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Patented Dec. 16, 1902.

E. KEMPSHALL.  
GOLF BALL.

(Application filed Apr. 2, 1902.)

(No Model.)

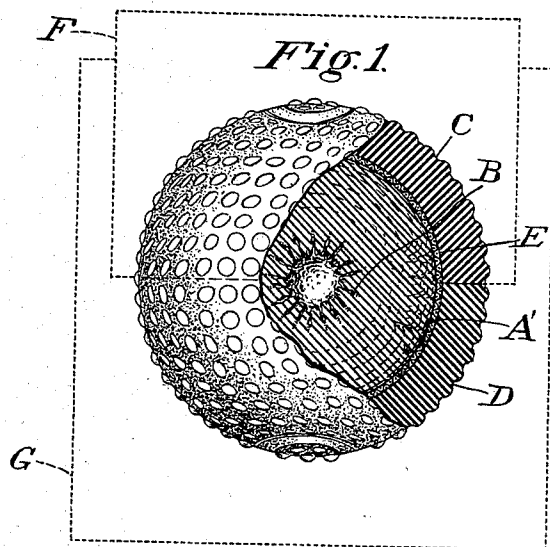
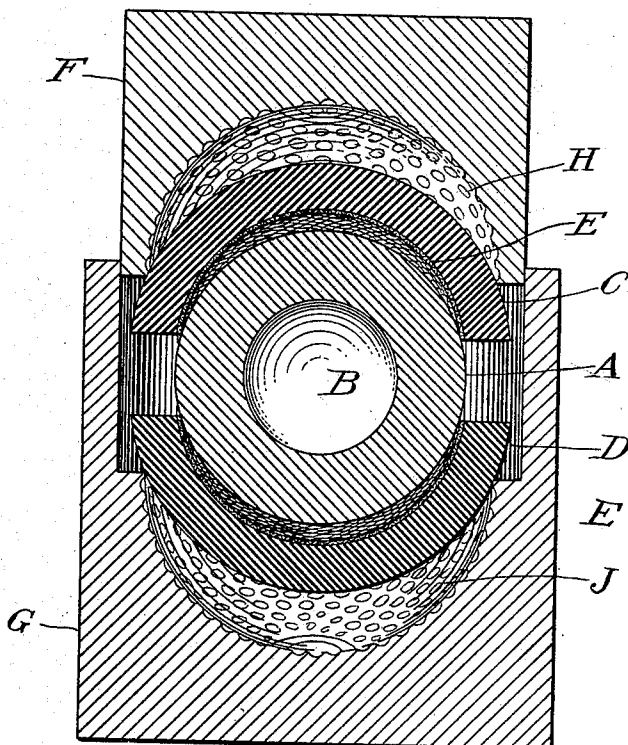


*Fig. 2.*



Witnesses:  
*Robert Head*  
*W. C. Abbott*

Inventor:  
*Eleazer Kempshall,*  
By his Attorney,  
*F. H. Richards.*

# UNITED STATES PATENT OFFICE.

ELEAZER KEMPSHALL, OF BOSTON, MASSACHUSETTS.

## GOLF-BALL.

SPECIFICATION forming part of Letters Patent No. 716,245, dated December 16, 1902.

Application filed April 2, 1902. Serial No. 101,087. (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, especially those used in the game of golf; and its object is to produce at low cost a ball which is well adapted to all the requirements of the game.

In the drawings forming part of this specification, Figure 1 is a view, partly in section, of a ball made in accordance with my present improvements, the dies in which the ball is finished being indicated in dotted lines. Fig. 2 is a sectional view showing the parts of the ball assembled in the dies before the operation of the latter.

Similar parts in the drawings are indicated by similar characters of reference.

For a core I use a sphere A, of solid soft rubber, said sphere being hollow, as at B, but its wall being preferably thick and substantial. Over this sphere I place cups C and D of plastic material, such as celluloid or gutta-percha, preferably the latter, said cups being preferably lined with fabric E. These parts I place between heating and compressing dies F and G.

The rubber sphere A in its original condition is considerably oversize, so that the cups C and D when placed thereon cannot meet, as illustrated in Fig. 2; but by the compressive action of the dies the cups are first forced over said sphere and then forced together and caused to weld at their edges. It will be seen that the cups C and D are normally too large to enter the hemispherical depressions H and J in the dies; but by the heat and compression the cups are forced to conform to the shape of the dies and also caused to weld at their edges. At Fig. 1 the final form of the ball is indicated in full lines and the closed position of the dies in dotted lines.

One of the main purposes of my invention is to collapse or force the rubber sphere A into a much smaller compass, as at A', Fig. 1, thus compressing and distorting the rubber, so that in the finished ball said rubber is in an abnormal tense condition throughout, and

hence imparts to the ball a phenomenal flying power, both on account of its increased resilience or power and also because of its constant expansive tendency, which serves instantly to restore the spherical shape of the shell when the latter is distorted by a blow. It will also be understood that the air or other fluid originally contained in the cavity B is also in a state of compression in the reduced cavity B' of the collapsed shell, as at Fig. 1, thereby further contributing to the liveliness of the ball.

The fabric lining E is of service in forming the ball, and when the latter is in use it prevents light blows from unduly affecting the sensitive core A', so that the ball is not too lively for "putting."

Many variations may be resorted to within the scope of my invention and portions of my improvements may be used without others.

Having described my invention, I claim—

1. A playing-ball comprising a wear-resisting cover and a distorted shell of soft rubber held under compression therewithin; said shell being hollow and being distorted throughout in radial directions.

2. A playing-ball comprising a soft-rubber spherical shell and cover of hard, wear-resisting material thereon; said rubber shell being in a state of partial collapse and held under compression by said casing.

3. A playing-ball comprising a shell of gutta-percha and a filling held under compression thereby; said filling consisting of a solid-rubber spherical shell in a state of partial collapse.

4. A playing-ball comprising a cover which consists of welded segments of gutta-percha, and a filling held under compression by said shell; said filling consisting of a rubber spherical shell hollow and in a state of partial collapse but tending constantly to recover its normal form.

5. A playing-ball comprising a rubber spherical shell in a state of partial collapse, and a cover holding said shell under compression; said cover being a compound of plastic material and fabric.

6. A playing-ball comprising a hollow sphere partially collapsed and confined by a wear-resisting shell, the hollow in said sphere containing air in a state of compression.

7. A playing-ball comprising a hollow rubber sphere having a thick wall and means for holding said sphere in a state of partial collapse, the hollow of said sphere containing air  
5 in a state of compression.

8. A playing-ball comprising a rubber sphere partially collapsed and confined by a fabric-lined, hard, wear-resisting shell.

9. A playing-ball comprising a hollow rubber sphere partially collapsed and confined by  
10 a fabric-lined wear-resisting shell.

10. A playing-ball comprising a hollow sphere partially collapsed and confined by a fabric-lined wear-resisting shell, the hollow

in said sphere containing air in a state of compression. 15

11. A playing-ball comprising a rubber sphere partially collapsed and held under compression by a shell of gutta-percha and fabric.

12. A playing-ball comprising a rubber sphere partially collapsed and held under compression by a shell consisting of welded segments of gutta-percha and fabric. 20

ELEAZER KEMPSHALL.

Witnesses:

B. C. STICKNEY,  
JOHN O. SEIFERT.