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(71) Applicant: **Chiang, Hermam**
Chung-ho city, Taipei Hsien (TW)

(72) Inventor: **Chiang, Hermam**
Chung-ho city, Taipei Hsien (TW)

(74) Representative: **Stuttard, Garry Philip**
Urquhart-Dykes & Lord
Tower House
Merrion Way
Leeds LS2 8PA (GB)

(54) Swimming goggles with step-less adjustment

(57) Swimming goggles with step-less adjustment comprising two lens frame units, each of said lens frame units accommodating a lens and having at opposite ends a first joining unit and a second joining unit, at least one string held in position by the first and second joining units of said two lens frame units whereby to maintain the two lens frame units spaced apart to form a nose bridge. The invention permits the user to regulate the length of string between the two lens frame units to adjust the span of the nose bridge.

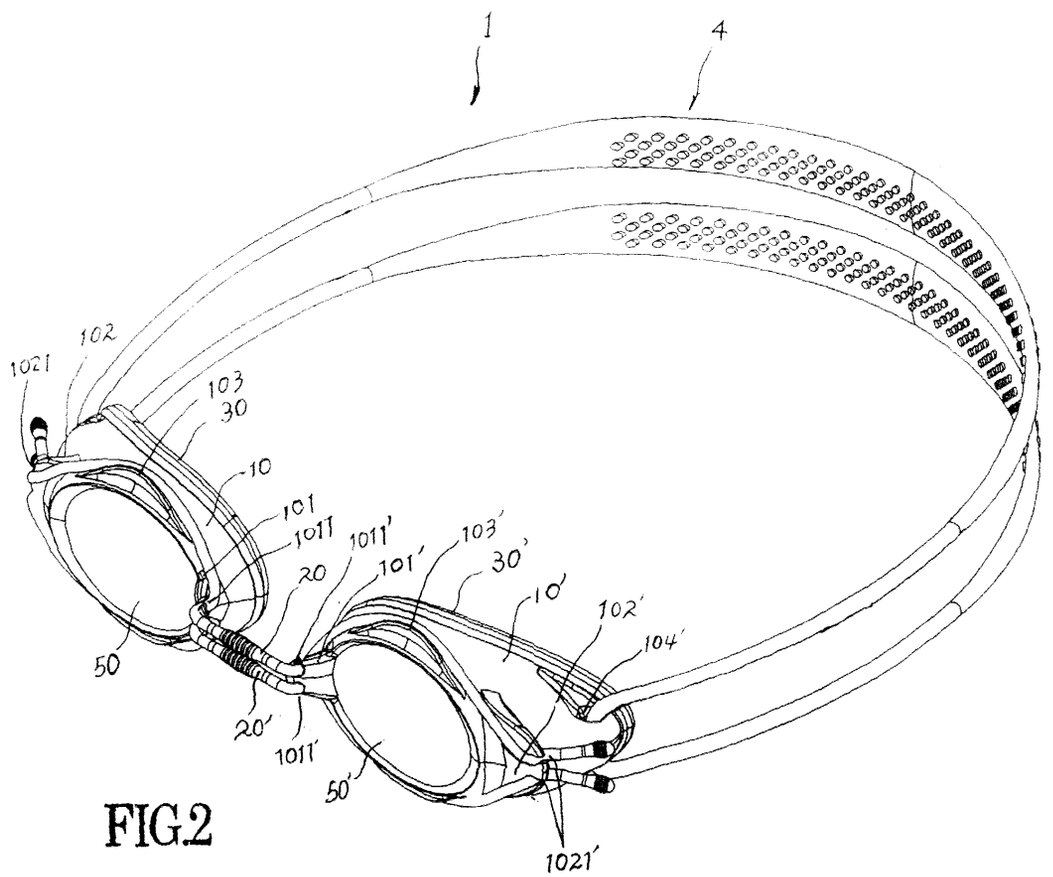

FIG.2

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Description

Field of the Invention

[0001] The subject invention relates to a type of swimming goggles with step-less adjustment, or specifically, to one with step-less adjustment of nose bridge to suit swimmers that require different spans of nose bridges.

Background of the Invention

[0002] As we know, the nose bridge of a conventional type of swimming goggles may be adjusted to lengthen or shorten the span between the left and right lens frames, to suit different face shapes of different users. However, the nose bridge of the conventional type of swimming goggles involves only three-step adjustment (as shown in Fig. 1), therefore, it could not satisfy the need of the general consumers. Besides, the conventional type of swimming goggles involves a check mechanism for the adjustment, it results in easier an adjustment in the natural direction but a difficult operation in the reverse direction. As illustrated in Fig. 1, the nose bridge of a prior art of swimming goggles 7 involves a plate unit 71, on which are several ribs 710 that are checked against a seat 720 on a lens frame 72. The opposite sides of the ribs 710 are designed to have guided sides. But, for the sake of checking performance, one of the sides has a larger guided angle, so it is more laborconsuming in the process of adjustment. In case of improper operation, it may even result in failure of movement. More worrisome is that, during the adjustment and moving process, the ribs 710 on the seat 71 will be squeezed and deformed by the seat 720. After extended use, said ribs 710 will be flattened and could not be engaged effectively to the seat 720. The result will be loose swimming goggles when worn by the user, or even water seepage. Some users who could not coordinate with the 3-step adjustment will feel uncomfortable. In view of the above drawbacks. it has become a subject for breakthrough to seek a design of swimming goggles to suit the different spans of nose bridge of different users.

Brief Description of the Invention

[0003] The primary objective of the subject invention of swimming goggles with step-less adjustment is to provide a type of swimming goggles with step-less adjustment of nose bridge span, so the nose bridge span of the swimming goggles can be adjusted to suit different users' requirements. The nose bridge in the subject invention of swimming goggles can be pulled to enlarge or reduce its span, to suit the nose shape of the user.

[0004] The secondary objective of the subject invention of swimming goggles with step-less adjustment is to provide free adjustment of the span of nose bridge, either lengthening the upper span or shorten the lower span of the nose bridge, in order to suit the outline of different nose bridges.

Characteristics of the Invention

[0005] The subject invention of swimming goggles with step-less adjustment lies in that: at two ends of the longer axis of the lens frame of the swimming goggle are first joining units and second joining units, the formation of the nose bridge being at least one string that is positioned onto the first and second joining units of the left and right lens frames along the rim of the lens frame units, maintaining an appropriate span between the two lens frames, that is, the nose bridge is composed of the strings connecting two lens frames to maintain an appropriate span. With such features, the user can adjust the strings and the span between two lens frames, to achieve the effect of step-less adjustment of the span of nose bridge of swimming goggles.

[0006] According to the above features, the two strings are wound in position respectively along the upper and lower rims of the lens frame units. with a length exposed at one end on the outside of the lens frame unit. to facilitate control in the adjustment of the span.

[0007] According to the above features, the first joining units are located on the inside of the lens frame, while the second joining unit is located on the outside of the lens frame, the two joining units respectively have accommodating holes with at least one clasp opening, said clasp opening serving to position the two ends of the strings for the nose bridge.

Brief Description of Drawings

[0008] Fig. 1 is a perspective view of a prior art of swimming goggles.

[0009] Fig. 2 is a perspective view of the invention of swimming goggles with step-less adjustment.

[0010] Fig. 3 is a top view of the invention of swimming goggles with step-less adjustment.

[0011] Fig. 4 is a front view of the invention of swimming goggles with step-less adjustment.

[0012] Fig. 5 is a longitudinal section view of the lens frame unit in the subject invention of swimming goggles with step-less adjustment.

Brief Description of Numerals

[0013]

1	swimming goggles	10, 10'	lens frame unit
20, 20'	string		
3	protective pad	30,30'	face contact part
4	headband device	50, 50'	lens

101, 101'	first joining unit
102, 102'	second joining unit
1011, 1011', 1021, 1021'	clasp opening
103, 103'	clasp piece
104, 104'	headband through hole

Detailed Description of Preferred Embodiment

[0014] As shown in Fig. 2, the subject invention of swimming goggles 1 comprises the following: two lens frame units 10 and 10', two strings 20 and 20', two protective pads 30 and 30', and a headband device 4. Said two lens frame units 10 and 10' are positioned left and right and respectively accommodating two lenses 50 and 50'. Said two lens 50 and 50' are implanted and fixed onto the lens frame units 10 and 10'. On the inside ends of the two lens frame units 10 and 10' are fixed two first joining units 101 and 101', while on the outside ends of the two lens frame units 10 and 10' are fixed two second joining units 102 and 102'. On the first and second joining units 101, 101' and 102, 102' are respectively two accommodating holes involving clasp openings 1011, 1011' and 1021 1021' serving to clasp one end of the two strings 20 and 20'. Extending from and correspondingly on the upsides and downsides of the lens frame units 10, 10' are clasp pieces 103, 103'. Said clasp pieces 103, 103' and the lens frame units 10, 10' are combined to form a fixing groove, as shown in Fig. 5, which serves to fix the winding strings in position. On the lens frame 10, 10' and next to the second joining units 102, 102' are two through holes 104, 104' that serve to accommodate the insertion of the headband device 4.

[0015] Said two strings 20 and 20', made of a flexible material, are respectively pulled through said accommodating holes involving clasp openings 1011, 1011'. The strings are pulled around the clasp pieces 103 and 103' on the edges of the two lens frame units 10 and 10', with appropriate stretches extended from the outside ends of the lens frame units 10, 10', ending in the shape of a ball to enable convenient handling by the user's hand. Said protective pads 3 are respectively inserted in the far sides of the two lens frames 10 and 10' away from the lenses 50 and 50'. each having a face contact part 30 or 30' with adequate flexibility to provide comfortable contact with the user's face and the effects of better attraction and resistance to seepage.

[0016] Pleaser refer to Fig. 2, the subject invention of swimming goggles is assembled in the following steps: the middle parts of the two strings 20 and 20' are snapped onto the accommodating holes of the clasp openings 1011, 1011' of the first joining units 101, 101' on the lens frame units 10, 10', then along the rims of the lens frame units 10, 10' and snapped onto the clasp pieces 103, 103'. Then, the ends of the two strings 20 and 20' are snapped in position onto the second joining units 102, 102', maintaining an appropriate distance from the two lens frame units 10. 10', and exposing a small section at the end of the two strings 20 and 20', so the two lens frame units 10 and 10' can be joined as one unit.

[0017] In the adjustment of the span ofthe invention of swimming goggles, as shown in Figs. 3 and 4, just pull out the string 20 (20') from one side of the second joining unit 102 (102') to the clasp opening 1011 (1011'), and adjust the length of the upper and lower strings 20, 20' to suit the user's requirement of different arc formation and provide comfortable contact with the user's face. The span of the nose bridge of the invention of swimming goggles is adjusted by changing the length of the two strings 20 and 20', thus enabling step-less adjustment to suit the nose bridge configuration of different users who can feel comfortable.

[0018] One feature that must be mentioned is that, due to the innovated assembling and configuration of the subject invention of swimming goggles, an entire set or an individual frame unit can be sold to a buyer who may have multiple options to purchase a single-sided lens and frame of a different style or color.

[0019] Having proved that the subject invention is capable of achieving the anticipated objective, as described above, it has met the qualification for a patent right. However, the above description has covered merely the preferred embodiment of the subject invention. It is declared herewith that all equivalent modifications and/or variations deriving from the above shall be included in the spirit of the subject claims.

Claims

1. Swimming goggles with step-less adjustment comprising:

two lens frame units, each of said lens frame units accommodating a lens;
a first joining unit on the inside end of each lens frame unit and a second joining unit on the outside end of each lens frame unit, wherein each joining unit has two accommodating holes with clasp openings;
a first string passing along the upper rim of each lens frame unit and a second string passing along the lower rim of each lens frame unit whereby to maintain the lens frame units spaced apart to form a nose bridge, wherein said first and second string are fixed in the accommodating holes of the first and second joining units on each lens frame unit; and
a headband device joined to the outside edge of each lens frame unit, said headband device comprising a headband; wherein said goggles are adapted to enable a user to regulate the length of the first and second string between the two lens frame units whereby to adjust the span of the nose bridge.

2. Swimming goggles as claimed in claim 1, wherein a portion of one end of the first and/or second string is exposed on the outside of the lens frame unit and terminates in a ball-shape to assist manual handling.

3. Swimming goggles as claimed in claim 1 or 2, wherein a clasp piece extends along the upper and lower rim of each lens frame unit, each clasp piece forming a fixing groove with the lens frame unit to facilitate positioning of the string.

4. Swimming goggles as claimed in any preceding claim wherein through holes are positioned on each lens frame unit adjacent to the second joining unit to facilitate insertion of the headband.

5. Swimming goggles with step-less adjustment comprising:

two lens frame units, each of said lens frame units accommodating a lens and having at opposite ends a first joining unit and a second joining unit;
at least one string held in position by the first and second joining units of said two lens frame units whereby to maintain the two lens frame units spaced apart to form a nose bridge;
a headband device joined to the second joining unit on each lens frame unit, said headband device comprising a headband;

whereby the user is able to regulate the length of string between the two lens frame units to adjust the span of the nose bridge.

6. Swimming goggles as claimed in claim 5, wherein a portion of one end of the string is exposed on the outside of the lens frame unit and terminates in a ball-shape to assist manual handling.

7. Swimming goggles as claimed in claim 5 or 6, wherein said first joining unit is located on the inside end of the lens frame unit, said second joining unit is located on the outside end of the lens frame unit, wherein said first and second joining unit have accommodating holes with clasp openings which serve to secure the string to form the nose bridge.

8. Swimming goggles as claimed in claim 5, 6 or 7, wherein a clasp piece extends along the upper and lower rim of each lens frame unit to form a fixing groove with the lens frame unit to clasp the string in position.

9. Swimming goggles as claimed in claim 5, 6, 7 or 8 wherein through holes on the lens frame unit adjacent to the second joining unit facilitate insertion of the headband.

10. A lens frame unit as defined in any of claims 1 to 9.

11. A lens frame unit as claimed in claim 10 accommodating a lens wherein said lens frame unit is provided:

at opposite ends with a first joining unit and a second joining unit, wherein said first joining unit is located on its inside end, said second joining unit is located on its outside end and said first and second joining unit have accommodating holes with clasp openings; and
with at least one string held in position by the first and second joining units, wherein a portion of the string is capable of being attached in spaced apart relationship to a second lens frame unit to form a nose bridge.

12. A lens frame unit as claimed in either of claims 10 or 11 wherein a portion of one end of the string is exposed on the outside of the lens frame unit and terminates in a ball-shape to assist manual handling.

13. A lens frame unit as claimed in any of claims 10, 11 or 12 comprising a clasp piece extending along the upper and lower rim to form a fixing groove to clasp the string in position.

14. A lens frame unit as claimed in any of claims 10 to 13 comprising through holes adjacent to the second joining unit to facilitate insertion of the headband.

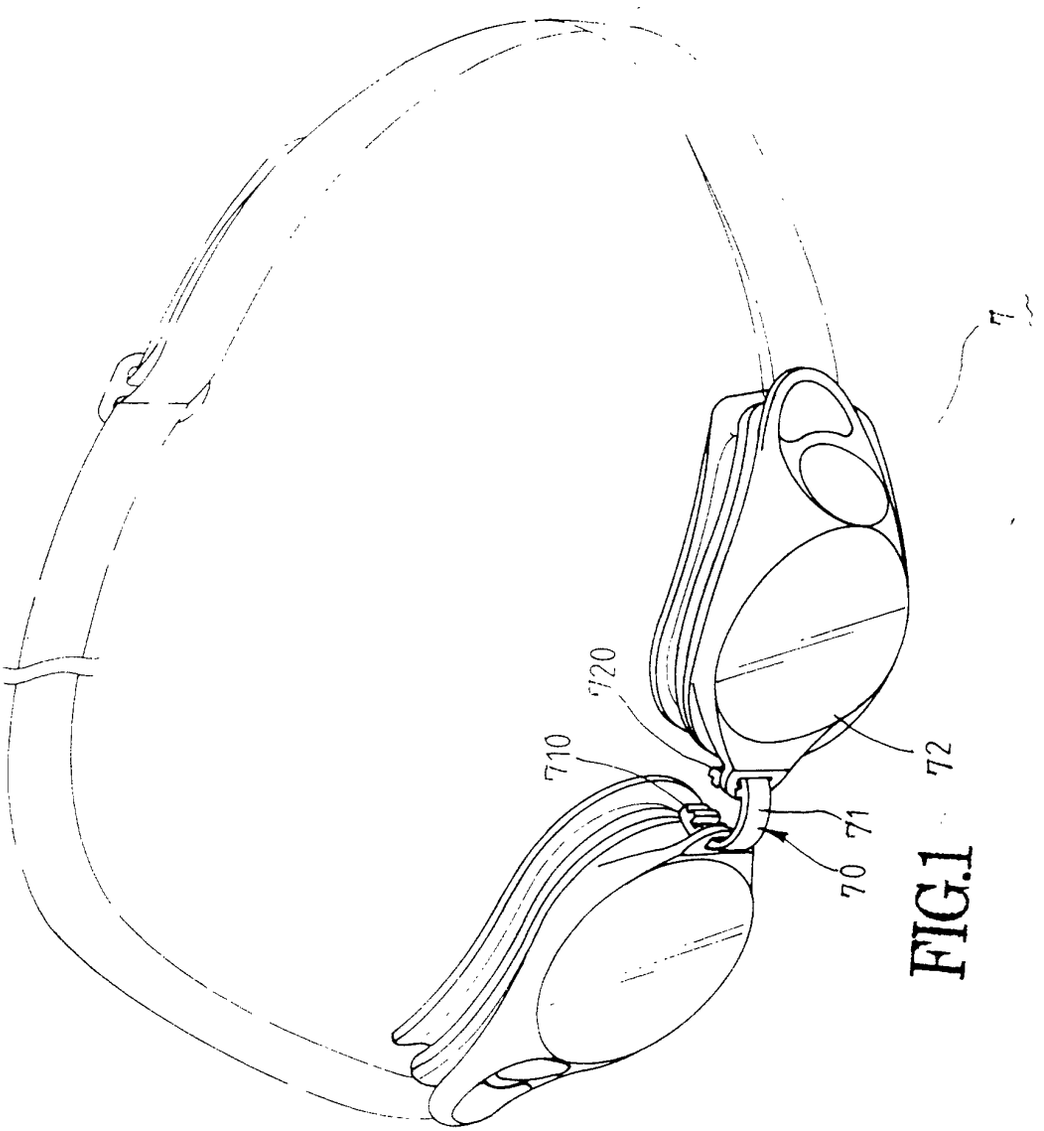

FIG.1

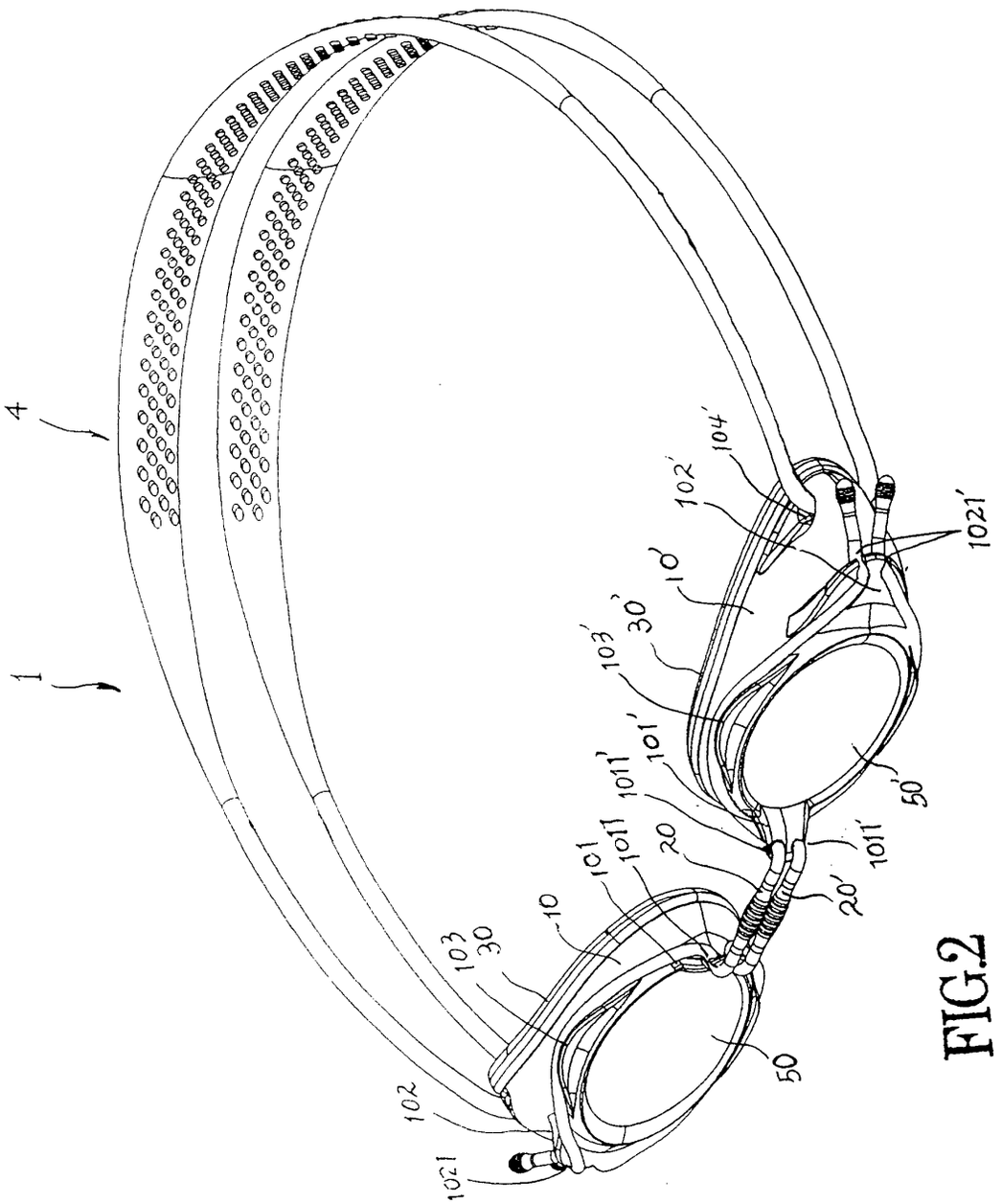
4
1
1021'
102'
104'
10'
30'
103'
101'
1011'
50'
20
20'
10
101
1011
103
30
102
1021
50

FIG2

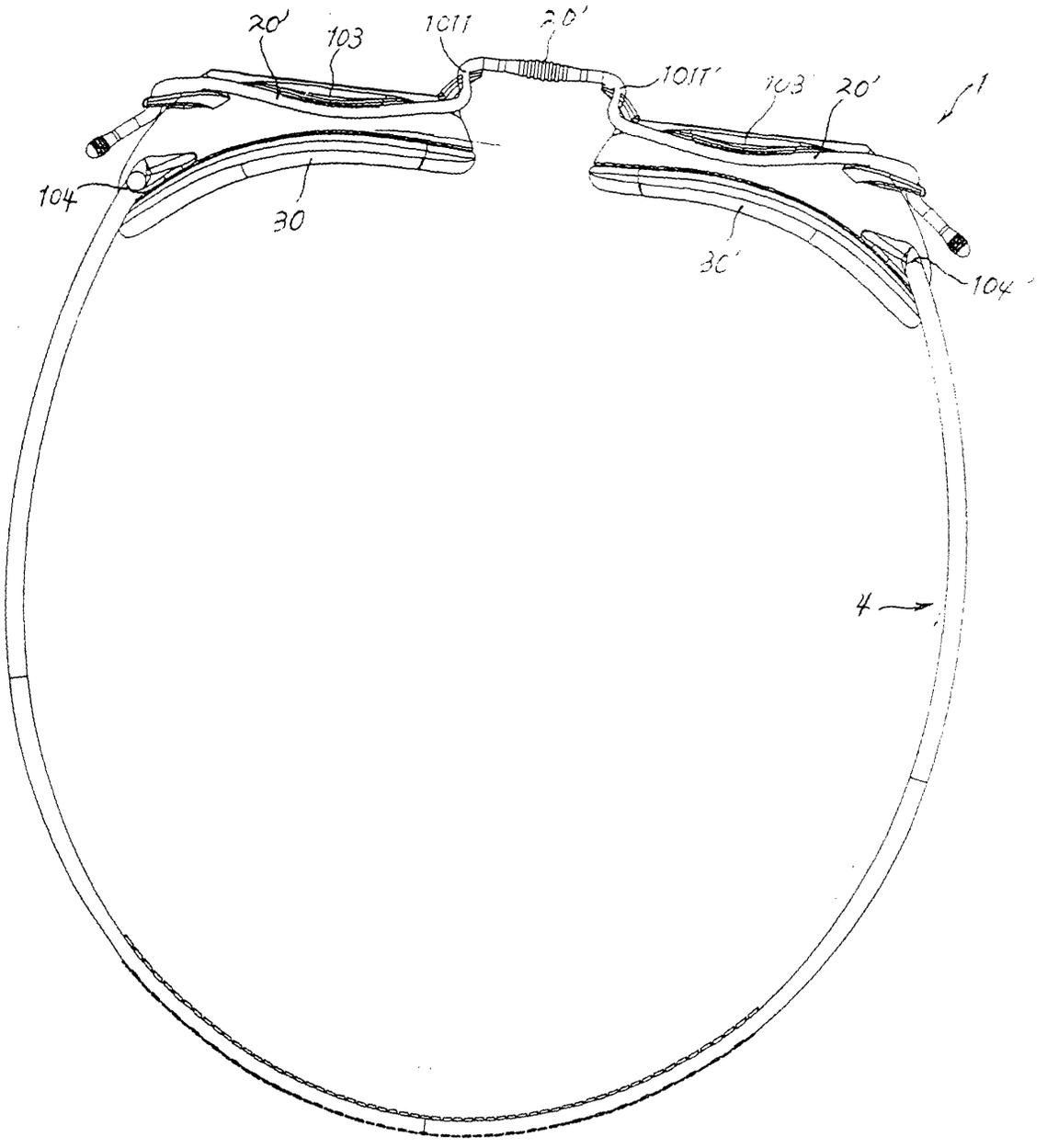

FIG.3

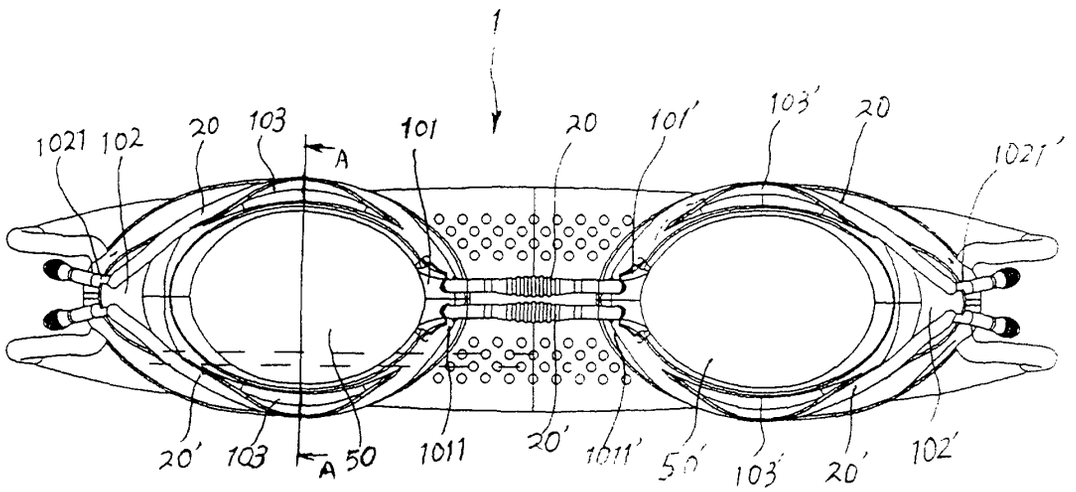
1
1021
102
20
103
A
101
20
101'
103'
20
1021'
20'
103
A
50
1011
20'
1011'
50'
103'
20'
102'

FIG.4

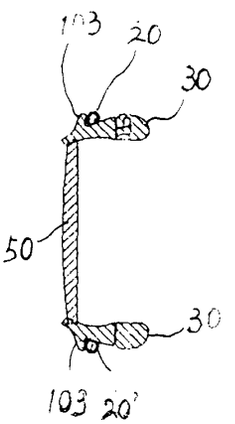
103
20
30
50
30
103
20'

FIG.5

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EUROPEAN SEARCH REPORT

Application Number
EP 00 30 2675

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	US 5 857 221 A (GENEVE FRANCOIS ET AL) 12 January 1999 (1999-01-12) * column 3, line 25 - column 4, line 11; figures 1-3 *	1,5,10	A63B33/00
A	US 5 502 844 A (ALVARADO WILLIAM) 2 April 1996 (1996-04-02) * abstract; figures *	1,5,10	
A	DE 685 459 C (HENSCHKE ERICH) * claim 1; figure 1 *	1,5,10	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

A63B
A61F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	11 September 2000	Jones, T

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 30 2675

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11-09-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5857221 A	12-01-1999	AU 6801798 A CA 2238239 A	26-11-1998 23-11-1998
US 5502844 A	02-04-1996	NONE	
DE 685459 C		NONE	

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