United States Patent [19]

Mathews

[11] **3,848,281**

[45] **Nov. 19, 1974**

[54] **APERTURED ARTICLE AND PROTECTIVE COVER THEREFOR**

[76] Inventor: **Dixie I. Mathews,** 4502 Abbott St., Apt. 104, Dallas, Tex. 75205

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[52] **U.S. Cl.** ..... **5/337,** 5/339, 150/54 B

[51] **Int. Cl.** **A47g 9/00**

[58] **Field of Search** ..... 150/52 R, 54 B; 206/304; 5/337, 338, 339, 345 R, 354; 297/219

[56] **References Cited**

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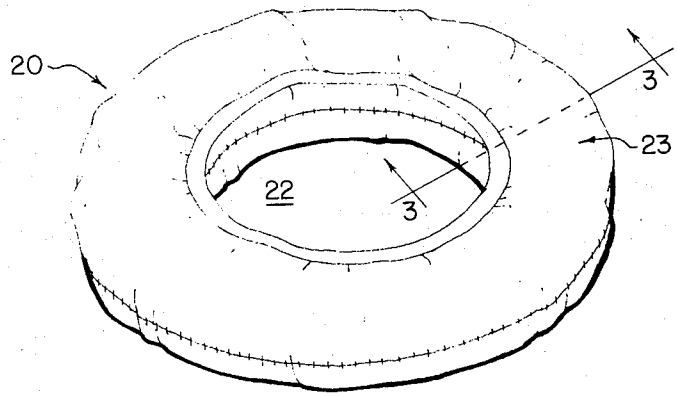
Primary Examiner—Paul R. Gilliam
Assistant Examiner—Andrew M. Calvert
Attorney, Agent, or Firm—Clegg, Cantrell & Crisman

[57] **ABSTRACT**

An apertured article, for example, a toroidal foam rubber cushion suitable for use in an infant's head rest or the like, is protected by a cover which includes four sheets of formable material, for example, a textile such as woven cotton fibers, each having a shape conforming to the cross-sectional configuration of the article in a principal plane therethrough, for example, an annulus for a toroidal article. First and second of the sheets are joined at their peripheral edges to define a first enclosure for the article. Third and fourth of the sheets are joined at their peripheral edges to define a second enclosure for both the article and the first enclosure. The two enclosures defined by the joined pairs of sheets are joined serially, completely to enclose the article while leaving the aperture therethrough accessible. The joined sheets form a cover having a unitary structure which can be applied to and removed from the article without the use of buttons, fasteners or the like.

11 Claims, 15 Drawing Figures



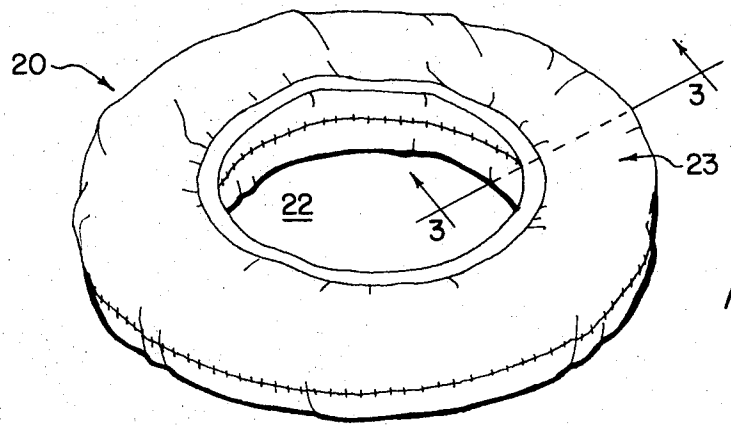


FIG. 1

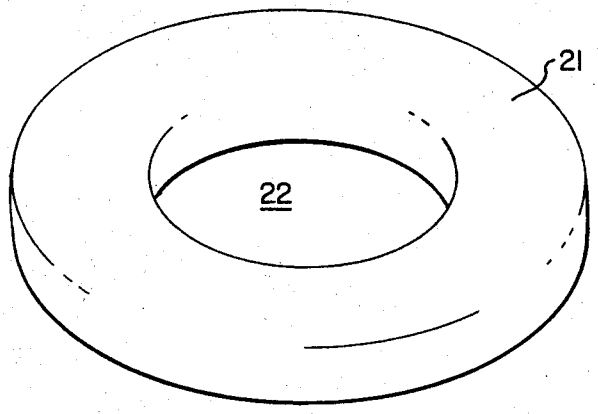


FIG. 2

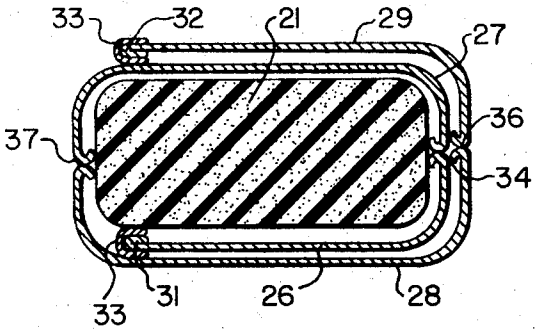


FIG. 3

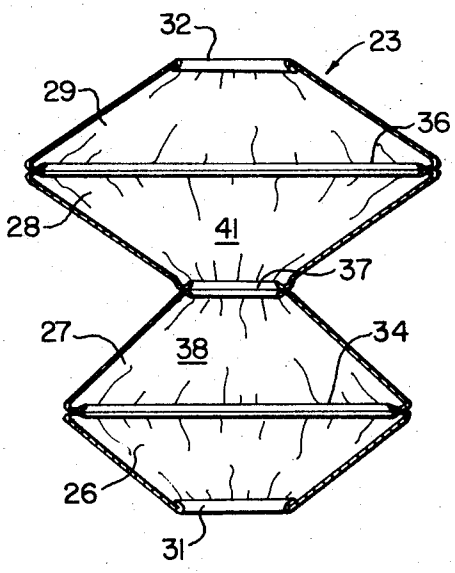


FIG. 4

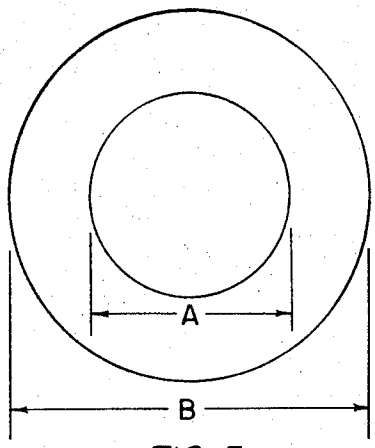


FIG. 5

PART	A"	B"
26	4 3/4	9 3/4
27	3 3/4	9 1/4
28	5 1/4	10 1/4
29	3 3/4	10 1/4
46	4	7 3/4
47	3 3/4	10 1/2

FIG. 10

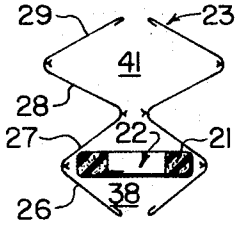


FIG. 6

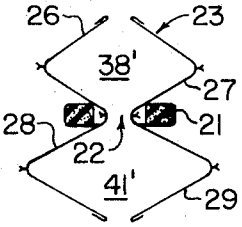


FIG. 7

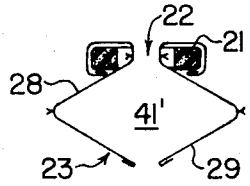


FIG. 8

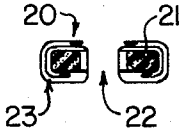


FIG. 9

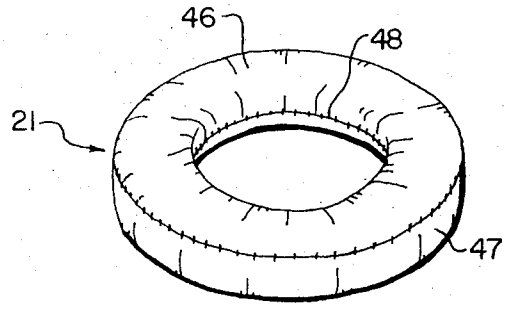


FIG. 11

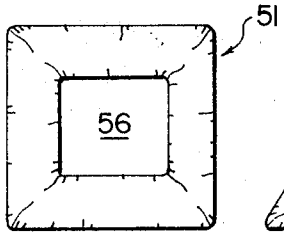


FIG. 12

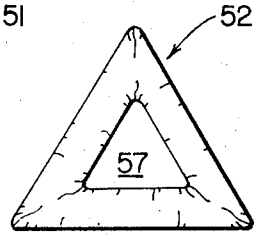


FIG. 13

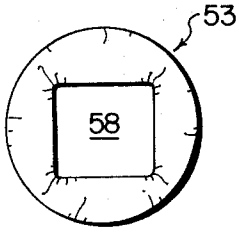


FIG. 14

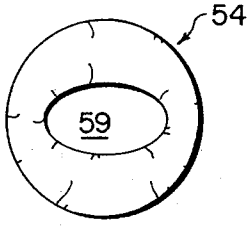


FIG. 15

APERTURED ARTICLE AND PROTECTIVE COVER THEREFOR

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to covered articles and, more particularly to articles having apertures formed therethrough and provided with protective covers.

2. Description of the Prior Art

The prior art, for example, C. L. McLean U.S. Pat. No. 3,141,179, discloses the use of head rests or pillows having apertures formed therethrough which permit a person reclining sideways to rest his head on the pillow with his ear projecting into the aperture. An accoustical passageway formed in the pillow and communicating with the aperture permits the user to hear equally well with both ears while reclining. It has also been determined that pillows or cushions having apertures formed therethrough are suitable for protecting various parts of invalids. Head rests formed with receiving apertures can be beneficial with regard to the case of sleeping or reclining infants. It is well known, for example, that some infants favor one side of the head when reclining or asleep. Permitting such a practice to continue unchecked can result in undesirable and sometimes permanent effects on the growth and health of the infant, particularly in the formation of the ears and the head. In some cases, these effects have been permanent and do not disappear as the infant matures.

Additionally, apertured head rests of the type described are beneficial when administering physiotherapeutic treatments to paraplegics or other invalids while they are reclining on massage tables or the like. These tables are frequently provided with apertures, permitting a patient undergoing a treatment to lie face down with his or her facial breathing apparatus projecting into the aperture while the treatment is administered.

In the above exemplary situations, it is desirable to provide some additional protection for the user of the apertured head rest. This is particularly important in the case of infants, since some head rests may contain materials which could prove harmful to the infant or which could suffocate the infant should the infant bite into the head rest and the material become lodged in its throat. Protection is also important for hygienic and sanitational reasons in that the head rests may absorb perspiration, moisture, and other bodily discharges, together with their attendant bacteria. This protection may be afforded by providing the head rest with a cover which can be cleaned and replaced periodically.

A cover for an apertured head rest should completely enclose all the exposed portions of the head rest while permitting the user access to the aperture therethrough to obtain the therapeutic benefits of the apertured head rest and the hygienic and sanitational benefits of the cover. The cover should not be provided with buttons, zippers or the like, to prevent an infant user from swallowing the former or injuring itself on the latter.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a new and improved cover for an article having an aperture formed therethrough.

It is a further object of the present invention to provide a new and improved cover for an apertured article whereby the article is completely enclosed by the cover while the aperture is exposed.

It is a further object of the present invention to provide a new and improved cover for an apertured article wherein the cover is of unitary construction and does not require the use of fasteners or the like to implement its use.

It is a further object of the present invention to provide a new and improved cover for an apertured article which may be easily applied to and removed from the article.

It is a further object of the present invention to provide a new and improved head rest including a cushion element formed with an aperture therethrough and a cover for the head rest which is of unitary construction and completely encloses the cushion element while leaving the aperture therethrough exposed.

A cover for an article having an aperture formed therethrough, embodying the principles of the present invention, may include four sheets of formable material each sheet being shaped in accordance with the cross-sectional configuration of the article in a principal plane therethrough. The sheets are paired to form two enclosures by connecting first and second of the sheets and third and fourth of the sheets at their peripheral edges. The enclosures are serially connected to form a cover of unitary construction whereby the first enclosure encloses the article and the second enclosure encloses the article and the first enclosure completely to enclose the article while leaving the aperture therethrough accessible.

If the article is a cushion element, the combination of the article and cover defines a head rest or the like which is particularly suited to the comfort and care of infants.

BRIEF DESCRIPTION OF THE DRAWING

A complete understanding of the invention will be obtained from the following detailed description thereof, when read in conjunction with the accompanying drawing, wherein:

FIG. **1** is a perspective illustration of one embodiment of an apertured article provided with a protective cover in accordance with the principles of the present invention;

FIG. **2** is a perspective view of the article of FIG. **1** without the cover;

FIG. **3** is a sectional view of the covered article of FIG. **1** taken along the lines **3—3** thereof;

FIG. **4** is a sectional view of the cover of FIGS. **1** and **3**, showing the manner in which four annular sheets of formable material are joined together to form the cover;

FIG. **5** shows the annular configuration of the sheets comprising the cover of FIG. **4**;

FIGS. **6** through **9** illustrate schematically two exemplary methods by which the cover of FIG. **4** may be applied;

FIG. **10** is a table of approximate dimensions for four sheets forming the cover for a given size of article of FIG. **2**;

FIG. **11** is a perspective view of a head rest or pillow covered with plastic material which may be utilized with the cover of FIG. **4**; and

FIGS. **12, 13, 14** and **15** illustrate four exemplary alternative embodiments of covered head rests in accordance with the principles of the invention.

DETAILED DESCRIPTION

Referring to FIGS. 1 and 2 there is shown a head rest 20 which includes a toroidal cushion 21 made of resilient material, for example, foam rubber or an expanded plastic, formed with an aperture 22 therethrough, enclosed by a cover 23 which is preferably of a supple and flaccid material, for example, a textile material such as woven cotton fibers. As shown in FIGS. 1 and 3, the cover 23 completely encloses the cushion 21 but allows the user access to the aperture 22.

The head rest 20 may be used advantageously for the comfort, health and beauty of an infant, preventing the ears of the infant from bending or turning up and preventing distortion on the lateral portions of the infant's head when the infant is reclining sideways with its ear depending into the aperture 22. The head rest 20 also provides for the protection of the posterior portion of the head of an infant reclining on its back, with the back of the head resting in the aperture 22, preventing the posterior portion of the head from being flattened. In addition, danger of so-called "crib death" from suffocation is substantially eliminated by the apertured construction of the head rest 20.

The cover 23 provides a sanitary, hygienic and absorbent unitary covering for the cushion 21, preventing material exuded from the body of the user, with its attendant bacteria, from being absorbed by the cushion 21.

Referring to FIG. 4, the cover 23 includes four sheets of formable material 26, 27, 28 and 29, having shapes in agreement with the cross-sectional configuration in a principal plane through the cushion 21, shown in FIG. 5 as being annular for a cushion having a toroidal shape.

As shown in FIGS. 3 and 4, the inside circumferential edges 31 and 32 of the sheets 26 and 29, respectively, may be flat hemmed. Additionally, suitable trimming 33 might be added to the edges of 31 and 32 of the sheets 26 and 29, respectively, and the sheets may have designs thereon in order to render a more pleasing appearance for the cover 23. The sheets 26 and 27 are paired by joining them together at their peripheral edges, for example, by sewing them together, forming a circular seam 34. Similarly, the sheets 28 and 29 are joined together at their peripheral edges to form a circular seam 36. The paired sheets 26–27 and 28–29 are joined together at their interior edges forming a circular seam 37.

The cover 23 therefore comprises two coaxial compartments or enclosures 38 and 41. As shown in the embodiment of FIG. 4, the sheets 26 and 27 forming the enclosure 38 are smaller than the sheets 28 and 29 forming the enclosure 41, such that the enclosure 41 is slightly larger than the enclosure 38. This permits the enclosure 38 to enclose the cushion 21, and permits the enclosure 41 to enclose both the cushion 21 and the enclosure 38 to form a relatively smooth covering on the cushion 21 with the seams 34 and 36 being relatively co-planar in the principal plane of the head rest 20 as shown in FIG. 3.

Referring to FIGS. 6 and 7, two exemplary methods which may be employed to initiate covering of the cushion 21 with the cover 23 are schematically illustrated.

Referring to FIG. 6, the cushion 21 may be inserted initially within the enclosure 38. This is easily accomplished since the cushion 21 is made of resilient material. Alternatively, as shown in FIG. 7, the cover 23 may be turned inside out and disposed within the aperture 22 formed in the cushion 21 such that the cushion 21 lies between enclosures 38' and 41', which are merely the enclosures 38 and 41, respectively, turned inside out.

If the starting position for the covering operation is that shown in FIG. 6, the enclosure 41 is collapsed by collapsing the sheets 28 and 29 and is pushed through the aperture 22 formed in the cushion 21 such that the cushion 21 is covered inside and outside completely around by the combination of the sheets 26 and 27 forming the enclosure 38 and part of the enclosure 41' adjacent thereto and lying outside the enclosed cushion 21 as shown in FIG. 8.

If the starting position for the covering operation is as shown in FIG. 7, it is necessary merely to pull the sheets 26 and 27 around the cushion 21 to enclose it within the enclosure 38, again as shown in FIG. 8.

Thus, regardless of whether or not the covering operation starts from the positions shown in FIG. 6 or FIG. 7, the second step will always result in the configuration of FIG. 8.

Once the configuration of FIG. 8 has been achieved, the operator merely pulls the enclosure 41' over the covered cushion 21 completely to enclose the cushion 21 in both enclosures 38 and 41, since the operation of pulling the enclosure 41' over the covered article will result in its turning outside in and once again becoming enclosure 41.

FIG. 10, when viewed in conjunction with FIG. 5, lists the inside and outside diametric dimensions of each annular sheet 26, 27, 28 and 29, when they are utilized to cover a cushion 21 having an outside diameter of 7.75 inches, an inside diameter of 4.0 inches, and a thickness of 1.5 inches. These dimensions are approximate and could be larger or smaller, depending upon the resilience and flaccidness of the material utilized in forming the sheets 26 through 29.

When the head rest 20 is utilized as an infant's pillow, it is preferable to cover the cushion 21 with the larger enclosure 41 applied first, and the smaller enclosure 38 applied last. This increases the absorbency of the cover 23 by wrinkling the sheets 28 and 29, defining the larger enclosure 41, to present a greater depth of covering material per unit surface area of the head rest 20. It has the additional advantage of making the outer enclosure 38 tighter fitting and thus having a relatively wrinkle-free surface in contact with the infant's tender skin to avoid any welts being formed thereon when the head rest is used by a sleeping infant.

The enclosures 38 and 41 also may be of substantially the same size without impairing their covering ability substantially, since the cushion 21 is resilient.

The sheets 26, 27, 28 and 29 alternatively may be formed from relatively elastic material, for example, nylon, but such a relatively elastic material is not preferred in a head rest intended for use by an infant, since it might be too easily removed, at least partially, providing a means of potential suffocation.

Moreover, when the head rest 20 is intended for an infant, it is preferable to cover the resilient foam rubber cushion 21 with a skin of plastic film material, before applying the cover 33, to prevent the cushion from absorbing moisture and thereafter exuding an unpleasant odor should any moisture happen to penetrate through

the cover **23.** This will also porvide additional protection for the infant should the cover **23** ever be removed, since it provides strength and rigidity to the cushion **21** and shields the infant from the foam rubber within. As shown in FIG. **11,** such a cover may be formed from two plastic sheets **46** and **47** which have the same configuration as shown for the sheets **26, 27, 28** and **29** (FIG. **5**), and are joined together at their inside and outside edges, for example, by sewing them together forming a seam **48.** Approximate dimensions for the sheets **46** and **47,** when utilized to cover a cushion **21** having the dimensions referred to above, are also listed in the table of FIG. **10.**

FIGS. **12** through **15** show four covered head rests **51, 52, 53** and **54,** formed with apertures **56, 57, 58** and **59,** respectively. The head rest **51** is square and the aperture **56** therethrough is square; the head rest **52** is triangular and the aperture **57** therethrough is triangular; the head rest **53** is circular and the aperture **58** therethrough is square; and the head rest **54** is circular and the aperture **59** therethrough is elliptical.

The head rest **54** of FIG. **15** is particularly suited for the physiotherapeutic treatment of invalids. The head rest **54** may be placed on a massage table with the aperture **59** coaxially disposed over an aperture formed in the massage table to permit the patient to recline face down on the table with his or her forehead or chin supported on the head rest **54,** to avoid possible discomfort which might arise due to an impairment of the breathing ability of the patient as might be expected with other types of head rests.

The head rests shown are merely exemplary and many permutations and combinations of apertures and peripheral contours are possible. For example, a circular cushion may be formed with a triangular aperture, etc. The coverings for these cushions would be formed in the manner above described, namely, that the four sheets making up the cushion be of the same shape, generally following the cross-sectional shape through a principal plane of the article to be covered. For example, in the cover of the head rest **52** of FIG. **12,** each of the four sheets making up the cover would be shaped as shown in FIG. **12,** namely, as having a square outer periphery and a square aperture. The same is true for the cushions of FIGS. **13, 14** and **15.** The coverings for the cushions of FIGS. **12** through **15** would be applied in the various manners described above with respect to the cover of FIG. **4.**

It is believed that the function and operation of the above-described invention will be apparent from the foregoing description. While the invention has been described as being particularly suitable for infants' head rests or pillows, it will be appreciated that the cover can be utilized advantageously with apertured articles other than cushions, for example, coils of wire, rope or hose, and it will be obvious that various changes and modifications may be made therein without departing from the spirit and scope of the invention.

What is claimed is:

1. A head rest which comprises:

a cushion element formed with an aperture therethrough; and

a cover for said cushion element comprising four sheets of formable material, each sheet having a shape generally in accordance with the cross-sectional configuration of said cushion element in a principal plane therethrough including a peripheral edge shaped in accordance with the peripheral configuration of said cushion element and an interior edge defining an aperture shaped in accordance with the configuration of the aperture through said cushion element;

first and second of said sheets being joined at their peripheral edges to define a first enclosure for said cushion element;

third and fourth of said sheets being joined at their peripheral edges to define a second enclosure for said cushion element and said first enclosure;

said first and second enclosures being joined at the interior edge of said second and third sheet whereby said cushion element is completely enclosed with the aperture therethrough exposed.

2. A head rest as defined in claim **1** wherein said first enclosure is larger than said second enclosure.

3. A head rest as defined in claim **1** wherein said second enclosure is larger than said first enclosure.

4. A head rest as defined in claim **1** wherein said first enclosure and said second enclosure are of substantially the same size.

5. A head rest as defined in claim **1** wherein said cushion element is a toroid and each of said sheets is generally annular.

6. A head rest as defined in claim **1** wherein said cushion element is formed with an elliptical aperture.

7. A protective cover for an article formed with an aperture therethrough which comprises:

four sheets of formable material, each sheet having a shape generally in accordance with the cross-sectional configuration of the article in a principal plane therethrough including a peripheral edge shaped in accordance with the peripheral configuration of the article and an interior edge defining an aperture shaped in accordance with the configuration of the aperture through the article;

first and second of said sheets being joined at their peripheral edges to define a first enclosure for the article;

third and fourth of said sheets being joined at their peripheral edges to define a second enclosure for the article and said first enclosure;

said first and second enclosures being joined at the interior edges of said second and third sheets, whereby the article may be completely enclosed with the aperture therethrough exposed.

8. A cover as defined in claim **7** wherein said first enclosure is larger than said second enclosure.

9. A cover as defined in claim **7** wherein said second enclosure is larger than said first enclosure.

10. A cover as defined in claim **7** wherein said first enclosure and said second enclosure are of substantially the same size.

11. A cover as defined in claim **7** wherein said sheets are generally annular forming two serially joined generally toroidal enclosures.

* * * * *