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(71) Applicant: **Cafiero s.r.l.**
32020 Limana (BL) (IT)

(72) Inventor: **Cafiero, Aldo**
32000 BELLUNO (IT)

(74) Representative:
Karaghiosoff, Giorgio Alessandro, Dr.
Studio Karaghiosoff e Frizzi S.a.S.,
Via Pecorile 25
17015 Celle Ligure (SV) (IT)

(54) Eyeglass case-display unit

(57) Case (1) for eyeglasses or the like, characterized in that it contains engagement means (2) capable of removably engaging the bridge (53) of the eyeglasses (50).

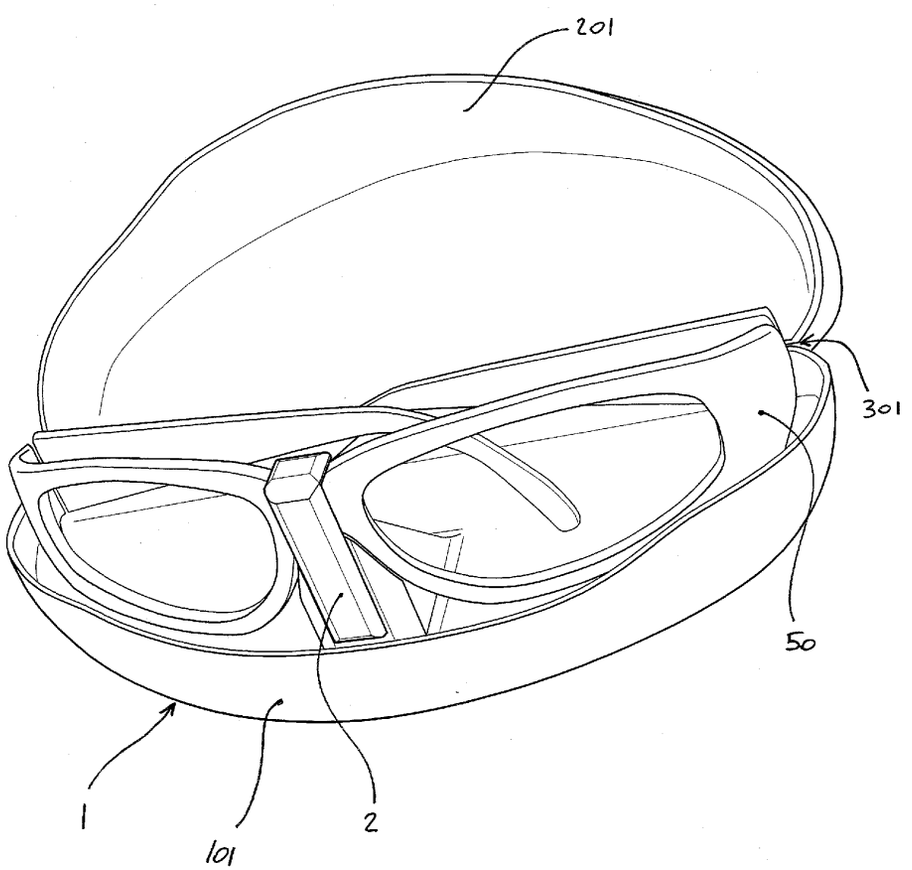


Fig. 1

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Description

[0001] This invention relates to a case for eyeglasses or the like.

[0002] Particularly, this invention relates to rigid eyeglass cases, which are composed of two hinged shell parts.

[0003] Prior art currently available rigid eyeglass cases are composed of two half-shells or asymmetric shell parts, that rotate about a rear hinge, thereby causing the case to open and close. As a rule, prior art cases, when used in the field of sport or wrap-around eyeglasses or goggles, typically have a spherical wedge shape, which ideally conforms to the arc profile of frames and lenses. In fact, said sport or wrap-around eyeglasses or goggles, when viewed from the top, are profiled to follow a single rather sharp curved line, which is obviously also followed by their lenses, the latter also forming the glass frame structure, due to commercial or aesthetic needs, as those eyeglasses are sometimes frameless and fabricated by mounting a bridge and two temples to the lenses.

[0004] The curved profile of these eyeglasses is often sharp and, due to aesthetic/market purposes, their lenses are often made from various plastic materials; while this provides certain advantages, such as inexpensive fabrication, easy assembly, lightness and availability of particular aesthetic arrangements, on the other hand it causes the serious drawback that plastic lenses are easily scratched and abraded whenever they contact harder surfaces, hence, due to the low hardness of any plastic material, scratches and abrasions are frequent drawbacks during normal use of these eyeglasses.

[0005] Particularly, these drawbacks occur when the above eyeglasses are stored in rigid cases containing dust, sand and other similar deposits, which often adhere to the inner surfaces of the case, as the latter is preferably lined, for aesthetic reasons, with soft and/or rubber-like materials, such as velvet or synthetic rubbers. During normal use, when a pair of eyeglasses is stored in its case and the latter is carried in a pocket, bag, backpack or in any other carrier, the eyeglasses move inside the case and their lenses contact the inner wall of the case, thereby causing in time the above mentioned scratches on lenses and possibly on the plastic frame and temples, the latter drawback being less serious, but annoying, especially for high-cost sport eyeglasses.

[0006] Those skilled in the art will appreciate that the case's lining could never be removed because, while this would lead to a reduction of abrasive agents inside the case, on the other hand such a case would not be acceptable from an aesthetic/commercial point of view due its poor finish, and the problem would not be eventually solved, as the plastic material of the case is often as hard as or even harder than the plastic material of the lenses and frame, and this would cause the above mentioned drawback, that is the abrasion of the softer material, i.e. of the eyeglasses.

[0007] Another drawback of normal prior art eyeglasses cases is associated to shocks: for instance, when the case is dropped, eyeglasses are subjected to shocks within the case, and this might cause the lenses and frame not only to be scratched but even broken or cracked, due to the fact that the plastic material which composes them has a low impact strength.

[0008] It shall be further noted that conventional rigid cases for eyeglasses often have such a large size as to prevent full vision of eyeglasses when they are displayed for sale in a shop window inside the open case. Due to the lack of an internal support in the case, eyeglasses lie on the bottom of the case and, since the case has a very high front edge, eyeglasses only a small portion of the eyeglasses is visible, i.e. the end portion of the lenses or the frame. This drawback involves the need of displaying eyeglasses out of their cases on appropriate support means, or of inserting a spacer in the open case, to raise the eyeglasses and ensure a good visibility thereof for purchasers.

[0009] This invention has the object of obviating prior art drawbacks by providing a case for eyeglasses as described hereinbefore, which is composed of two rigid shells, wherein the eyeglasses are properly secured in appropriate removable engagement means. The engagement means may be provided, as will be apparent hereafter, in different embodiments, all having the same purpose: providing a removable engagement for the bridge between lenses, so that the eyeglasses are held still within the case even during transport thereof. The eyeglasses are substantially held by the ends of the temples and by the bridge retained by the engagement means, and never come in contact with the case, except by said temples or the lower edge of the rims.

[0010] According to an improvement, the above engagement means are so sized as to prevent the nose piece from disengaging therefrom even when the case is turned upside down and/or shaken during transport.

[0011] Also, the engagement means are situated at such a distance from the inner wall of the case that lenses cannot come in contact therewith.

[0012] The engagement means may further have displacement guides, preferably positioned at the junction between the engagement means and the inner wall of the case, for allowing the engagement means to move with at least one degree of freedom, to provide adaptation to different eyeglass shapes.

[0013] Therefore, the engagement means according to this invention provide the advantage of preventing eyeglasses from contacting the inside of the case, thereby avoiding any lens scratching, and minimizing frame scratching, by retaining the eyeglasses by the ends of the temples and the bridge and, sometimes, by the lower portions of the rims.

[0014] Moreover, thanks to the fact that the eyeglasses are engaged inside the case by their bridge, which is highly resistant, the lenses or frame are not subjected

to shocks within the case even in case of violent impacts, i.e. when the case is dropped. In fact, the shock will be preferably discharged, thanks to the engagement means, onto the eyeglass bridge and not, for instance, onto the lenses.

[0015] As mentioned above, said engagement means may include a guide for displacement thereof relative to the case, which provides the advantage of allowing the case to be adapted to different eyeglass types, as well as to be used as a display unit: by moving or pivoting the engagement means when the case is open and the eyeglasses are held therein by the bridge, an attractive eyeglass arrangement is obtained, and eyeglasses may be displayed in their cases.

[0016] The visibility of eyeglasses is improved by simply increasing their distance from the front side of the shell portion on which the case rests.

[0017] Also, the case may be designed in such a shape as to further enhance this advantage, e.g. by arranging the two shell parts to form a profile that maximizes the visible eyeglass surface when the case is open and the eyeglasses are held therein.

[0018] Regarding the engagement means, two preferred embodiments are disclosed herein, which are not intended to limit other possible arrangements.

[0019] A first preferred embodiment is a clip support means, which is made from a naturally resilient material, capable of deforming when the eyeglass bridge is pushed into the clipping arms. These clipping arms will elastically close around the eyeglass bridge and retain it, whereby the eyeglasses are firmly held in position, and prevented from shaking. The clip will be adjusted by the displacement guide in such a manner that, when the case is closed, any contact is prevented between the lenses and the inner surface of the case, for instance by shaking and/or pivoting the clip from/to the wall of the shell part/s that are turned toward the eyeglass lenses when the eyeglasses are stored therein. If no displacement guides are provided, the clip shall be disposed at such a distance from the inner surface of the case as to prevent any contact therebetween.

[0020] According to another characteristic, the upper distance between the clip and the upper case part in the closed condition is smaller than the distance between the bridge and the upper portion of the frame or lenses. Hence, even in the event that the bridge should be released from the clip due to an impact, the eyeglasses would not move freely inside the case, but would be kept still, though in a weaker engagement than before release from the clipping arms.

[0021] The additional advantage provided by the use of the clip means is a low fabrication cost, and those skilled in the art will easily appreciate how this arrangement is cost-effective and advantageous.

[0022] The displacement guide will be selected in such a manner that the eyeglasses may be displaced in one or more preferred directions, to not only adjust their position in the closed case, but also to position them in a preferred manner while it is displayed.

[0023] A second preferred embodiment consists of a nose piece for supporting the bottom side of the bridge at the bridge's position and of a retainer tab at a certain distance over the support nose piece, which tab is arranged to slide along guides to/from the support nose piece, in such a manner as to engage the eyeglass bridge between the tab and the support nose piece. Hence, at a slightly higher cost, another advantage is obtained in addition to the above mentioned lens scratch prevention advantages, i.e. the provision of a much smaller engagement means that does not cover the eyeglasses when the latter are displayed in their case, while wholly preventing eyeglass disengagement, even when the case is turned upside down or otherwise impacted.

[0024] The guides for displacement of the engagement means relative to the shell part/s may include translation, oscillation, rotation guides or combinations thereof, so that the eyeglasses may be moved in one or more preferred directions, not only to adjust their position inside the closed case, but also to position them in the preferred manner while it is displayed for sale.

[0025] Both the displacement guides and those situated between the engagement means and the case, or between the support nose piece and the retainer tab may be formed with well-known profiles: translation or oscillation guides having a dove-tail profile, pins and cylindrical guides, or grooves and projections, or any other such arrangement as to prevent any undesired displacement of the engagement means due to impacts or transport of the case. The position lock effect between the engagement means and the case and/or between the retainer tab and the support nose piece may be obtained in various manners.

[0026] Special removable lock means may be provided, which are to be alternately moved to the operating or idle locking position. This involves a cost increase and an inconvenience.

[0027] As an alternative, position lock means may be provided, which are composed of snap fit elements to be mutually engaged and disengaged thanks to the natural resilience of their material, which is such as to require a predetermined amount of manual force both for snap engagement and disengagement.

[0028] Yet another alternative consists in providing such shape- or friction-fit position-lock means between slidable or displaceable parts as to ensure manually overcome locking forces.

[0029] Here, an interference is provided between the profiles of the male and female parts of the guide, so that a certain force is required to move said means.

[0030] Eyeglass engagement means may be provided on both shell parts, thereby obtaining the same results and advantages as described in the previous embodiments.

[0031] Further, for practical reasons, these engagement means may be arranged to be used as case closing devices, by positioning well-known engagement/dis-

engagement means thereon: a retainer tooth may be provided on the engagement means for engagement with a fitting profile on the opposed shell part, thereby tightly closing the case. A suitable and known release means may be further provided, which allows disengagement of the retainer tooth from the closing profile, for instance by elastic deformation of the engagement means.

[0032] Further characteristics and improvements will form the subject of the claims appended hereto.

[0033] The characteristics of the invention and the advantages derived therefrom will be more apparent from the following detailed description of the detailed figures, in which:

Figure 1 is a perspective view of the case according to this invention.
Figure 2 is a top view of the case according to this invention.
Figure 3 is a side sectional view of the case in the closed position.
Figure 4 is a transparent front view of the case.
Figure 5 shows two preferred embodiments of the guide and slide assemblies.
Figure 6 shows an additional embodiment of the guide and slide assembly.
Figure 7 shows a particular guide and slide coupling arrangement.
Figure 8 shows the support element in the particular clip-based embodiment.
Figure 9 is a rear top view of the case.
Figure 10 is a side view of the details of the support element 402.
Figure 11 is a front view of the nose piece 502 and the tab 602 from the inside of the shell.
Figure 12 is a side view of the details of the support element 402.
Figure 13 is a transparent side view of the shell including engagement means 2.
Figure 14 shows a transparent side view of the shell, including a clip 102.
Figure 15 is an additional side sectional view of the shell in the closed position.
Figure 16 is a perspective view of the open shell with a pair of eyeglasses therein.
Figure 17 is a front view of the case in the open condition.

[0034] Figure 1 is a perspective view of the case according to this invention. The case 1 has a lower shell part 101, and an upper shell part 201, which are connected by a hinge 301. The case houses a pair of eyeglasses, generally designated by 50, which are held by means for engagement of the eyeglass bridge, the latter forming the first eyeglass supporting contact point with the shell or case of the invention. The remaining supporting contact points between the eyeglasses and said case or shell are the ends of the temples, as will be further noted in the following figures. Moreover, Figure 1 already shows that the eyeglass lenses are kept at a certain distance from the inner wall of the shell or case 1.

[0035] Figure 2 is a top view of the case as shown in Figure 1, and includes: the lower shell part 101, the upper shell part 201, the hinge 301, the engagement means 2, a general pair of eyeglasses 50, the left temple 51 of said eyeglasses 50, the right temple 52 of said eyeglasses 50 and the bridge 53 between the lenses of said eyeglasses 50. The bridge 53 of the eyeglasses 50 is held by the engagement means 2 in such a manner that the eyeglass lenses are at a certain distance from the inner wall of the shell or case. Figure 2 further shows that the eyeglass profile follows the profile of the case 1 or shell and vice versa, so that the eyeglasses are held by their bridge 53 in the engagement means 2 and also rest by the ends of their temples 51 and 52, thereby being firmly engaged with the half shell, in such a manner that no impact may occur with the inner wall of the half shell, even when the case is subjected to shocks or jolts due to careless handling.

[0036] Figure 3 shows the case in the closed condition with the lower shell part 101 pivoted over the upper shell part 201. Further, in Figure 3, the engagement means are secured to the lower shell part 101 by means of a guide and slide combination 3; regarding the displacement of the engagement means 2, Figure 3 also shows the distance h between the engagement means 2 and the front wall of the shell, and the distance H between the engagement means 2 and the top wall of the shell. The eyeglass bridge section is shown both in the properly inserted position in the support element, and in the upward displacement position, in which the bridge is disengaged from the lower portion of the engagement element. Figure 3 clearly shows that, even when the bridge is displaced upwards and disengaged from its proper housing in the engagement means 2, for instance when the case is subjected to shocks, dropped, or similar, the distance H between the end portion or free end of the engagement means 2 and the inner wall of the case is such as to prevent the bridge from coming out of the engagement means, and the eyeglasses from being released from their contact points with the case and, for instance, from impacting by their lenses or frame the inner walls of the case. It may be further noted that in the particular embodiment of Figure 3, the engagement element 2 is positioned at a distance h from the inner wall of the shell. This distance h corresponds to the preferred distance between the engagement means 2 and the inner wall of the lower shell part 101, as it is longer than the distance required by the eyeglass lenses to come in contact with the wall of said shell. Figure 3 also generally shows the guide and slide assemblies 3 that may be interposed between said engagement element 2 and the shell part 201 to which the engagement element is secured. These guide and slide assemblies 3 allow the engagement element 2 to move with at least one degree of freedom, and are made in the well-known shape- and

friction-fit arrangements, to be described hereafter. Figure 3 shows, by the two black arrows F1, F2, two possible degrees of freedom for the engagement element, provided by the guide and slide assemblies 3, which are placed at the base of said engagement element. Thanks to these guide and slide assemblies, the engagement means are displaceable, thereby providing the advantage of making the case adaptable to different types of eyeglasses, that may be placed inside this inventive case without changing the shape thereof, and providing high versatility. The guide and slide assemblies are such as to allow adjustment thereof by a manual action aimed at overcoming the friction- or shape-fit strength between the guide and its relevant slide, which resistance is required to keep in position the engagement means 2 whereto the guide is linked, to prevent any undesired displacement of the engagement means and, consequently, of the eyeglasses.

[0037] Figure 4 is a transparent front view of the case 1, which particularly shows the profile of the closing edges 401, the guide and slide assemblies 3 and the engagement means 2. Figure 4 further shows two possible additional degrees of freedom of the engagement means 2, which may be obtained thanks to the guide and slide assemblies 3. It shall be observed that these guide and slide assemblies are not forcibly provided in the case, there being provided a particular embodiment of the case 1 in which the engagement means 2 are directly linked to one or both of the shell parts. The preferred embodiment as shown in Figure 4, includes said guide and slide assemblies, which provide, in this case, two additional degrees of freedom, possibly required if the case 1 is to contain eyeglasses with particular shapes, or is to be used as a display unit. In the latter case, particular positioning arrangements may be provided for eyeglasses, that may be disposed in asymmetric positions, for aesthetic and visibility purposes. A guide and slide assembly may be oriented in a translation direction that is tangent, secant or parallel to the front edge of the lower half shell 101. Alternatively to or in combination with the above, the engagement means may be secured in such a manner as to be able to pivot about an axis 102 transverse to the front surface of the shell 101. It shall be further noted that in the preferred embodiment as shown in Figure 4, the closing edge 401 has such a profile as to improve visibility of eyeglasses when the latter are inserted or laid in the case, with said case in the open position. It shall be further observed that said preferred embodiment provides a case that can be highly effective as a display unit, as it not only allows a comprehensive vision of the eyeglasses contained therein, but also enables fancy positioning of the eyeglasses inside the case.

[0038] Figure 5 shows two preferred embodiments of the guide and slide assemblies that are generally designated by numeral 3 in Figure 4. Figure 5 shows the engagement means 2, the dove-tail guide 203, formed by an undercut in the lower shell part 101 of the case 1 and the dove-tail slide 103 formed at the base of the engagement means 2. The configuration of the guide and slide assembly of Figure 5 allows the engagement means 2 to move with one degree of freedom, and to translate to and fro, as shown in Fig. 3, or sideways, as shown in Fig. 4. Figure 5 further shows an alternative arrangement of the guide and slide assembly with the dove-tail slide 203 consisting of a suitable projection formed in the lower shell part 101 of the case 1, and the dove-tail guide 203 consisting of an undercut at the end of the engagement means 2. In these embodiments, the slide is locked in position inside the guide by a friction-fit coupling that is calibrated in such a manner as to allow displacement of the engagement means 2, by exerting a predetermined force thereon in the translation direction, which force may be exerted manually.

[0039] In the embodiment of Figure 6, the slide is locked in position in the guide by further providing mutually fitting or gripping tooth- or projection-like shapes of the guide and the slide. Interference profiles are generated thereby, which allow guide and slide assemblies to be position-locked by having the teeth or grip profiles of the guide mesh with those of the slide and vice versa. Obviously, the mutual gripping teeth or profiles of the guide and slide are made from such a naturally resilient material as to ensure that they may be released and capable of translation, by exerting a predetermined manual force. By this arrangement, the engagement means may be positioned in such a manner as to be held in position and provides substantially the same advantages as the guide and slide assemblies described for Figure 5: the mutual gripping profiles of the guide and slide assemblies are designed in such a manner as to allow adjustment thereof by a manual action aimed at overcoming the shape-fit strength between the guide and the slide due to the teeth or profiles, which strength is such as to hold the engagement means 2 associated to the guide in position, to prevent any undesired displacement of the support element, and consequently of the eyeglasses.

[0040] Figure 7 shows a particular type of pivoting coupling arrangement, which is obtained by cylindrical guide 703 and a cylindrical pin 803. One degree of freedom is allowed thereby, for pivoting motion of the engagement means 2, whereby eyeglass lenses may be pivoted away from the inner wall of the case. This arrangement provides the same advantages as were mentioned in the descriptions of Figures 3, 4, 5, 6.

[0041] Figure 8 shows the engagement means in the particular clip-based embodiment. The figure shows the two clipping arms 202 of the clip, the engagement area 302 and the lower case part 101. This particular embodiment clearly shows the high construction simplicity of the clip engagement means, which forms an engagement area between its two arms 202, for engagement of the eyeglass bridge, which is firmly held by the engagement means. For this purpose, the engagement means is made from a naturally resilient material, which

deforms to allow insertion of the eyeglass bridge therein. When the eyeglass bridge is in the engagement area, the resilience of the clip material causes the two clipping arms 202 to close around the bridge, and to hold it therein. The free ends of the clipping arms extend beyond the engagement area 302 to prevent any accidental disengagement of the bridge, e.g. caused by possible shocks. In fact, as shown and described above, regarding Figure 3, the free ends of the clip arms end at such a distance from the top wall of the case that, in the closed position of the shell, even when the bridge comes out of the engagement portion, it is still held between the free ends of the clip.

[0042] Figure 9 is a rear top view of a case 1, which shows a variant embodiment of the engagement means 2. These means consist of an engagement element, generally designated by 402, which forms a recess 11 for snap engagement of the bridge 53 of the eyeglasses 50 in a snap fit position, and thereby prevents any undesired movement of the eyeglasses and any damage to the eyeglass frames or lenses. Further, this particular embodiment includes guide and slide assemblies that allow displacement of the engagement means 402, thanks to the engagement of a dove-tail slide 403 of the shell 101 with a dovetail guide 303 of the engagement means 2, like in the above description.

[0043] Figure 10 is a side view of the details of the engagement means 402. These means consist of a support nose piece 502, and a retainer tab 602 that form together a recess 11, wherein the eyeglass bridge is snap fitted. This may occur thanks to the fact that the tab 602 is flexible and may be deflected to widen the recess 11 while exerting an elastic clamping action on the eyeglass bridge. According to one variant, the tab may be displaced from and to the nosepiece thanks to a guide and slide assembly 702 to alternately allow engagement and disengagement of the eyeglasses.

[0044] Figure 11 shows a front view of the nose piece 502 and tab 602 from the inside of the shell, which clearly shows the most effective positions of the above described guide and slide assemblies 603, to facilitate eyeglass bridge engagement and disengagement in the recess 11, as well as the preferred shape of these assemblies, to allow displacement of the support nose piece 502 by engagement of a dove-tail slide 403 of the shell 101 with a dove-tail guide 303 of the engagement means 2, which guide and slide assembly increases, as mentioned above, the safety factor of the eyeglasses, as it prevents eyeglass lenses or parts from being damaged due to contact or rubbing against hard surfaces, by coming in contact with the case edge or the front walls thereof.

[0045] Figure 12 is a side view of the details of the support element 402, said details including a support nose piece 502 wherewith a retainer tab 602' cooperates to generate a recess 11, in which the eyeglass bridge is engaged and disengaged, the guide and slide assemblies 702, on which guides said retainer tab is displaced to alternately allow engagement and disengagement of the eyeglasses, and the guides 3 for displacement of said engagement means with one or more degrees of freedom. In this particular embodiment, the retainer tab 602' has a particular U-shape, which is particularly adapted to prevent any motion of the eyeglass bridge out of the recess 11 as well as any displacement of the case or front walls of the shell, which characteristic further increases the lock element safety, as it prevents any displacement of the eyeglasses inside the shell, and any lens scratching caused by rubbing thereof against the front walls of the shell.

[0046] Figure 13 is a transparent side view of the shell which comprises engagement means 2 for engagement of the eyeglass bridge, guide and slide assemblies 3 for displacement of the engagement means 2, a retainer tooth 802 on said engagement means, for cooperation with similar retainer engagement means 501 on the opposed side of the shell lid part as well as release means 15, i.e. a rod and/or a button and/or a plate and/or elastic spread apart means, operating thanks to the natural resilience of the shell part or the cooperating means or teeth that are provided in combination therewith on the shell lid part or shell base part, which is adapted to elastically deform the support element to allow disengagement thereof from the retainer tooth 802. This particular embodiment apparently provides the advantage that the closing mechanisms are situated on the engagement means, which arrangement allows to avoid the provision of other shell components during fabrication, and to achieve time and service savings.

[0047] Figure 14 shows a transparent side view of the shell, including a clip 102 for engagement of the eyeglass bridge as well as for interface with retaining engagement means 501, positioned in the opposite side of the shell lid part in such a manner as to assist eyeglass bridge locking, and to provide a simple and effective closing mechanism, and guide-slide pairs 3 for displacement of the engagement means. In this particular embodiment, the closing mechanism have the double purpose of providing a case lock system, and of improving the eyeglass stability inside the case, by assisting eyeglass bridge locking, as said bridge is secured between the two arms of the clip 102 and is further held by the retaining engagement means 501, which limit the freedom of movement of eyeglasses, thereby hindering its contact with hard surfaces (e.g. the front walls of the shell) that may damage its lenses.

[0048] Figure 15 is a side sectional view of the shell, including a support nose piece 2' on one shell part and a locking member 2" coinciding with the nose piece 2' on the opposed shell part, which is placed in such a position as to generate a recess 11 when the shell is closed, which recess is designed to accommodate the eyeglass bridge 53, as described above. Guide/slide assemblies 3 are further provided for displacement of the engagement means. This particular embodiment provides the advantage that the supporting and locking

means are provided in two separate parts, thereby obtaining an increased immobility of the eyeglasses and, as a result, a higher protection thereof, by preventing any movement thereof from their housing inside the recess 11, and any contact with hard surfaces (e.g. the front walls of the shell) that may damage eyeglass lenses.

[0049] Figure 16 is a perspective view of the open shell, which contains the engagement means 2 secured to the lower shell part 101 and the lock means 602 that holds the bridge 53 of the eyeglass 50 in position. In this particular embodiment, the profile of the closing edge is particularly adapted, thanks to its curvature, to provide full vision of the eyeglasses, thereby allowing the shell to be used not only as an eyeglass case, but also as a display unit.

[0050] Figure 17 is a front view of the open shell, which contains the engagement means 2 secured to the lower shell part 101 and the lock means 602 that holds the bridge 53 of the eyeglass 50 in position. This particular view shows even more clearly how the profile of the closing edge, as described above, is particularly adapted, thanks to its curvature to provide full vision of the eyeglasses, thereby allowing the shell to be used not only as an eyeglass case, but also as a display unit.

Claims

1. A case (1) for eyeglasses or the like, **characterized in that** it contains engagement means (2) capable of removably engaging the bridge (53) of the eyeglasses (50).

2. A case (1) for eyeglasses or the like as claimed in claim 1, **characterized in that** it is composed of at least two shell parts (101, 201).

3. A case for glasses or the like as claimed in one or more of the preceding claims, **characterized in that** said shell parts have a hinge (301) positioned therebetween, along a line on the side that is to form the rear side thereof, so that said shell parts (101, 201) may be pivoted to the opening and closing position.

4. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said engagement means (2) are integral with one or both shell parts.

5. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said engagement means (2) extend vertically from the bottom of one of the two shell parts (101), which is to form a shell base part.

6. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said engagement means (2) are placed at such a distance (h) from the front walls of the shells as to prevent the eyeglass lenses from coming in contact with said walls.

7. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said engagement means are linked to the shell part in a displaceable manner.

8. A case for eyeglasses or the like as claimed in claim 7, **characterized in that** the engagement means are displaced with at least one degree of freedom.

9. A case for eyeglasses or the like as claimed in claim 7, **characterized in that** the engagement means is/are displaced with two or more degrees of freedom.

10. A case for eyeglasses or the like as claimed in claim 7, **characterized in that** the displacement of the engagement means is a linear translational motion along at least one preferred reference axis.

11. A case for eyeglasses or the like as claimed in claim 7, **characterized in that** the displacement of the engagement means is a rotary or pivoting motion along at least one preferred reference axis.

12. A case for eyeglasses or the like as claimed in claim 7, **characterized in that** the displacement of the engagement means is a combination of translational and rotational motions along one or more preferred reference axes.

13. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the engagement means is/are secured to the corresponding shell/s by means of a combination of at least one slide and a translation guide for engagement thereof.

14. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the support element/s are secured to the corresponding shell/s by means of one, two or three assemblies composed of a guide and an associated slide, each of said guide and slide assemblies being oriented in a different direction.

15. A case for eyeglasses or the like as claimed in claim 14, **characterized in that** at least one guide and at least one portion of the slide are secured to the case shell part of the support element respectively.

16. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in** each slide and each guide associated thereto have

complementary mutual engagement undercut means.

17. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the engagement means is/are directly secured to the corresponding shell part by means of a hinge, or to the slide or the guides.

18. A case for eyeglasses or the like as claimed in claim 17, **characterized in that** the hinge axis is secant, tangent or parallel to the front edge of the case shell/s.

19. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the engagement means is/are directly secured to the corresponding shell part, or to the slide or guide, by means of an articulated joint having at least two axes of oscillation, or by means of a ball joint.

20. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the guide and slide assembly/ies and/or the hinge/s and or the joints are made in such a manner that the two parts engaged thereby have such a friction-fit as to ensure that the two parts are locked in a relative position with a predetermined force, which is to be overcome by a manual action.

21. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the guide and slide assembly/ies and/or the hinge/s and/or the joint/s have means for locking the two elements in a given position, which means are removable by elastically forcing the shape fit.

22. A case for eyeglasses or the like as claimed in claim 21, **characterized in that** said position lock means consist of at least one projection on one of the two slide and guide, joint or hinge elements or of a row of projections having folds or articulated surfaces.

23. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the support element is a clip-based element (102).

24. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the clip-based element has at least two arms between which the eyeglass bridge is engaged.

25. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said clip-based element forms a recess on said two arms, for removably holding the eyeglass bridge.

26. A case for eyeglasses or the like as claimed in claims 10 to 12, **characterized in that** the clip-based element ends at a vertically measured distance (H) from the top wall of the closed shell, said distance (H) being smaller than the distance between the bridge and the upper portion of the eyeglass lenses or frame.

27. A case for eyeglasses or the like as claimed in claims 1 to 9, **characterized in that** the support element is a supporting lock member (402).

28. A case for eyeglasses or the like as claimed in claim 27, **characterized in that** said supporting lock member (402) consists of a recess (11) having an eyeglass bridge supporting surface and a retaining surface, which is opposed to the supporting surface and at a predetermined distance therefrom.

29. A case for eyeglasses or the like as claimed in claims 27 and 28, **characterized in that** said recess (11) is formed by at least one top wall, one bottom wall and one front wall.

30. A case for eyeglasses or the like as claimed in claims 27 to 29, **characterized in that** said recess (11) has a support nose piece (502) as a bottom wall and a retainer tab (602) as a top wall.

31. A case for eyeglasses or the like as claimed in claims 27 to 30, **characterized in that** said recess (11) has a 90° sideways rotated U shape (502), whose top is at the most as wide as the eyeglass bridge.

32. A case for eyeglasses or the like as claimed in claims 27 to 31, **characterized in that** said recess (11) is made from a naturally resilient material.

33. A case for eyeglasses or the like as claimed in claims 27 to 32, **characterized in that** the upper wall of said recess (11) may be preloaded in the closing direction, i.e. toward the opposed supporting wall in such a manner as to generate a clamping force on the eyeglass bridge when the latter is inside the recess (11).

34. A case for eyeglasses or the like as claimed in claims 27 to 33, **characterized in that** said recess (11) may be elastically deformed to the opening position, to release the bridge and disengage the eyeglasses (50).

35. A case for eyeglasses or the like as claimed in claim 30, **characterized in that** said retainer tab has an inverted L shape (602).

36. A case for eyeglasses or the like as claimed in claim 30, **characterized in that** said retainer tab has an inverted hook shape (602').

37. A case for eyeglasses or the like as claimed in claims 28 to 36, **characterized in that** said retainer tab (602) and support nose piece (502) are separable.

38. A case for eyeglasses or the like as claimed in claims 28 to 37, **characterized in that** said retainer tab (602) is movable relative to the support nose piece (502).

39. A case for eyeglasses or the like as claimed in claims 28 to 38, **characterized in that** the retainer tab is coupled to the support nose piece by means of sliding and/or oscillation guides, said guides being as claimed in one or more of the preceding claims 13 to 18.

40. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said engagement means are or form part of a case closing mechanism.

41. A case for eyeglasses or the like as claimed in claim 34, **characterized in that** said retainer members have a retainer tooth (802) which cooperates with one or more opposed teeth on the case shell surface that is displaceable relative to said members.

42. A case for eyeglasses or the like as claimed in claims 40and 41, **characterized in that** it has means (15) for disengaging the opposed case closing teeth.

43. A case for eyeglasses or the like as claimed in claims 40 to 42, **characterized in that** said disengagement means are presser members, which act on the shell part with the retainer teeth and/or on the support element in such a manner as to keep the engagement teeth of said two parts apart by elastic deformation or displacement of one or both of said parts and which presser members project out of the case, through an aperture formed in one of the two shells, by an actuating end.

44. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** it has retainer engagement means (501) on the shell part opposed to the part with the engagement element.

45. A case for eyeglasses or the like as claimed in the preceding claim, **characterized in that** said retainer engagement means (501) has an inverted L shape, or any other shape capable of engagement in said retainer tooth (802) provided on the engagement means.

46. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said retainer engagement means (501) forms a wider area in its end portion, which is designed to cooperate with the clip engagement element (202), by elastically deforming it in the opened condition.

47. A case for eyeglasses or the like as claimed in claims 1 to 4, **characterized in that** said engagement means as claimed in claims 5 to 46 are provided in two parts, associated to the two shell parts.

48. A case for eyeglasses or the like as claimed in the preceding claim, **characterized in that** said engagement elements have two spaced-apart opposed surfaces, which are the facing ends projecting into the case, each from a shell part, and each of said two ends forming a part of the recess (11) as claimed in claims 15 to 26.

49. A case for eyeglasses or the like as claimed in claims 41 and 42, **characterized in that** said supporting element (2') and said locking element (2") form such a shape as to removably lock the eyeglass bridge.

50. A case for eyeglasses or the like as claimed in claims 41 to 43, **characterized in that** said support elements (2') and said retainer elements (2") have closing systems as claimed in claims 35 to 40.

51. A case for eyeglasses or the like as claimed in claims 41 to 43, **characterized in that** said support elements (2') and said retainer elements (2") have snap closing systems disposed on the hinge (301).

52. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** it comprises two shell parts having a free front edge for mutual abutment or superposition.

53. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said edge has a depression in a predetermined area, in which a shell part has a concave profile and the other shell part has a convex profile.

54. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the shell part which is to form the support base of the case has an edge with a concave depression at the front side thereof, which depression has such a depth and length that a substantial portion of the eyeglass housed in said shell part is visible.

55. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the two shell parts (101, 201), in the closed condition, are shaped like a segment of a spheroid.

56. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** the rear side of said two shell parts (101, 201) is rectilinear.

57. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** at least the bottom wall of the base shell part is planar.

58. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said two top and bottom walls are connected to said rear side, forming a rounded profile.

59. A case for eyeglasses or the like as claimed in one or more of the preceding claims, **characterized in that** said two top and bottom walls have side and front extensions that form a spherical surface whose radiuses of curvature averagely correspond to the radiuses of curvature of wrap-around eyeglasses.

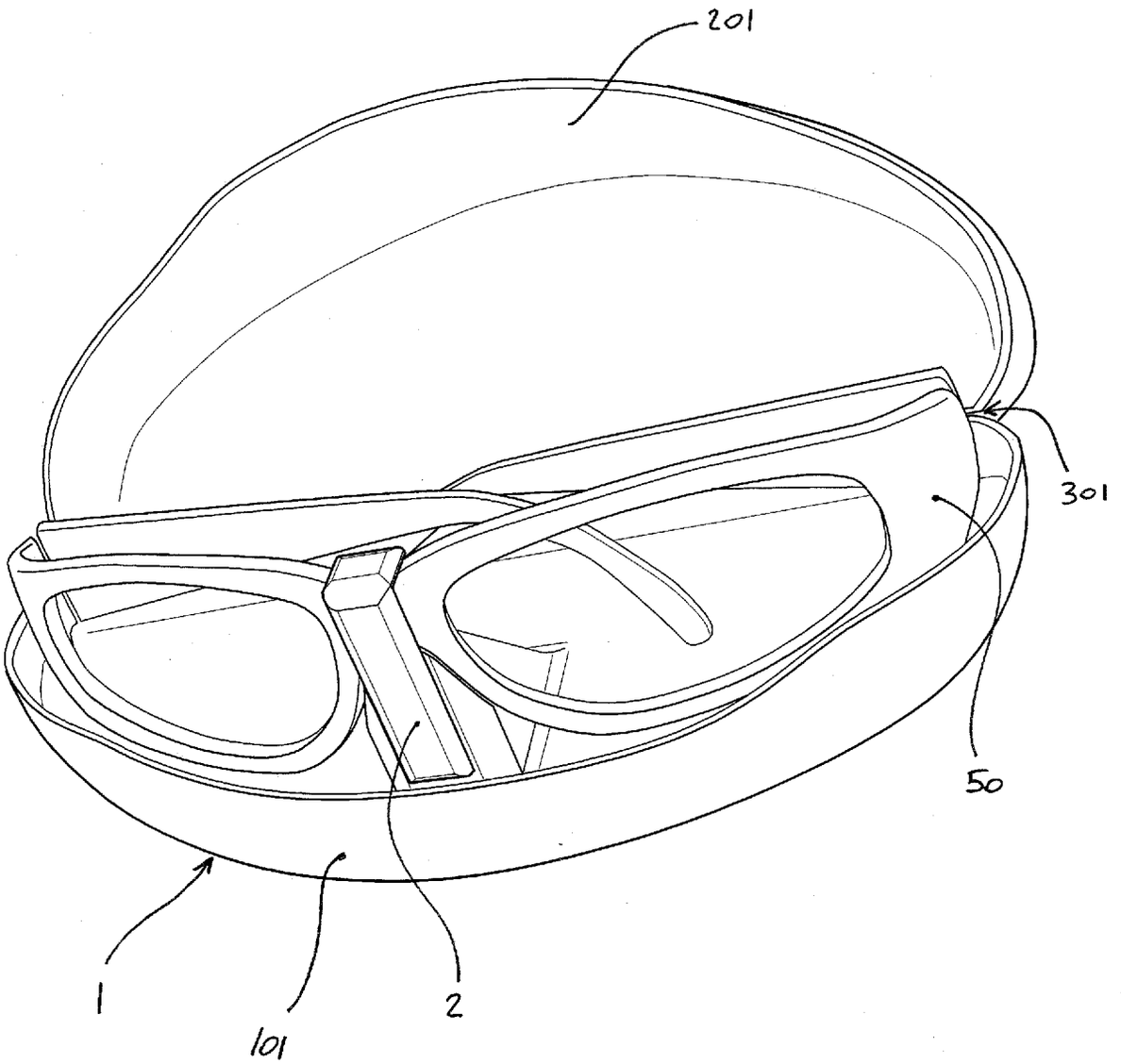


Fig. 1

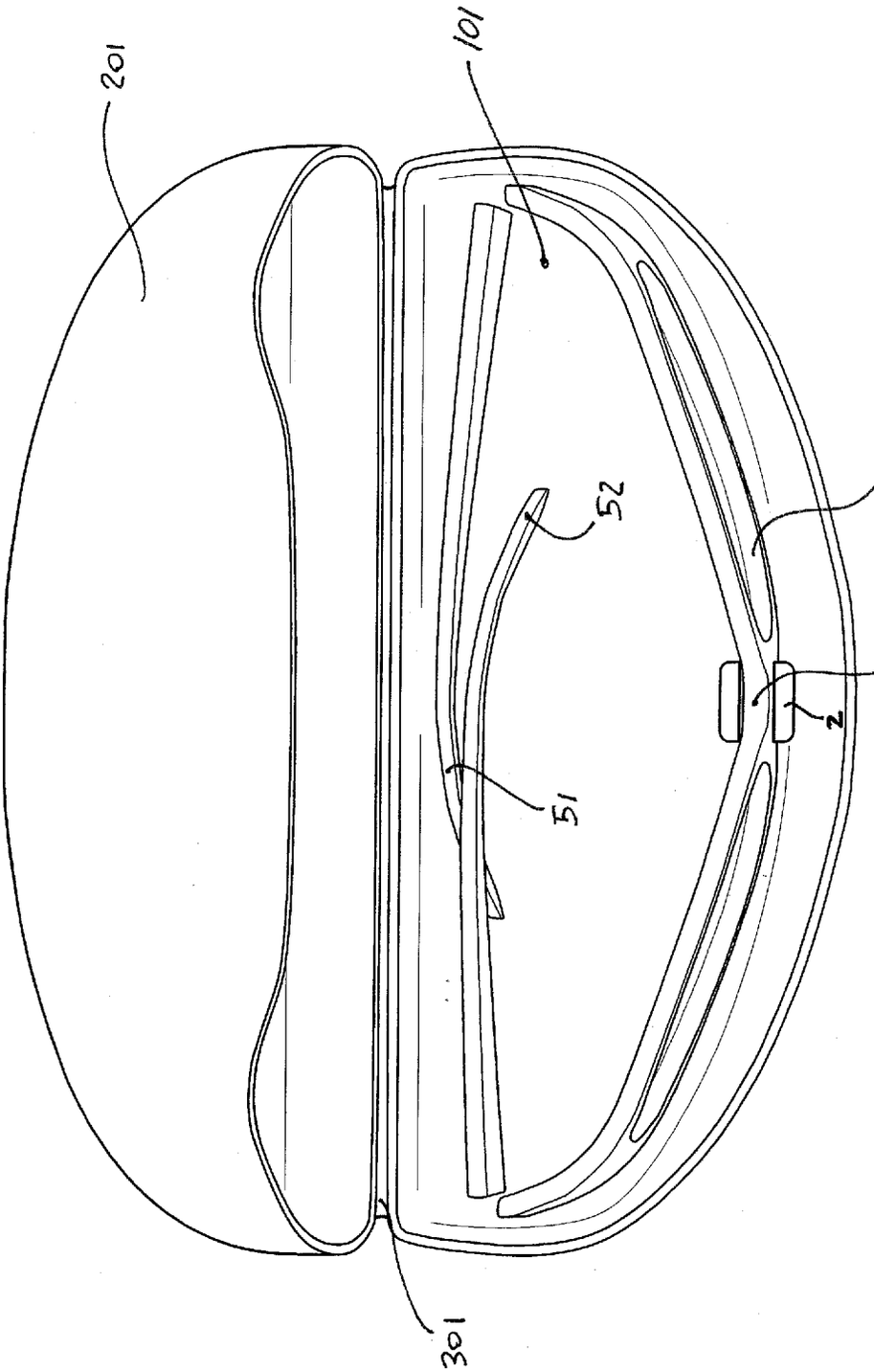


Fig. 2

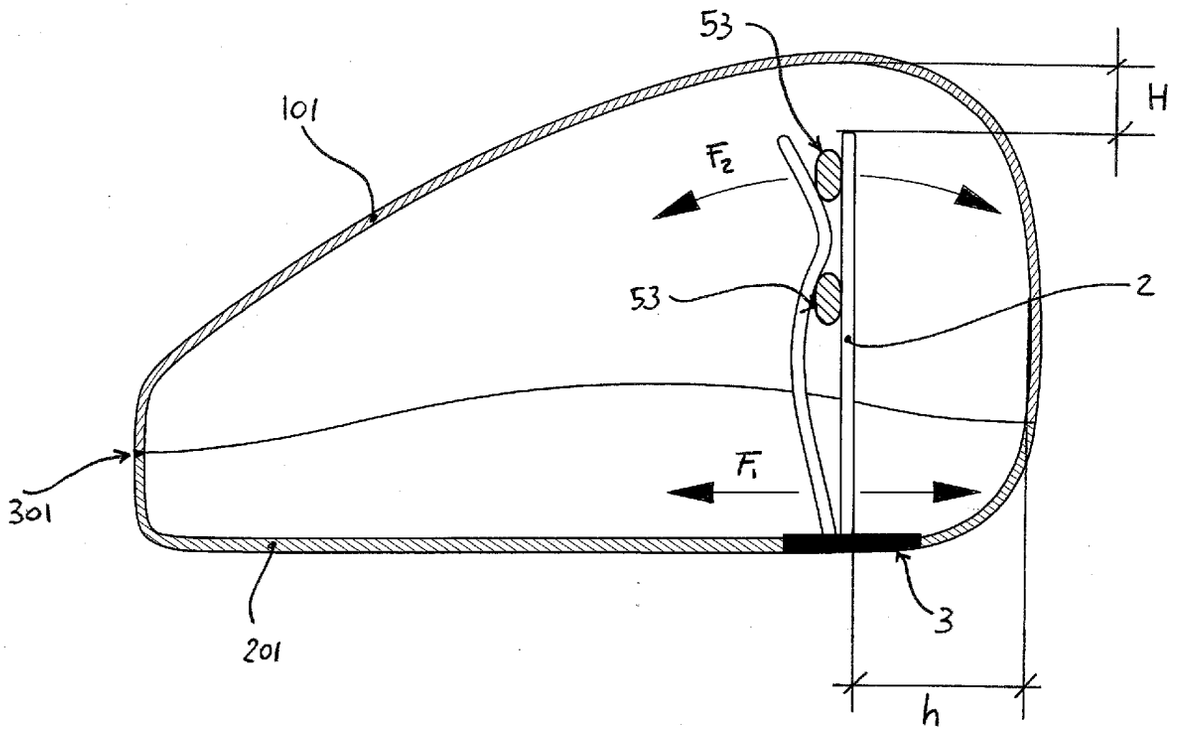


Fig. 3

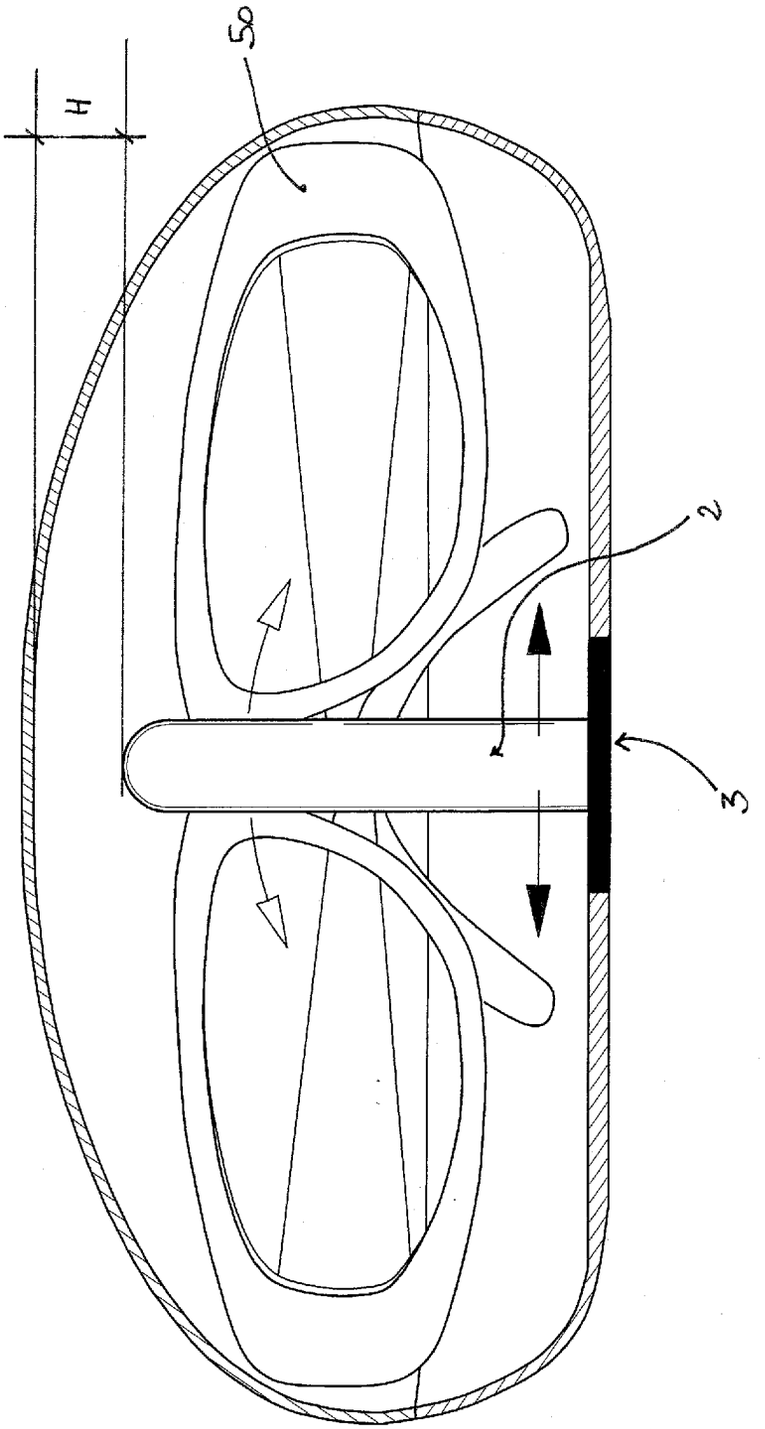


Fig. 4

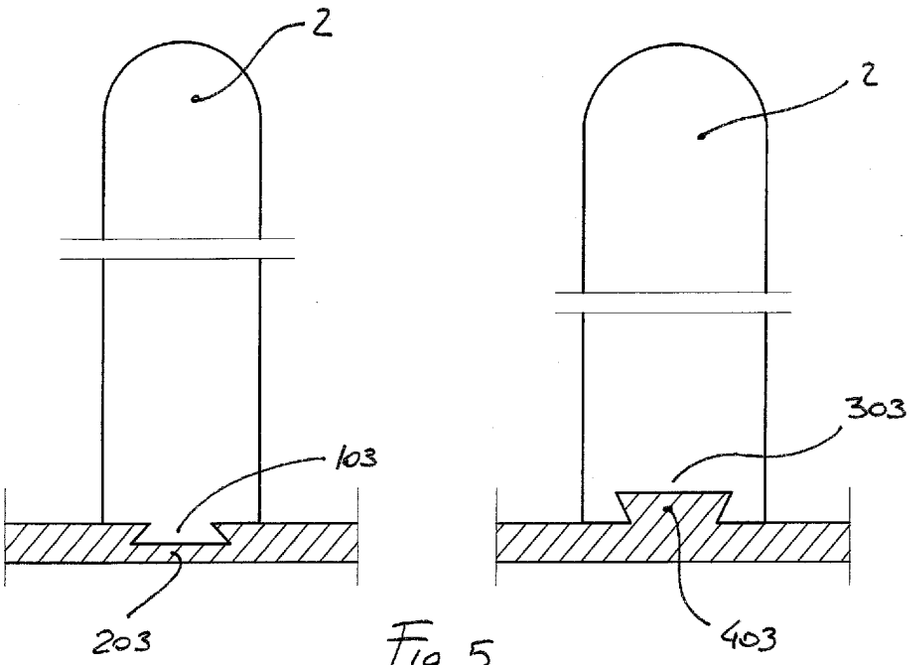


Fig. 5

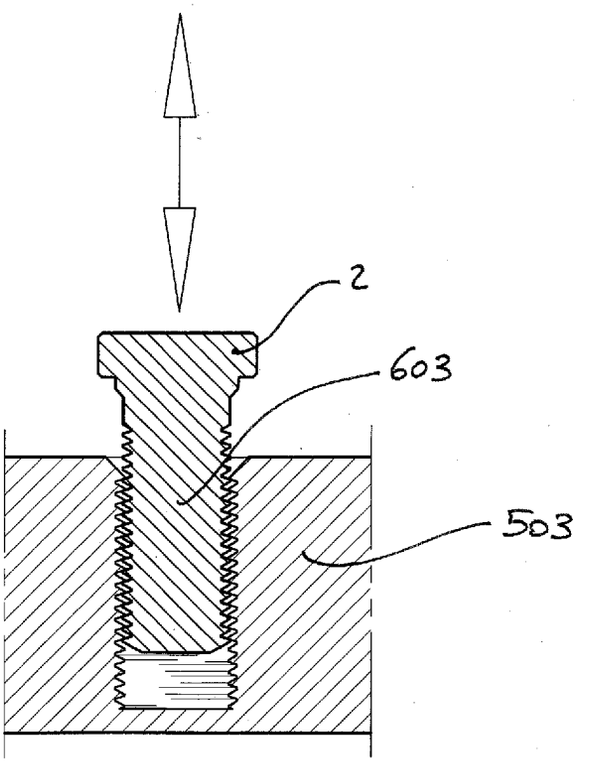


Fig. 6

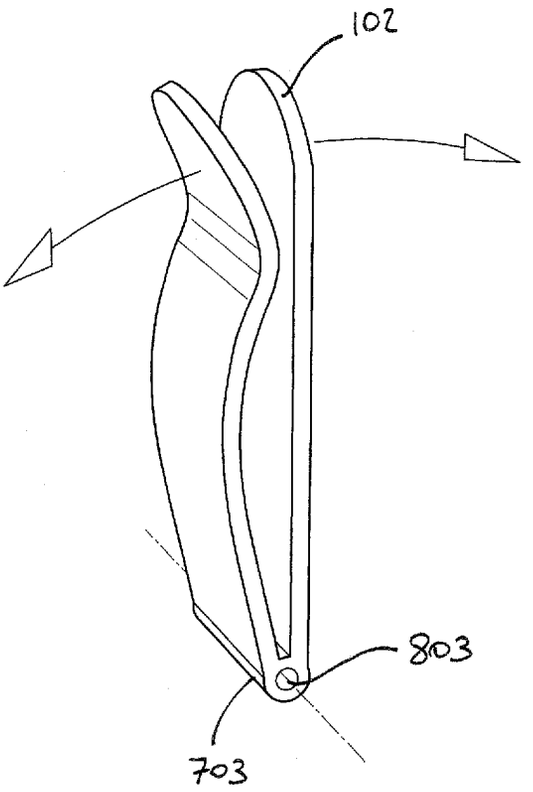


Fig. 7

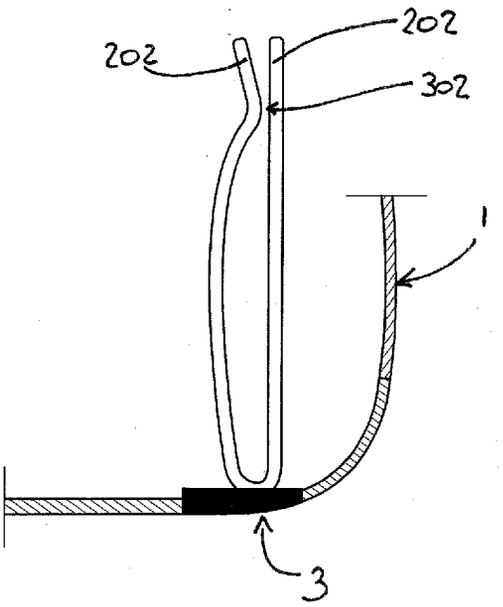


Fig. 8

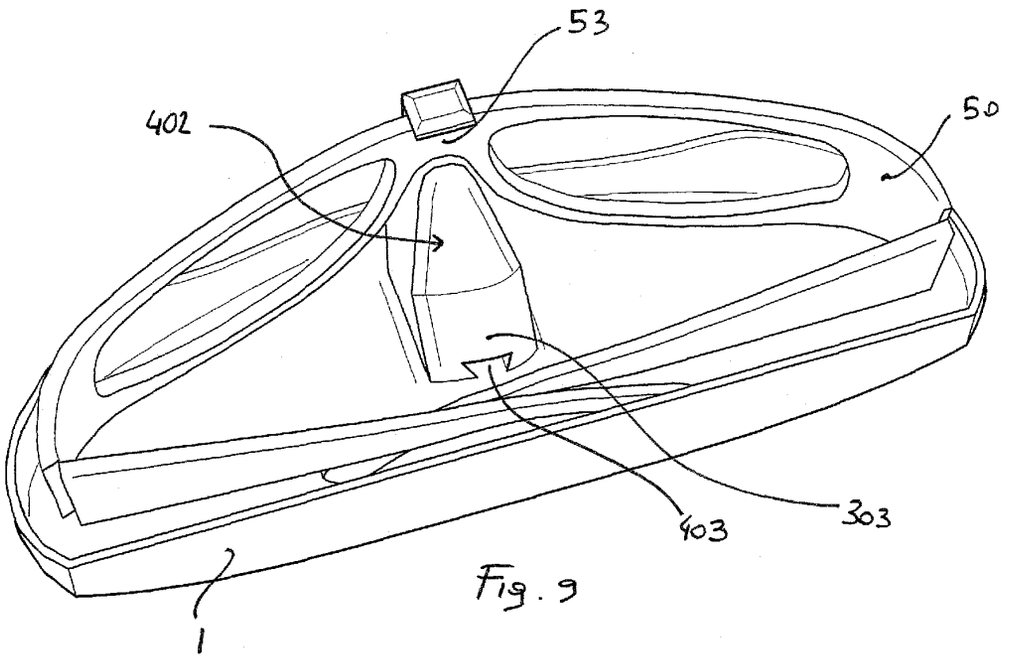


Fig. 9

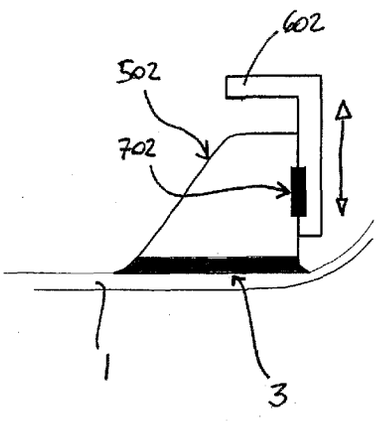


Fig. 10

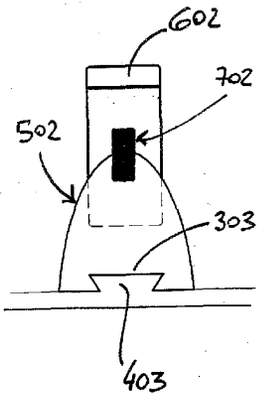


Fig. 11

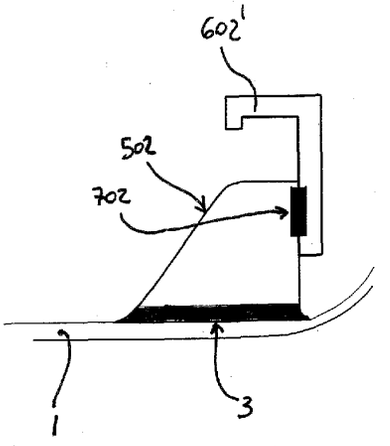


Fig. 12

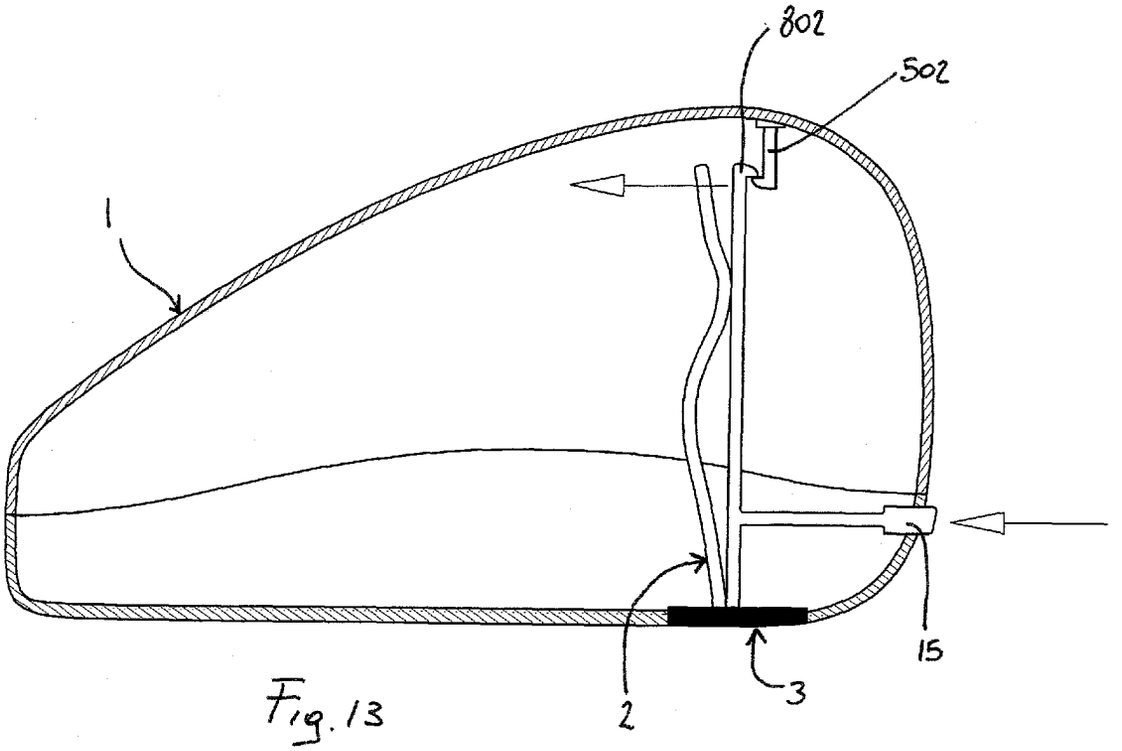


Fig. 13

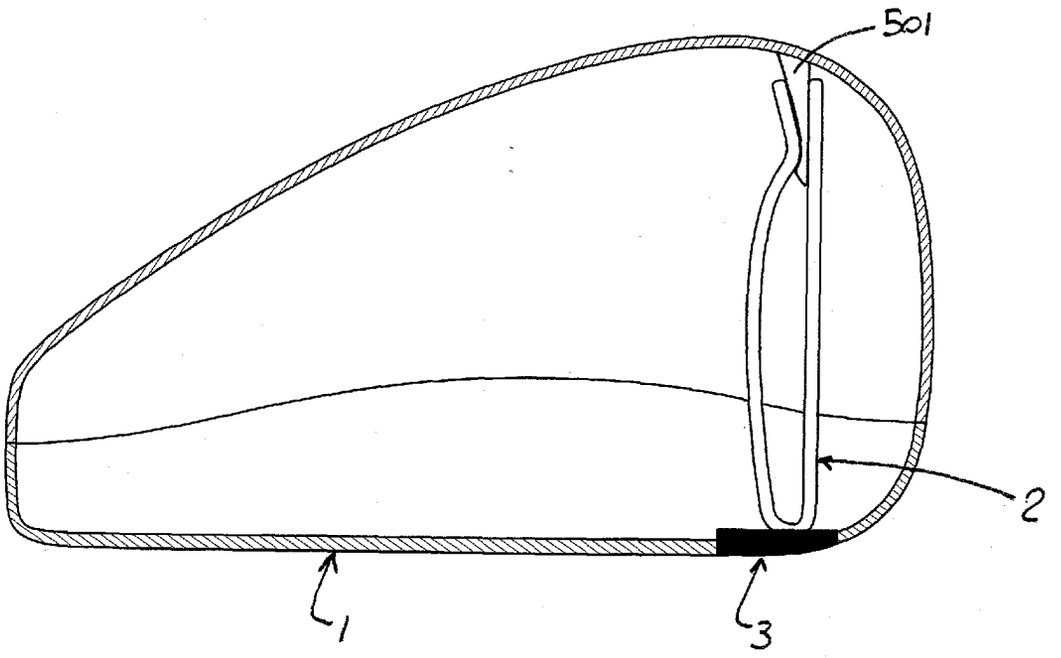


Fig. 14

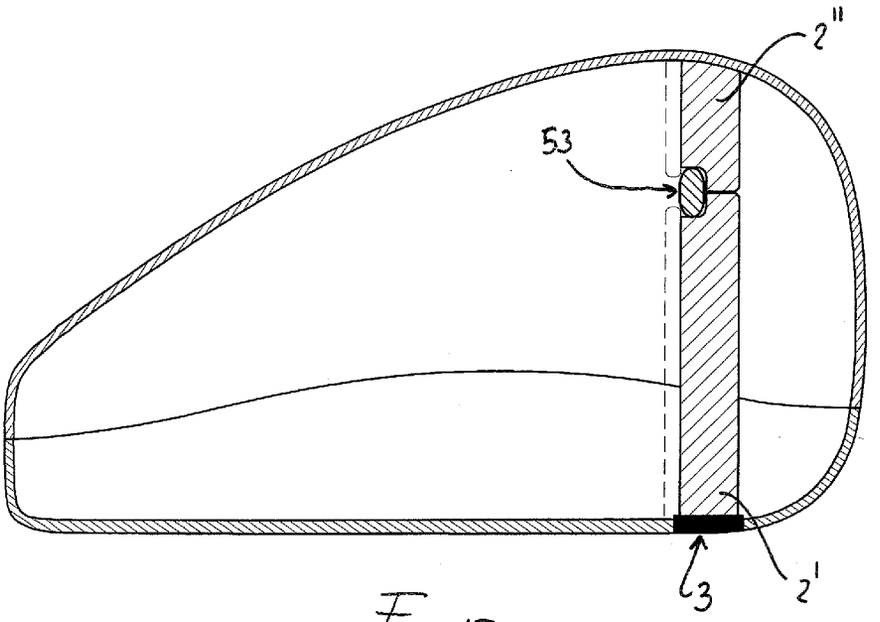


Fig. 15

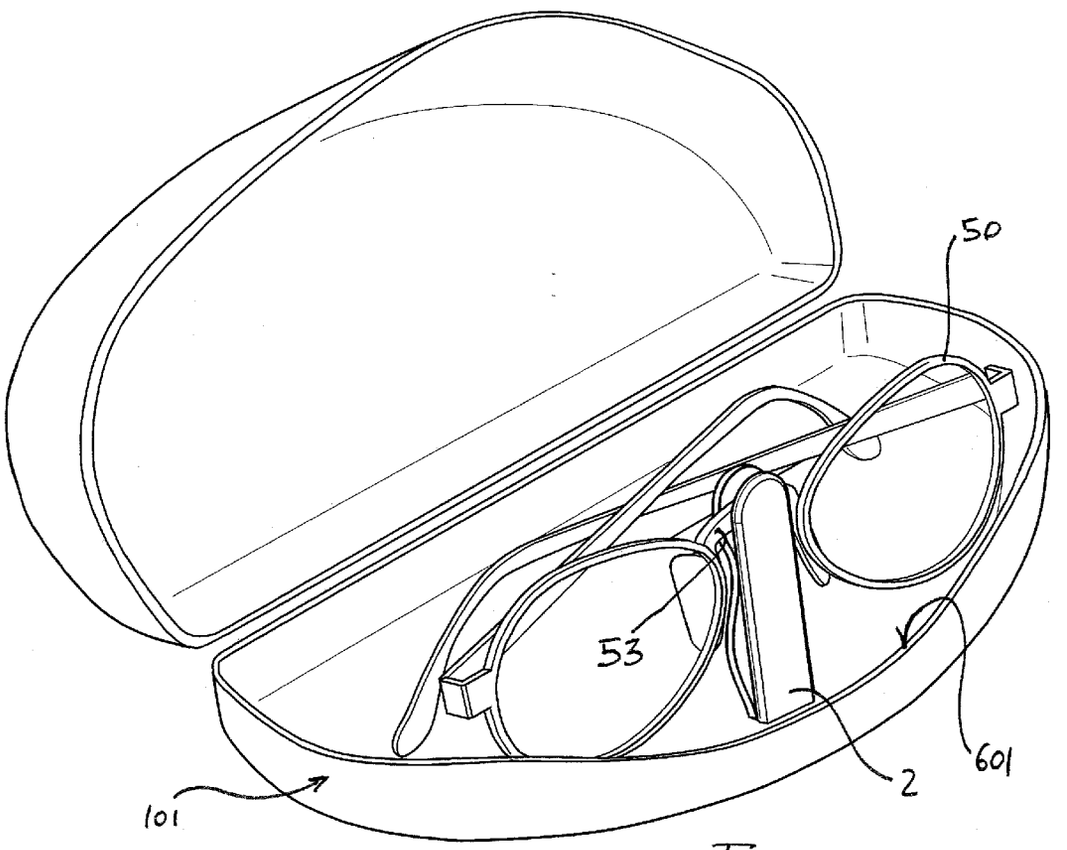


Fig. 16

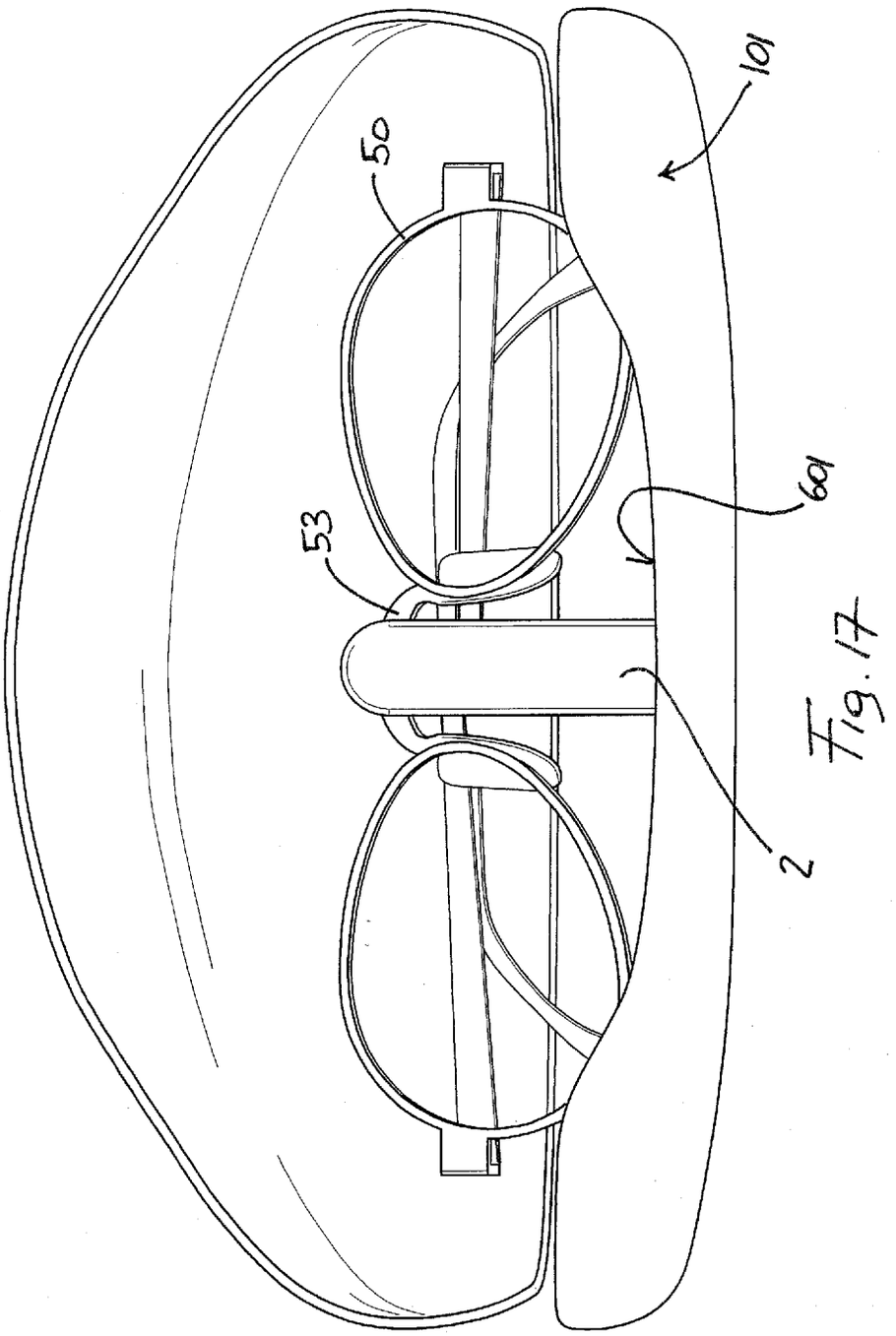


Fig. 17

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 04 10 0324

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)
X	US 2 692 043 A (DAVIS LILLIAN A) 19 October 1954 (1954-10-19) * figure 3 * * column 2, line 30 - column 3, line 25 *	1-3,7,8, 11,17, 18, 23-25, 52,56,57	A45C11/04
Y	---	4	
Y	US 3 825 110 A (HALBICH F ET AL) 23 July 1974 (1974-07-23) * column 1, line 56 - line 65 * * figure 4 *	4	
X	---	1-3,7,8,	
	US 2 927 685 A (ABBOTT GALEN N) 8 March 1960 (1960-03-08) * figures 1,2 * * column 2, line 15 - line 26 *	11, 23-25, 52,56,57	
X	---	1-3,	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
	US 608 640 A (BEMIS HARRY E) 9 August 1898 (1898-08-09) * figure 1 * * page 1, right-hand column, line 73 - line 101 *	23-25, 52,56	A45C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	4 June 2004	Zetzsche, B

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
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T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 10 0324

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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04-06-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2692043 A	19-10-1954	NONE	
US 3825110 A	23-07-1974	NONE	
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82