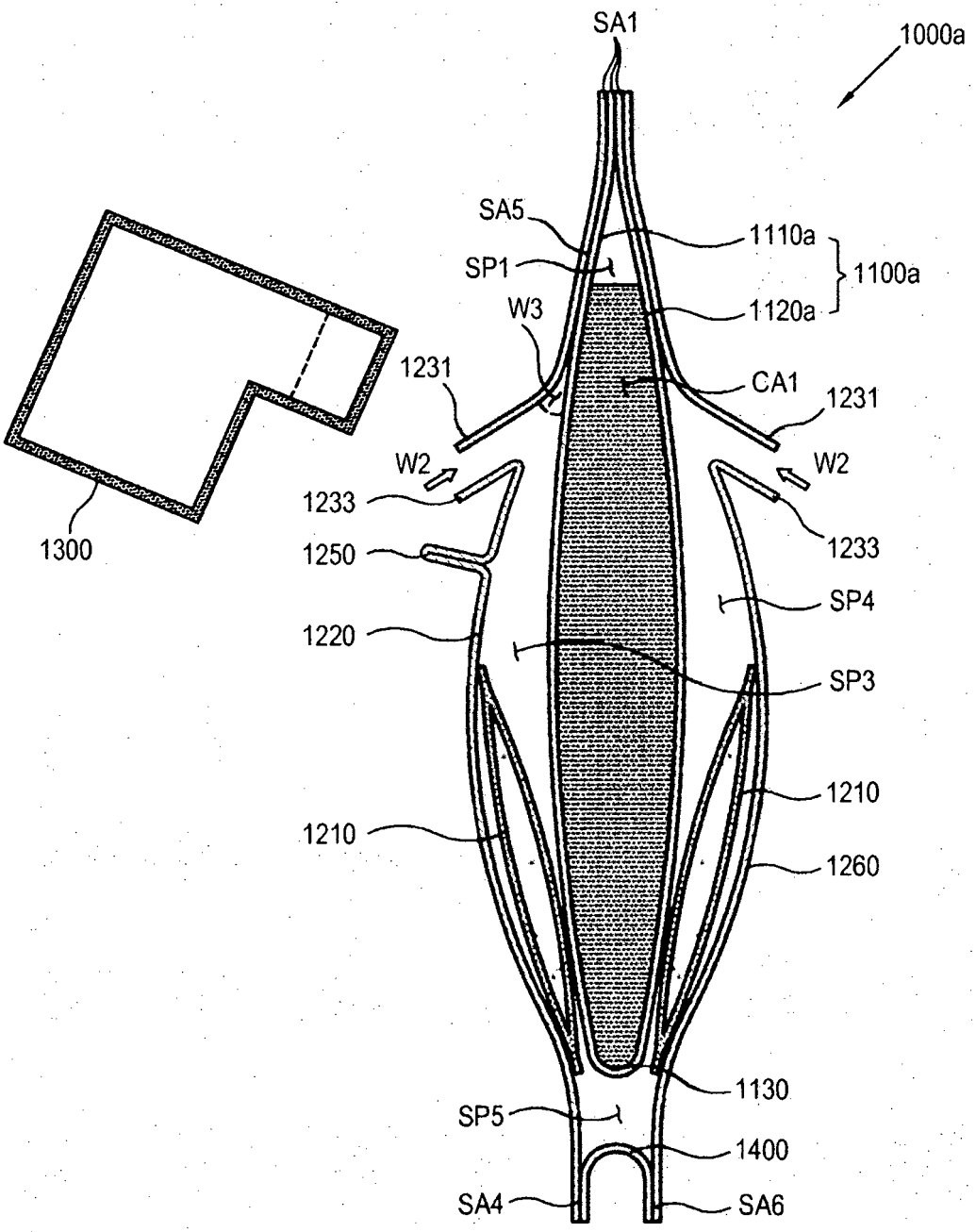

SA1
1000a
SA5
1110a
SP1
1100a
1120a
CA1
1230
1230
1250
SP4
1200a
1220
SP3
1260
1210
1210
1130
SP5
1400
SA4
SA6

FIG. 51


SA1
1000a
SA5
1110a
1100a
SP1
1120a
W3
1231
CA1
1231
W2
W2
1233
1233
1250
SP4
1220
SP3
1210
1210
1260
1130
SP5
1400
SA4
SA6
1300

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