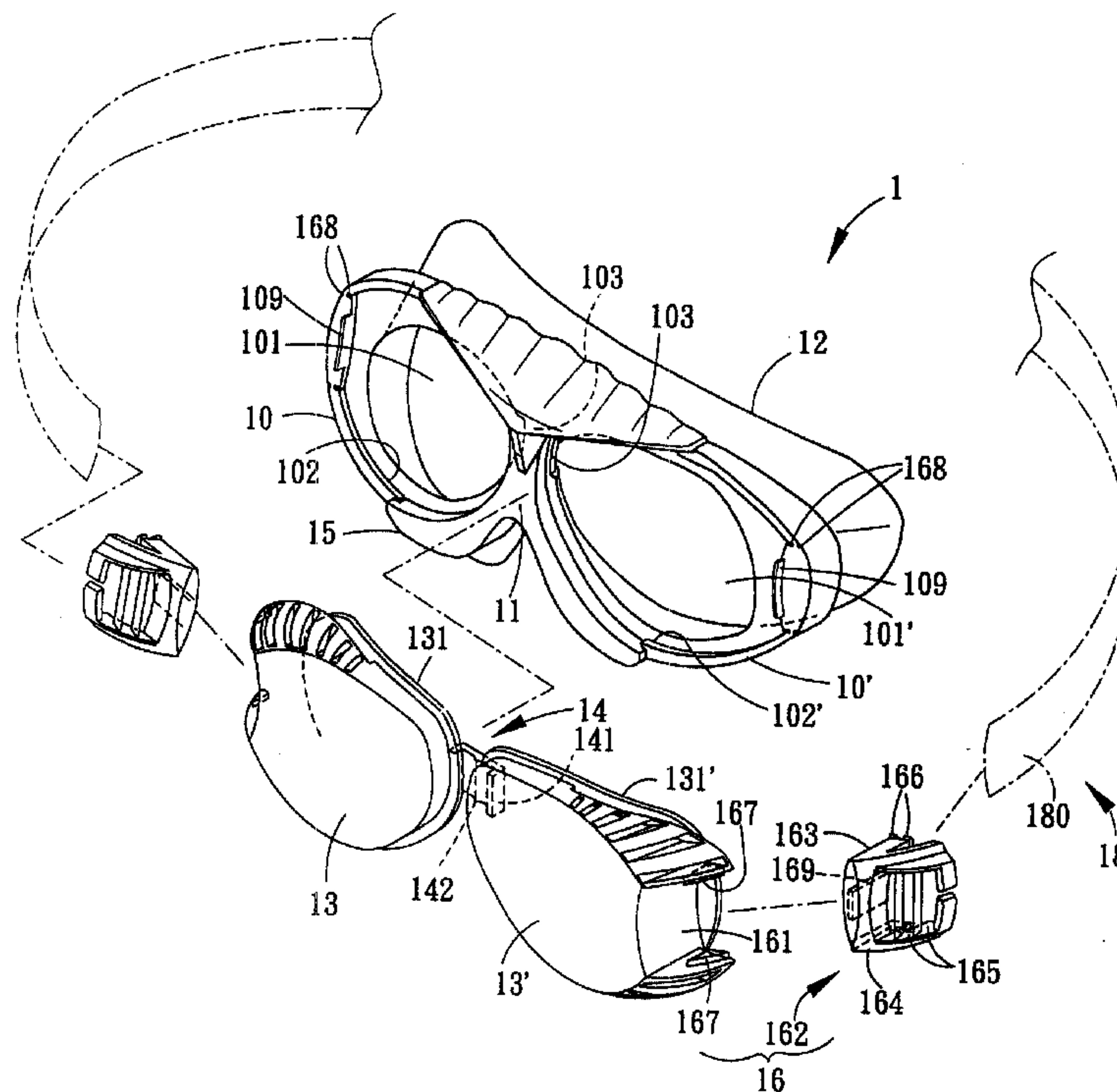




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(54) Titre : LUNETTES DE NATATION DE TYPE NOVATEUR
(54) Title: AN INNOVATED TYPE OF SWIMMING GOGGLES



(57) **Abrégé/Abstract:**

The invention relates to an innovated type of swimming goggles, including: a monobloc formation of lens frame main units, nose bridge and protective pad that are made of a flexible material, and two lenses made of a rigid material that are joined by a joint part, wherein in each of the frame openings of the two lens frame main units is as inserted groove, edges are on the rims of the two lenses, and, between the frame openings of the lens frame main units is at least one positioning groove, while on the joint part between the two lenses and opposite to the positioning groove is a stop unit, to enable firmer and more convenient assembling of the two lenses and the lens frame main units. Furthermore, the protective pad has a face mask with the function of single covering space to combine two lens frames as one space, and provide comfortable contact with the user's face.

ABSTRACT OF THE DISCLOSURE

The invention relates to an innovated type of swimming goggles, including: a monobloc formation of lens frame main units, nose bridge and protective pad that are made of a flexible material, and two lenses made of a rigid material that are joined by a joint part, wherein in each of the frame openings of the two lens frame main units is an inserted groove, edges are on the rims of the two lenses, and, between the frame openings of the lens frame main units is at least one positioning groove, while on the joint part between the two lenses and opposite to the positioning groove is a stop unit, to enable firmer and more convenient assembling of the two lenses and the lens frame main units. Furthermore, the protective pad has a face mask with the function of single covering space to combine two lens frames as one space, and provide comfortable contact with the user's face.

Title

An innovated type of swimming goggles

[Field of the Invention]

5 This invention relates to a type of swimming goggles, particularly the one that is innovated and formed in a monobloc including a main unit of lens frame, a nose bridge and a protective pad, wherein the protective pad serves to combine the two lenses in a same space of frame to provide wearing comfort, while the lenses are assembled firmly with the main unit of lens frame to prevent water seepage.

10

[Background of the invention]

As it is generally known, swimming goggles can be used in swimming pools, for snorkeling or scuba diving. For pool swimmers who need to regulate their breathing above water, swimming goggles must have a nose bridge to facilitate the breathing.

15 For snorkelers or scuba divers who spend much more time in deep water, swimming goggles are made to cover their eyes and nose, to avoid water pressure causing discomfort to the nose. Conventional swimming goggles for pool swimmers have two lens frames pressing on the muscles around the eyes, but the installation of a protective pad may press the muscles around the eyes, the user may feel discomfort,

20 or even water seeping inside due to muscle twitches caused by the discomfort.

[Objectives of the invention]

The major objective of this invention is to provide a type of swimming goggles exclusively for swimming pool swimmers, involving a protective pad that serves

25 simultaneously as a facemask to provide a comfortable face contact, meanwhile, the two lens frames are combined in one space to enable a unique way of assembling the lenses with the lens frames, and provide convenient and firm assembling effects.

[Characteristics of the invention]

The subject invention of innovated swimming goggles is characterized by the fact that: the lens frame main unit, the nose bridge and the protective pad are formed in a monobloc and made of a flexible material, and the said protective pad involves a
5 single covering space; the two lenses made of a rigid material are joined by a joint part, wherein in the frame openings of the lens frame main units are inserted grooves, the edges are on the rim of the two lenses, so that the two lenses can be assembled and fitted into the lens frame main unit.

Another characteristic of the invention of innovated swimming goggles is that,
10 between the frame openings of the lens frame main units is at least one positioning groove, on the joint part between the two lenses and opposite to the positioning groove is a stop unit, so designed that the two lenses and the lens frame main units can be assembled more firmly.

A further characteristic of the invention is that, on the outside of the longer axis
15 of the two lenses is a fixing device used to connect the headband, so that the force when the swimming goggles are worn is resting on the two rigid lenses, to ensure no risk of water seeping through.

Yet another characteristic of the invention lies in that, on the inserted grooves on two sides of the two lens frame main units and near the nose bridge is a reinforcing
20 unit to reinforce the strength of its neighborhood area.

[Brief description of drawings]

The invention can be fully understood by reading the following detailed description of the preferred embodiments, with reference made to the accompanying
25 drawings, wherein:

FIG. 1 is a perspective-disassembled view of this invention of innovated swimming goggles.

FIG. 1A is a perspective view of a snap piece in the fixing device of this

invention of swimming goggles.

FIG. 2 is a perspective-assembled view of the invention of swimming goggles.

FIG. 3 is a close-up of a part of the lens frame unit in this invention of swimming goggles.

5 FIG. 4 is a section view of the part marked A-A in FIG. 2.

FIGs. 5, 6, 7 and 8 illustrate how this invention of swimming goggles is assembled.

FIG. 9 is a close-up of the fixing device when it is assembled onto the lens frame unit of this invention of swimming goggles.

10 FIG. 10 illustrates how this invention of swimming goggles are worn on a user's face.

[Preferred embodiment]

Referring to FIG. 1, this invention of swimming goggles 1 includes the
 15 following: a main unit formed in a monobloc of two lens frames 10 and 10', a nose
 bridge 11 and a protective pad that are made of a flexible material, two lenses 13, 13'
 (to be described later) that are formed in a monobloc and made of a rigid material, a
 joint part 14 joining the two lens frames 13, 13', and a headband device 18, the said
 lens frame units 10, 10' have frame openings 101, 101' respectively, and inside the
 20 frame openings 101, 101' grooves are inserted 102, 102' in order to position the two
 lenses 13, 13'. Referring simultaneously to FIG. 3, at the frame openings 101, 101'
 and near the nose bridge 11 is a first positioning groove 103, the said first positioning
 groove 103 has a recessed dent formed on the frame openings 101, 101', then
 between the left and right positioning grooves 103 is a second positioning groove
 25 104 in the shape of a V, where the first and second positioning grooves 103, 104 can
 be assembled with the joint part 14 in connection with two lenses 13, 13' to solidify
 the assembly of the whole unit (to be described later). On the frame openings 101,
 101' and near the nose bridge 11 is installed a reinforcing unit 15 to intensify the

strength of the frame openings 101, 101'. The protective pad 12 extends outwardly from the edge of the frame openings 101, 101' of the main lens frame units 10, 10', creating a height difference from the lens frame main unit and an excellent flexibility, and covering the upper and lower edges of the user's eyes (as shown in FIG. 10) to
5 provide comfortable face contact.

On the rims of the two lenses 13, 13' are edges 131, 131' that can go into the inserted grooves 102, 102', and on the joint part 14 between the two lenses 13, 13' is a first stop part 141 that can be fitted on the first positioning groove 103 on the frame openings 101, 101'. On the joint part 14 is a V-shaped stop unit 142 that can be fitted
10 on the V-shaped second positioning groove 104. As shown in FIG. 4, it can be understood clearly that the V-shaped stop unit 142 after being assembled, is securely fitted on the V-shaped second positioning groove 104. As shown clearly in FIG. 2, the first stop part 141 is fitted on the dent-shaped first positioning groove 103. Looking back to FIG. 1, on the outside edge of the longer shaft of the two lenses 13,
15 13' is a fixing device 16, the said fixing device 16 includes: a snap groove 161 on the lenses 13, 13' and a joining plate 162 that can be fitted on the snap groove 161; on the two sides of the joining plate 162 are a combining arm 163 and a leading surface 164, the combining arm 163 has two opposite snap units 166, the said snap units 166 are protruded from the outside of the combining arm 163, so positioned that it can rest on
20 the rear of the bottom of the guide surface 167 on the two sides of the snap groove 161 (not shown in drawing). On the leading surface 164 are several through holes 165 to accommodate the insertion of a headband 180 in the headband device 18. Opposite to the lens frame main unit 10, 10' of the combining unit 166 are snap holes 168, to accommodate the combining unit 166 after the combining arm 163 is
25 assembled, and achieve the function of accommodation and positioning (refer to FIG. 5). Furthermore, as shown in FIG. 1A, between the two combining arms 163 is a stop plate 169 that can push each other against the stop plate 109 on the lens frame main units 10, 10', as shown in FIG. 9, to prevent loosening of the inserted groove 102

(102') on the lens frame main unit 10, 10'; in other words, the stop plate 169 will press against the stop plate 109 after the joining plate 162 is fixed onto the snap groove 161; as a result, the inserted groove 102 (102') will not slip outwardly and escape. Furthermore, the joining plate 162 presses against the rear of the end of the
5 guide surface 167 by means of a snap unit 166 on the combining arm 163 on both sides, meanwhile, the snap unit 166 and the snap holes 168 are fastened in position, to prevent the joining plate 162 from escaping. Please refer to FIGs. 5, 6, 7 and 8, which illustrate how the invention is assembled. To avoid sophistication, the drawings show only the lenses 13, 13' and the lens frame main unit formed in a
10 monobloc 10 and 10', the nose bridge 11 and the protective pad 12, as shown in FIG. 5; to assemble, a section of the twin lenses 13, 13' is pulled out from one side of the protective pad 12, then, as indicated by the arrow, the inserted groove 102 on the lens frame main unit 10 is inserted into the edge 131 of the lens 13 (shown in FIG. 6). Then, the lens frame 10' on the other side is pulled back as in FIG. 7, so that the lens
15 13' on the other side is located at the front, as indicated by the arrow in FIGs. 7 and 8, the inserted groove 102' is fitted on the edge 131', then the twin lenses 13, 13' can be assembled as one unit with the lens frame main unit formed in a monobloc 10 and 10', the nose bridge 11 and the protective pad 12. One point worth mentioning is that, in addition to the engagement between the aforementioned inserted grooves 102,
20 102' with the edges 131, 131', by way of further connection between the first stop part 141 on the joining part 14 and the dent-shaped first positioning groove 103 of the frame openings 101, 101', and the connection between the V-shaped stop unit 142 and the V-shaped second positioning groove 104 on the joint part 14 pushing against each other, as shown in FIGs. 2 and 4, the twin lenses 13, 13' and the lens
25 frame main unit formed in monobloc 10 and 10', the nose bridge 11 and the protective pad 12 can be assembled more firmly as one unit. Thus, the aforementioned construction of the invention of swimming goggles will not only provide the user with better comfort and freedom from water leakage, it also

provides more convenience and firm assembly.

The invention has been described using exemplary preferred embodiments. However, it is to be understood that the scope of the invention is not limited to the disclosed embodiments. On the contrary, it is intended to cover various
 5 modifications and similar arrangements. The scope of the claims, therefore, should be accorded to the broadest interpretations so as to encompass all such modifications and similar arrangements.

[Brief description of numerals]

10	1	swimming goggles	10, 10'	lens frame main unit
	11	nose bridge	12	protective pad
	18	headband device	lenses	13, 13'
	101, 101'	frame opening	102, 102'	inserted groove
	131, 131'	edge	103	first positioning groove
15	104	second positioning groove	109	stop plate
	14	joint part	141	first stop unit
	142	second stop unit	15	reinforcing unit
	16	combining device	161	snap groove
	162	joining plate	163	combining arm
20	164	leading surface	165	through hole
	166	snap unit	167	guide surface
	168	snap holes	169	stop plate
	18	headband device	180	headband

CLAIMS

What is claimed is:

1. An innovated type of swimming goggles, including:

two lenses, made of a rigid material, connected to a joining part as one unit,
5 edges on the rim of the two lenses;

two lens frame main units, a nose bridge and a protective pad, formed in
monobloc and made of a flexible material, wherein on the two lens frame main
units are frame openings to accommodate lenses, each frame opening having an
inserted groove to accommodate the edges of lens, and the said protective pad
10 having a single covering space;

a headband device, including at least a headband connected to the outside edge
of the said two lenses; the edges of the two lenses are thus fitted in the inserted
grooves in the frame openings of the lens frame main unit, to fasten the two lenses
onto the two lens frame main units.

15 2. The innovated swimming goggles as cited in Claim 1, wherein, the said joint part
is used to join the two lenses as one unit formed in monobloc.

3. The innovated swimming goggles as cited in Claim 2, wherein, the said protective
pad is extended outwardly from the rim of the frame opening of the lens frame
main unit, creating a height difference from the lens frame main unit, its area
20 covering the upper edge of brow and the lower edge of the eye pit, to provide
comfortable contact with the user's face.

4. The innovated swimming goggles as cited in Claim 3, wherein, in the frame of the
lens frame main unit and near the nose bridge is a dent-shaped first positioning
groove, on the joint part of the two lenses opposing the first positioning groove is
25 a first stop unit, the said first stop unit can be engaged to the dent-shaped first
positioning groove after being assembled.

5. The innovated swimming goggles as cited in Claim 4, wherein, the said lens frame
main unit and on a nose bridge between lens frame openings on one side of the

protective pad is a V-shaped second positioning groove, on the joint part of the two lenses and opposite the said second positioning groove is a V-shaped stop unit.

- 5 6. The innovated swimming goggles as cited in Claim 5, wherein, on the outside edge of the longer axis of the two lenses is a fixing device for connecting a headband, the said fixing device includes: snap grooves on the lenses and joining plates that can be inserted in the said snap grooves, the said joining plates having combining arms and leading surfaces, wherein the said combining arm can be joined with the snap grooves, and on the leading surfaces are several through holes
10 serving to accommodate the headband and fix it in position.
7. The innovated swimming goggles as cited in Claim 6, wherein, in the insert grooves on two sides of the said two lens frame main units and near the nose bridge is the protrusion of a reinforcing unit extending from the lens frame main unit formed in a monobloc, to reinforce the strength of the frame opening.
- 15 8. The innovated swimming goggles as cited in Claim 7, wherein, on the outside of the end of the combining arm of the said fixing device is a snap unit, and opposite to the said snap unit on the lens frame main unit is a joining hole, which serves to imbed the said snap unit in the said joining hole, to achieve the accommodation and positioning effects.
- 20 9. The innovated swimming goggles as cited in Claim 8, wherein, between the two combining arms of the said fixing device is a stop plate, and on the inside of the snap groove of the lens frame main unit, opposite the said stop plate, is a blocking plate to prevent the inserted groove on the lens frame main unit from escaping, in other words, by fixing the joining plate on the snap groove, the said stop plate will
25 press on the said inserted groove, to achieve the purpose of pressing on the inserted groove of the lens frame main unit.
10. An innovated type of swimming goggles, including:
two lenses, made of rigid material, joined together by a joint part by a snapping

device, and edges are on the rims of the two lenses;

two lens frame main units, a nose bridge and a protective pad, formed in a monobloc and made of a flexible material, wherein, the two lens frame main units have frame openings to accommodate lenses, each frame opening having an
5 inserted groove, and the said protective pad being a single covering space;

a headband device, including at least a headband connected to the outside edges of the aforementioned two lenses; the edges of two lenses are inserted in the inserted grooves of the frame openings of the lens frame main unit, to fix the two lenses onto the two lens frame main units.

10 11. The innovated swimming goggles, as cited in Claim 10, wherein, the said protective pad extends outwardly from the rim of the frame opening of the lens frame main unit, its area covering the upper edges of eyebrows and the lower edges of eye pits, to provide comfortable contact with the user's face.

12. The innovated swimming goggles, as cited in Claim 11, wherein, in the inserted
15 grooves on the two sides of the said two lens frame main unit and near the nose bridge is a reinforcing unit that protrudes from the lens frame main unit, to reinforce the strength of the frame opening.

13. The innovated swimming goggles, as cited in Claim 12, wherein, on the outside
20 edge of the longer axis of the said two lenses is a fixing device to connect the headband, the said fixing device including: a snap groove on the lens and a joining plate that can be inserted into the said snap groove, the said joining plate having a combining arm and a leading surface, wherein the said combining arm can be joined with the snap groove, while on the leading surface are several through holes to facilitate the insertion of the headband in position.

25 14. The innovated swimming goggles, as cited in Claim 13, wherein, in the inserted grooves on the two sides of the said two lens frame main unit and near the nose bridge is a reinforcing unit that protrudes from the lens frame main unit, to reinforce the strength of the frame opening.

15. The innovated swimming goggles as cited in Claim 14, wherein, on the outside
of the end of the combining arm of the said fixing device is a snap unit, and
opposite to the said snap unit on the lens frame main unit is a joining hole, used to
imbed the said snap unit in the said joining hole, to achieve the accommodation
5 and positioning effects.

16. The innovated swimming goggles as cited in Claim 15, wherein, between the two
combining arms of the said fixing device is a stop plate, and on the inside of the
snap groove of the lens frame main unit, opposite to the said stop plate, is a
blocking plate to prevent the inserted groove on the lens frame main unit from
10 escaping, in other words, by fixing the joining plate on the snap groove, the said
stop plate will press on the said inserted groove, to achieve the purpose of pressing
on the inserted groove of the lens frame main unit.

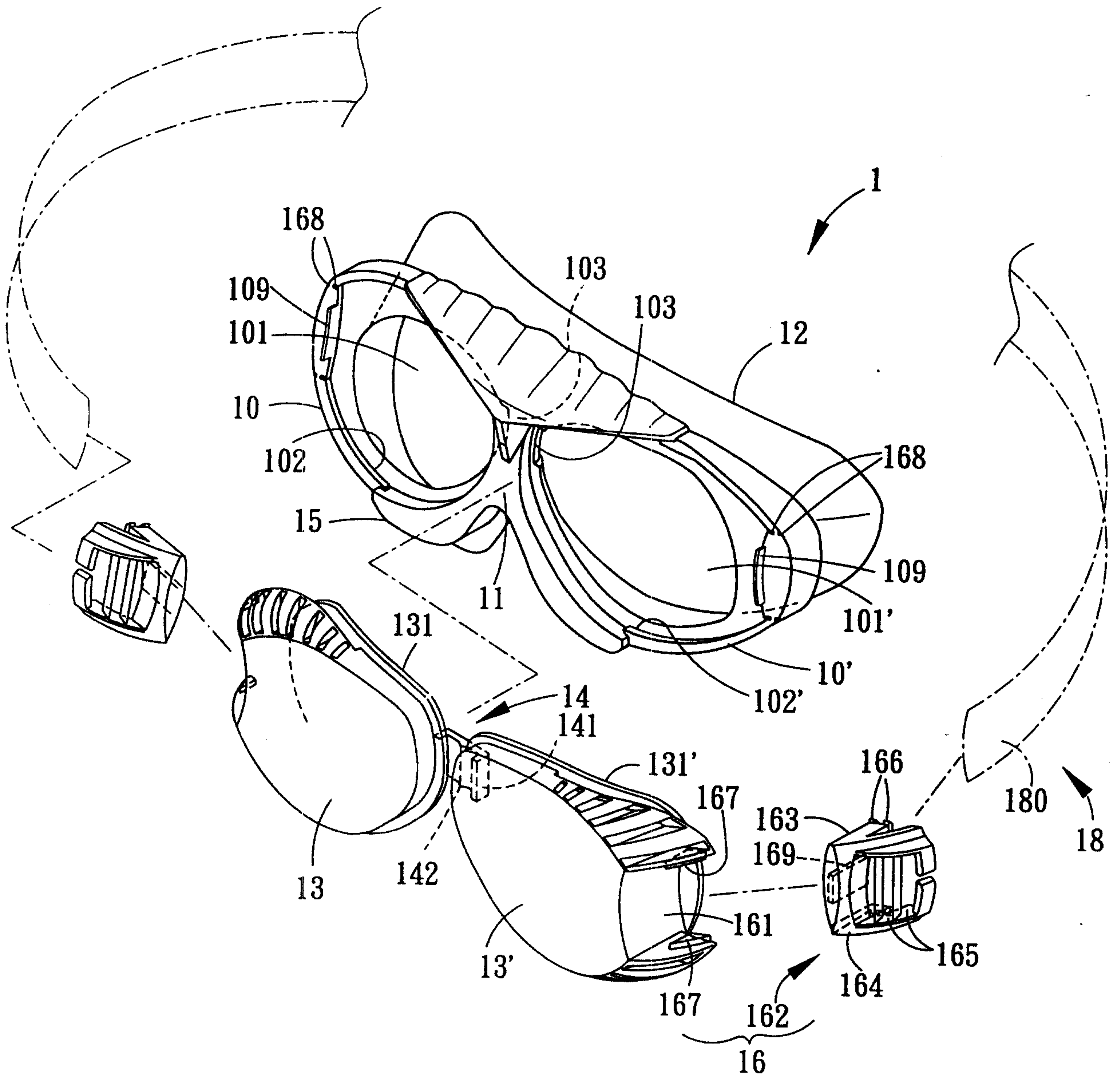


FIG.1

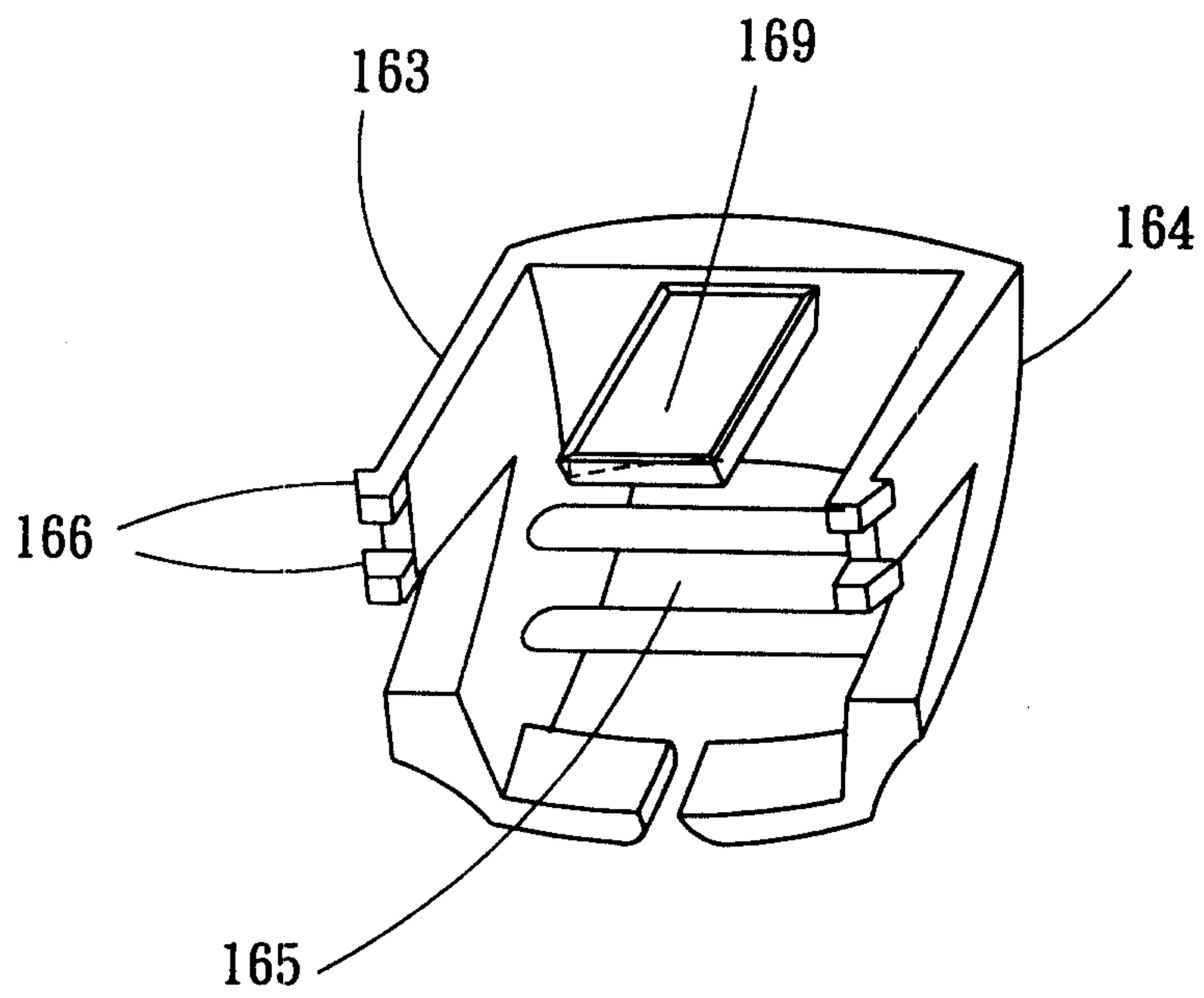


FIG.1A

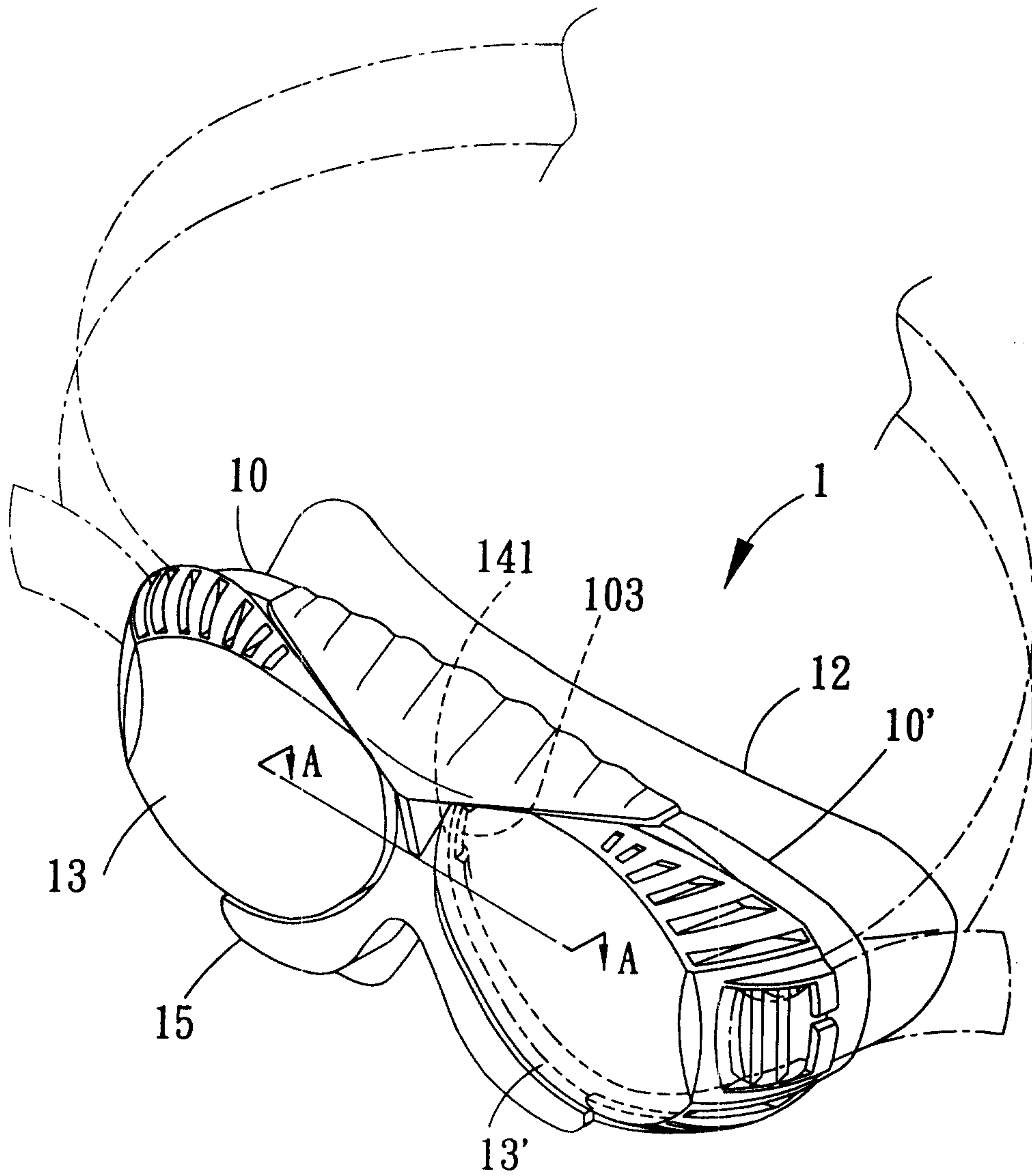


FIG.2

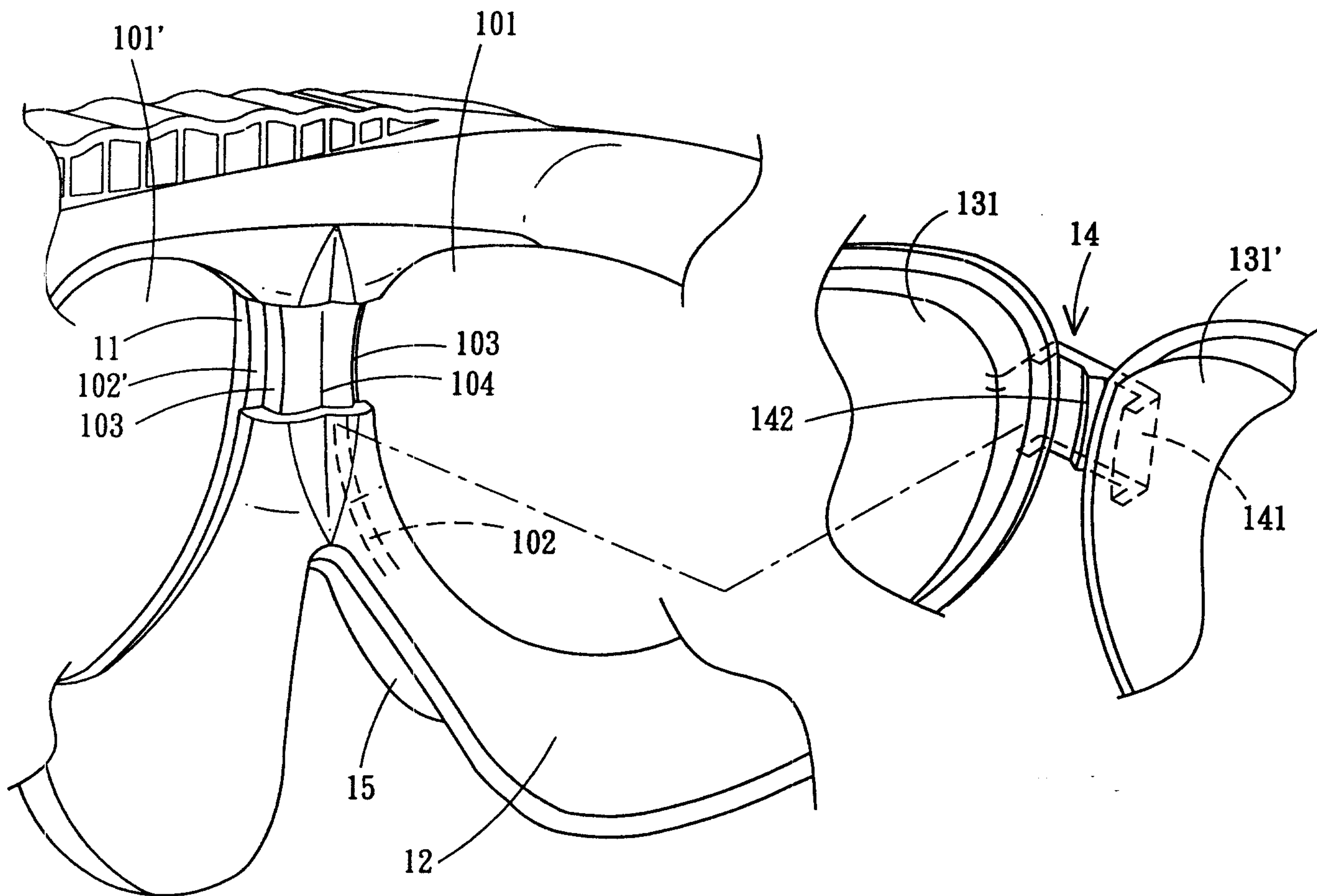


FIG.3

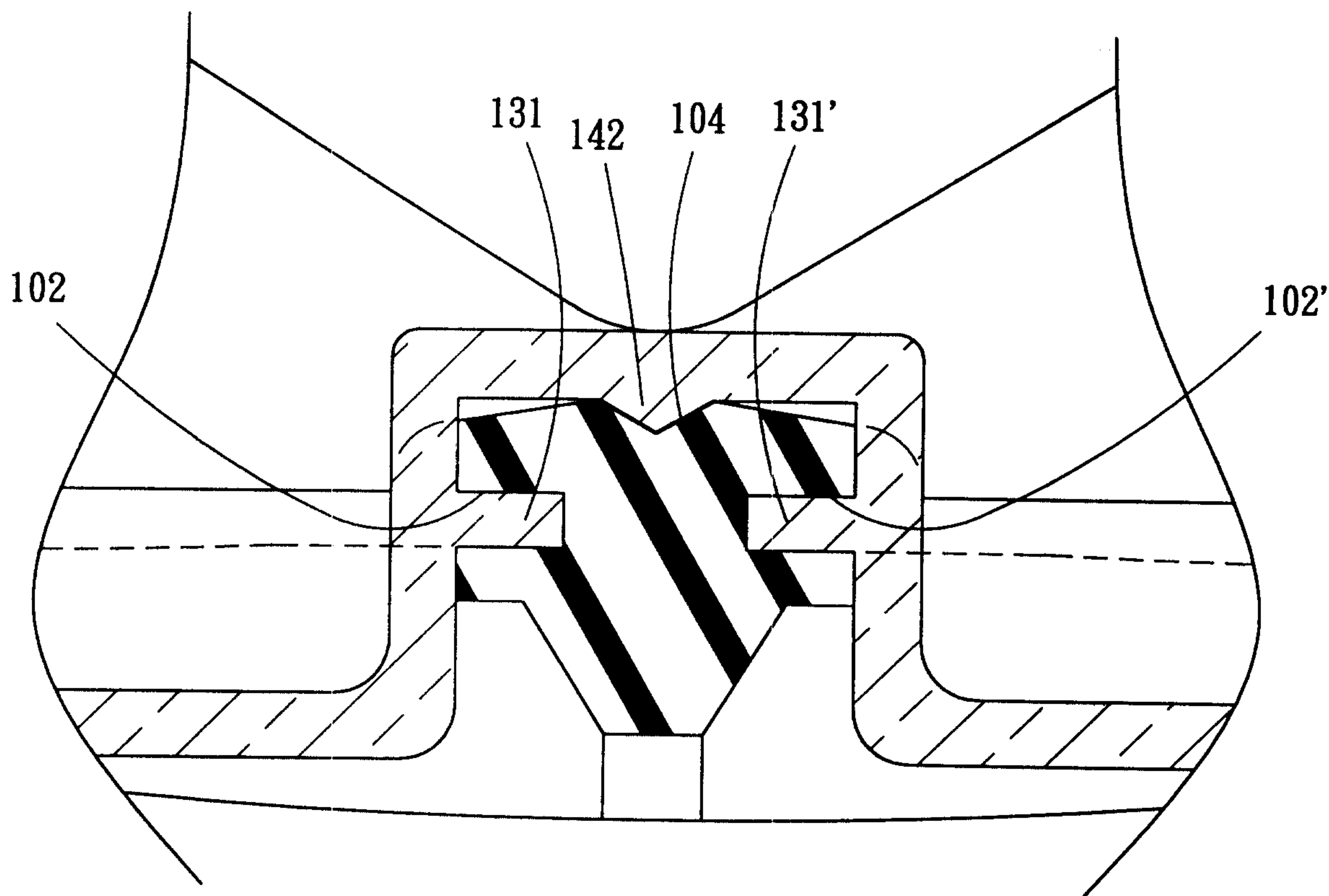


FIG.4 (A-A)

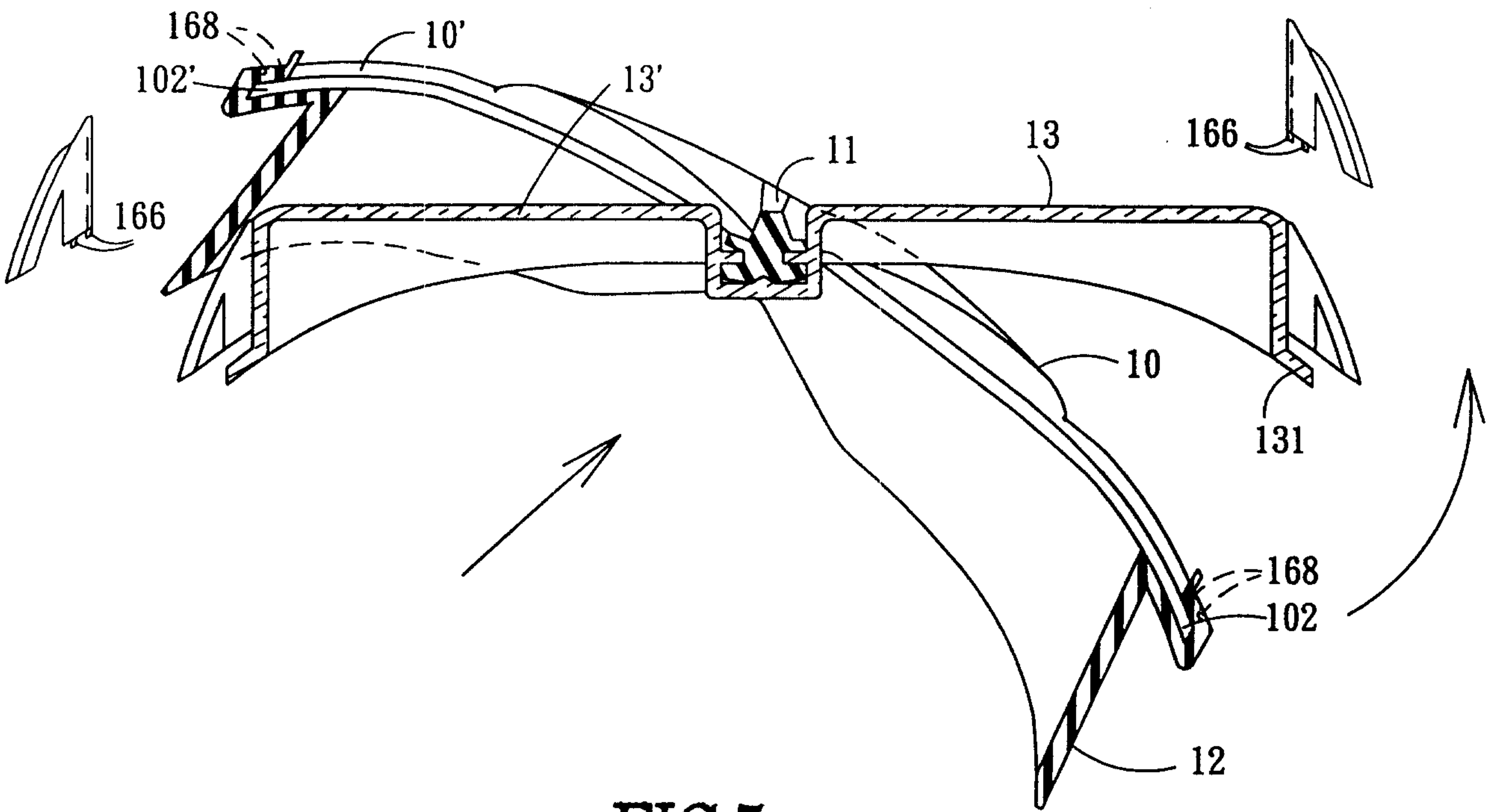


FIG. 5

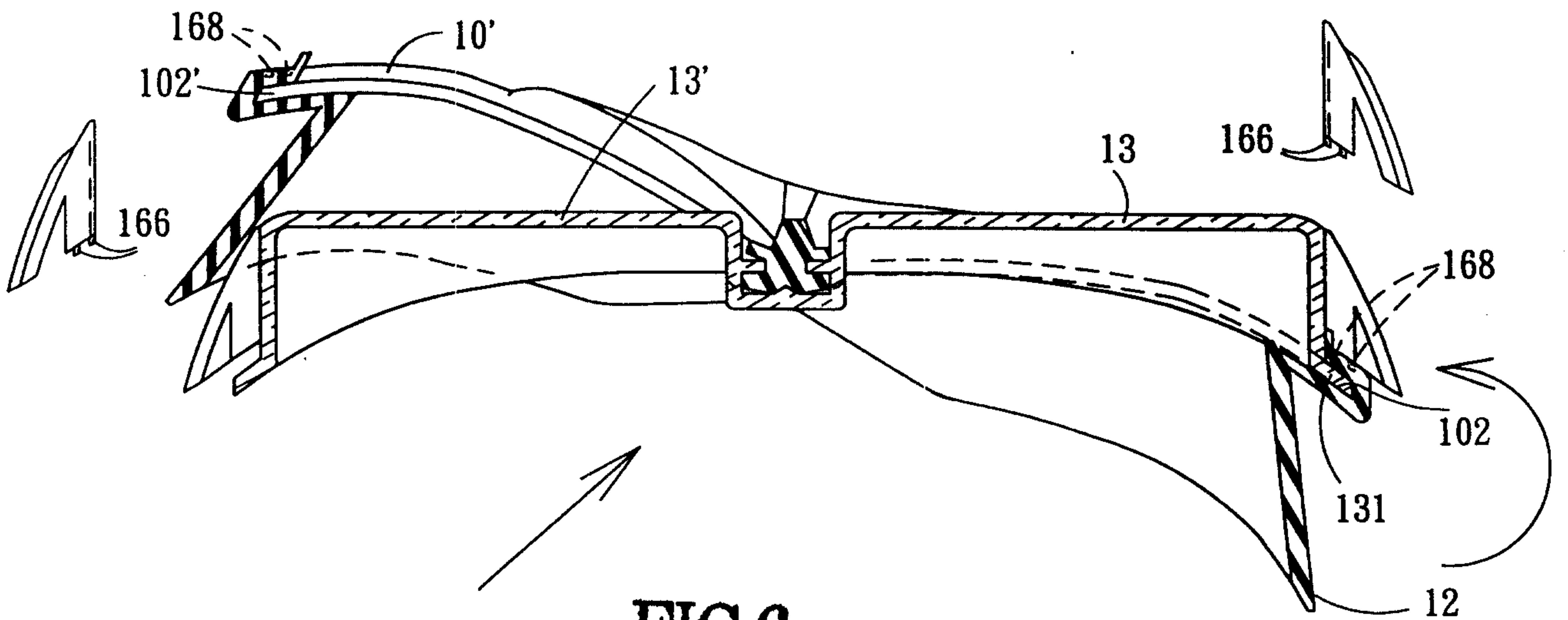
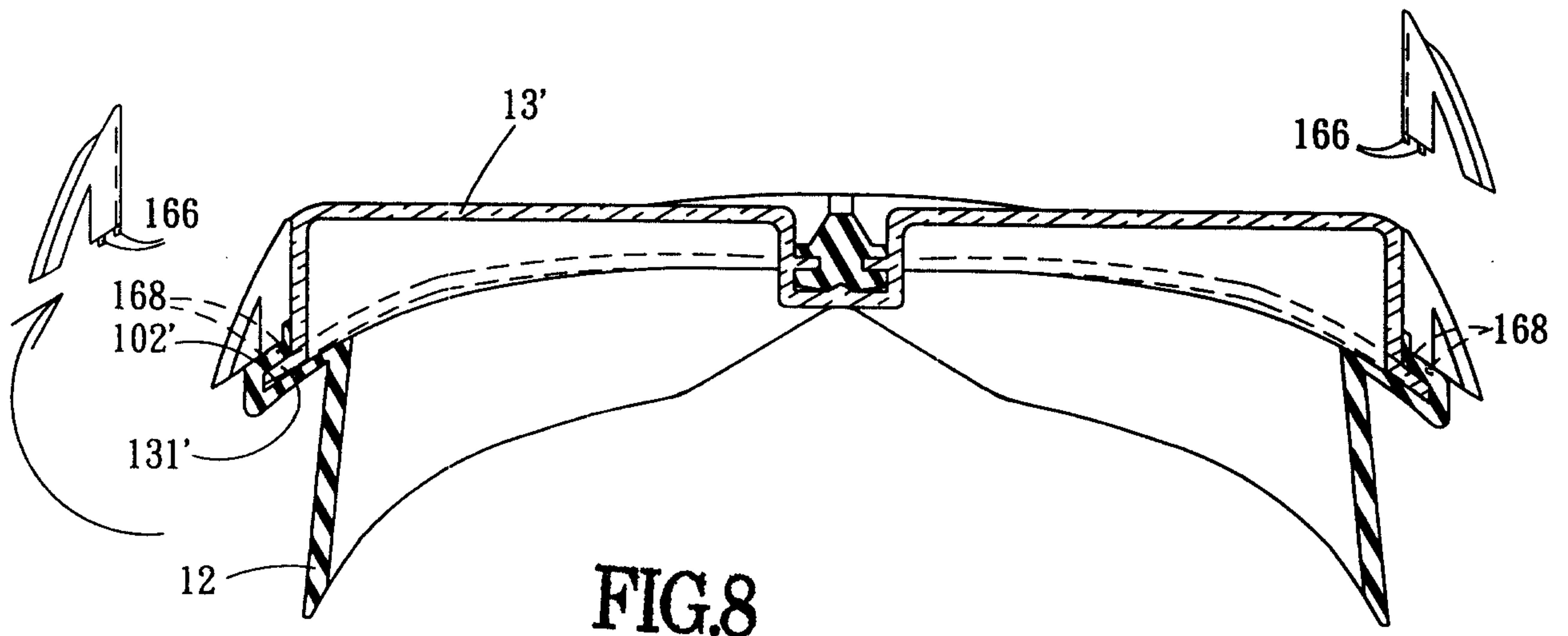
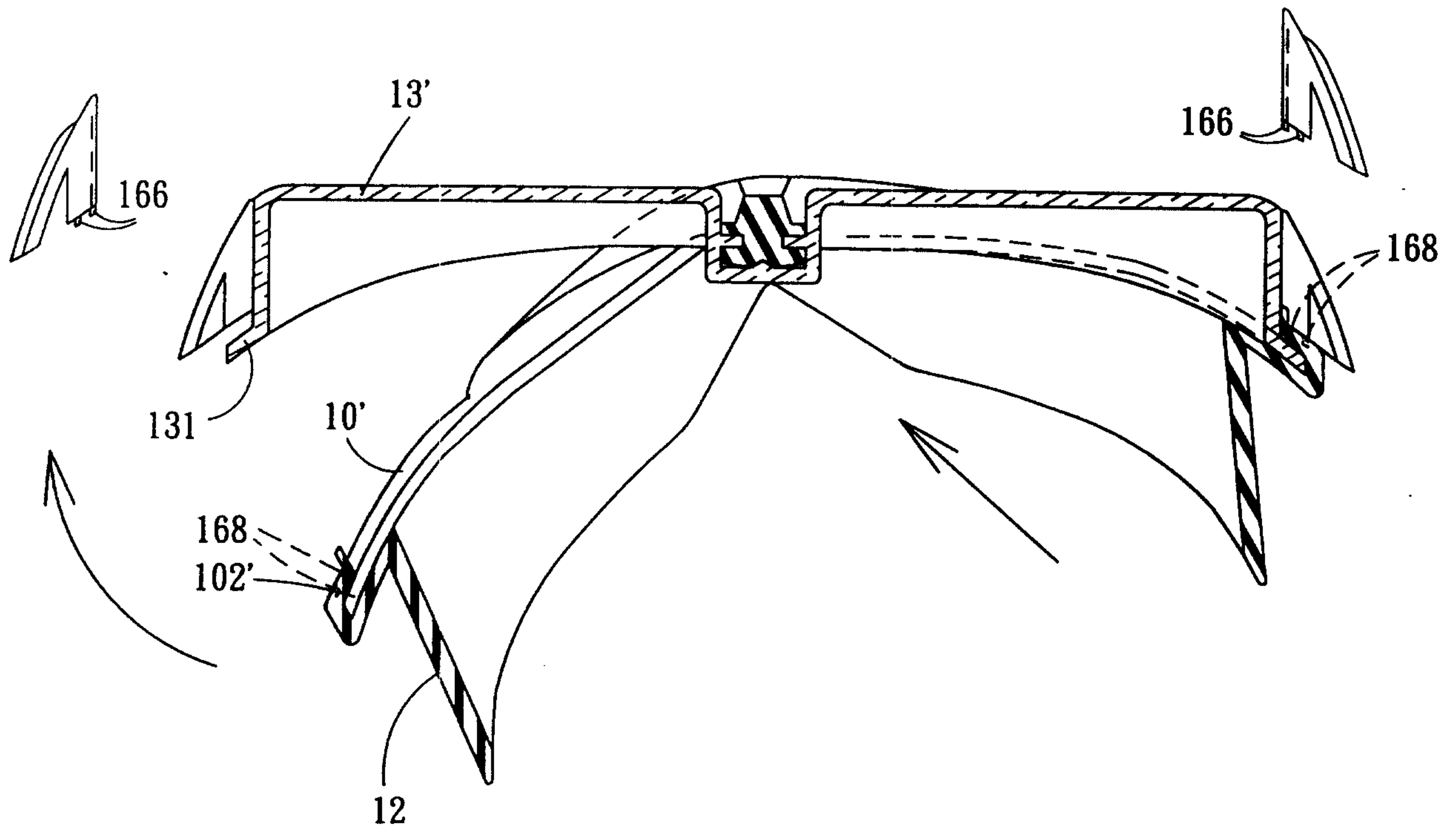


FIG. 6



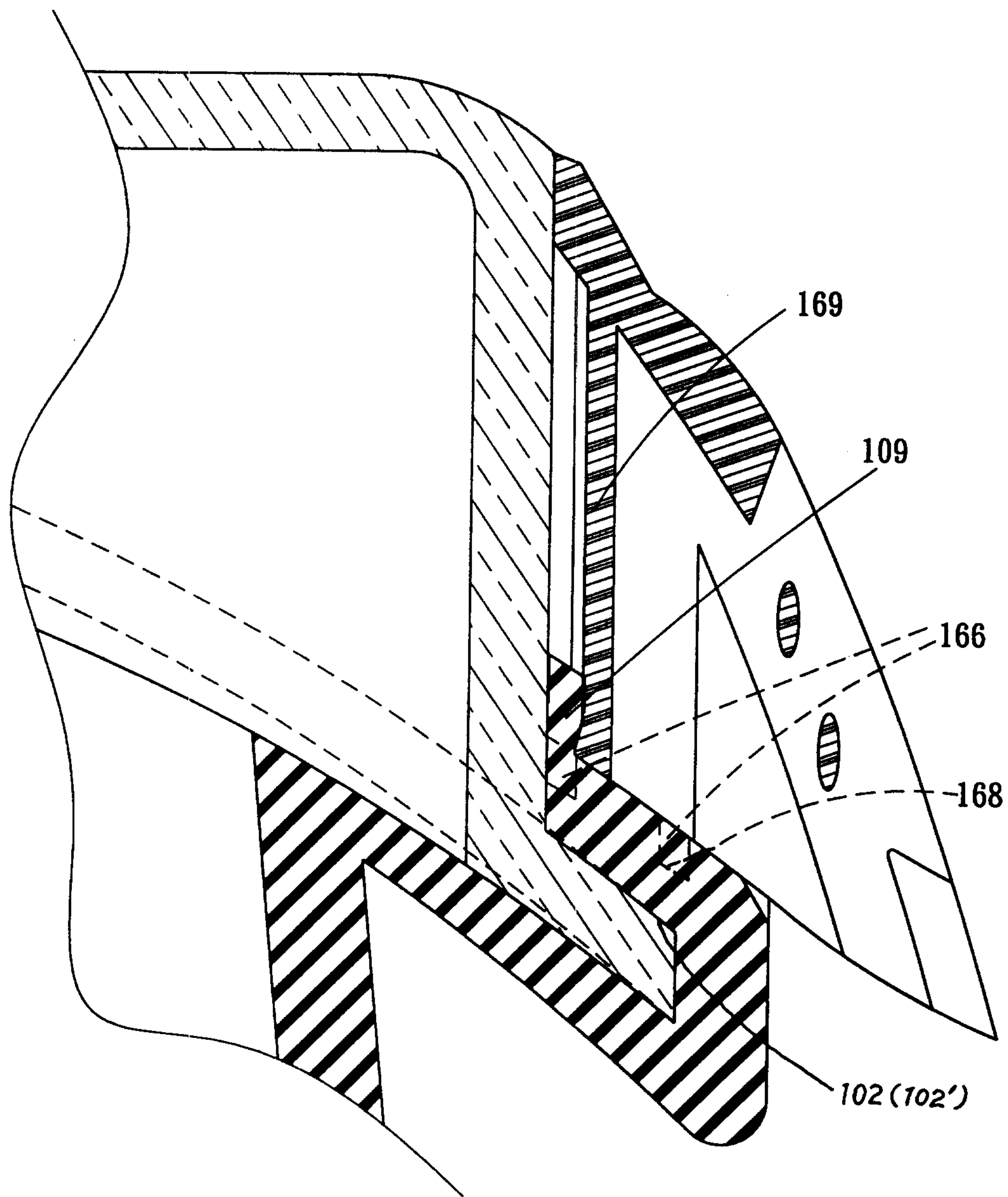


FIG.9

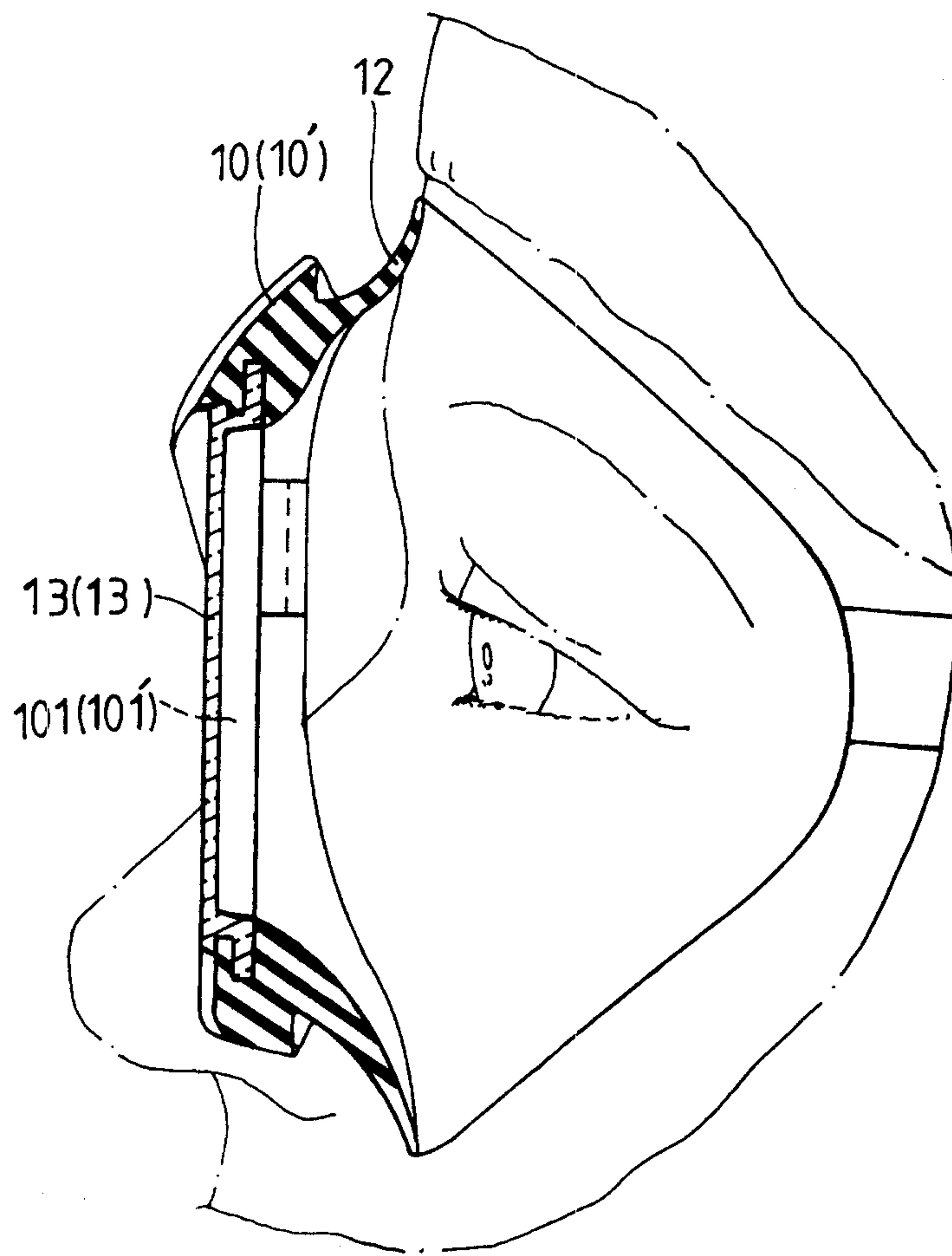


FIG.10

