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(54) **FACE MASK**

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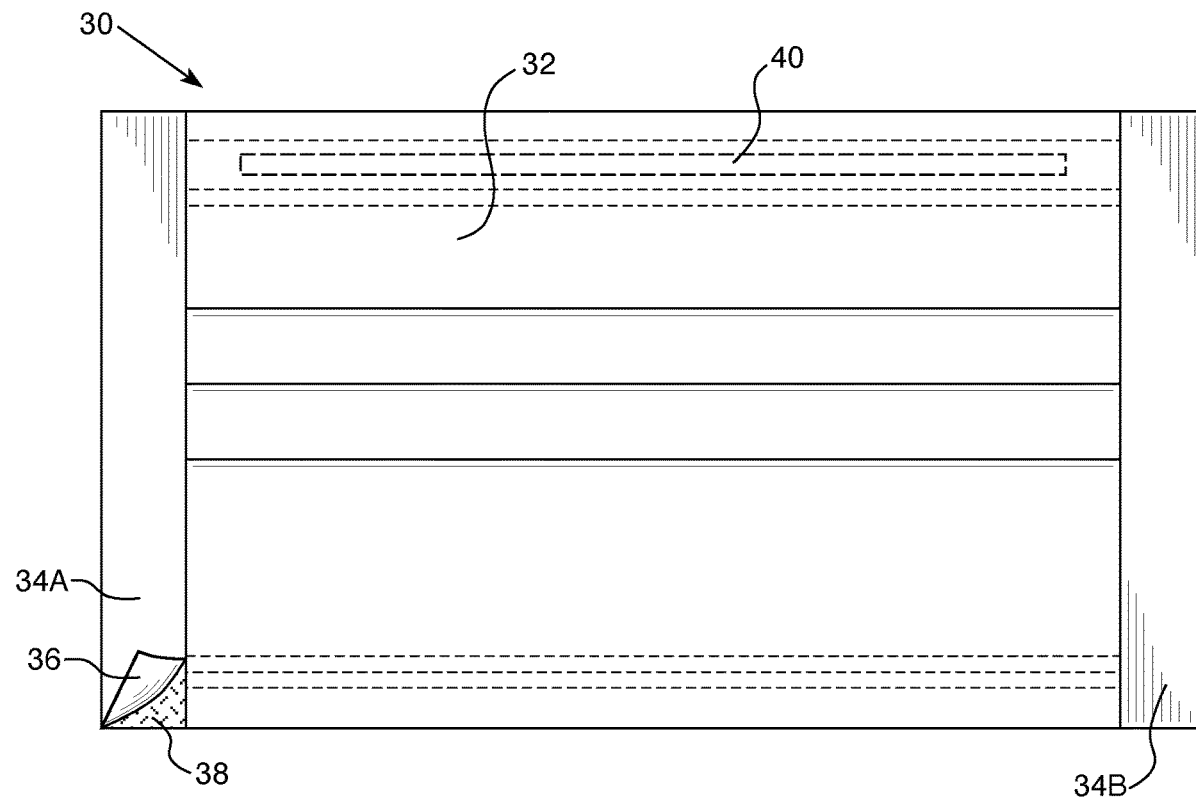
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(57) **ABSTRACT**

A protective face mask comprises (a) a covering portion having first and second opposing sides, first and second opposing side edges, and opposing top and bottom edges, (b) a first adhesive strip affixed to the first side adjacent to the first edge, and (c) a second adhesive strip affixed to the first side adjacent to the second edge. The protective face mask may comprise a first selectively removable protective backing covering the first adhesive strip and a second selectively removable protective backing covering the second adhesive strip. The protective face mask may not comprise a retention strap adapted to secure the protective face mask around a user's head or ears.

Related U.S. Application Data

(60) Provisional application No. 63/027,773, filed on May 20, 2020.



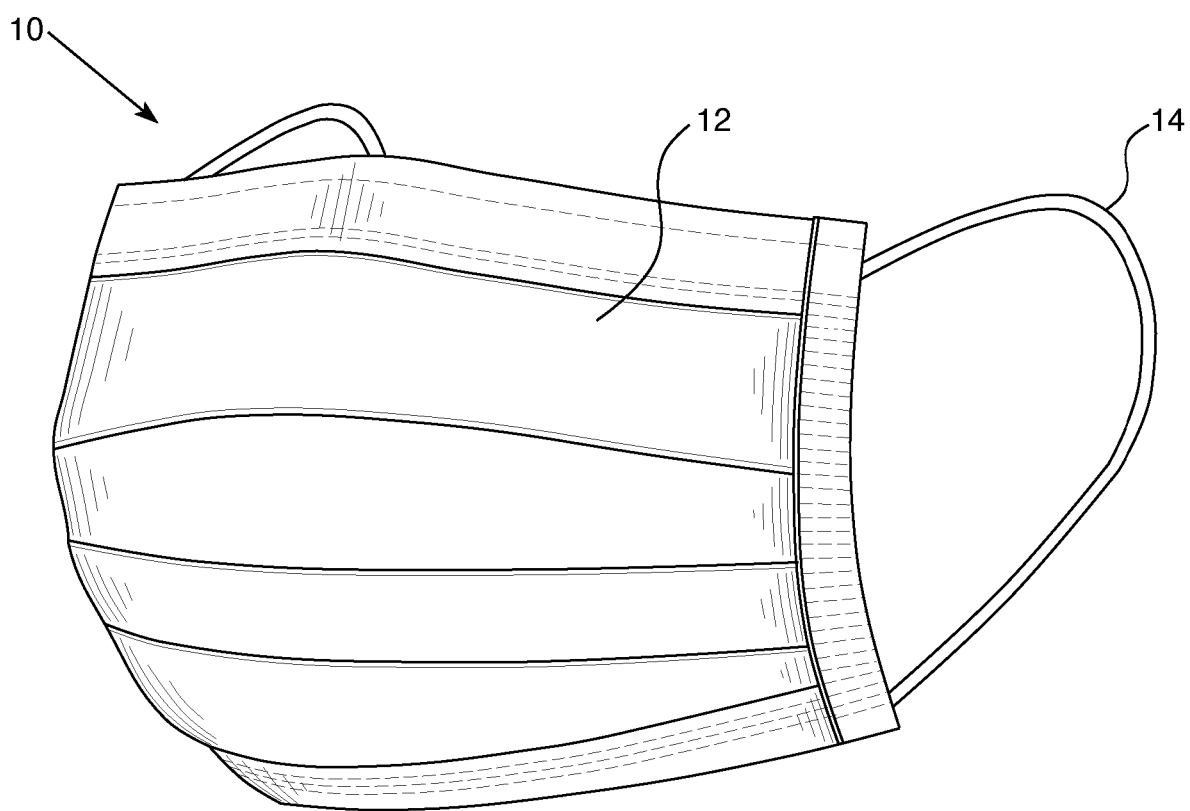


FIG. 1 (Prior Art)

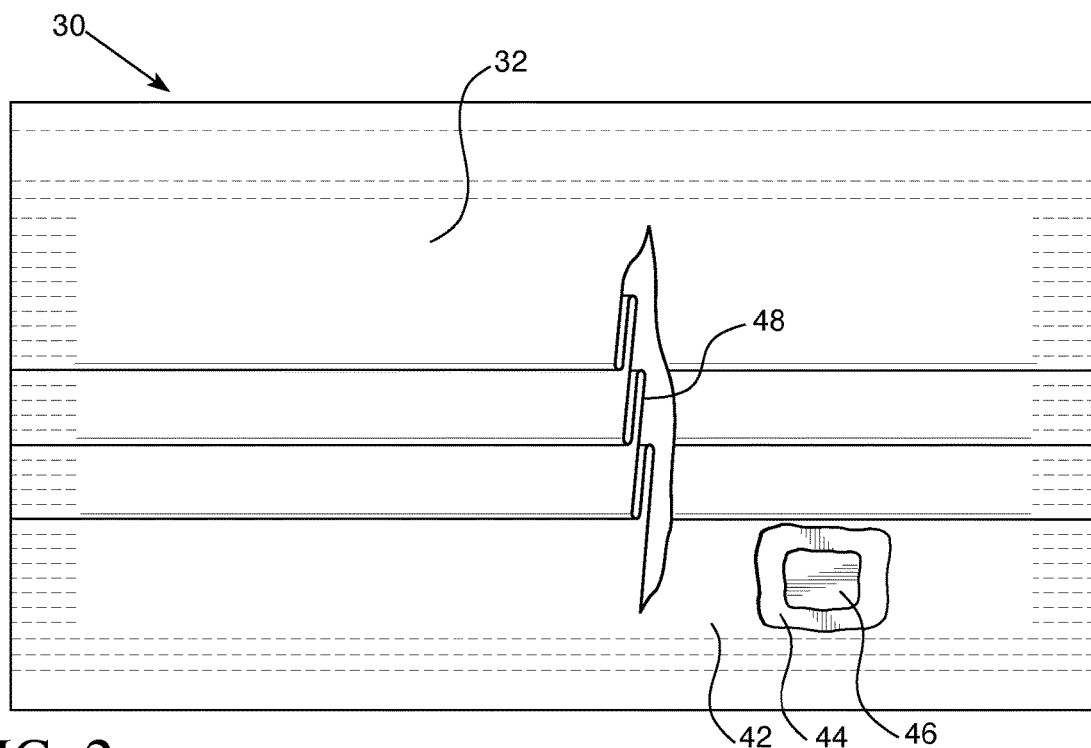


FIG. 2

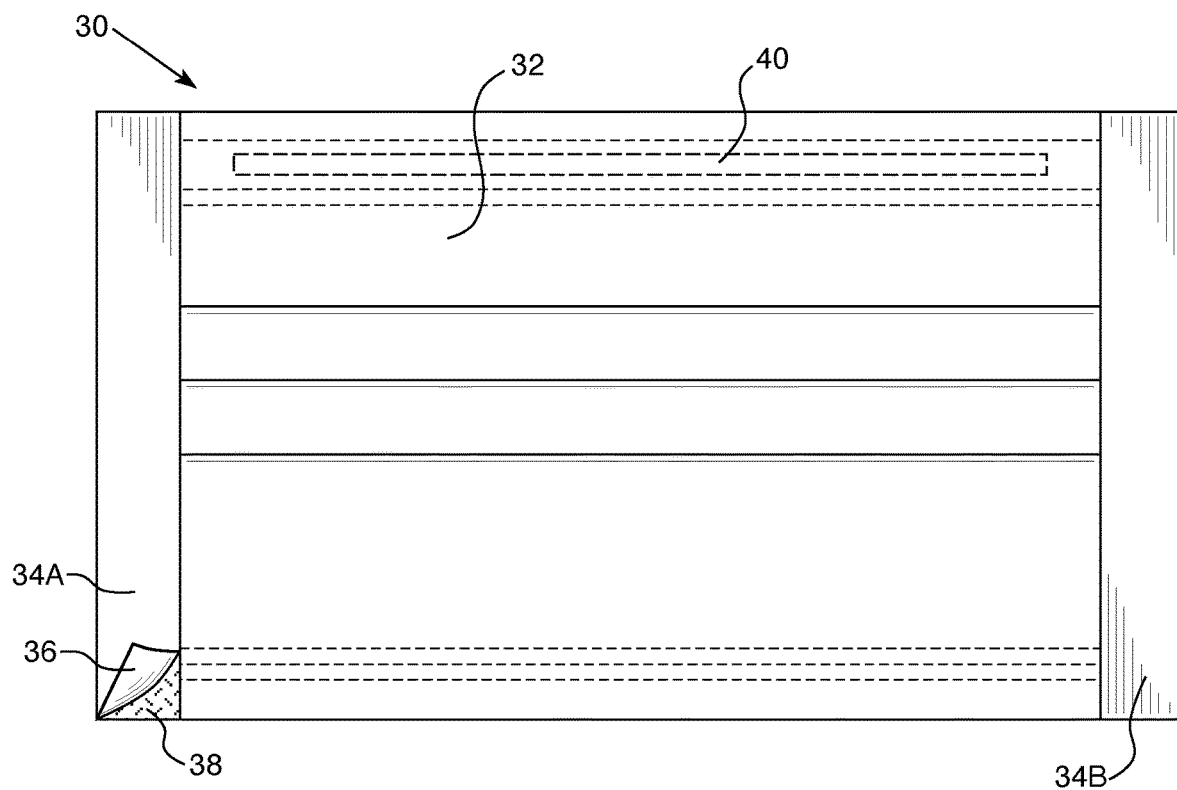


FIG. 3

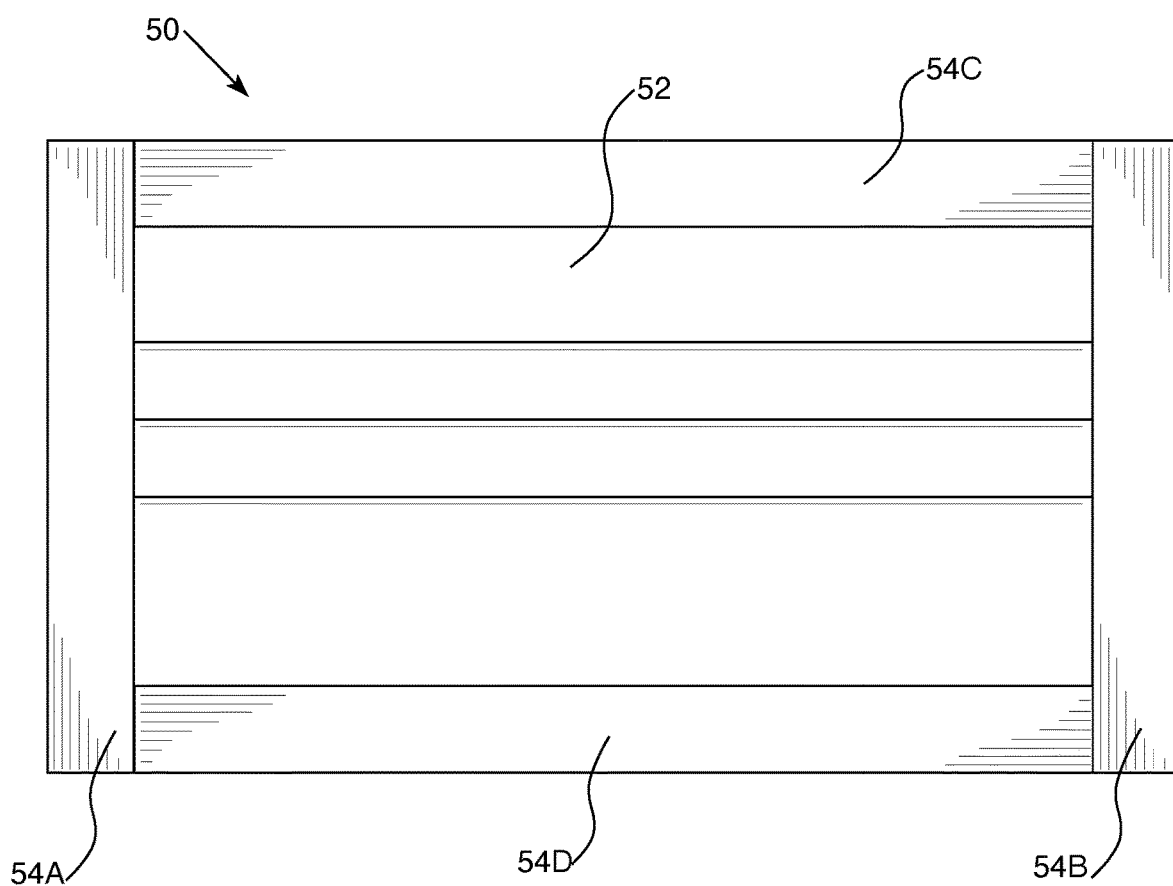


FIG. 4

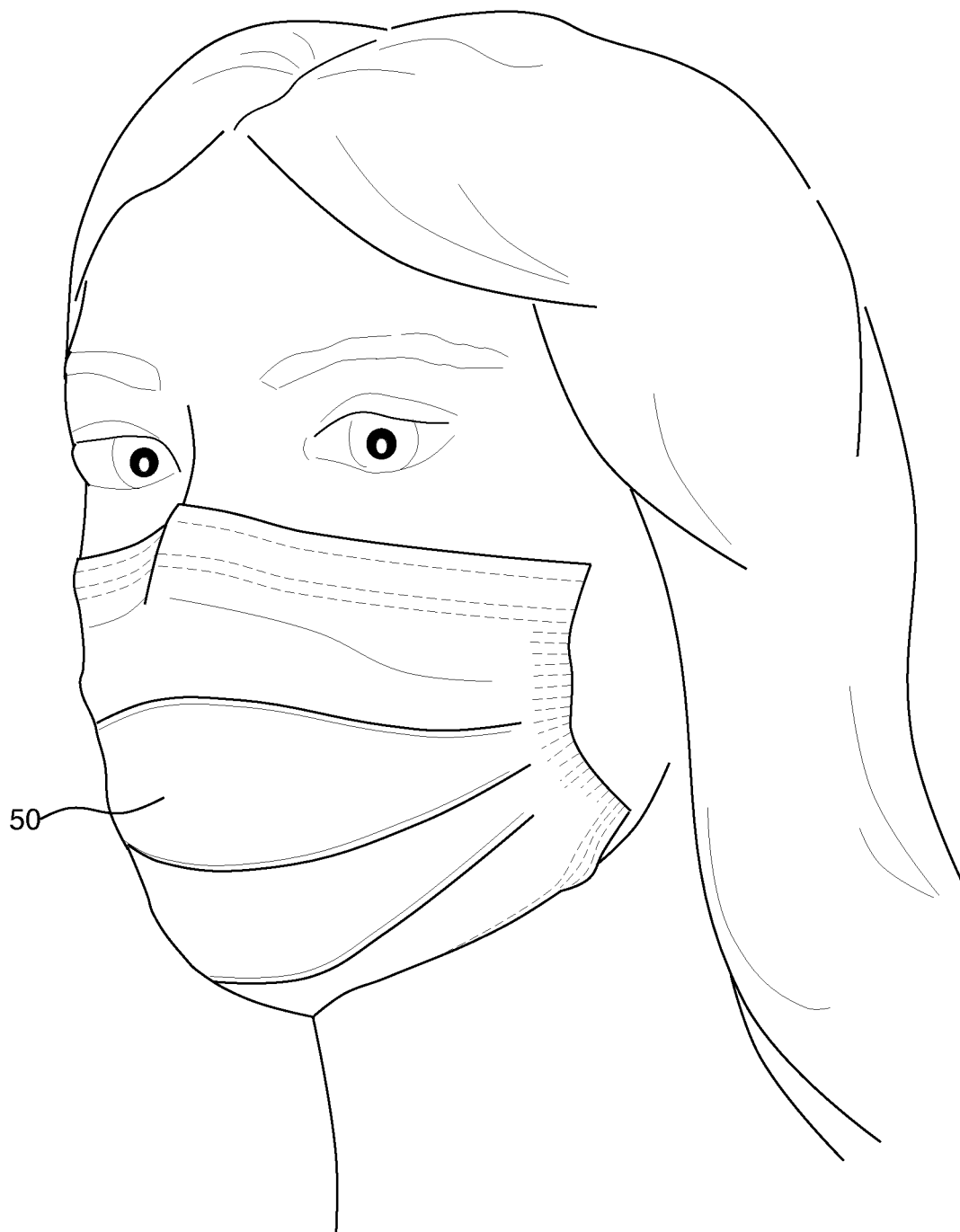


FIG. 5

FACE MASK

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to pending U.S. Provisional Application Ser. No. 63/027,773, filed May 20, 2020, the contents of which are incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present technology relates generally to protective face masks.

BACKGROUND

[0003] During the 2020 COVID-19 pandemic, it became necessary for people to wear face masks covering their mouth and nose while in the vicinity of other people. A large variety of face masks are available, and such masks commonly comprise a covering portion that goes over the wearer's nose and mouth and a retaining portion for retaining the mask in position over the wearer's nose and mouth. The covering portion is often generally rectangular, but may have other shapes that may fit better. The retaining portion typically comprises ear straps or head straps attached to opposing side edges of the covering portion. The ear straps are positioned around the wearer's ears, and the head strap is positioned around the wearer's head.

[0004] FIG. 1 shows one such conventional face mask. Face mask 10 comprises covering portion 12 and retaining portion (ear loops) 14. The covering portion 12 is constructed of melt-blown 3-ply fabric between two outer non-woven layers and is often used for medical procedures. The retaining portions of various conventional face masks are typically constructed of a resilient material to aid in retention.

[0005] The retaining portion of conventional face masks can obstruct or interfere with certain activities. For example, it may be difficult for a barber or hairdresser to cut the hair of someone wearing such a conventional face mask, as the retaining portion gets in the way of cutting the hair.

BRIEF SUMMARY OF THE DISCLOSURE

[0006] In one embodiment of the invention, a protective face mask comprises (a) a covering portion having first and second opposing sides, first and second opposing side edges, and opposing top and bottom edges, (b) a first adhesive strip affixed to the first side adjacent to the first edge, and (c) a second adhesive strip affixed to the first side adjacent to the second edge.

[0007] The covering portion may comprise an outer non-woven layer, an inner non-woven layer, and a melt-blown layer therebetween.

[0008] The protective face mask may further comprise a first selectively removable protective backing covering the first adhesive strip and a second selectively removable protective backing covering the second adhesive strip.

[0009] The protective face mask may further comprise a third adhesive strip affixed to the first side adjacent to the top edge and a fourth adhesive strip affixed to the first side adjacent to the bottom edge. The protective face mask may further comprise a third selectively removable protec-

tive backing covering the third adhesive strip and a fourth selectively removable protective backing covering the fourth adhesive strip.

[0010] The protective face mask may not comprise a retention strap adapted to secure the protective face mask around a user's head or ears.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0011] Reference will now be made to the accompanying drawings, which are not necessarily drawn to scale. The following detailed description of the disclosure will be better understood when read in conjunction with the appended drawings. It should be understood, however, that the disclosure is not limited to the precise arrangements and instrumentalities shown. In the drawings:

[0012] FIG. 1 shows a conventional face mask.

[0013] FIG. 2 is a front view of a face mask, in accordance with embodiments of the present invention.

[0014] FIG. 3 is a rear view of the face mask of FIG. 2.

[0015] FIG. 4 is a rear view of a face mask, in accordance with alternative embodiments of the invention.

[0016] FIG. 5 is a view of the face mask of FIG. 4 being worn by a user.

DETAILED DESCRIPTION OF THE DISCLOSURE

[0017] Certain terminology is used in the following description for convenience only and is not limiting. The words "lower," "bottom," "upper," and "top" designate directions in the drawings to which reference is made. The words "inwardly," "outwardly," "upwardly" and "downwardly" refer to directions toward and away from, respectively, the geometric center of the device, and designated parts thereof, in accordance with the present disclosure. Unless specifically set forth herein, the terms "a," "an" and "the" are not limited to one element, but instead should be read as meaning "at least one." The terminology includes the words noted above, derivatives thereof and words of similar import.

[0018] Embodiments of the invention are directed to a face mask, such as might be worn to help reduce the spread of contagious illnesses by at least partly containing infected droplets expelled when the wearer coughs or sneezes. Embodiments of the invention are further directed to methods of manufacturing such face masks and methods of donning/wearing such face masks.

[0019] Advantageously, the face masks of embodiments of the invention do not have a conventional retaining portion that goes around the wearer's ears or head. Rather, the covering portion of the face masks of embodiments of the invention comprises an adhesive material along some or all of the edges of the inner surface (i.e., the surface against the wearer's face) of the covering portion.

[0020] The face masks of embodiments of the invention may be constructed of any suitable fabric or fabric blend (the term fabric will be used herein to refer generally to the material used, regardless of whether a single fabric or blend of fabrics is used), constructed using any suitable technique. For example, the fabric may comprise cotton, bamboo, polyester, modal, silk, or melt-blown 3-ply, and may have been constructed via weaving, knitting, etc. or may be non-woven.

[0021] Referring now to FIGS. 2 and 3, a face mask 30 of embodiments of the invention is illustrated. FIG. 2 shows the outer surface view of the mask (i.e., the surface that is away from the wearer's face when worn), while FIG. 3 shows the inner surface view of the mask (i.e., the surface that is against the wearer's face when worn.) The face mask 30 comprises a generally rectangular covering portion 32, but any suitable shape may be used. The covering portion 32 is constructed of three fabric layers (similar to conventional face mask 10 of FIG. 1), but any suitable fabric may be used. The outer layer 42 and inner layer 46 are typically constructed of non-woven fabric, while the middle layer 44 is typically constructed of a melt-blown material. The covering portion 32 has accordion folds 48 for expansion, but such folds are optional. A bendable wire 40 may be enclosed within the layers to help shape the top edge of the mask around the wearer's nose. The face mask 30 of FIGS. 2 and 3 does not have a conventional retaining portion that goes around the wearer's ears or head. The face mask 30 of FIG. 2 has a first adhesive strip 34A along the left side edge of the covering portion 32 and a second adhesive strip 34B along the right side edge of the covering portion 32 (the terms right side and left side refer to the wearer's left or right side when the face mask is worn). As seen on the first adhesive strip 34A of FIG. 3, each adhesive strip typically comprises an adhesive layer 38 affixed or adhered to the covering portion 32 and a selectively removable ("peel away") protective backing 36 covering and protecting the adhesive layer 38 until the mask 30 is to be adhered to a wearer's face.

[0022] The use of adhesive strips enables the face mask to be adhesively secured to the wearer's face as shown in FIG. 5 without the use of ear or head straps and therefore without any obstruction for haircuts, etc. The adhesive strips provide secure attachment of the face mask to the wearer's face but easy removal of the face mask by simply pulling the face mask off the wearer's face. Any suitable adhesive may be used, including any suitable double-sided tape. Double-sided tape works well as it is available with a protective backing on a one side. Such double-sided tape is secured to the edges of the face mask with the protective backing 36 left in place on the opposite side, as seen in FIG. 3. The protective backing 36 is then removed when the face mask is to be used, revealing the adhesive layer 38. In one exemplary embodiment of the invention, fashion tape is used as the adhesive.

[0023] It is preferable to use separate strips of adhesive for each edge of the mask, typically with a small gap between the strips, rather than a single continuous adhesive strip along all the edges, as a single continuous strip along all the edges may crease and bend at the corners, which is undesirable. A single continuous adhesive strip may be used on each edge, however in alternative embodiments two or more adhesive strips may be used on each of one or more of the edges.

[0024] FIG. 4 shows adhesive strips on four (i.e., all) sides of the face mask which may be beneficial as securing all sides of the mask against the wearer's face may reduce the likelihood of virus transmission to/from the wearer. However, alternative embodiments of the invention may have adhesive strips on fewer than all sides (although such an option may be less desirable). The face mask 50 of FIG. 4 has a first adhesive strip 54A along the left side edge of the covering portion 52, a second adhesive strip 54B along the right side edge of the covering portion 52, a third adhesive

strip 54C along the top edge of the covering portion 52, and a fourth adhesive strip 54D along the bottom edge of the covering portion 52 (the terms right side and left side refer to the wearer's left or right side when the face mask is worn).

[0025] Face masks of embodiments of the invention may have any suitable shape and size, and may be made in several different sizes (e.g., small/medium/large or child/adult) to fit differently sized people.

[0026] The terminology used herein is for the purpose of describing particular embodiments only and is not intended to be limiting of the invention. As used herein, the singular forms "a", "an" and "the" are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that the terms "comprises" and/or "comprising," when used in this specification, specify the presence of stated features, integers, steps, operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

[0027] The corresponding structures, materials, acts, and equivalents of all means or step plus function elements in the claims below are intended to include any structure, material, or act for performing the function in combination with other claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and described in order to best explain the principles of the invention and the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

That which is claimed:

1. A protective face mask comprising:
 - a covering portion having first and second opposing sides, first and second opposing side edges, and opposing top and bottom edges;
 - a first adhesive strip affixed to the first side adjacent to the first edge; and
 - a second adhesive strip affixed to the first side adjacent to the second edge.
2. The protective face mask of claim 1, wherein the covering portion comprises an outer non-woven layer, an inner non-woven layer, and a melt-blown layer therebetween.
3. The protective face mask of claim 1, further comprising:
 - a first selectively removable protective backing covering the first adhesive strip; and
 - a second selectively removable protective backing covering the second adhesive strip.
4. The protective face mask of claim 1, further comprising:
 - a third adhesive strip affixed to the first side adjacent to the top edge; and
 - a fourth adhesive strip affixed to the first side adjacent to the bottom edge.
5. The protective face mask of claim 4, further comprising:

a third selectively removable protective backing covering the third adhesive strip; and
a fourth selectively removable protective backing covering the fourth adhesive strip.

6. The protective face mask of claim 1, wherein the protective face mask does not comprise a retention strap adapted to secure the protective face mask around a user's head or ears.

7. A method of securing a protective face mask to a user, the method comprising:

- (a) obtaining a protective face mask comprising:
 - a covering portion having first and second opposing sides, first and second opposing side edges, and opposing top and bottom edges;
 - a first adhesive strip affixed to the first side adjacent to the first edge;
 - a second adhesive strip affixed to the first side adjacent to the second edge;
 - a first selectively removable protective backing covering the first adhesive strip; and
 - a second selectively removable protective backing covering the second adhesive strip;
- (b) removing the first selectively removable protective backing from the first adhesive strip;
- (c) removing the second selectively removable protective backing from the second adhesive strip;
- (d) adhering the first adhesive strip to a first side of a user's face; and

(e) adhering the second adhesive strip to the second side of a user's face.

8. The method of claim 7, wherein the covering portion comprises an outer non-woven layer, an inner non-woven layer, and a melt-blown layer therebetween.

9. The method of claim 7, wherein the protective face mask further comprises:

- a third adhesive strip affixed to the first side adjacent to the top edge;
 - a fourth adhesive strip affixed to the first side adjacent to the bottom edge;
 - a third selectively removable protective backing covering the third adhesive strip; and
 - a fourth selectively removable protective backing covering the fourth adhesive strip; and
- wherein the method further comprises:
- removing the third selectively removable protective backing from the third adhesive strip;
 - removing the fourth selectively removable protective backing from the fourth adhesive strip;
 - adhering the third adhesive strip to an upper portion of the user's face; and
 - adhering the fourth adhesive strip to a lower portion of the user's face.

10. The method of claim 7, wherein the protective face mask does not comprise a retention strap adapted to secure the protective face mask around a user's head or ears.

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