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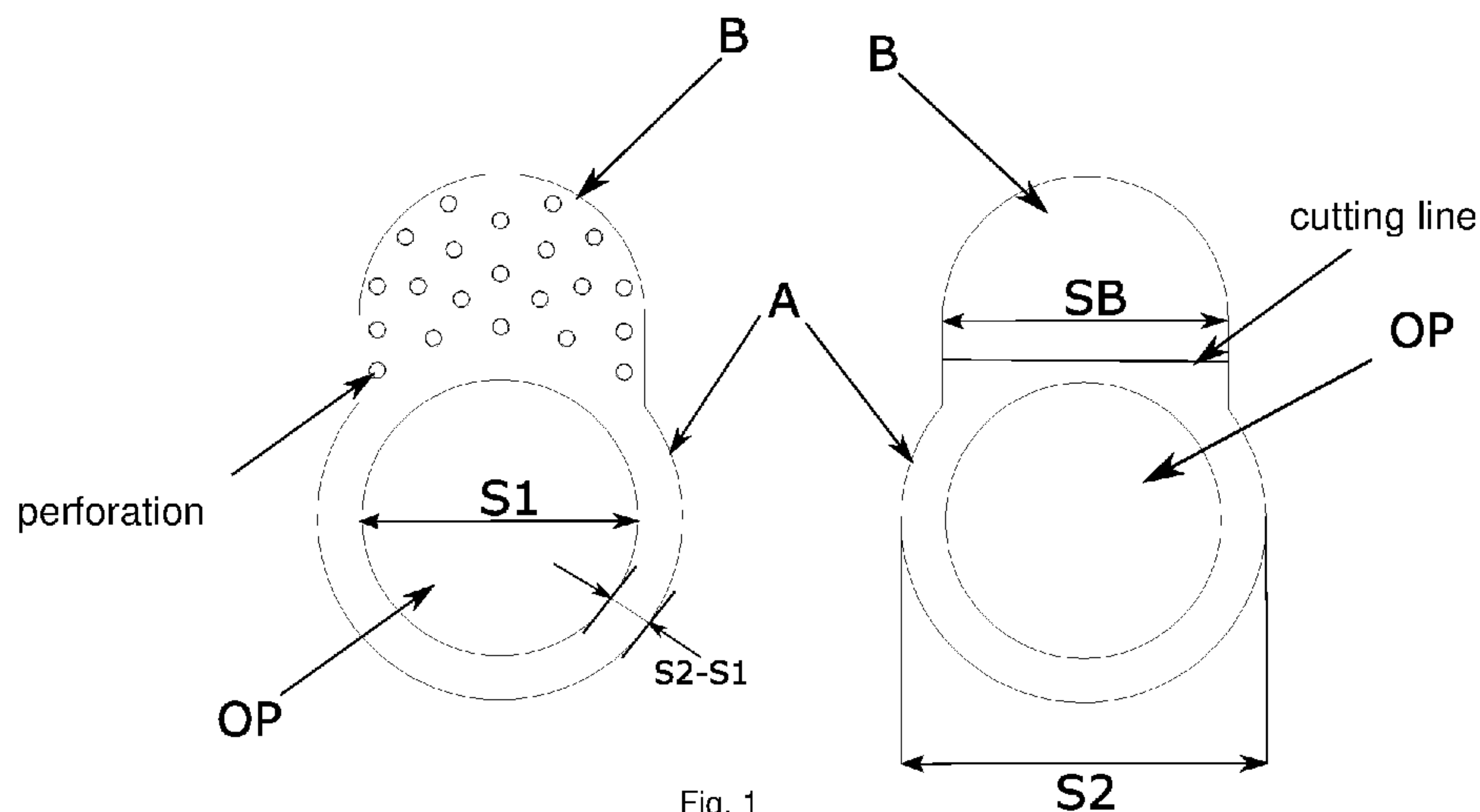
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(54) Title: TWO-COMPONENT PLASTER, THE METHOD OF ATTACHING THE ELECTROSTIMULATING APPLICATOR, AND THE USE OF THE TWO-COMPONENT PLASTER TO ATTACH THE ELECTROSTIMULATING APPLICATOR



(57) Abstract: The object of the present invention is a two-component plaster for attaching an electrostimulating applicator to a patient's body comprising an upper plaster and a lower plaster, wherein the upper plaster or the lower plaster comprises the first plaster portion joined to at least one second plaster portion, characterized in that the first portion (A) of the lower plaster (PD) or the upper plaster (PG) has the shape of a circle with a through-hole (OP) for receiving the electrostimulating applicator (AE), wherein the circle has an inner diameter (S1) corresponding to the width (SB) of the second plaster portion (B) and the outer diameter (S2) of the circle is greater than the width of the second plaster portion (SB), wherein the second portion (A) of the upper plaster (PG) or the lower plaster (PD) constitutes at least one extension of a semicircular shape, wherein the upper plaster (PG) or the lower plaster (PD) comprises a top layer from a flexible polymer (1), an adhesive layer (2) between the flexible polymer layer (1) and a paper layer (3) protecting the adhesive layer (2). The invention also relates to the method of attaching an electrostimulating applicator with a two-component plaster and the use of the two-component plaster for attaching the electrostimulating applicator.

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Two-component plaster, the method of attaching the electrostimulating applicator, and the use of the two-component plaster to attach the electrostimulating applicator

The present invention relates to a two-component medical plaster, a method for attaching an electrostimulating applicator with the two-component plaster, and the use of the two-component plaster for attaching the electrostimulating applicator to a patient's body. The invention is used in medical treatment.

Acupuncture, as a therapeutic practice, derives from Far East countries. It has been practiced for over 2,500 years. It is used in a number of diseases. In 2002, the World Health Organization (WHO) published a report titled "Acupuncture. Review and Analysis of Reports on Controlled Clinical Trials". It contains information on clinical trials performed with the use of acupuncture techniques, including, which is particularly important, diseases, symptoms or conditions for which it has been proven – through controlled trials – that the use of acupuncture produces the desired and effective therapeutic effect, such as: adverse reactions to radiotherapy and/or chemotherapy, allergic rhinitis (including hay fever), biliary colic, depression (including depressive neurosis and depression after stroke), dysentery, menstrual pain, epigastric pain (also acute in peptic ulcer disease, acute and chronic gastritis and gastrospasm), facial pain (including craniomandibular disorders), headache, hypertension, hypotension, knee pain, leucopenia, lower back pain, fetal malposition, morning sickness, nausea and vomiting, neck pain, pain in dentistry (including toothache and temporomandibular dysfunction), periarticular shoulder inflammation, post-operative pain, renal colic, rheumatoid arthritis, sciatica, dislocation, stroke, tennis elbow.

In 1997, the National Institutes of Health (NIH, National Institutes of Health) accredited acupuncture as an effective treatment for post-operative pain, toothache, nausea and vomiting (induced by chemotherapy or pregnancy) and promising to alleviate menstrual pain, tennis elbow and abdominal pain based on available clinical evidence (Acupuncture, 1998; Morey, 1998; Wootton, 1997). In 2016, NIH-NCCIH (National Center for Complementary and Integrative Health) updated the clinical use of acupuncture according to research data, confirming its effectiveness in treating pain, including back and neck pain, osteoarthritis and knee pain as well as headaches (*Wang, H., Yang, G., Wang, S., Zheng, X., Zhang, W., & Li, Y. (2018). The most commonly treated acupuncture indications in the united states: a cross-sectional study. The American journal of Chinese medicine, 46(07), 1387-1419; Med Clin (Barc). 2016 Sep 16;147(6):250-6. doi: 10.1016/j.medcli.2016.02.029. Medical indications for acupuncture: Systematic review).*

The healing effect in acupuncture is achieved by inserting special silver or gold needles at specific body points that exert stimulus action on the peripheral and central nervous system, stimulating nerve endings. Acupuncture has an analgesic and healing effect. It improves blood circulation in the capillaries. This method is used to treat a wide range of diseases and pain conditions, as well as inflammation, paralysis, and epilepsy. Electroacupuncture is a type of classical acupuncture in which strictly defined electrical stimuli support the stimulation of the body's characteristic points. Two types of electroacupuncture can be

distinguished here. The first one uses needles inserted into the body of a patient. The second in which electrostimulation is performed transcutaneously. The second method is more desirable due to the lack of interference with the patient's body; namely, no piercing of the skin is needed. Research shows that stimulation with electrical impulses in appropriate areas of the body is widely effectively used in the treatment of, among others, high blood pressure, obesity, infertility, or depression.

The Polish patent application P.431427 discloses a portable wireless electrostimulating applicator that can be worn on a patient's body. The stimulator is small and compact in size and has a single body structure.

The Chinese utility model application CN207445321U discloses a layered plaster for attaching tubular wires to a patient's body, e.g., catheters. One of the plaster's layers is made of flexible foam with a pressure-activated adhesive layer on one of the surfaces. In the central part of the layer, there is a Velcro for attaching the wires. The flexible foam can be made of porous polypropylene, polyethylene, polyurethane, or polylactic acid.

On the other hand, from the German patent application DE202015001021U1, a two-component plaster is known for fixing infusion tubes, drains, and catheters in adults, children, and infants. The plaster, made of polyurethane foam, is hypoallergenic and breathable and adapts to anatomical conditions.

The international patent application PCT WO2016113661A1 describes an electrostimulation system in which the electrostimulating applicator is in the form of a self-adhesive plaster. On the underside, it contains electrostimulating electrodes and an adhesive layer. The plaster can be attached only to the upper arm.

A two-component medical plaster is known from the registration of the community industrial design assigned with number 006254520. Each of the plaster's components has an identical shape. A single component is shaped like a strip, the first half of which has a rounded/semicircular end. Whereas the second half of the strip extends to form a circle with a diameter greater than the width of the first half.

Numerous examples of plasters are known in the prior art for use in medicine for attaching wires, catheters to a patient's body. Also known as an electrostimulating system in the form of a self-adhesive plaster. However, these solutions do not describe the possibility of attaching a small, compact, and single-body applicator for electrostimulation in places other than an arm or forearm, i.e., in places of varying mobility, innervation degree, or attachment surface, without significantly affecting the user's comfort when using the applicator. Moreover, the attachment of the applicator should ensure its fastening durability, i.e., high tear strength, so that during a therapeutic process, the applicator does not come unstuck spontaneously or accidentally or move from a selected point, which could affect the therapeutic process. Wherein, each plaster should be made of one type of material and allow easy attachment of the device to the skin and its possible repositioning. Unexpectedly, the above problems have been solved by the present invention.

The first subject of the present invention is a two-component plaster for attaching an electrostimulating applicator to the patient's body comprising an upper plaster and a lower plaster, the upper or the lower

plaster comprising the first plaster portion joined to at least one second plaster portion, characterized in that the first portion of the lower or upper plaster has a circular shape with a through-hole for receiving the electrostimulating applicator, the circle having an internal diameter corresponding to the width of the second plaster portion and the outer diameter of the circle being greater than the width of the second plaster portion, and the second portion of the upper or lower plaster constitutes at least one extension of a semicircular shape, wherein the upper plaster or the lower plaster comprises an upper plaster of a flexible polymer, an adhesive layer between the flexible polymer layer and the paper layer protecting the adhesive layer.

In a preferred embodiment of the invention, the upper or lower plaster comprises at least two extensions of a semicircular shape forming the second plaster portions.

In a further preferred embodiment of the invention, the extensions of a semicircular shape forming the second plaster portion are provided with a perforation.

In yet another preferred embodiment of the invention, the flexible polymer layer is a polyurethane layer.

In a further preferred embodiment of the invention, the adhesive layer is an acrylic adhesive layer.

In yet another preferred embodiment of the invention, the paper layer contained in the upper plaster or the lower plaster comprises two portions corresponding to the first portion of the upper plaster and to the second portion of the upper plaster and includes two portions corresponding to the first portion of the lower plaster and the second portion of the lower plaster, wherein the paper layer portions are detachably connected by a cutting line.

The second object of the invention is a method of attaching an electrostimulating applicator with a two-component plaster as defined in the first aspect of the invention, characterized in that it includes the following steps:

- a) the paper layer protecting the adhesive layer of the first portion of the lower plaster is peeled off from, the lower plaster containing a single or double extension,
- b) the lower plaster is put on the electrostimulating applicator through the through-hole,
- c) the electrostimulating applicator with the lower plaster is positioned on the attachment point on the skin,
- d) the paper layer protecting the adhesive layer of the other portion of the lower plaster is peeled off from, the lower plaster containing a single or double extension, and the electrostimulating applicator with the lower plaster is stuck on the skin,
- e) the paper layer protecting the adhesive layer of the first portion of the upper plaster is peeled off from the upper plaster containing a single or double extension,
- f) the upper plaster is put on the electrostimulating applicator through the through-hole,

- g) the paper layer protecting the adhesive layer of the second portion of the upper plaster is peeled off from the upper plaster containing a single or double extension and adhered to the attachment portion on the skin.

In a preferred embodiment of the invention, the two-component plaster comprises an upper plaster, and a lower plaster, the upper or lower plaster comprising the first plaster portion joined to at least one second plaster portion, the first portion of the lower plaster or the upper plaster has a circular shape with a through-hole for receiving the electrostimulating applicator, the circle having an inner diameter corresponding to the width of the second plaster portion, and the outer diameter of the circle being greater than the width of the second plaster portion, and the second portion of the upper plaster or the lower plaster constitutes at least one extension with a semicircular shape, wherein the upper plaster or the lower plaster comprises a top layer of a flexible polymer, an adhesive layer between the flexible polymer layer and the paper layer protecting the adhesive layer.

In a further preferred embodiment of the invention, the upper plaster or the lower plaster comprises at least two semicircular extensions forming the second portions of the upper plaster or the lower plaster.

In a further advantageous embodiment of the invention, the second portion of the plaster comprises a perforation.

In another preferred embodiment of the invention, the flexible polymer layer is a polyurethane layer.

In yet another preferred embodiment of the invention, the adhesive layer is an acrylic adhesive layer.

In yet another preferred embodiment of the invention, the paper layer contained in the upper plaster or the lower plaster comprises two portions corresponding to the first portion of the upper plaster and the second portion of the upper plaster and includes two portions corresponding to the first portion of the lower plaster and the second portion of the lower plaster, wherein the paper layer portions are detachably connected by a cutting line.

The third object of the invention is a use of the two-component plaster as defined in the first aspect of the invention and the method as defined in the second aspect of the invention for attaching an electrostimulating applicator on a patient's body.

During the research, two variants of the application of the device to the patient's skin were developed. The proposed variants result from the research nature of the project. The effective operation of the technology in the form of an electrostimulating applicator is conditioned by the necessity to locate the same on a patient's body, which means that the attachment's conditions are significantly different from each other. The proposed shapes and properties of the plaster's materials take into account this variability. The second determining factor is the length of time the device is held with the plasters on the patient's skin. For this factor, apart from the system of forces and stresses resulting from the shape, it is important to select an adhesive with an appropriate strength.

The tests have shown that the solution that best meets the requirements is a two-component plaster made of a flexible polymer, e.g., polyurethane. The curves of the plaster contribute to stable and long-term maintenance of the device on the skin. Moreover, the solution reduces the risk of adhesion to the user's clothing and detachment.

The two-component plaster design allows for several variants of systems that correspond to specific places on the patient's body. The perforation changes the material properties (polyurethane foam), resulting in increased flexibility. This significantly improves adhesion in places with high mobility as well as in places where the skin breaks down naturally. The perforation increases air access to the skin, improving comfort and enabling a long-term attachment. This solution is particularly important when applying the device in highly innervated (more sensitive) places, e.g., on the chest.

Due to the desired properties of the solution, which ensure high adhesive strength and the relatively small surface area, a double extension/wings shape in the form of rounded extensions were developed. Such a solution provides the largest effective adhesion surface. Doubling the plaster without perforation is intended for places on the user's body characterized by little mobility and large adhesion plane, e.g., the back.

An important factor is the speed and simplicity of the attaching process of the device (electrostimulating applicator). This consists of the identification of a correct place on a patient's body and adhesion of the device in a selected location. The method of plaster's design is of decisive importance here. What is important is the number of elements as well as the division and order of removing the paper protecting the adhesive side of the plaster. The solution, according to the invention, takes into account an intuitive sequence of movements and the limitation of activities necessary for the device's application, in particular the electrostimulating applicator.

The two-component plaster is extremely comfortable for a person placing the device on a patient's skin. The decision to use a given combination of plasters (lower and upper and the form – extensions number) can be made by a person at the time of assessing the observed skin fragment selected as the most beneficial in terms of the electrostimulation device action specificity. The choice, however, is reduced to the smallest possible number of elements giving a number of combinations. Therefore, it does not complicate the application operation and does not increase the costs associated with the production of plasters in shapes individually adapted to all places on which the electrostimulation device is to be used.

The possibilities of various combinations of plaster systems of a two-component plaster include the specificity of two extreme situations: when the gluing surface must be as small as possible (the plaster is then the most flexible because it consists of two elements with single and perforated extensions/wings) and when it is possible to use a large gluing surface (the plaster is less flexible because it does not have to be flexible and therefore in the element with double extensions/wings the perforation was abandoned, thus gaining more space for gluing). This means that the choice of a gluing surface is also the choice of flexibility degree. Therefore, the discussed solution is intuitive and does not require additional indications

for a user. It also eliminates the need to use two types of materials in productions with varying degrees of flexibility, depending on the application site.

When selecting the materials from which the plaster components are made, the economy of production and disposal was taken into account, as one type of material is preserved. It is of particular importance for disposable products.

Embodiments of the invention are illustrated in the drawing, in which Fig. 1 shows a plaster with one extension without perforation and with perforation, Fig. 2 a plaster with a double extension without perforation and with perforation, Fig. 3a-3b variants of folding the plasters with a different number of extensions with perforation and without perforation, where: a) folding two plasters (upper and lower) with double extensions, b) folding a plaster with a single extension (upper) and a plaster with a double extension (lower), c) folding three plasters (upper and lower) with single extensions, d) folding two plasters (upper and lower) with single extensions; Fig. 4 the method of placing the applicator in a plaster, Fig. 5a-5d examples of attaching the electrostimulating applicator in places of different mobility, where: a-b – places of moderate mobility, c-d – places of considerable mobility, Fig. 6 the method of placing the applicator in a two-component plaster.

Example 1

The two-component plaster, according to the invention, comprises an upper plaster PG and a lower plaster PD. The plaster, lower PD or upper PG, in its basic form, has the shape of a strip, one part A of which is extended to form a circle, the inner diameter S1 of which corresponds to the diameter of the electrostimulating applicator AE and defines a through-hole OP for receiving the applicator AE and the outer diameter S2 of the circle is correspondingly larger to ensure better adhesion of the plaster to the attachment site on the skin. Whereas, the second plaster portion B has a width SB corresponding to the applicator's diameter, and thus the inner diameter of the circle S1 forming the first plaster half A and has a round or semicircular end. Both plaster's portions A and B are connected to each other to form a continuous surface. The circle in the first portion A of the plaster formed by the difference in the width of the outer diameter S2 and the inner diameter defines a surface that serves to attach the electrostimulating applicator AE to the upper plaster PG or lower plaster PD. The design of the applicator AE includes a rim, which is used for sticking the plaster. The method of placing the plaster (PG or PD) on the applicator is shown in Fig. 8. The diagram of the plaster is shown in Fig. 1. In the cross section, the plaster has three layers: the top layer 1, which constitutes a flexible polymer, e.g., a polyurethane foam, the adhesive layer 2, and a paper layer 3, which protects the adhesive layer (Fig. 6). Conveniently, a non-toxic acrylic adhesive can be used as the adhesive in the adhesive layer 2. The paper layer 3, like the upper plaster PG or the lower plaster PD, has two elements (Fig. 7 – indications: 3APD, 3BPD, 3APG, 3APG). Each of its portions corresponds to the first portion A or the second portion B of each plaster (PG or PD) and their shapes. Such a division of the paper layer 3 is justified by the method of attaching the electrostimulating applicator to the skin, i.e., by the subsequent steps performed during this operation.

Each of the component plasters, both the lower plaster PD and the upper plaster PG, may contain a perforated portion B, which improves airflow at the gluing point and flexibility at high mobility points.

The two-component plaster shape and its component plasters (PG i PD) were developed on the basis of observations, attempts to attach the electrostimulating applicator AE. This allowed to define a shape, ensuring a maximum adhesion to the skin and attachment durability of the applicator AE.

Example 2

In this embodiment, the two-component plaster also comprises an upper plaster PG and a lower plaster PD, wherein PG or PD may contain an additional extension B in comparison with the plaster of Example 1. This is illustrated in Fig. 2. Moreover, the plaster of this embodiment has other features of the plaster from Example 1.

Example 3

The sequence of attaching the two-component plaster is designed to make the work of a person who has to perform this operation as easy as possible while finding the most appropriate place on a patient's skin in terms of skin resistance. Therefore, the following sequence of the related operations should be followed. This order should be followed regardless of the fact which combination of plasters will be used. The next layers are shown in Fig. 7. The method of placing the electrostimulating applicator AE in the two-component plaster itself is shown in Fig. 4.

- step 1: peeling off from the plaster (with single or double extension B), which will constitute the first lower layer PD, a protecting paper 3APD covering a portion of the plaster A. This operation is performed on the plaster with paper layer portion 3PD facing up. To facilitate quick recognition of the correct side of the plaster, the paper in the paper layer 3 may be printed with a multiplied logotype. Then, by bending the plaster along with the paper cutting (Fig. 1), the paper peels off intrinsically pointwise, which allows the adhesive portion A to be easily exposed;

- step 2: the next step is to put the plaster on the AE device (from the top). The lower plaster PD is this time turned with the sticky portion downwards, which causes it to stick to the rim of the AE device;

The electrostimulation device AE is now connected to the lower plaster PD. Whereas the plaster portion 3BPD remains protected by the paper layer 3. This is advantageous as the person now carries out the operation of selecting an application site at a point convenient for electrostimulation. To this end, a person places the AE device together with the attached first plaster portion A on the patient's skin. S/he makes a correction of a position by searching a point with an optimal skin resistance, i.e., ensuring the effective operation of the device. The requirement for repositioning during application is made possible by the fact that portion B, which is designed to hold the device on the patient's body, is still covered by the paper layer 3BPD. This prevents the plaster from sticking to the skin spontaneously during the operation described above. This excludes a situation in which plaster PD needs to be detached from random places, which would significantly weaken or even lose the gluing properties of the adhesive. The acrylic glue in the

adhesive layer 2, used in this case, is not intended for repositioning. This problem is solved by the described two-component plaster structure, dividing the protective layer of the plaster adhesive side into two fields.

- step 3: after identifying the stimulation point, the remainder part of the paper from portion B can be removed in one move, independently of whether it is plaster with a single or double extension B. This is done without the need to detach the AE device from the selected area of the patient's skin. It is extremely important because it ensures its precise application;

- step 4: the last step is to strengthen the attachment with the second component of the two-component plaster, i.e., with the upper plaster PG (variant with a single or double extension B) depending on the anatomical conditions of the selected point on the body. This procedure is analogous to the plaster constituting the first layer (lower plaster PD), i.e., exposing the first adhesive portion 3APG (attaching the plaster to the AE device) and then the second 3BPG (securing the whole to the skin).

Maintaining the division of the paper, constituting the paper layer 3, protecting the adhesive layer 2, into two portions is motivated by two factors. The first one is to prevent the person performing the application from accidentally catching the place covered with an adhesive with his fingers, which would significantly reduce the gluing properties of the adhesive. The second factor is that the construction of both plaster types (PD and PG) is the same. This allows them to be used interchangeably in various combinations, i.e., each of them may constitute the first layer or be used as the second layer. As a result, the selected combination (a combination of two plasters PD and PG), can also be more precisely adapted to the anatomy of the application site. The use of a round base of the device housing which in combination with round openings PO in the component plasters allows the possibility of a slight rotation of plasters PD and/or PG when applied on the AE device and adjusting the arrangement of first layer PD and second layer PG plasters with respect to each other.

The upper PG and lower PD plasters, according to Example 1 or 2, can be combined as desired in order to place the applicator on the patient's body. Examples of possible combinations of plasters according to the first and/or second example are shown in Fig. 3a-3d. A specific combination of the upper PG and lower PD plaster depends on the electrostimulating applicator AE attachment place.

The doubling of the perforated plaster provides great flexibility and adaptation to places where the attachment of the device is difficult, in particular places characterized by high mobility and a small gluing area, i.e., thenar or medial malleolus of foot. Due to the individual variability in the size, mobility, quality (structure) of the application area, in order to obtain the desired effect, attaching can be performed with any configuration of both types of the plaster. For example, for areas with limited mobility, such as the chest (under the collarbone) or the calf (under the knee), the preferred solution is a combination of a perforated (single) and a smooth (double) plaster. This is shown in Fig. 5a-5d. The described application combinations are possible, thanks to the two-component plaster structure.

Claims

1. A two-component plaster for attaching an electrostimulating applicator on a patient's body comprising an upper plaster and a lower plaster, wherein the upper plaster or the lower plaster comprises the first plaster portion joined to at least one second plaster portion, **characterized in that** the first portion (A) of the lower plaster (PD) or the upper plaster (PG) is of a circular shape with a through-hole (OP) for receiving the electrostimulating applicator (AE), wherein the circle has an inner diameter (S1) corresponding to the width (SB) of the second plaster portion (B) and the outer diameter (S2) of the circle is greater than the width of the second plaster portion (SB) and the second portion (A) of the upper plaster (PG) or the lower plaster (PD) constitutes at least one extension of a semicircular shape, wherein the upper plaster (PG) or the lower plaster (PD) comprises a top layer of a flexible polymer (1), an adhesive layer (2) between the flexible polymer layer (1) and a paper layer (3) protecting the adhesive layer (2).
2. The plaster, according to claim 1, **characterized in that** the upper plaster (PG) or the lower plaster (PD) comprises at least two extensions of a semicircular shape constituting second portions (B) of the upper plaster (PG) or the lower plaster (PD).
3. The plaster, according to claim 1 to 2, **characterized in that** the extensions of a semicircular shape forming the second portion (B) of the upper plaster (PG) or the lower plaster (PD) comprise a perforation.
4. The plaster, according to claim 1, **characterized in that** the flexible polymer layer (1) is a polyurethane layer.
5. The plaster, according to claim 1, **characterized in that** the adhesive layer (2) is an acrylic adhesive layer.
6. The plaster, according to claim 1 to 6, **characterized in that** the paper layer (3) included in the upper plaster (PG) or the lower plaster (PD) comprises two portions (3APG, 3BPG), corresponding to the first portion (A) of the upper plaster (PG) and the second portion (B) of the upper plaster (PG) and comprises two portions (3APG, 3BPG), corresponding to the first portion (A) of the lower plaster (PD) and the second portion (B) of the lower plaster (PD), wherein the portions of the paper layer (3) are detachably connected by a cutting line.
7. A method of attaching an electrostimulating applicator with a two-component plaster comprising the steps of:

- a) the paper layer (3APD) protecting the adhesive layer (2) of the first portion (A) of the lower plaster (PD) is peeled off from, the lower plaster (PD) containing a single or double extension (B),
 - b) the lower plaster (PD) is put on the electrostimulating applicator (AE) through the through-hole (OP),
 - c) the electrostimulating applicator (AE) with the applied lower plaster (PD) is positioned on the attachment point on the skin,
 - d) the paper layer (3BPD) protecting the adhesive layer (2) of the other portion of the lower plaster (PD) is peeled off from, the lower plaster (PD) containing a single or double extension (B) and the electrostimulating applicator (AE) with the lower plaster (PD) is stuck on the attachment point of the skin,
 - e) the paper layer (3APG) protecting the adhesive layer (2) of the first portion (A) of the upper plaster (PG) is peeled off from the upper plaster (PG) containing a single or double extension (B),
 - f) the upper plaster (PG) is put on the electrostimulating applicator (AE) through the through-hole (OP),
 - g) the paper layer (3BPG) protecting the adhesive layer (2) of the second portion (B) of the upper plaster (PG) is peeled off from the upper plaster (PG) containing a single or double extension (B) and adhered to the attachment point on the skin.
8. The method according to claim 7, **characterized in that** the two-component plaster comprises the upper plaster (PG) and the lower plaster (PD), wherein the upper plaster (PG) or the lower plaster (PD) comprises the first plaster portion (A) joined to at least one second plaster portion (B), wherein the first portion (A) of the lower plaster (PD) or the upper plaster (PG) has a shape of a circle with a through-hole (OP) for receiving the electrostimulating applicator (AE), wherein the circle has an inner diameter (S1) corresponding to the width (SB) of the second plaster portion (B) and an outer diameter (S2) of the circle is greater than the width of the second plaster portion (SB) and the second portion (A) of the upper plaster (PG) or the lower plaster (PD) constitutes at least one extension of a semicircular shape, wherein the upper plaster (PG) or the lower plaster (PD) comprises a top layer of a flexible polymer (1), an adhesive layer (2) between the flexible polymer layer (1) and a paper layer (3) protecting the adhesive layer (2).
9. The method, according to claim 8, **characterized in that** the upper plaster (PG) and the lower plaster (PD) comprises at least two extensions of a semicircular shape constituting the second portions (B) of the upper plaster (PG) or the lower plaster (PD).
10. The method, according to claim 7 to 9, **characterized in that** the extension of a semicircular shape, constituting the second portion (B) of the upper plaster (PG) or the lower plaster (PD), comprises a perforation.

11. The method, according to claim 8, **characterized in that** the flexible polymer layer (1) is a polyurethane layer.
12. The method, according to claim 8, **characterized in that** the adhesive layer (2) is an acrylic adhesive layer.
13. The method, according to claim 7 to 12, **characterized in that** the paper layer (3) of the upper plaster (PG) or the lower plaster (PD) comprises two portions (3APG, 3BPG), corresponding to the first portion (A) of the upper plaster (PG) and the second portion (B) of the upper plaster (PG) and comprises two portions (3APG, 3BPG), corresponding to the first portion (A) of the upper plaster (PG) and the second portion (B) of the lower plaster (PD), wherein the portions of the paper layer (3) are detachably connected by a cutting line.
14. A use of the two-component plaster, as defined in claim 1, and the method, as defined in claim 7, for electrostimulating applicator attachment on the patient's skin.

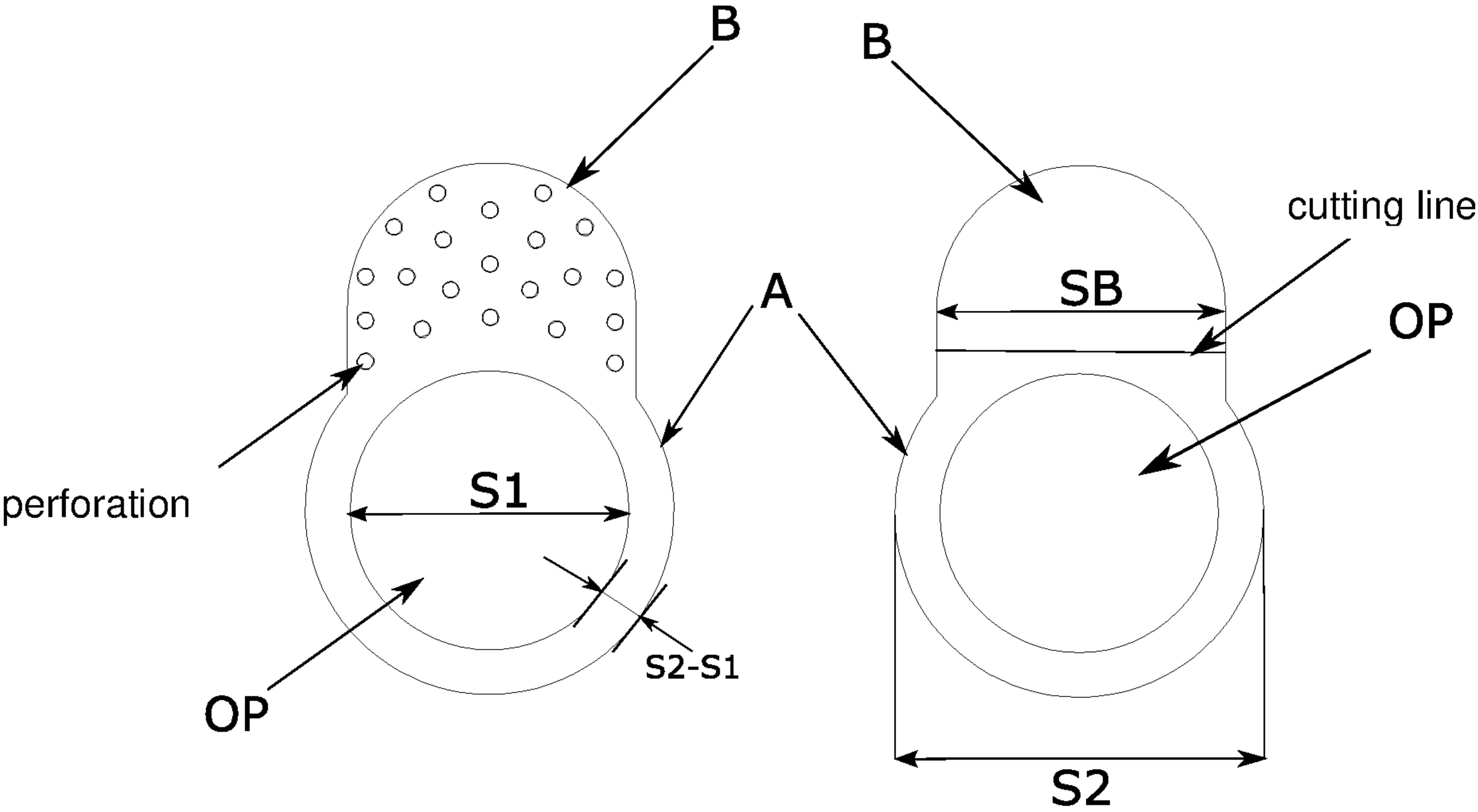


Fig. 1

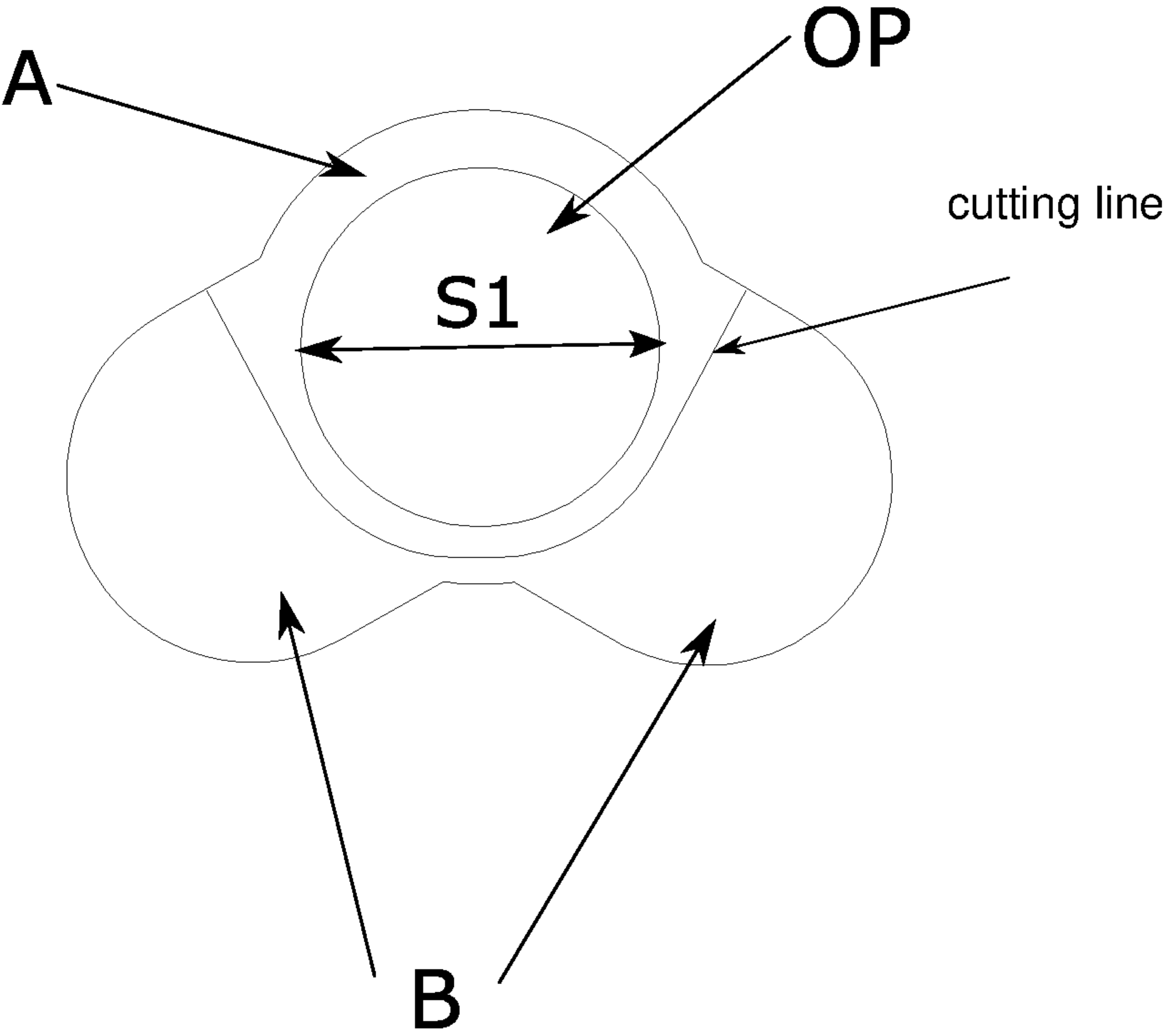


Fig. 2

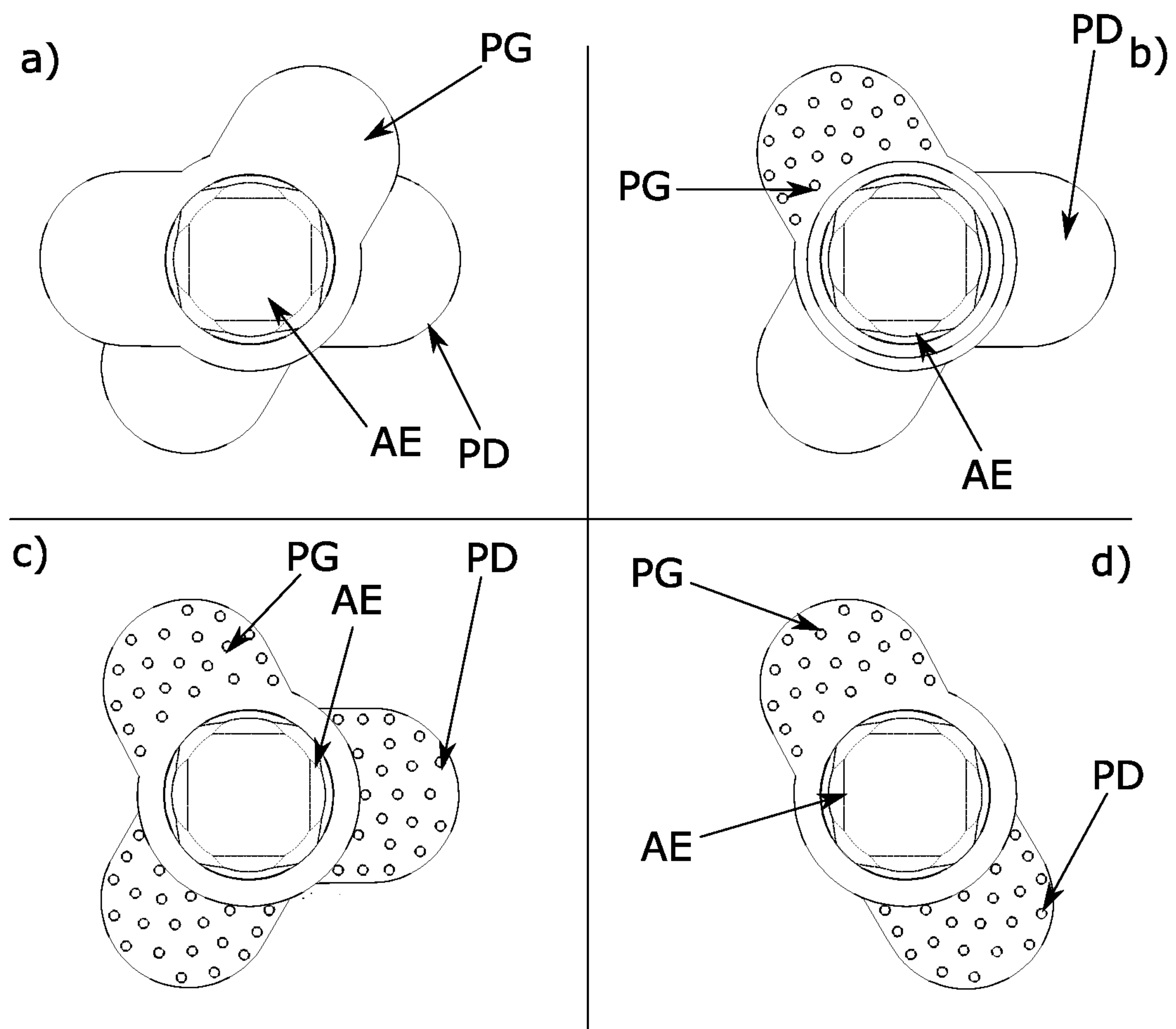


Fig. 3

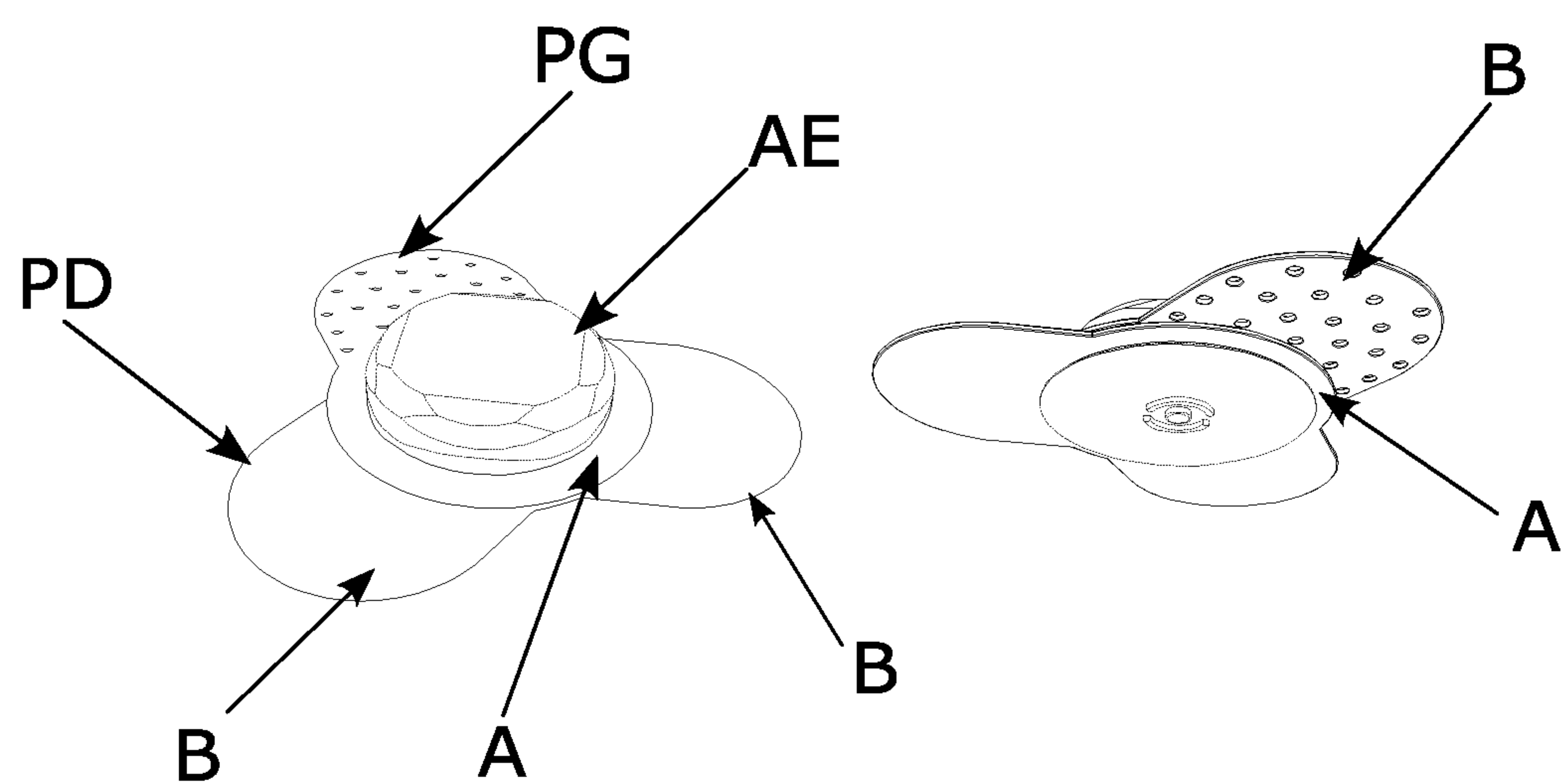


Fig. 4

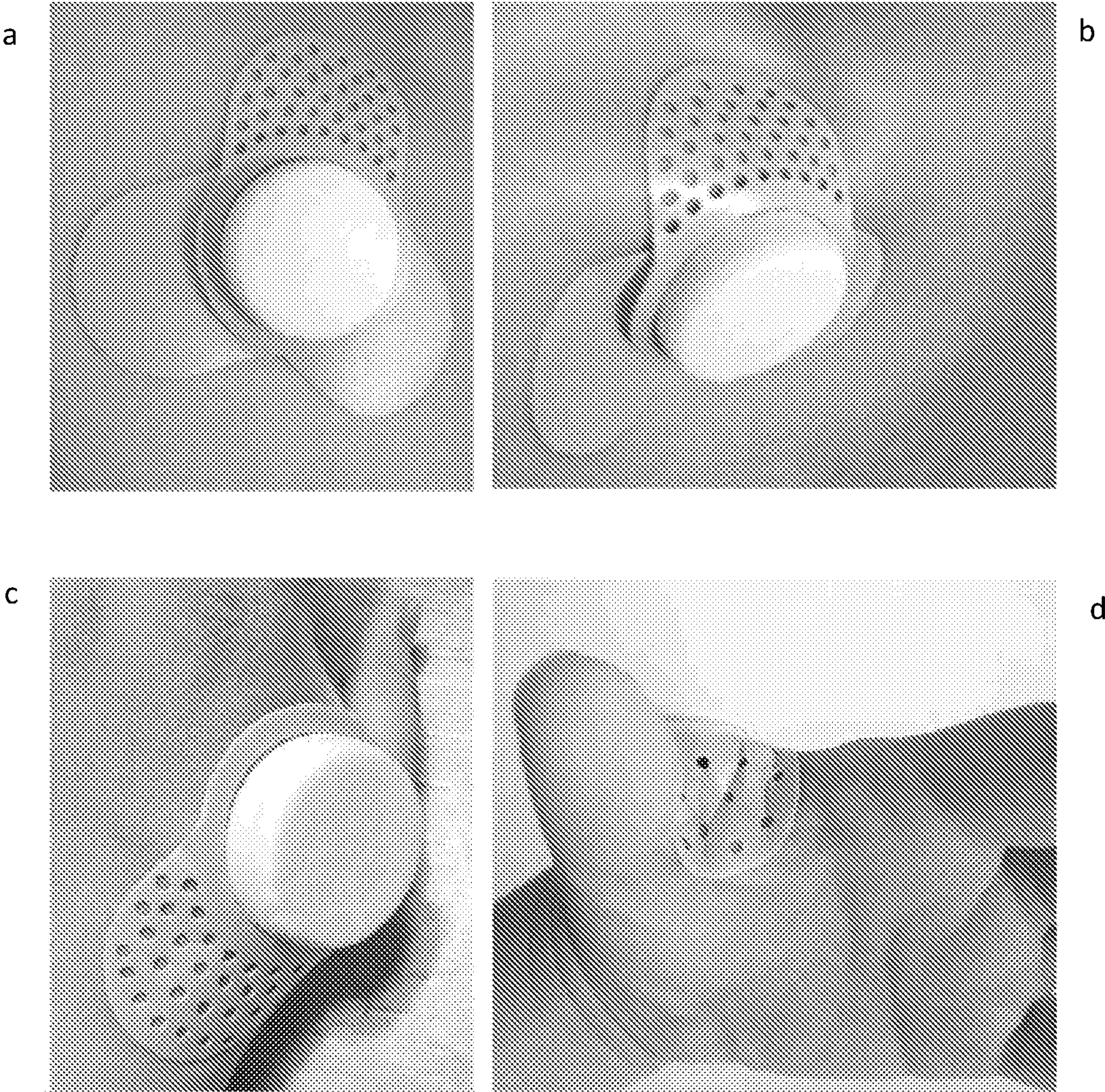


Fig. 5

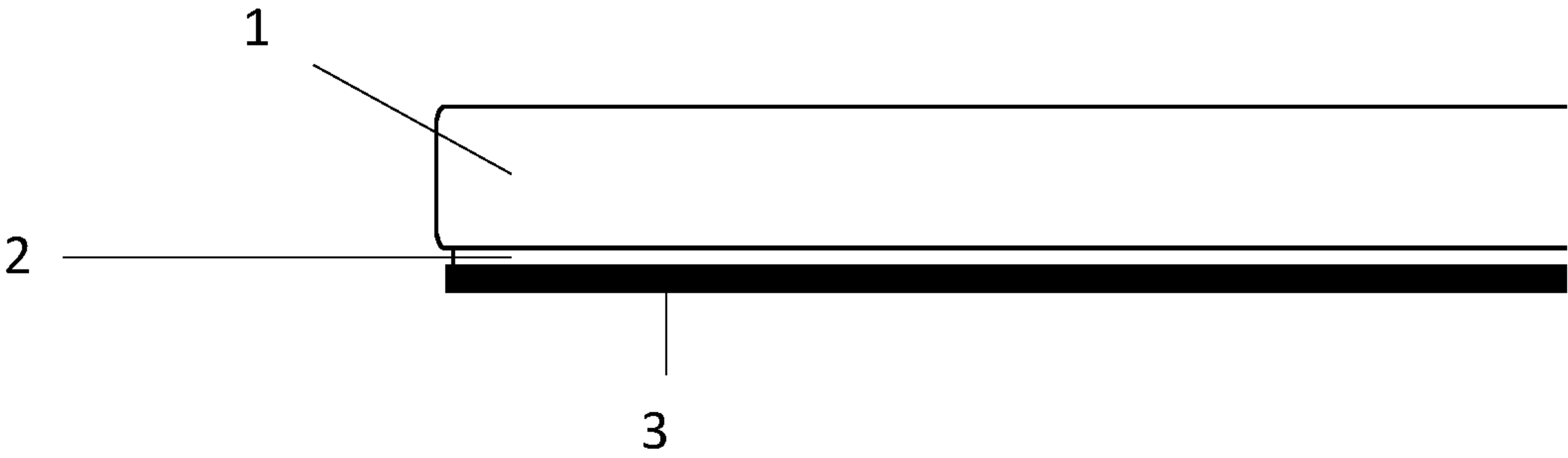


Fig. 6

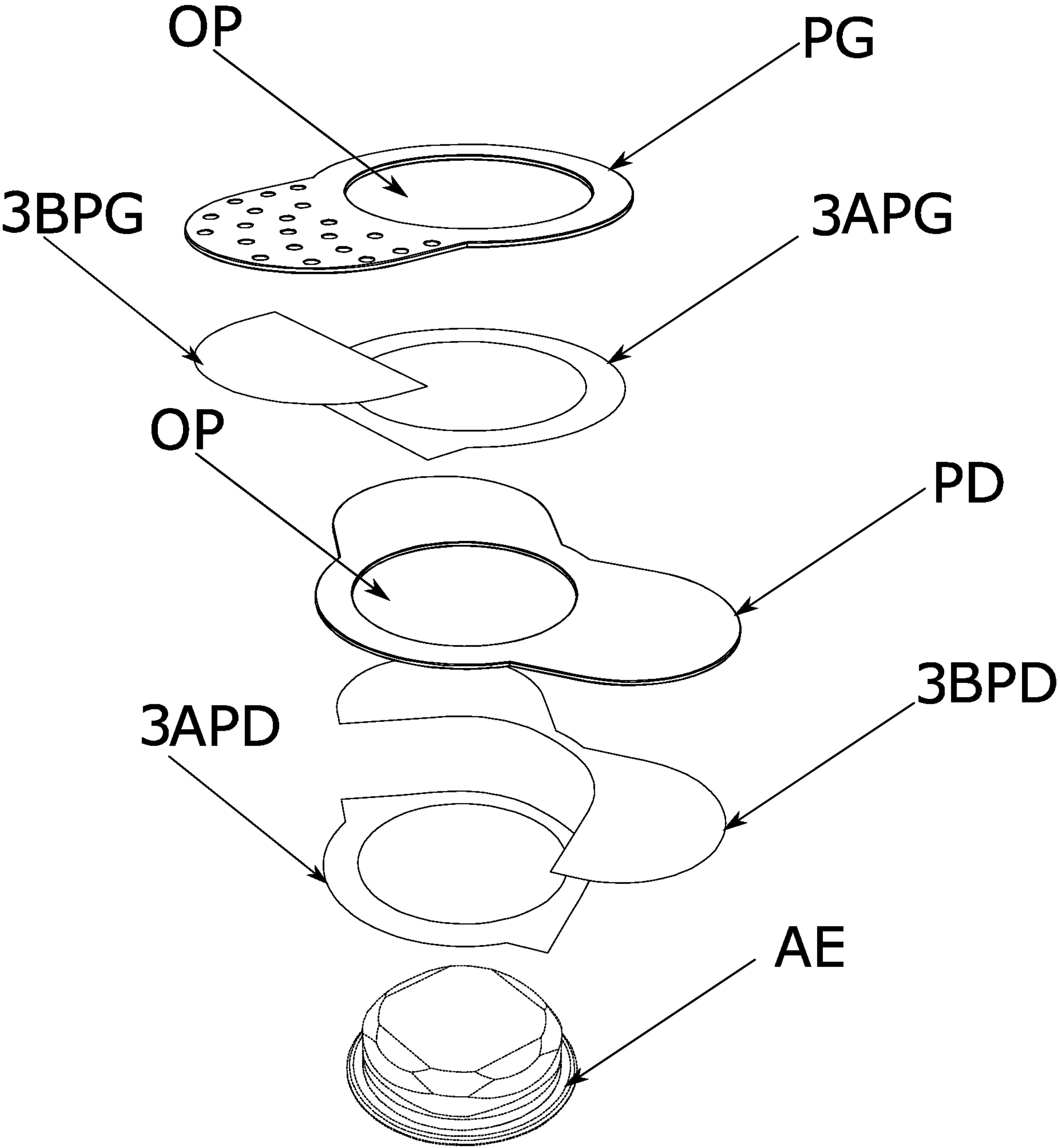


Fig. 7

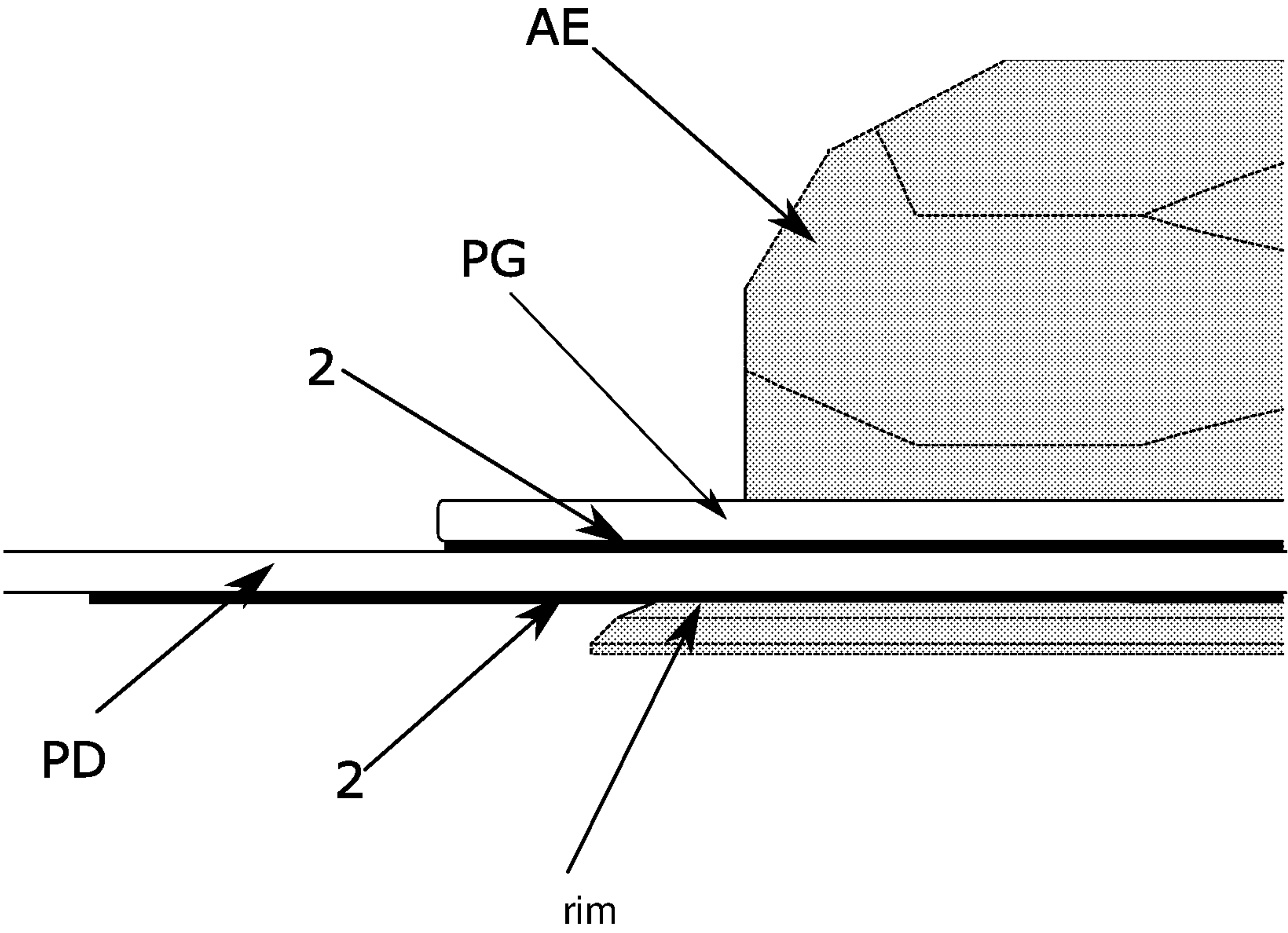


Fig. 8

INTERNATIONAL SEARCH REPORT

International application No.

PCT/PL2020/050086

A. CLASSIFICATION OF SUBJECT MATTER

A61F 13/02, A61N 1/36,

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61F , A61N

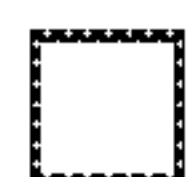
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPOQUENet (Epodoc, Wpi, X-Full), Polish Patent Office Databases

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US2006189912 A1(Gerromed Pflege Und Medizintec DE) 24-08-2006 the whole document	1-14
A	CN202933387U U (Ji Hualei CN) 15-05-2013 the whole document	1-14
A	JP2010042228 A (Deguchi Kazuki JP) 25-02-2010 the whole document	1-14
A	WO2007071642 A1 (Lorenz Biotech SPA, Toscano R, Zanella A) 28-06-2007 the whole document	1-14



Further documents are listed in the continuation of Box C.



See patent family annex.

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“&” document member of the same patent family

Date of the actual completion of the international search

19 Mar 2021 (19.03.2021)

Date of mailing of the international search report

22 Mar 2021 (22.03.2021)

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/PL2020/050086

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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----- CN202933387U	----- 2013-05-15	----- NONE	----- NONE
----- JP2010042228	----- 2010-02-25	----- NONE	----- NONE
----- WO2007071642	----- 2007-06-28	----- CA2634354 EP1976592 ITMO20050343 US2009227935	----- 2007-06-28 2008-10-08 2007-06-24 2009-09-10
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