No. 697,816. Patented Apr. 15, 1902.

C. DAVIS.

GOLF BALL.

(Application filed Sept. 27, 1901.)

(No Model.)

Fig. 1.

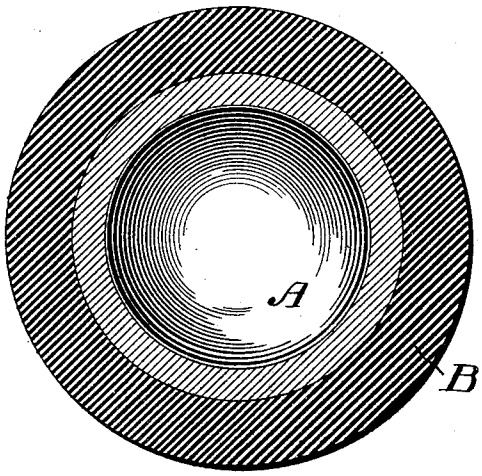


Fig. 2.

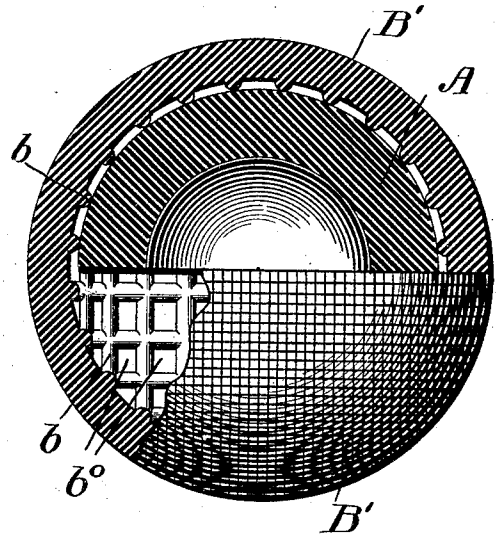


Fig. 3.

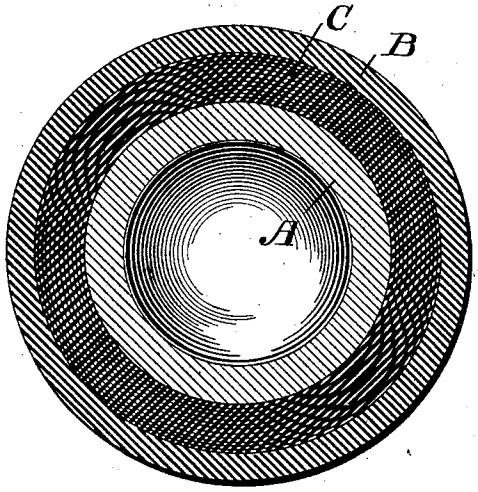
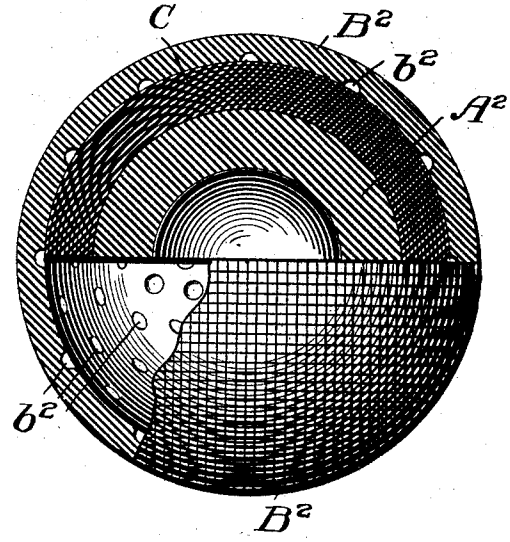


Fig. 4.



Witnesses
Geo. E. Payne
Percy C. Bowers

Inventor
Cleland Davis
By Wilkinson & Fisher,
Attorneys

UNITED STATES PATENT OFFICE.

CLELAND DAVIS, OF THE UNITED STATES NAVY.

GOLF-BALL.

SPECIFICATION forming part of Letters Patent No. 697,816, dated April 15, 1902.

Application filed September 27, 1901. Serial No. 76,766. (No model.)

To all whom it may concern:

Be it known that I, CLELAND DAVIS, lieutenant in the United States Navy, stationed at Washington, in the District of Columbia, have invented certain new and useful Improvements in Golf-Balls; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to improvements in golf-balls or balls of like character in which the ball is projected by a severe blow at a very high initial velocity.

The purposes of my present invention are to make a ball that will fly farther and truer and will be less sensitive to inequalities of the ground when striking or rolling on the same. To accomplish this purpose, I increase the directive force of the mass of the ball and also its elasticity, as will be hereinafter described.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views. The figures are on an enlarged scale, approximately two diameters.

Figure 1 represents a section through a form of ball constructed according to my invention. Fig. 2 represents a sectional elevation, parts broken away, showing another form of the invention. Fig. 3 represents a section of a third form of ball constructed according to my invention. Fig. 4 represents a sectional elevation, parts being broken away, of another form of ball constructed according to my invention.

Referring first to Fig. 1, A represents a hollow spherical shell of either steel or celluloid surrounded by a shell of gutta-percha B. Steel or celluloid being heavier than gutta-percha the standard specific gravity of the ball, about .98, may be retained and yet permit a hollow air-space in the center of the ball.

In the form of device shown in Fig. 2, A′ is a celluloid shell surrounded by a shell B′ of gutta-percha, which latter is provided with ribs b, separating the inner surface of the gutta-percha shell into a plurality of air-chambers b^0, which surround the inner shell A′, or any other means of forming air-pockets may be used. When the ball is struck, the air is compressed in some of these chambers, and its elasticity assists in restoring the outer shell promptly to its initial shape, thus giving a greater elastic reaction against the face of the club and accelerating the velocity of the ball.

In the form of device shown in Fig. 3 the inner shell A, which may be of steel or celluloid, as before, is separated from the outer gutta-percha shell B by a shell C, composed of a number of layers of fine rubber stretched on under tension.

In the form of device shown in Fig. 4 the inner hollow shell A^2, made of steel, celluloid, or other elastic material heavier than gutta-percha, is wrapped around with the rubber strands C, as before, and outside of this is the gutta-percha shell B^2, provided with air-pockets b^2, whose function is the same as that of the air-pockets b^0, already described with reference to Fig. 2.

In any of the hereinbefore-described constructions the mass of the ball is confined to a hollow spherical shell, thus increasing the moment of inertia of the mass when rotating. This causes the ball to fly truer and also increases its tendency to continue in the plane in which it is started, thus making it less sensitive to lateral deviating forces, on the principle of the gyroscope. Again, by making the hollow shell forming the interior of the ball of highly-elastic material the ball directly regains its initial shape after leaving the club and tends to fly truer. Golf-balls are projected with such high velocities that small differences in the disposition of the weights and in the elasticity of the layers constituting the ball are important factors in determining the range and the direction of the ball.

The hollow cavity in the center of the ball and also the air-pockets referred to may be charged with air or other gas under pressure, if desired, whereby the elasticity of the ball may be increased.

In the claims I use the term "gutta-percha," meaning not only gutta-percha, but its equivalent—vulcanized rubber or other material of like character.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A golf-ball, comprising a hollow spherical shell composed of a nitrocellulose compound and an elastic coating exterior to said shell and provided on its outer surface with a plurality of projections, substantially as described.

2. A golf-ball, comprising a hollow central shell of a nitrocellulose compound, an outer envelop of gutta-percha provided with a plurality of projections thereon, and an intermediate layer of elastic material not integral with either the inner shell or the gutta-percha coating, substantially as described.

3. A golf-ball, comprising a hollow central shell of a nitrocellulose compound, an outer envelop of gutta-percha provided with a plurality of projections thereon, and an intermediate layer of rubber not integral with either the inner shell or the gutta-percha coating, substantially as described.

4. A golf-ball, provided with a plurality of projections thereon, and comprising a hollow spherical shell of elastic material, and a distinct elastic coating therefor, with air-pockets between the shell and coating, substantially as described.

5. A golf-ball, provided with a plurality of projections thereon, and comprising a hollow central shell of highly-elastic material, an outer envelop of gutta-percha, and an intermediate layer of elastic material, with air-pockets provided between the outer envelop and the intermediate elastic material, the said intermediate layer being not integral with either the inner shell or the exterior coating, substantially as described.

6. A golf-ball, provided with a plurality of projections thereon, and comprising a hollow central shell of highly-elastic material, an outer envelop of gutta-percha, and an intermediate layer of elastic rubber, with air-pockets between said outer envelop and said rubber layer, the said intermediate layer being not integral with either the inner shell or the outer coating, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CLELAND DAVIS.

Witnesses:

J. STEPHEN GIUSTA,

JANE LEE HART.