

No. 726,502.

PATENTED APR. 28, 1903.

G. BROWNING & C. E. BOUTWOOD.

GOLF BALL.

APPLICATION FILED NOV. 4, 1901.

NO MODEL.

Fig. 1.

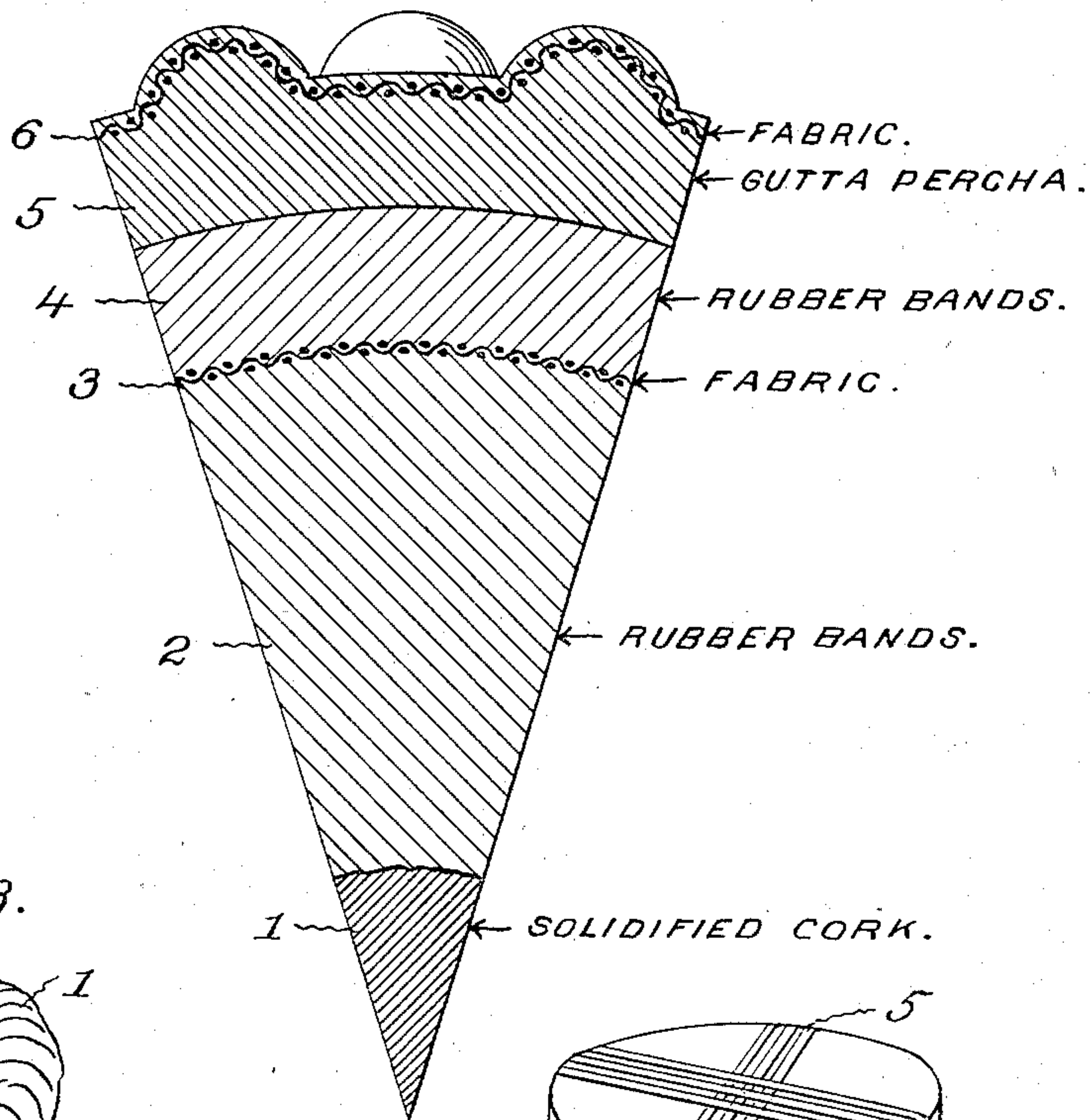


Fig. 3.

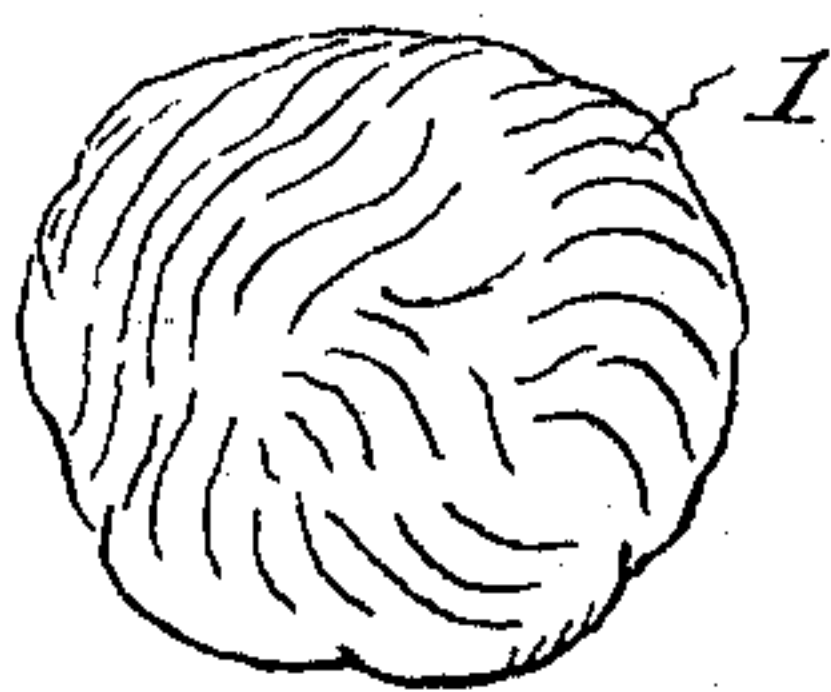


Fig. 2.

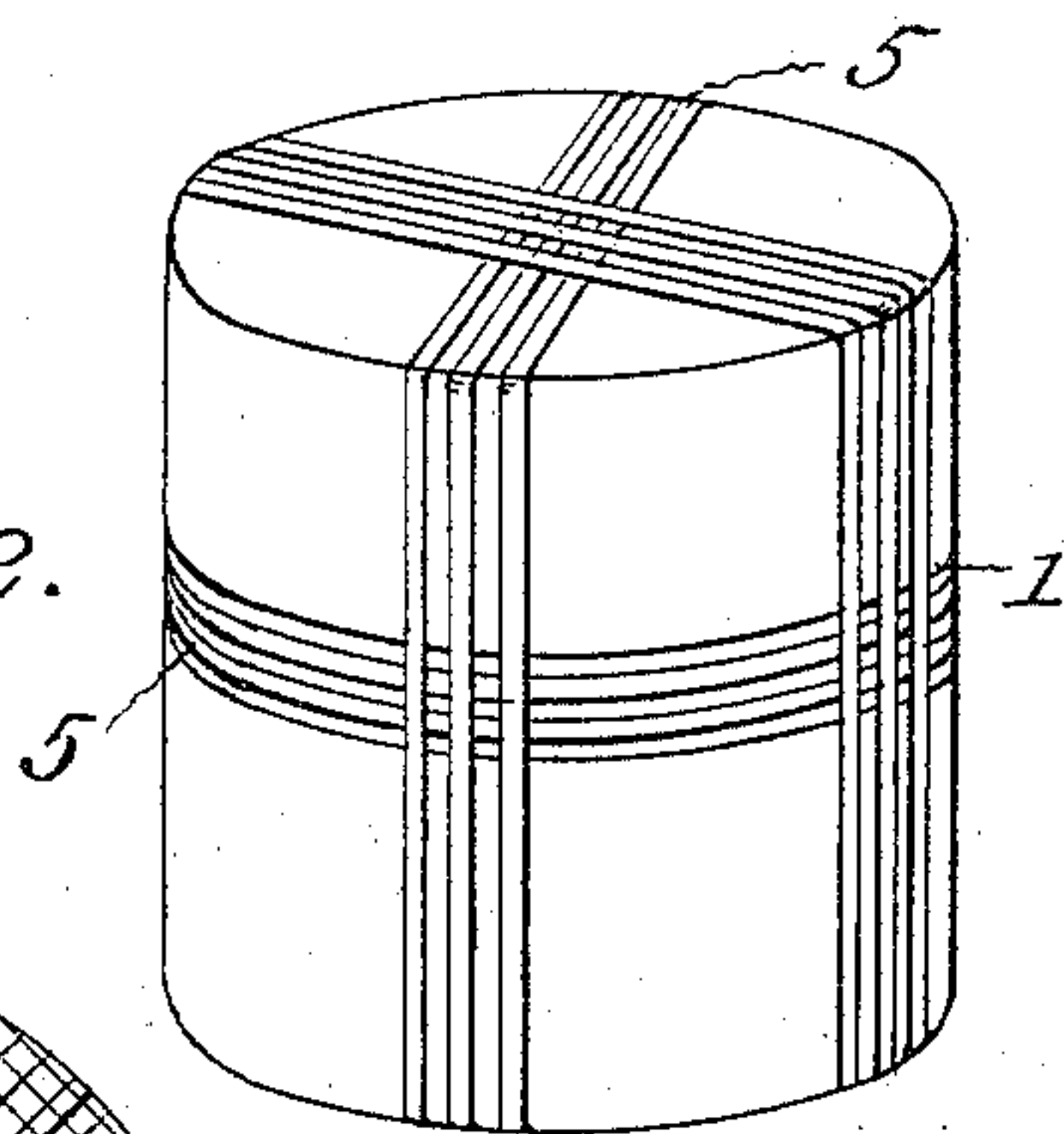
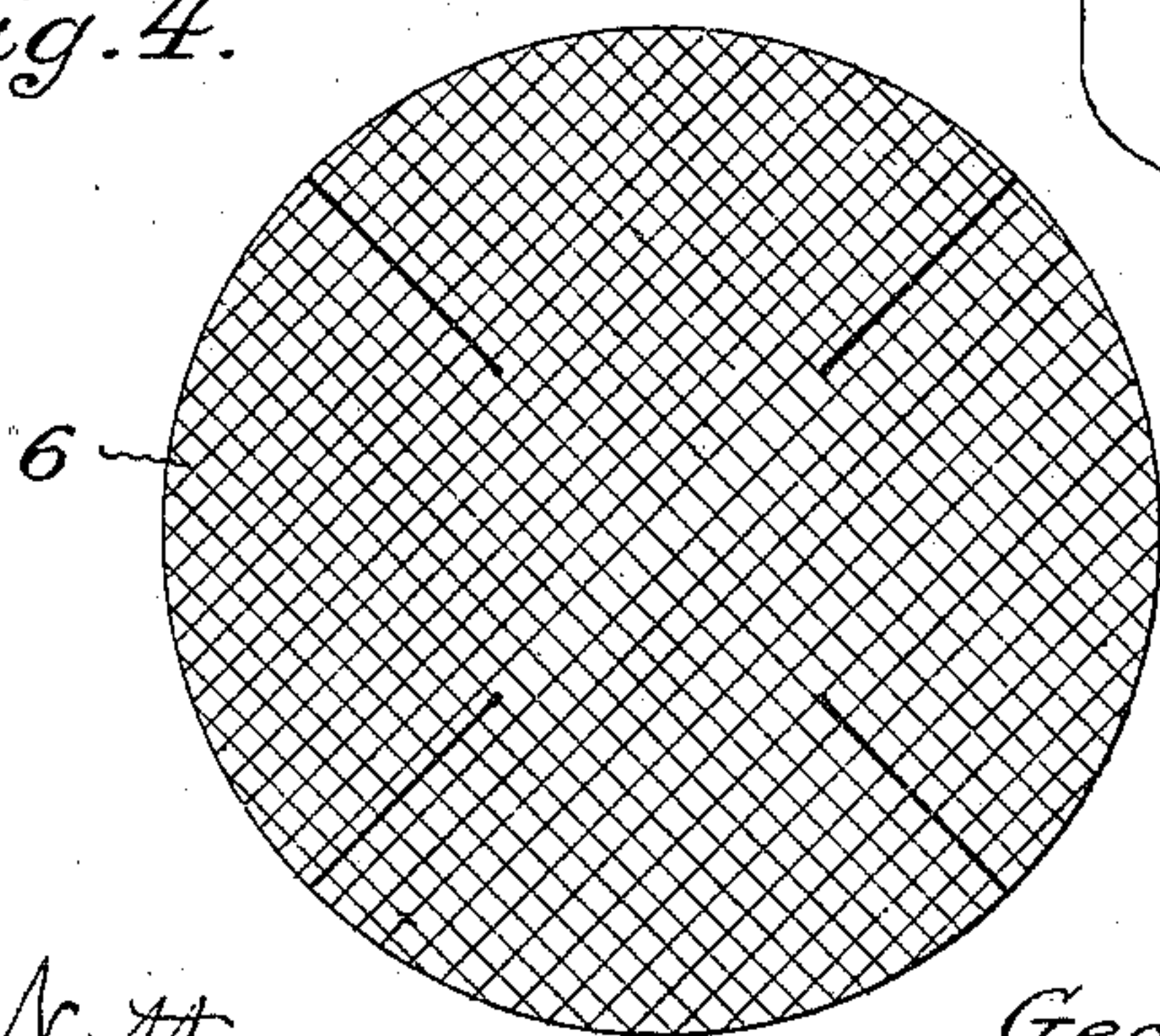


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE BROWNING, OF HINSDALE, AND CHARLES EDWD. BOUTWOOD, OF
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GOLF-BALL.

SPECIFICATION forming part of Letters Patent No. 726,502, dated April 28, 1903.

Application filed November 4, 1901. Serial No. 81,006. (No model.)

To all whom it may concern:

Be it known that we, GEORGE BROWNING, a subject of the King of Great Britain, residing at Hinsdale, in the county of Dupage,
5 (with post-office address at Hinsdale, Illinois,) and CHARLES EDWARD BOUTWOOD, a citizen of the United States, residing at Rogers Park, in the county of Cook, State of Illinois,
10 (with post-office address at Rogers Park, Illinois,) have invented certain new and useful Improvements in Golf-Balls, of which the following is a specification.

This invention relates to that class of composite balls used in the game of golf and the
15 like.

The object of the present improvement is to provide a cheap and efficient ball for such uses possessing the properties of great durability and lightness, and which under high
20 impacts will have a corresponding degree of resiliency and under light or moderate impacts will have but little resiliency, all as will hereinafter more fully appear and be more particularly pointed out in the claims.

25 In the accompanying drawings, illustrative of the present invention, Figure 1 is a detail axial section of a segmental fragment of a golf-ball embodying the present invention. Fig. 2 is a detail perspective view illustrating
30 the manner of applying the elastic winding upon the cork center or core of the ball. Fig. 3 is an elevation of the solidified-cork core of the present invention as the same appears after the ball has been completely formed in
35 the present manufacture. Fig. 4 is a plan view of one of the sections of woven fabric employed in the present invention.

Similar numerals of reference indicate like parts in the several views.

40 Referring to the drawings, 1 represents the solidified-cork core of the present invention, and which is preferably brought to such solidified condition in the process of making the ball as hereinafter described.

45 2 is the main intermediate core layer of the ball, which in the present improvement is formed by a number of endless rubber bands encompassing the solidified-cork core 1 and placed thereon under the desired tension. In
50 the preferred method of applying such rubber bands to the cork core 1 we prefer to ap-

ply to same in successive series, and with the application of each series, which may comprise eight, more or less, ordinary rubber
bands, we hammer or pound the same into
55 place upon the cork core, so that with the application of the final series of bands to the central cork core and the repeated hammering of the same above mentioned a solid resilient core is produced, and with the original
60 bulk of such core reduced from the size shown in Fig. 2 to approximately that shown in Fig. 3. Formed in the manner described the solidified-cork core or body has a horn-like nature that is uniform in its resiliency.

65 3 is a layer covering of woven or other equivalent fabric surrounding the main intermediate core 2 and intended to prevent the outer gutta-percha covering or casing from being forced between the interstices of the
70 bands composing said core while such gutta-percha is being molded into place in its heated or softened condition. Such layer or covering 3 will usually be formed of two counterpart circular disks of the fabric slitted radially, as illustrated in Fig. 5, so as to better
75 adapt the same to the curvature of the core 2.

4 is a supplementary core layer formed of endless rubber bands encompassing the layer
80 or covering 3 of woven fabric and placed thereon under the desired tension.

5 is the gutta-percha shell or outer covering placed encompassing the composite core heretofore described and usually formed of
85 two semishells joined together under heat and pressure in an ordinary vulcanizing apparatus or other equivalent appliance.

6 is an extreme outer layer or covering of woven or other equivalent fabric surrounding
90 the gutta-percha shell 5 and applied thereto during the process of manufacture. Such layer or covering 6 will usually be formed of two counterpart circular disks of fabric slitted radially, as heretofore described
95 in connection with layer or covering 3 illustrated in Fig. 5.

In the present manufacture the gutta-percha outer shell or covering forms a very intimate union with both the outer covering or facing
100 6, of woven fabric, as well as with the supplementary core 4, of rubber bands, and the coverings or facings of woven fabric 3 and 6

are adapted to impart added toughness to the finished ball and lessen the resiliency under light impact.

The process of manufacture heretofore referred to and in which the gutta-percha outer covering or casing is molded in a heated and softened condition consists in placing the ball formed in the manner before described in an apparatus similar to that shown in our Patent No. 685,095, of October 22, 1901, and by means of heat and pressure imparting the desired shape to the ball, and during which operation the heated and plastic gutta-percha outer covering is caused to penetrate through the layers 3 and 6, of open-mesh fabric, to form the very intimate union of the present invention between said parts and with the material of the gutta-percha covering 5 showing upon the outer surface of the outer layer 6, of an open-mesh fabric.

The exterior surface of the ball may be molded with any of the usual markings found on golf-balls by a corresponding formation of the surfaces of the molds.

In the present description, as well as in the claims, the term "gutta-percha" is intended to cover balata gum or other like equivalent materials, while the term "solidified core" is intended to express a core formed in the particular manner set forth in the foregoing description.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A golf-ball, comprising an outer covering or shell of gutta-percha, and a composite core composed of a central body of dense material, a main encompassing elastic layer or winding of india-rubber outside of said cen-

tral body, a layer of fabric inclosing such elastic winding, and an auxiliary encompassing elastic layer or winding of india-rubber outside said fabric, substantially as set forth.

2. A golf-ball formed of gutta-percha or the like, and provided with a layer of open-mesh fabric embedded in the outer surface of the ball with the material of such ball penetrating through and showing upon the outer surface of such fabric, substantially as set forth.

3. A golf-ball comprising a springy core, an inclosing shell of gutta-percha or the like, and a layer of open-mesh fabric embedded in the outer surface of such shell and with the material of such shell penetrating through and showing upon the outer surface of such fabric, substantially as set forth.

4. A golf-ball comprising an outer covering or shell of gutta-percha, and a composite core composed of a central body of solidified cork and an encompassing elastic winding, substantially as set forth.

5. A golf-ball, comprising an outer covering or shell of gutta-percha, and a composite core composed of a central body of dense material, a main encompassing winding of endless rubber bands outside of said central body, a layer of fabric inclosing such elastic winding and an auxiliary encompassing winding of endless rubber bands outside said fabric, substantially as set forth.

In testimony whereof witness our hands, this 25th day of October, 1901, at Chicago, Illinois.

GEORGE BROWNING.

CHARLES EDWD. BOUTWOOD.

In presence of—

ROBERT BURNS,

M. H. HOLMES.