US 20070161439A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2007/0161439 A1**

Huang et al. (43) **Pub. Date: Jul. 12, 2007**

(54) **SOFTBALL**

(75) Inventors: **Yao-Jen Huang**, Kaohsiung City (TW); **John F. Furlong**, Sellersville, PA (US)

Correspondence Address:
LEONG C LEI
PMB # 1008
1867 YGNACIO VALLEY ROAD
WALNUT CREEK, CA 94598 (US)

(73) Assignee: **HUANG, Yao-Jen**

(21) Appl. No.: **11/327,468**

(22) Filed: **Jan. 9, 2006**

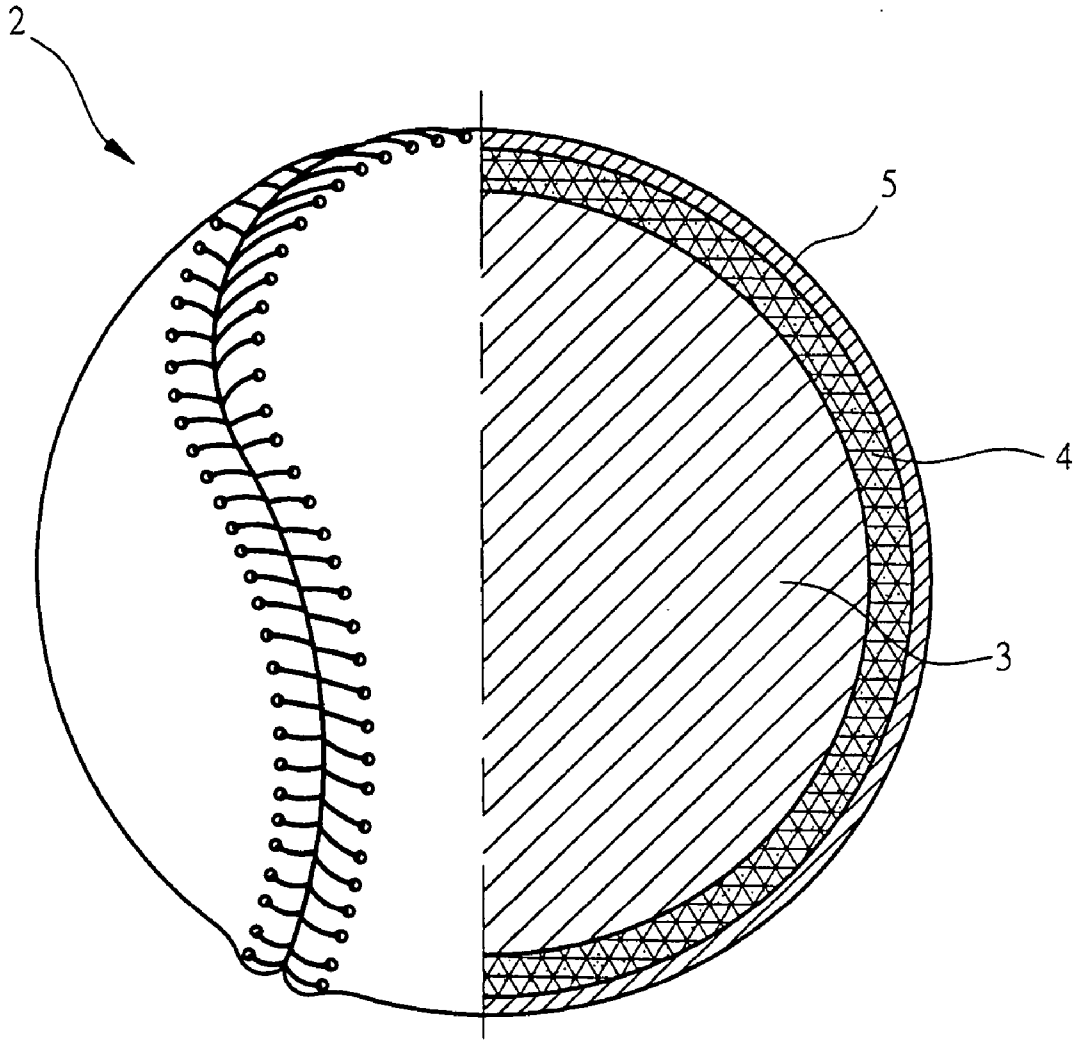
Publication Classification

(51) **Int. Cl.**
A63B 39/08 (2006.01)
A63B 37/00 (2006.01)

(52) **U.S. Cl.** **473/598**; 473/600

(57) **ABSTRACT**

A softball which includes a spherical core, a vapor block made of yarns which imbeds the spherical core and then is immersed into an adhesive agent to fill up clearances between the yams, and a cover made of two sheets of flexible material stitched together to enclose the vapor block, whereby even if the softball is stored in a humid environment or comes into contact with water when playing, no water or moisture can pass through the separation layer to the spherical core thereby extending the service life of the softball.



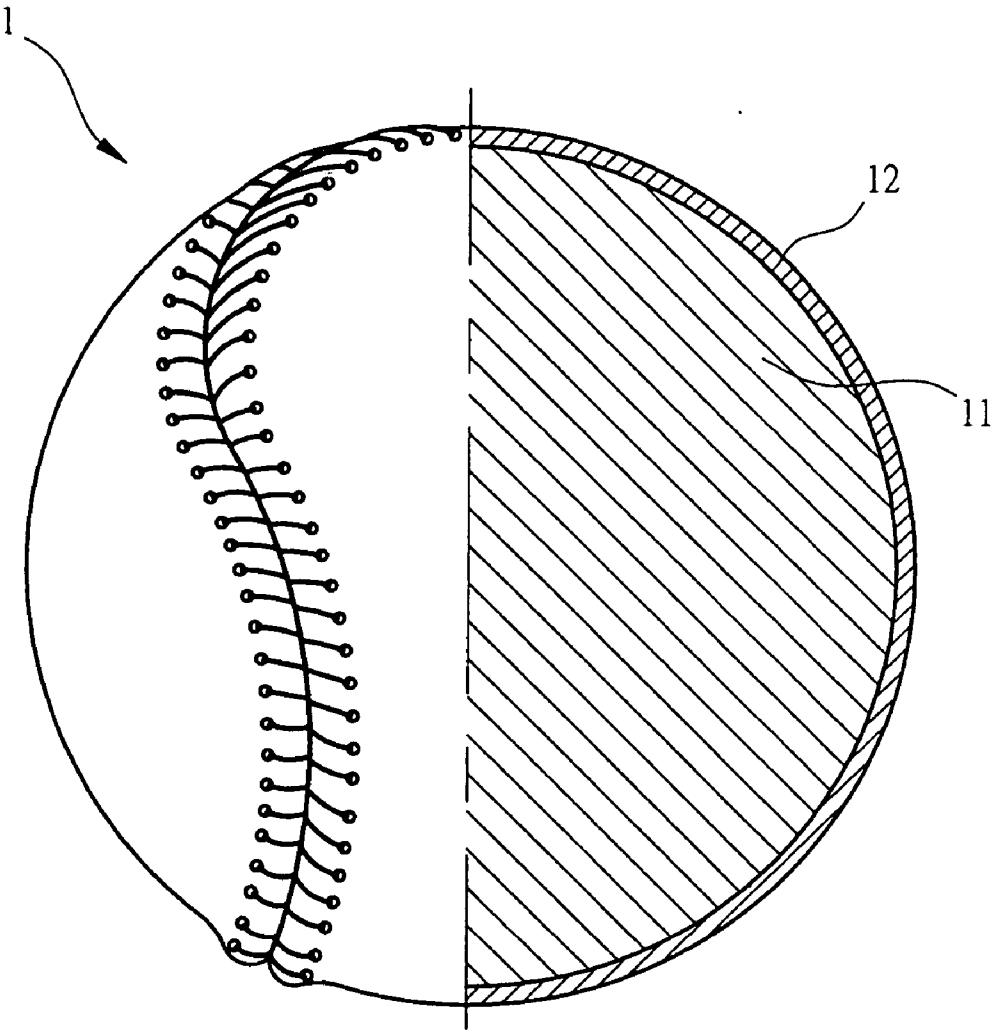


FIG. 1
PRIOR ART

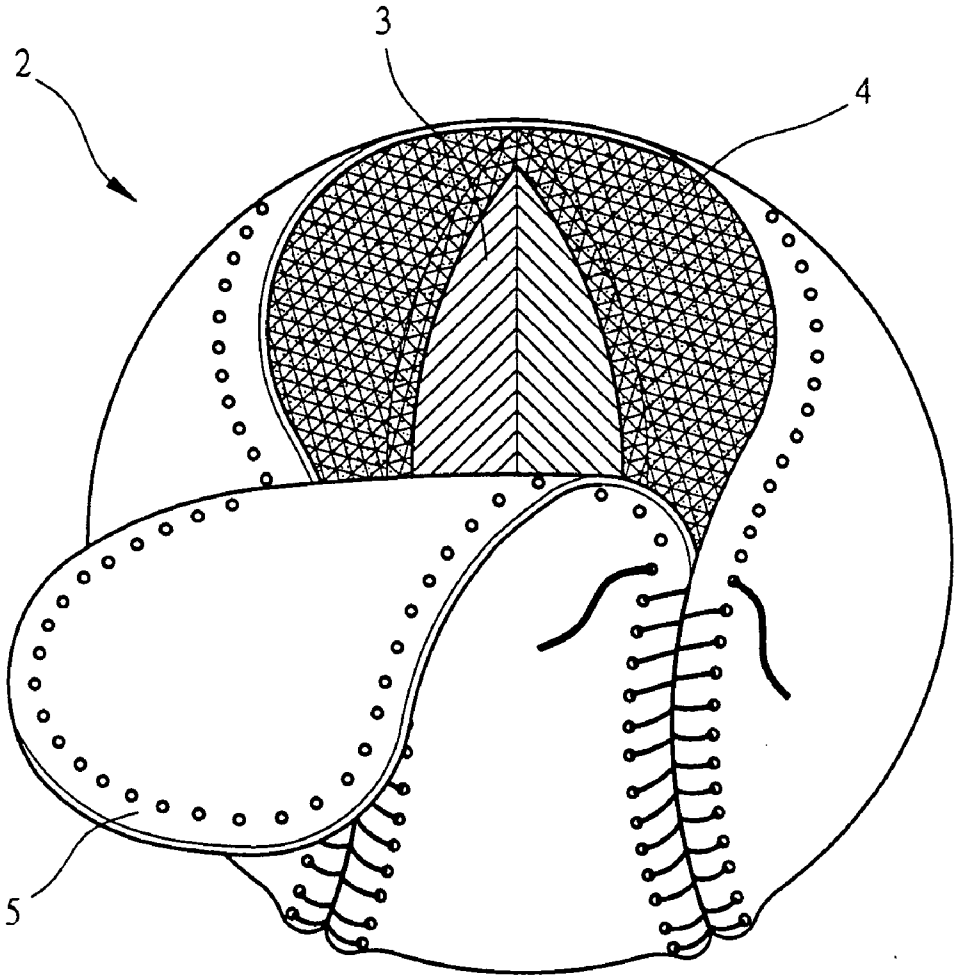


FIG. 2

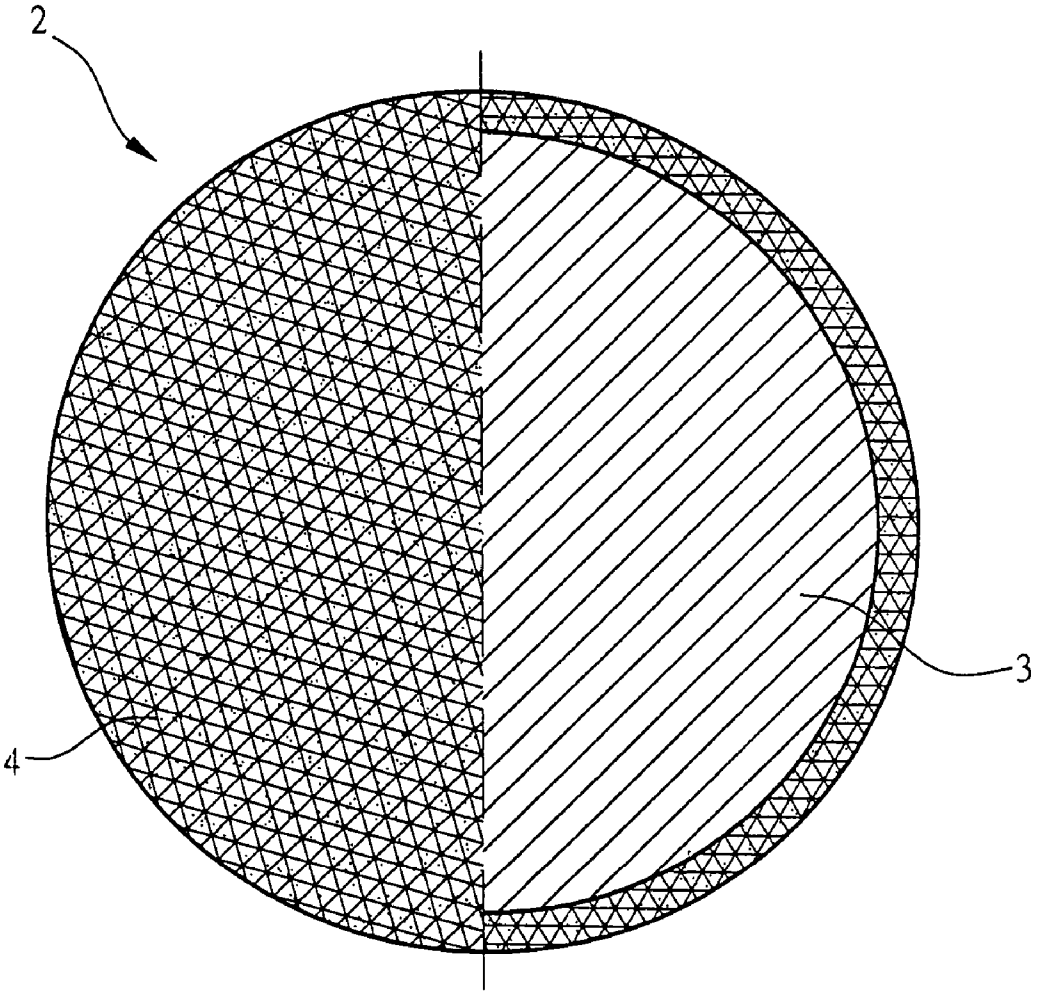


FIG. 3

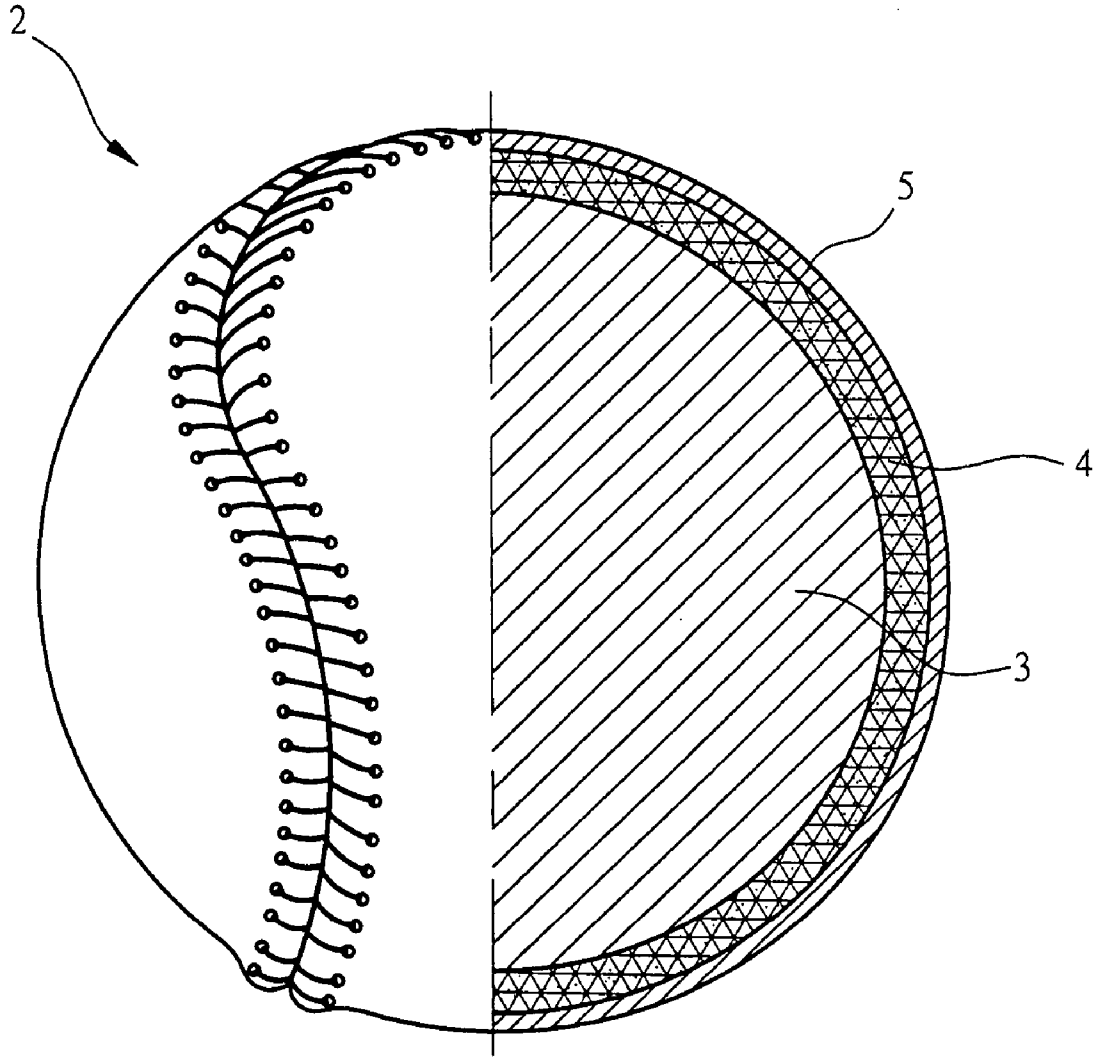


FIG. 4

SOFTBALL

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention is related to an improvement in the structure of a softball, and in particular to one which the core can be prevented from becoming damp.

[0003] 2. Description of the Prior Art

[0004] As shown in FIG. **1**, the conventional softball **1** includes a spherical core **11** and a cover **12**. The spherical core **11** is generally made of cork or foamed polyurethane, while the cover **12** is made of two sheets of flexible cover. The two sheets of flexible cover are stitched together to enclose the spherical core **11**. Softballs **2** must comply with different standards such as ASA or USSSA, etc. for use on different kinds of softball fields. Aside from the volume, the compression of a softball should not be lower than 375 lbs, 400 lbs or 500 lbs. Hence, the manufacture must produce softballs complying with the standards in order to sell the softballs on the market. However, if the softball is being used on rainy days or where the environment is humid, water or moisture will pass through the cover **12** into the spherical core **11** thereby making the core damp. As the core **11** is made of material which can absorb water, the core **11** will absorb a large amount of water thereby increasing the weight of the softball and therefore lowering the compression value and coefficient of restitution. Accordingly, the softball **1** will become one which does not comply with the standards, and so the softball has to be discarded when it comes into contact with water.

[0005] Moreover, even if the softball **1** is stored in a humid environment, the moisture can still be able to pass through the cover **12** into the spherical core **11** thereby dampening spherical core **11** and therefore lowering the compression value and coefficient of restitution.

[0006] Therefore, it is an object of the present invention to provide an improved softball which can obviate and mitigate the above-mentioned drawbacks.

SUMMARY OF THE INVENTION

[0007] This invention is related to an improvement in the structure of a softball.

[0008] It is the primary object of the present invention to provide a softball which uses a vapor block to prevent water or moisture from entering into the core thereby extending the service life of the softball.

[0009] It is another object of the present invention to provide a softball which will produce a crack sound when hit by a bat.

[0010] According to the present invention, there is provided a softball which includes a spherical core, a vapor block made of yams and wound under high tension so as to imbed and to ensure the wound layer will not slip over the core during game use. The spherical core is then immersed into an adhesive agent to fill up clearances between the yarns, and a cover made of two sheets of flexible material stitched together to enclose the vapor block, whereby even if the softball is stored in a humid environment or comes into contact with water when playing, no water or moisture can pass through the vapor block to the spherical core.

[0011] The foregoing objects and summary provide only a brief introduction to the present invention. To fully appreciate these and other objects of the present invention as well as the invention itself, all of which will become apparent to those skilled in the art, the following detailed description of the invention and the claims should be read in conjunction with the accompanying drawings. Throughout the specification and drawings identical reference numerals refer to identical or similar parts.

[0012] Many other advantages and features of the present invention will become manifest to those versed in the art upon making reference to the detailed description and the accompanying sheets of drawings in which a preferred structural embodiment incorporating the principles of the present invention is shown by way of illustrative example.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. **1** is a sectional perspective view of a conventional softball;

[0014] FIG. **2** is a sectional perspective view of a softball according to the present invention;

[0015] FIG. **3** is a sectional view illustrating the relationship between the vapor block and the core; and

[0016] FIG. **4** is a sectional view of the softball according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0017] The following descriptions are of exemplary embodiments only, and are not intended to limit the scope, applicability or configuration of the invention in any way. Rather, the following description provides a convenient illustration for implementing exemplary embodiments of the invention. Various changes to the described embodiments may be made in the function and arrangement of the elements described without departing from the scope of the invention as set forth in the appended claims.

[0018] Referring to FIGS. **2**, **3** and **4**, the softball **2** according to the present invention comprises a spherical core **3**, a vapor block **4** and a cover **5**.

[0019] The spherical core **3** is made of polyurethane for providing better compression ability so as to comply with the requirements for a standard softball.

[0020] The separation layer **4** is made of yarns wound under high tension around the surface as to imbed the spherical core **3**. The yarns are made of polyester to further increase the waterproof ability thereof Then, the core with the vapor block **4** is immersed into an adhesive agent for filling up the clearances between the yarns and enabling the vapor block **4** to be firmly adhered to the core **3** and the cover **5** thereby providing an unitary member. When the clearance between the yarn is filled with an adhesive agent, the vapor block **4** will become waterproof thereby preventing water from passing there through.

[0021] The cover **5** is made of two pieces of flexible cover or foamed plastic which are stitched together to enclose the vapor block **4**.

[0022] In manufacturing the softball according to the present invention, polyurethane is first foamed into a spherical core **3** so as to provide the spherical core with the required compression. Then, the spherical core **3** is wound with polyester yarn to form a vapor block **4**. Thereafter, the spherical core **3** with the vapor block **4** is immersed into an adhesive agent for filling up the clearances between the yams and enabling the vapor block **4** to be firmly adhered to the core **3**. Finally, two pieces of flexible cover or foamed plastic are stitched together to form the cover **5** for enclosing the vapor block **4** thereby providing a softball according to the present invention.

[0023] The present invention is characterized by the vapor block **4** between the cover **5** and the spherical core **3**. As the spherical core **3** is imbedded within the vapor block **4** made of polyester yarn and then is immersed into an adhesive agent for filling up the clearances between the yarn, the softball becomes waterproof, so that even if the softball is stored in a humid environment or comes into contact with water when playing, no water or moisture can pass through the vapor block **4** to the spherical core **3** thereby extending the service life of the softball. Furthermore, since the vapor block **4** is constituted by yarn and adhesive agent, the softball **2** will produce a crack sound when hit by a bat thus increasing the function of the softball.

[0024] It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods differing from the type described above.

[0025] While certain novel features of this invention have been shown and described and are pointed out in the annexed claim, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.

I claim:

1. A softball comprising:

a spherical core;

a vapor block made of yarns and imbedded within said spherical core and then immersed into an adhesive agent to fill up clearances between said yarns; and

a cover made of two sheets of flexible material stitched together to enclose said vapor block;

whereby no water or moisture can pass through said vapor block into said spherical core thereby extending service life of said softball

2. The softball as claimed in claim 1, wherein said spherical core is made of polyurethane.

3. The softball as claimed in claim 1, wherein said yarns are made of polyester.

4. The softball as claimed in claim 1, wherein said vapor block is closely adhered to said spherical core.

5. The softball as claimed in claim 1, wherein said vapor block is closely adhered to said cover.

* * * * *