July 25, 1933. J. D. BEEBE 1,919,357

PLAY BALL AND METHOD OF MAKING THE SAME

Filed Oct. 3, 1931

Fig-1

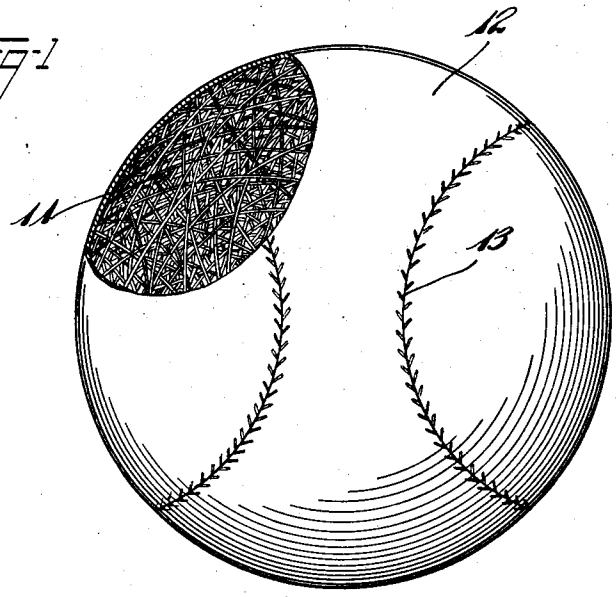
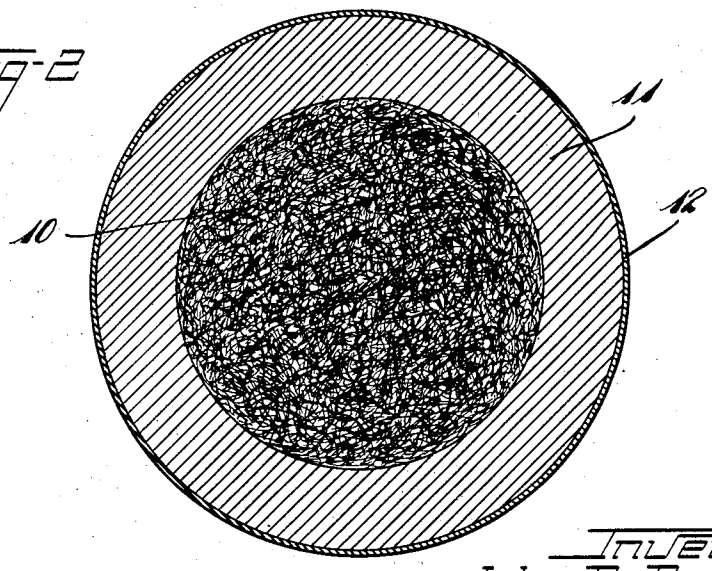


Fig-2



Inventor
John D. Beebe
By Eakin & Avery
Attys

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UNITED STATES PATENT OFFICE

JOHN D. BEEBE, OF AKRON, OHIO, ASSIGNOR TO THE B. F. GOODRICH COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

PLAY BALL AND METHOD OF MAKING THE SAME

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This invention relates to play balls and pertains more particularly to baseballs of the soft variety, such as are commonly known as indoor baseballs or playground balls.

Such balls, heretofore, have been of a construction including a core of soft packing material, usually kapok, which has the objectionable characteristic that it is easily distorted as the ball softens from use, and the original sphericity of the ball is soon lost, the ball becoming flabby and lopsided.

It is an object of this invention to provide a ball of improved construction which possesses a high degree of permanent resilience, which is maintained even under the partial softening of the ball that inevitably results from use, and which causes the ball to resume substantially its full sphericity even after many hard blows.

These and further objects will be apparent from the following description of a preferred embodiment of the invention, reference being had to the accompanying drawing, in which:

Fig. 1 is an exterior view of a play ball, constructed according to the invention, a portion of the cover being removed to show the structure next interior thereto.

Fig. 2 is a cross section of the ball of Fig. 1.

Referring to the drawing, the ball comprises a spherical core 10, a surrounding layer 11, preferably of yarn wound upon and holding the core in a state of compression, and an enclosing cover 12, which may be of the conventional leather sections secured together by a continuous stitching 13.

The core 10, according to the invention, is made up of a mass of loosely matted fibers, such as animal hair or vegetable fibers, preferably the former, these matted fibers being permanently united at their multitudinous crossing positions, and, preferably though not necessarily, individually coated throughout their extent, by means of a flexible agglutinant, which may be a flexible glue or a nitrocellulose substance but is preferably a rubber composition, such as the deposit formed by drying thereon a rubber cement or a natural or artificial dispersion of rubber, preferably latex.

The core may be prepared by matting together the fibers, applying thereto the rubber dispersion, containing any suitable vulcanizing or other ingredients, by any suitable procedure, such as spraying or dipping, then drying the coated fibers to remove excess moisture, and then vulcanizing the material in a spherical mold preferably while it is held compressed somewhat in the cavity.

The spherical core thus produced may then be encased in the layer 11 preferably by winding the yarn tightly onto the core to hold the same under compression, and the cover 12 may then be applied in known manner.

If desired, the core may be enclosed in the layer 11 in a partially or un-vulcanized state and the whole then vulcanized, whereupon the inner layers of yarn of the layer 11 that contact the coating material will be caused to become permanently united with the core by vulcanized adhesion of the yarn and coating material and any tendency of the yarn and core to slide relative to each other under distortion of the ball will be reduced. This expedient is not essential, however, as the tightness of the yarn winding upon the core effectively restricts slipping of the parts and the core may be fully vulcanized before applying the layer 11.

It has been found that due to the adequate form-preservation and integrity of the core of this construction, a thinner layer of yarn may effectively be used in a ball of a given size than in former constructions, and the core may therefore be larger with better cushioning results.

In the core of a ball constructed as above described, the fibers are permanently united with one another at their crossing positions by the resilient coating, and the core thereby possesses a high degree of resilience which is materially contributed to by the condition of flexure in which the fibers are held by the vulcanized coating due to the molding of the mass under compression and holding of the core under compression by the layer 11. As the fibers are restrained from permanent displacement in the mass by the resilient union at their crossing positons, objectionable bunching or packing of the core material is

substantially avoided, and the adequate open spaces afforded by the loosely matted and united fibers permit efficient cushioning of the ball under blows, without sacrifice of resilience.

The ball is thus capable of resuming substantially its full sphericity after repeated hard blows, and even after the materials of the ball have become softened somewhat from use, the ball of this improved construction retains a large amount of resilience as compared with the condition of flabbiness and lack of resilience that develops in balls having cores of ordinary packing materials such as kapok.

Although it is preferred to construct the core wholly of the material above described, it will be understood that the core may have a center of cork, rubber or other material if desired, and further that the mass of rubberized fibers may be associated in balls of various types in dispositions other than that of the core, with the securing of a large measure of the advantages of increased resilience and shape preservation attributable to it.

Variations may be made without departing from the scope of the invention as it is defined in the following claims.

I claim:

1. A play ball comprising a reticulated mass of fibers united only at their crossing positions by a flexible agglutinant.

2. A play ball comprising a reticulated mass of fibers coated with a flexible agglutinant and united only at their crossing positions by said agglutinant.

3. A play ball comprising a reticulated mass of fibers united only at their crossing positions by a vulcanized rubber composition, and a flexible cover enclosing said reticulated mass.

4. A play ball as defined in claim 3 in which the reticulated mass of fibers is held compressed within the cover.

5. A play ball comprising a cover and a reticulated mass of fibers coated with a flexible agglutinant, and united only at their crossing positions by the agglutinant, said reticulated mass being held under compression within said cover.

6. A play ball comprising a spherical reticulated core of fibers united only at their crossing positions by a flexible agglutinant.

7. A play ball comprising a cover, a reticulated core of fibers united only at their crossing positions by a flexible agglutinant, and a layer of strand material wound upon said core inside said cover and holding said core under compression.

8. A play ball comprising a reticulated core of fibers coated with a vulcanized rubber composition, and united only at their crossing positions by said composition, a layer of strand material wound upon said core and a flexible enclosing cover.

JOHN D. BEEBE.