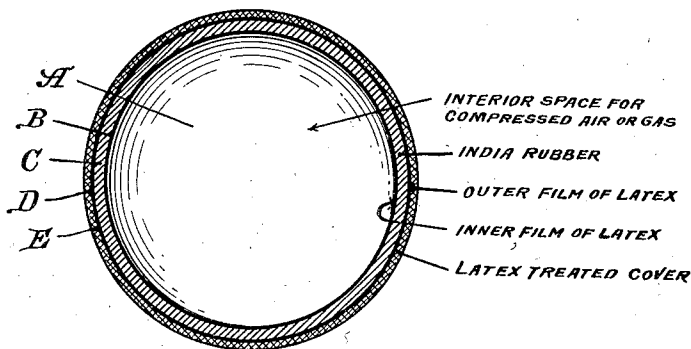


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R. RUSSELL ET AL
TENNIS AND OTHER PLAYING BALL
Filed March 31, 1924



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ROBERT RUSSELL, OF MANCHESTER, AND HERBERT BROOMFIELD, OF STOCKPORT, ENGLAND.

TENNIS AND OTHER PLAYING BALL.

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To all whom it may concern:

Be it known that we, ROBERT RUSSELL, of "Yaldersgate," Beechwood, Heaton Park, Manchester, late of Lands End House, Rhodes, near Manchester, England, a British subject, and HERBERT BROOMFIELD, of 23 Davenport Road, Hazel Grove, Stockport, England, a British subject, have invented certain new and useful Improvements in or Relating to Tennis and Other Playing Balls, of which the following is a specification.

Hitherto it has been difficult to retain the air or gas introduced into tennis and other playing balls largely owing to the fact that the case is made from rubber mixed with powders or mineral matter and vulcanizing ingredients, which are only partially ground in mixing, and frequently left in minute particles, thus allowing the air or gas to escape when the ball is inflated and used. Further, the heavy cloth used for covering tennis balls and the like absorbs a considerable amount of moisture during play, thereby making the ball heavy and generally unsatisfactory.

In the manufacture of tennis and other playing balls the case of the ball is usually made in two sections which may be half spheres or like the figure 8; in the former case the half spheres are usually pressed together in a mould, while in the latter case they are generally made by hand. Before the sections are combined or fixed together it is usual to introduce gas, or powder adapted to produce gas and create the internal pressure necessary during vulcanization. A rubber or plastic plug is sometimes provided through which a needle may be passed for the purpose of inflating the ball with air after the sections have been joined together and vulcanized.

The manufacture of tennis and like playing balls according to this invention is not limited to any particular formation regarding the sections, whether made by machine or by hand, but after the sections are cut or moulded, and preferably before vulcanization, they are treated with liquid latex by dipping coating or like operation and are then joined together in the usual way to form the complete ball, which, when completed is similarly treated with latex. In

each instance it is preferable to allow the latex to dry before proceeding with the next operation.

If preferred, the ball may be made in the ordinary way and the liquid latex then sprayed into its interior by means of a suitable needle the ball being afterwards placed in a revolving machine to ensure its interior being thoroughly coated, after which it is placed to dry, preferably with the plug downwards so that any surplus latex will settle around the plug.

After vulcanization and preferably after inflation, the ball, as a whole, is dipped into or coated with latex, one or more times as desired, and afterwards dried, thus forming a film over the compound rubber shell or casing to prevent the escape of air or gas through said compound shell or case or through the aperture in the plug pierced for the purpose of inflation. This further film may be vulcanized or left unvulcanized and used as a solution or medium for the attachment of the outer cloth covering where desired.

In the case of tennis and like playing balls, which are covered with cloth or felt, the cloth or felt, before being attached to the case or shell, is dipped in latex one or more times as desired, afterwards moulded to the desired shape, dried and then, if preferred, vulcanized by any suitable process to the shell. The vulcanizing agent may be mixed with the latex before application of the various coatings to the sections of the ball, or to the ball as a whole, or to the cloth.

The latex for the purposes above described may be mixed with other substances such as dyes, pigments, powders, minerals or/and vulcanizing agents, when desirable. For instance in the case of playing balls without the cloth cover where it is desired to produce coloured effects, patterns or designs on the surface of the ball, or in the case of balls covered with cloth or felt, where it is desired to produce and retain a white effect, in which case the surface of the cloth may afterwards be raised to give a nap effect.

It will be understood that whilst preferring to apply the several films of latex before named or described, any one may be omitted if desired. It will also be under-

stood that the latex will preferably contain a preservative to prevent premature coagulation.

In the accompanying drawing the figure 5 shows a cross-sectional view of a tennis ball produced in accordance with and illustrating the present invention. A is the interior space for compressed air or gas; B is the inner film of latex; C is the indiarubber 10 shell of the ball; D is the outer film of latex; and E is the latex-treated outer cover.

We claim:—

1. As a new article of manufacture a playing ball composed of sections of vulcanized indiarubber and provided on at least one 15 side with a film of precipitated latex solids.
2. As a new article of manufacture a playing ball composed of sections of vulcan-

ized indiarubber and provided on one side with a film of vulcanized latex. 20

3. As a new article of manufacture a playing ball composed of sections of vulcanized indiarubber and provided on both sides with a film of precipitated latex solids.

4. As a new article of manufacture a 25 playing ball composed of sections of vulcanized indiarubber coated on both sides with vulcanized latex.

5. A tennis ball composed of sections of vulcanized indiarubber covered on at least 30 one side with precipitated latex solids, and of a cloth covering impregnated with precipitated latex solids.

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