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(54) **SKIN STABILIZATION AND NASAL DILATION SYSTEM**

(76) Inventor: **Hanford N. Lockwood**, San Mateo, CA (US)

Correspondence Address:
TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834 (US)

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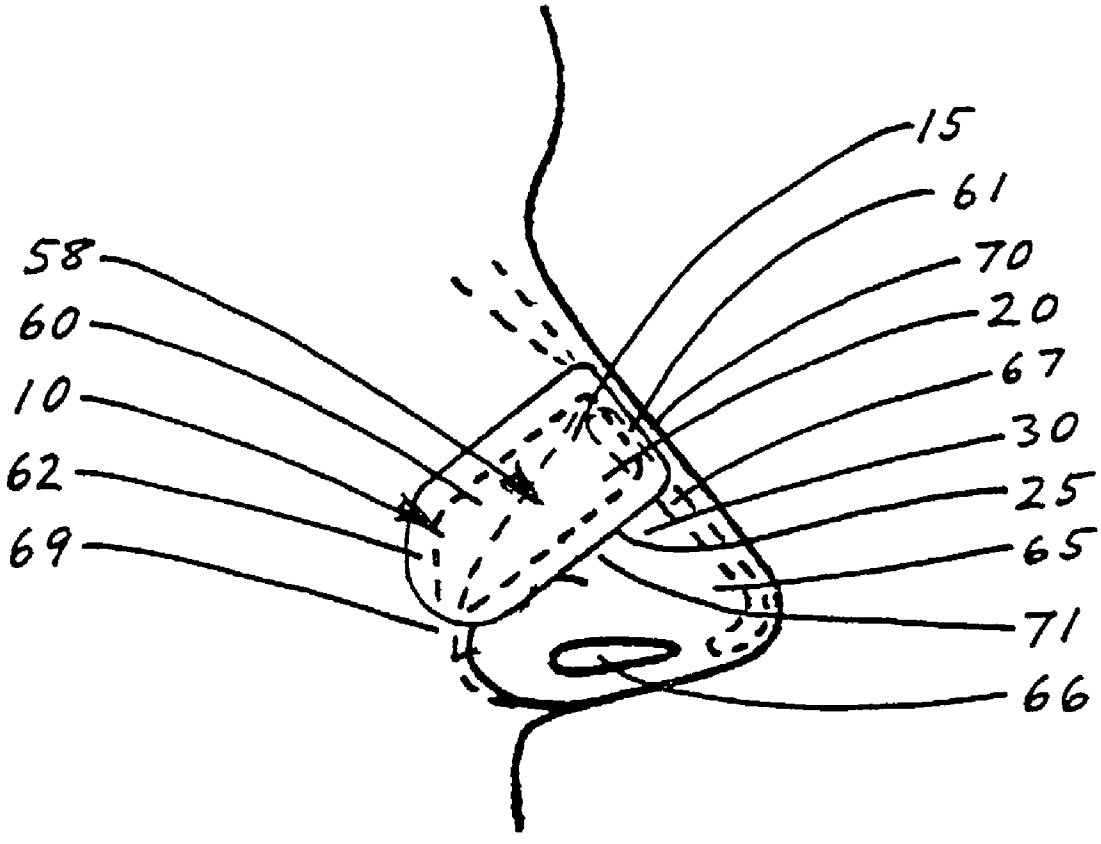
(57) **ABSTRACT**

A skin stabilization system is formed from lamination elements consisting of fabric layers bonded to plastic layers which in turn are laminated to the outer surface of the user's skin by adhesively attaching them thereto. The lamination elements resist tension, compression and bending forces and are used to strengthen or stabilize the skin to reduce deformation. The lamination elements can be applied as a single unit or interconnected to other lamination elements by extending the fabric portions of the laminate. The skin stabilization system can be used as a nasal dilator. As a nasal dilator, a lamination element is applied to each side of the nose between the bridge and the cheek, which in turn causes the center of the lamination element to lift the soft outer skin of the nasal passage and prevent any deflection that restricts breathing through the nasal passages. The fabric portions of the lamination element can be extended over the bridge of the nose to interconnect the two nasal dilator lamination elements and assist the user in properly positioning the elements.



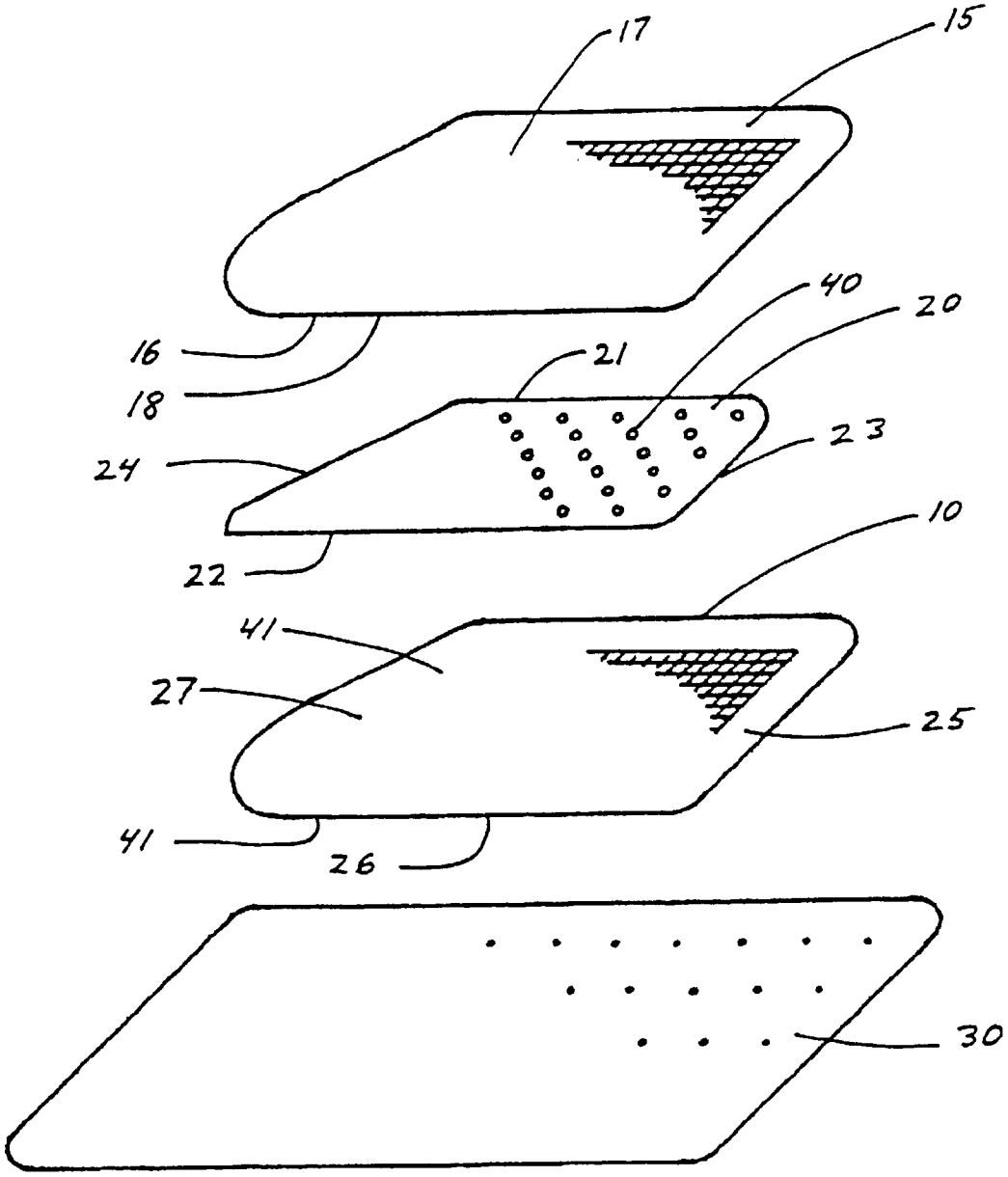


FIG - 1

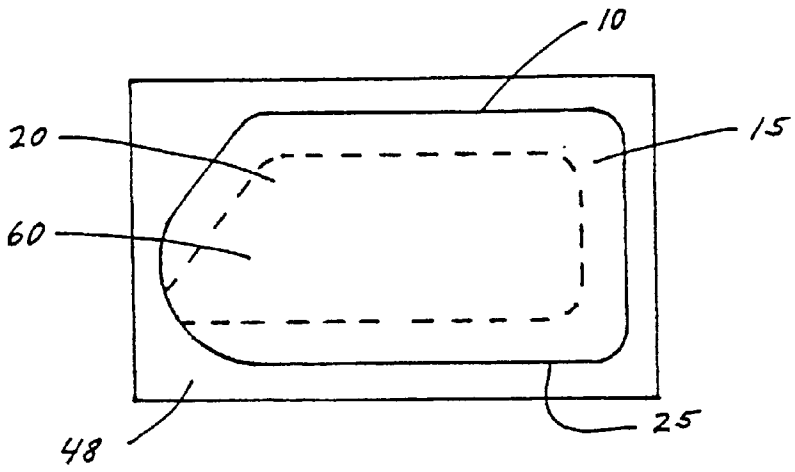


FIG - 2

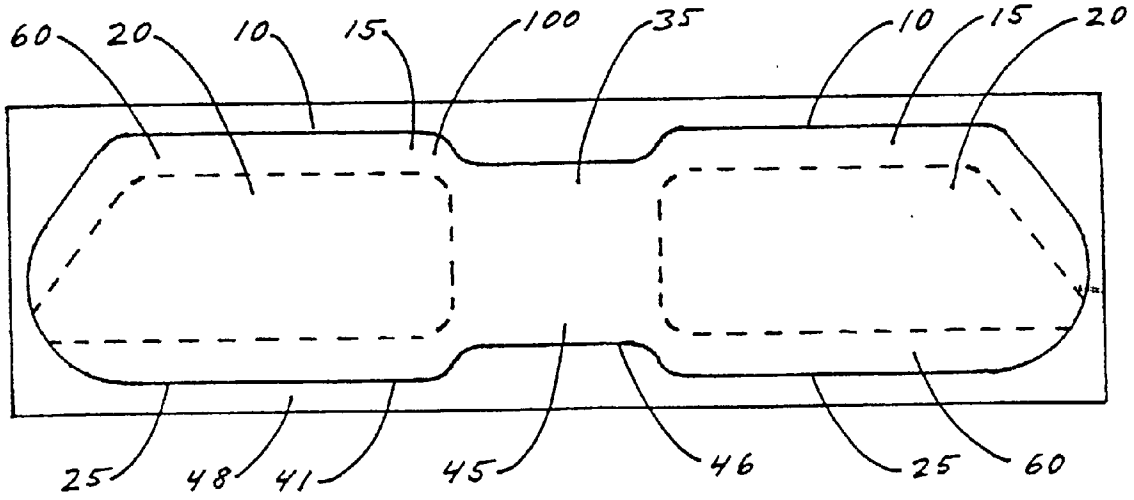


FIG - 3

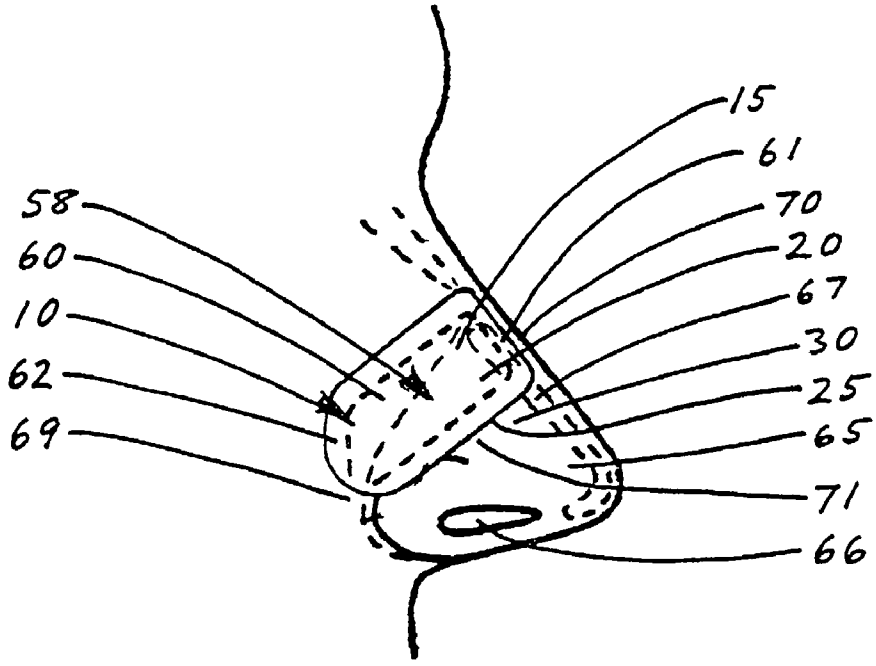

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FIG - 4

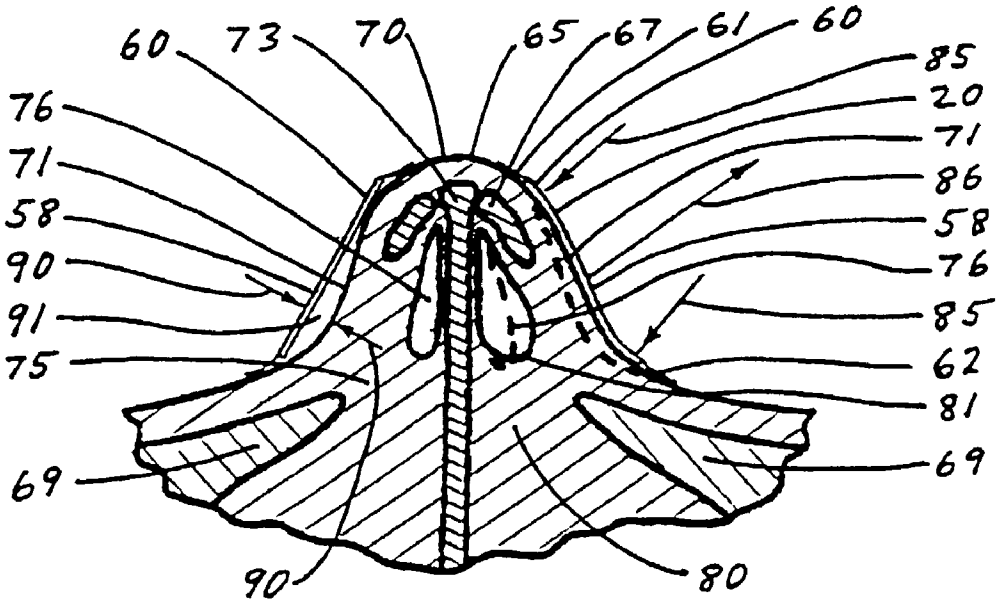
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FIG - 5

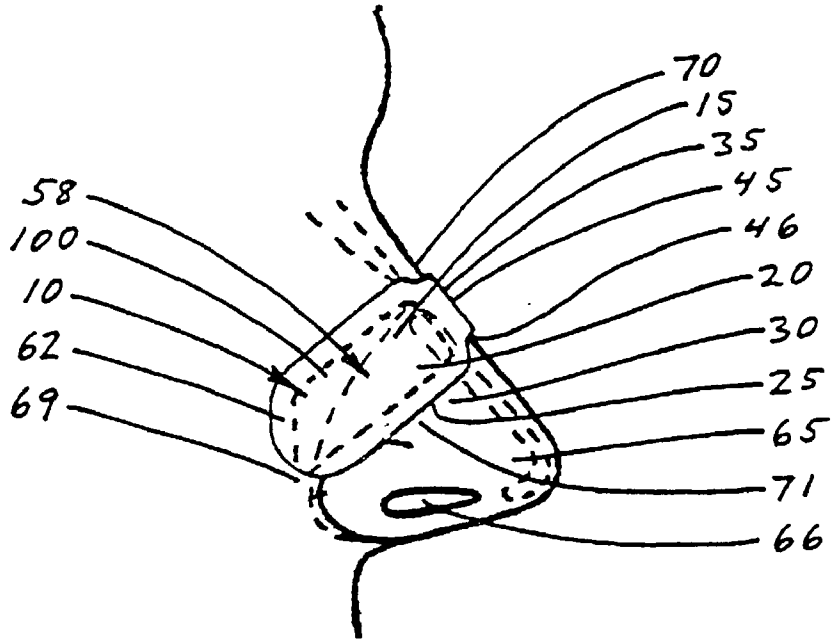
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FIG - 6

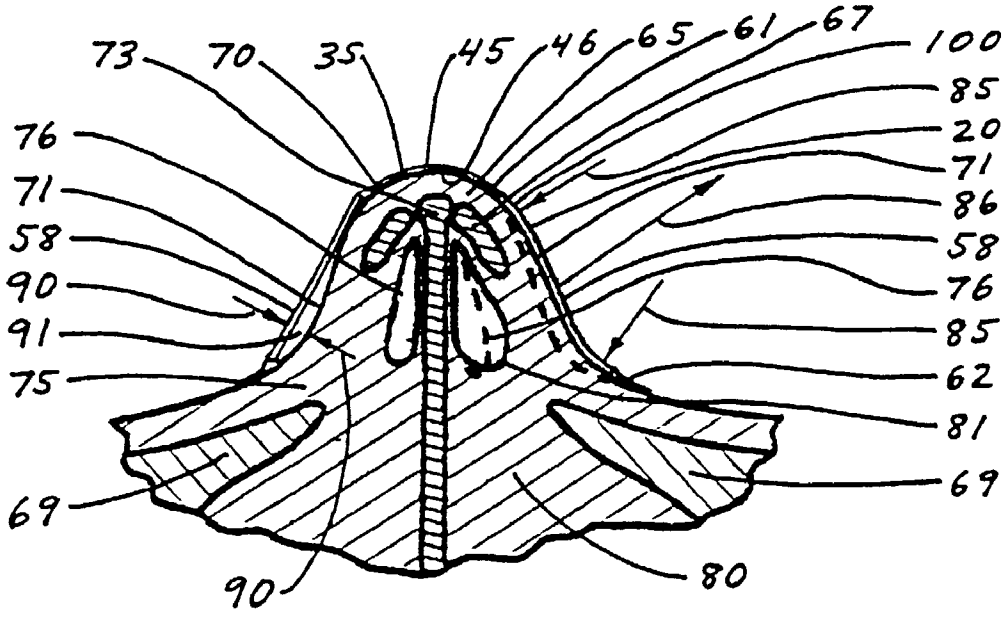
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FIG - 7

SKIN STABILIZATION AND NASAL DILATION SYSTEM

BACKGROUND OF THE INVENTION

[0001] This invention relates to a new field of devices which can be derived from lamination elements consisting of fabric materials bonded to layers of plastic which are resistant to tension, compression and bending forces. The lamination elements when properly applied by the user include a layer that integrates the outer surface of skin into the lamination element. The lamination element with its ability to resist these forces is used to strengthen or stabilize the skin in a way that reduces deformation and can strengthen or reinforce soft skin tissue to prevent deformation under some conditions.

[0002] One use of such a skin stabilizing lamination element is to prevent deformation of the soft tissue (as used in this application, typically referring to soft tissue, including the overlying skin) external to a nasal passage on the side of the nose. A lamination element can be applied on one side of the nose between the bridge of the nose and the cheek, which in turn causes the center of the lamination to hold the soft outer tissue of the nasal passage and prevent any deflection that restricts breathing through the respective nasal passage. A similar but opposite-shaped lamination element is required on the opposite side of the nose to stabilize the outer tissue of the second nasal passage.

[0003] Blockage of the nasal passages for reasons such as swelling due to allergies, colds, and physical deformities can lead to breathing difficulty and discomfort. The nasal passages have mucus membranes which condition the air in the nasal passages prior to its arrival in the lungs. If the nasal passages are constricted due to swelling or minor deformities, then the alternative is to breathe through the mouth. This means that the air bypasses the mucus membranes, losing the conditioning effects and causing irritation in the throat and lungs. At night, restrictions to breathing through the nasal passages can lead to snoring and/or sleep disturbances. In some cases, the restricted air supply can cause sleep problems brought on by a lack of oxygen.

[0004] For people with chronic blockages in the nasal passages, the alternative to correct the problem has been expensive surgery or medication. People with minor deformities and breathing problems brought on by swelling of the walls of the nasal passageways have been turning to various products fitted in or on the nose which claim to open the nasal passages.

[0005] The structure of the nose limits the options available for the design of nasal dilators. The nose terminates at the nostril, which has a slightly expanded volume immediately above it known as the vestibule. Above the vestibule, the nasal passage becomes restricted at a point called the nasal valve. At the nasal valve, the external wall of the nose consists of soft tissue known as the lateral wall, which will deform with air pressure changes induced within the nasal passage during the breathing cycles. Above the nasal valve, the nasal passage opens up to a cavity with turbinates over the top of the palate and turns downward to join the passage from the mouth to the throat.

[0006] The external structure of the nose consists of tissue and skin covering the nasal bones which are part of the skull. This gives the top of the nose a rigid structure at its base. Beyond the rigid nose bones, there is thin cartilage under the tissue which is attached to the septum, which in turn contributes to the outside shape of the nose. The septum forms the wall between the two nostrils and may, if it is crooked, contribute to breathing problems.

[0007] As an alternative to surgery, the structure of the nose and the prior art leave two alternatives for the design of nasal dilators. One alternative is the type of dilator that consists of a tube or structure which can be inserted into the nasal passage to hold it in the open position allowing the free passage of air. The disadvantage of this design is that the dilator structure covers up the mucus membranes which condition the air. Also dilators of this design are uncomfortable and can irritate the walls of the nasal passage.

[0008] The second alternative is a dilator design where each end that attaches to the external lateral wall of each of the nasal passages has a resilient member connecting the ends for generating an external pulling force on the lateral wall to thereby open the nasal passage. The advantage of this design over the first alternative is that the nasal passages are not disturbed by an internal insert. However, this second alternative permits only limited control over the resilient force on the lateral wall of each of the nasal passages, and the resilient members crossing over the bridge of the nose can cause discomfort.

[0009] The present invention differs from prior art systems in that it is a laminated skin stabilizer that locally stabilizes the lateral wall of the nasal passage. The lamination element adheres to the skin at the bridge of the nose at one end and to the skin adjacent to the cheekbone structure on the other end. It stabilizes the lateral wall tissue where it adheres to the soft skin external to the nasal passage. The ability of the lamination element to resist tension, compression and bending forces prevents deformation of the soft tissue of the lateral wall and promotes easier breathing.

[0010] In the prior art, there are items, such as bandages, tapes, and splints, which have some characteristics of a laminated skin stabilization system. Bandages and tapes have adhesives which stick to the skin; however, they cannot resist compression and bending loads. Splints, on the other hand, do not adhere to the skin, but have the rigid structure required to resist compression, tension, and bending loads. Splints are usually attached to the skin using tape which is independent of the splint structure itself.

[0011] The prior art that comes closest to the present invention are the nasal dilators disclosed in patents to Muchin, Johnson, and Deubek et al, which are all limited to placing resilient members over the bridge of the nose and which function very differently from the present invention.

[0012] The development of nasal dilators goes back to U.S. Pat. No. 701,538, which was filed Sep. 16, 1901, teaches a dilator that fits within the nasal passages, and functions like the above-described first alternative. Many of the devices that fit this alternative are not only used as nasal dilators, they also teach methods for filtering air or providing a platform for releasing medication which is entrained in the air passing through the device located in the nostril. U.S. Pat. Nos. 1,256,188 to Wilson, 2,055,855 to Weaver, 2,264,153 to Rowe, 2,277,390 to Crespo, 2,674,245 to Tanditter, 2,715,904 to Hill, 3,905,335 to Kapp, 3,935,859 to Doyle, 4,201,

217 to Slater, 4,221,217 to Amezcua, 4,267,831 to Aguilar, 4,327,719 to Childers, 4,414,977 to Rezakhany, and 5,479,944 to Petruson are all examples of devices which either dilate, medicate or filter by inserting the device inside the nostril.

[0013] U.S. Pat. No. 5,479,944 to Petruson is of particular interest in the group, because it has tabs which insert in each nostril which are connected to a resilient member located between them which is deformed into a curved shape when the tabs are inserted in each nostril. The single resilient member curves around the end of the nose clearing the septum and provides a biasing force to the tabs forcing them against the outer wall of each nostril, thereby causing each nostril to be opened further. This design has disadvantages over the present invention, in that the tabs in contact with the sensitive surface on the inside of the nostril can cause discomfort to the user. The tabs cannot be located far up into the vestibule or even further up to the nasal valve, so that this type of nasal dilator is of limited effectiveness. Because of the location of the tabs in the nasal passages, the Petruson dilator will interfere with any attempt by the user to clear nasal congestion. Also the biasing force is fixed by the design and size of the connecting member and is not adjustable by the user.

[0014] The second alternative is the dilator design which attaches to the outside surface of the nasal lateral walls and has a resilient member for generating a pull force on the lateral walls of the nose. An example of this type of nasal dilator is U.S. Pat. No. 1,292,083 to Sawyer, which has two pads with metal loops that are attached to the outside of the nasal passages above the nostril on each side of the nose with an adhesive. A resilient member is attached to the pads and exerts a pulling force on them, thereby causing the nasal passage to be dilated. U.S. Pat. No. 1,950,839 to Chirila is similar to the Sawyer patent except that Chirila uses suction cups instead of adhesive pads. In both instances, the resilient member is a single metal spring and the resilient force is determined by the size and spring rate of the resilient member. These designs are difficult to fit and can cause injury to the user if the resilient member should come loose. This would be a significant problem for a user who is asleep and moves, causing the resilient member to become dislodged.

[0015] Patents which are part of the second alternative include U.S. Pat. No. 5,546,929 to Muchin and Spanish Patent 289,561 issued to Miguel Angel Aviles Iriarti. Generally speaking, they teach that a single resilient member, or spring, made from a flat piece of plastic extends over the bridge of the nose to the lateral wall and is covered by a pad with adhesive material that extends around the spring member. The spring is inset centrally in the pad, and the pad is located over the nose bridge and adheres to the outside of the nasal passages. This enables the respective ends of the spring to apply a pulling force on the outside of the soft tissue of the nose, thus dilating the nasal passages.

[0016] A similar dilator is disclosed in U.S. Pat. No. 5,476,091 to Johnson, except that in the case of the Johnson patent the single plastic resilient member is replaced by two parallel but not connected resilient members that provide the spring force to pull on the nasal valve external wall. The Johnson patent has a top and bottom pad to contain the resilient members which also have notches at each end to reduce delamination forces on the dilator. The dilator of the Johnson patent forms a truss which has a flexible strip material that defines the first and second end regions and an intermediate segment. The first and second resilient bands extend over the length of the truss and generate a force when the end regions are attached to the skin which lifts the underlying tissue upwardly and thereby dilates the nasal passages.

[0017] U.S. Pat. No. 5,533,499 to Johnson is a variation of the dilator shown in U.S. Pat. No. 5,476,091. It teaches that two parallel but not connected resilient members are mounted on a single base pad. Each of the end regions of the nasal dilator are adhesively fixed to the external walls of the nasal passages, while the interconnecting truss member passes over the bridge of the nose. The nasal strip configuration of the '499 Johnson patent turned out to be difficult to fabricate and subject to delamination of the resilient members.

[0018] U.S. Pat. No. 5,533,503 to Deubek et al is a further development of the nasal dilator disclosed in the two Johnson patents discussed above. Deubek has two parallel but not connected resilient members that are mounted between top and bottom pads. This patent discloses a new pad configuration at each end of the dilator which is designed to improve the ease of manufacture and prevent delamination of the resilient members. The dilator of Deubek also has a truss with pads at each end and an intermediate section that bends over the bridge of the nose. The resilient members generate a force which pulls on the lateral wall, causing the nasal passage to open.

[0019] U.S. Pat. No. 5,553,605 to Muchin is related to U.S. Pat. No. 5,546,929 of the same inventor. The '605 patent describes the same nasal dilator design shown in 5,546,929, except that the nasal dilator is transparent. It also has a single resilient member that crosses over the bridge of the nose and terminates in two pads that attach to the lateral wall on each side of the nose.

[0020] The Spanish patent, the two Muchin patents, the two Johnson patents, and the Deubek et al patent all have a single band that crosses the bridge of the nose which contains the resilient member. The Spanish patent and the Muchin patents use a single resilient member, while the Johnson and Deubek et al patents have two parallel but not interconnected resilient members contained in a single truss passing over the bridge of the nose. The spring rate in all these dilators is determined by the design of the resilient member and is set during the manufacture of the nasal dilator.

[0021] The present invention teaches about lamination elements resistant to tension, compression and bending forces which can be used as an improved nasal dilator. The lamination element of the present invention works in a manner that is opposite to the manner in which the nasal dilation systems of the Spanish, Muchin, Johnson, and Deubek et al patents work.

SUMMARY OF THE INVENTION

[0022] This invention relates to a new field of devices which can utilize lamination elements alone or in combination to stabilize skin, so it can resist deformation caused by external forces. The lamination elements are made up of

fabric materials permanently bonded to a thin, resilient layer of plastic which resists tension, compression and bending forces. The lamination element is permanently bonded to a cushion layer located beneath the plastic layer. The lamination element also includes a layer that integrates the outer surface of skin into the lamination element when properly applied by the user. The lamination element uses its resistance to tension, compression and bending to stabilize the skin beneath the center of the lamination element from deflection due to forces acting on the tissue.

[0023] The lamination elements are small in size and made up of a top or fabric layer, a plastic layer, a cushion layer, and the skin layer. Each layer of the laminate is bonded to its adjacent layer with a permanent adhesive, with the exception of the bond between the cushion and the skin, which is a strong, but temporary bond. Each level or layer of the laminate can either have the same dimensions or be a different size than the adjacent level. This allows different levels to accomplish different functions, the plastic layer being the most important element of the laminate.

[0024] The plastic layer provides the structure that resists tension, compression and bending forces. The plastic layer can be from 0.005 inch to 0.030 inch thick and is typically up to 1.5 inches long. In a preferred embodiment, the width of the plastic layer is between about 0.125 inch to about 0.5 inch, depending on the application. The plastic layer may be solid, may have some porosity, or may have a hole pattern to provide for the ventilation of air and moisture from the skin through the lamination element. The opposite sides of the plastic layer are generally parallel; however, in some cases, the sides may not be parallel, and the plastic layer can have another, e.g. triangular, shape.

[0025] Between the plastic layer and the skin is a cushion layer which cushions the skin from the plastic layer. The cushion layer is made from woven polyester or equivalent and provides relief from the rigidity in the plastic layer.

[0026] The top of the lamination element is preferably made from woven, stretchable synthetic fabric or the like. The top layer is bonded to the plastic layer and is used to interconnect multiple lamination elements, depending on how they are being applied. The most common interconnection is to connect the lamination elements end-to-end. The stretchable top cover allows the user to adjust the distance between adjacent lamination elements to properly position them on the user's nose.

[0027] In a preferred embodiment, the lamination element is used to stabilize the soft tissue forming the lateral wall of the nasal passage to perform the functions of a nasal dilator. In this application, the lamination element is applied so that one of its ends adheres to the skin which covers the cartilage on the side of the bridge of the nose. The other end of the lamination element is positioned on the skin at the cheekbone where the bone provides support for the skin. The center section of the lamination element is pushed against and adheres to the soft tissue of the nasal wall between bridge cartilage and the cheekbone. This resiliently deforms the plastic layer and generates a force that stabilizes the lateral nasal wall, thereby pulling it outwardly and opening the nasal passage. A second and opposite-shaped lamination element is installed on the adjacent lateral wall of the other nasal passage.

[0028] Users of the lamination element for stabilizing the lateral wall of the nasal passage will normally use one on each side of the nose. To aid the person in positioning the respective lamination elements, the external fabric layer is preferably extended to connect the two lamination elements end-to-end. This fabric layer is readily deformable, e.g. flexible, acts as a positioner, and can be stretched to assist in properly locating the two lamination elements which stabilize the nasal walls.

[0029] The specific elements of the design of the adjustable nasal dilator are shown in the attached drawings and description of the preferred embodiment.

BRIEF DESCRIPTION OF THE DRAWINGS

[0030] **FIG. 1** is an exploded view of a lamination element used as a nasal dilator;

[0031] **FIG. 2** is a view of a lamination element used as a nasal passage dilator;

[0032] **FIG. 3** is a view of two lamination elements linked end-to-end for use as a nasal passage dilator;

[0033] **FIG. 4** is a view of a single lamination element located on the user's nose;

[0034] **FIG. 5** is a sectional view through **FIG. 4** showing the application of the lamination element;

[0035] **FIG. 6** is a view of two lamination elements linked end-to-end located on the user's nose; and

[0036] **FIG. 7** is a sectional view through **FIG. 6** showing the application of two lamination elements.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0037] Referring to **FIG. 1, a** lamination element **10** is made up of a top cover **15** which is bonded to a thin plastic layer **20** which in turn is bonded to a bottom cushion layer **25** that is attached to the user's skin **30** when the skin stabilization system of the present invention is in place. The lamination element **10** stabilizes or strengthens skin with its ability to resist tension, compression and/or bending forces. Top cover **15** of the lamination element **10** is made from a woven polyester or equal and on its bottom side **18** has an adhesive **16** which is a 3 mils acrylic hypoallergenic medical grade pressure sensitive type or equal. The adhesive **16** may or may not cover the entire surface of the top cover **15**, depending on the shape of the lamination element **10** and its use. The top cover **15** also has a top surface **17** which can be either the natural color of the fabric material or have a specific color added through dying or printing processes. The top surface **17** can also have printed designs or carry promotional symbols printed on or otherwise applied to it.

[0038] A plastic layer **20** is laminated to the bottom surface **18** of the top cover **15**. The plastic layer is made from a polyester sheet or equal and will typically vary in thickness from about 0.010 inch to about 0.050 inch. Plastic layer **20** is generally rectangular in shape and typically has a length from about 0.5 inch to about 1.50 inches and a width that can vary from about 10% to about 60% of the length of the plastic layer. The plastic layer has two long edges **21** and **22** which are generally parallel; however, when useful for a given application, long edges **21** and **22** may be angled in relation to each other. Plastic layer **20** has two short edges **23** and **24** which are generally at an angle to each other.

When useful, short edges **23** and **24** can be parallel to each other, defining ends which are parallel. Plastic layer **20** can be designed to allow air and moisture to pass through it. This is achieved with perforations **40** that pass through the plastic layer **20** or by making the plastic layer **20** from a plastic material that has a porous structure which allows air and moisture to pass through it. The plastic layer is generally smaller than top cover **15** and is normally recessed from the edge of the top cover. If useful for a given application, plastic layer **20** can have a long edge **21** or a short edge **23** which can be located at the respective edge of the top cover **15**. The plastic layer also can be made from transparent plastic for use in a transparent nasal dilator design.

[**0039**] Plastic layer **20** and top cover **15** are both laminated to a cushion layer **25**. Since plastic layer **20** is normally smaller than top cover **15**, the excess surface of the top cover **15** is directly laminated to cushion layer **25**. The cushion layer prevents direct contact between the plastic layer **20** and the skin **30**. Cushion layer **25** generally has the same shape as top cover **15**. The cushion layer is made from a woven polyester or equal and has a bottom surface **26** which carries a 3 mils acrylic hypoallergenic medical grade adhesive **41**. Cushion layer **25** has a top surface **27** which has a 1.5 mils acrylic hypoallergenic medical grade adhesive **41** to form a lamination when in contact with bottom surface **22** of plastic layer **20** and bottom layer **18** of top cover **15**. The lamination element **10** is fully functional when the cushion layer **25** is adhesively attached and thereby laminated to the user skin **30** by the medical grade adhesive **41** on bottom side **26** of the cushion layer. Depending on the specific use of the lamination element **10**, the adhesives on the bottom side **26** or top side **27** of the cushion layer **25** may or may not completely cover the bottom surface **26** or top surface **27**, respectively, of the cushion layer. **FIG. 2** shows a single lamination element **10** on which a release liner **48** protects the adhesive **41** on bottom side **26** of cushion layer **25** during storage and shipment.

[**0040**] The lamination element **10** makes the user's skin **30** part of the overall lamination to perform its function of stabilizing the user's skin **30** by resisting tension, compression and/or bending forces. The lamination element **10** stabilizes the soft tissue between two or more skin **30** surface areas supported by bone or cartilage, e.g. the wall of the nasal passages.

[**0041**] **FIG. 3** shows two lamination elements **10** which have been joined end-to-end by an end-to-end link **35** consisting of an extension **45** of top cover **15** laminated to an extension **46** of cushion layer **25**. The end-to-end link **35** is used to position one lamination element **10** in relation to the second lamination element **10** to assist in properly positioning both ends of the nasal dilator assembly, which is typically made up of more than one, i.e. two, lamination elements **10**. The two lamination elements **10** are attached to a release liner **48** which protects the adhesive **41** on the bottom of the cushion layer prior to the application of the lamination elements **10** to the user's skin **30**. The release liner **48** is discarded by the user prior to the application of the skin stabilization system.

[**0042**] **FIG. 4** shows a single lamination element **10** in use as a nasal dilator **60**. The nasal dilator **60** consists of a top cover **15** laminated to a plastic layer **20** which is laminated to the cushion layer **25** and, when installed, is effectively further laminated to the skin **30** on the side of the nose **65**. Top cover **15** and cushion layer **25** of nasal dilator **60** extend beyond the plastic layer **20**. A first dilator end **61** is laminated, e.g. adhesively attached, to the user's skin **30**, where it is reinforced and supported by cartilage **67** located on the side of a bridge **70** of the user's nose **65**. The other, second end **62** of the dilator is laminated to the user's skin **30**, where it is reinforced and supported by cheekbone **69** which terminates adjacent to nose **65**. With the nasal dilator **60** laminated to portions of the user's skin **30** supported by either bone or cartilage, a center section **58** of the dilator is adhesively attached and thereby laminated to a soft lateral wall **71** of a nostril **66** where the ability of the plastic layer **20** to resist bending stiffens the lateral wall **71**, thereby preventing it from being drawn in when the user inhales, thus facilitating the breathing of the user.

[**0043**] **FIG. 5** shows the appearance of nose **65** before the nasal dilator is applied to lateral wall **71** when the nasal passage **76** at the left side **75** of the septum **73** is restricted. The nasal dilator **60** is shown as it is positioned before it is laminated to the lateral wall of the nose. Prior to deflection of the plastic layer **20**, there is a gap **91** between center section **58** and the soft lateral nose wall **71**. The size of the gap is shown by arrows **90** in **FIG. 5**. The right side **80** of septum **73** shows the nasal dilator properly laminated to lateral wall **71** of nose **65**, thereby eliminating gap **91** and causing the restricted nasal passage **76** (dashed line) to expand outwardly.

[**0044**] The nasal dilator **60** becomes deflected from its relaxed, flat configuration when it is properly applied and positioned to laminate it to the lateral wall of nasal passage **66**. The expansion of the nasal passage **81** is due to the force from the resiliently deflected plastic layer **20** of the dilator pulling outwardly on the soft tissue forming lateral wall **71**. Force vector arrows **85** and **86** show the direction of force applied to the nose **65** by the nasal dilator **60** when it is installed. At the first and second ends **61**, **62**, force vector arrows **85** push against the skin and subject it to a compression force. Cartilage **67** and cheekbone **69** support skin **30** against this compression force. In addition, the force urges the first and second ends of the nasal dilator against the skin, thereby preventing an accidental separation of the dilator ends from the skin and maintaining a secure connection. At the same time, the force vector arrow **86** at the center of the nasal dilator **60** exerts a lifting force on lateral nose wall **71** which causes the lateral wall to move from the dashed line to its new, dilated position shown on the right side **80** in **FIG. 5**.

[**0045**] **FIG. 2** shows a single nasal dilator **60** which can be used on one nostril **66**. **FIG. 3** shows a nasal strip or dilator **100** which dilates both nasal passages. It is made from two lamination elements **10** that have been joined end-to-end by end-to-end link **35** consisting of an extension **45** of the top cover **15** laminated to an extension **46** of the cushion layer **25**. The end-to-end link **35** passes over the bridge **70** of the nose **65** to assist the user in positioning each of the lamination elements **10** that make up dual nasal dilator **100**. The end-to-end link **35** made up of the extension **45** of the top cover **15** and the extension **46** of the cushion layer **25** forms an elastic, readily deformable connection between the two lamination elements **10** of dual nasal strip **100**. When the dual nasal strip is to be applied to the nose **65**, the user can stretch the end-to-end link **35** over the bridge **70** of

the nose **65** to properly position each of the lamination elements **10** over their respective lateral walls **71** on each side of the nose **65**.

[**0046**] **FIGS. 6 and 7** show how the dual nasal strip **100** is installed on the user's nose **65**. On the side **75** of the septum **73**, the dual nasal strip **100** is shown as it looks prior to being laminated to the lateral wall **71**. The restricted nasal passage **76** shows the reduced area that inhibits breathing. Right side **80** of the septum **73** shows dual nasal strip **100** properly laminated to lateral wall **71** of the nose **65**, causing restricted nasal passage **76** (dashed line) to expand to the open nasal passage **81** because the resilient force generated by plastic layer **20** of the nasal strip pulls the soft tissue lateral wall **71** outwardly. The force vectors show the direction of force applied to the nose **65** by one of the two lamination elements **10** which make up the dual nasal strip **100** when it is installed. At the first and second ends **61**, **62**, the force vectors **85** apply a compression force against skin **30** supported by cartilage **67** and cheekbone **69**. At the same time, force vector **86** at the center section of the lamination element **10** applies a lifting force on the lateral nose wall **71** which causes it to move from the dashed line to its dilated position shown on the right side **80** in **FIG. 7**.

[**0047**] Tests have been performed to establish the dilating forces on the lateral wall **71** of the nose **65**. By deflecting the plastic layer **20** by the depth of the gap **91**, the resulting lifting force on the lateral wall **71** can be established. The lifting force is represented by the force vector arrow **86** at the center of the lamination element **10**. The lifting force results in equal but opposite compression forces which are represented by force vector arrows **85** at the first and second ends **61**, **62** of the lamination element. The tested lamination element had a plastic layer **20** made of 0.020 inch thick polyester sheet, a width of 0.4 inch and a chord length (along the centerline of the plastic layer) of 1.050 inches. The results shown are the average results of repeated tests to establish the force levels:

Lamination Element 10 Deflection 91	Lifting Force Vector 86	Compression Force Vector 85
.03125 inch	35.44 grams	17.72 grams
.0625 inch	81.31 grams	40.66 grams
.09375 inch	131.17 grams	65.59 grams

[**0048**] The compression forces are half of the lifting forces on the lateral wall **71** of the nostril **66**. This makes the dual nasal strip **100** much more comfortable for the user than nasal strips made according to the prior art. As the lifting force vector **86** is applied and lateral wall **71** expands outwardly in response, the lifting force vector **86** diminishes until an equilibrium is achieved. The dual nasal strip **100** only applies the lifting force vector **86** required to stabilize the lateral wall **71**, thereby further contributing to the user comfort.

[**0049**] The dual nasal strip **100** can be fabricated using a transparent top cover **15** and a transparent cushion layer **25** which can be made of a transparent perforated polyethylene or polyurethane. The top cover **15** has hypoallergenic medical acrylic pressure sensitive-type adhesive **16** or equal on the bottom side **18**. The cushion layer **25** carries an acrylic hypoallergenic medical grade adhesive **41** on the top surface **27** and the bottom surface **26**. At the same time, the plastic layer **20** can also be made from transparent plastic for use in a transparent dual nasal strip **100** design.

[**0050**] The description of the preferred embodiment described herein is not intended to limit the scope of the invention, which is properly set out in the claims.

What is claimed is:

1. A structure capable of stabilizing soft skin tissue to prevent deformation comprising: a lamination structure adapted to incorporate skin into the structure by attaching the structure to the skin, the structure including spaced-apart peripheral surfaces adapted to be attached to the skin in proximity to relatively rigid supports beneath the skin and a center of the structure between the peripheral surfaces and adapted to be attached to a portion of the skin which is relatively soft and movable and disposed between the rigid supports for stabilizing the soft and movable portion of the skin, whereby the center of the structure limits deflections of the skin portion when the structure is applied to the skin.

2. A structure according to claim 1 wherein one of the peripheral surfaces is adapted for attachment to skin proximate a bridge of a nose, the other one of the peripheral surfaces is attached to skin overlying a cheekbone, and the center of the structure is adapted to be attached to a soft lateral wall external to an associated nasal passage, whereby the structure acts as a nasal dilator.

3. A structure according to claim 1 including attachment means for attaching the laminated structure to skin.

4. A nasal dilator as claimed in claim 2 wherein the lamination structure is configured to fit the contour of the nose by correspondingly deflecting the structure, and wherein the structure, when deflected and applied to the nose, causes compressive forces between the peripheral surfaces and skin overlying the bridge of the nose and skin overlying the cheekbone, thereby causing a lifting force on the lateral wall external to the nasal passage which is equal and opposite to the compressive forces, thereby causing the dilation of the nasal passage.

5. A method of stabilizing skin tissue comprising the steps of providing a stabilizer having first and second end portions separated from each other in a longitudinal direction of the stabilizer; positioning the stabilizer over a skin tissue; resiliently deforming the stabilizer so that each of the end portions applies a first force directed towards the skin tissue and a section of the stabilizer intermediate the end portions applies a second force to the skin tissue in a direction away from the skin tissue; and attaching the resiliently deformed stabilizer to the skin tissue.

6. A method according to claim 5 wherein the step of deforming comprises deforming the stabilizer so that a side thereof facing the skin tissue is convexly shaped.

7. A method according to claim 6 wherein the step of attaching comprises positioning the center section over skin tissue comprising a nasal wall.

8. A method according to claim 7 wherein one of the end portions is attached to skin tissue proximate a cheekbone and another one of the end portions is attached to skin tissue proximate nasal cartilage on a side of a nose bridge.

9. A method according to claim 5 including the step of giving the stabilizer a curvature in the longitudinal direction

prior to the step of positioning to thereby increase the forces generated by the stabilizer following the step of attaching it to the skin tissue.

10. A nasal dilator for dilating a first nasal passage extending along a nasal wall located between nasal cartilage extending from a bridge of a nose along a side of the nose and a cheekbone, the dilator comprising a resiliently deformable sheet having a length so that it extends along the nasal wall from proximate the nasal cartilage to proximate the cheekbone, and an adhesive layer applied to a side of the sheet which faces the nasal wall when the dilator is applied to the nasal wall, whereby the sheet, upon adhesively attaching the dilator to the nasal wall so that its ends are proximate the nasal cartilage and the cheekbone, generates first forces which urge the end portions towards the skin tissue and a second force generated in a mid-section of the sheet intermediate the end portions thereof which urges the nasal wall away from the nasal passage.

11. A nasal dilator according to claim 10 comprising a laminate formed by the sheet, a top cover overlying and adhesively attached to a side of the sheet opposite the side thereof which carries the adhesive layer, and a cushion layer disposed between the sheet and the adhesive layer and adhesively secured to the other side of the sheet.

12. A nasal dilator according to claim 11 wherein the top cover and the cushion layer extend beyond a periphery of the sheet.

13. A nasal dilator according to claim 12 wherein portions of the top layer and the cushion layer extending beyond the periphery of the sheet include adhesive securing them to each other.

14. A nasal dilator according to claim 13 wherein the top cover, the sheet, the cushion layer and the adhesive layer are translucent.

15. A nasal dilator according to claim 13 wherein the top cover, the sheet, the cushion layer and the adhesive layer are transparent.

16. A nasal dilator according to claim 10 for additionally dilating a second nasal passage in addition to dilating the first nasal passage, the dilator comprising an additional resiliently deformable sheet for adhesively attaching it to a nasal wall proximate the second nasal passage, and including a connector attaching the sheets to each other.

17. A nasal dilator according to claim 16 wherein the connector is elongated and formed to extend over the bridge of the nose when the sheets are adhesively attached to the respective nasal walls.

18. A nasal dilator according to claim 17 wherein the connector is constructed of a readily deformable material.

19. A nasal dilator according to claim 18 including an adhesive on a side of the connector facing the nose.

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