

No. 704,882.

Patented July 15, 1902.

E. KEMPSHALL.

PLAYING BALL.

(Application filed May 12, 1902.)

(No Model.)

Fig. 1.

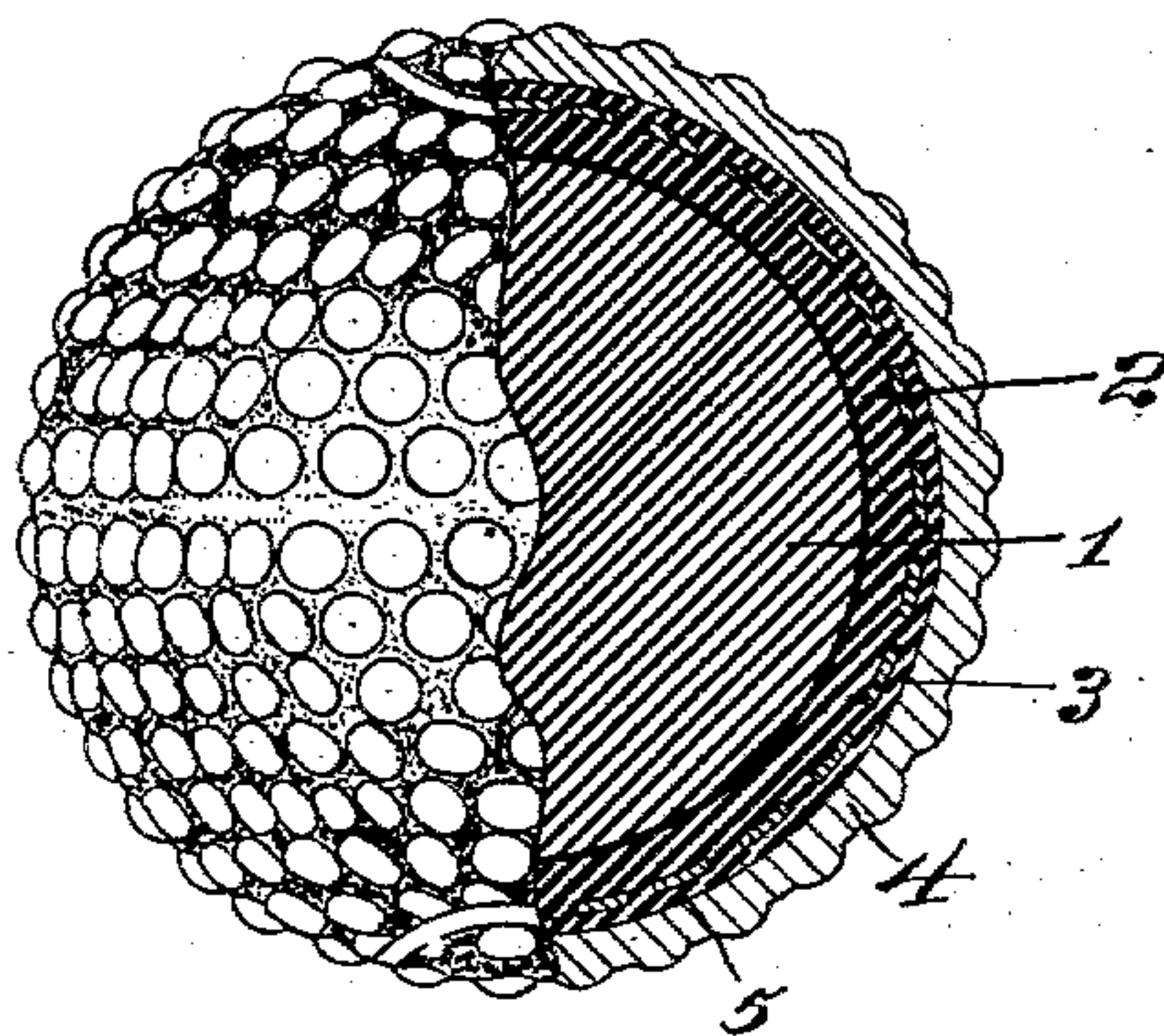
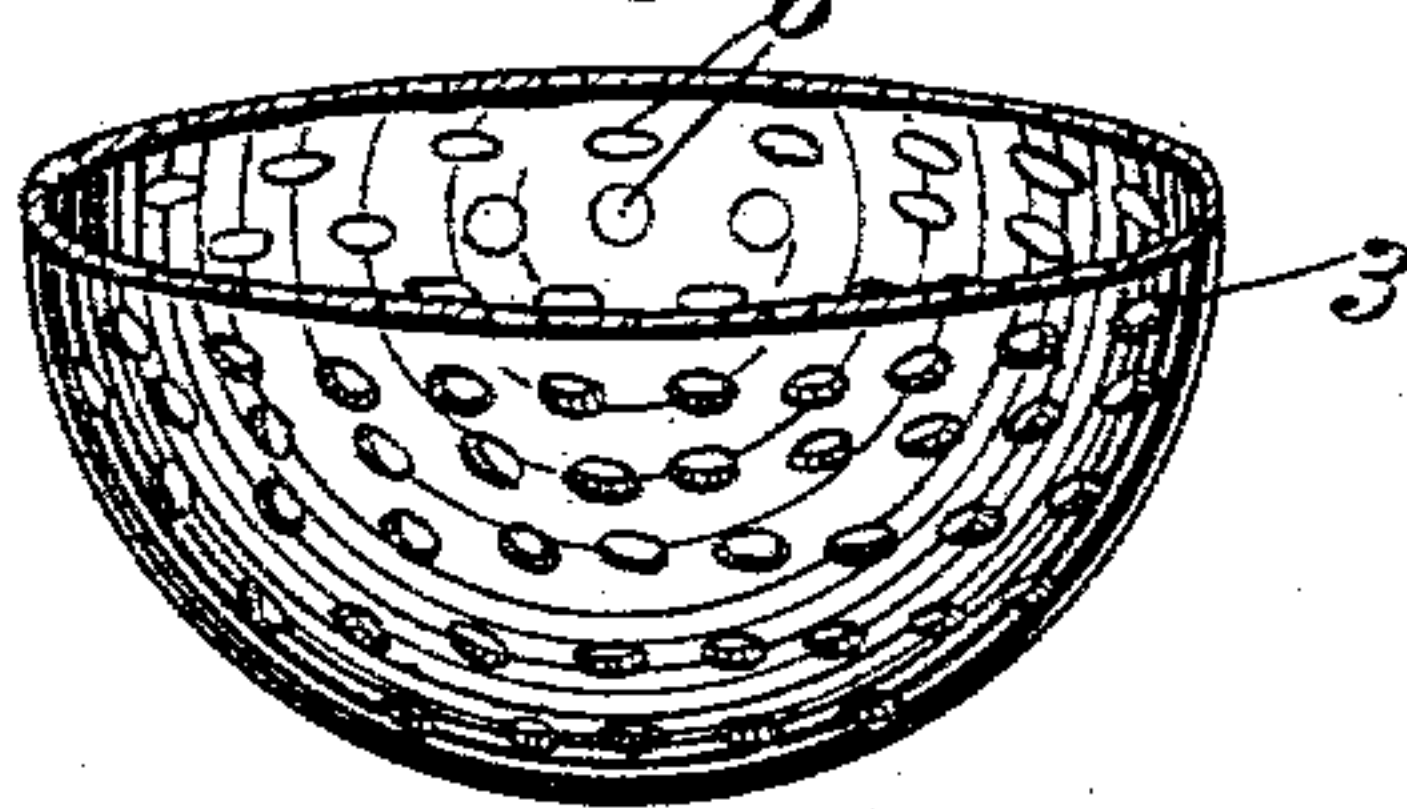


Fig. 2.



Witnesses:

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Inventor:

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UNITED STATES PATENT OFFICE.

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PLAYING-BALL.

SPECIFICATION forming part of Letters Patent No. 704,882, dated July 15, 1902.

Application filed May 12, 1902. Serial No. 107,018. (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 Playing-Balls, of which the following is a specification.

This invention relates generally to playing-balls, and specifically to balls used in the game of golf; and its object is to improve the flying power and other qualities of the ball.

In the drawings forming a part of this specification, Figure 1 is a part sectional view of a golf-ball made in accordance with my present improvements, and Fig. 2 shows a fragment of a perforated hard shell contained within the ball.

My improved ball consists, preferably, of a hard springy spherical filling 1, inclosed by a layer 2 of soft rubber, the latter being inclosed by a thin hard elastic shell 3 and a casing 4 of springy plastic material, preferably celluloid, a thin soft-rubber layer 5 intervening between the casing 4 and the thin shell 3. I prefer to make the shell 3 of celluloid, although other material may be employed. The flexibility of this hard shell may be increased by providing the same throughout with perforations 6, thus increasing the resiliency or flying power of the ball. The thin layer 5 of soft rubber is intended chiefly to act as a cushion between the hard shell 3 and the hard casing 4, so as to diffuse the force of the blows upon the latter and save it from damage, while calling into action a larger area of the inner shell with the effect of increasing the energy of the ball. It will be understood that when the outer shell or casing is depressed by a blow the soft rubber of the layer 5 is forced to flow sidewise away from the area of depression, thus not only cushioning the blow, but also calling into action a larger portion of the inner hard shell, and, further, by its own resiliency tending to restore the outer shell instantly to its normal spherical shape, thereby reacting upon the club and causing the ball to spring with great energy therefrom. Preferably the plastic shell 4 holds the interior elements of the ball under compression, particularly the rubber facing or layer 5. The material of each of

the soft-rubber layers 2 and 5 may protrude somewhat into the holes 6 in the hard shell 3. If desired, said layers 2 and 5 may be vulcanized together through the apertures 6 in the hard shell 3, so that the latter may be embedded throughout in the soft rubber.

It will be understood that the shock of the blow is taken chiefly by the hard thin shell 3, which supports the celluloid or other plastic shell 4, so that the latter may not buckle, while the intervening layers 2 and 5 contribute to both the durability and resiliency of the ball. In order to obtain these advantages, it is important that said inner shell 3 shall lie close to the outer shell 4, as illustrated, so as not to afford an opportunity for buckling of the latter. Moreover, by making the cushioning-layers thin it becomes impossible to effect displacement of said layers to such an extent as to burst the outer shell 4.

The soft layer 5 prevents beating out or peening of the celluloid or other plastic shell 4, so that repeated blows thereon do not have the effect of enlarging it and cause it to separate from or become loose upon the filling.

For certain games the shell 4 may be omitted, and for other games a shell of different material and otherwise constructed may be substituted. So long as a thin-rubber cushioning-layer is placed between the hard inner shell 3 and the hard outer shell 4 and another cushioning-layer between said shell 3 and the hard core 1 other material may be used for the shell 3 or for the core 1. Other changes in details may be resorted to within the scope of my improvements.

Having described my invention, I claim—

1. A playing-ball comprising a hard core; a soft-rubber layer thereon; said layer being inclosed by a hard shell of such thinness as to be highly resilient; and a layer of soft rubber covering said shell.

2. A playing-ball comprising a hard core; a soft-rubber layer thereon; a hard thin shell inclosing said layer and provided throughout with perforations; and a layer of soft rubber covering said shell.

3. A playing-ball comprising a celluloid shell provided throughout with perforations, a thin layer of soft rubber covering said shell, and a cover of wear-resisting material upon

said rubber layer and close to said celluloid shell.

4. A playing-ball comprising a hard thin shell provided throughout with perforations, a springy core reinforcing said shell, a thin layer of soft rubber covering said shell, and a casing of plastic material holding said rubber layer under compression.

5. A playing-ball comprising a celluloid shell, a layer of soft rubber covering said shell, the latter being provided throughout with perforations, and a shell of celluloid upon said rubber layer.

6. A playing-ball comprising a thin perforated hard shell; a sphere of hard springy material within said shell; a layer of soft material between said sphere and said shell; and a layer or facing of springy material upon said shell.

7. A playing-ball comprising a hard thin shell lined with soft rubber and provided throughout with perforations; a hard center piece filling said lined shell; soft rubber forming a thin outer covering upon said shell; and

a shell of plastic material holding said soft-rubber covering under compression.

8. A playing-ball comprising a hard flexible shell; a filling for said hard shell consisting of a sphere of hard material inclosed in soft rubber; a layer of soft rubber covering said shell; and a casing of plastic material holding said rubber covering under compression.

9. A playing-ball comprising a hard core; a soft-rubber layer thereon; a hard perforated shell upon said layer; a soft-rubber facing upon said shell; and a casing of plastic material upon said soft-rubber facing.

10. A playing-ball comprising a hard core; a soft-rubber layer thereon; a perforated celluloid shell upon said layer; a soft-rubber facing upon said shell; and a casing of plastic material holding said rubber facing under compression.

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Witnesses:

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