

F. A. SEIBERLING.
GOLF BALL.
APPLICATION FILED JAN. 31, 1901.

Fig. 1.

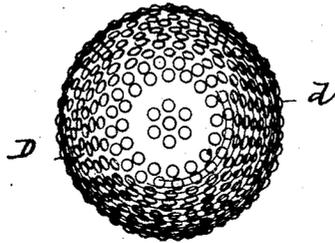


Fig. 2.

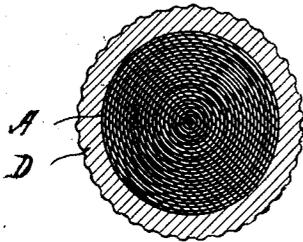


Fig. 3.

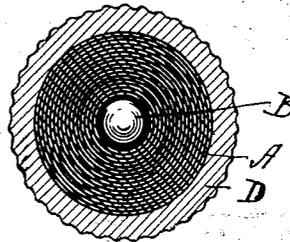


Fig. 4.

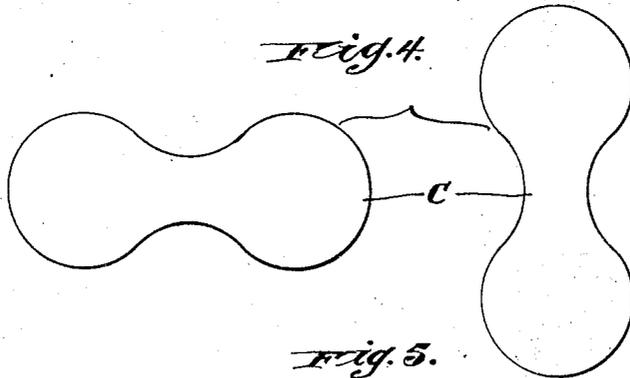
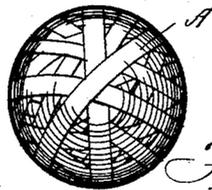


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRANK A. SEIBERLING, OF AKRON, OHIO.

GOLF-BALL.

SPECIFICATION forming part of Letters Patent No. 786,524, dated April 4, 1905.

Application filed January 31, 1901. Serial No. 45,422.

To all whom it may concern:

Be it known that I, FRANK A. SEIBERLING, of Akron, county of Summit, and State of Ohio, have invented certain new and useful Improvements in Golf-Balls, of which the following is a specification.

My invention relates to improvements in balls for use in games and sports, and more particularly to an improved ball for use in the game of golf.

Golf-balls as hitherto constructed have usually been made of solid gutta-percha, the gutta-percha being first reduced to a pulpy state through the application of water and heat thereto, and afterward the pulp is compressed in a mold, being thereby given a spherical form, and the ball thus made, when thoroughly dried out and seasoned, is ready for use.

The object of my present invention is to provide a ball for use in golf and similar games which shall possess the required quality of such balls as to weight and in addition thereto increased life and durability, greater resiliency under the impact of the heavier blows, as in driving, and increased economy and simplicity in respect to manufacture.

With these objects in view my invention consists, generally speaking, in a ball of the character described having an inner or core portion made of rubber in its raw state, commonly known as "caoutchouc," and an outer portion or shell of the required thickness, weight, and durability made of gutta-percha.

A golf-ball constructed in accordance with my invention and its materials and mode of manufacture are illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of the ball complete. Fig. 2 is a central sectional view thereof. Fig. 3 is a view similar to Fig. 2, showing a slight modification in the method of manufacture. Fig. 4 is a plan view illustrating the form of the gutta-percha blanks composing the outer portion or shell of the ball, and Fig. 5 is an elevation of the core of the ball ready for the application of the shell and illustrating the mode of forming the

In carrying out my invention I take a number of strips or bands of rubber A in its raw state, which is commonly known as "caoutchouc," and wind the same under a tension approximating the elastic limit either upon itself, as shown in Fig. 2, or upon a small foundation-core B, as shown in Fig. 3. These strips or bands of caoutchouc will preferably be from one-fourth to three-eighths of an inch in width, such a width of strip being preferably employed as will permit an even and uniform stretching of the strip throughout its entire width in the act or operation of winding the same under tension. This winding is continued until a core has thus been built up approximating two-thirds to three-fourths of the diameter of the completed ball. As a covering or shell for the core thus formed I prefer to employ raw gutta-percha, and my preferred method of building up and applying this shell is illustrated in Fig. 4. The gutta-percha is rolled out into thin sheets about one thirty-second of an inch in thickness, and then by means of a suitable die blanks C are cut therefrom of the general form and outline illustrated in Fig. 4, which, it will be observed, is similar to the form or shape of the blanks constituting the usual base-ball cover. The gutta-percha blanks thus formed are first treated to the action of a heat sufficient to give them a certain degree of plasticity, and mating pairs of blanks are then applied to the caoutchouc core in successive superimposed layers in such a manner as to thoroughly break the joints, and the entire ball thus built up is placed in a suitable spherical mold and subjected to a high pressure, whereby the several layers of the shell, which is designated as a whole by D, are forced into such intimate contact as to form a substantially integral shell or covering for the core. If preferred, the mold in which the ball is thus compressed may be provided with a series of small indentations throughout the inner concave surfaces of its two members, whereby the outer surface of the ball compressed therein in its finished form is caused to present a series of corrugations *d* of any desired form and shape, corresponding, of course, to the manner of indenting the mold. This latter

feature, however, is not of the essence of my invention.

A golf-ball constructed as hereinbefore described can be easily made to conform to the required standard of weight and size in view of the fact that the two materials employed in its manufacture have substantially the same specific gravities.

I am aware that I am not the first to provide a ball of this character with an inner elastic core, as it has been heretofore proposed to employ for such an elastic core a manufactured rubber thread wound under tension into spherical form. My present invention is, however, distinguished from such a construction in the fact that I employ a core formed of strips or bands of raw caoutchouc in place of a core formed of rubber thread in its manufactured and commercial form. Raw caoutchouc and manufactured rubber possess different inherent qualities and afford widely different results, especially in the relation herein referred to. As hereinbefore stated, the strips of raw caoutchouc when wound under tension adhere closely together and when still further compressed by the inclosing shell form a practically solid integral homogeneous resilient mass. This is not true of manufactured rubber, which contains a certain per cent. of sulfur and the layers or coils of which will not adhere under pressure. Again, by reason of the peculiar character of the caoutchouc above mentioned the outer surface of the core unites more perfectly and intimately with the inner surface of the shell, adhering thereto with great tenacity, and consequently the core never becomes loose or rattles around within the shell, as might easily be the case where a core of manufactured rubber was employed. Other substantial advantages possessed by caoutchouc over manufactured rubber, especially in this relation, are that it is much cheaper, that it possesses a longer life and will not deteriorate and lose its elastic character, and that it has a greater degree of resiliency. The term "caoutchouc" as used in the patented claims, therefore, is intended to designate and define rubber in its raw and crude state without any chemical or mechanical treatment as contradistinguished from manufactured rubber, which consists of caoutchouc mixed with sulfur and subjected to a heat that forms the rubber of commerce. My invention as defined in the claims is not intended to cover golf-balls having a core of such manufactured rubber.

From the foregoing it will be seen that I

have provided an improved golf-ball which being formed of two readily adhering raw materials possesses substantially the integral character of a solid gutta-percha ball and surpasses the latter in desirable characteristics of utility in that it is highly resilient under the impact of heavy blows and is practically non-resilient under the impact of light blows. The impact of a heavy blow, as in driving, distorts the shell to such an extent as to bring into play the resilient quality of the core, whereby a longer drive may be obtained, while, on the other hand, the mere fall of the ball to the ground does not produce such an impact on the ball as to bring into play the resiliency of the core, and consequently the ball has no tendency to bound. Similarly, the impact of the lighter strokes, as in putting, is not transmitted through the shell to the core, and therefore the ball is non-resilient, as it properly should be in such plays.

I claim as my invention—

1. A golf-ball comprising a core of caoutchouc and an inclosing shell of gutta-percha, substantially as described.

2. A golf-ball comprising a core composed of thin strips of caoutchouc wound under tension, and a gutta-percha inclosing shell therefor, substantially as described.

3. A golf-ball comprising a core composed of thin strips of caoutchouc wound under tension, and a gutta-percha inclosing shell of such thickness as to make the ball resilient under heavy blows, and practically non-resilient under light blows, substantially as described.

4. A playing-ball comprising a shell and a solid body of spherical form, said body consisting of windings in miscellaneous directions of thin and highly-tensioned sheet-caoutchouc; said windings adhering to one another.

5. In a playing-ball, the combination with a core consisting of adherent windings of highly-tensioned caoutchouc, of a shell surrounding said core, said shell being thinner and of harder material than said core, substantially as described.

6. A playing-ball comprising a core of caoutchouc and an inclosing shell, substantially as described.

7. A golf-ball comprising a core of caoutchouc and an inclosing shell of relatively hard material, substantially as described.

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