No. 734,463. PATENTED JULY 21, 1903.

C. T. KINGZETT.

GOLF BALL.

APPLICATION FILED MAY 22, 1903.

NO MODEL.

Fig. 1.

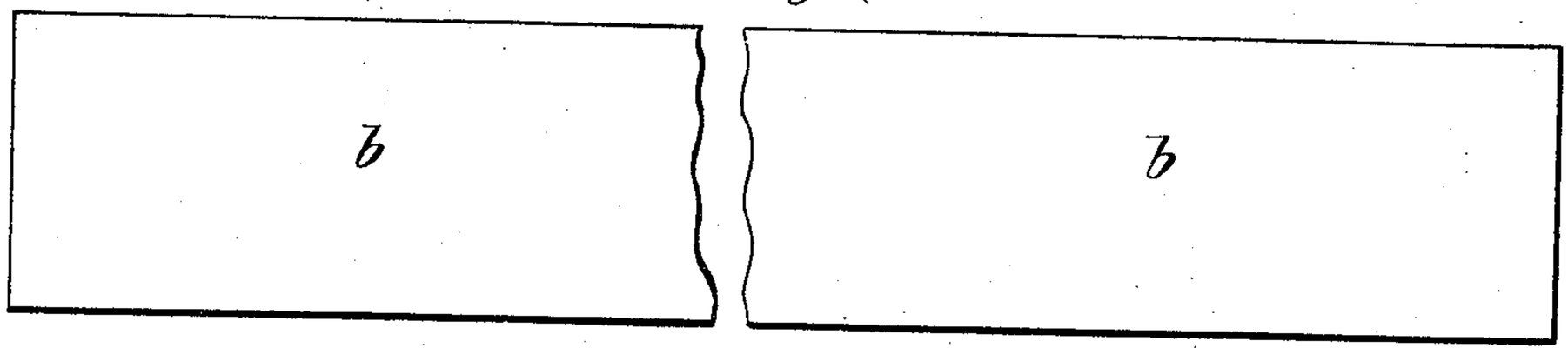


Fig. 2.

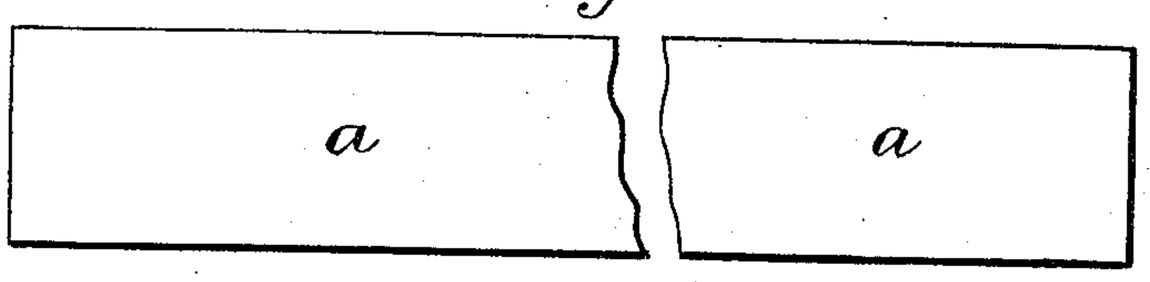


Fig. 3.

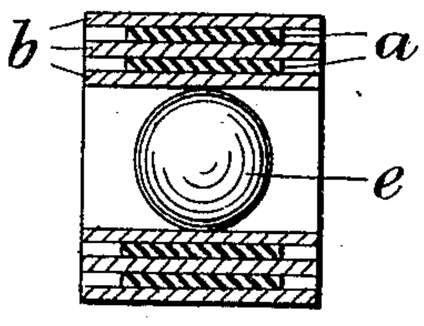


Fig. 4.

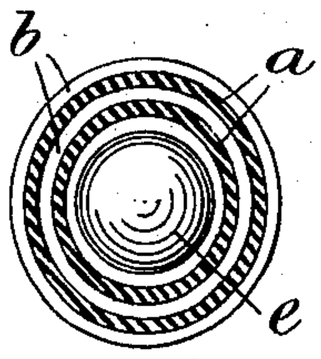


Fig. 5.

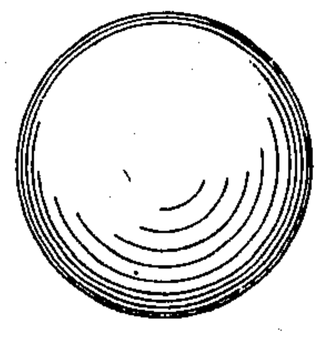
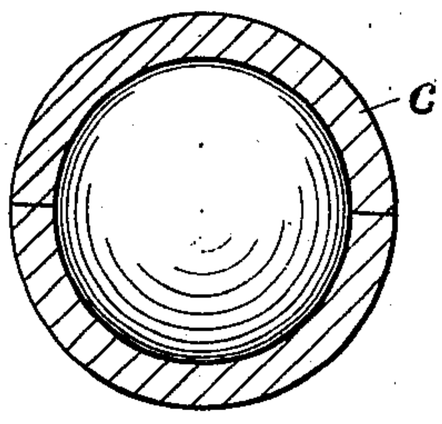


Fig. 6.



Witnesses

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No. 734,463. Patented July 21, 1903.

UNITED STATES PATENT OFFICE.

CHARLES THOMAS KINGZETT, OF CHISLEHURST, ENGLAND.

GOLF-BALL.

SPECIFICATION forming part of Letters Patent No. 734,463, dated July 21, 1903.

Original application filed September 2, 1902, Serial No. 121,811. Divided and application filed February 4, 1903. Serial No. 141,875. Again divided and this application filed May 22, 1903. Serial No. 158,358. (No model.)

To all whom it may concern:

Be it known that I, CHARLES THOMAS KINGZETT, chemical manufacturer, a subject of the King of Great Britain, residing at Elmstead Knoll, Chislehurst, in the county of Kent, England, have invented a certain new and useful Improvement in the Manufacture of Golf-Balls, of which the following is a specification.

According to my invention I construct golf-balls or portions of golf-balls of several or many alternating layers of gutta-percha and india-rubber from strips or sheets of both of these materials or of other similar slightly and highly elastic substances. The balls are formed from strips cut from sheets of these materials. The strips of both materials are first softened by heat and then when in this softened state wound around a central nucleus to form them into alternating layers around it. The alternating layers may either be formed by first winding around the nucleus and squeezing together a strip of the one material, so as to form around the nucleus a spherical envelop of this material, then winding and squeezing around this envelop a strip of the other material, and so on, first using a strip of the one material and then of the other until the desired thickness has been attained, or strips of the two materials may be placed one over the other and the compound strip then wound around the central nucleus or core, so as to form around it either a spherical or cylindrical roll. In the case of a cylindrical roll the ends of the roll are subsequently squeezed inward and the whole molded to spherical form.

Figure 1 represents a sheet of gutta-percha—say about one-sixteenth of an inch thick; Fig. 2, a similar shorter and narrower sheet of india-rubber. Fig. 3 shows an india-rubber ball or other nucleus surrounded by a spiral roll of gutta-percha and india-rubber in alternating layers, the roll being shown in longitudinal section. Fig. 4 shows a section of same after the ends of the roll have been roughly closed in by hand and the whole brought to an approximately spherical form. Fig. 5 shows an elevation of the same after it has been compressed in a mold and brought to spherical form. Fig. 6 shows the same after it has been inclosed in an outer casing of gutta-percha, the casing being shown in section.

To make a spiral roll, such as shown at Fig. 3, I first take a spherical or it may be a cylindrical core or nucleus *e*, which may be of india-rubber or of other suitable material or materials. I next take a strip of sheet india-rubber *a* and place it onto a sheet of gutta-percha *b* of greater width and length and roll them up together when more or less heated around the core, so as to form around it a spherical or cylindrical roll, the exterior surface of which will be of gutta-percha, as the gutta-percha strip is of greater length than the strip of india-rubber.

To form a spherical roll, the side edges of the compound strip are continuously pressed inward toward and around the central nucleus while the strip is being wound around it, or if a cylindrical roll is first formed the ends or side edges of the gutta-percha strip will be protruding outward beyond the side edges of the rubber strip, as illustrated in Fig. 3, and they are then when the roll is heated closed in by hand, so as to bring the roll approximately to a spherical form, as illustrated in Fig. 4, which may then be further compressed by a suitable mold and brought to a truly spherical form, as indicated in Fig. 5. The ball thus made I then inclose in an outer casing of gutta-percha *c*, as indicated in Fig. 6. This outer casing may be formed of sheet gutta-percha wound around the ball or two hemispherical cups of gutta-percha first molded and placed over the ball and the whole then compressed together, or, as above stated, in place of a sheet of gutta-percha and a sheet of india-rubber being wound together as a compound sheet into spiral form around a central core or nucleus the numerous alternating layers of these materials may be successive—that is to say, around the core may be wound several layers or folds of first the one substance and then the other—so that first a spherical covering of one substance is formed around the core, then a spherical covering of the other substance, and so on until the required thickness has been attained.

This case is a division of my application

for patent, Serial No. 141,875, filed February 4, 1903, which was a division of my application Serial No. 121,811, filed September 2, 1902. In application Serial No. 121,811 the ball as an article of manufacture is claimed. In application Serial No. 141,875 claims are made to the process of constructing a ball similar to the claims herein made, but omitting the step of winding the roll about a central core.

What I claim is—

1. The hereinbefore-described process of forming balls, consisting in winding around a central core or nucleus sheet india-rubber and sheet gutta-percha in a softened state to form around it a plurality of alternate layers, first a layer of the one material and then a layer of the other, and molding the whole into spherical form, then surrounding the sphere so formed with gutta-percha and squeezing the whole together when heated within a mold.

2. The hereinbefore-described process of forming balls, consisting in placing a strip of sheet india-rubber onto a strip of sheet gutta-percha, winding up the strips into a roll around a central core or nucleus and then squeezing the roll when heated into a spherical form.

3. The hereinbefore-described process of forming balls, consisting in placing a strip of sheet india-rubber onto a strip of sheet gutta-percha of greater width and length, winding up the strips into a roll around a central core or nucleus in such way that the outermost layer of the roll is of gutta-percha, and then squeezing the roll when heated into a spherical form.

4. The hereinbefore-described process of forming balls, consisting in placing a strip of sheet india-rubber onto a strip of sheet gutta-percha, winding up the strips into a roll around a central core or nucleus and squeezing the roll when heated into a spherical form, then surrounding the sphere so formed with gutta-percha and squeezing the whole together when heated within a mold.

5. The hereinbefore-described process of forming balls, consisting in placing a strip of sheet india-rubber onto a strip of sheet gutta-percha of greater width and length, winding up the strips into a roll around a central core or nucleus in such way that the outermost layer of the roll is of gutta-percha, and then squeezing the roll when heated into a spherical form, then surrounding the sphere so formed with gutta-percha and squeezing the whole together when heated within a mold.

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Witnesses:
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