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(54) BASKETBALL HAVING GRIPPABLE APERTURES FOR ONE-HANDED DUNKING

(76) Inventors: Kenneth L. Junior, Fresno, CA (US); Marcus T.L. Jamael Junior, Fresno, CA (US)

> Correspondence Address: RICHARD A. RYAN ATTORNEY AT LAW 8497 N. MILLBROOK AVENUE **SUITE 101** FRESNO, CA 93720 (US)

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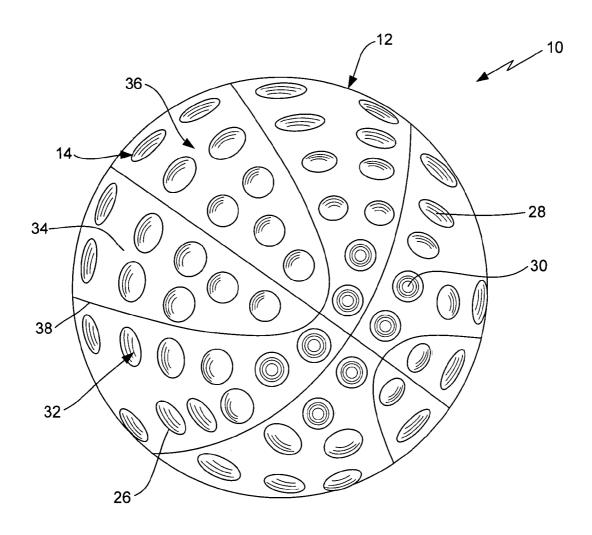
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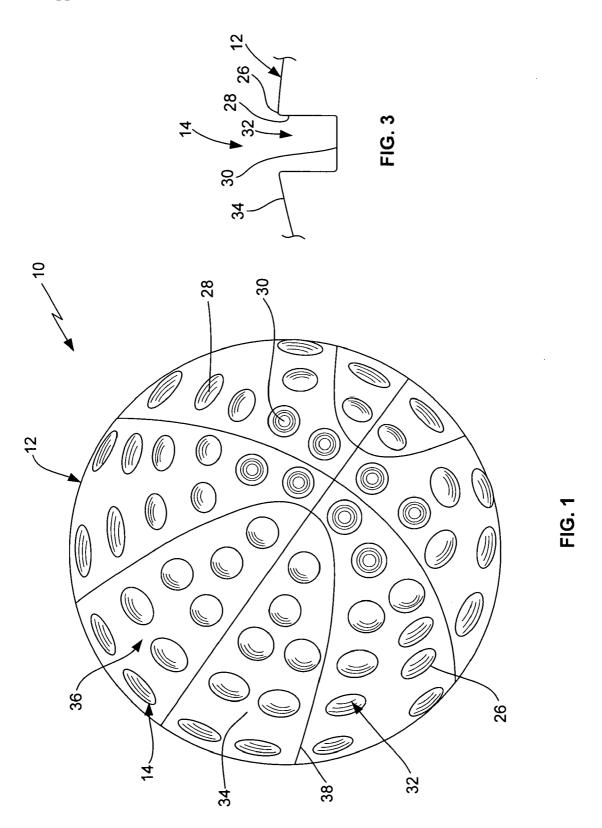
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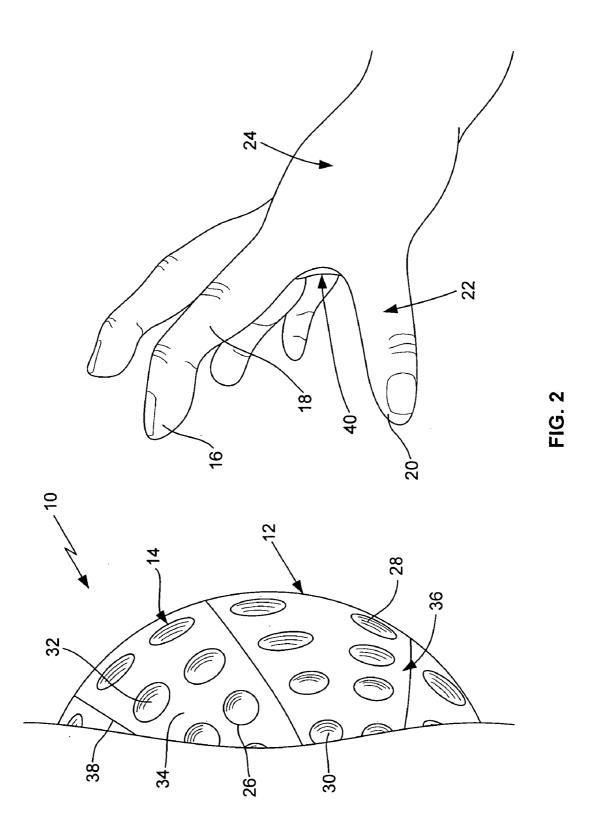
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(57)**ABSTRACT**

A basketball having a generally spherical exterior surface with a plurality of spaced apart grippable apertures disposed entirely around the exterior surface. The apertures define a convex surface therebetween. Each of the apertures are sized and configured to releaseably receive a portion of a fingertip or thumb tip of one of a hand. The depth and width of the apertures are selected to provide a firm grip, yet allow quick and easy release of the basketball as required for the successful execution of a one-handed dunk. The size and shape of the convex surface is selected to facilitate normal surface contact, thereby allowing the basketball to be dribbled, passed and shot as a standard basketball. Spacing of the apertures and convex surfaces allow players with varying finger spans and grip strength to securely guide the basketball with one hand through the rim of a basket while executing a one-handed dunk.







BASKETBALL HAVING GRIPPABLE APERTURES FOR ONE-HANDED DUNKING

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 60/596,005 filed on Aug. 23, 2005.

BACKGROUND OF THE INVENTION

[0002] A. Field of the Invention

[0003] The field of the present invention relates generally to sports balls used to play games of skill where gripping and releasing of the ball are primary elements of play. More specifically, this invention relates to balls that have a surface which is configured to be easily handled by the players of the game. Even more specifically, this invention relates to basketballs that are configured to enhance the ease with which a player can dunk the ball.

[0004] B. Background

[0005] Basketball began from the desire to adapt the indoor conditions of a walled-in gymnasium to meet the physical education needs of students who could not exercise or play sports out of doors during cold winters. Legend has it that basketball was developed in 1891 by Dr. James Naismith, a physician and minister on the faculty of a college in Springfield, Mass. Seeking a vigorous indoor game to keep young men fit during the long New England winters, Dr. Naismith nailed a pair of peach baskets on to opposing walls of the school's gymnasium and devised a game in which players competed to make the most number of baskets with a soccer ball. A year later, the first official basketball game was played in a YMCA gymnasium with two nine member teams on a court that was half the size of a modern NBA court. The current game of basketball derives many of its principles from Dr. Naismith's initial concept and is still played on a flat surfaced rectangular court with baskets mounted at opposing ends. From its beginnings as a game played with a leather soccer ball and a pair of peach baskets, basketball has evolved into a modern sport where the players' skill and style and the equipment and facilities are being continually refined by the players and others, creating a sport that enjoys an ever growing degree of popularity with fans and players throughout the world.

[0006] The fundamental piece of equipment necessary to play the game of basketball is the ball. The rugged competitive nature of the game, with the repetitive bouncing and rough physical handling of the ball that is repeatedly thrown and caught, created the need for a ball that was more durable than a soccer ball. The original structure of the ball specifically configured to play basketball comprised a plurality of leather panels that tapered to form narrow points at the polar ends of the ball. Because the pinnacle of the points made the ball too weak structurally to place an air valve at the top or bottom of the ball, the air valve had to be located midpoint on the side of the ball. Unfortunately, this resulted in a ball that was unbalanced and easily damaged. Prior art shows the evolution of the basketball from its original form to its more contemporary form, as shown in U.S. Pat. No. 1,718,305 to Pierce, where the panels which form the outside skin of the ball are configured in a pattern that run essentially parallel to the equator of the ball to provide a spherical shaped ball that is more balanced and eliminates any weak points where the panels meet. As a result of the changed panel arrangement, the air valve could be situated to avoid causing the ball to be unbalanced.

[0007] Another significant feature of the modern basketball is the size of the ball. The modern regulation basketball comes in specific sizes, for example, the typical circumference of a regulation basketball ranges from between 29 inches (73 cm) to 30 inches (76 cm) and weighs between 20 and 30 ounces, depending on whether the game is played by men or women. Yet another feature of the modern basketball is the readily recognizable exterior embossed grain pattern composed of pebble-like convex projections, each pebble or projection being separated from its neighboring projection by a recessed valley. Typically, the individual pebble projections have a diameter or width of approximately 0.0625 (1/16) to 0.125 (1/8) inches [1.6 mm to 3.2 mm], and project from the surrounding surface of the ball by approximately 0.03125 (1/32) inches [0.8 mm]. According to a leading manufacturer of basketballs, the surface of an average basketball is covered with 122 pebble protrusions per square inch. The purpose of this surface formation is to provide a substantially grippable exterior surface for catching and throwing the ball.

[0008] Modifications to the exterior surface of a basketball to further enhance the grippability of the ball is shown in the prior art. For instance, U.S. Pat. No. 4,991,842 to Finley discloses a sports ball that has an exterior surface consisting of a pattern somewhat similar to, but modified from, the original grain seen in many basketballs, as defined by a raised pebble and recessed valley. The modified pattern disclosed in the Finley patent reverses the grain by raising the valley separating the pebble protrusions and indenting the pebble protrusions, thereby providing an enhanced tactile pattern to provide a more secure gripping surface to enable players to shoot and dribble the ball with greater accuracy. U.S. Pat. No. 5,735,761 to Palmquist discloses a basketball that has an exterior surface covered with a plurality of very shallow concave indentations or dimples that are configured to fit the finger tip of an average player for the purpose of enhancing the grippability of the basketball. The exterior surface dimpling covers the entire surface of the ball to enable the player to place his or her fingertips on the dimples to provide an improved gripping surface that facilitates throwing or catching the ball. Other changes to the basketball have been predicated on the development of materials that are both lightweight and durable and on a better understanding of aerodynamics and sports kineseology to provide basketballs that are more durable while providing greater handling and accuracy for the athlete. Such innovations have lead to the development of basketballs with special features to enable the ball to remain inflated (i.e., Spaldings Never FlatTM ball) or to allow players to quickly change the amount of air pressure within the air bladder of the ball as a means to adjust the firmness or grippability of the ball (i.e., Spalding's InfusionTM ball).

[0009] As with any popular sport, amateur players often endeavor to mimic the athletic skills and feats of professional players. For the game of basketball, the feat that many amateur players undertake to emulate is a move known as the dunk or slam dunk, particularly the one-handed slam dunk. According to most basketball devotees, this one move

can change the course of a game. Often, a well-executed slam dunk will excite the team and the crowd, creating a winning psychological and emotional momentum for the team and player who executes this move. More specifically, players who can consistently make a one-handed dunk are often viewed as the star of the game, if not the sport. As with most sports plays worthy of merit, however, the one-handed slam dunk is not readily achievable for most individuals.

[0010] To properly execute a one-handed slam dunk, a player needs to have a wide finger span and strong grip to hold the ball as he or she jumps vertically to palm the ball through the hoop of the basket. At almost all levels of play, but particularly at the professional level, the height of the basket requires the player to make a substantial vertical jump to deliver the ball to the opening of the basket. To compound the difficulty inherent in executing a one-handed slam dunk, the player must be able to firmly grip the ball as he or she makes the vertical jump in order to successfully palm or push the basketball through the rim of the basket. Because the size of the basketball is significantly greater than the span of the average person's hand and he or she typically lacks sufficient gripping strength to securely grip the ball with one hand, combined with the required jumping distance to reach the basket, the one-handed slam dunk is an exceedingly difficult and, therefore, challenge-inspiring move that most amateur athletes, as well as a number of professionals, are unable to execute.

[0011] Because the one-handed slam dunk only utilizes one hand to grip the ball while vertically jumping, most amateur athletes will significantly benefit from a ball with an exterior surface that is configured to help the player grip the ball as the move is executed. What is needed, therefore, is a basketball that enables the player to securely grip and stabilize the basketball with one hand, no matter the width of the player's finger span as he or she guides the basketball through the rim of the basket to execute a one-handed slam dunk. The preferred basketball should have an exterior surface that is specially configured to facilitate being firmly gripped by one hand as a means to provide stability for the ball as it is being lifted. The preferred basketball should be configured so that the entire exterior surface of the ball is adapted for enhanced grippability by any width of finger span so the player does not have to stop play in order to engage his or her fingers to the corresponding surface for a secure grip. Because the one-handed slam dunk is typically performed during an ongoing basketball game, and not as an isolated move, the preferred basketball should be configured so that the surface for enhanced grippability does not impede the normal performance requirements of the basketball for dribbling, passing and shooting.

SUMMARY OF THE INVENTION

[0012] The basketball having grippable apertures for one-handed dunking of the present invention provides the benefits and solves the problems identified above. That is to say, the present invention discloses a basketball with grippable apertures covering the entire surface of the basketball so that it can be firmly gripped as the player lifts and guides the basketball through the rim of the basket as he or she jumps to execute a one-handed slam dunk. The entire surface of the basketball of the present invention has a series of grippable apertures shaped in width and depth to receive a portion of the player's finger therein. Preferably, the basketball of the

present invention is configured for use by player's having a variety of hand widths and configured such that the player can easily grip the basketball with one hand without interrupting his or her ongoing game play. The preferred basketball is configured such that the grippable apertures do not interfere with the normal use of basketballs for dribbling, passing and shooting. The basketball of the present invention may be adaptable to a variety of different sizes and weights of balls.

[0013] In one general aspect of the present invention, the basketball has an exterior surface with a plurality of grippable apertures disposed in the exterior surface of the basketball. The depth and width of the apertures are sized and configured to receive a portion of the player's fingers therein to allow the player to firmly grip the basketball as he or she guides the basketball through the rim of a basket during the execution of a one-handed slam dunk. In a preferred embodiment of the present invention, the exterior surface of the basketball is substantially covered with a plurality of spaced apart apertures in a generally evenly spaced pattern. The total coverage across the surface of the basketball with apertures allows the player to quickly engage his or her fingertips and/or thumb tip into the apertures without the need to stop the momentum of play in order to align the finger and/or thumb tips with a corresponding aperture. The grippable apertures are separated by a sufficiently sized convex surface so that the basketball has a generally solid surface to ensure its performance as is commonly required during a basketball game for dribbling, passing and shooting. In a more specific aspect of the present invention, the total surface coverage by the grippable apertures is configured to create a ball that can be firmly and securely gripped by players having a range of hand sizes and finger span widths, allowing a one-handed dunk to be performed by many different sized players. In a preferred embodiment of the present invention, the plurality and proximal spacing of grippable apertures that cover each of the panels forming the exterior surface of the basketball is configured to allow any sized finger-span an optimal amount of grippability.

[0014] Accordingly, the primary objective of the present invention is to provide a basketball that provides the advantages discussed above and which overcomes the disadvantages and limitations associated with presently available basketballs for one-handed dunking.

[0015] It is also an important objective of the present invention to provide a basketball having an exterior surface that is configured with a plurality of finger receiving apertures which receive the fingertips and/or thumb tip of the player to allow a firm and secure grip on the basketball so as to enable the player to guide it through the rim of a basket as he or she jumps to execute a one-handed slam dunk.

[0016] It is also an important objective of the present invention to provide a basketball with a plurality of grippable apertures that are configured in spaced apart relation so as to enable a wide range of players with different hand sizes and finger spans to execute a one-handed slam dunk.

[0017] It is also an important objective of the present invention to provide a basketball with a plurality of grippable apertures that are configured so as to allow the player to grip the basketball by engaging the apertures with the fingers and/or thumb of one hand without interrupting his or her normal game play.

[0018] It is also an important objective of the present invention to provide a basketball having a plurality of grippable apertures for ease of one-handed dunking wherein the apertures and intervening convex surface are configured in such a pattern so as not to impede the ball's ability to be dribbled, passed, caught and shot during game play.

[0019] The above and other objectives of the present invention will become readily apparent and are explained in greater detail by reference to the attached figures and the description of the preferred embodiment which follows. As set forth herein, the present invention resides in the novel features of form, construction, mode of operation and/or combination of processes presently described and understood by the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] In the drawings which illustrate the preferred embodiments and the best modes presently contemplated for carrying out the present invention:

[0021] FIG. 1 is a top perspective view of basketball having grippable apertures spaced apart by convex surfaces to enable one-handed dunking configured according to a preferred embodiment of the present invention;

[0022] FIG. 2 is a side view of the basketball of FIG. 1 shown with a player's hand positioned generally adjacent thereto; and

[0023] FIG. 3 is a partial cross sectional view of the surface of the basketball shown in FIG. 1 particularly illustrating the aspects of the grippable apertures of the basketball.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] With reference to the figures where like elements have been given like numerical designations to facilitate the reader's understanding of the present invention, the preferred embodiments of the present invention are set forth below. As will be understood by those skilled in the art, the enclosed figures and drawings are merely illustrative of a preferred embodiment and represent one of several different ways of configuring the present invention. Although specific components, materials, configurations and uses are illustrated, it will be understood that a number of variations to the components and to the configuration of those components described herein and in the accompanying figures can be made without changing the scope and function of the invention set forth herein. For purposes of simplifying the present disclosure, references herein are generally to the use of a basketball with improved grippability for playing the game of basketball with specific emphasis on the execution of the move known as a one-handed slam dunk wherein the ball is guided with one hand as the player moves the basketball through the rim of a basket while vertically jumping to execute the move. However, as will be readily understood by those skilled in the art, the disclosure is not so limited, as the basketball of the present invention may be used to play other types of games where dunking the ball with one hand is beneficial or preferred.

[0025] A basketball having grippable apertures to enable a player to more easily execute a one-handed dunk that is manufactured out of the components and configured pursu-

ant to a preferred embodiment of the present invention is shown generally as 10 in the figures. In a preferred embodiment of the present invention, shown FIG. 1, the basketball 10 has a generally spherical exterior surface 12 with a plurality of spaced apart grippable apertures 14 that are each configured to receive at least a portion of the fingertip 16 of a finger 18 or the tip 20 of the thumb 22 of the player's hand 24, as shown in FIG. 2. As best shown in FIGS. 2 and 3, the grippable apertures 14 have a top perimeter 26, an inner side wall 28 and a bottom surface 30 that define a finger receiving cavity 32 in which fingertip 16 or thumb tip 20 are received. Disposed between adjacent apertures 14 is convex surface 34 that, taken together, define the exterior surface 12 of basketball 10. The grippable apertures 14 are sized and configured so that upon gripping the ball 10, the player can readily engage his or her fingertips 16 or thumb tip 20 into the necessary number of apertures 14 to obtain a firm, secure grip of basketball 10 so as to allow the player to direct the ball 10 through the rim of the basket (not shown) while executing a one-handed slam dunk.

[0026] As shown in the figures, the top perimeter 26 defines the opening into the finger receiving cavity 32 of grippable aperture 14. In addition to the spacing and pattern of the grippable apertures 14 on the exterior surface 12 of basketball 10, the width and depth of the finger receiving cavities 32 of grippable apertures 14 contribute to the player's ability to perform a one-handed slam dunk. As will be readily appreciated by those skilled in the art and who play the game of basketball, if finger receiving cavities 32 are too shallow the ability of the player to securely grip basketball 10 with one hand 24 is likely to be substantially compromised. For instance, the dimples having a depth of approximately 0.5 mm to 0.2 mm of the Palmquist patent referenced above are insufficient to accomplish the objectives of the present invention, as the depth is not suitable for receiving a sufficient portion of the finger 18 or thumb 22 to allow the player to securely grip basketball 10 with one hand 24. Likewise, if the opening formed by top perimeter 26 is too small, creating a tight finger receiving cavity 32, the speed of release necessary to accomplish a successful singlehanded slam dunk is compromised as well. In the preferred embodiment, the depth of receiving cavities 32 in apertures 14 will range from approximately 15 mm to 35 mm, to ensure the player can have a firm grip and then a quick and easy release of basketball 10, as required in the successful execution of a one-handed slam dunk. In an alternative embodiment of the present invention, the basketball 10 is configured such that at least some or all of the spaced apart grippable apertures 14 extend entirely through basketball 10 (i.e., from one side to the other). In a preferred embodiment of the present invention, each grippable aperture 14 has a circular cross-section with a diameter of approximately 15 mm to 20 mm to ensure that a single aperture 14 will receive only a single fingertip 16 or thumb tip 20 of hand 24. Other shapes can also be utilized.

[0027] Although the basketball 10 having grippable apertures 14 to enable one-handed dunking of the present invention may be adaptable to a number of different sports and games with regard to components and use, it is primarily configured for use as a basketball 10 for playing the game of basketball. As a basketball, in the preferred embodiment, the dimensions, materials and weight corresponds to that of a standard regulation sized basketball. For example, the exterior surface 12 of the basketball 10 is configured to have a

plurality of panels 36, such as the eight commonly found on a standard regulation basketball, that are each joined or delineated by a circumferential seam 38. As well known to those skilled in the art, basketball 10 can be of the inflatable type that is inflated or deflated by the introduction or release of pressurized air into a bladder (not shown) through a valve (not shown). In a preferred embodiment of the basketball 10 of the present invention, the seamed panels 36 are each covered, preferably somewhat evenly, with a plurality of spaced apart grippable apertures 14.

[0028] The convex surface 34 between apertures 14 is sufficiently spaced to separate adjacent grippable apertures 14 creating an intervening surface necessary to prevent more than one fingertip 16 from being inserted into a single aperture 14. The actual spacing should be selected to be appropriate for the target user (i.e., kids versus adults) and to facilitate use of basketball 10 as a person would use a standard basketball. As is apparent to those knowledgeable in the manufacture of sports balls in particular, the convex surface 34 between the grippable apertures 14 is intrinsic to the overall performance of the basketball 10 of the present invention as a basketball in that the convex surface 34 together with the top perimeter 26 of each grippable aperture 14 comes into contact with the floor, wall or other surface when the basketball is bounced. Thus, the convex surface 34 separating the grippable apertures 14 should provide sufficient area for surface contact when basketball 10 is bounced. In addition, the convex surfaces 34 separating the apertures 14 should be configured so as to not inhibit normal passing and shooting of basketball 10. In a preferred embodiment of the present invention, the convex surfaces 28 range from 15 mm to 30 mm width depending on its location on the seamed panel 30 as well as the repeating pattern of apertures 14.

[0029] In a preferred embodiment, the repeating pattern of apertures 14 is configured in a regular iteration to obviate the need for the player to pause during play in order to locate and conform his or her finger span to engage the necessary top perimeter 20 of apertures 14. As a result, the direction and angle of how basketball 10 is caught or is otherwise manipulated during the course of play will not impede the player from firmly gripping the basketball 10 by inserting a combination of fingertips 16 and/or thumb tips 20 into apertures 14. The player's hand 24, including the fingers 16 and thumb 22 are in contact with a random number of both the top perimeters 26 of a plurality of apertures 14 and convex spaces 34 between apertures 14 to allow the player to manipulate the basketball 10 as he or she chooses and then quickly insert his or her fingertips 16 and/or thumb tips 20 into readily corresponding grippable apertures 14 to firmly grasp the ball 10 as it is lifted to execute a one-handed slam dunk.

[0030] As those familiar with the manufacture of sports equipment and basic kineseology will readily recognize, the shape and conformation of the grippable apertures 20 need not be circular in shape to cooperatively receive the human fingertip 16 or thumb tip 20 to provide a secure grip for the player to perform the desired one-handed dunk. As will also be understood by those skilled in the art, grippable apertures 14 could be virtually any cross-sectional shape (i.e., square, rectangular, triangular, octagon, etc.). Although round or generally ovoid shapes are likely to be preferred, it is only necessary that the apertures 14 be configured such that when the fingertips 16 or thumb tip 20 of hand 24 are in receiving

cavity 32, they can press against side wall 28 in a manner that allows the player to have a tight grip of basketball 10. Generally, at least two fingertips 16 or a fingertip 16 and thumb tip 20 will need to be received in a receiving cavity 32 of separate apertures 14 to facilitate the player squeezing his or her hand 24 to hold the exterior surface 12 of basketball 10 substantially against the palm 40 of the player's hand 24 (although in some circumstances, the player may be able to sufficiently grip basketball 10 with only one fingertip 16 or thumb tip 20 against palm 40).

[0031] In use, during normal basketball game play, basketball 10 of the present invention is used as a standard basketball with regard to dribbling, passing and shooting the basketball 10. When the player desires to perform a onehanded dunk, he or she will move one or more fingertips 16 and/or thumb tip 20 into separate apertures 14. Because the apertures 14 are provided in sufficient number, the player will not have to stop his or her normal game play to line up a fingertip 16 and/or thumb tip 20 with aperture 14. The player inserts fingertip 16 and/or thumb tip 20 into receiving cavity 32 of separate apertures 14 a sufficient distance, typically approximately one-third of the way, and contracts his or her hand sufficiently to engage the side walls 28 of apertures 14 with the inserted fingertips 16 and/or thumb tip 20. Contracting against side walls 28 by one or more fingertips 16 and/or thumb tip 20 will provide the player with a firm, secure grip of basketball 10 with hand 24 to allow the player to perform the desired one-handed slam

[0032] While there are shown and described herein specific forms of the invention, it will be readily apparent to those skilled in the art that the invention is not so limited, but is susceptible to various modifications and rearrangements in design and materials without departing from the spirit and scope of the present invention. In particular, it should be noted that the present invention is subject to modification with regard to any dimensional relationships set forth herein, which are merely presented for exemplary purposes, and modifications in assembly, materials, size, shape, and use. For instance, there are numerous components described herein that can be replaced with equivalent functioning components to accomplish the objectives of the present invention.

What is claimed is:

- 1. A basketball for one-handed dunking by a player, said basketball comprising an exterior surface having a plurality of apertures in spaced apart relation to define a convex surface therebetween, said apertures disposed entirely around said exterior surface and shaped and configured to releaseably receive therein a fingertip or a thumb tip of one hand of the player so as to enable the player to firmly grip said basketball in said hand to facilitate the player dunking said basketball with said hand.
- 2. The basketball according to claim 1, wherein each of said apertures comprises a top perimeter, an inner side wall and a bottom surface, said top perimeter, said side wall and said bottom surface defining a receiving cavity for receiving at least a portion of said fingertip or said thumb tip.
- 3. The basketball according to claim 2, wherein said top perimeter is generally circular in cross-section.

- **4**. The basketball according to claim 2, wherein said side wall of said aperture is configured for the player to press said fingertip or thumb tip thereagainst so as to grip said basketball in said hand.
- 5. The basketball according to claim 2, wherein said aperture is approximately 15 mm to 35 mm deep.
- **6**. The basketball according to claim 5, wherein said aperture is approximately 15 mm to 20 mm wide at said top perimeter.
- 7. The basketball according to claim 1, wherein each of said apertures comprises a top perimeter and an inner side wall, said top perimeter and said side wall defining a receiving cavity for receiving at least a portion of said fingertip or said thumb tip therein.
- **8**. The basketball according to claim 7, wherein said aperture is approximately 15 mm to 20 mm wide at said top perimeter.
- **9.** The basketball according to claim 1, wherein said apertures are configured in a substantially repeating pattern covering said exterior surface.
- 10. The basketball according to claim 1, wherein said exterior surface comprises a plurality of seamed panels, each of said panels joined to an adjacent panel by a circumferential seam.
- 11. A basketball for one-handed dunking by a player, said basketball comprising an exterior surface having a plurality of apertures in spaced apart relation to define a convex surface therebetween, said apertures having a top perimeter,

- an inner side wall and a bottom surface defining a receiving cavity, said apertures disposed entirely around said exterior surface and shaped and configured to releaseably receive a fingertip or a thumb tip of one hand of the player in said receiving cavity so as to enable the player to firmly grip said basketball in said hand by pressing said fingertip or thumb tip against said side wall so as to facilitate the player dunking said basketball with said hand.
- 12. The basketball according to claim 11, wherein said aperture is approximately 15 mm to 35 mm deep.
- 13. The basketball according to claim 12, wherein said aperture is approximately 15 mm to 20 mm wide at said top perimeter.
- **14**. The basketball according to claim 11, wherein said aperture is approximately 15 mm to 20 mm wide at said top perimeter.
- **15**. The basketball according to claim 11, wherein said apertures are configured in a substantially repeating pattern covering said exterior surface.
- 16. The basketball according to claim 11, wherein said exterior surface comprises a plurality of seamed panels, each of said panels joined to an adjacent panel by a circumferential seam.
- 17. The basketball according to claim 11, wherein said top perimeter is generally circular in cross-section.

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