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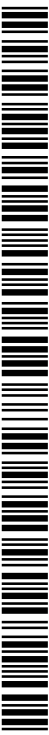
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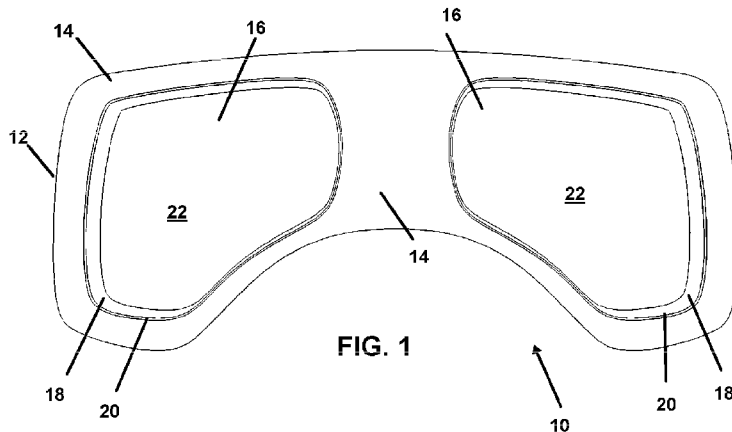
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(54) Title: CORRECTIVE LENS APPARATUS AND METHOD



(57) Abstract: A unitary lens structure is provided which is employable with spectacles as well as goggles and safety eyewear. The lens is formed as a unitary structure with projections having surfaces which are machinable for prescription eyewear extending from a first side surface of a larger shield. Damage from cracking of the shield at the intersections with the projection perimeters is prevented by non linear connections between the two surfaces.

## Corrective Lens Apparatus and Method

### BACKGROUND OF THE INVENTION

#### 1. Field of the Invention

This application claims priority to U.S. Provisional Patent Application serial number  
5 62/210024 filed on August 26, 2015, which is incorporated in its entirety herein by this  
reference thereto.

The present invention relates generally to corrective lenses employed in eyewear such  
as eyeglasses, protective eyewear, and goggles. More particularly, the disclosed system and  
method relates to a lens having a first portion forming a shield or surrounding portion formed  
10 of optically correct material and having one or a plurality of projections permanently  
positioned thereon for formation of corrective lenses. So configured the device forms a  
unitary structure where the perimeter of the first portion of the lens is adapted for engagement  
in an eyewear frame or goggle or other lens frames.

#### 2. Prior Art

Individuals with eyesight problems have turned to corrective eyewear for hundreds of  
years. As a general rule, such eyesight problems are a result of the physical characteristics of  
the eye of the person requiring corrective lenses. Over the duration such corrective lenses  
have been provided to users requiring them. The basic nature of grinding lenses to refocus the  
20 image captured by the eye of the user onto the receptive rear surface of their eye in a manner  
rendering clearer vision has progressed to provide corrections for issues other than near or far  
sightedness. However, the basic premise of positioning a lens in front of the eye of the user to  
refocus incoming light is still present today.

In some instances the nature of construction of corrective lenses, especially in  
25 combination with safety or protective eyewear, has been less than adequate. For example,  
users of corrective lenses who suffer from severe farsightedness require very thick lenses to  
correct their vision, which are not well adapted for use in combination with a shield type  
eyewear such a goggles. Further, such thick lenses have perimeters which limit the  
engagement to eyeglass frames.

30 Further, those with nearsightedness or farsightedness or who suffer from other vision  
acuity problems also have problems trying to wear protective goggles such as military

members who wear goggles, or others who wear sport goggles for activities such as skiing or motorcycling. The problem of corrective lenses is also an issue when combined with workers who must wear safety goggles.

Conventionally, such users have been forced to try and fit their eyeglasses within the cavity of the goggle or safety goggle covering their eyes. In such a combination, the user must view their surroundings through both the goggle lens, and their own lenses positioned in-between the goggle lens and their face. Such has led to poor vision from fogging, glare from the interaction of spaced refraction surfaces, shadow images caused by the spaced lenses, and other issues caused by the interaction between the eyeglass lenses spaced from the goggle lens or lenses.

In prior art a partial solution to the problem has been advanced. For example U.S. Patent 8814349 (Quintana), while a leap forward, in the concept of providing a unitary structure of corrective lenses and panoramic or shielding lens, could use improvement in the taught construction of the unitary structure. Quintana, while teaching the novel concept of using two projecting portions rising from one side of a first panoramic lens for formation of ophthalmic lenses, makes no accommodation for the risk of cracking along the perimeter of the projecting portions at their intersection with the front panoramic lens. Additionally, refraction of light through the sidewall of the projecting portions and adjacent their intersection with the front panoramic lens, as taught by the Quintana reference, may generate refractive qualities such as colorized light, which has been found to be distracting to users. Additionally, when employed for goggles which form a sealed cavity in front of the face of the user, the dissimilar thicknesses of the panoramic lens or shield areas thereof with projecting portions, can have thermal issues during formation due to the retention of heat in the thicker areas. Additionally, no prior art teaches a manner in which smaller projections on a curved panoramic shield can be ground to required characteristics to provide vision correction to a wearer.

As such, there exists an unmet need, for a corrective lens formable upon a surface of a thinner panoramic lens, where the intersection of the perimeter of the projecting material from which the ophthalmic lens is formed and the planar panoramic front lens is configured to prevent cracking and stress fractures over time and temperature differentials. Such a device should provide a form which is employable in single lenses of eyewear as well as in dual lens

configurations of protective eyewear shields and sport and protective goggle devices and in shapes which allow for formation of progressive lenses in both the horizontal and vertical direction. Still further, such a device and method should provide projections on the frontal panoramic lens which are machinable to corrective lenses using conventional lens grinding machinery, in spite of the large and highly curved panoramic lens surrounding the projecting portions.

The forgoing examples of related art and limitations related therewith are intended to be illustrative and not exclusive, and they do not imply any limitations on the invention described and claimed herein. Various limitations of the related prior art will become apparent to those skilled in the art upon a reading and understanding of the specification below and the accompanying drawings.

### **OBJECTS OF THE INVENTION**

It is an object of this invention to provide a unitary structure of a first curved or panoramic lens having one or a plurality of projecting portions formed thereon which may be cut to form ophthalmic lenses.

It is a further object of this invention to provide such a unitary structure where the first lens on which the projecting portion is formed, surrounds the projecting portion in a thinner cross section of optical material which may be fit to frames heretofore precluded for users with thick lens prescriptions.

It is a further object of this invention to eliminate or at least minimize the potential for cracking of the thinner front or panoramic lens at the intersection of the perimeter sidewalls of the projecting portions and the panoramic lens they are formed upon.

It is a further object of this invention to provide the projecting portions formed upon a surface of a larger curved lens to be machinable using conventional lens grinding machinery despite the large and curved first lens portions surrounding them.

It is also an object of this invention to provide the projecting portions formed to unitary structure with the surrounding panoramic first lens, in shapes which may be cut to allow for progressive lenses in both the horizontal and vertical directions.

These and other objects, features, and advantages of the present lens invention and system herein, as well as the advantages thereof over existing prior art, which will become

apparent from the description to follow, are accomplished by the improvements described in this specification and hereinafter described in the following detailed description which fully discloses the invention, but should not be considered as placing limitations thereon.

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## SUMMARY OF THE INVENTION

The present invention is a lens formed into a unitary structure featuring a first lens portion formed in a generally concave panoramic shape and having a plurality of projecting portions on a rear surface, defined in shape by a perimeter edge, rising from a permanent connection with a first surface of the first lens portion. The cross sectional thickness of the first lens portion, which curves around and surrounds the projecting portions, is thinner than the cross sectional thickness of the area within the bounds of the perimeter of the projecting portions, rising from an inner or first side of the first lens portion.

In a preferred mode of the device, the radii of the first lens portion or shield can vary slightly to better accommodate the portion in a central area of the shield where the projections are located and reduce distortion further. For example, the first lens portion or shield can have a general radii of a front surface of the shield or first lens portion, which is 75mm. However, the central area where the projections extend can be 65mm (flatter). This slight flattening of the arc in the central portion has been found to increase the range of possible corrective prescriptions to be produced. However, the difference in radii would not be noticeable to the naked eye, and the first portion or shield will maintain, in general, its original shape for cosmetics and fitment to conventional frames and goggle housings.

This first lens portion is optically correct across its entire surface such that the thinner surrounding area, on both sides of the central portion, is optically correct and significantly thinner in cross section to allow engagement within an eyeglass frame or goggle but still adapted for an engagement to temple portions to form a shield.

In all modes of the device herein, the intersection of the perimeter edge of the sidewall defining the shape of the projecting portion employed for lens formation, with the first surface for the first lens portion, is preferably neither a perpendicular intersection of two planar surfaces nor an intersection of a straight line extending up the sidewall surface of the projecting portion.

In all modes of the device herein, that intersection of the sidewall of the perimeter of

the projecting portions which defines a shape of the projecting portions, is preferably formed such that the line running up the sidewall surface from the intersection with the first surface of the first lens portion, is non linear in that a portion of the sidewall changes direction relative to the rest of the sidewall extending to the edge of the machinable surface of the projecting portion.

In all modes of the device herein, one or, more preferably, a plurality of such projecting portions, are engaged with the surrounding optically correct panoramic lens in a manner to yield a permanent connection between the two, which forms a unitary structure with minimal, if any, optical distortion therethrough. This connection between the projecting portion or portions is preferably achieved by molded formation of a unitary structure of the projecting portions and the first lens portion or shield defining a panoramic lens.

In forming a unitary structure, the projections and first lens portion or shield can be molding as a single unit, or the projections may be co-molded into the first lens portion. In co-molding, the projections are pre-formed and subsequently communicated into the mold for the first lens portion, wherein a first surface of the projections melts and joins to the projecting portions to form a unitary structure.

As noted, it is preferable that the intersection of the perimeter sidewall of the projections, and the central portion of the first lens portion, is not perpendicular. Thus, in molding or forming the unitary structure of the first lens portion and projections, this intersection is preferably formed curved or angled. It is also preferred that a width of the intersection of the angled or curved surface forming the connection be small and not rise more than a millimeter above the surface of the first lens portion, because experimentation has shown this to minimize any distortion or light refraction issues.

Additionally, if formed of a curved first lens portion or shield with a plurality of projecting portions thereon for engagement to goggles or an eyeglass frame, a polarizing layer may be placed in-between the material forming the first lens portion and the projecting portion which is machinable to form the corrective lens. This will provide polarized light transmission to the wearer. Such may be accomplished by layering the first lens portion.

Still further, the shape of the projecting portion defined by the sidewall intersecting the first surface of the first lens portion can be formed in shapes, as shown herein, or other shapes, which will allow for cutting of progressive lenses therein for the user. For example,

one such shape, as shown in the figures, has a wider diameter adjacent the two ends of the curved first lens portion and narrows and extends toward the middle.

This preferred shape allows for portions of the projecting portion to extend closer to the bridge of the nose, while concurrently extending to the temple and well below the nose.

5 This extended rectangular shape with a curve extending from a nose-side to the lower edge allows for formation of progressive lenses which are highly customized to a user where the progressive lens can be both horizontal from top to bottom and sideways from nose to temple. Since the surrounding section of the first lens portion is significantly thinner than the unitary portion of the projecting portion and first lens portion, the formed lens or shield can be  
10 configured for users.

Additionally shown is a preferred removable tooling engagement member which may be formed as part of the unitary lens. By formation of this tooling engagement member, in a break away or removable engagement extending perpendicular from the axis of the unitary lens and in a centered position, it allows for machining of the raised surfaces of the projecting  
15 portions to form corrective lenses by an engagement of the unitary structure to a lens machining apparatus using the removable projecting member. As noted, this tooling engagement, and the unitary structure of the first lens and projecting portion, overcomes the problems associated with the prior art, where the large curved panoramic first lens portion blocks engagement in a conventional fashion to lens grinding machines. Once the projecting  
20 portion surface or surfaces have been properly machined to the corrective lens, the projecting member can be removed by breaking a frangible portion or cutting it from the side edge.

Finally, the unitary lens herein is especially well adapted to the formation of protective eyewear, as well as for sport goggles and the like. This is because a plurality of raised portions may be permanently engaged and extend from the first surface of the first lens  
25 portion surrounding the raised portions, and the first lens portion is large and panoramic and has thin edges, the unitary structure provides a goggle which is protected from fogging and the like. Further, as noted above, a wafer or layer of polarizing film may be positioned between the lenses, or within the pre formed projecting portions which are later co molded to the first lens portion, thereby providing polarized eyewear to the user for high glare  
30 conditions.

In all modes, both the first lens portion surrounding the engaged projecting portion,

and the projecting portion or portions, may be formed of polycarbonate plastic or other optically suitable polymeric or plastic materials, such as a monomer plastic, or a "High Index" plastic.

5 With respect to the above description, before explaining at least one preferred embodiment of the herein disclosed eyewear invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and to the arrangement of the steps in the following description or illustrated in the drawings. The unitary lens invention herein described is capable of other embodiments and of being practiced and carried out in various ways which will become obvious to those skilled in the art on reading  
10 this disclosure. Also, it is to be understood that the phraseology and terminology employed herein are for the purpose of description and should not be regarded as limiting.

As such, those skilled in the art will appreciate that the conception upon which this disclosure is based may readily be utilized as a basis for designing and carrying out the present disclosed system and eyewear apparatus. It is  
15 important, therefore, that the claims be regarded as including such equivalent construction and methodology insofar as they do not depart from the spirit and scope of the present invention.

#### **BRIEF DESCRIPTION OF DRAWING FIGURES**

20 Figure 1 depicts a view of the first surface of a first lens portion having a plurality of raised portions with shapes defined by a perimeter sidewall, extending away therefrom.

Figure 2 depicts a view of the opposite side of the first lens portion from figure 1 showing the second surface and the shadowless appearance of the second surface provided by the unitary structure herein.

25 Figure 3 depicts a perspective view of the view of figure 1 showing two projecting portions having a shape defined by a perimeter sidewall extending from the first surface of the first lens portion.

Figure 4 is a sectional view through figure 3 showing the unitary structure formed by the projecting portions and first lens portion and the non linear intersection of the sidewall of  
30 the projecting portions with the first surface of the first lens portion.

Figures 4a shows a curved intersection between the sidewall defining the shape of the

projecting portion and the first surface of the first lens portion.

Figures 4b shows a reverse curved intersection between the sidewall defining the shape of the projecting portion and the first surface of the first lens portion.

Figures 4c shows an angled intersection between the sidewall defining the shape of the projecting portion and the first surface of the first lens portion.

Figures 4d shows a curved radius relief intersection between the sidewall defining the shape of the projecting portion and the first surface of the first lens portion.

Figure 5 depicts another mode of the unitary lens structure showing a curved panoramic first lens portion and two circular projecting portions extending from the first surface thereof and showing the centered positioning of a tooling engagement member attached thereto, which may be employed on all versions of the device herein.

Figure 6 shows a view of the unitary lens structure of figure 5 from the opposite side from figure 5 showing the second side surface.

Figure 7 shows a perspective view of a unitary lens structure such as in figure 6, showing the tooling engagement member centered between the two ends of the first lens portion and running perpendicular to an axis running across the first lens portion.

Figure 8 depicts a sport goggle mode of the device herein.

Figure 9 depicts a first lens portion having two projecting portions thereon and a second lens engaged in a spaced relationship adjacent the second surface of the first lens portion as would be engaged in the goggle of figure 8.

Figure 10 shows the device in a similar fashion to that of figure 9, engageable within the goggle frame of figure 8, wherein the second lens forming a cavity is positioned adjacent to the raised lens-machinable surfaces of the projecting portions.

Figure 11 shows another mode of the device adapted for a goggle to minimize fogging in the same fashion as those of figures 9, 10, and 12, and showing a mating lens having projecting sections adapted to fit adjacent the sidewalls of the formed projecting portions of the first lens.

Figure 12 depicts a mode of the device forming a unitary lens structure adapted for engagement in eyeglass frames where the thinner cross section of the first lens portion surrounds the thicker area where the projecting portion is engaged.

Figure 12 depicts a mode of the device forming a unitary lens structure which is

adapted for engagement in eyeglass frames where the thinner cross section of the first lens portion surrounds the thicker area where the projecting portion is engaged.

Figure 13 is an overhead view of the device as in figure 12 showing the intersection surrounding the perimeter sidewall defining the shape of the oval projecting portion and the first surface of the first lens portion.

Figure 14 depicts a sectional view of the device of figures 12 and 13 and shows the preferred non linear intersection of the sidewall defining the projecting portion, with the first surface of the first lens portion.

Figures 15a-15d depict various preferred shapes to the intersection of the sidewall with the first surface of the first lens portion, to eliminate the linear intersection prone to cracking.

Figure 16 depicts unitary lenses formed to engage eyeglass frames where the thicker projecting portion is surrounded by the thinner first lens surface to allow engagement to more fashionable eyewear when the user must have thick lenses for sight correction.

Figure 17 depicts another mode of the device as in figure 16 but with rectangular panoramic first lens portions.

Figure 18 shows the unitary lens structure herein having a polarizing or other filter engaged between the projecting portion and the first lens portion and which can be included with any form of the unitary lens herein.

Figure 19 depicts the unitary lens structure where the polarizing or other filter layer is positioned across the entire first lens component in between the first surface and second surface thereof.

Other aspects of the present invention shall be more readily understood when considered in conjunction with the above noted accompanying drawings, and the following detailed description, neither of which should be considered limiting.

## **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION**

Now referring to drawings of figures 1-19, where similar structures are described with like numerals there is seen in Figure 1 depicts a view of a mode of the device having a unitary structured lens, formed of a first lens portion 12 having a first surface 14, and having

at least one, or as shown preferably a plurality of projecting or projecting portions 16 extending therefrom. The projecting portions 16 have a shape defined by a perimeter formed by a sidewall 18 which extends away from an intersection 20 at a first end of the sidewall 18, with the first surface 14 of the first lens portion 12. The sidewall 18 of each projecting  
5 portion 16 extends to a distal end, at an intersection with the edge of a projecting surface 22 formed within the perimeter defined by the sidewall 18. The projecting surface 22, is adapted for formation of an ophthalmic lens to correct the vision of a user or wearer.

A particularly preferred shape of the projecting portions 16 is shown in figure 1. As shown, each of the two projecting portions 16 has a respective wider diameter adjacent the  
10 two ends of the curved first lens portion 12, and have narrower diameters at their respective ends, adjacent the middle.

This preferred shape allows for portions of the projecting portions 16 to extend closer to the bridge of the nose, while concurrently extending to the temple and well below the nose. This extended rectangular shape, with a curve extending from a nose-side of the projections  
15 16 to a lower edge adjacent both ends of the first lens portion 12, allows for formation of progressive lenses, using the projecting portions 16, and prescriptive eyewear which are highly customized, as the formed progressive lens can be both horizontal from top to bottom, and sideways from nose end to temple end.

Figure 2 depicts a view of the opposite side or second side surface of the first lens  
20 portion 12 from that shown in figure 1. A novel aspect of the disclosed device 10 is that the formed unitary structure of ophthalmic lens formed on the projecting portion 16 projecting from the first side 14 of the first lens portion 12, when viewed from the second surface 24 side, yields a shadowless appearance of the second surface 24 even where a filter material may be inserted as noted below.

Shown in Figure 3 is a perspective view of the device 10 shown in figure 1. Depicted  
25 are a plurality of two projecting portions 16 each having a shape defined by the perimeter of a sidewall 18 extending from an intersection 20 with the first surface 14 of the first lens portion 12. As can be seen the cross sectional thickness of the first lens portion 12 surrounds the formed projecting portions 16 and is significantly thinner. As noted, the projecting portions  
30 16 and first lens portion 12 are formed in a unitary structure, either by a single mold with the projections 16 and lens portion 12, or by co molding formed projecting portions 16 into the

mold for the first lens portion 12 which melts and forms the projecting portions 16 into the structure of the first lens portion 12.

In the depiction of Figure 4 is shown a sectional view through the device as in figures 1 and 3 showing the unitary structure of the first lens portion 12 and projecting portions 16.

5 The non linear intersection 20 of the sidewall 18 forming the perimeter and defining the shape of the projecting portions 16 with the first surface 14 of the first lens portion 12 is preferred. As noted above, the non linear intersection 20 of the sidewall 18 with the first surface 14 is most important. By non linear is meant that the line running along the surface of the sidewall 18 running between its communication with the raised surface 22 and the  
10 intersection 20, does not intersect the line or planar surface of the first side of the first lens portion.

Instead, at, or adjacent to, the intersection 20 the surface of the sidewall 18 deviates from a planar or straight surface, with an angled portion or curved portion of the surface communicating between the sidewall 18, and the first surface 14. Currently, the angled  
15 intersection of figure 4c and the curved intersection is in figure 4a are particularly preferred as a non linear communication of the sidewall 18 with the first surface 14, however the other noted intersection shapes of figures 4b-4d are also examples of a non linear communication of the sidewall 18 at or adjacent to the first surface 14.

Figures 4a shows a curved surface at the intersection 20 between the sidewall 18  
20 defining the shape of the projecting portion 16 and the first surface 14 of the first lens portion 12.

Figures 4b shows a reverse curved shape of the surface of the intersection 20 between the sidewall 18 defining the shape of the projecting portion 16 and the first surface 14 of the first lens portion 12.

25 Figures 4c shows an angled surface of the intersection 20 between the sidewall 18 defining the shape of the projecting portion 16 and the first surface 14 of the first lens portion 12.

Figures 4d shows a curved relief shaped intersection 20 of the perimeter edge of the sidewall 18, running underneath the first end of the sidewall, 18 and depending into the first  
30 surface 14, and running for the perimeter of the projecting portion 1.

Thus, the non linear intersection as defined herein, can be any of a group of non linear

intersections, including an intersection formed by a curved surface extending between said first end of said sidewall and said first surface of said first lens portion as in figures 4a and 4b, an intersection formed by an angled surface extending between said first end of said sidewall and said first surface of said first lens portion as in figure 4c, and an intersection  
5 formed by a recess extending underneath said first end of said first sidewall 18 and depending into the first surface 14 of said first lens portion 12. This formation of a non linear intersection as noted, prevents cracks.

As shown in Figure 5 is depicted another mode of the unitary lens structure device 10 herein. Shown is a curved panoramic first lens portion 12 and two circular projecting portions  
10 16 extending from the first surface 14 of the curved first portion 12 of the formed lens. The perimeter intersection 20 of both sidewalls 18 is shown also and would preferably non linear as noted above. Additionally depicted is a centered tooling engagement member 28 in operative engagement to the first lens portion 12 along a side edge. This tool engagement member may be employed in all modes of the device herein.

In Figure 6 is shown an opposite side view of the unitary lens structure of figure 5  
15 showing the second side surface 24 and showing the tooling engagement member 28 centered between the two side edges 13 of the first lens portion 12 and extending perpendicular to a horizontal axis running between the two side edges 13.

A perspective view of this configuration is shown in Figure 7. As can be seen, the  
20 tooling engagement member 28 is centered between the two ends 13 of the first lens portion 12 and runs substantially perpendicular to an axis 17 running across the first lens portion 12 between both ends or the temple ends, thereof. As noted this tooling engagement member 28 is adapted for engagement with conventional eyeglass grinding machines, where a goggle lense will not fit or be engageable to form the lenses.

Figure 8 depicts a sport or protective goggle mode 33 of the device 10 herein. The  
25 configurations shown in figures 9-12 can be engaged with a goggle frame such as in figure 8.

In Figure 9 is shown first lens portion 12 having two projecting portions 16 thereon  
and having a second lens 31 engaged in a spaced relationship adjacent the second surface 24 of the first lens portion 12 as would be engaged in the goggle of figure 8.

Shown in Figure 10 is a mode of the device 10 similar in fashion to that of figure 9  
30 and engageable within the goggle frame 33 such as that of figure 8. In this figure, the second

lens 31 forming a cavity is positioned adjacent to the lens-machinable raised surfaces 22 of the projecting portions 16.

Another goggle or protective eyewear mode is shown in Figure 11 and adapted to minimize fogging in the same fashion as those of figures 9, 10, and 12. As depicted, a mating  
5 second lens 31 having projecting sections 35 is engageable where the projecting sections 35 are configured to fit adjacent the sidewalls 18 of the formed projecting portions 16 of the first lens 12 and fill the gaps.

Figure 11 shows another mode of the device adapted for a goggle to minimize fogging in the same fashion as those of figures 9, 10, and 12, and showing a mating lens having  
10 projecting sections adapted to fit adjacent the sidewalls of the formed projecting portions of the first lens.

Figure 12 depicts a mode of the device forming a unitary lens structure formed with a first lens portion 12 and projecting portion 16 as with the other modes herein. This mode of the device is well adapted for engagement in eyeglass frames where the thinner cross section  
15 of the first lens portion 12 which surrounds the thicker area where the projecting portion 16 rises will better fit frames.

Figure 13 is an overhead view of the device as in figure 12 showing the perimeter intersection 20 of the sidewall 18 with the first surface 14 of the first lens portion 12. As depicted the sidewall 18 defines an oval projecting portion 16 extending from the first surface  
20 14 of the first lens portion 12.

Figure 14 depicts a sectional view of the device of figures 12 and 13 and shows the preferred non linear intersection 20 between the sidewall 18 and the first surface 14 of first lens portion 12 as is preferable in all modes of the device herein.

Figures 15a-15d depict various non linear shapes to the intersection 20 of the sidewall  
25 18 with the first surface 14 of the first lens portion 12. Such as noted are highly preferred to eliminate a linear intersection prone to cracking.

Figure 16 depicts unitary lense devices 10 formed to engage eyeglass frames where the thicker projecting portion 16 is surrounded by the thinner first lens portion 12 to allow for optical prescriptions requiring thick lenses, but also allow engagement of the formed lens  
30 devices 10 to more fashionable eyewear when the user must have such thick lenses for sight correction. In Figure 17 is shown a similar mode of the device 10 as in figure 16, but with

rectangular panoramic first lens portions 12.

Where filtered optics are desired or required in the device 10 herein in any mode, such is depicted in Figure 18 and figure 19. In figure 18 is shown the unitary lens device 10 which has a polarizing or other filter layer 36 engaged between the projecting portion 16 and the  
5 second side 24 of the first lens portion 12. Shown in Figure 19 the polarizing or other filter layer 36 is positioned across the entire first lens portion 12 in between the first surface 14 and second surface 24 thereof.

While all of the fundamental characteristics and features of the software enabled employee management and matching system herein have been shown and described herein,  
10 with reference to particular embodiments thereof, a latitude of modification, various changes and substitutions are intended in the foregoing disclosure and it will be apparent that in some instances, some features or steps in the invention may be employed without a corresponding use of other features or steps without departing from the scope of the invention as set forth. It should also be understood that various substitutions, modifications, and variations may be  
15 made by those skilled in the art without departing from the spirit or scope of the invention. Consequently, all such modifications and variations and substitutions are included within the scope of the invention as defined by the following claims.

What is claimed is:

1. A unitary lens structure, comprising:

a first lens portion having a perimeter edge and having a first surface opposite a second surface;

said first lens portion having a first end opposite a second;

at least one projecting portion, said projecting portion having a sidewall defining a perimeter edge of said projecting portion, said perimeter edge defining a shape of said projecting portion;

said projecting portion and said first lens portion forming a unitary structure, with said projecting portion extending from an intersection of a first end of said sidewall with said first side of said first lens portion, to a raised surface having a shape defined by a second end of said sidewall; and

each said raised surface adapted for formation of an ophthalmic lens to correct the vision of a wearer of said unitary lens structure.

2. The unitary lens structure of claim 1, wherein said intersection of said first end of said sidewall with said first surface of said first lens portion, is a non-linear intersection of said first end of said sidewall with said first surface of said first lens portion.

3. The unitary lens structure of claim 2, wherein said non linear intersection is any of a group of non linear intersections, including said intersection formed by a curved surface extending between said first end of said sidewall and said first surface of said first lens portion, said intersection formed by an angled surface extending between said first end of said sidewall and said first surface of said first lens portion, and said intersection formed by a recess extending underneath said first end of said sidewall and depending into said first surface of said first lens portion.

4. The unitary lens structure of claim 1 wherein said perimeter edge of said first lens portion is large than said perimeter edge of said projecting portion; and

said perimeter edge of said first lens portion configured for engagement with one lens holder of an eyeglass frame, and

whereby said raised surface may be formed to an ophthalmic lens to correct the vision of a nearsighted wearer, and said perimeter edge of said first lens portion is engageable with a said eyeglass frame.

5. The unitary lens structure of claim 2 wherein said perimeter edge of said first lens portion is large than said perimeter edge of said projecting portion; and

said perimeter edge of said first lens portion configured for engagement with one lens holder of an eyeglass frame, and

whereby said raised surface may be formed to an ophthalmic lens to correct the vision of a nearsighted wearer, and said perimeter edge of said first lens portion is engageable with a said eyeglass frame.

6. The unitary lens structure of claim 3 wherein said perimeter edge of said first lens portion is large than said perimeter edge of said projecting portion; and

said perimeter edge of said first lens portion configured for engagement with one lens holder of an eyeglass frame, and

whereby said raised surface may be formed to an ophthalmic lens to correct the vision of a nearsighted wearer, and said perimeter edge of said first lens portion is engageable with a said eyeglass frame.

7. The unitary lens structure of claim 1 additionally comprising:

said first lens portion having a perimeter edge sized for engagement with a goggle frame;

two projecting portions, extending from a said intersection of a respective first end of a respective said sidewall with said first side of said first lens portion;

said two projecting portions and said first lens portion formed as a unitary structure; and

each of said two projecting portions having a said raised surface adapted for formation of a said ophthalmic lens to correct the vision of a said wearer of said unitary lens structure.

8. The unitary lens structure of claim 2 additionally comprising:

said first lens portion having a perimeter edge sized for engagement with a goggle frame;

two projecting portions, extending from a said intersection of a respective first end of a respective said sidewall with said first side of said first lens portion;

said two projecting portions and said first lens portion formed as a unitary structure; and

each of said two projecting portions having a said raised surface adapted for formation of a said ophthalmic lens to correct the vision of a said wearer of said unitary lens structure.

9. The unitary lens structure of claim 3 additionally comprising:

said first lens portion having a perimeter edge sized for engagement with a goggle frame;

two projecting portions, extending from a said intersection of a respective first end of a respective said sidewall with said first side of said first lens portion;

said two projecting portions and said first lens portion formed as a unitary structure; and

each of said two projecting portions having a said raised surface adapted for formation of a said ophthalmic lens to correct the vision of a said wearer of said unitary lens structure.

10. The unitary lens structure of claim 7 additionally comprising:

a tooling engagement member extending from a first end engaged with said first lens portion, to a distal end;

said tooling engagement member adapted to engage a lens machining device;

said tooling engagement member positioned upon said first lens portion and engaged with said lens machining device, operatively positioning said raised surfaces for ophthalmic lens formation using said lens machining device.

11. The unitary lens structure of claim 9 additionally comprising:

a tooling engagement member extending from a first end engaged with said first lens portion, to a distal end;

said tooling engagement member adapted to engage a lens machining device;

said tooling engagement member positioned upon said first lens portion and engaged with said lens machining device, operatively positioning said raised surfaces for ophthalmic lens formation using said lens machining device.

12. The unitary lens structure of claim 10 additionally comprising:

a tooling engagement member extending from a first end engaged with said first lens portion, to a distal end;

said tooling engagement member adapted to engage a lens machining device;

said tooling engagement member positioned upon said first lens portion and engaged with said lens machining device, operatively positioning said raised surfaces for ophthalmic lens formation using said lens machining device.

13. unitary lens structure of claim 7 additionally comprising: both of said two projecting portions, having a said shape which is wider at first end of said projecting portions adjacent ends of said first lens portion, and narrower at second ends centrally located on said first lens portions;

said first side of each of said projecting portions extending in a line between a first corner of said first side and first corner of a second side; and

a second side of each of said projecting portions extending in a curve from a second corner of said first side to a second corner of said second side.

14. The unitary lens structure of claim 8 additionally comprising:

both of said two projecting portions, having a said shape which is wider at first end of said projecting portions adjacent ends of said first lens portion, and narrower at second ends centrally located on said first lens portions;

said first side of each of said projecting portions extending in a line between a first corner of said first side and first corner of a second side; and

a second side of each of said projecting portions extending in a curve from a second corner of said first side to a second corner of said second side.

15. The unitary lens structure of claim 9 additionally comprising:

both of said two projecting portions, having a said shape which is wider at first end of said projecting portions adjacent ends of said first lens portion, and narrower at second ends centrally located on said first lens portions;

said first side of each of said projecting portions extending in a line between a first corner of said first side and first corner of a second side; and

a second side of each of said projecting portions extending in a curve from a second corner of said first side to a second corner of said second side.

16. The unitary lens structure of claim 3 additionally comprising:

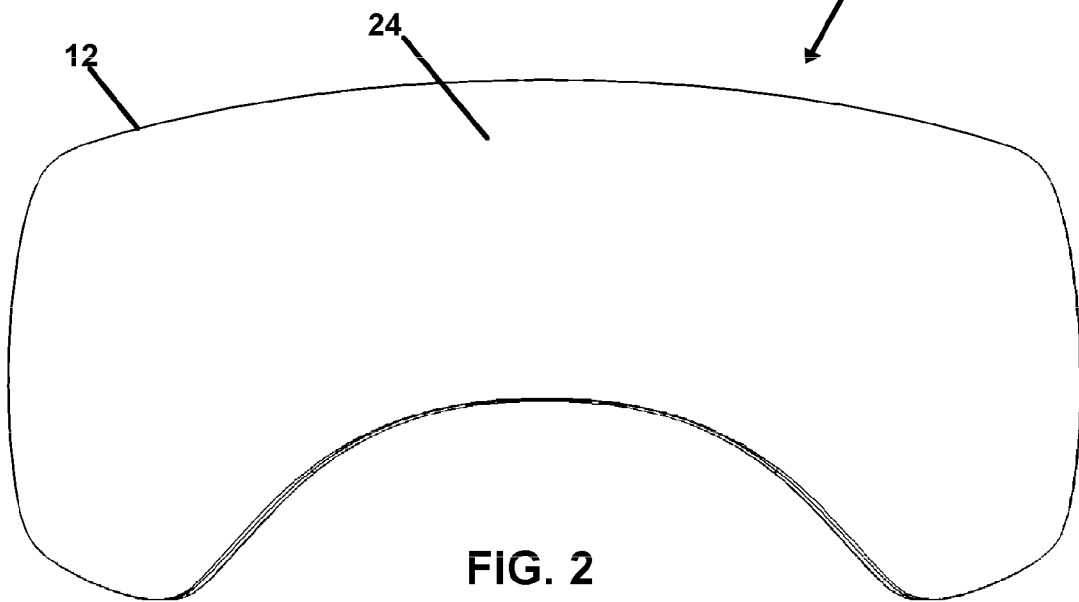
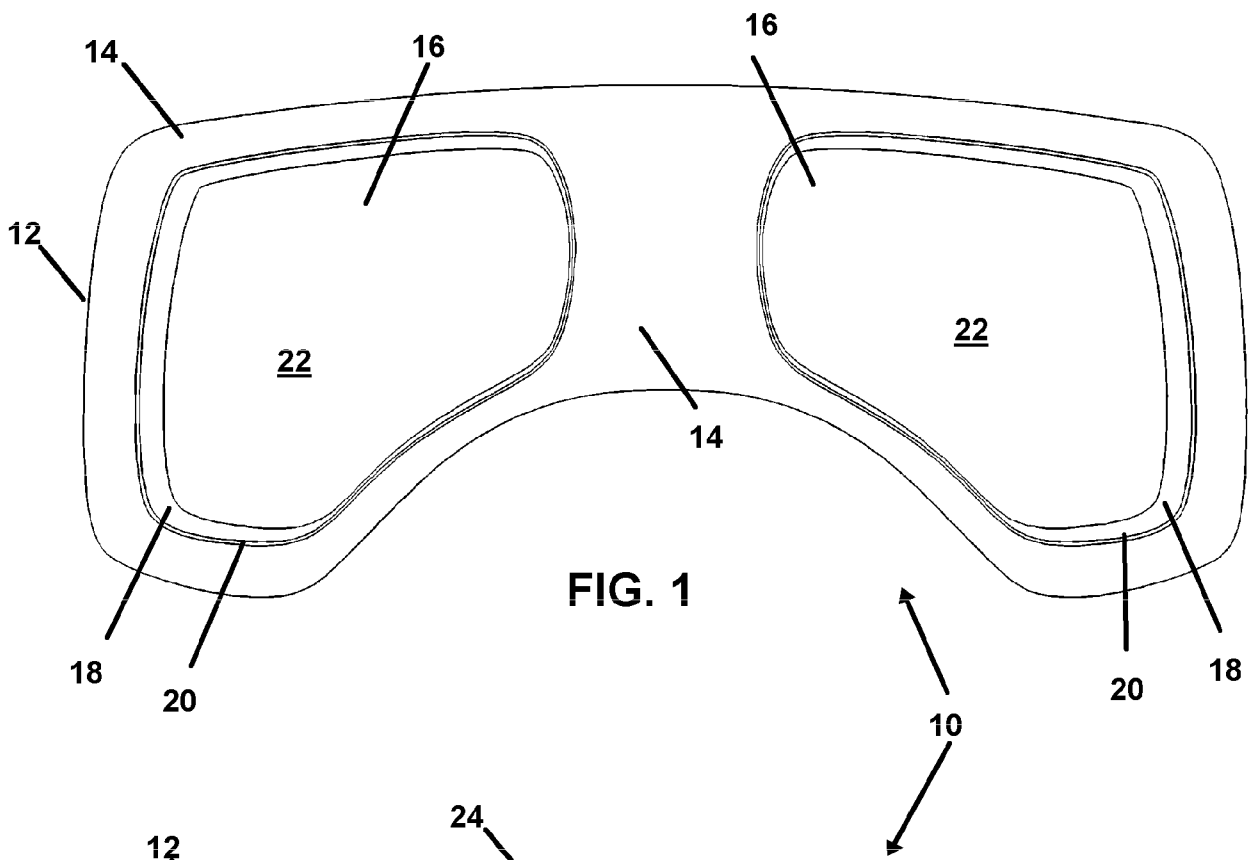
wherein both said curved surface extending between said first end of said sidewall and said first surface of said first lens portion, and said angled surface extending between said first end of said sidewall and said first surface of said first lens portion, extend to a point on said sidewall which is 1mm or less, above said first surface of said lens portion.

17. The unitary lens structure of claim 6 additionally comprising:

wherein both said curved surface extending between said first end of said sidewall and said first surface of said first lens portion, and said angled surface extending between said first end of said sidewall and said first surface of said first lens portion, extend to a point on said sidewall which is 1mm or less, above said first surface of said lens portion.

18. The unitary lens structure of claim 9 additionally comprising:

wherein both said curved surface extending between said first end of said sidewall and said first surface of said first lens portion, and said angled surface extending between said first end of said sidewall and said first surface of said first lens portion, extend to a point on said sidewall which is 1mm or less, above said first surface of said lens portion.



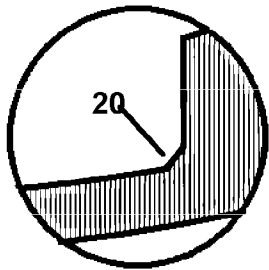
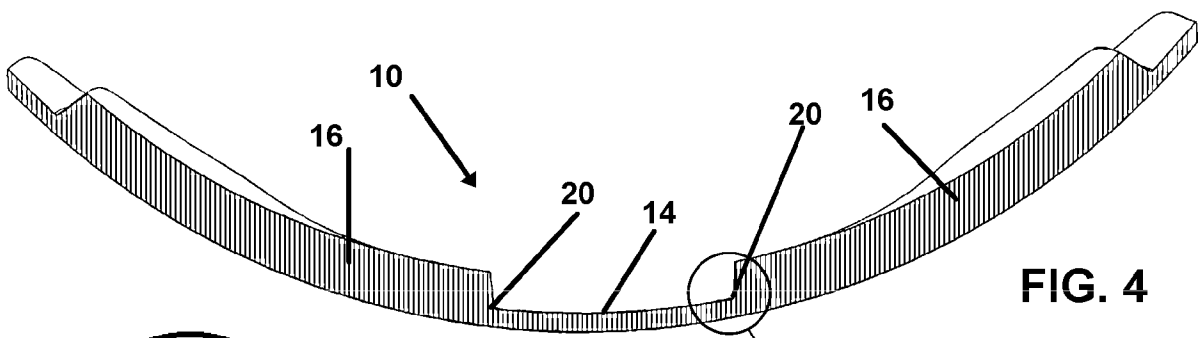
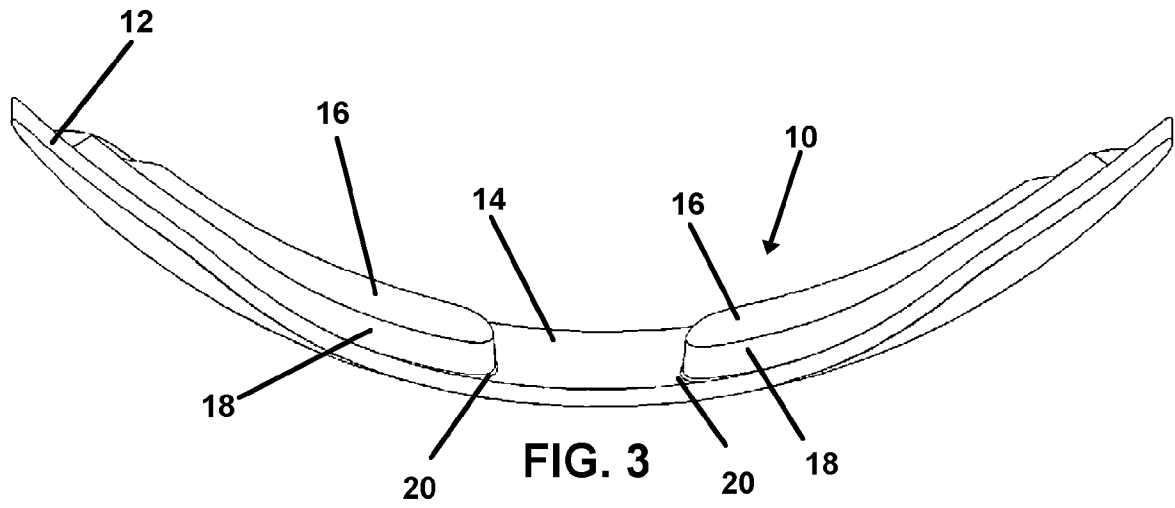


FIG. 4c

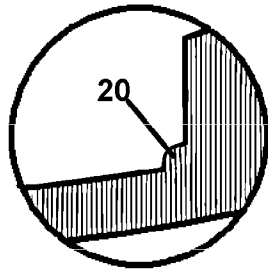


FIG. 4b

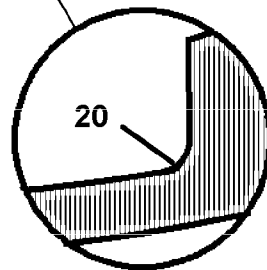


FIG. 4a

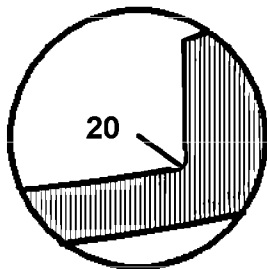


FIG. 4d

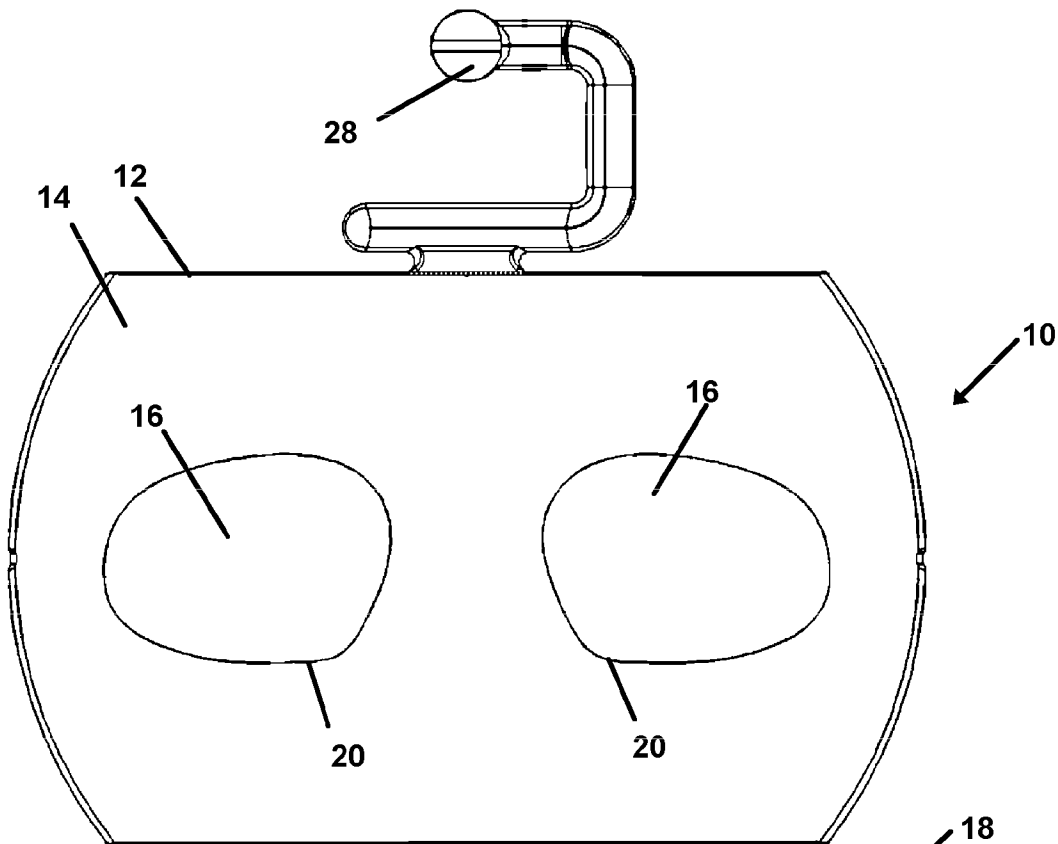


FIG. 5

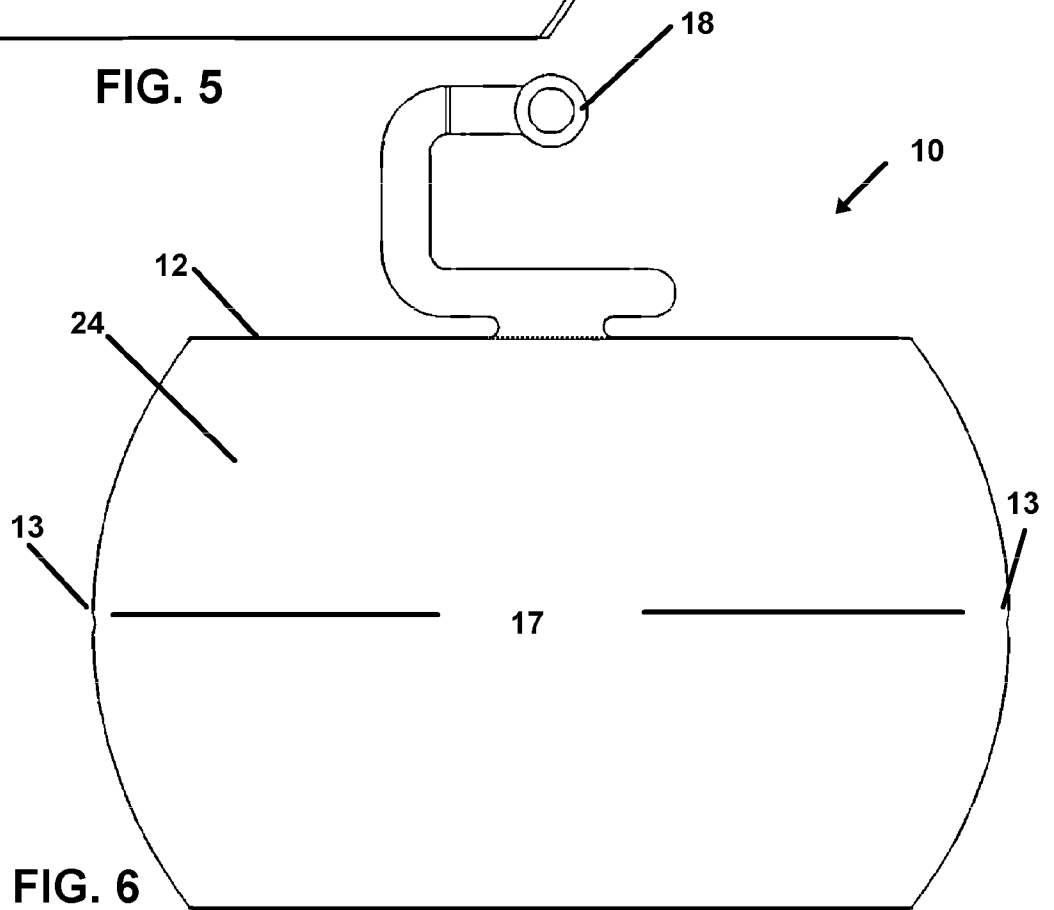


FIG. 6

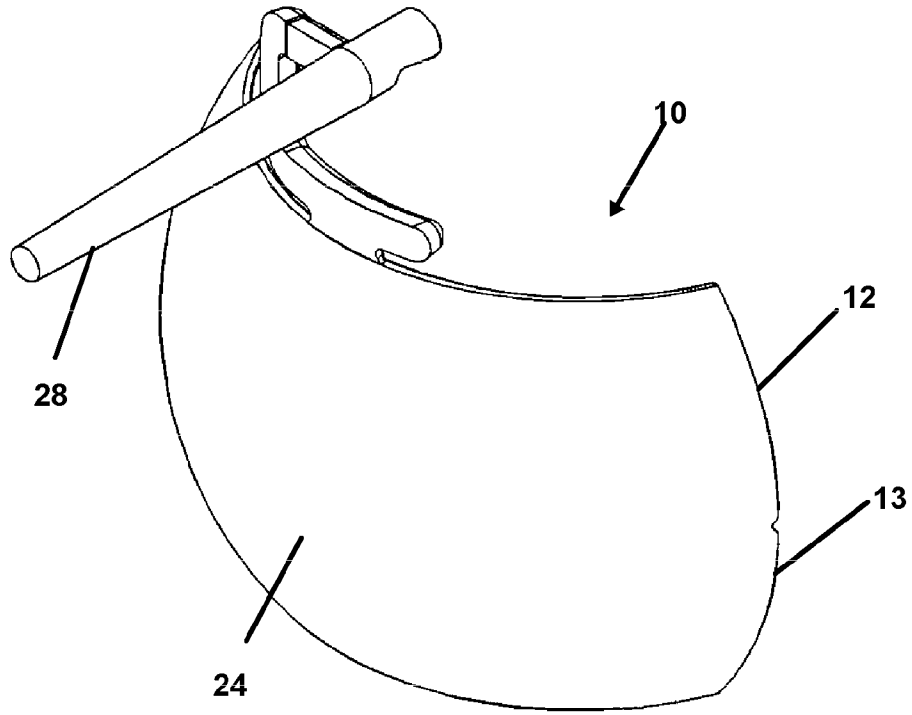
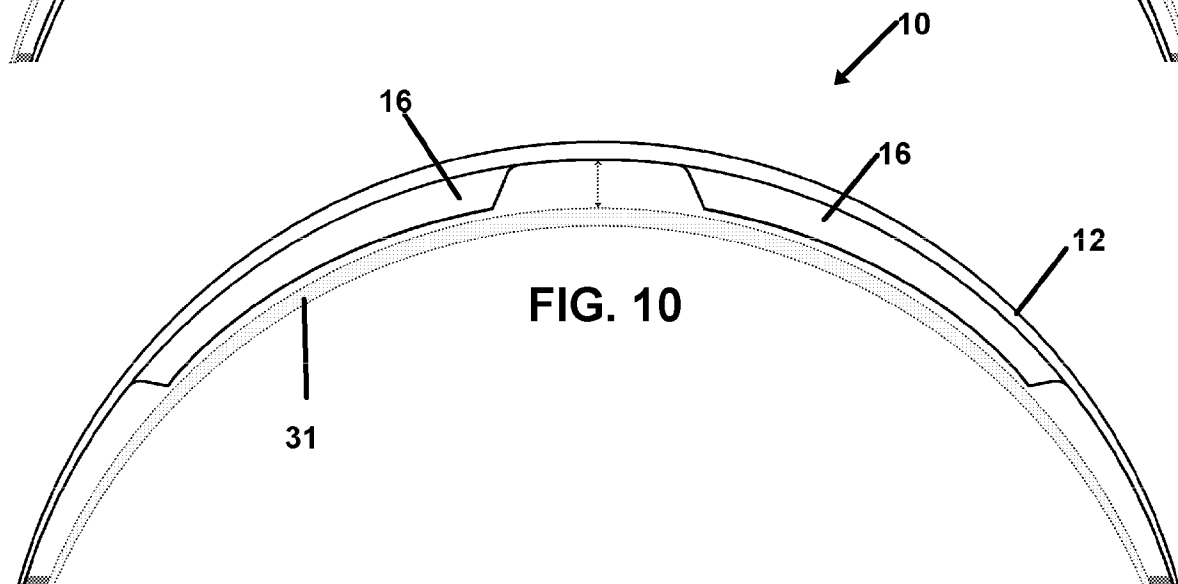
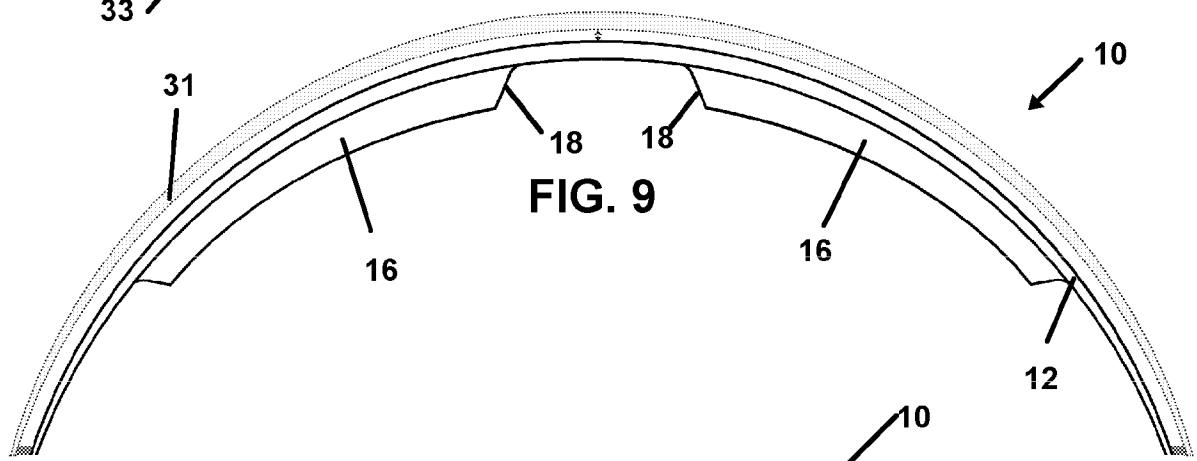
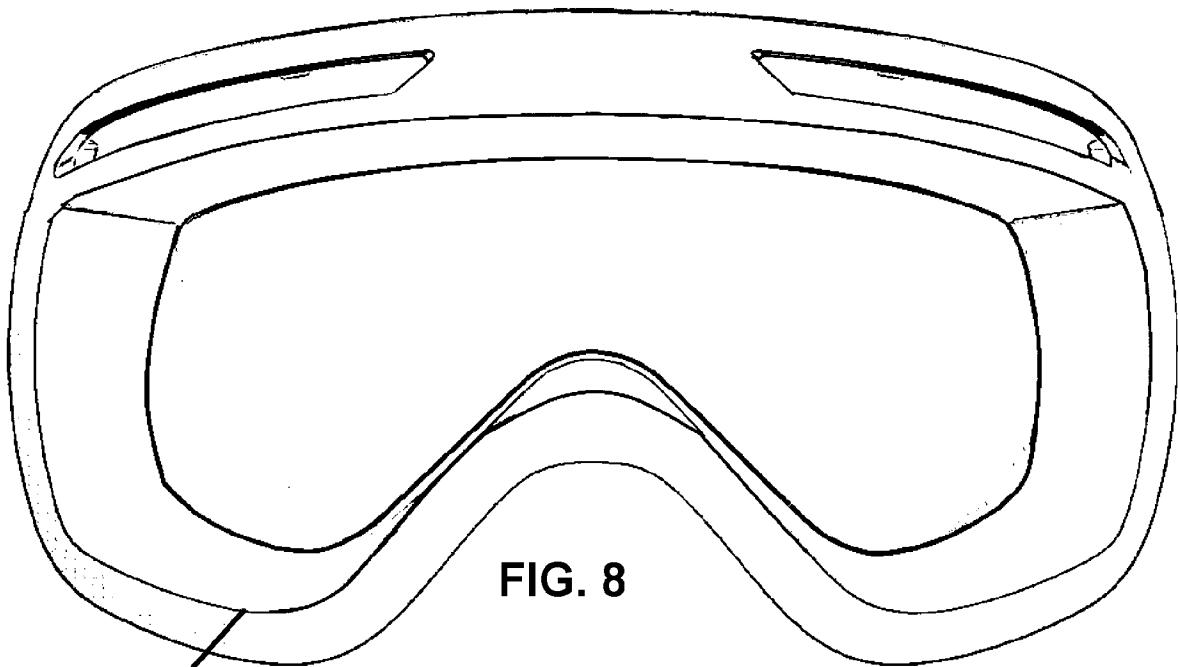
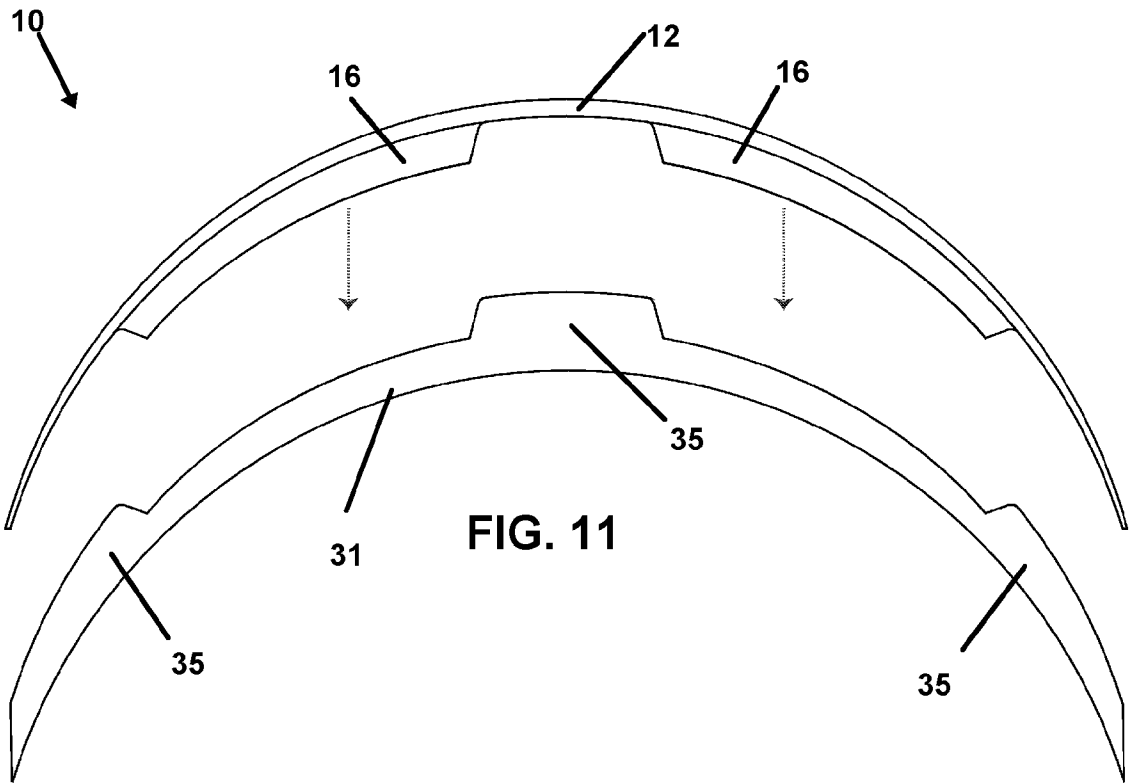


FIG. 7





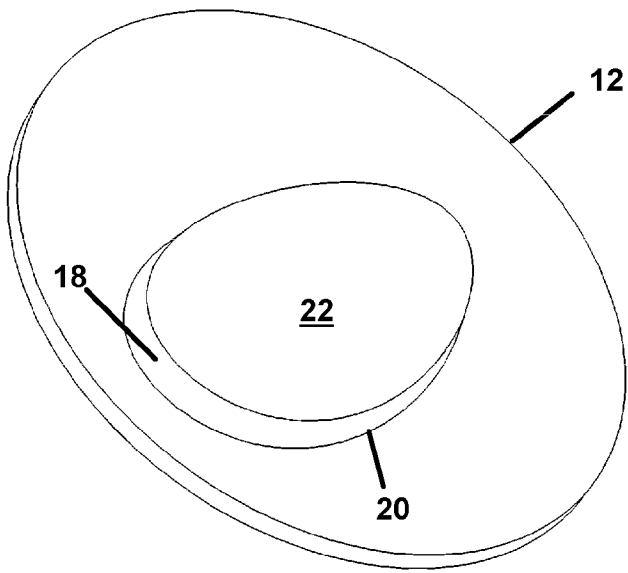


FIG. 12

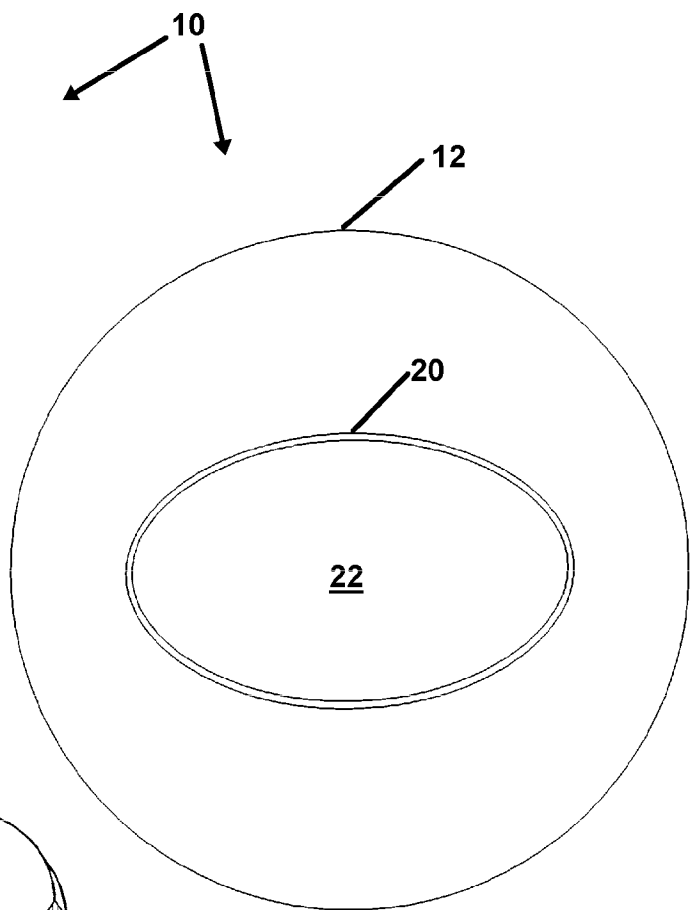


FIG. 13

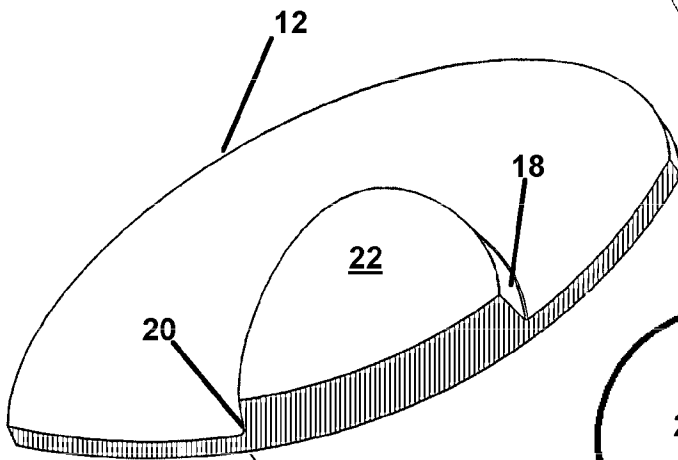


FIG. 14

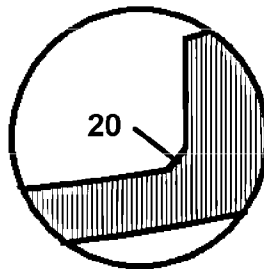


FIG. 15a

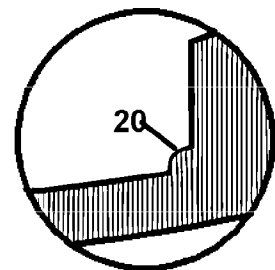


FIG. 15b

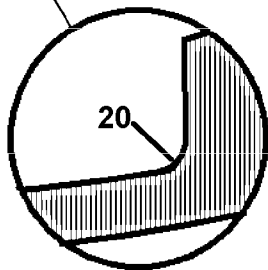


FIG. 15c

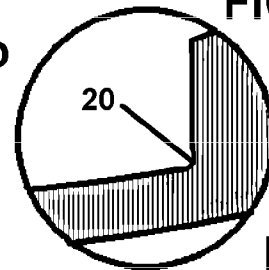
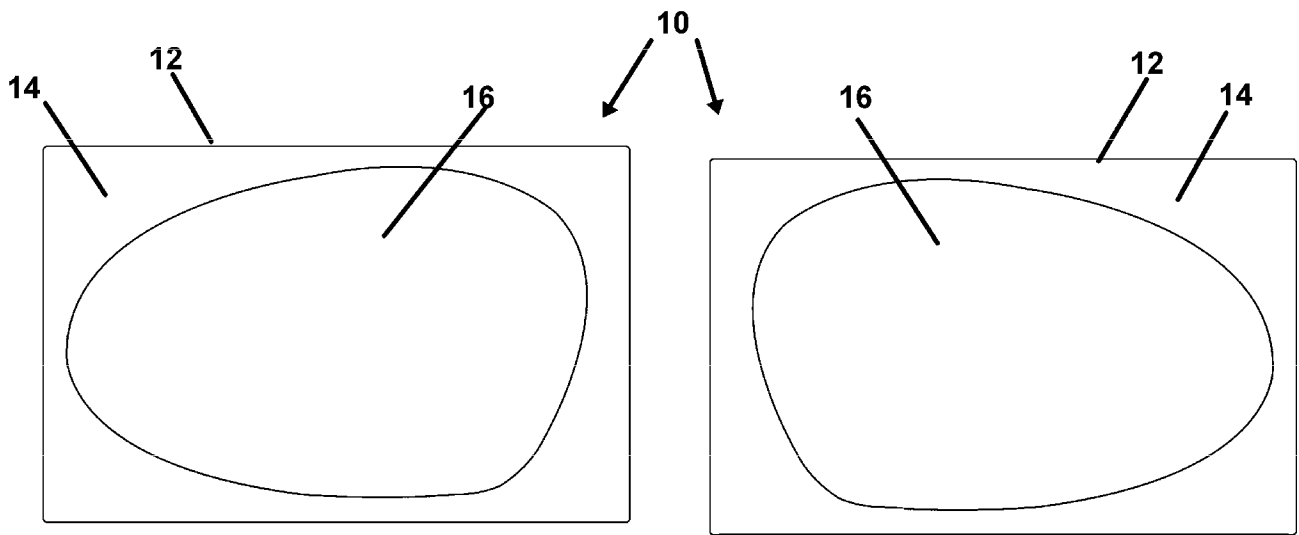
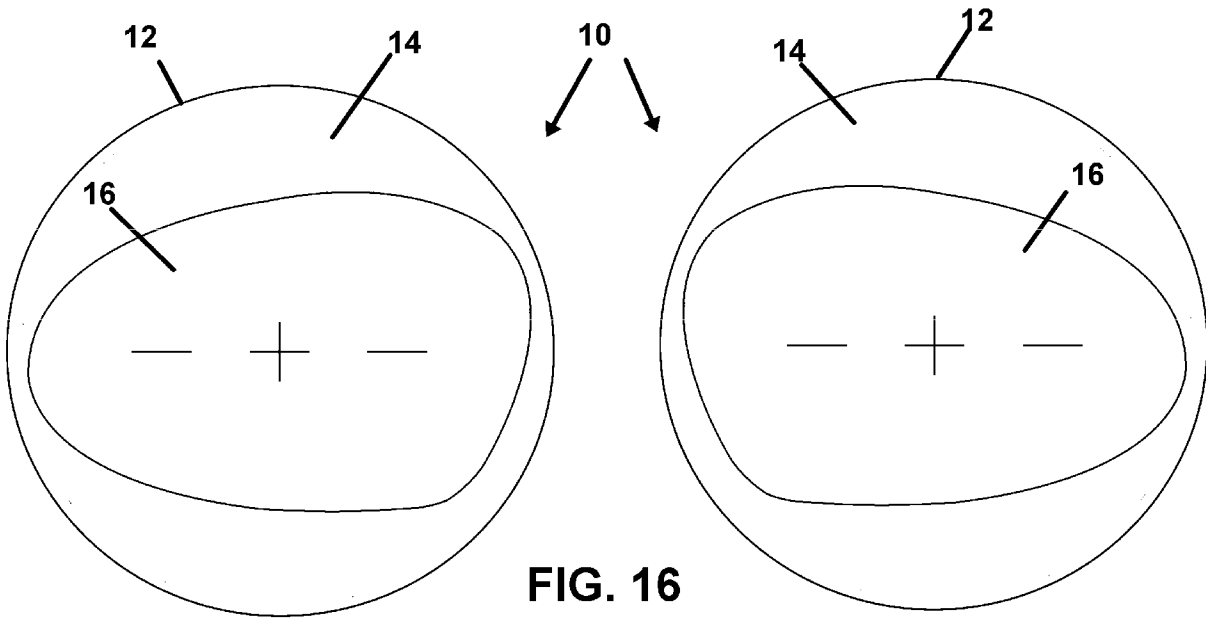
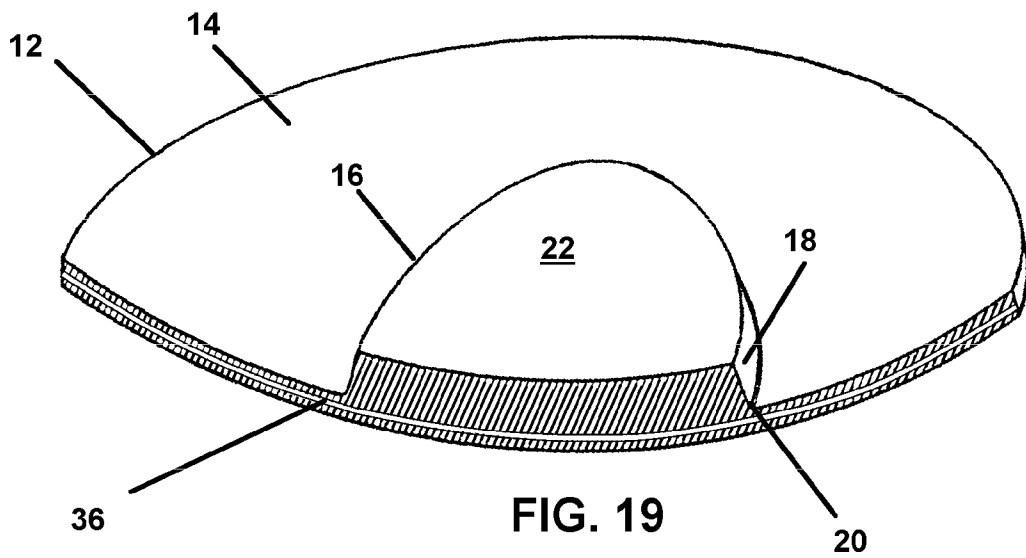
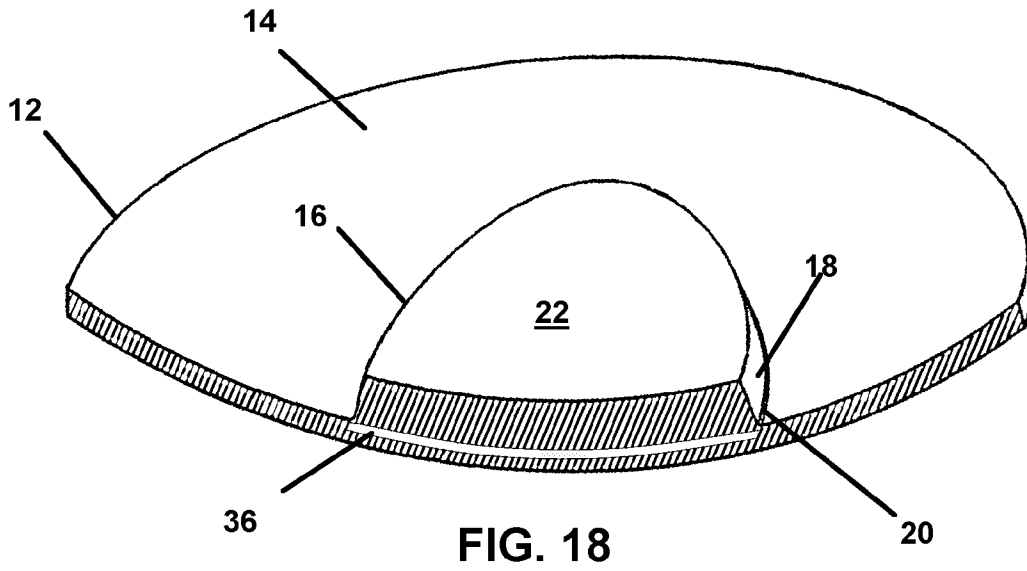


FIG. 15d





## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 2016/049110

## A. CLASSIFICATION OF SUBJECT MATTER

*A63F 9/02 (2006.01)**G02C 7/02 (2006.01)**G02C 1/00 (2006.01)*

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)

G02C 1/00-1/08, 5/00-5/10, 7/00-7/16, A63F 9/02

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)

PatSearch (RUPTO internal), USPTO, PAJ, Esp@cenet, DWPI, EAPATIS, PATENTSCOPE, Information Retrieval System of FIPS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2010/0118258 A1 (ALEJANDRO ARTURO GOEBEL QUINTANA) 13.05.2010	1-9, 13-15
A		10-12, 16-18
A	WO 2014/154370 A1 (RAUTER, CHRISTOPH) 02.10.2014	1-18
A	US 2014/0033408 A1 (DYE PRECISION, INC.) 06.02.2014	1-18
A	WO 2013/075166 A1 (PEREIRA, JORGE MIGUEL) 30.05.2013	1-18

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document but published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

28 November 2016 (28.11.2016)

Date of mailing of the international search report

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