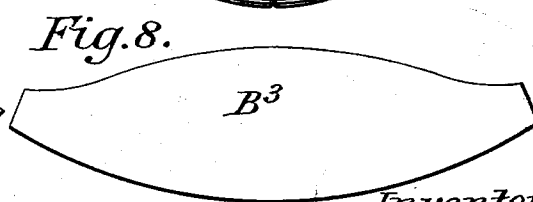
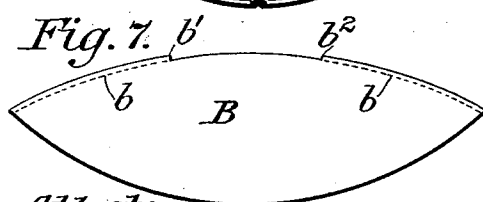
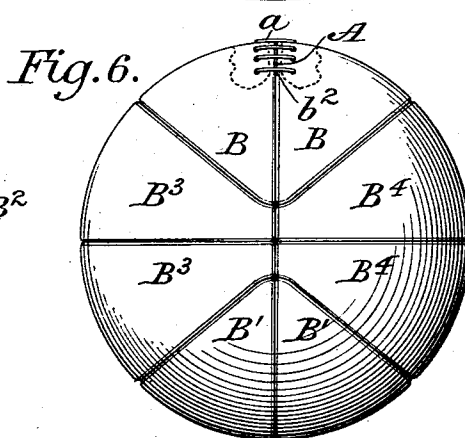
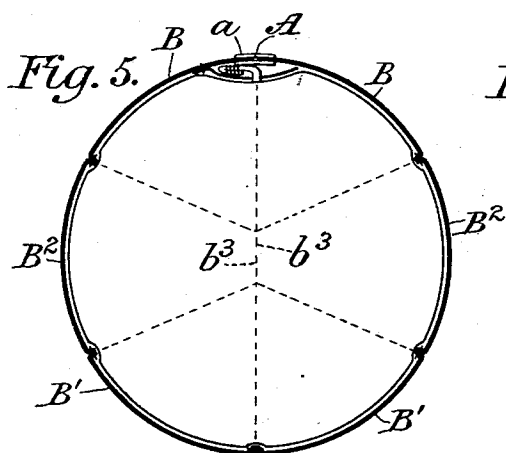
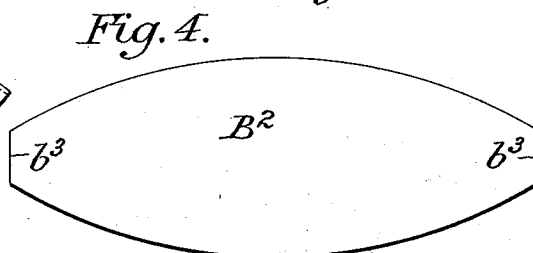
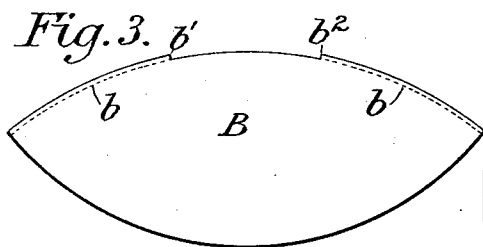
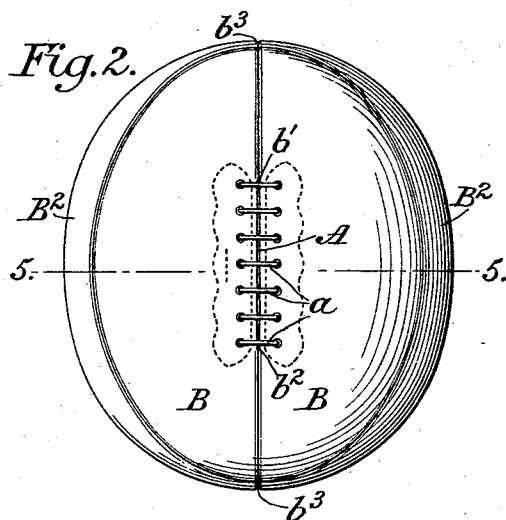
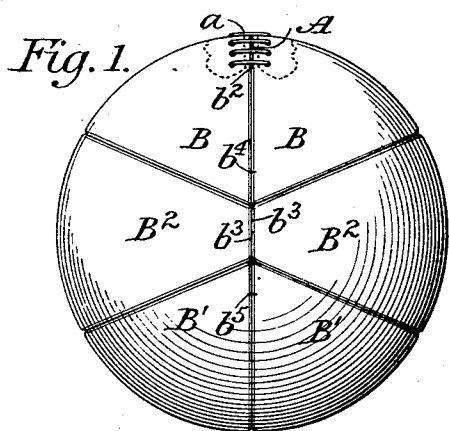


(No Model.)

A. NISBET.
FOOT BALL.

No. 568,871.

Patented Oct. 6, 1896.



Attest:
A. N. Jesbera.
Charles E. Givens

Inventor:
Alexander Nisbet
by Redding, Kiddle & Greeley
Attys.

UNITED STATES PATENT OFFICE.

ALEXANDER NISBET, OF NEW YORK, N. Y., ASSIGNOR TO THE A. G. SPALDING & BROS., OF SAME PLACE AND CHICAGO, ILLINOIS.

FOOT-BALL.

SPECIFICATION forming part of Letters Patent No. 568,871, dated October 6, 1896.

Application filed May 18, 1896. Serial No. 591,906. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER NISBET, a subject of the Queen of Great Britain, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Foot-Balls, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

10 This invention relates to the covers of foot-balls, such covers being usually made of leather and inclosing within them an inflatable bag.

15 One of the objects which I have had in view has been to make the foot-ball, when the inner bag is fully inflated, as smooth as possible exteriorly and free from any irregularities which would affect the intended accuracy of the movements of the ball when in play, 20 as well as to avoid the necessity for the existence of any buttons or other protuberances which are apt to cause injury when they strike unprotected parts of the person of the player.

25 A further object has been to reduce the cost of manufacture, as well as to improve the quality of the product, by reducing to a minimum the amount of hand-sewing requisite to finish the ball after the machine-sewing has 30 been carried as far as possible.

35 These desirable results I accomplish by giving to the pieces of leather of which the cover is composed certain relative shapes and by uniting them in a certain relation, all as more particularly described hereinafter.

40 In the first place I form the pieces which are adjacent to the laced opening left for the purpose of inserting or removing the inflatable bag and of manipulating the tube through which the bag is inflated in such a manner as to permit the edges adjacent to 45 said opening to be drawn snugly together without causing the wrinkling of the cover, which has been usual in foot-balls having the covers constructed as heretofore. This particular feature of improvement is equally applicable to a ball of the form ordinarily employed in the Association game and to a ball of the form employed in the Rugby game. 50 In the second place I have given such form and relation to the pieces of which the cover

is made up, whether six or eight in number, as to avoid the existence of any clumsy seam or of any exterior covering piece or button at the ends of the cover, to enable the cover 55 to stretch more uniformly when the inner bag is inflated, and therefore to assume more certainly the perfectly regular form desired, and to reduce to a minimum the length of the seam which must be left open after the machine-sewing has been carried as far as possible and must be closed by hand-stitching 60 in order to finish the cover. This second feature of my invention has relation more especially to the Association ball, although it might be applied to the Rugby ball. 65

In the accompanying drawings, in which I have illustrated embodiments of my invention, Figure 1 is a plan or top view of a complete foot-ball having a six-piece cover. 70 Fig. 2 is a front elevation of the same. Fig. 3 is a plan view of one of the pieces of the cover adjacent to the laced opening, there being in all four pieces of substantially the same shape, except as hereinafter indicated. Fig. 4 is a 75 plan view of one of the two pieces which, with the four just referred to, complete the cover shown in Figs. 1 and 2. Fig. 5 is a section on the plane indicated by the line 5 5 of Fig. 2. Fig. 6 is a plan or top view of a complete 80 foot-ball having an eight-piece cover. Fig. 7 is a plan view of one of the pieces of the cover adjacent to the laced opening, as represented in Fig. 6, there being in all four pieces of substantially the same shape, except as here- 85 inafter indicated. Fig. 8 is a plan view of one of the four pieces which, in the cover represented in Fig. 6, make up the cover with the four pieces represented in Fig. 7.

In foot-balls having a laced opening the 90 parts or pieces of the cover on each side of such opening as heretofore made have had their meeting edges formed on a continuous curve which is substantially an arc of a great circle of the sphere. The result has been that 95 when the two parts or pieces are sewed together at opposite ends of the opening the amount of material necessary to be taken up by the seam causes a slackness or looseness of the material on each side of the opening itself, even when the opening is laced as tightly 100 as possible, which occasions a noticeable

wrinkling or irregularity of the cover about such opening when the ball is fully inflated. In order to obviate entirely the existence of such wrinkling and irregularity, I form these
 5 two parts or pieces B B (see Figs. 1, 2, 3, 5, 6, and 7) as follows: I cut away the edge of each piece B B back to the line b of the stitches when the parts are sewed together, this cutting away extending the whole length of the
 10 opening A, as from b' to b^2 . When the two parts or pieces B B are sewed together, those portions from b' and b^2 to the respective ends of each piece will be turned in to form the seam, wherefore such parts will meet along a
 15 line represented by the broken line b , or, as I shall hereinafter term it, the "line of stitching," thus allowing the inset edges or lips of the opening A, as from b' to b^2 , to just meet when the ball is fully inflated and the lacing
 20 a applied and drawn taut. It will be obvious, accordingly, that there is no superfluous material left to cause any slackness and irregularity in the cover, but that, on the contrary, my improved cover will be as smooth about
 25 the opening A as at any other part. It will also be evident that this particular feature of my invention may be applied with advantage to covers constructed in other respects in the ordinary manner. For the sake of securing
 30 the best results, however, I prefer that the cover shall be constructed in other respects as will be described presently.

In the construction represented in Figs. 1, 2, 3, 4, and 5 the cover is made up of six parts,
 35 comprising the two parts B B, already referred to, two other parts B' B', which are of the same shape as the parts B B, except that they are not cut away along one edge, as are the parts B B, and two truncated segments B².
 40 The parts or pieces B B and B' B' are stitched to each other and to the lateral edges of the parts or pieces B² B², as clearly represented in the drawings, but are of such length as to fall short of the poles of the completed sphere,
 45 as clearly shown in Figs. 1 and 2. The parts or pieces B² B², however, are of such length as to permit their truncated ends b^3 b^3 to meet and be stitched together in the arc of a great circle of the sphere and of the same great
 50 circle in which lie the seams between the two parts B B and between the two parts B B, so that the cover is characterized by a seam which encircles the ball in the plane of its polar diameter and to which all of the parts
 55 which make up the cover are brought. The result of this construction is not only the avoidance of any bunching of the cover at the poles of the sphere, but a more uniform stretching of the cover is permitted and a
 60 more perfect shape of the inflated ball secured

than is possible where the parts are not brought to a common seam and where the poles are crossed by a seamless band or piece. Furthermore, the cover can be entirely machine-
 65 sewed, except for a short portion of this common seam, in a diametrical plane, as from the point b^4 to the point b^5 in Fig. 1, leaving only this short extent of seam to be stitched by
 70 hand, and thereby greatly reducing the labor and expense in finishing the cover as compared with covers as heretofore made, in which a much greater extent of hand-stitching is required.

The cover represented in Figs. 1, 2, and 3 is made up of six pieces, but it will be seen
 75 by reference to Figs. 6, 7, and 8 that the improvement can be as well embodied in an eight-piece cover. As shown in said figures, the cover comprises two parts or pieces B B and two parts or pieces B' B', which correspond
 80 to the parts to which the same letters of reference are applied in Figs. 1, 2, 3, 4, and 5, although they may be somewhat narrower in proportion to their length. The other four
 85 parts of which this cover is composed are arranged in pairs B³ B³ and B⁴ B⁴, each pair of parts or pieces B³ or B⁴ corresponding to the parts or pieces B² of the construction shown in Fig. 1. Each of the four parts B³ B⁴ is,
 90 however, formed substantially as represented in Fig. 8, the curving of the meeting edges of the two parts B³ B³ and of the two parts B⁴ B⁴ permitting the cover to be shaped to the sphere with less stretching of the leather.

I am aware that it has been proposed heretofore to provide the edges of the pieces of a
 95 foot-ball cover adjacent to the opening with flaps which are turned in and are provided with holes to receive the lacing, but this construction occasions an increase in the thick-
 100 ness adjacent to the opening, which it is my desire to avoid.

I claim and desire to secure by Letters Patent—

A foot-ball cover comprising four pieces
 105 having each a length less than the semicircumference of the ball and two truncated parts of a length to permit their truncated ends to meet in the arc of a circle passing through the poles of the ball, the said several parts or
 110 pieces being secured together and meeting in a common seam which lies in the arc of said circle passing through the poles of the ball, substantially as shown and described.

This specification signed and witnessed this
 115 13th day of May, A. D. 1896.

ALEXANDER NISBET.

In presence of—

W. B. GREELEY,
 A. N. JESPERA.