

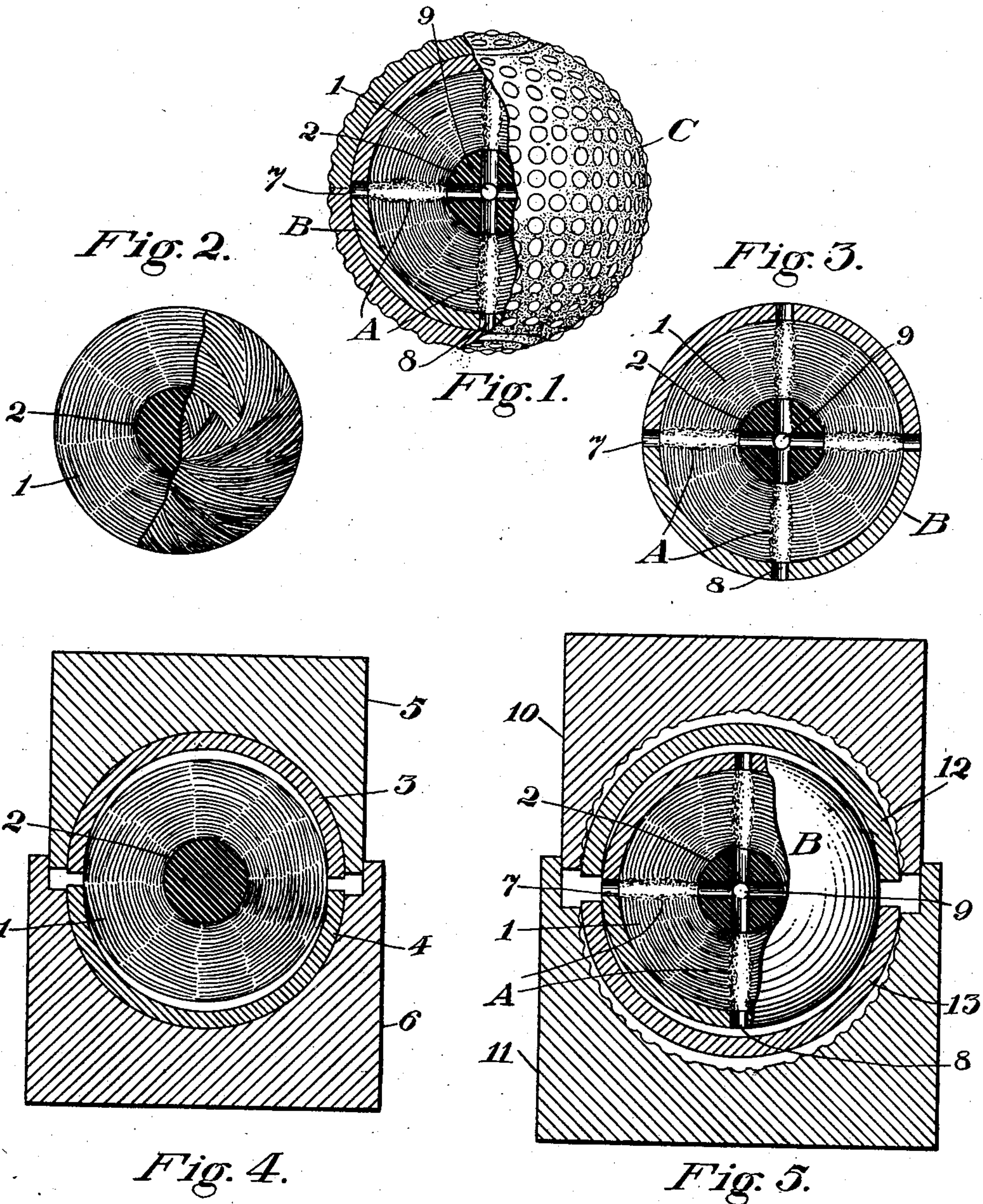
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Patented June 3, 1902

E. KEMPSHALL.
GOLF BALL.

(Application filed Apr. 22, 1902.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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GOLF-BALL.

SPECIFICATION forming part of Letters Patent No. 701,736, dated June 3, 1902.

Application filed April 22, 1902. Serial No. 104,108. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER KEMPSHALL, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Golf-Balls, of which the following is a specification.

This invention relates to playing-balls, and especially to those used in the game of golf; and its object is to increase the liveliness or driving power of the ball.

In the accompanying drawings, Figure 1 is a part-sectional view of a ball made in accordance with my present improvements. Fig. 2 is a part-sectional view of a rubber-thread filling. Fig. 3 is a sectional view of my improved ball before an outer shell is applied thereto. Fig. 4 illustrates a stage in forming the Fig. 3 article, and Fig. 5 shows the final stage in forming the completed ball illustrated at Fig. 1.

In the several views similar parts are designated by similar characters of reference.

For the filling of the ball I employ rubber threads 1, wound under tension, preferably upon a gutta-percha center piece 2. Upon this filling I apply a shell, preferably by compressing thereon hemispherical segments 3 and 4 of hard plastic material—such as celluloid or gutta-percha, the latter being preferred—the segments being compressed and welded by means of heating-dies 5 and 6. The heat renders the shell soft, so that it may weld and also be given a spherical form by the dies, and the pressure is maintained until the shell cools and hardens. In the ball thus produced I form diametrical holes 7, 8, and 9 at right angles to each other and intersecting at the center of the ball. In making the holes some of the rubber bands are cut at A, and owing to the tendency of the severed bands to assume their normal condition the rubber-thread sphere as a whole is caused to swell or at least to exert an expansive tendency upon all parts of the shell, tending to preserve its normal spherical form, whereby the ball is rendered highly elastic, since a blow which tends to distort the shell is preferably resisted by the expansive mass confined therein, so that the ball flies from the

club with phenomenal energy. While I prefer to make three perforations, still my invention is not limited to this number; nor is it essential in all cases that the perforations be at right angles and intersecting one another. Upon the ball thus formed I prefer to weld, by means of heating-dies 10 and 11, a shell of celluloid or gutta-percha, preferably the latter, said shell consisting of segments 12 and 13. Thus the original shell B is reinforced, and the holes 7, 8, and 9 are covered, the ball thus produced having excellent flying qualities. It is not essential, however, that the outer shell (indicated at C, Fig. 1) be used in all cases, and it may be formed of other material or materials within the scope of my invention. The shells weld together by reason of the heat and pressure of the dies, and thus prevent the formation of cracks in the inner shell B around the holes, due to the expansion of the filling, and also obviate liability of the inner shell B to distortion by reason of possible unevenness of the expansive pressure of the filling.

Having now described my invention, I claim—

1. A playing-ball comprising windings of tensioned rubber inclosed by a shell formed of plastic material; a perforation extending entirely through said ball, and the rubber being cut or severed in the region of said perforation and tending to expand the shell.

2. A playing-ball comprising windings of tensioned rubber inclosed by a shell formed of plastic material; perforations extending entirely through said ball, and the rubber being cut or severed in the region of said perforations and tending to expand the shell; said perforations being diametrical and intersecting at the center of the ball.

3. A playing-ball comprising windings of tensioned rubber inclosed by a shell formed of plastic material; three perforations extending each entirely through said ball, each at right angles to the others; the rubber being cut or severed in the region of said perforations and tending to expand the shell in all directions, and said perforations being diametrical and intersecting at the center of the shell.

4. A playing-ball comprising a filling which consists of windings of tensioned rubber, and a whole unbroken shell of hard material inclosing said filling; at least a portion of said windings of rubber being severed, and tending to expand said shell.
5. A playing-ball comprising windings of tensioned rubber inclosed by a shell formed of plastic material and provided with a perforation; the rubber being cut or severed in the region of said perforation and tending to expand the shell; and an outer unbroken shell secured upon said shell and covering said perforation.
6. A playing-ball comprising windings of tensioned rubber inclosed by a shell formed of plastic material, the structure being provided with diametrical perforations, which intersect at the center of the ball, and the rubber being cut or severed in the region of said perforations and tending to expand the shell in all directions; and an outer shell of plastic material welded upon said shell.
7. A playing-ball comprising windings of tensioned rubber inclosed by a shell formed of plastic material, the structure being provided with three diametrical perforations, which intersect at the center of the ball and extend at right angles to one another; the rubber being cut or severed in the region of said perforations and tending to expand the shell in all directions; and an outer shell of similar plastic material welded upon said shell.
8. A playing-ball comprising a center piece, windings of tensioned rubber thereon, and a shell formed of gutta-percha upon said rubber; perforations extending entirely through said ball, and the rubber being cut or severed in the region of said perforations and tending to expand the shell.
9. A playing-ball comprising windings of tensioned rubber inclosed by a shell formed of gutta-percha, the structure being provided with perforations, and the rubber being cut or severed in the region of said perforations and tending to expand the shell; and an outer shell of gutta-percha compacted upon said shell and covering the perforations.
- ELEAZER KEMPSHALL.
- Witnesses:
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