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(54) **TRANSPARENT PROTECTIVE FACE MASK**

(52) **U.S. Cl.**

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(21) Appl. No.: **17/323,508**

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**Related U.S. Application Data**

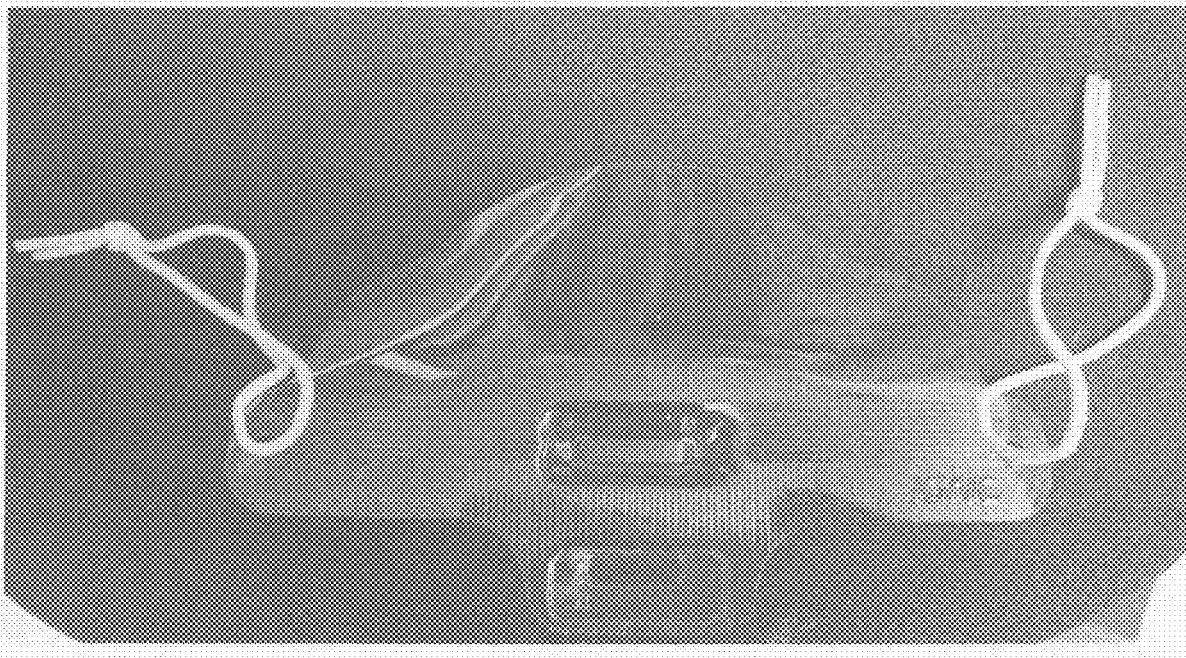
(60) Provisional application No. 63/027,002, filed on May 19, 2020.

**Publication Classification**

(51) **Int. Cl.**  
*A41D 13/11* (2006.01)

(57) **ABSTRACT**

A transparent protective face mask, typically for non-medical use, is provided. The mask comprises a protective face covering portion to cover at least a mouth and nose of a user; side portions respectively comprising head attachment means; and a mount portion for resting the mask adjacent to and in contact with the chin of the user, whereby the face covering portion of the mask is spaced apart from the face of the user except at the mount portion. In another embodiment, the face mask comprises a flexible chin panel hinged to the face covering portion. The chin panel is releasably lockable with the face covering portion. The face covering portion may also comprise a nose portion comprising a nose bridge portion, and one or more nose protuberances flanking the nose bridge portion, for engaging with opposite sides of the nose of a user.



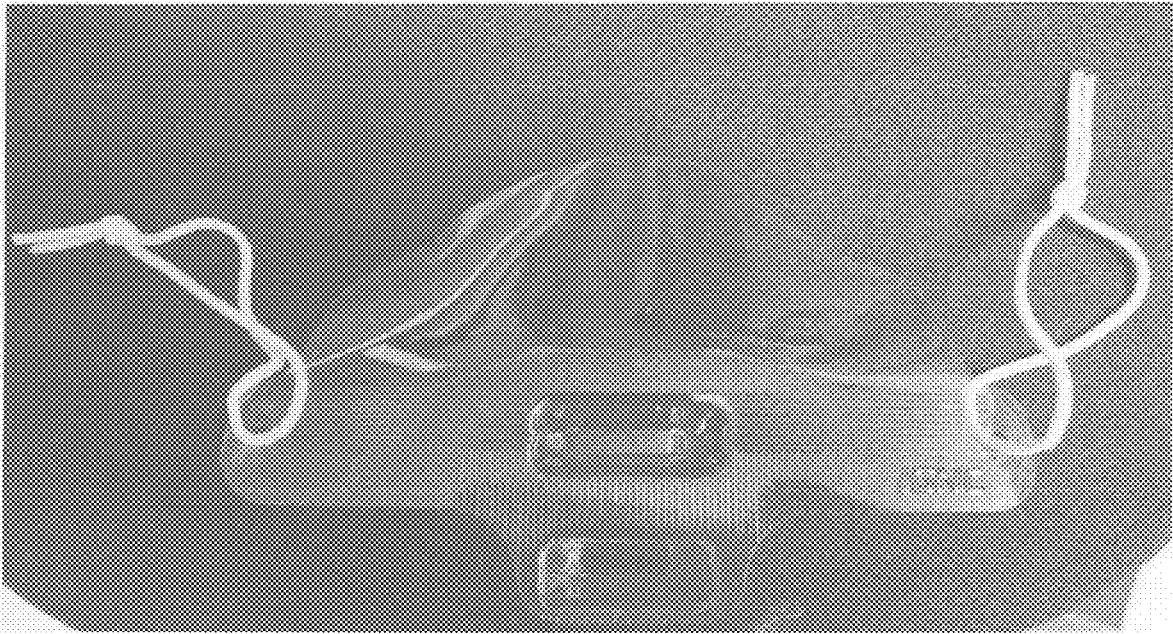


Fig. 1

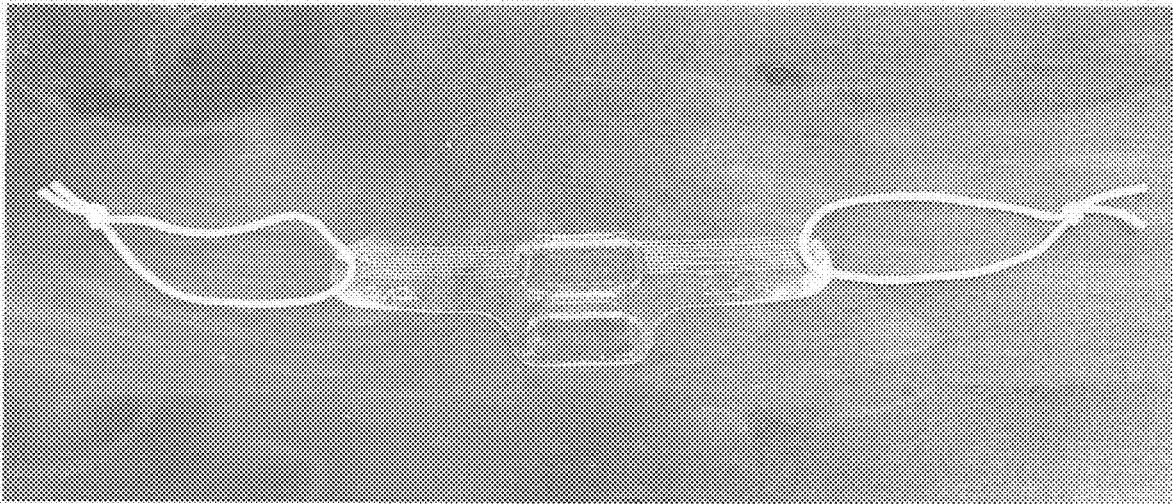


Fig. 2

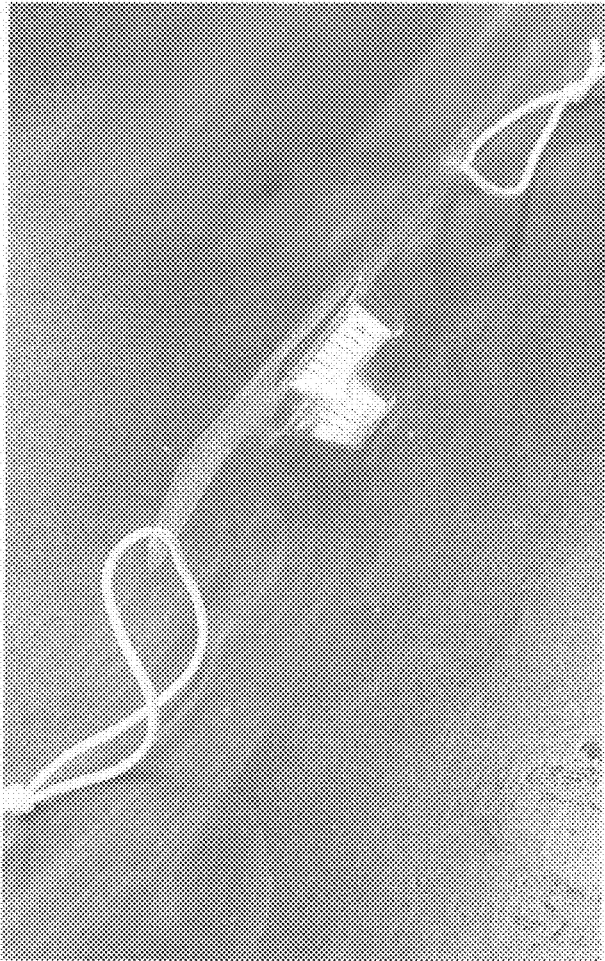


Fig. 3

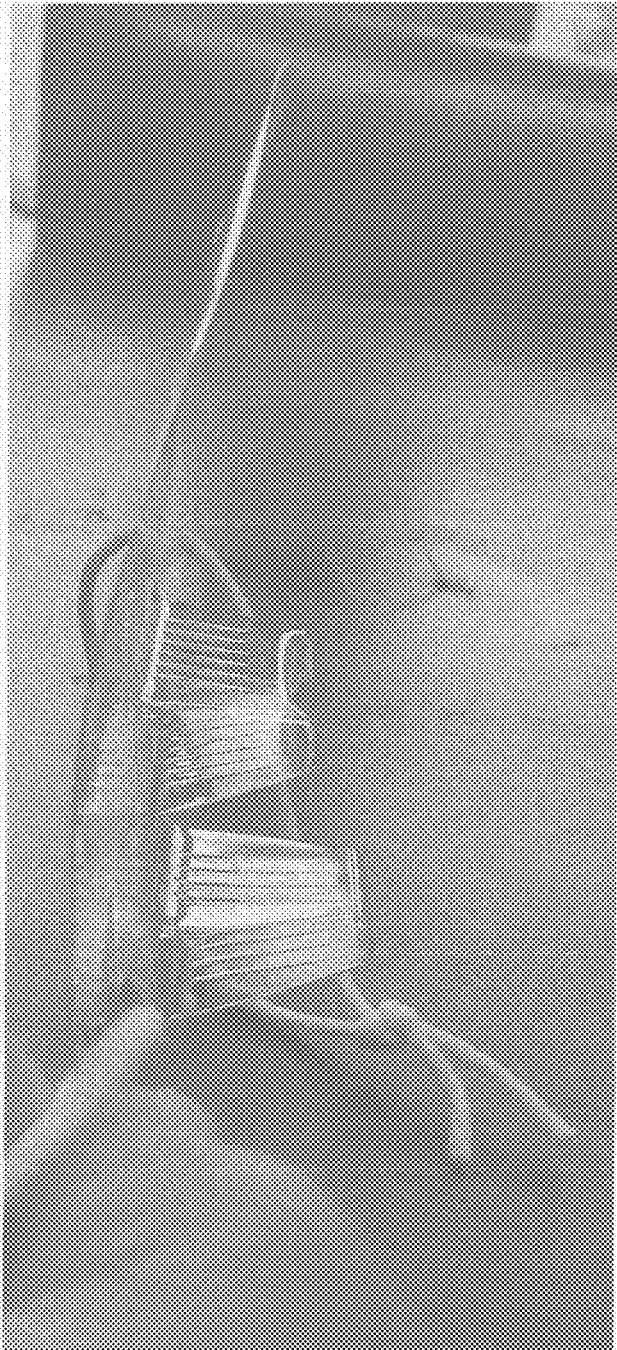


Fig. 4

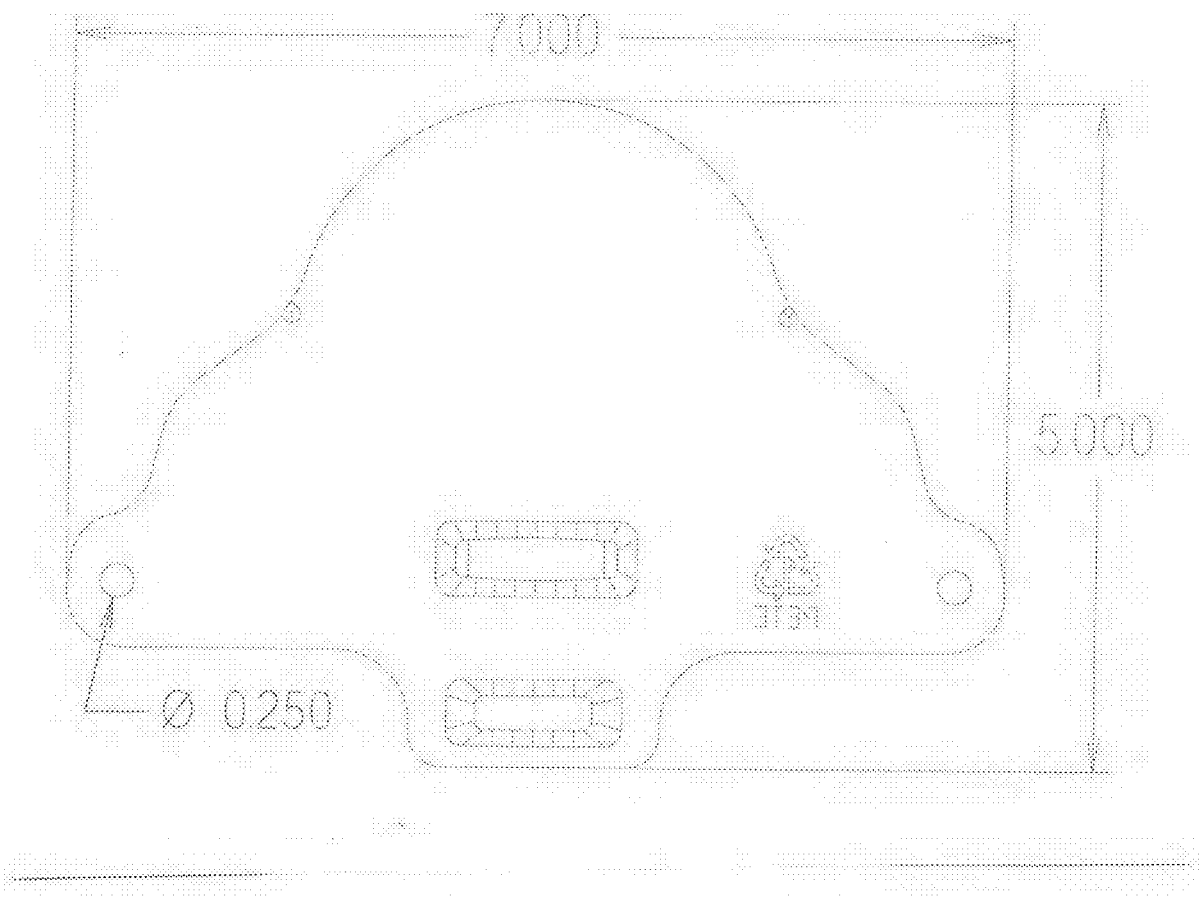


Fig. 5

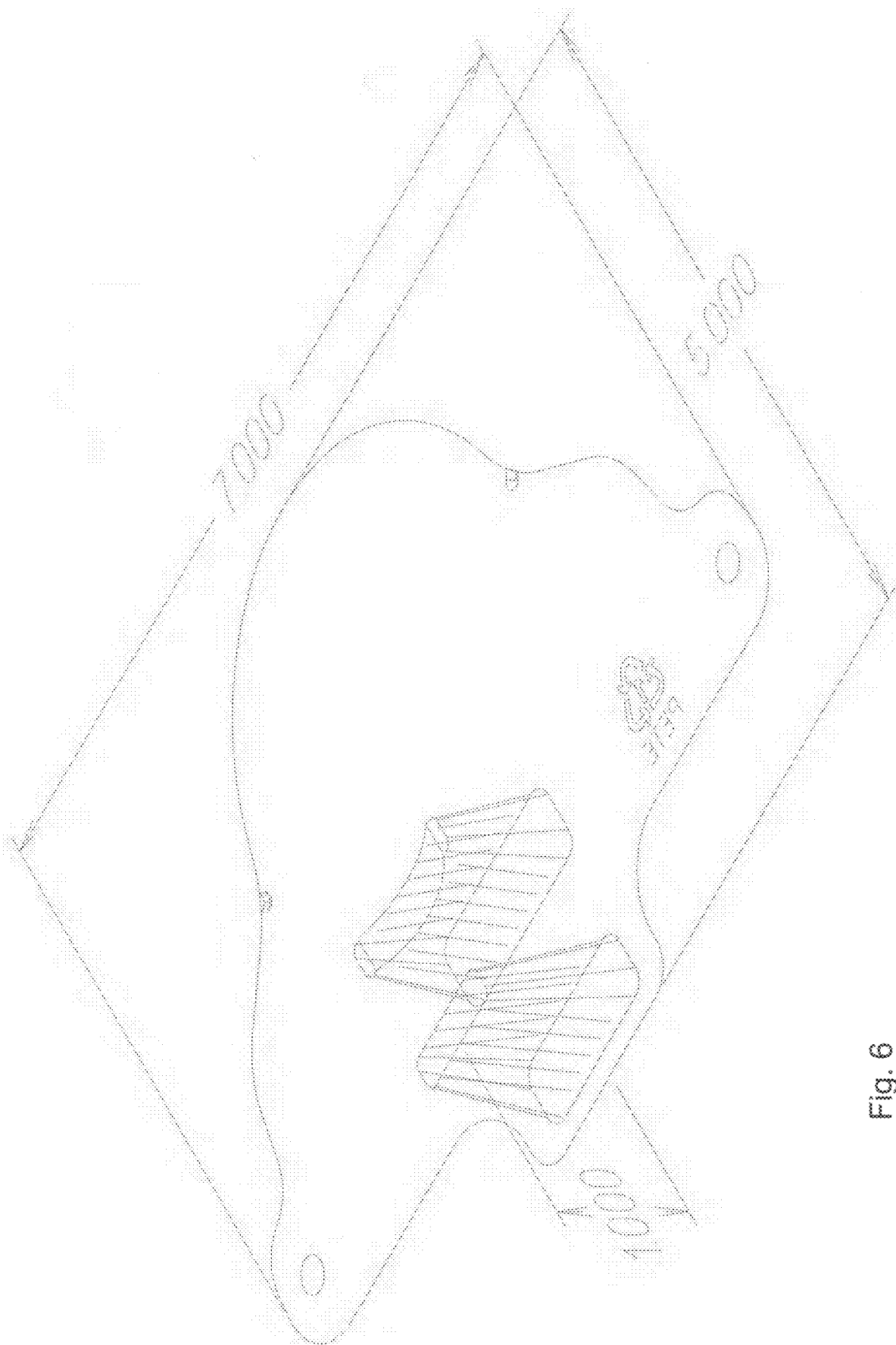


Fig. 6

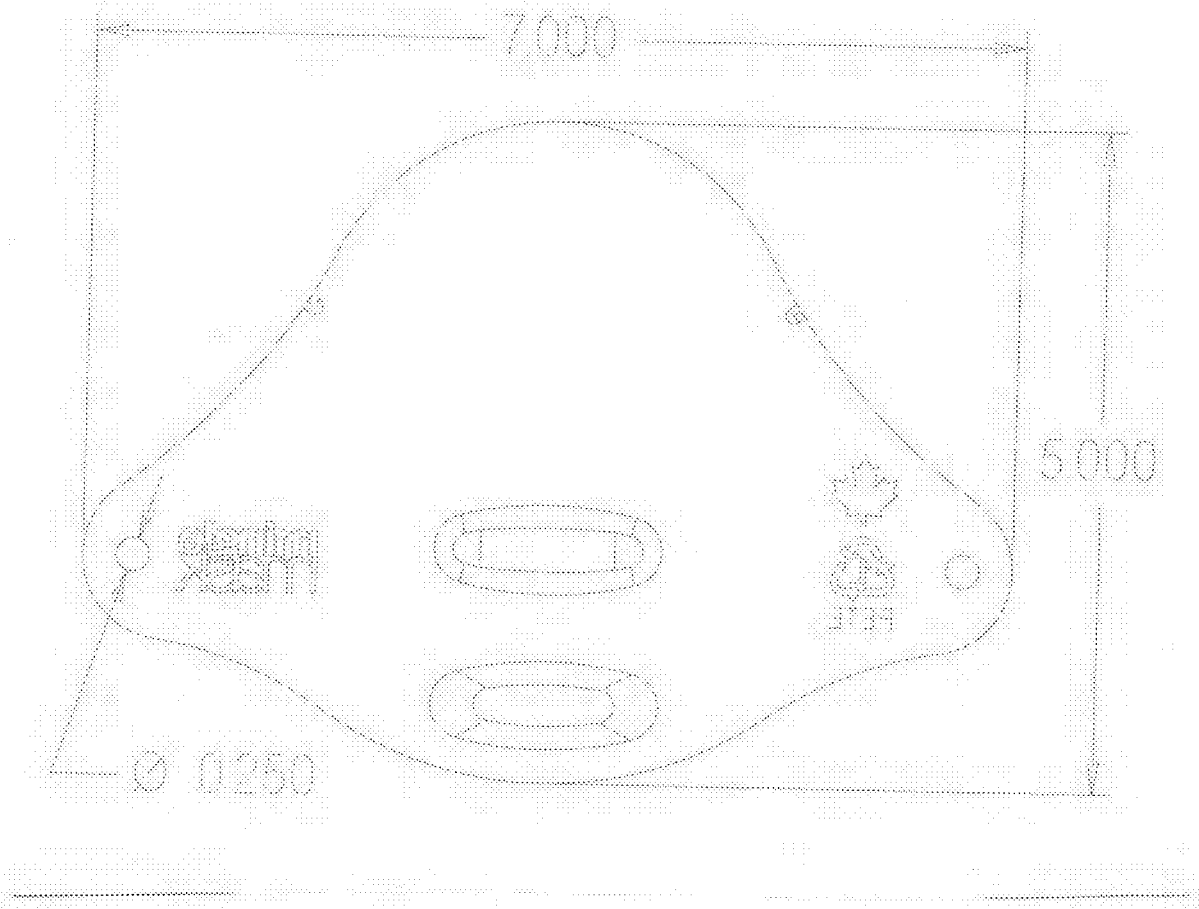


Fig. 7



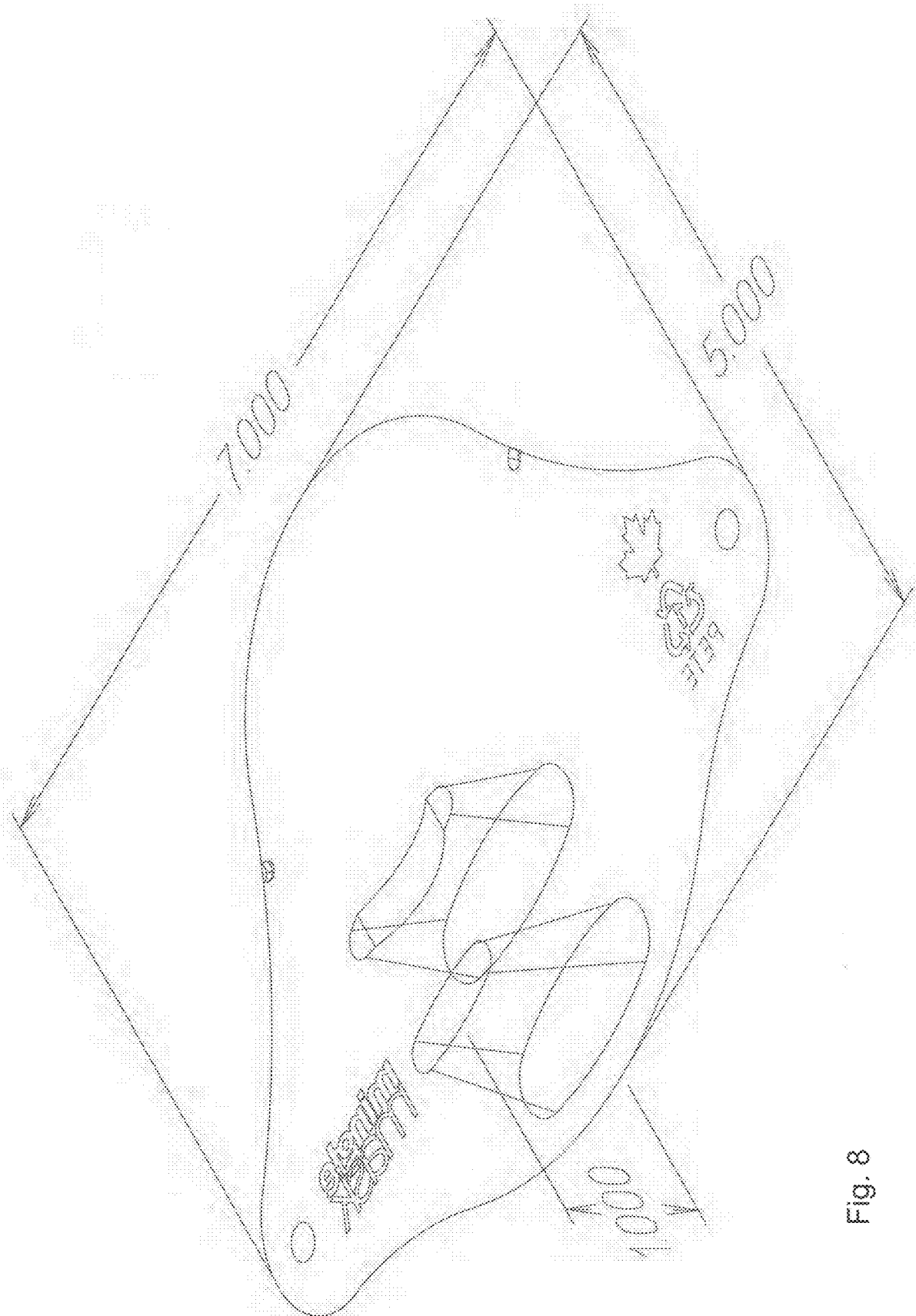


Fig. 8



Fig. 9

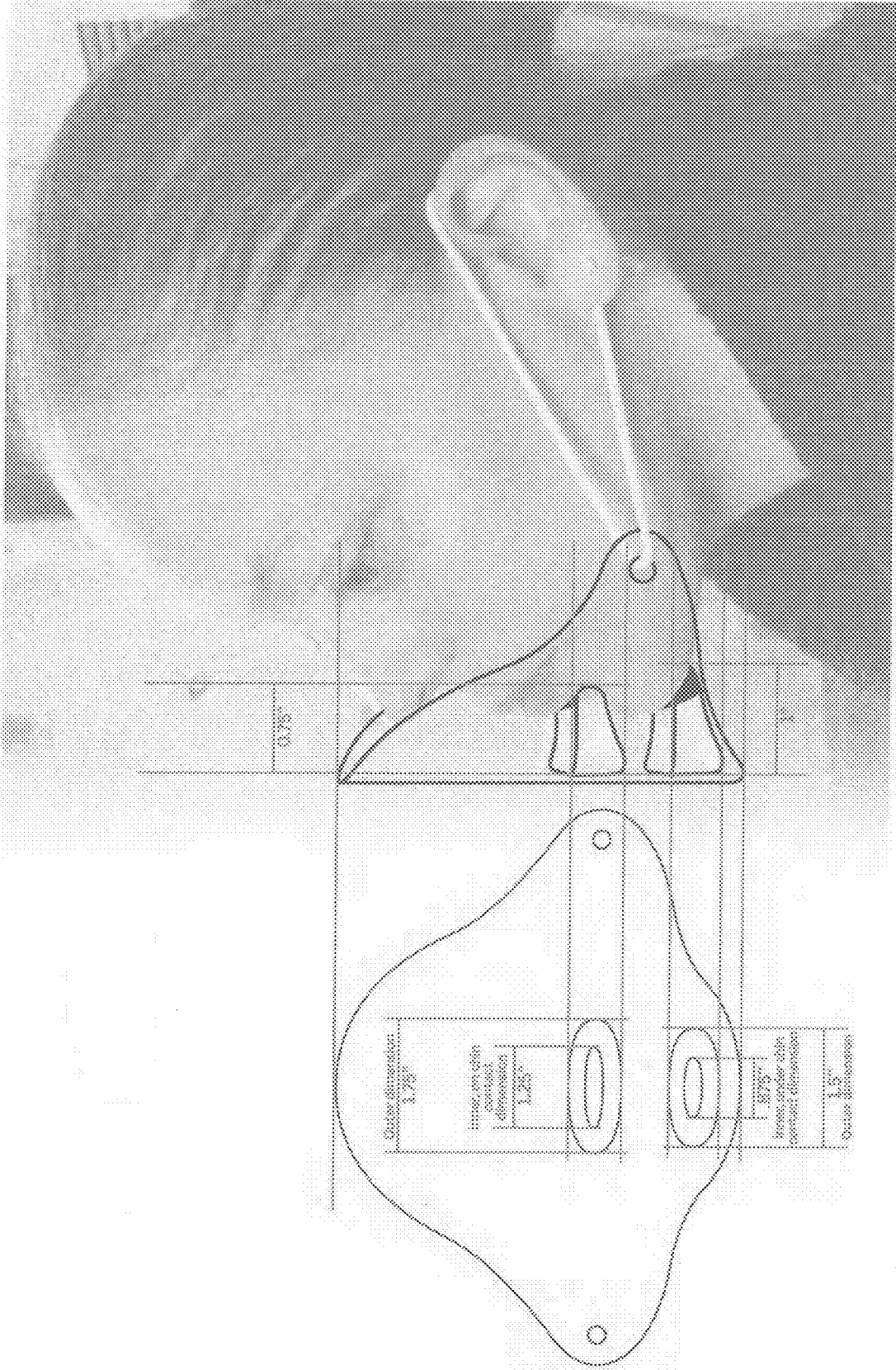




Fig. 11



Fig. 12

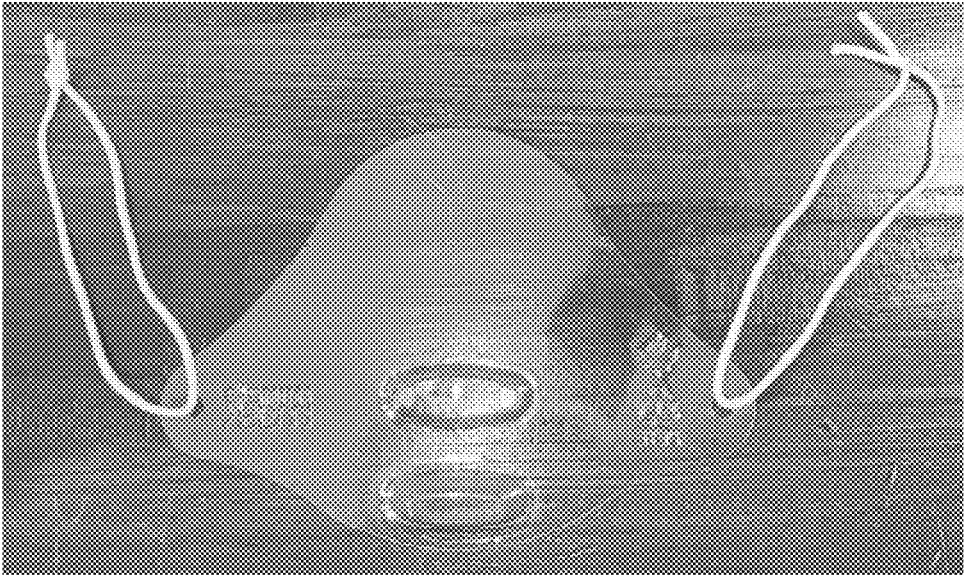


Fig. 13

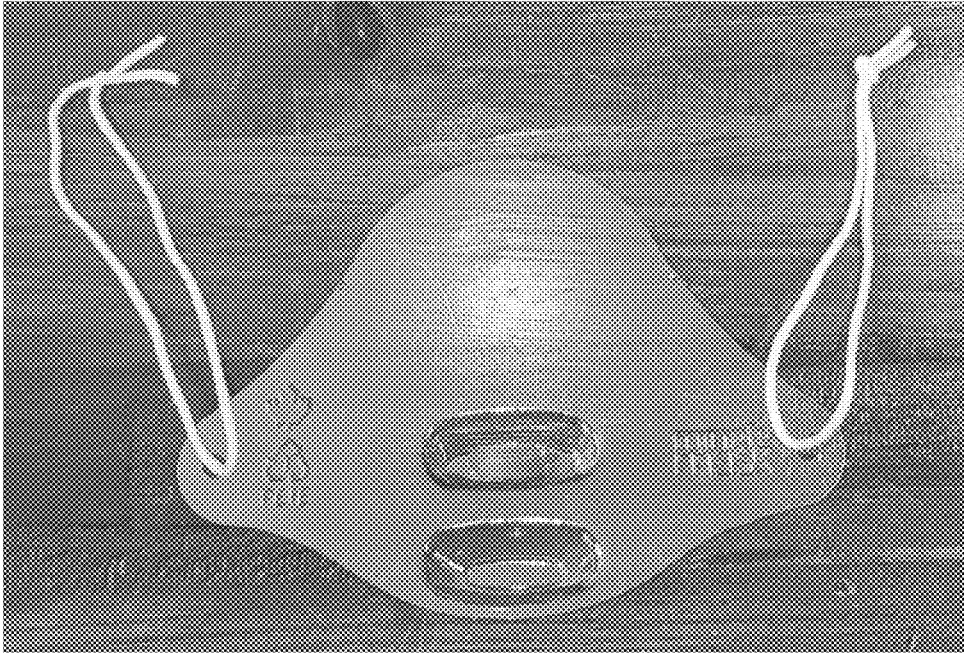


Fig. 14

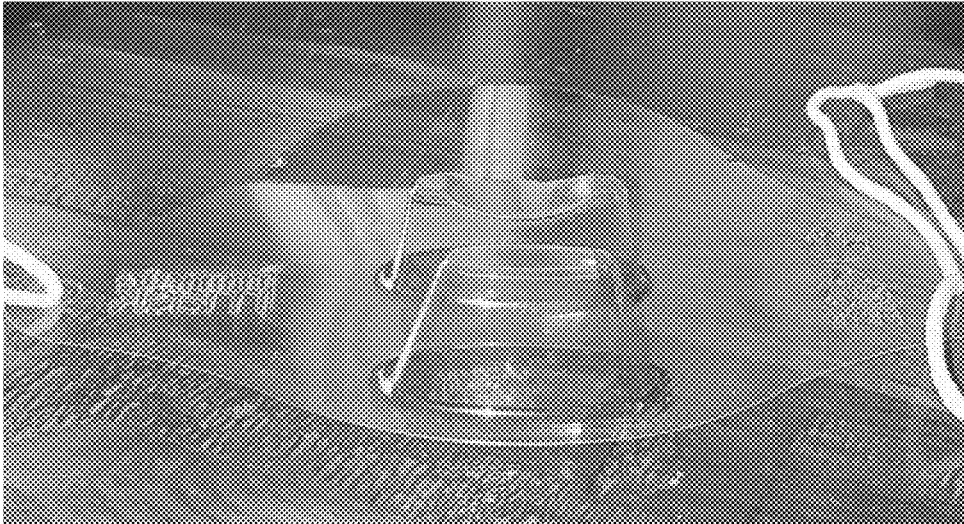


Fig. 15





Fig. 16

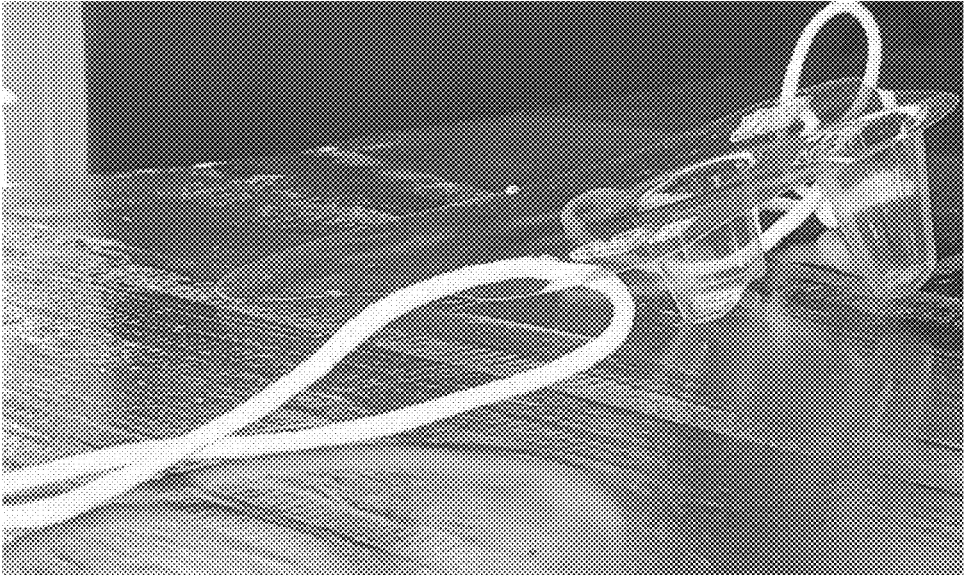


Fig. 17

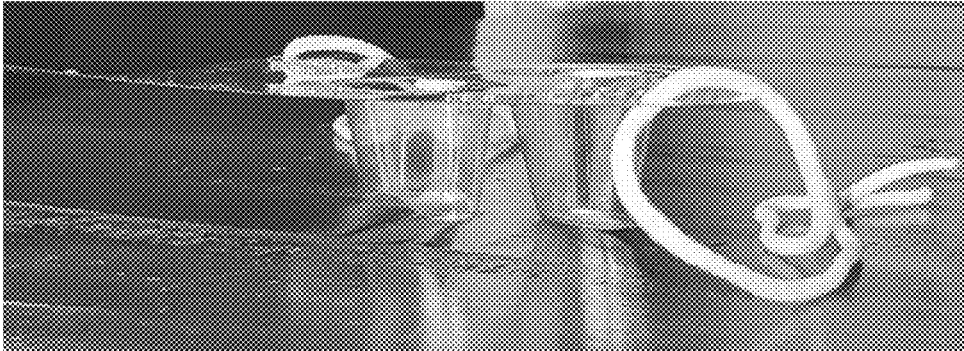


Fig. 18

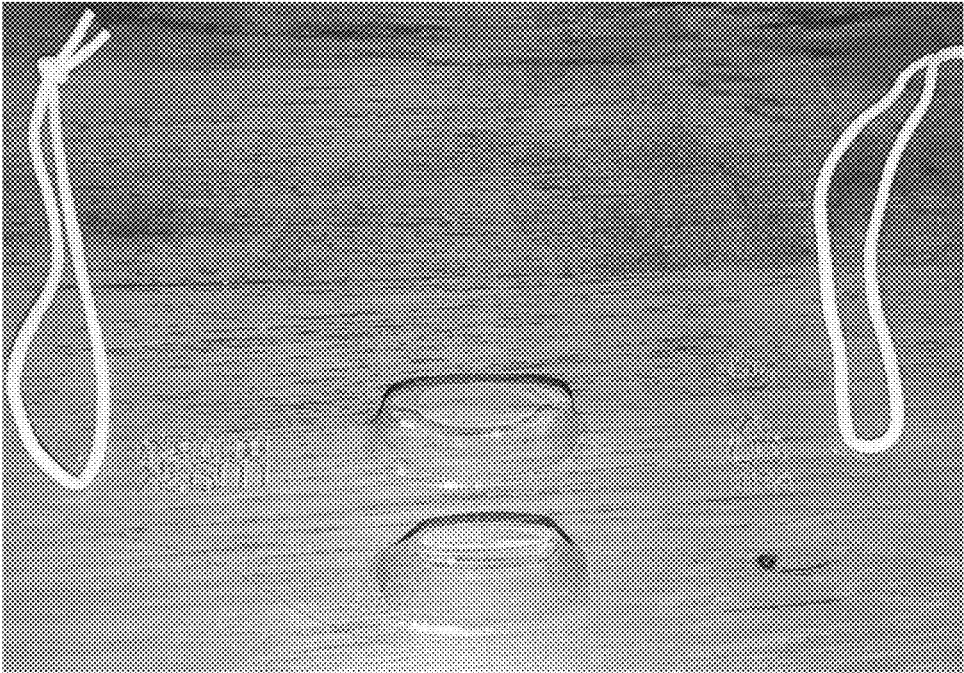


Fig. 19

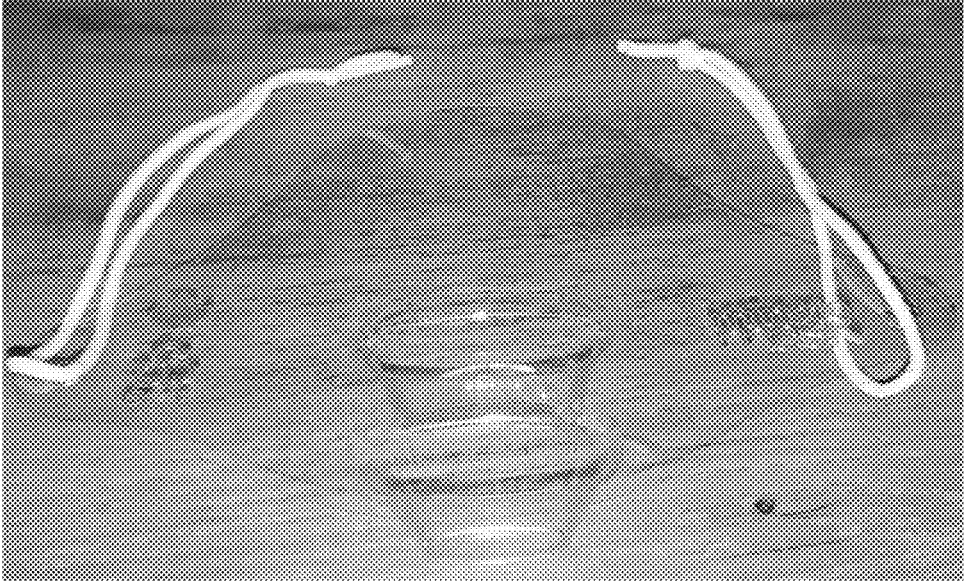


Fig. 20

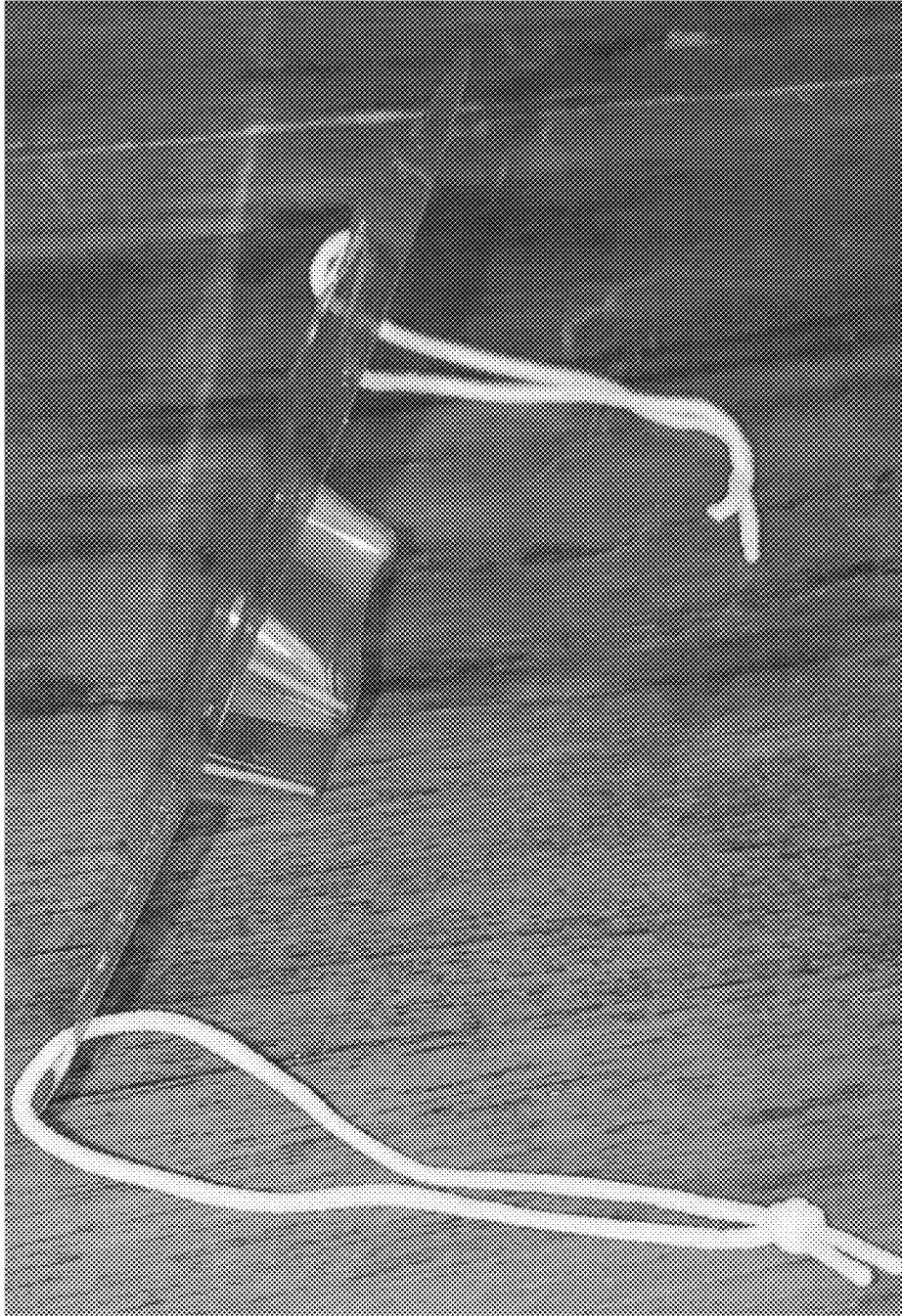


Fig. 21

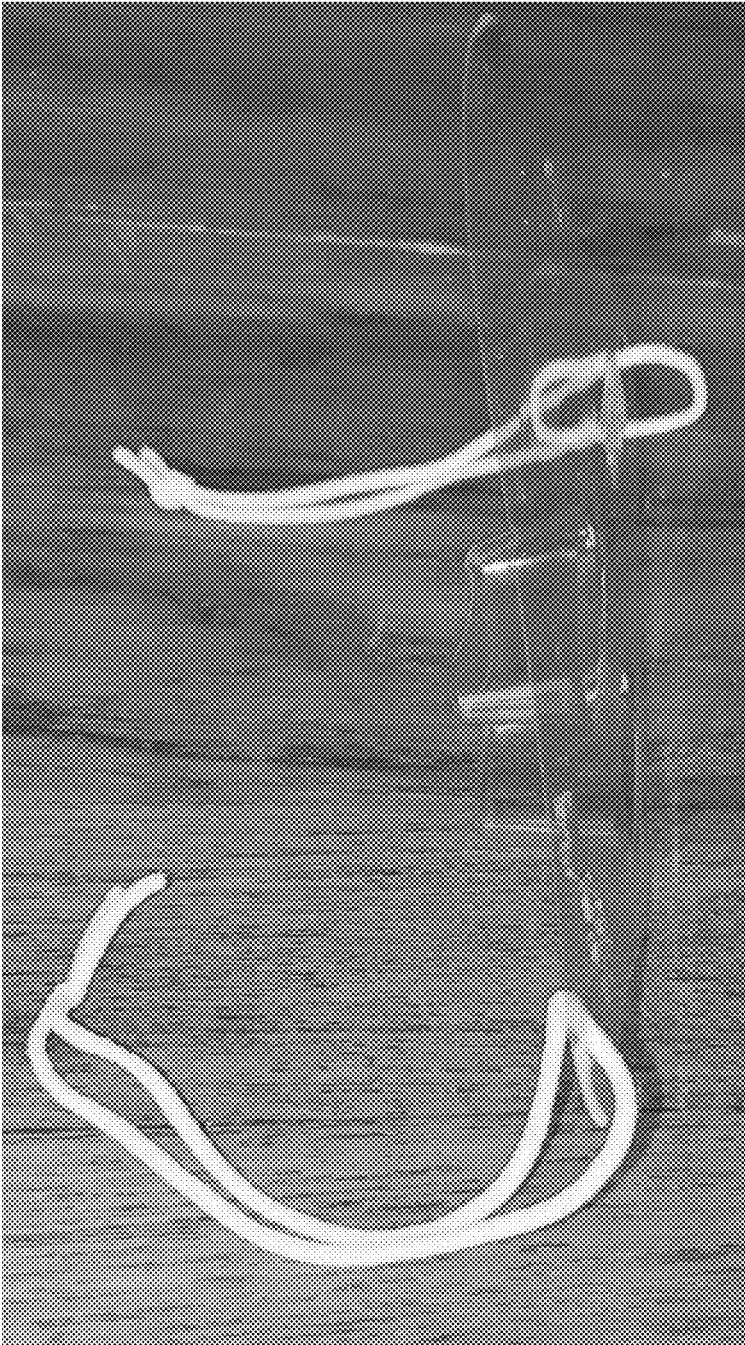


Fig. 22



Fig. 23





Fig. 24



Fig. 25



Fig. 26

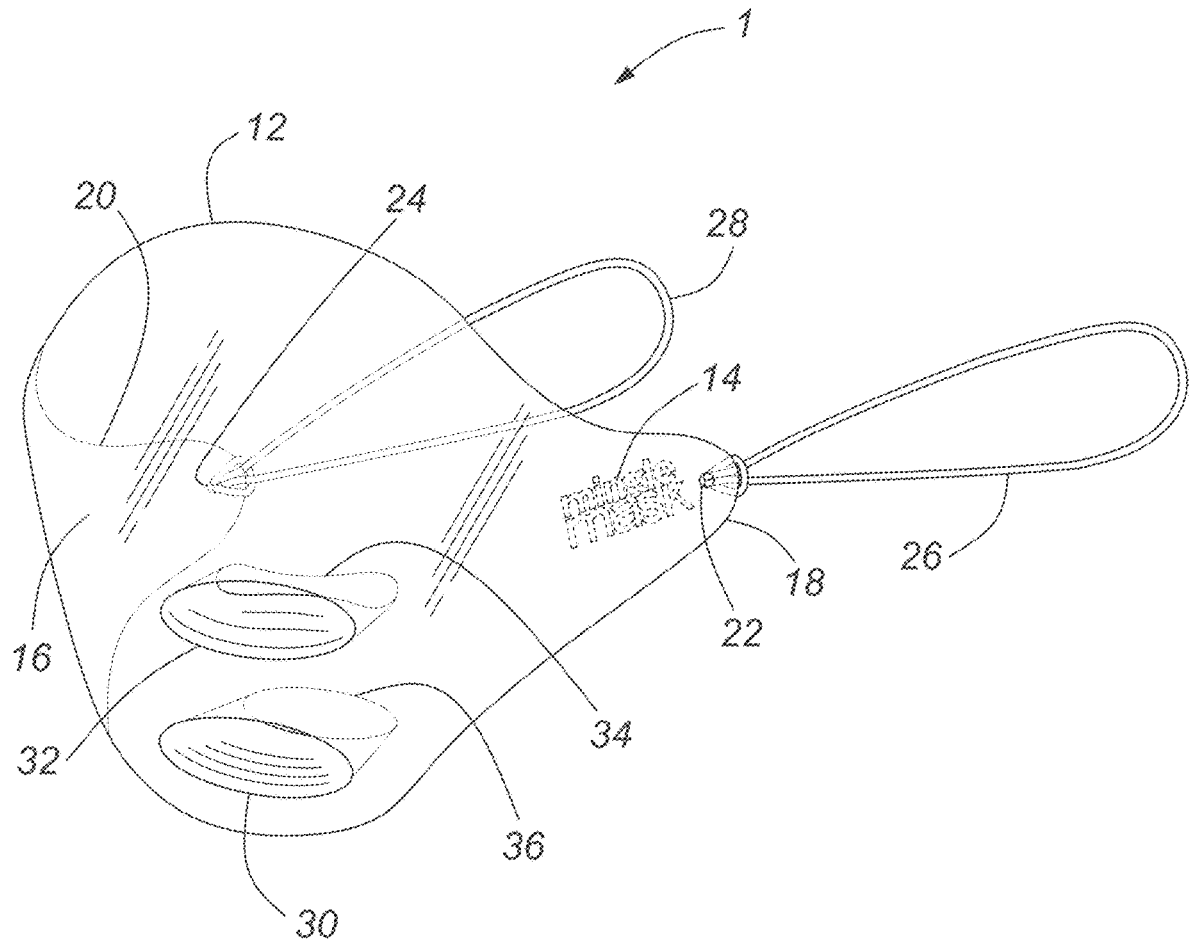


Fig. 27

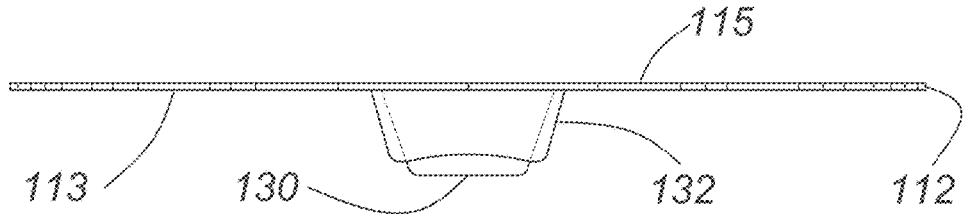


Fig. 29

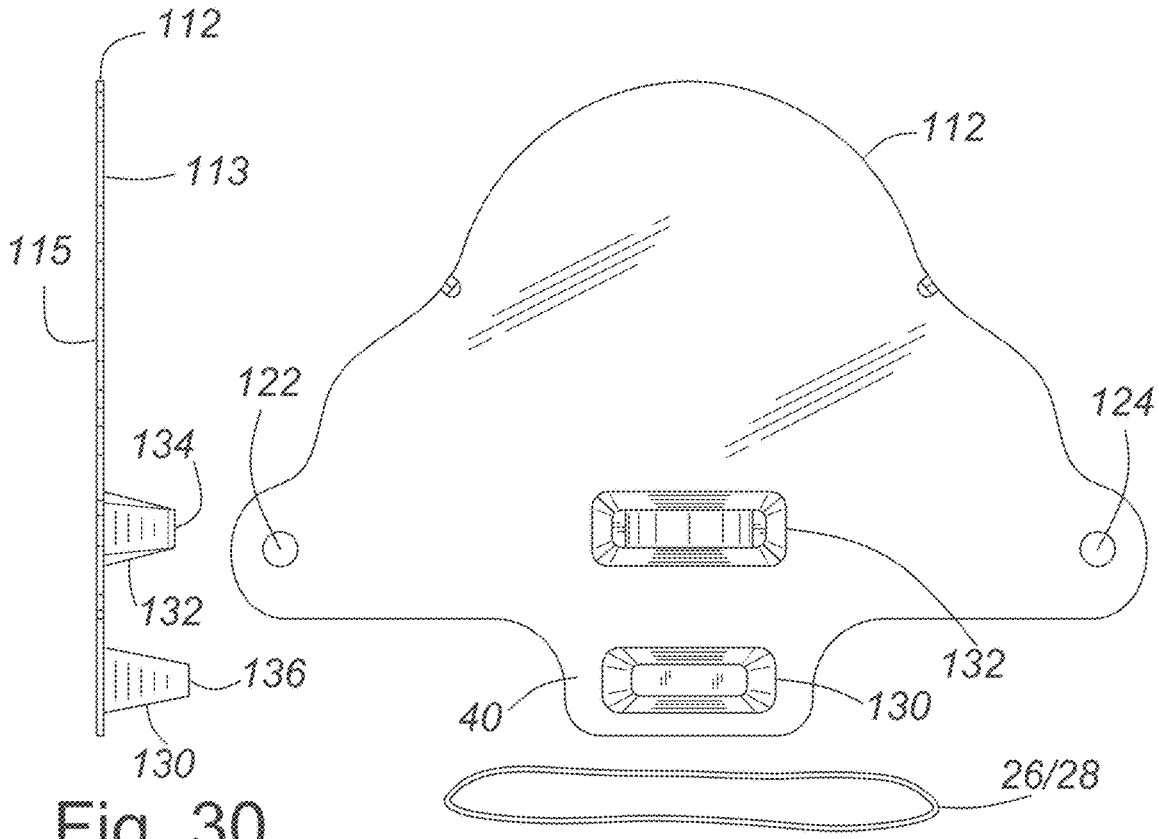


Fig. 30

Fig. 28

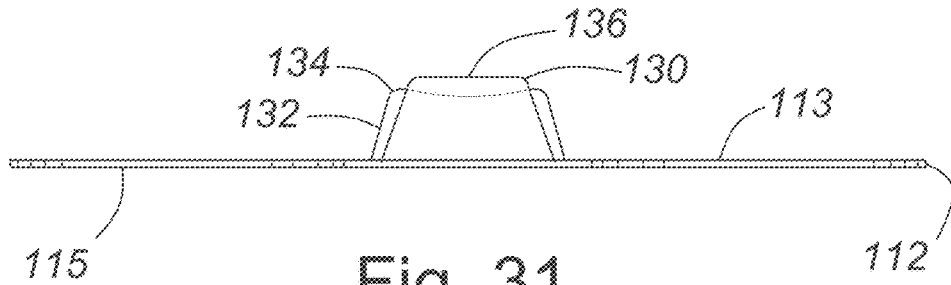


Fig. 31

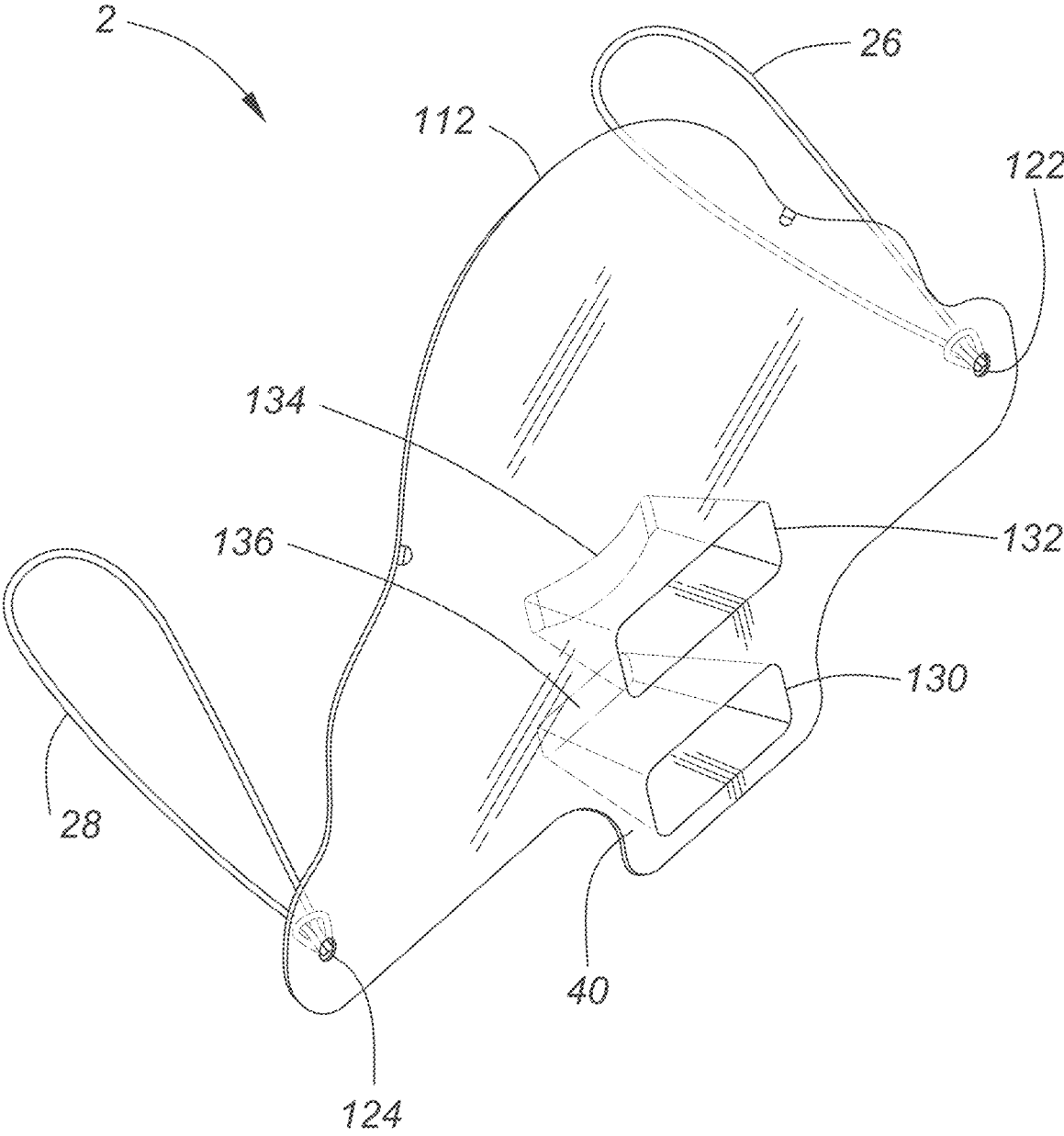


Fig. 32

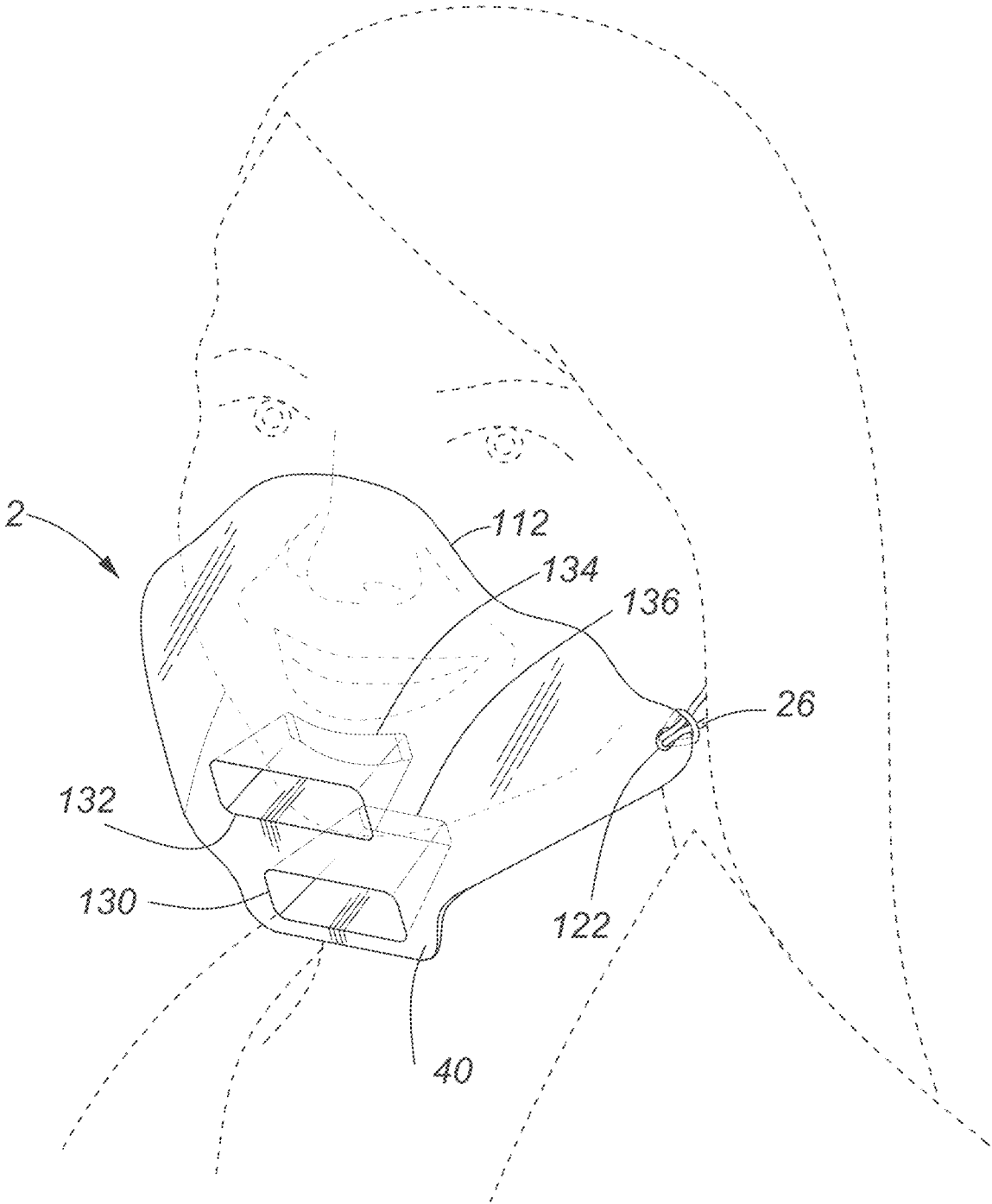


Fig. 33

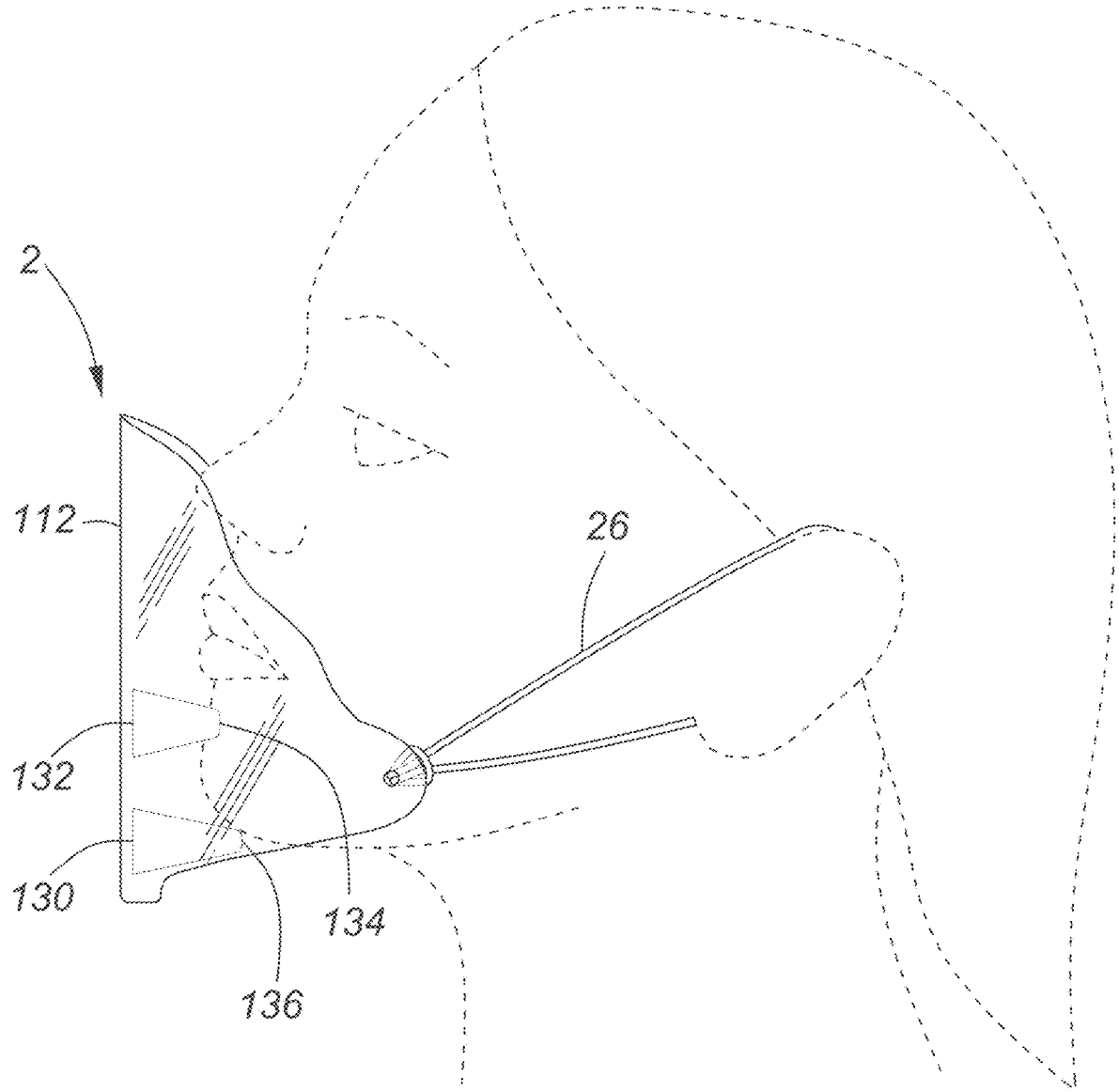


Fig. 34A



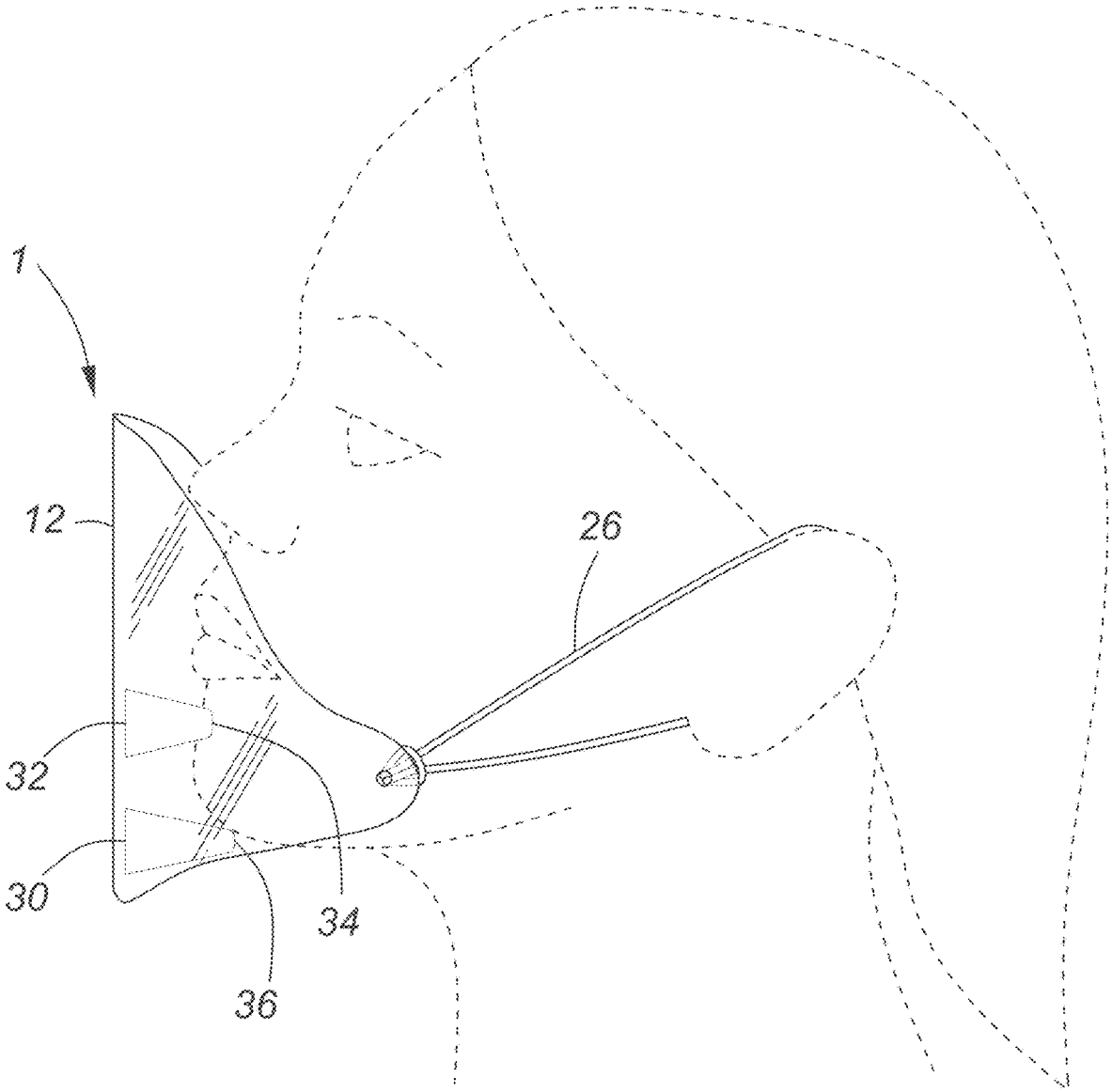


Fig. 34B

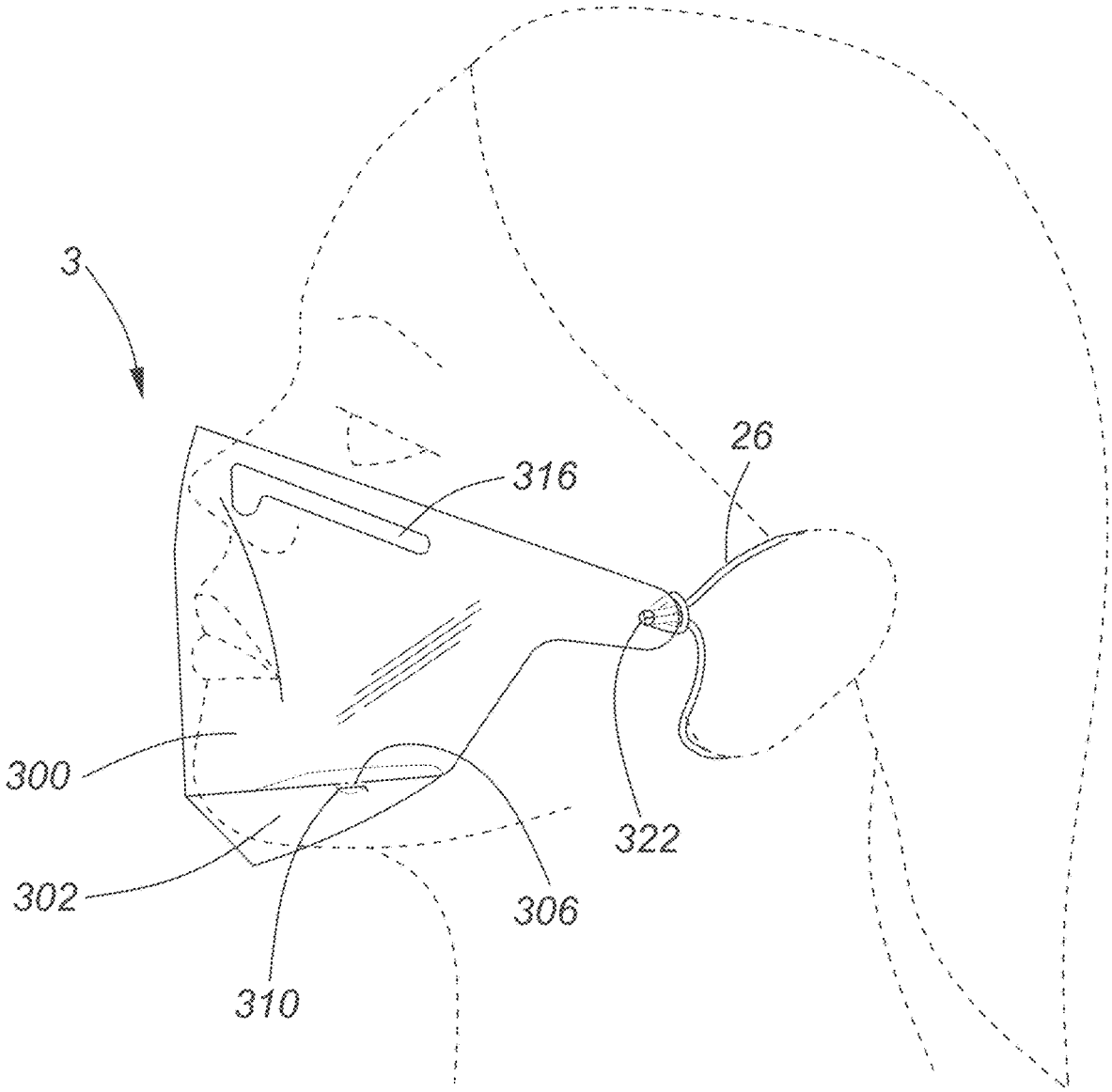


Fig. 34C

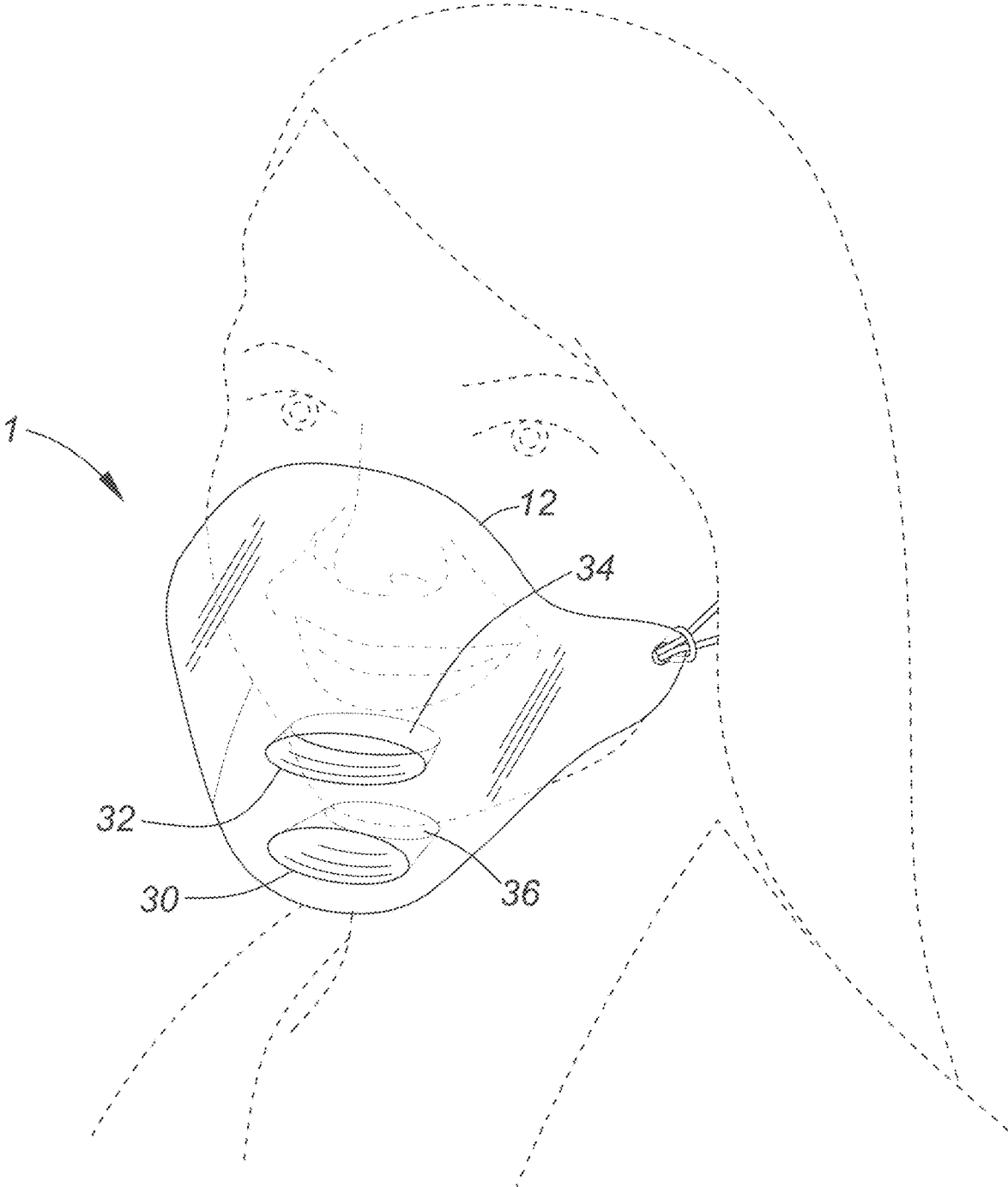


Fig. 35

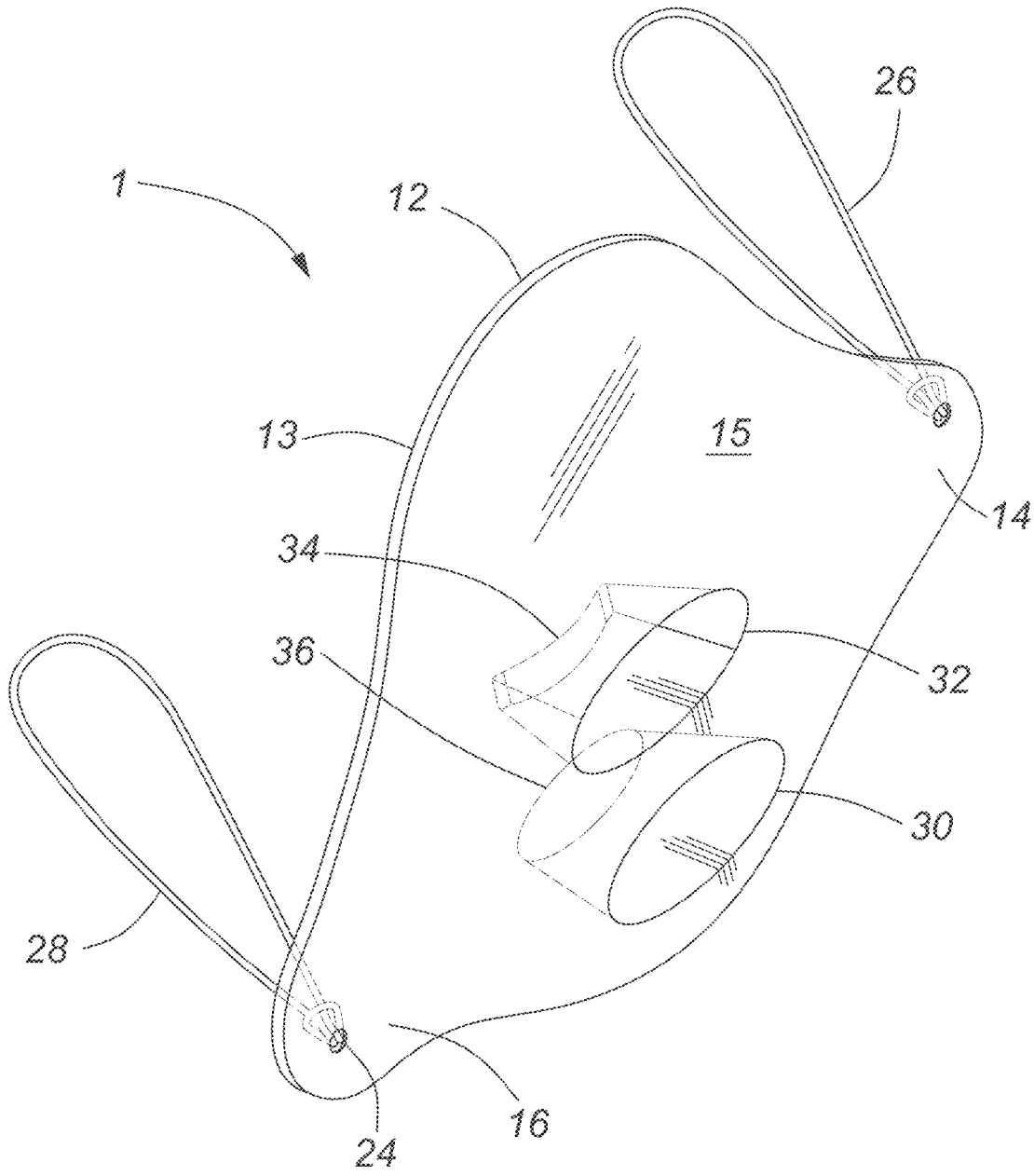


Fig. 36

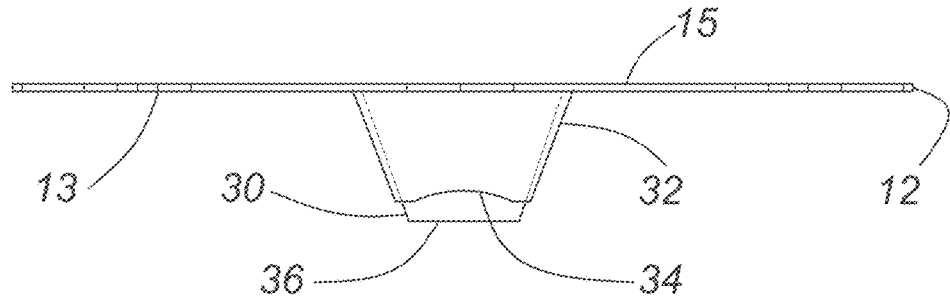


Fig. 40

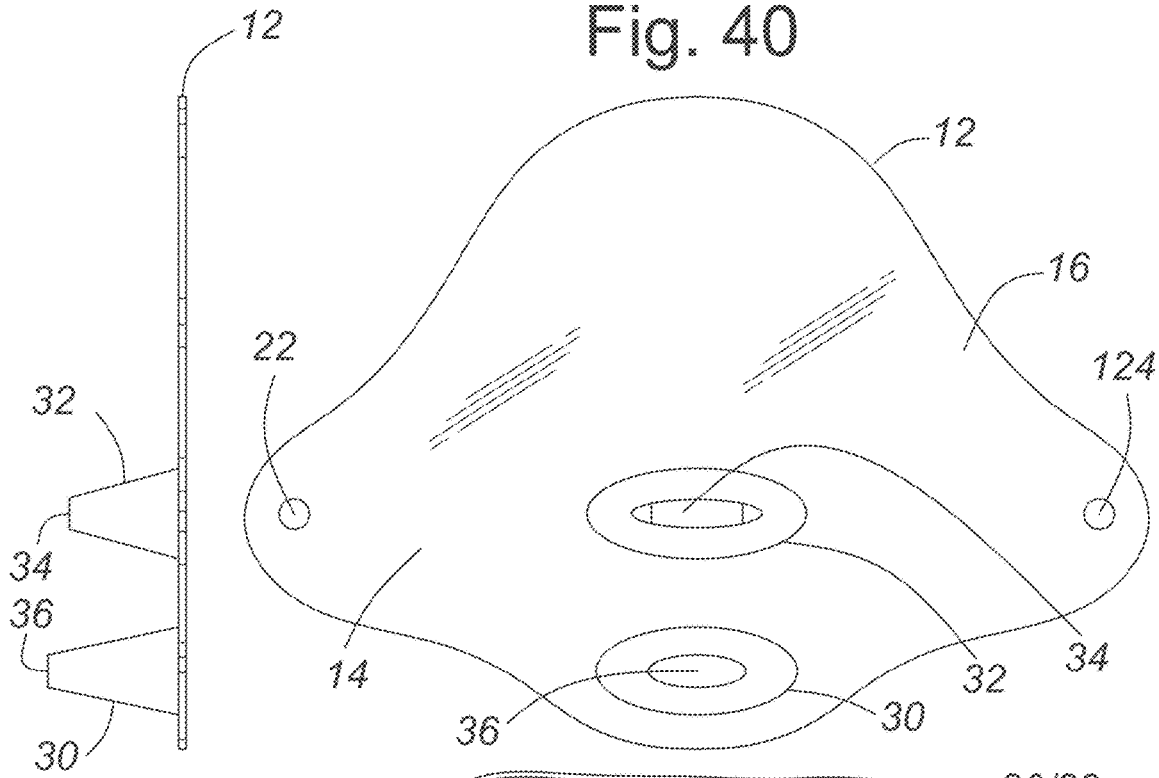


Fig. 39

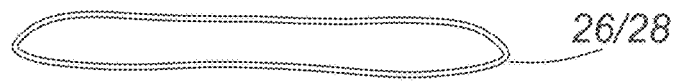


Fig. 37

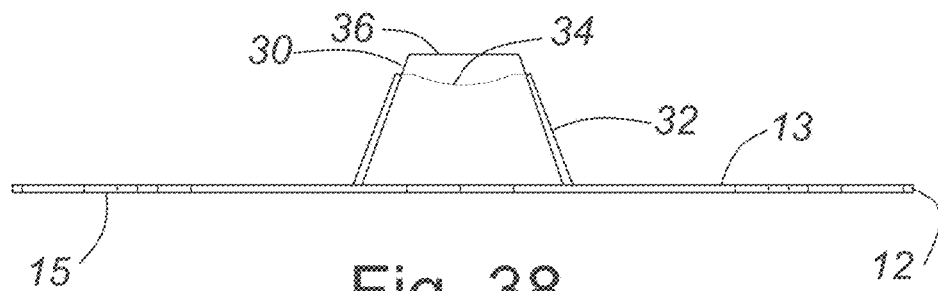


Fig. 38

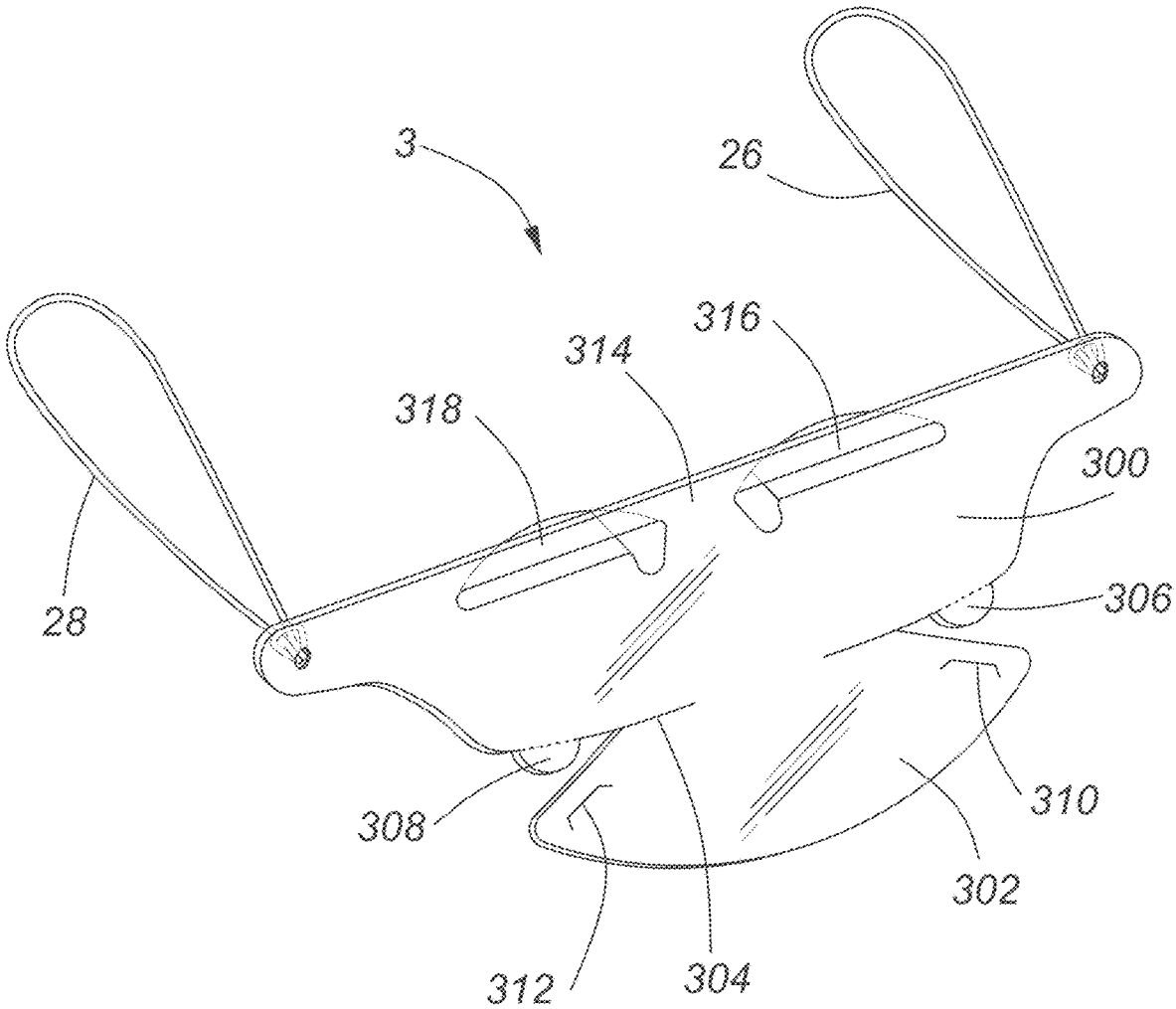


Fig. 41

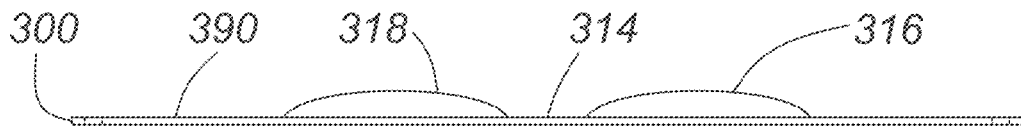


Fig. 42C

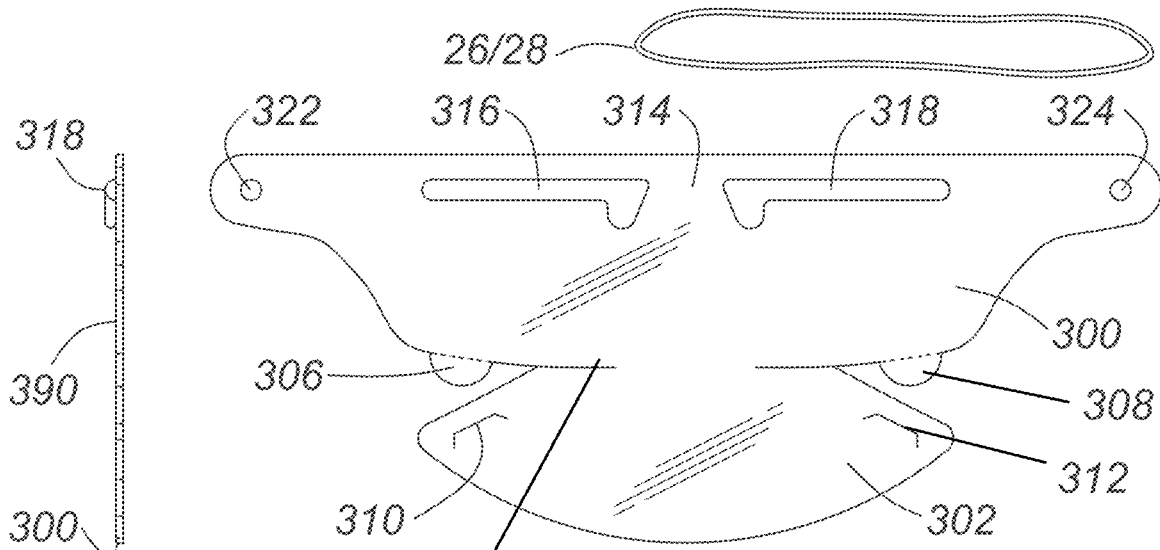


Fig. 42A

Fig. 42E

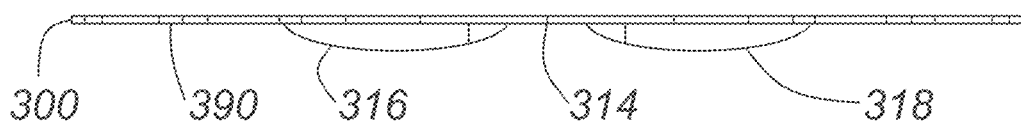


Fig. 42B

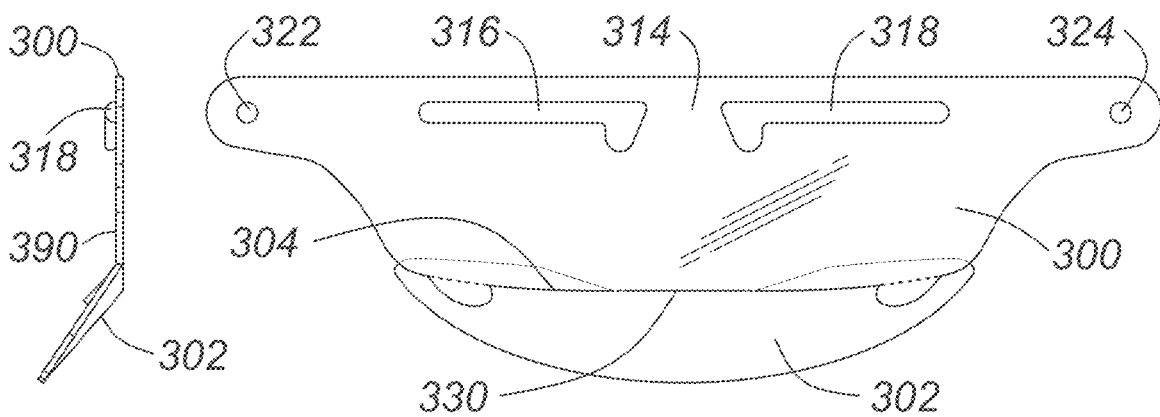


Fig. 42D

Fig. 42F

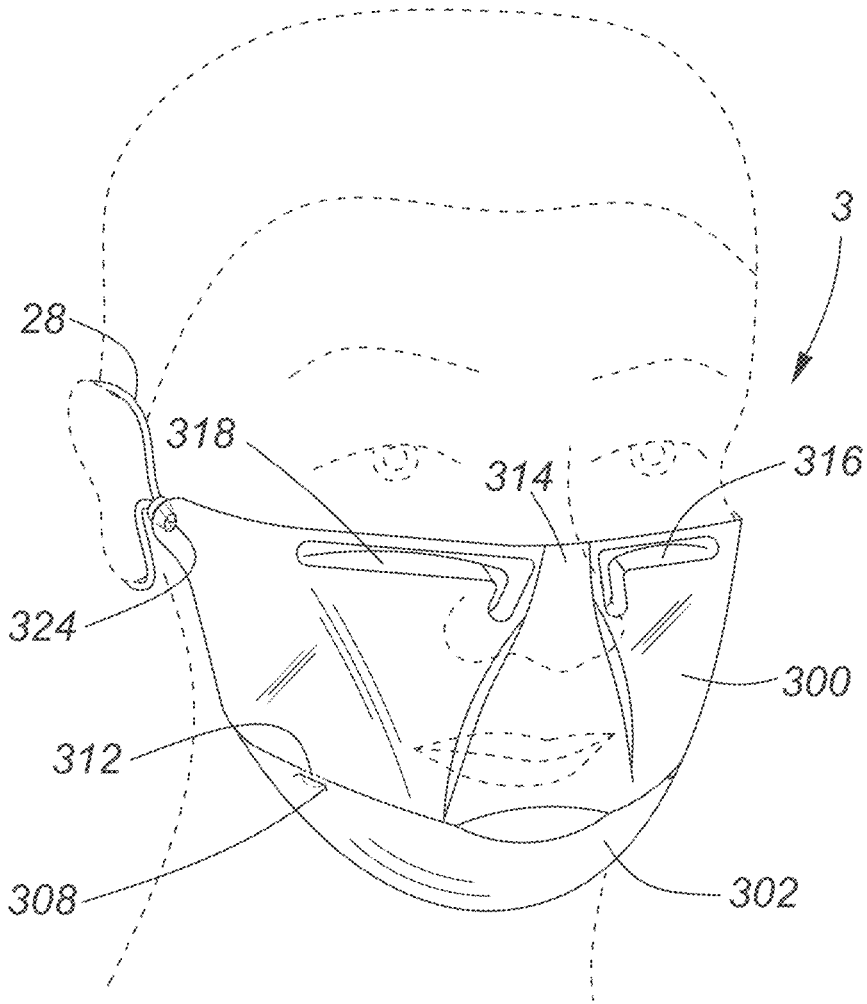


Fig. 43





FIG. 44

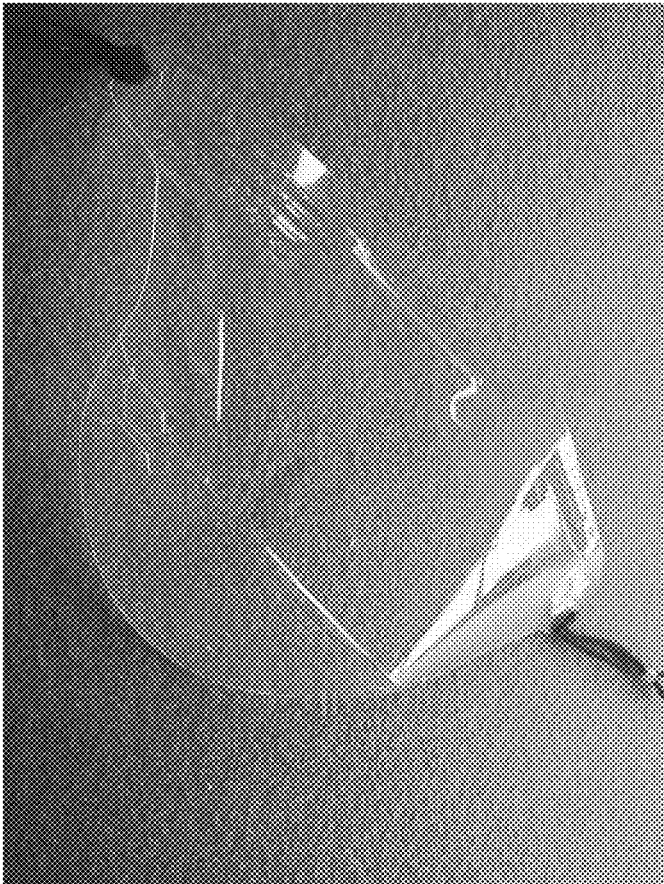


FIG. 45A



FIG. 45B



FIG. 46

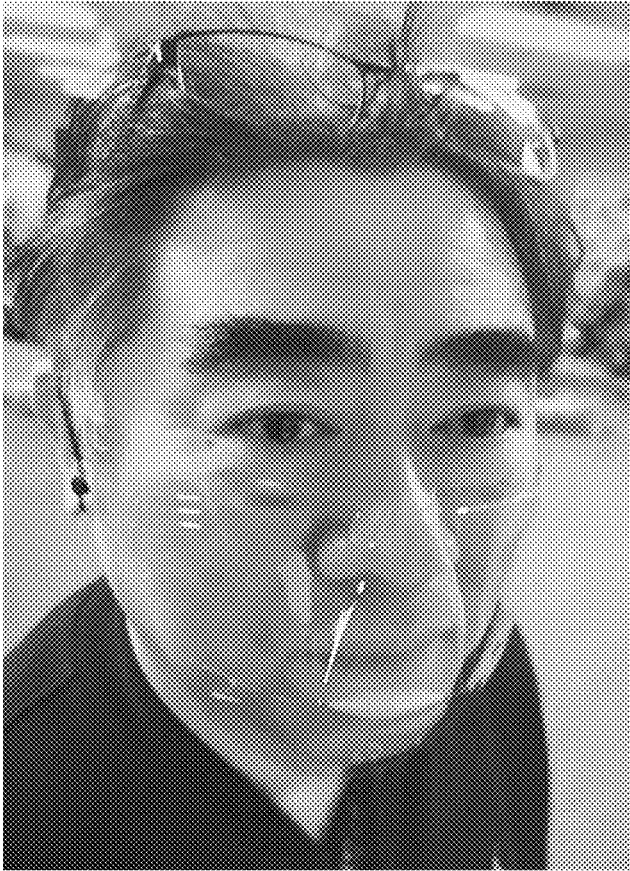


FIG. 47

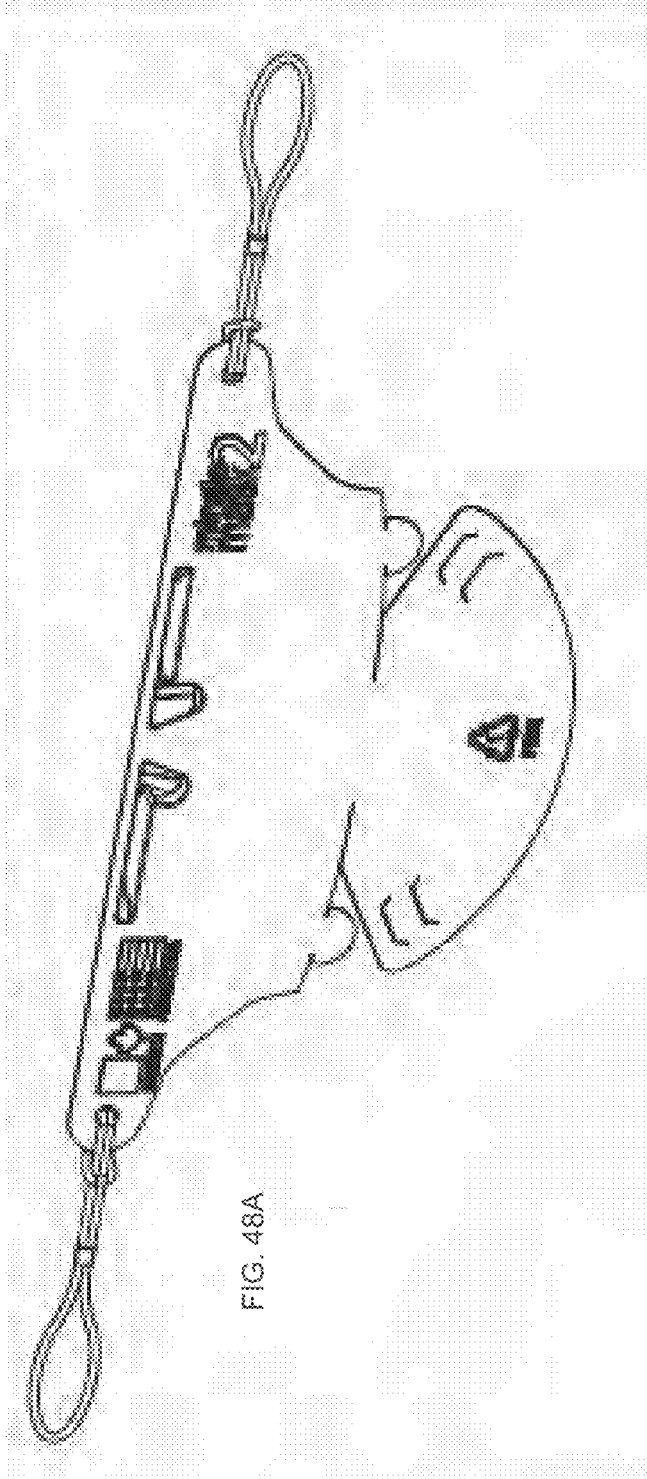


FIG. 48A

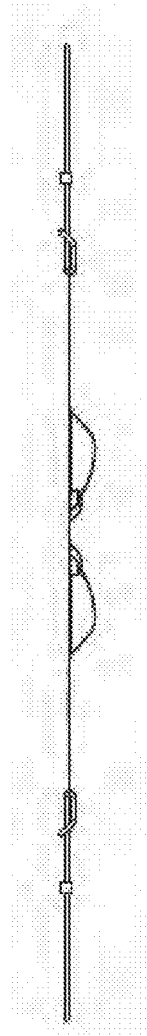


FIG. 48B

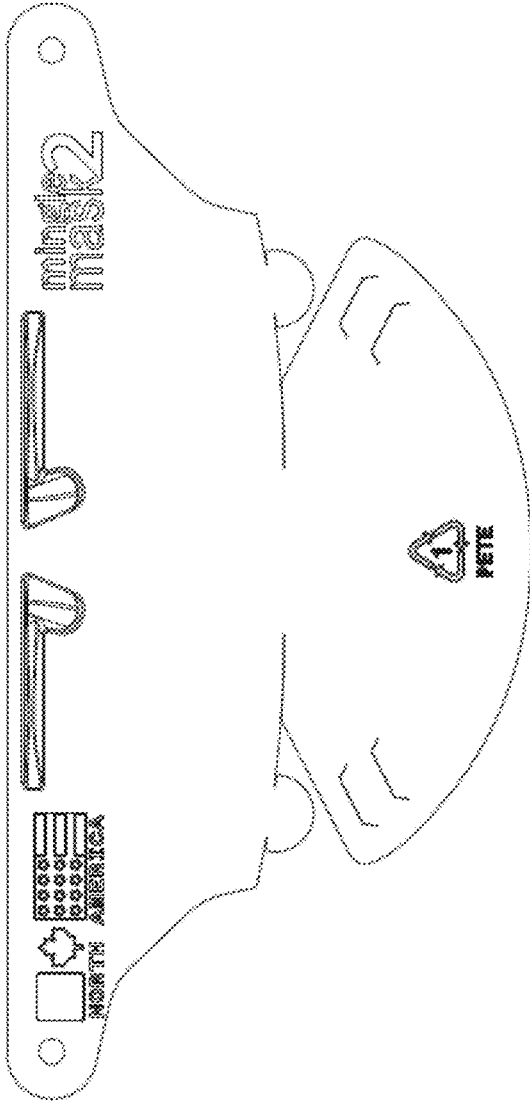


FIG. 49

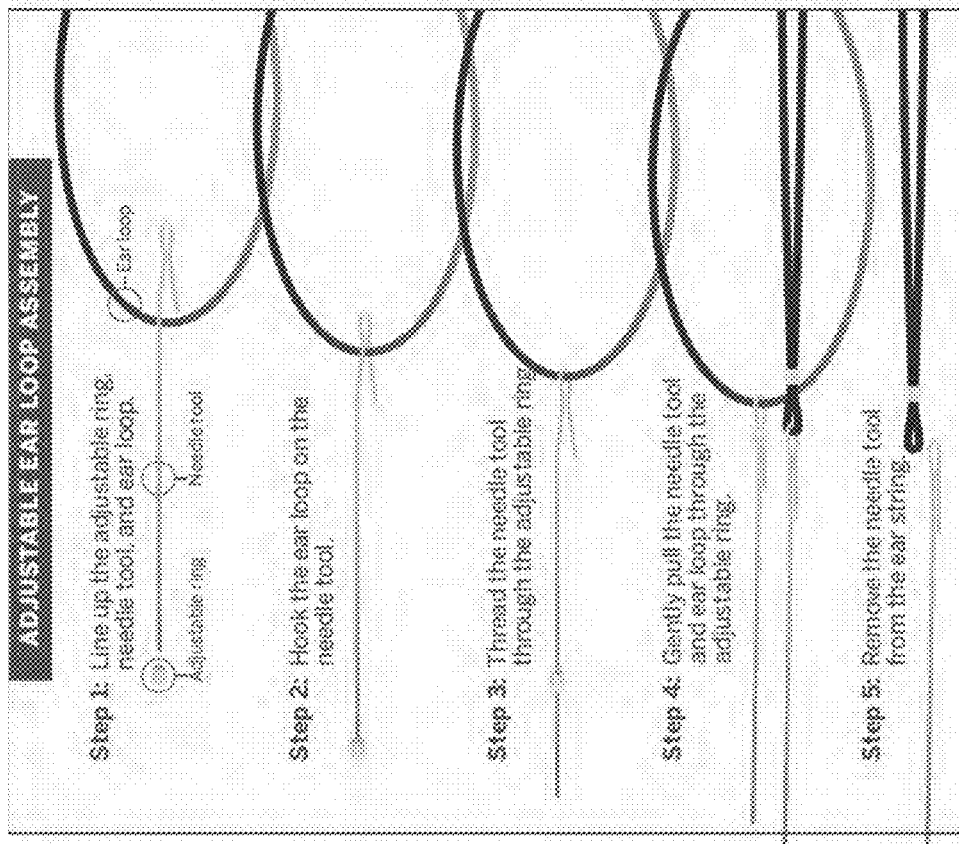
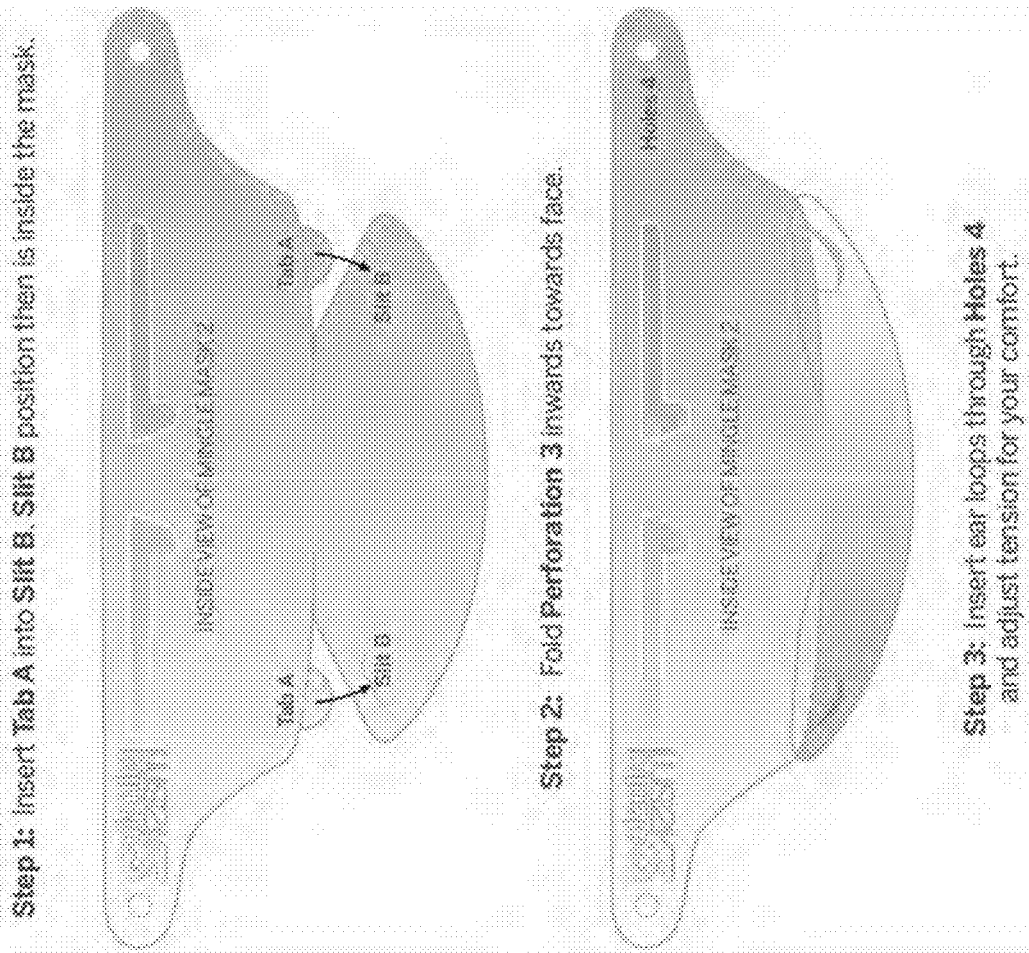


FIG. 50





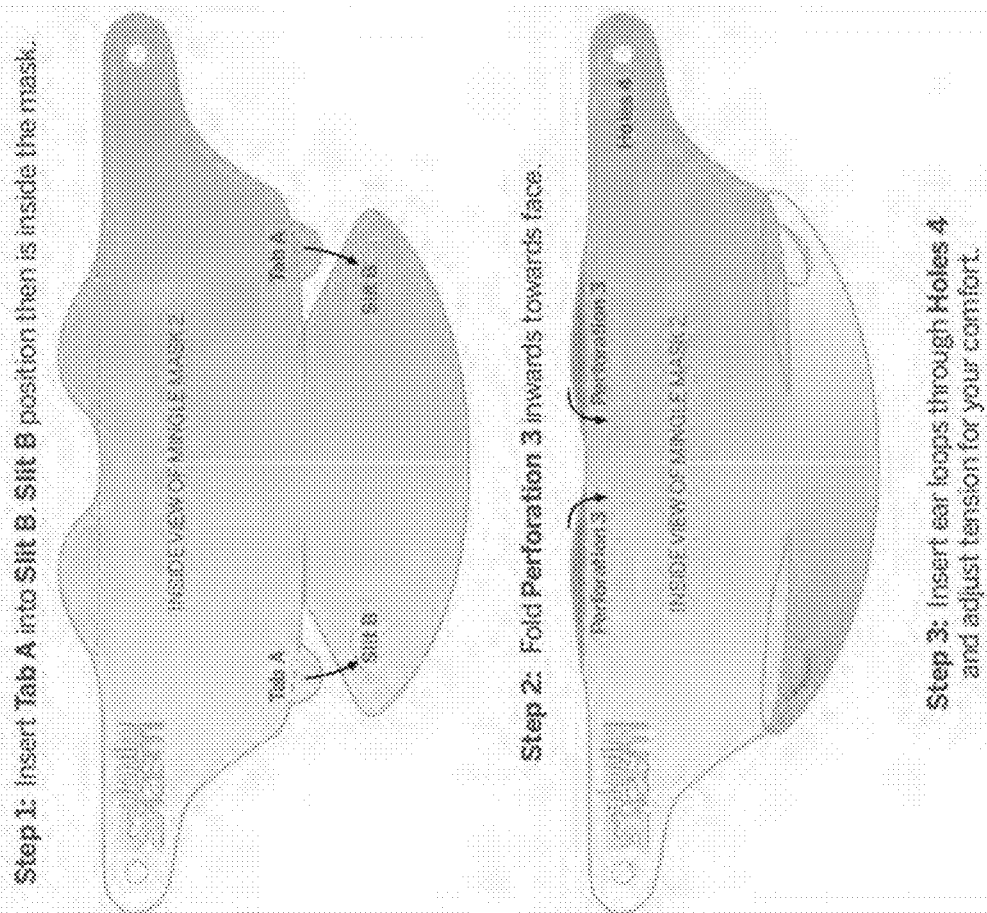


FIG. 52

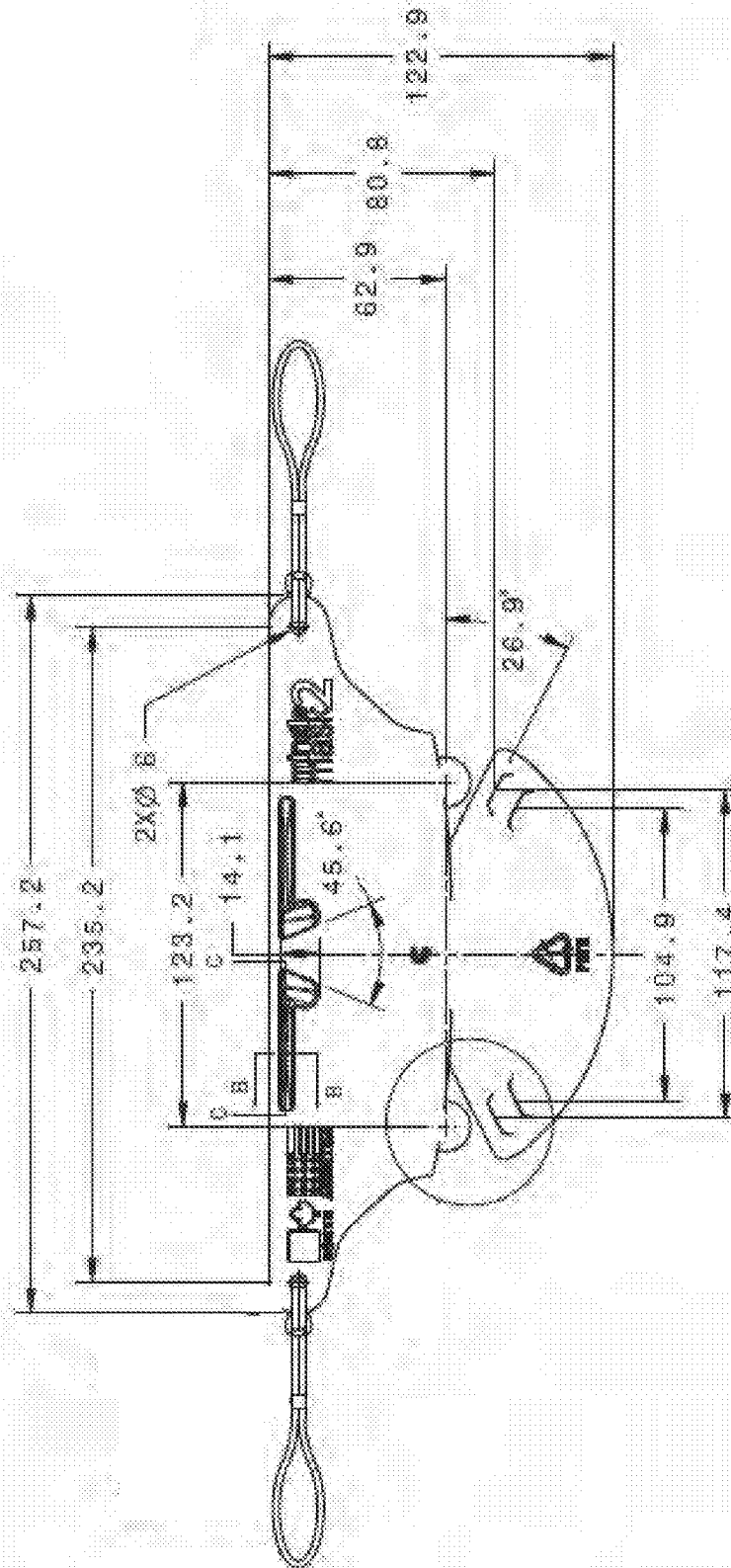


FIG. 53

## TRANSPARENT PROTECTIVE FACE MASK

### CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application claims priority to U.S. Provisional Patent Application Ser. No. 63/027,002, filed on May 19, 2020, the entire contents of which are herein incorporated by reference.

### FIELD

[0002] The present application relates to a transparent protective face mask, such as a plastic mask, against airborne particles or pathogens that is configured for support on a user's face using the chin area and ears of the user, but otherwise does not touch the face, or has minimal contact with the face. It is particularly suitable for use in social settings such as retail stores and restaurants, where visibility of the face is preferred while still maintaining a certain amount of facial protection.

### BACKGROUND

[0003] Opaque protective masks, such as cloth masks, are undesirable in social settings as they also mask facial expressions and provide an intrusive, unfriendly ambiance. Known transparent protective plastic face masks or shields do not mask facial expressions, but they typically comprise a clear protective plastic mask or shield mounted and extending from the forehead down over most or all of the face including the eyes, nose and mouth of the user possibly extending further downward over the chin and possibly even further downward over the neck. Similar such masks may also be supported on the body of the user, at or below the bottom of the neck. Such masks may thus provide extensive protective covering of the face or head which may be particularly desirable in a medical setting such as a hospital, or generally for use by medical personnel. However, their large size, prominence, and obvious isolating nature, may be considered to be socially undesirable for more casual, non-medical user settings, such as in restaurants or retail stores, where a much less intrusive or noticeable, as well as more comfortable mask would be desired for their personnel. Further, full plastic masks or shields often experience fogging, or contribute to fogging of eyeglasses if worn under the mask.

[0004] U.S. Pat. No. 8,375,949 and U.S. D684322 each disclose a face mask or shield for use by largely non-medical personnel which are much less cumbersome, but with less coverage of the face, than the forehead mounted shields discussed above. These show two-part masks which respectively have a first, lower shield-mount part located on and touching the face along the jaw of the user, and a second mask or shield part extending, without touching the face, upwards from the first part and over the mouth and nose of the user. However, the extensive touching of the face along the jaw of the user is a source of substantial physical discomfort to the user while also limiting air flow behind the shield thereby contributing to fogging of the mask or of eyeglasses if worn by the user. Also, these have quite visible parts which are intrusive, distracting or unattractive to others especially in non-medical, social uses.

[0005] There is a need for a protective face covering (such as a mask), particularly in social settings such as stores and restaurants, which is comfortable to wear for prolonged

periods, has a minimal visual impact to others and facilitates viewing the facial expressions of the user during social interactions, while still providing some degree of protection to the user and/or others.

[0006] This background information is provided for making information believed by the applicant to be of possible relevance to the present application. No admission is necessarily intended, nor should be construed, that any of the preceding information constitutes prior art against the subject matter presented herein.

### SUMMARY

[0007] An aspect of the present application is to provide a transparent face mask that allows for facial features to be visible through the face covering, and having minimal contact with the face of the user, while providing a certain degree of protection against air-borne particles or pathogens.

[0008] In accordance with one aspect, the present application provides a transparent (such as a rigid, clear plastic) mask, typically for use by largely non-medical personnel, the mask comprising: a face covering portion to cover at least the mouth and nose of the user; side portions respectively comprising head attachment means for receiving retention elements such as ear loops or a head strap; and a mount portion, the mount portion preferably comprising one or more, typically a pair of, protuberances for resting the mask adjacent the chin of the user. In one embodiment, the two protuberances preferably comprises an upper protuberance having an end portion configured for resting on an upper part of the chin of the user, and a lower protuberance having an end portion configured for resting on a lower part of the chin, more preferably on an under part of the chin. When the mask is attached to the user, the respective end portions of the protuberances in the mount portion thus rest against the face of the user while the rest of the mask is held off from touching the face of the user (i.e. the face covering portion of the mask is spaced apart from the face of the user except at the mount portion) due to the height (depth) of each protuberance and the rigidity of the rigid, durable material (e.g. plastic) mask.

[0009] In another embodiment, there is provided a transparent mask comprising a face covering portion to cover at least the mouth and nose of the user; side portions respectively comprising head attachment means for receiving retention elements (such as ear loops or a head strap), a nose portion, and a releasably lockable chin panel which releasably locks with the face covering portion. In one embodiment, the chin panel is integrally molded with the face covering and is hinged with the bottom edge of the face covering portion such that the chin panel is bendable towards the chin of the user. In one embodiment, the chin panel comprises one or more slots which reversibly interlock with corresponding one or more tabs on the bottom edge of the face covering portion (or, alternatively, the chin panel may comprise one or more tabs which reversibly interlock with corresponding one or more slots on the bottom edge of the face covering portion). The nose portion comprises a nose bridge portion and one or more (preferably a pair of) protuberances, each of said protuberances positioned on opposite sides of the nose bridge portion, for engaging with opposite sides of the nose of a user, wherein the nose bridge portion is flexibly contoured for fitting over and/or adjacent to an exterior surface of a nose of the user. By fitting over the nose of a user, the mask may provide a certain degree of

sealing engagement with an external surface of the nose of the user. Again, the mask is preferably made of a rigid, durable material, such as plastic.

**[0010]** The inventive mask thus provides for only minimal contact points with the user's face. In one embodiment, the end portions of each chin protuberance and the head or ear attachment means are in contact with the user. In other embodiments, where a nose portion is present, contact is generally limited to a portion of an exterior surface of the nose area, but may also include contact of the chin with the chin panel. Further, in some embodiments, the chin panel may have minimal or no contact with the chin of the user, whether or not the chin panel is locked with the face covering portion. While such minimal contact results in greater comfort, the air space between most of the mask and the user's face adds to the comfort, as such permits some air movement over the user's face, lessening the likelihood of having a fogged mask, or fogged eyeglasses if worn, from breathing and talking. The mask is particularly beneficial, compared to other masks, when used in social settings involving proximity with others, for example in retail store settings, or restaurants. This is because the mask has a minimal visual impact, compared to other masks, and allows an unobstructed view of the user's facial expressions as well as clear communications with the user. Since the present mask is more comfortable to wear, as discussed above, it may be worn for example, by store and restaurant personnel for a considerable time. Its minimal visual impact provides a more acceptable ambiance for social settings as well, i.e. compared to more noticeable masks.

**[0011]** Further, embodiments comprising the nose portion provide a more sealing engagement with the nose of a user, which can help with retaining the mask on the face of the user by preventing the mask from sliding down the face, while also covering and providing at least a certain degree of protection to at least a portion of the nose region. The chin panel, when engaged with the face covering portion, also covers and may provide at least a certain degree of protection to at least a portion of the chin region of the user.

#### BRIEF DESCRIPTION OF THE DRAWINGS

**[0012]** Drawings and photographs of preferred embodiments of the invention are provided herewith and briefly described as follows:

**[0013]** FIG. 1 is a front view of one embodiment of the mask as described herein;

**[0014]** FIG. 2 is a back view of the mask of FIG. 1;

**[0015]** FIG. 3 is a top left side, back perspective view of the mask of FIG. 1;

**[0016]** FIG. 4 is a left side view of the mask of FIG. 1;

**[0017]** FIG. 5 is a drawing of a back view of the mask of FIG. 1, showing preferred dimensions (in inches) of width and length of the mask, and diameter of each ear loop hole;

**[0018]** FIG. 6 is a drawing of a perspective back view of the mask of FIG. 1, showing preferred dimensions (in inches) of width and length of the mask, and extent (or height) of the indented face mounts (protuberances);

**[0019]** FIG. 7 is a drawing of a back view of an alternative preferred embodiment of the inventive mask, showing preferred dimensions (in inches) of width and length of the mask, and diameter of each ear loop hole;

**[0020]** FIG. 8 is a drawing of a perspective back view of the embodiment of FIG. 7, showing preferred dimensions (in

inches) of width and length of the mask, and extent (or height) of the indented face mounts;

**[0021]** FIG. 9 is a photograph of a side view of a model wearing one embodiment of the present mask;

**[0022]** FIG. 10 is a drawing superimposed on the photograph of FIG. 9, in which there is a drawing of a side view of the mask on the model and a drawing of a front, or back, of the mask showing dimensions of features of the mask in correlation to the mask on the model;

**[0023]** FIG. 11 is a photograph of a front view of the model wearing the mask of FIG. 1;

**[0024]** FIG. 12 is a draft product promotional photograph of a model wearing one embodiment of the mask described herein;

**[0025]** FIG. 13 is a back view of the mask of FIG. 12;

**[0026]** FIG. 14 is a front view of the mask of FIG. 12;

**[0027]** FIG. 15 is a back, bottom perspective view of the mask of FIG. 12;

**[0028]** FIG. 16 is a back, right side perspective view of the mask of FIG. 12;

**[0029]** FIG. 17 is a front, right side perspective view of the mask of FIG. 12;

**[0030]** FIG. 18 is a right side view of the mask of FIG. 12;

**[0031]** FIG. 19 is another back, bottom perspective view of the mask of FIG. 12;

**[0032]** FIG. 20 is a front, bottom perspective view of the mask of FIG. 12;

**[0033]** FIG. 21 is a left side perspective view of the mask of FIG. 12 resting along its lower edge and distal end of the lower protuberance on a table surface;

**[0034]** FIG. 22 is a right side perspective view of the mask of FIG. 12 resting along its lower edge and distal end of the lower protuberance on a table surface;

**[0035]** FIG. 23 is a back, bottom perspective view of the mask of FIG. 12;

**[0036]** FIG. 24 is a side view of the mask of FIG. 12 worn by a model without eyeglasses;

**[0037]** FIG. 25 is a front view of the mask of FIG. 12 worn by a model wearing eyeglasses;

**[0038]** FIG. 26 is a side view of the mask of FIG. 12 worn by a model wearing eyeglasses.

**[0039]** FIG. 27 shows a front view of the mask of FIGS. 12-26 and FIG. 36.

**[0040]** FIG. 28 shows a rear view (side facing the user) of the mask of FIGS. 1-6 and 32, without the ear loops attached.

**[0041]** FIG. 29 shows a top view of the mask of FIG. 28.

**[0042]** FIG. 30 shows a side view of the mask of FIG. 28.

**[0043]** FIG. 31 shows a bottom view of the mask of FIG. 28.

**[0044]** FIG. 32 shows a front perspective view of the mask of FIG. 28.

**[0045]** FIG. 33 shows the mask of FIG. 32 as worn on the face of a user, from the front.

**[0046]** FIGS. 34A-C show side views of various embodiments of the present mask: the mask 2 of FIG. 32 (FIG. 34A), the mask 1 of FIG. 36 (FIG. 34B), and the mask 3 of FIG. 41 (FIG. 34C) on the face of a user.

**[0047]** FIG. 35 shows a front view of the mask of FIG. 36 on the face of a user.

**[0048]** FIG. 36 shows a front perspective view of the mask of FIG. 27.

**[0049]** FIG. 37 shows a rear view (side facing the user) of the mask of FIG. 36, without ear loops attached.

[0050] FIG. 38 shows a bottom view of the mask of FIG. 37.

[0051] FIG. 39 shows a side view of the mask of FIG. 37.

[0052] FIG. 40 shows a top view of the mask of FIG. 37.

[0053] FIG. 41 shows a different embodiment of a mask as described herein.

[0054] FIGS. 42A-F show: a rear view (side facing the user) of the mask of FIG. 41 with the chin panel unlocked (FIG. 42A); bottom view of the mask of FIG. 42A (FIG. 42B); top view of the mask of FIG. 42A (FIG. 42C); and chin panel locked (FIG. 42D) with the face covering portion. Side views of the mask are shown in the unlocked (FIG. 42E), and folded inward (FIG. 42F), chin panel.

[0055] FIG. 43 shows a front facing view of the mask of FIG. 41 on the face of a user, with the chin panel locked with the face covering portion.

[0056] FIG. 44 shows a photograph of the mask of FIG. 41 on the face of a user, with the chin panel locked with the face covering portion.

[0057] FIGS. 45A and 45B show photographs of the mask of FIG. 41, right and left perspective views, with the chin portion locked with the face covering portion.

[0058] FIG. 46 shows a photograph of another perspective view of the mask of FIG. 41, with the chin portion locked with the face covering portion.

[0059] FIG. 47 shows a photograph of the mask of FIG. 41 on a user, with the chin panel locked with the face covering portion.

[0060] FIG. 48 shows another view of the mask of FIG. 41. FIG. 48A is a perspective view and FIG. 48B is a top view.

[0061] FIG. 49 is a front view of the mask of FIG. 41, without the ear loops.

[0062] FIG. 50 illustrates one method of assembling the adjustable ear loop assembly for use with the present mask.

[0063] FIG. 51 shows a method of assembling the mask of FIG. 41 to lock the chin portion with the face covering portion.

[0064] FIG. 52 shows a method of assembling another embodiment of the mask of FIG. 41.

[0065] FIG. 53 shows a schematic of one embodiment of the mask of FIG. 41, showing exemplary dimensions (in mm).

#### DETAILED DESCRIPTION

[0066] Provided herein is a transparent mask comprising a face covering portion to cover at least the mouth and nose of the user; side portions respectively comprising head attachment means, and a portion for covering and/or engaging with the chin region of the user. In one embodiment, the mask comprises a mount portion having one or more protuberances which rest on the chin of a user. In another embodiment, the mask comprises a nose portion and a chin panel which releasably locks with the face covering portion. The nose portion comprises a nose bridge portion and one or more (preferably a pair of) protuberances. Each of said protuberances is positioned on a generally opposite side of the nose bridge portion, for engaging with opposite sides of the nose of a user, wherein the nose bridge portion is flexibly contoured for fitting over and/or adjacent to an exterior surface of a nose of the user. The nose portion generally contours with, and provides a certain degree of sealing engagement with, an external surface of the nose of the user.

[0067] As used herein, a “mask” refers to a wearable face covering that is intended to provide an amount of protection to the user wearing the mask. The mask should cover or substantially cover (i.e., provide a barrier to) at least the nose and mouth of the user. The terms “mask” and “face mask” may be used interchangeably herein, unless otherwise qualified. Typically, the present mask is for non-medical use.

[0068] As used herein, a “transparent” mask refers to a mask which, when worn by a user, still allows the face of the user (i.e., including the portions of the face covered by the mask) to be visible.

[0069] FIGS. 1-6 and 11 illustrate one embodiment of the present mask, such as mask 2, as also shown, for example, in FIGS. 28-33, and 34A;

[0070] FIGS. 7-10 and 12-26 illustrate another embodiment of the present mask, such as mask 1, as also shown, for example, in FIGS. 27, 34B, and 35-40.

[0071] FIGS. 41-49 and 51-53 illustrate yet another embodiment of the present mask, such as mask 3 as shown, for example, in FIGS. 34C and 41-43.

[0072] As one example of the mask as shown in the embodiment in FIG. 27 and FIG. 36, the mask generally comprises a rigid, solid substrate composed of a transparent material such as plastic. In this embodiment, the mask 1 (and as illustrated in FIG. 37-40 without ear loops attached) comprises a face covering portion 12 which generally covers the nose, the mouth, and the chin of the user. The face covering portion comprises an inside facing surface 13 (i.e., towards the face of the user) and an exterior facing surface 15. The mask 1 comprises side portions 14, 16 at or near one or more side edges 18, 20 of the mask, typically on each of left and right sides of the mask (generally corresponding to the left and right sides of a user’s face or head); a brand or logo may be included here, such as shown, for example. Either and/or both of the side portions 14, 16 comprise head attachment means. In the embodiment shown, two head attachment means 22, 24 are provided, one at each side portion 14, 16 of the mask, in the form of a hole in each side portion. FIG. 5 illustrates one example of a head attachment means as a hole having a diameter of about 0.25 inches; however, other sizes may be used. Retention elements 26, 28, such as ear loops or a single head strap, is/are insertable and releasably attachable and secured at one end to each of the head attachment means 22, 24, respectively, and may be used in any or all of the embodiments of the mask described herein. Where ear loops are used, each is used to attach the mask to the respective ears of a user such as shown in FIGS. 34A-C; however, other facial/head retention elements may be contemplated (such as a head strap over or around the head of the user, for example). In some embodiments, the retention elements may be adjustable in length to better fit the user.

[0073] FIGS. 6-8 illustrate exemplary sizes of one embodiment of the present mask. The width shown is about 7 inches, and the height is about 5 inches. The protuberances can be about 1 inch high, but can vary as needed (see below).

[0074] The face covering portion may have a rounded bottom edge (such as shown in the mask 1 in FIGS. 7-8, 12-15, 19-23, 27, and 35-40), or a more square bottom edge (such as shown in the mask 2 in FIGS. 1, 5-6, 11, 28-30, 32 and 33). In an embodiment of the mask, such as mask 2 having a square bottom edge, the lower protuberance of the chin mount portion may be located within the extended

portion **40** which juts downward from the face covering portion, such as shown particularly in FIG. **32**.

**[0075]** In one embodiment, the mask comprises a mount portion for resting the mask on the chin of the user. In one embodiment, the mount portion comprises one protuberance; in another embodiment, the mount portion comprises a pair of protuberances, namely: an upper protuberance having an end portion configured for resting on an upper part of the chin, and a lower protuberance having an end portion configured for resting on a lower part of the chin, preferably on an under part of the chin. The protuberances project generally inward (towards the face of the user) from the inside surface **13** of the face covering portion **12**, such as in the form of an indentation of the face covering portion towards the face (chin) of the user; see, for example, FIGS. **37-40**.

**[0076]** The mount portion is typically made of the same durable material as the rest of the mask (e.g. plastic). Ideally, the mount portion is integrally molded within the mask (such that the protuberances are indented inward from the surface of the face covering portion, as described above). However, other types of protuberances, such as releasably attachable and/or sizable protuberances, or additional protuberances, may also be contemplated. In certain embodiments, the protuberances may be generally hollow (i.e., opening only at the outer face side of the mask, as an indent) to keep the mask lightweight. FIG. **32** shows one embodiment of the mask **2**, and FIG. **36** shows one embodiment of the mask **1**. The upper protuberance may comprise a chin rest panel **34** (FIG. **36**) or **134** (FIG. **32**), and the lower protuberance may comprise a chin rest panel **36** (FIG. **36**) or **136** (FIG. **32**), which contact the chin of the user, and may provide a more comfortable resting portion against the chin of the user. In embodiments shown in FIGS. **32** and **36**, the chin rest panels **34** or **134** of the upper protuberance **32** or **132** are slightly concave so as to contour with the upper part of the chin, compared to the more planar chin rest panel **36** or **136** of the lower protuberance **30** or **130**.

**[0077]** FIG. **10** illustrates one example of typical dimensions of the protuberances (exemplary shown for the embodiment of the mask **1**). In this embodiment, the upper and lower protuberances comprise an outer dimension and an inner dimension. In the exemplary upper protuberance shown, the diameter of the outer dimension is about 1.75" (inches), and the diameter of the inner, on chin contact dimension is about 1.25 inches. For the exemplary lower protuberance, the outer dimension is about 1.5 inches and the inner, under chin contact dimension is about 0.875 inches. The upper protuberance in this example has a depth (i.e., length inward towards the chin) of about 0.75 inches, and the lower protuberance has a depth of about 1 inch. However, as with the dimensions shown in FIGS. **5-8**, these dimensions are only examples, and should not be considered as limiting. Any desired length/depth or width of protuberances may be contemplated.

**[0078]** When in use, the mount portion ideally permits, at minimum, only the mount portion to be in contact with the face of the user, thus only at the chin area of the user. The mask may, thus, be spaced apart from the face of the user except at the mount portion (not including the side portions and retention elements, which are engaged with the side of the user's head and ears). This is particularly advantageous for providing maximum comfort for the user.

**[0079]** To wear the mask, the user places the mask near his/her face and attaches the retention elements to their head. The retention elements are ideally releasably attachable to the mask; they may be separate from the mask and manually attachable by the user, or already attached to the head attachment means. Where ear loops are provided and attached to the head attachment means on the mask, the user places the ear loops over their ears. Using the embodiment of the mask **1** shown in FIGS. **35** and **36** as examples, the mount portion is then placed on the user's chin, and when there are two protuberances, the end portion **34** of the top protuberance **32** is positioned above the top part of the user's chin, and the end portion **36** of the lower protuberance **30** rests on a lower part under the user's chin. (If only one protuberance is provided, the protuberance may be positioned on top of, below, or directly on the chin of the user, as desired or provided). The mask is then in position on the face of the user.

**[0080]** In another embodiment of the present mask, as best shown in FIGS. **41-49** and **51-53**, the mask **3** comprises a releasably securable chin panel which releasably locks with the face covering portion. As best shown in FIG. **41** and FIGS. **42A-F**, the chin panel **302** is hinged with a lower edge **304** of the face covering portion **300**, and preferentially biased inward (toward the face) to the chin region of the user.

**[0081]** As shown in the embodiment in FIG. **42A** and FIG. **42D**, the lower edge **304** of the face covering portion **300** comprises one or more, typically two, tabs **306**, **308**, one near each side (left and right) of the lower edge **304** of the face covering portion **300**. The tabs **306**, **308** interlock with corresponding slots **310**, **312** on corresponding ends of the chin panel **302**. Ideally, the chin panel **302** is integrally molded with the rest of the mask, except for the tab/slot portions (which are integral to the face covering portion or the chin panel, respectively). Additional slots may be provided to allow the chin panel to be positioned more closely or more distant to the chin of the user, thus accommodating different chin sizes, to provide for a tighter fit for the user.

**[0082]** The embodiment of the mask **3** further comprises a nose portion on the face covering portion of the mask. The nose portion comprises a nose bridge portion **314** and one or more, preferably two, nose protuberances **316**, **318**. Each of said nose protuberances **316**, **318** is positioned on opposite sides, flanking the nose bridge portion **314**, for engaging opposite sides of the nose of a user. Ideally, the nose bridge portion **314** is flexibly contoured for fitting over and/or adjacent to an exterior surface of a nose of the user. The nose portion may provide a certain degree of sealing engagement with an external surface of the nose of the user. In this regard, the nose protuberances may ideally be more rounded in shape to fit the contour of the sides of a user's nose. Similar to the upper and lower chin protuberances in the embodiments shown in mask **1** and mask **2**, the nose protuberances extend from an inner surface **390** of the face covering portion of the mask **3** towards the face of the user, and may be hollow (opening from the outer surface) to reduce overall weight of the mask. In one embodiment (such as shown in FIG. **52**), the top of the mask may comprise foldable projections which act as nose protuberances. The user would then fold these projections inward along perforations towards the user's face to form the protuberances.

**[0083]** FIG. **51** shows an exemplary method of assembling the mask of FIG. **41** to lock the chin panel to the face

covering portion; an illustration of the lock and unlocked positions is also shown in FIGS. 42A and 42D. When using this embodiment of the mask, the user slightly bends the chin panel 302 along the hinge 330 at the lower edge 304 towards their face, such that the tabs 306, 308 from the face covering portion 300 align with the slots 310, 312 on the chin panel 302. The user then locks the tabs into their corresponding slots, thus retaining the chin panel in its slightly bent position over the chin of the user. (Alternatively, the chin panel may comprise the tabs and the face covering portion may comprise the corresponding slots). The user then places the mask on their face and head, attaching the ear loops or other retention elements (which are connected to the side portions at head attachment means 324, 322, respectively, to their ears or head). The chin panel 302 may also be assembled with the face covering portion after the user places the mask on their face. FIGS. 34C, 43, 44 and 47 show this mask worn on a user.

[0084] The chin panel thus may also provide a certain degree of added protection to not only the facing part of the chin, but also at least a portion of the underside thereof. Other than the side portions of the mask, the nose portion may be the only portion of the mask to be in contact with the face of the user, depending on the shape and size of the face/head of the user. In some cases, the nose portion and the chin panel may both be in contact with the face of the user. In some cases, the chin panel may be spaced apart from the chin of the user.

[0085] FIGS. 45A and 45B show photographs of the mask of FIG. 41, right and left perspective views. FIG. 46 shows a photograph of another perspective view of the mask of FIG. 41. FIG. 47 shows a photograph of the mask of FIG. 41 on a user, with the chin panel locked with the face covering portion. FIG. 48 shows the mask of FIG. 41. FIG. 48A is a perspective view and FIG. 48B is a top view. FIG. 49 is a front view of the mask of FIG. 41, without the ear loops.

[0086] FIG. 50 illustrates one method of assembling the adjustable ear loop assembly, which may be used as an ear loop for adding to the mask as described herein.

[0087] FIG. 53 shows one embodiment of the mask of FIG. 41 and associated measurements (dimensions in mm; measurements are exemplary only and are not limiting).

[0088] The above disclosure and figures are intended to be illustrative and not exhaustive. The description will suggest many variations and alternatives to one of ordinary skill in the art. Those familiar with the art may recognize other equivalents to the specific embodiments described herein within, without departing from the spirit and scope thereof.

What is claimed is:

1. A transparent protective face mask comprising:
  - a protective face covering portion to cover at least a mouth and nose of a user;
  - side portions respectively comprising head attachment means; and
  - a mount portion for resting the mask adjacent to and in contact with the chin of the user, wherein the face covering portion of the mask is spaced apart from the face of the user except at the mount portion.
2. The face mask of claim 1, wherein the side portions comprising a left side portion corresponding to a left side of

the face of the user, and a right side portion corresponding to a right side of the face of the user.

3. The face mask of claim 1, wherein the mask is composed of a rigid plastic material.

4. The face mask of claim 1, wherein the mount portion comprises one or more protuberances.

5. The face mask of claim 1, wherein the mount portion comprises two protuberances comprising: an upper protuberance having an end portion configured for resting on an upper part of the chin of the user, and a lower protuberance having an end portion configured for resting on a lower part of the chin.

6. The face mask of claim 5, wherein the end portion of the lower protuberance is configured for resting on an under part of the chin.

7. The face mask of claim 1, wherein each head attachment means is releasably connectable with one or more corresponding retention element(s), wherein the retention element is an ear loop configured for attaching to the respective ears of a user, or a head strap.

8. A transparent protective face mask comprising:

- a protective face covering portion to cover at least a mouth and nose of a user;

- side portions respectively comprising head attachment means; and

- a releasably securable chin panel hinged to a bottom edge of the face covering portion, wherein the chin panel releasably locks with the face covering portion, wherein the face covering portion comprises a nose portion comprising: a nose bridge portion, and one or more nose protuberances flanking the nose bridge portion, for engaging with opposite sides of the nose of a user.

9. The face mask of claim 8, wherein the side portions comprise a left side portion corresponding to a left side of the face of the user, and a right side portion corresponding to a right side of the face of the user.

10. The face mask of claim 8, wherein each head attachment means is releasably connectable with one or more corresponding retention element(s), wherein the retention element is an ear loop configured for attaching to the respective ears of a user, or a head strap.

11. The face mask of claim 8, wherein the mask is composed of a rigid plastic material.

12. The face mask of claim 8, wherein the chin panel is integrally molded with the face covering and is hinged with the bottom edge of the face covering portion such that the chin panel is bendable towards the chin of the user.

13. The face mask of claim 8, wherein the chin panel comprises one or more slots which reversibly interlock with corresponding one or more tabs on the bottom edge of the face covering portion.

14. The face mask of claim 8, wherein the chin panel comprises one or more tabs which reversibly interlock with corresponding one or more slots on the bottom edge of the face covering portion.

15. The face mask of claim 8, wherein the nose portion comprises two nose protuberances and wherein the nose bridge portion is flexibly contoured for fitting over and/or adjacent to an exterior surface of a nose of the user.

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