



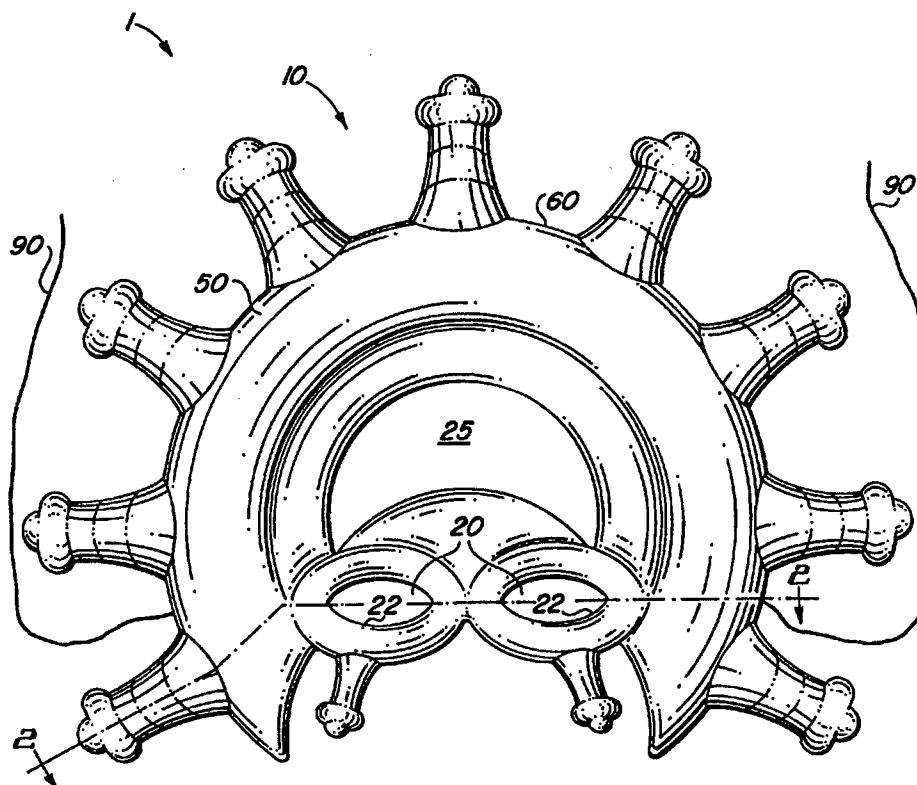
## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/US96/09936</p> <p>(22) International Filing Date: 6 June 1996 (06.06.96)</p> <p>(30) Priority Data: 08/467,104                      6 June 1995 (06.06.95)                      US</p> <p>(71) Applicant: INNOVATIONS WAY, CORP. [US/US]; 9375 Fountainbleau Boulevard #L-217, Miami, FL 33172 (US).</p> <p>(72) Inventor: GATTAMORTA, Ruben, D.; 9375 Fountainbleau Boulevard #L-217, Miami, FL 33172 (US).</p> <p>(74) Agent: MALLOY, Jennie, S.; Malloy &amp; Malloy, P.A., One Biscayne Tower, Suite 3760, 2 S. Biscayne Boulevard, Miami, FL 33131-1803 (US).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report.</i></p>

(54) Title: INFLATABLE MASK

(57) Abstract

A mask assembly (1) providing a primary housing (10) which includes a flexible front panel (50) and a flexible rear panel (70) which are secured together about their perimeters (60). At least one transverse eye opening (20) extends through the front and rear panels (50 and 70), and the front and rear panels (50 and 70) are secured to one another about the perimeter (22) of the transverse eye opening (20). A primary cavity (100), containing a plurality of interior walls (150), is defined between the front and rear panels (50 and 70). The plurality of interior walls (150) define a plurality of interconnected chambers (170). At least one of the interconnected chambers (170) includes an exterior inlet passage (200), preferably a one-way valve, structured to permit exterior fluid flow therethrough into



at least one of the interconnected chambers (170) for subsequent seepage of the fluid into the remaining interconnected chambers (170), thereby inflating all of the interconnected chambers (170) so as to define a substantially stiff, fixed decorative configuration.

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Description  
INFLATABLE MASK

BACKGROUND OF THE INVENTION

5

Field of the Invention

This invention relates generally to masks, and in particular inflatable costume masks and a method for making the same, the masks to provide an attractive easy to achieve three dimensional decorative appearance without necessitating complex manipulation or adaptation.

Description of the Related Art

Costume masks come in all shapes and sizes. They range from simple, small children's toy masks to ornate, often large, head-coverings. Further, the materials used to manufacture the masks vary as well. For example, inexpensive children's halloween masks are often simple cardboard or molded plastic cut-outs, while the more expensive and complex designs are often fabricated by detailed and time consuming techniques such as papier-mache, molded plastic and/or rubber bases with various ornaments secured thereto.

In particular, one type of mask which is commonly implemented by children and adults alike includes the mardi-gras type mask. These masks will generally be of a more flamboyant nature, especially due to the flamboyance of "mardi-gras" type events themselves. Accordingly, many mardi-gras type masks are quite ornate and elaborate, utilizing costume jewelry, feathers and various other ornate articles in a large, fanciful display. Still, however, due to the cost and fragile nature of the elaborate masks, many people seek out less expensive alternatives which maximize the fanciful appearance at a lesser cost and in a more convenient design. Unfortunately, however, the less expensive, more convenient type masks are generally flimsy and relatively plain, leaving the consumer with the need for an improved, fanciful product.

One reason which often leads to the greater expense associated with more elaborate masks involves the method of manufacturing the mask. Generally, the arrangement of the masks can be quite

complex, often requiring expensive machinery or some manual fabrication. For example, in the past there have been some costume masks structured to provide variable appearance and or bulge out in certain areas. Such designs, however, generally require independent creation of a number of bladders, molded into a surface of the mask, and configured with an elaborate array of tubing for independent inflation or deflation. These designs, accordingly, do not lend themselves to convenient, inexpensive use, but rather are primarily directed for more sophisticated circumstances including theatrical special effects type uses.

As such, there is a need in the art for a mask which is ornate and decorative, having an eye catching, three-dimensional appearance, but which is still inexpensive and convenient to utilize. Further, there is a need for an ornate mask which is relatively sturdy and easy to store and transport, and which is light and flexible enough to be easy assemble and wear.

Additionally, there is a need for a process for manufacturing such as a mask in an efficient and effective manner which will facilitate mass production, at a relatively inexpensive cost, without compromising the ornate, decorative, three dimensional appearance.

#### Summary of the Invention

The present invention fulfills the need in the art. Broadly described, the present invention is directed towards an inflatable mask and a method for manufacturing the mask.

In a preferred embodiment of the present invention, the mask assembly includes a primary housing. The primary housing includes a flexible front panel and a flexible rear panel to be secured with one another substantially about a perimeter thereof. Accordingly, the flexible front panel and the flexible rear panel define a primary cavity of the primary housing therebetween.

Disposed within the primary cavity are a plurality of interior walls. The interior walls are formed between the flexible front panel and the flexible rear panel, in the primary cavity, and thereby are structured and disposed to define at least one plurality of interconnected chambers within the primary cavity.

At least one of the interconnected chambers defined in the

primary cavity of the main housing includes an exterior inlet passage. The exterior inlet passage is structured and disposed to permit exterior fluid flow therethrough into the at least one interconnected chamber. Once the fluid is introduced through the exterior inlet passage into the interconnected chamber, it will subsequently seep into the remaining interconnected chambers. Accordingly, all of the interconnected chambers will be inflated and a substantially stiff, fixed, and generally elaborate decorative configuration will be defined by the positions of the interconnected chambers.

Additionally, the inflatable mask of the present invention includes at least one transverse eye opening formed therein. The transverse eye opening is structured to extend through the flexible front and rear panels of the primary housing, and is disposed to permit vision therethrough by an individual wearing the inflatable mask of the present invention. In order to define a configuration and position of the transverse eye opening, the front and rear panels are secured to one another about a perimeter of the transverse eye opening.

An alternate form of the present invention provides a method of manufacturing an inflatable mask. The method includes an initial step of configuring a first mold face to include a perimeter ridge, at least one, substantially enclosed, eye opening ridge, and a plurality of interior, partially interconnected ridges, all of which are structured and disposed to define a perimeter mask configuration and an interior mask configuration. Next a first material panel is placed on a substantially flat molding surface, and a second material panel is placed in overlying position atop the first material panel. The configured first mold face is then heated. Once the first mold face has been sufficiently heated, it is pressed onto the first and second material panels disposed on the substantially flat molding surface until the first material panel is bonded with the second material panel along the ridges configured in the first mold face. Finally, any excess material which is exterior of a perimeter seal formed by the perimeter ridge of the first molding face, and interior of an eye opening seal formed by the eye opening ridge of the first molding face is trimmed from the bonded first and second material

panels.

Accordingly, it is an object of the present invention to provide an attractive and decorative inflatable mask.

5 It is also an object of the present invention to provide an inflatable mask which is ornate and decorative, yet inexpensive to manufacture and purchase.

It is a further object of the invention to provide an ornate mask which is relatively sturdy and easy to store and transport, and once needed easy to implement for use.

10 Still another object of the present invention is to provide an inflatable mask that is lightweight and flexible, so as to be easy to wear, but provides a sturdy, attractive, three dimensional appearance.

15 It is a further object of the invention to provide a method for making a decorative mask.

Also an object of the present invention to provide a process for manufacturing a decorative mask which is efficient and effective, providing an inexpensive yet highly attractive product.

20 Another object of the present invention is to provide a method for manufacturing a mask which is simple, rapid, and capable of efficient repetition to produce a substantial quantity of masks.

25 These and other objects, features, and advantages of the present invention may be more clearly understood and appreciated from a review of the following detailed description of the disclosed embodiment and by reference to the appended drawings and claims.

#### Brief Description of the Drawings

30 For a fuller understanding of the nature of the present invention, reference should be had to the following detailed description taken in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of the preferred embodiment of the present invention;

35 FIG. 2 is a partial cut-away view, taken along line 2-2 in FIG. 1, of the interior of the preferred embodiment of the present invention;

FIG. 3A is a front planer view of a mold employed in the

preferred method embodiment of the present invention;

FIG. 3B is a side planer view of a step in the method of the present invention.

Like reference numerals relate to like parts throughout the several views of the drawings.

#### Detailed Description of the Preferred Embodiment

Referring now to the drawings, the present invention is directed to a mask assembly generally indicated as 1. Turning to FIG. 1, it illustrates a preferred embodiment of the mask assembly 1 of the present invention.

The mask assembly 1 includes primarily a primary housing 10 which will define an overall exterior configuration of the assembly. Included as part of the primary housing 10 are a flexible front panel 50 and a flexible rear panel 70. The front panel 50 and rear panel 70 may be formed of any of a variety of flexible materials, including an elastic rubber material, however in the preferred embodiment the front and rear panels will be constructed of a flexible synthetic film, such as that commonly sold under the trademark "MYLAR", or a like durable, inflatable material.

The flexible front panel 50 and the flexible rear panel 70 are secured to one another substantially about their perimeters 60. In the preferred embodiment, the front panel 50 is secured to the rear panel 70 by a heat seal, thereby bonding the front and rear panels 50 & 70 permanently with one another and defining a perimeter configuration of the mask assembly 1.

Further, the mask assembly 1 includes at least one transverse eye opening 20 extending through the front and rear panels 50 & 70 of the primary housing 10 so as to permit the wearer to see therethrough. The front and rear panels 50 & 70 are fixedly and permanently secured to one another about a perimeter 22 of the transverse eye opening 20 in much the same manner that the front and rear panels 50 & 70 are permanently secured to one another about their perimeters 60 thereof. Accordingly, the perimeter seal 22 defines the desired ornamental configuration of the eye opening 20. In the preferred embodiment, the mask assembly 1 will include two transverse eye openings 20 having matching or varied

configurations.

Also, in addition to the transverse eye opening 20, there may be one or a plurality of decorative openings 25 formed through the front and rear panels 50 & 70. These openings are defined in much the same manner as the eye openings 20 and can include decorative material extending therein. For example, the perimeter of the decorative opening 25 may be defined by a heat or like seal, but a quantity of material from the front and/or rear panels 50 & 70 may nevertheless extend into the decorative opening 25. Such may also be the case with the eye openings 20 or exterior of the perimeter seal 60.

Defined between front and rear panels 50 & 70, and primarily by the perimeter seal 60 and the various interior seals which define one or more eye openings 20 and decorative openings 25, is a primary cavity 100. This primary cavity 100 includes disposed therein a plurality of interior walls 150. The interior walls 150, which extend between the front and rear panels 50 & 70 within the primary cavity 100 are preferably formed by a fixed seal between the front and rear panels 50 & 70. This fixed seal is preferably a heat seal which bonds the front and rear panels 50 & 70 to one another therealong, however any method, such as the secured positioning of material strips to form the interior walls 150, may be implemented so long as the resultant interior walls 150 provides a substantially air tight barrier.

The plurality of interior walls 150 are disposed in the primary cavity 100 so as to define a plurality of interconnected chambers 170 in the primary cavity 100. There can be a small or large number of the interconnected chambers 170, and each interconnected chamber may be of a varying size and configuration as necessary to define an attractive and elaborate design and configuration in the mask. For example, the mask may include a horn or feather type configuration and/or a number of interior design segments each of which is defined by one or more of the interconnected chambers 170. Preferably, there will be only one plurality of interconnected chambers 170, although this may vary depending upon how elaborate the mask design is. Further, as illustrated in the figures, each interconnected chamber 170 is in fluid flow communication with at least one adjacent interconnected



chamber as a result of openings or gaps formed in select portions of the interior walls 150. Accordingly, fluid such as air or helium may freely flow therebetween.

Included in at least one of the interconnected chambers 170' is an exterior inlet passage 200. This exterior inlet passage 200 is structured to permit exterior fluid flow (i.e., helium, air, etc.) therethrough into that chamber 170'. Accordingly, once the fluid is introduced into that chamber 170', the fluid will seep into the remaining interconnected chambers 170, because of the interconnection of the chambers 170. As such, the seepage of fluid will result in the inflation of all of the interconnected chambers 170 to give them a three dimensional configuration. When all of the chambers 170 are so inflated, the mask 1 will have a substantially stiff, fixed, decorative, three dimensional configuration. Additionally, it is preferred that the exterior inlet passage 200 include a one-way valve 200 (illustrated schematically) structured to prevent fluid from escaping the primary cavity 100.

Further, the mask of the present invention will preferably include positioning means 90. The positioning means 90 are structured to position the primary housing 10 in front of a user's face when desired. In a preferred embodiment, this is accomplished by one but preferably a pair of fasteners straps 90 extending from the primary housing 10 and structured to be secured with one another at free ends thereof. Accordingly, this can be achieved using an elastic band(s), string, flexible material strip or other like material. Such will allow the mask 1 to be worn by wearers of varying sizes. It should be noted, however, that the positioning means 90 could be any of a number of mechanisms in the use in the art, for instance a substantially rigid support rod (not illustrated) secured to the primary housing 10 and structured to be held by a user may be implemented, or, due to the lightweight of the mask assembly 1, one ore more clips to be secured to the user's hair or a hat, or a pair of flexible arms such as those used on eyeware may also be effectively implemented.

Finally, to add to its overall decorative appearance the mask assembly 10 will include a painted or preformed decorative color scheme, and/or decorative add-ons affixed thereto. Preferably,

each interconnected chamber will be decorated in its own color or pattern to lend itself to the elaborate "mardi-gras" style, however more conventional clown or alternative decorative color/ornament schemes may be effectively implemented.

5           Turning now to Figures 3A and 3B, the present invention also includes a method of manufacturing a mask. The method includes an initial step (FIG. 3A) of configuring a first mold face 300. This first mold face 300 hundred is configured to include a perimeter ridge 320, at least one, substantially enclosed, eye opening ridge 10 330, and a plurality of interior, partially interconnected ridges 340. These various ridges 320, 330, 340 will function to define a perimeter mask configuration and an interior mask configuration, such as by the formation of a number of interconnected chambers. As such, the interior ridges include a number of gaps formed 15 therebetween so as to enable the definition of the numerous interconnected chambers while performing the subsequent steps of the present method.

Next, as illustrated in FIG. 3B a first material panel 410 is placed on preferably a substantially flat molding surface 430, and 20 a second material panel 420 is placed in an overlying position atop the first material panel 410, on the flat molding surface 430. It should be noted, however, that the molding surface can also be configured identical to the first mold face 300. The first mold face is then heated (not illustrated), such as through electric 25 heating elements formed in the mold, by placing the mold in a heater so as to heat the metal of the mold by conventional convection heating, or by any other means effective to heat at least an outer edge of the various ridges 320, 330, 340 formed in the first mold face 300.

30           Once heated, the first mold face 300 is pressed (in the direction indicated by arrow A) onto the first and second material panels 410, 420 disposed on the preferably substantially flat molding surface 430 for bonding of the first material panel 410 to the second material panel 420 along the ridges 320, 330, 340 of the 35 first mold face 300. Because the ridges 320, 330, 340 protrude from the first mold face 300, only they will engage the first and second material panels 410 & 420 to form a permanent and substantially air tight bond therebetween. Further, the gaps

between the ridges will not result in an underlying bond such that the resultant interconnected ridges will be in fluid flow communication with one another.

5 Excess material can then be trimmed (not shown) from the first and second material panels 410, 420 exterior of a perimeter seal formed by the perimeter ridge 320 of the first molding face 300, and interior of an eye opening seal formed by the eye opening ridge 330, as necessary. As previously mentioned, in some instances excess material may remain for decorative purposes.

10 At this time, the resultant mask can be painted and/or decorated, especially if the material panels were not preformed with a desired color scheme, and the positioning means, such as a fastener straps (not shown in this figure), or support rod, can be affixed to the mask.

15 Although multiple embodiments are described herein, it should be understood that the inventor intends for this invention to cover other mask assemblies, and methods for making masks, not described herein. For instance, the mask could contain a plurality of individual chambers, not interconnected, with an exterior inlet  
20 passage for each. Or alternate positioning means could be employed, such as clips or adjustable ear-hooks.

Now that the invention has been described,

Claims

1. A mask assembly comprising:

a primary housing, said primary housing including a flexible front panel and a flexible rear panel,

5 said flexible front panel being secured to said flexible rear panel substantially about a perimeter thereof,

at least one transverse eye opening extending through said front and rear panels so as to permit vision therethrough, said front panel and said rear panel being secured to one another about  
10 a perimeter of said transverse eye opening,

a primary cavity defined between said front panel and said rear panel,

a plurality of interior walls disposed between said front panel and said rear panel in said primary cavity,

15 said plurality of interior walls defining a plurality of interconnected chambers in said primary cavity,

said plurality of interconnected chambers in said primary cavity being structured and disposed to define a specific decorative, ornamental, exterior shape and appearance of said  
20 primary housing, and

at least one of said interconnected chambers including an exterior inlet passage structured to permit exterior fluid flow therethrough into said at least one of said interconnected chambers for subsequent seepage of said fluid into remaining ones of said  
25 interconnected chambers, thereby inflating all of said interconnected passages so as to define a substantially stiff, fixed, ornamental, decorative configuration.

2. A mask assembly as recited in claim 1 including two of said transverse eye openings.

30 3. A mask assembly as recited in claim 1 wherein said exterior inlet passage includes a one way valve structured to prevent fluid from escaping said primary cavity.

4. A mask assembly as recited in claim 1 wherein said fluid is helium.

35 5. A mask assembly as recited in claim 1 wherein said fluid is air.

6. A mask assembly as recited in claim 1 wherein said plurality of interior walls includes said front panel fixedly

secured to said rear panel.

7. A mask assembly as recited in claim 1 wherein said front panel is secured to said rear panel by a heat seal.

5 8. A mask assembly as recited in claim 1 wherein said front panel and said rear panel are formed of an elastic rubber material.

9. A mask assembly as recited in claim 1 wherein said front panel and said rear panel are formed of a flexible synthetic film.

10 10. A mask assembly as recited in claim 1 further including positioning means structured to position said primary housing in front of a user's face.

11. A mask assembly as recited in claim 10 wherein said positioning means includes a pair of fastener straps extending from the primary housing and structured to be secured with one another at free ends thereof.

15 12. A mask assembly as recited in claim 10 wherein said positioning means includes a substantially rigid support rod secured to said primary housing and structured to be held by a user.

20 13. A method of manufacturing a mask comprising the steps of: configuring a first mold face including a perimeter ridge, at least one, substantially enclosed, eye opening ridge and a plurality of interior, partially interconnected ridges, said ridges being structured to define a perimeter mask configuration and an interior mask configuration,

25 placing a first material panel on a substantially flat molding surface,

placing a second material panel in overlying position atop said first material panel,

heating said first mold face,

30 pressing said heated first mold face onto said first and second material panels disposed on said substantially flat molding surface for bonding of said first material panel to said second material panel along said ridges of said first mold face, and

35 trimming excess material from said first and second material panels exterior of a perimeter seal formed by said perimeter ridge of said first molding face, and interior of an eye opening seal formed by said eye opening ridge.

1/2

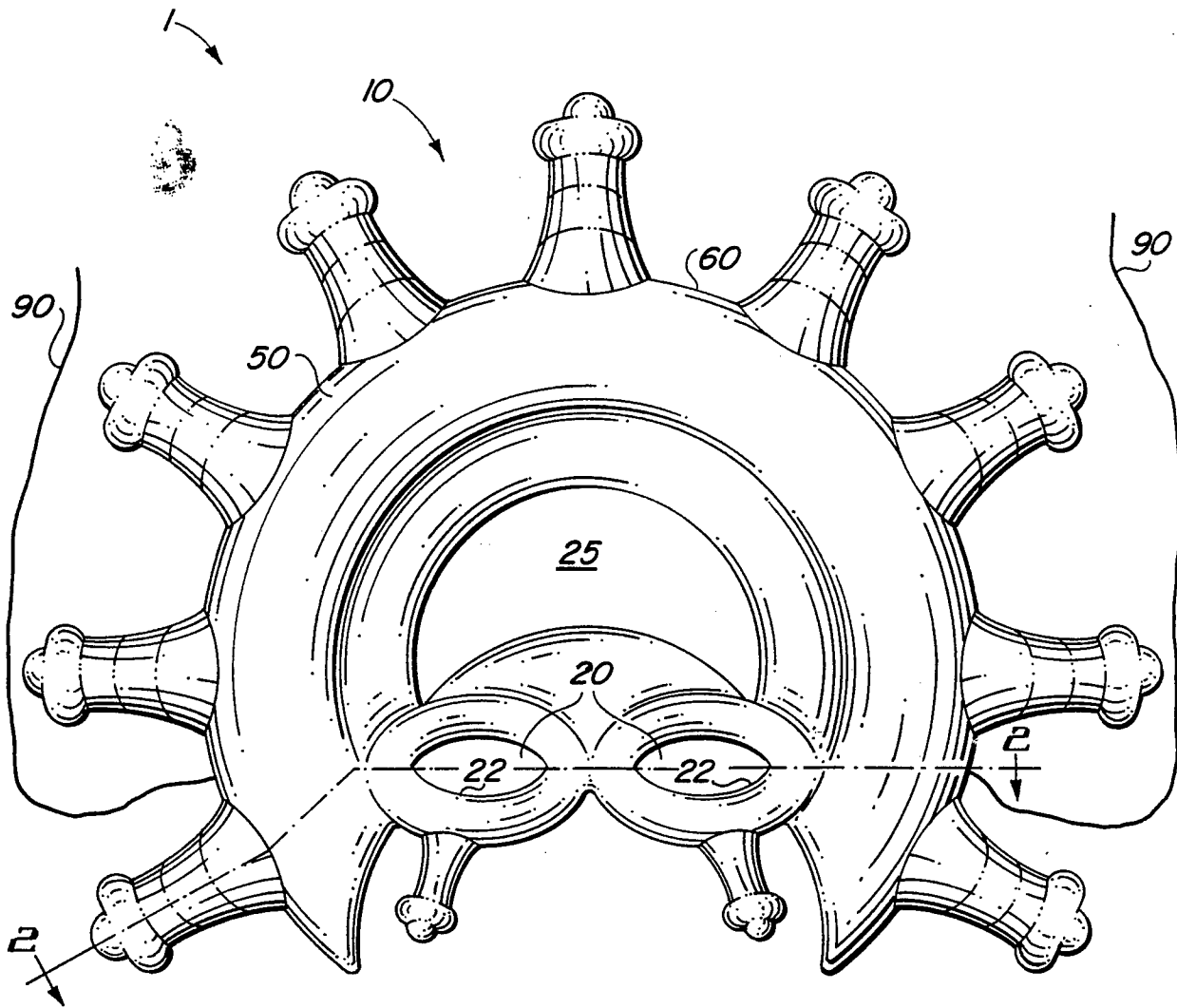


FIG. 1

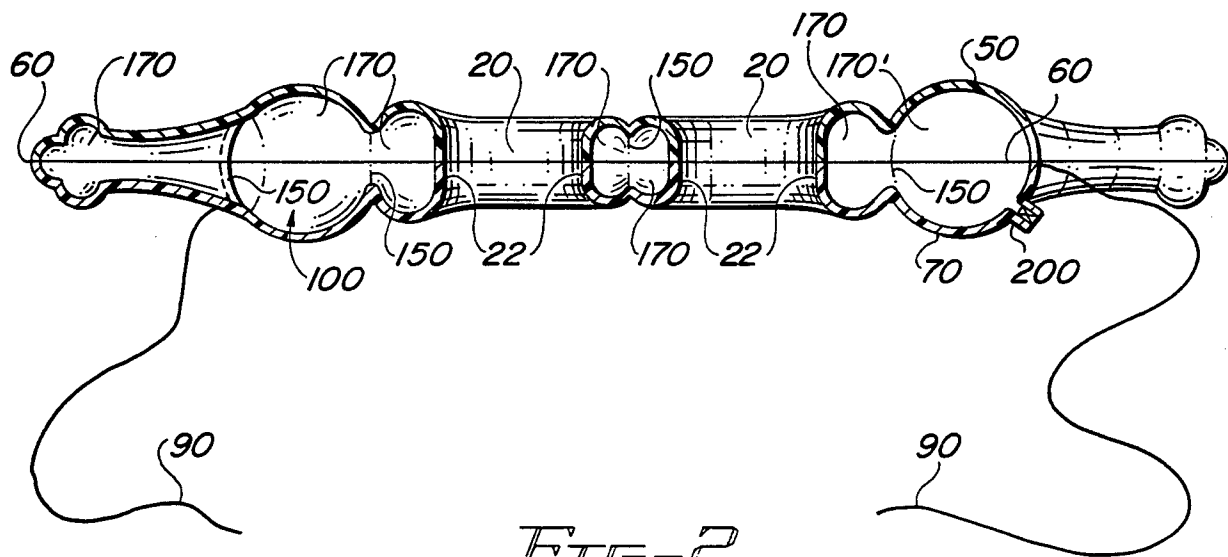


FIG. 2

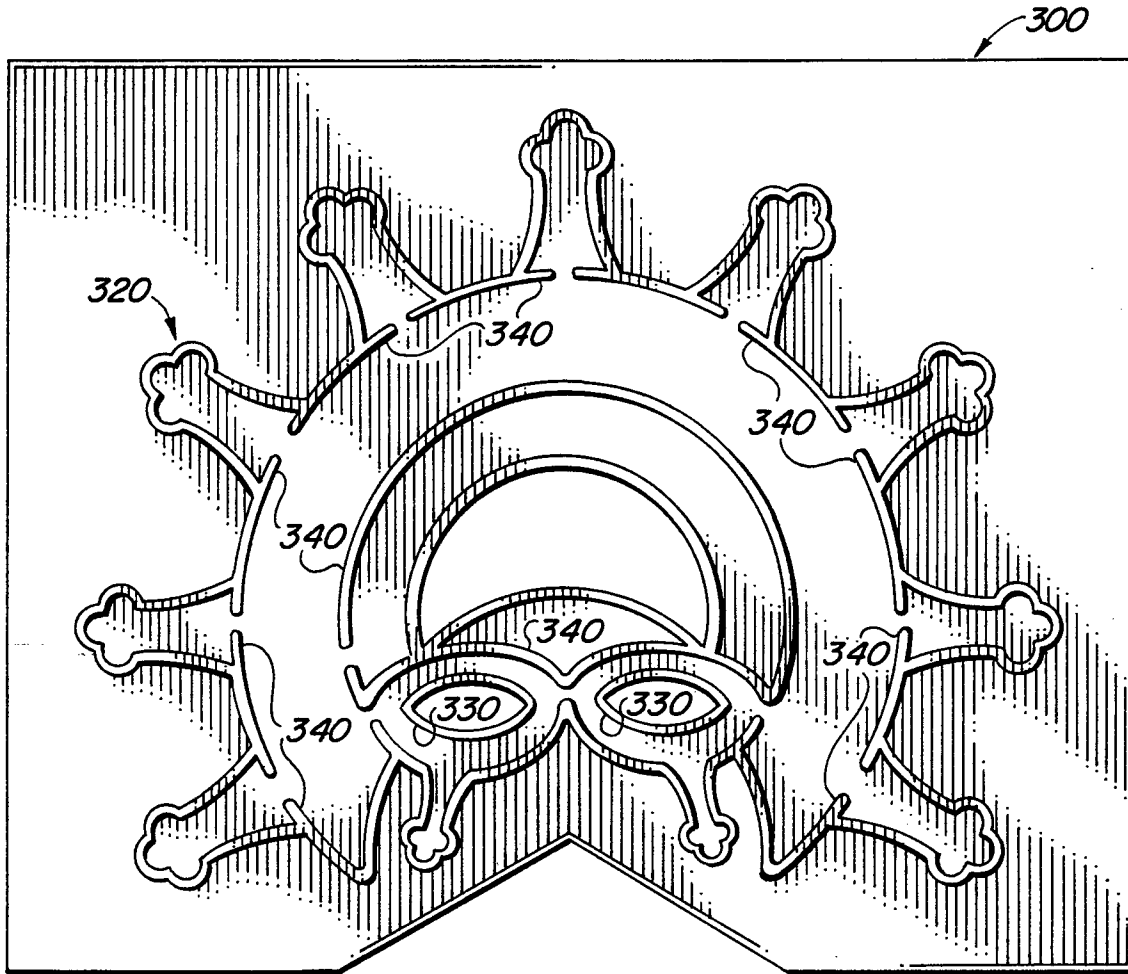


FIG. 3A

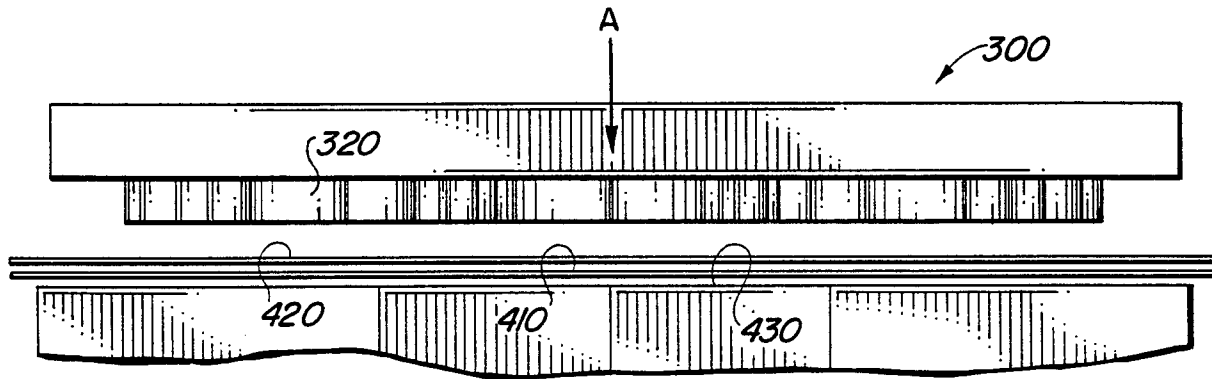


FIG. 3B

INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US96/09936

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(6) :A42B 1/00  
US CL :2/9, 206

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 2/9, 173, 206, 413, 421, 424; 128/857, 858; 602/13, 17

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US, A, 2,664,567 (NICHOLS) 05 JANUARY 1954, entire document.	1, 2, 5-7, 10 ----- 3, 4, 8, 9, 11, 13
Y	US, A, 3,787,893 (LARCHER) 29 JANUARY 1974, entire document.	4
Y	US, A, 4,324,005 (WILLIS) 13 APRIL 1982, entire document.	3
Y	US, A, 5,315,718 (BARSON ET AL) 31 MAY 1994, entire document.	11
Y	US, A, 5,389,030 (CHAPKIS) 14 FEBRUARY 1995, entire document.	9

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

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Date of the actual completion of the international search

23 JULY 1996

Date of mailing of the international search report

**30 JUL 1996**

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