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(54) **COVER PANEL STRUCTURE OF A BALL SURFACE**

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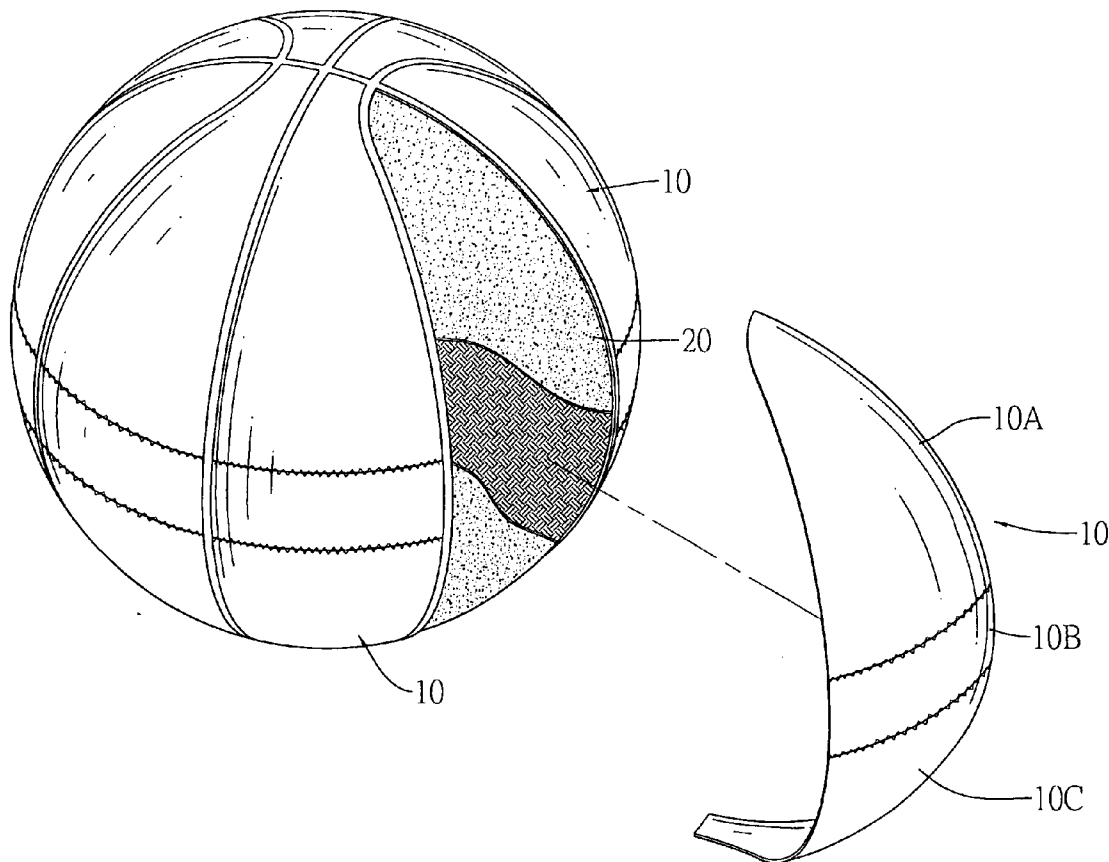
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(57) **ABSTRACT**

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A cover panel structure for making a ball surface includes multiple secondary pieces of different shapes and dimensions to be combined together to form an oval shape.

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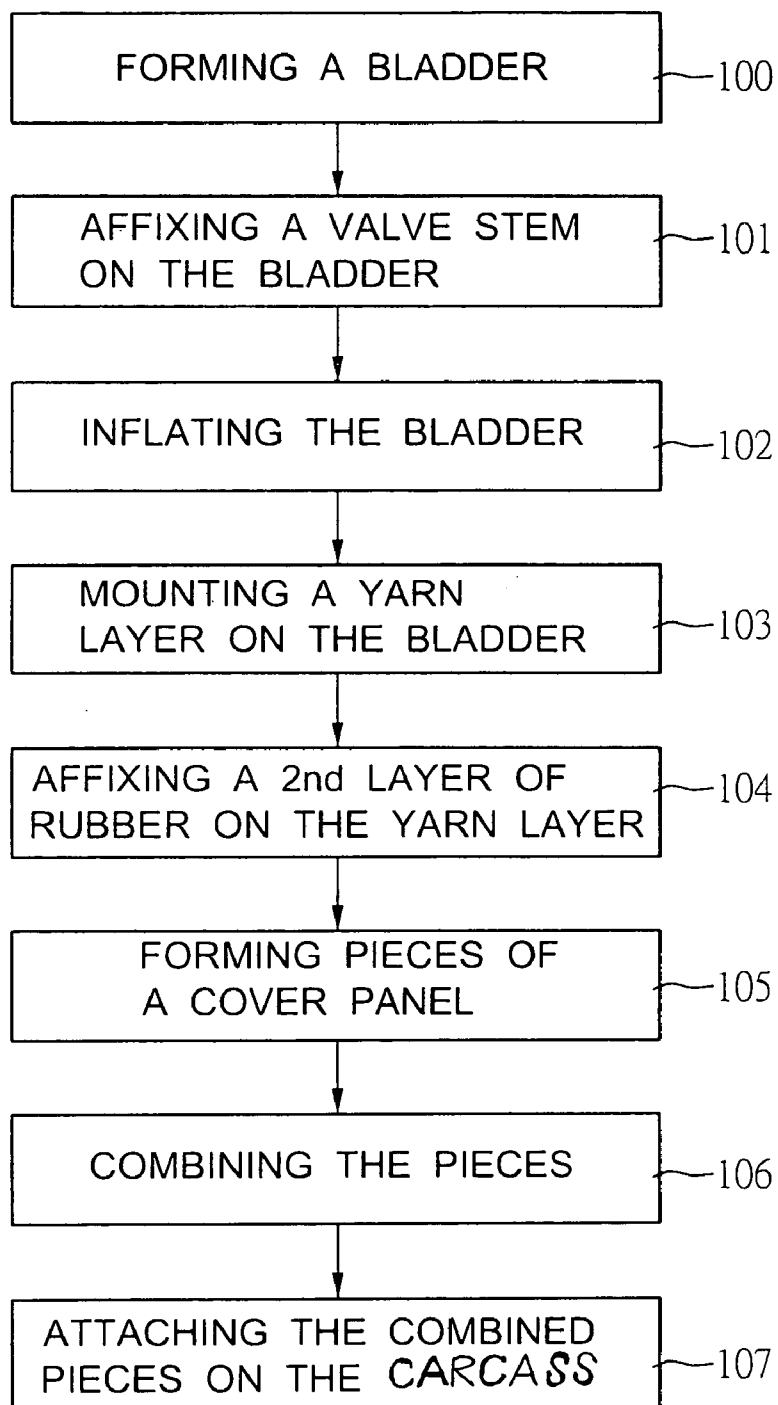


FIG.1

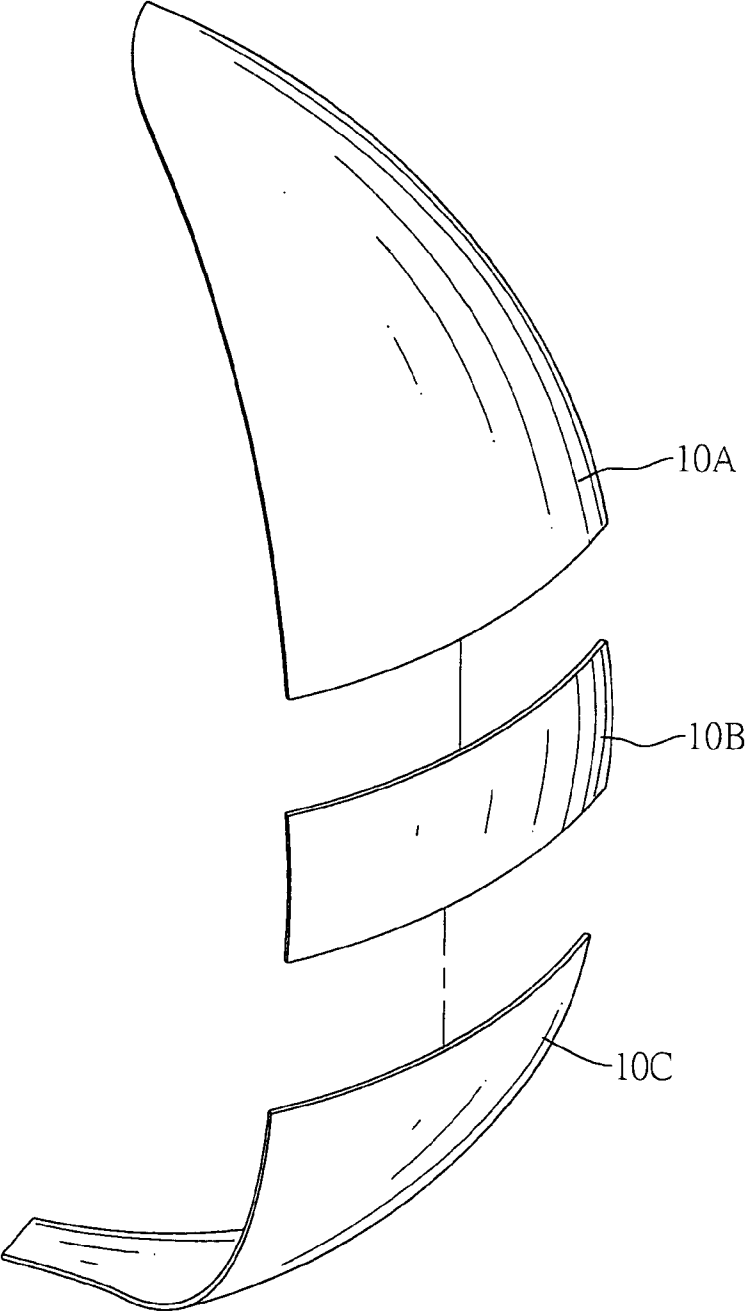


FIG.2

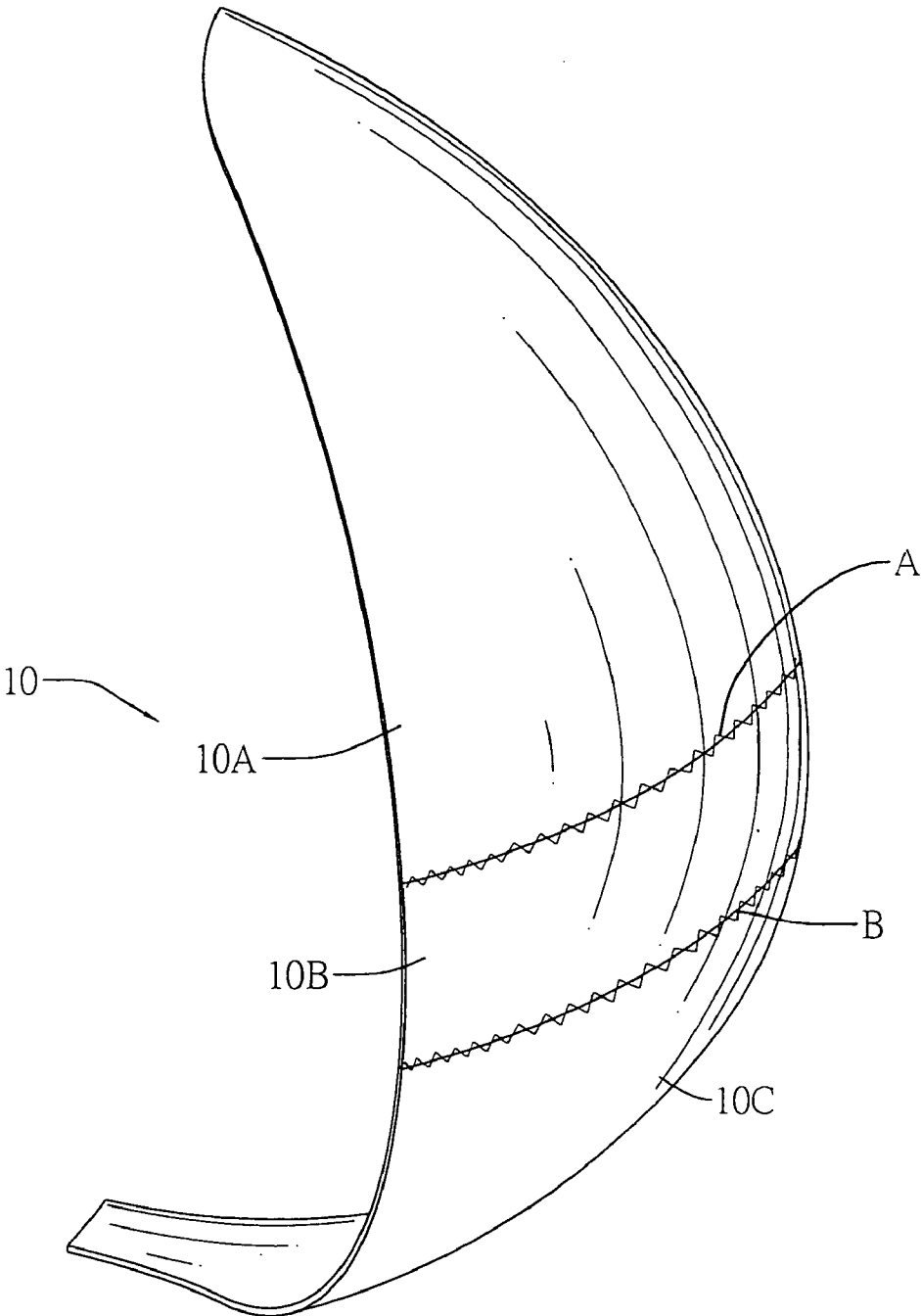


FIG.3

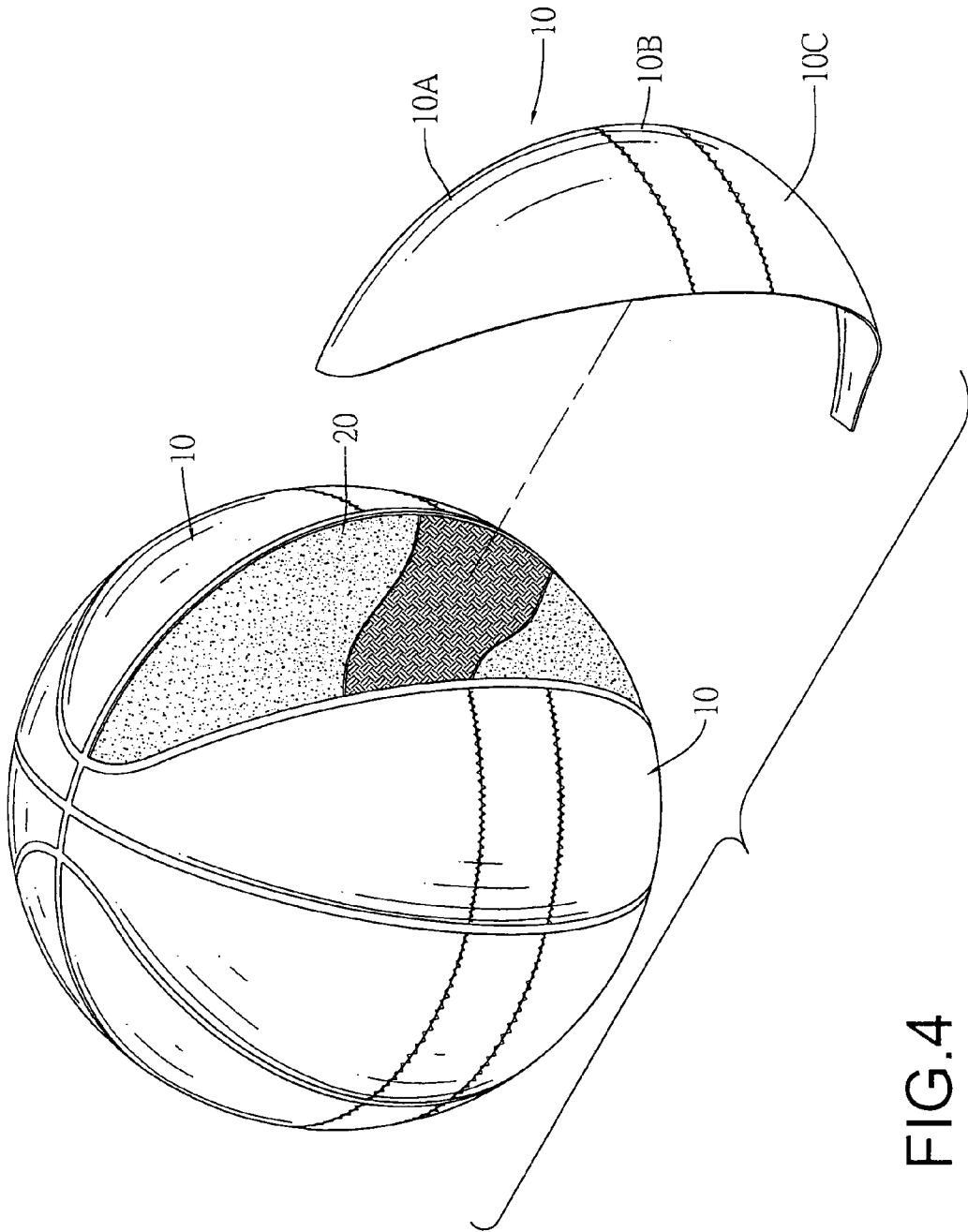


FIG.4

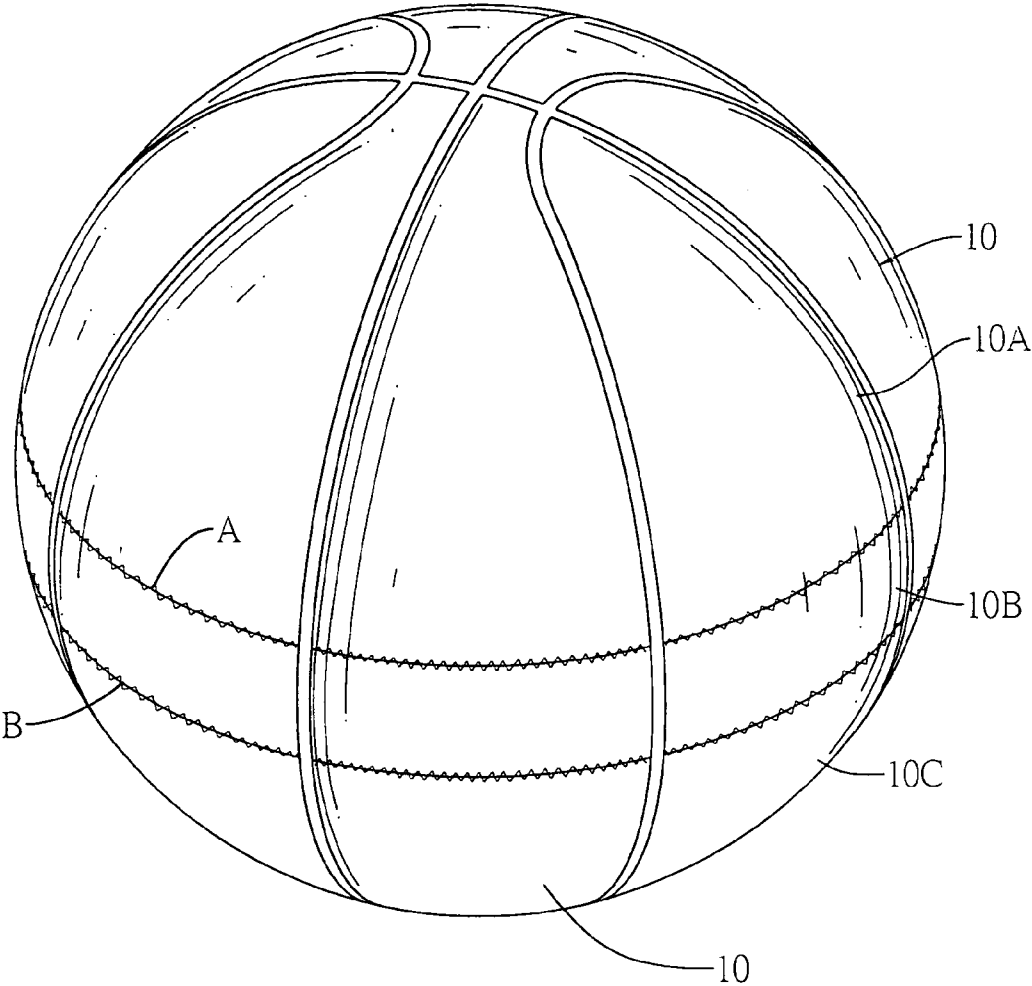


FIG.5

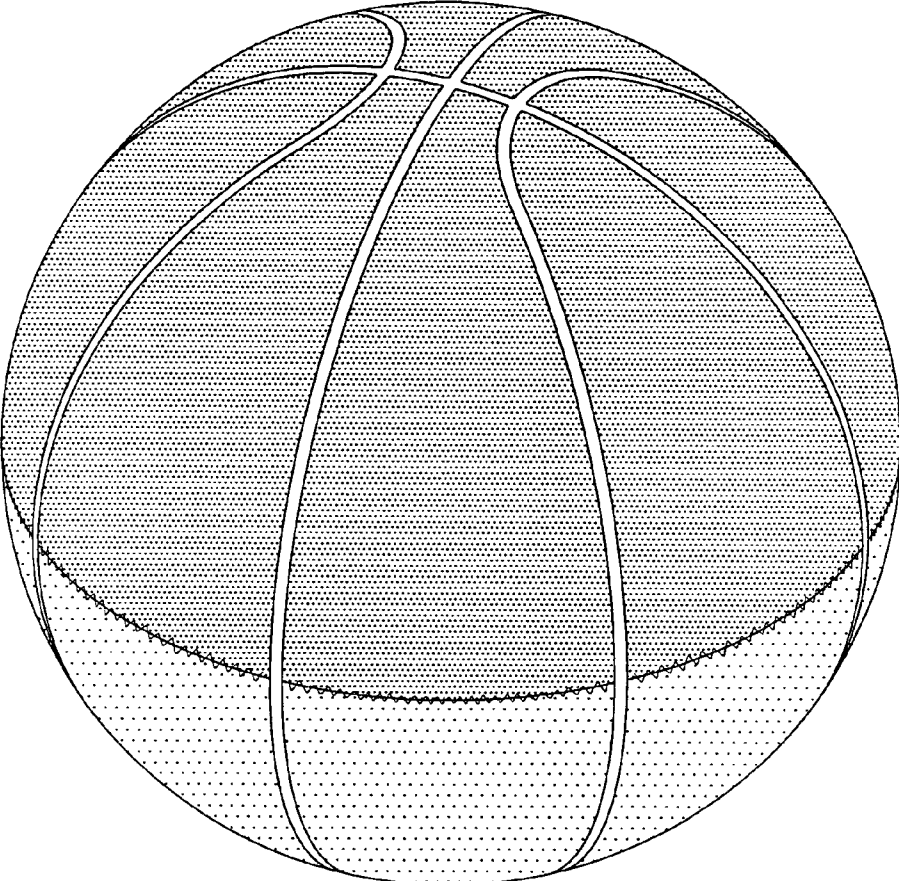


FIG.5A

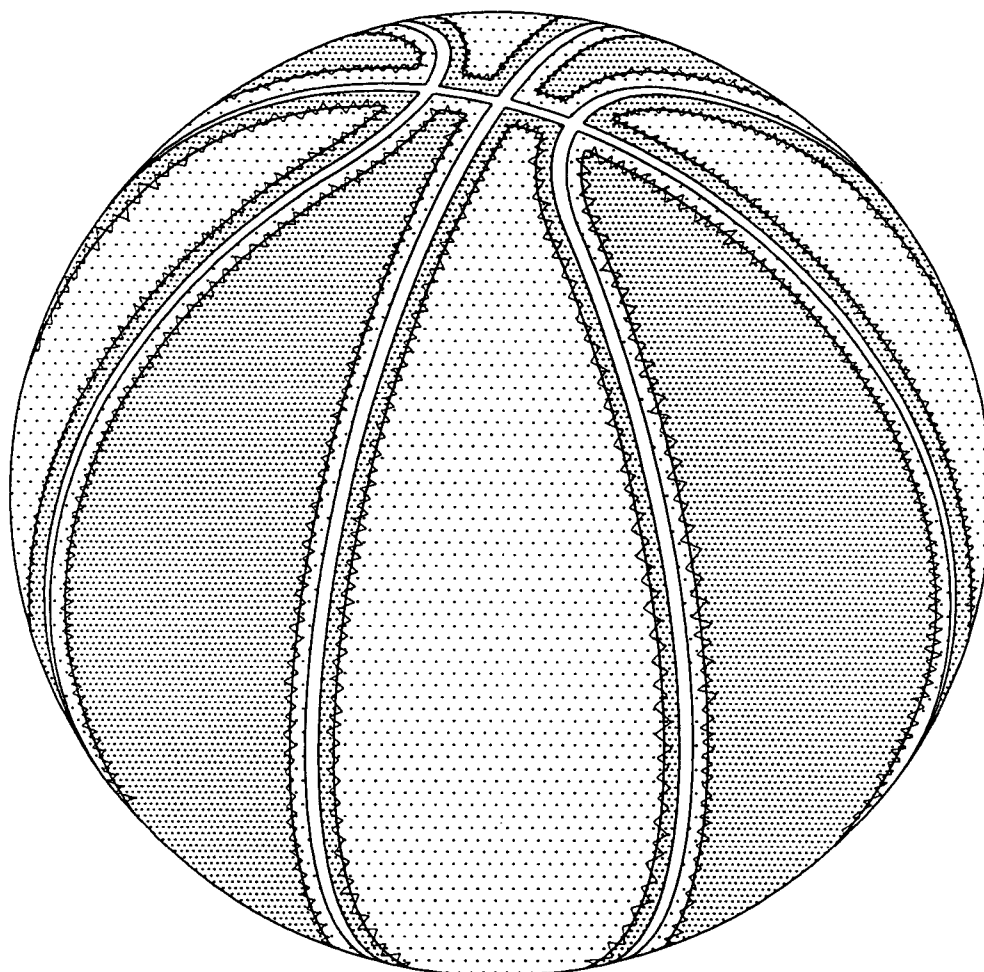


FIG.5B



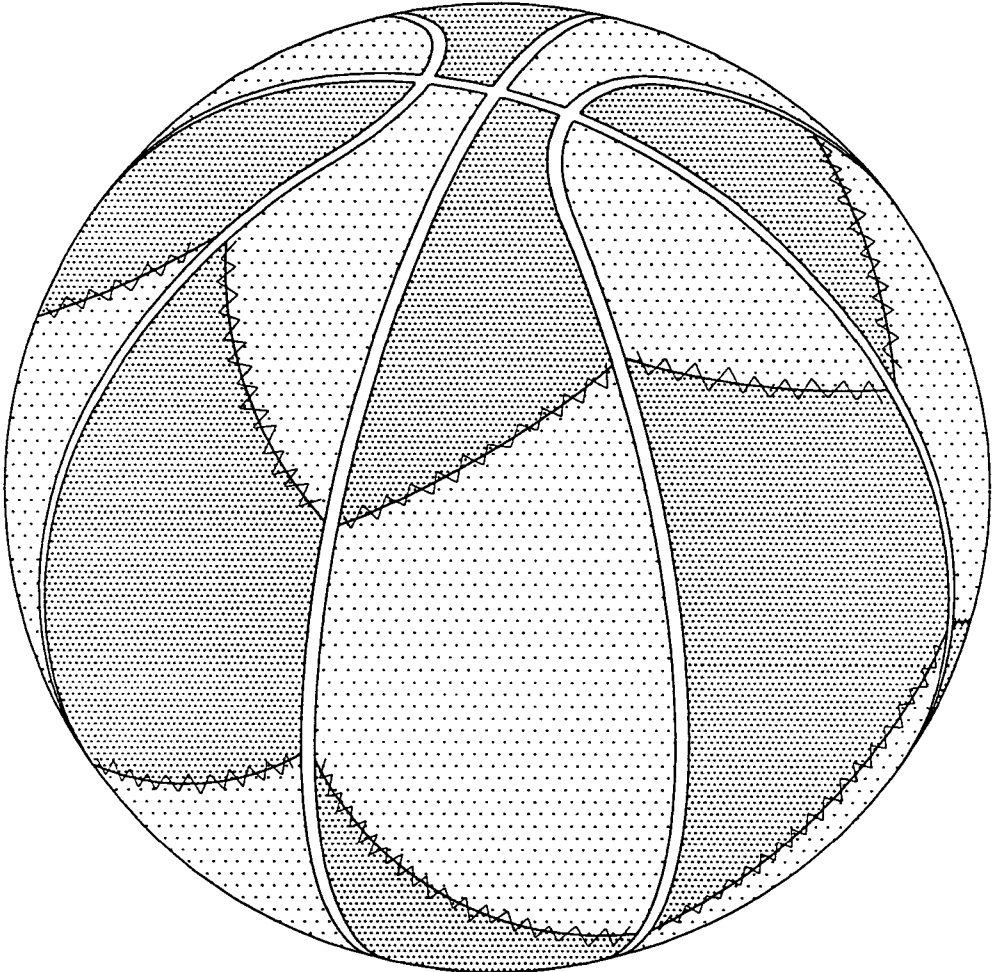


FIG.5C

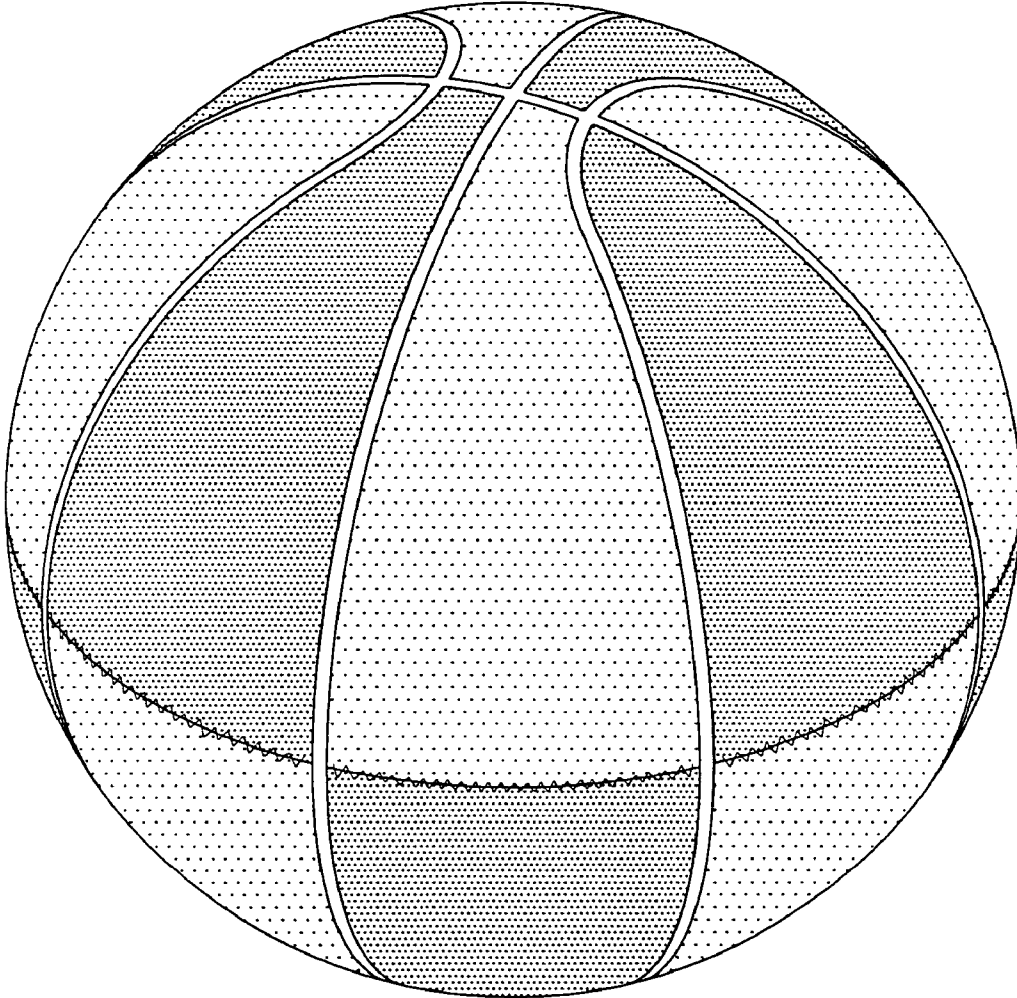


FIG.5D

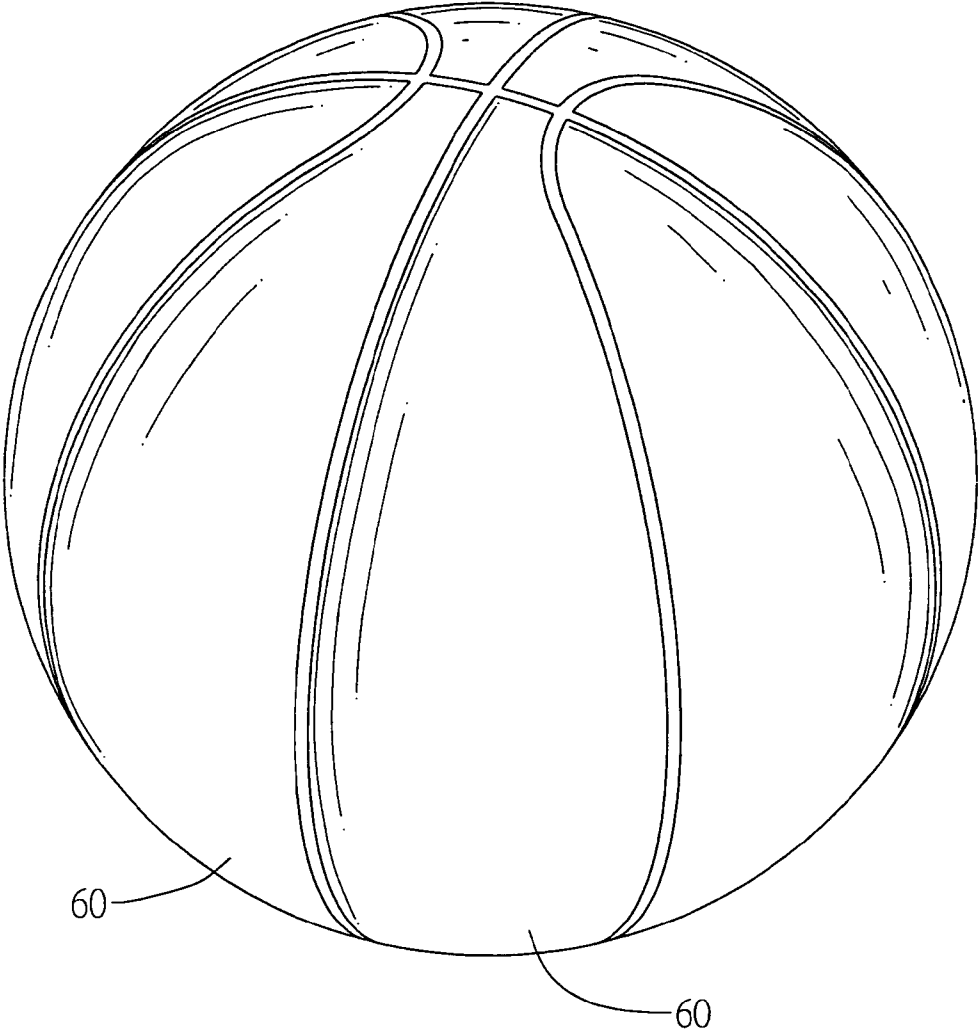


FIG.6  
PRIOR ART

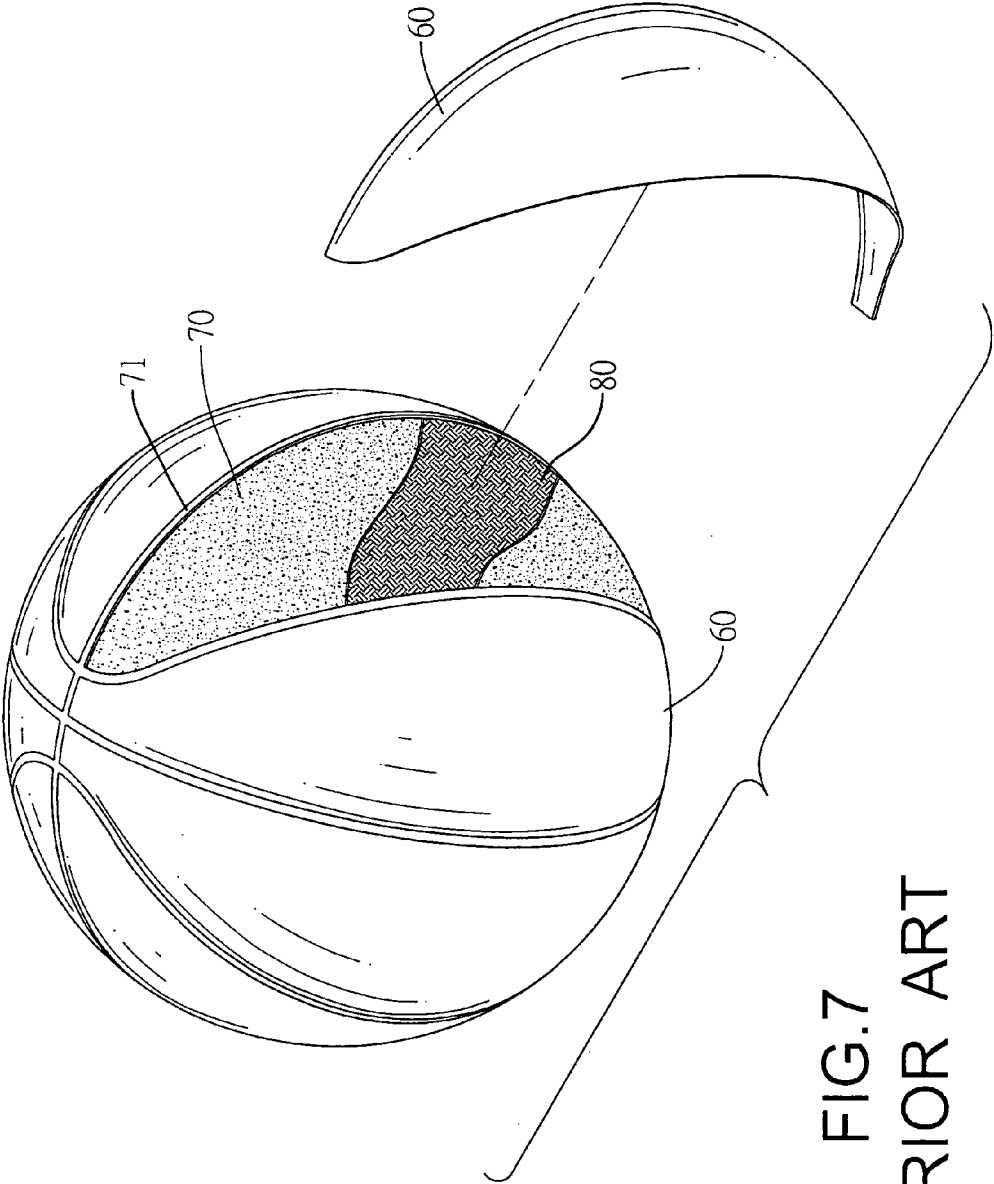


FIG.7  
PRIOR ART

## COVER PANEL STRUCTURE OF A BALL SURFACE

### BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a ball surface structure, and more particularly to a cover panel structure of a ball surface to reduce waste of material during manufacture of the ball.

[0003] 2. Description of Related Art

[0004] A conventional ball, as shown in FIGS. 6 and 7, generally comprises a spherical bladder having a carcass (80) which is a hollow rubber ball (not shown) affixed thereto. The carcass has a yarn layer (70) mounted thereon and a plurality of projection ribs (71) integrally protruded and extended on the carcass to define eight leaf shaped recesses surrounded by the ribs (71). Then eight cover panels (60) are securely and respectively attached to a bottom face defining the panel recess to complete the production of the ball.

[0005] Before attaching the cover panels (60) to the carcass, the user has to cut the cover panel (60) from a material plate. Because each cover panel (60) has a length substantially the same as that of the diameter of the ball, a large portion of the material for making the cover panel (60) will be wasted due to the specific shape of the cover panel (60). Taking the cost and environment into consideration, the conventional method for making a ball is neither economic nor environmental friendly.

[0006] To overcome the shortcomings, the present invention tends to provide an improved ball surface structure to mitigate the aforementioned problems.

### SUMMARY OF THE INVENTION

[0007] The primary objective of the present invention is to provide an improved ball surface structure to reduce waste of material for making the cover panels of the ball.

[0008] In one aspect of the present invention, the cover panel is oval shaped and composed of pieces of different dimensions and shapes.

[0009] Other objects, advantages and novel features of the invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. 1 is schematic diagram showing the process for making a ball of the present invention;

[0011] FIG. 2 is an exploded perspective view showing the composition of the cover panel of the present invention;

[0012] FIG. 3 is a schematic perspective view showing combination of the pieces of the cover panel;

[0013] FIG. 4 is a perspective view of the ball in a partially exploded form;

[0014] FIG. 5 is a perspective view of the ball of the present invention;

[0015] FIGS. 5A to 5D are perspective views showing different shapes of the secondary pieces for making the cover panel;

[0016] FIG. 6 is a perspective view showing a conventional ball; and

[0017] FIG. 7 is a perspective view of the conventional ball in a partially exploded form.

### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0018] With reference to FIG. 1, it is noted that the process for making a ball in accordance with the present invention includes the steps of forming a bladder (100), affixing a valve stem on a surface of the bladder (101), inflating the bladder (102), mounting a yarn layer onto the bladder (103), affixing a second layer of rubber on the yarn layer (104) to form a carcass, forming pieces of a cover panel (105), combining the pieces of the cover panel (106) and attaching the combined cover panels onto the carcass (107).

[0019] After the cover panels are securely attached to the carcass, the ball is completed.

[0020] With reference to FIGS. 2, 3, and 4, it is noted that in order to accomplish the goal of reducing material waste, each of cover panels (10) forming a partial outer periphery of a ball is composed of secondary pieces of different shapes and dimensions, i.e. a top piece (10A), a mediate piece (10B) and a bottom piece (10C).

[0021] From this preferred embodiment of the present invention, each cover panel (10) is composed of the top piece (10A) of a substantially triangular shape, the mediate piece (10B) of rectangular shape and the bottom piece (10C) of a substantially triangular shape. The shape of the top piece (10A), the mediate piece (10B) or the bottom piece (10C) is not limited to the shape as described above and the quantity of the pieces for making a cover panel is also not limited to only three pieces. That is, the cover panel may be composed of two or more than four pieces of different shapes and of different dimensions.

[0022] Taking the structure as shown in FIG. 2 for example, after the top piece (10A), the mediate piece (10B) and the bottom piece (10C) are combined by e.g. sewing, stitched lines (A,B) are formed on the cover panel (10), as shown in FIG. 5. However, when quantity of the pieces for making a cover panel becomes more/less than three, the stitch lines are more/less than two. That is, taking FIGS. 5A to 5D for example, only one stitched line is formed on the ball surface in FIGS. 5A and 5D, while sixteen stitched lines are shown in FIGS. 5B and 5C.

[0023] After the top piece (10A), the mediate piece (10B) and the bottom piece (10C) are combined, the cover panel (10) is securely attached to an outer periphery of a yarn layer (20) on top of the bladder. Therefore, after all the cover panels (10) are attached to the yarn layer (20), the stitched lines (A,B) are substantially connected to one another.

[0024] Due to the formation of the cover panel, the material for making the cover panel is used up such that material waste is reduced to the minimum and thus cost for making the ball is reduced.

[0025] It is to be understood, however, that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description,

together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A cover panel structure for making a ball surface, the cover panel comprising:

multiple secondary pieces of different shapes and dimensions to be combined together to form an oval shape.

2. The cover panel as claimed in claim 1, wherein at least one stitched line is formed between two adjacent secondary pieces after the secondary pieces are combined.

3. The cover panel as claimed in claim 2, wherein two stitched lines are formed on the combined secondary pieces.

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