Aug. 24, 1926. 1,597,308

J. W. BRANDT

FOOTBALL

Filed Jan. 9, 1925 4 Sheets-Sheet 1

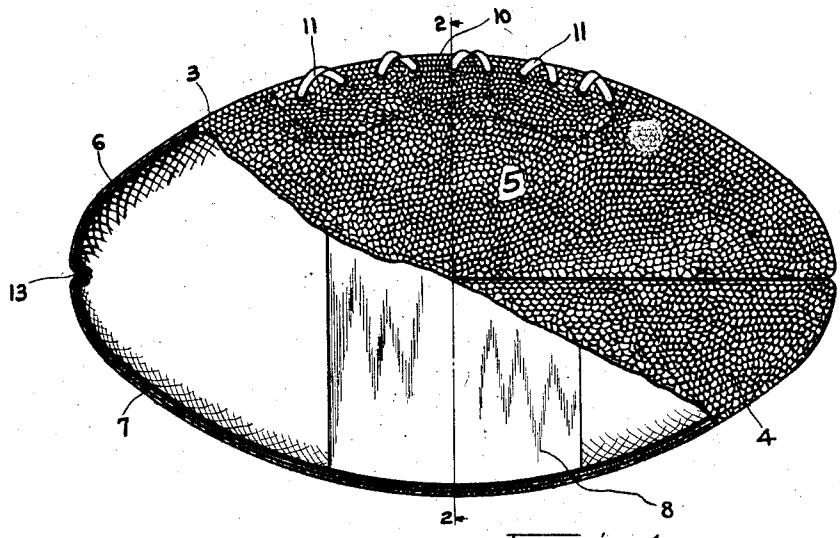


Fig. 1

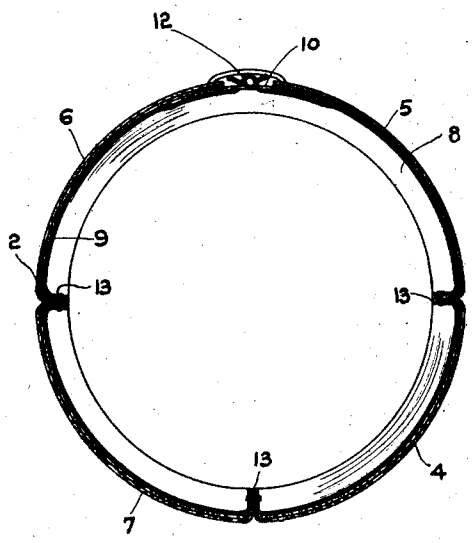


Fig. 2

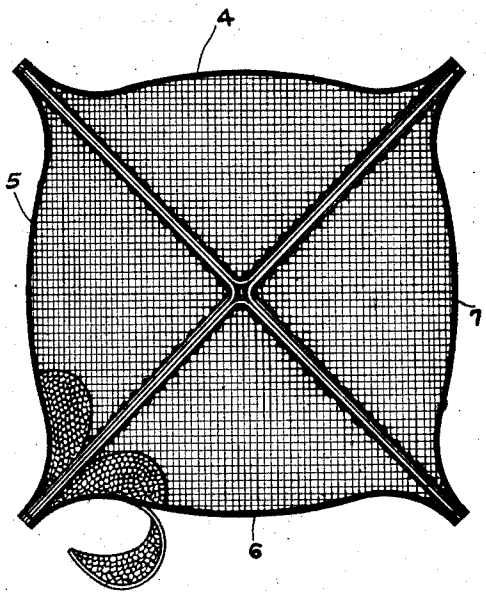


Fig. 5

INVENTOR
John W. Brandt
BY
Ridley Slaughter & Watt
HIS ATTORNEYS.

Aug. 24, 1926. 1,597,308

J. W. BRANDT

FOOTBALL

Filed Jan. 9, 1925 4 Sheets-Sheet 2

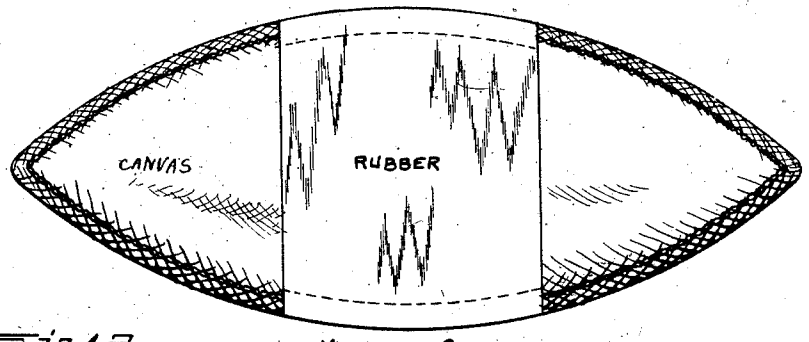


Fig. 1a

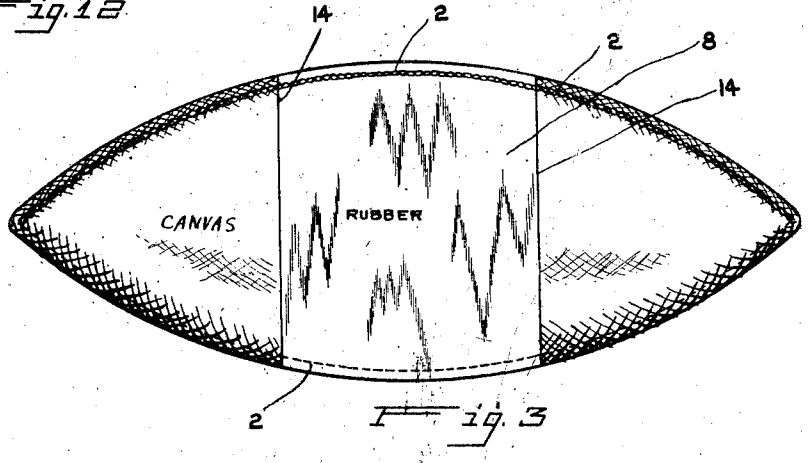


Fig. 3

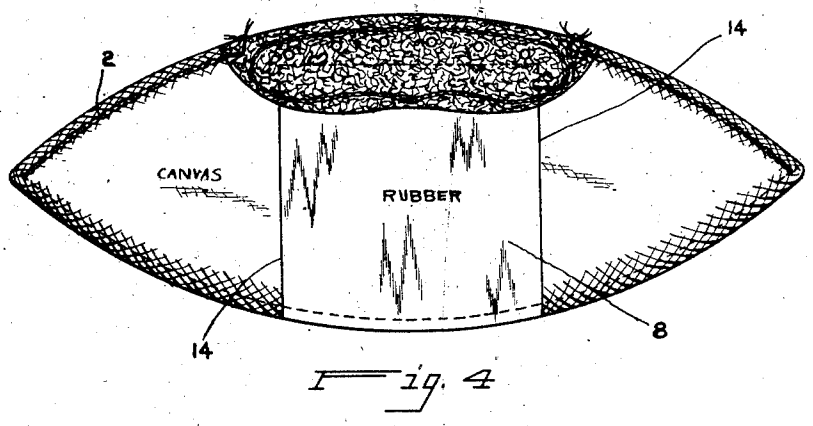


Fig. 4

INVENTOR
John W. Brandt
BY
Ridley Slough & Watts,
His ATTORNEYS.

Aug. 24, 1926. 1,597,308

J. W. BRANDT

FOOTBALL

Filed Jan. 9, 1925 4 Sheets-Sheet 3

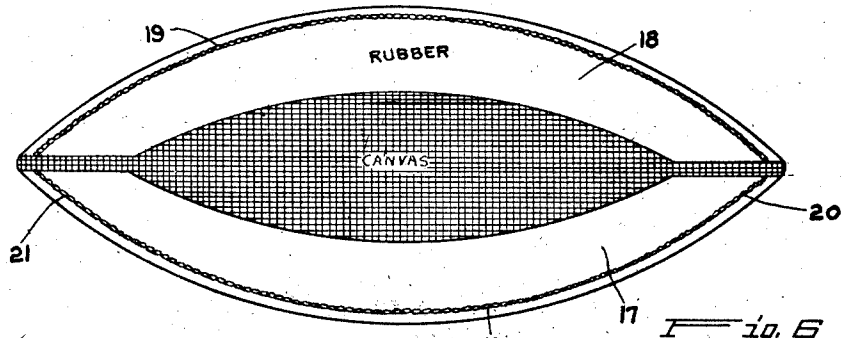


Fig. 6

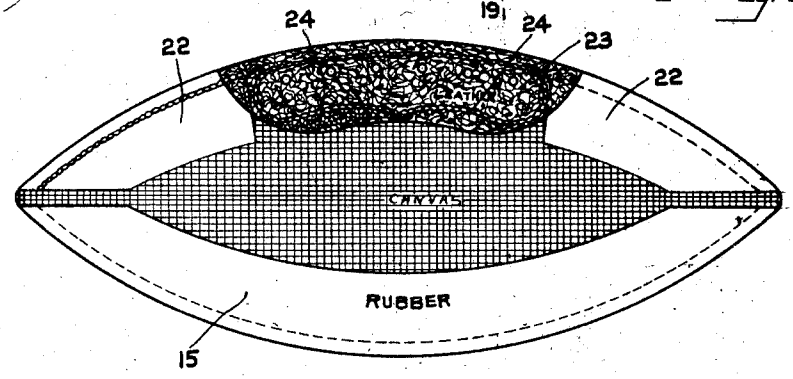


Fig. 7

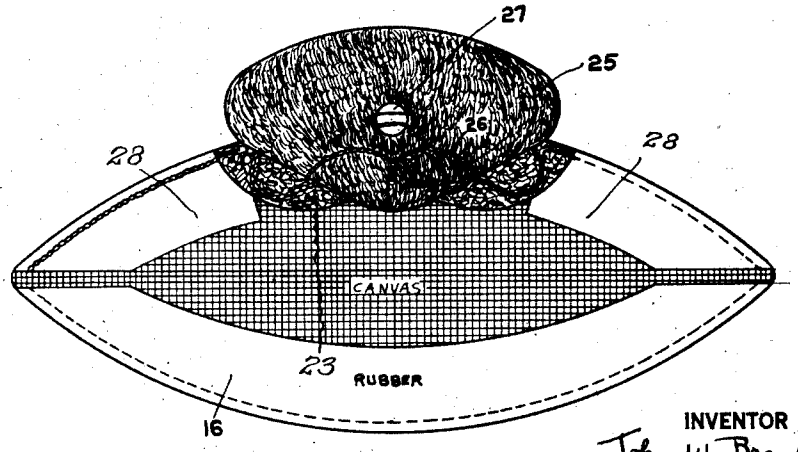


Fig. 8

INVENTOR
John W. Brandt
BY
Richey, Slough & Watts
ATTORNEYS

Aug. 24, 1926. 1,597,308

J. W. BRANDT

FOOTBALL

Filed Jan. 9, 1925 4 Sheets-Sheet 4

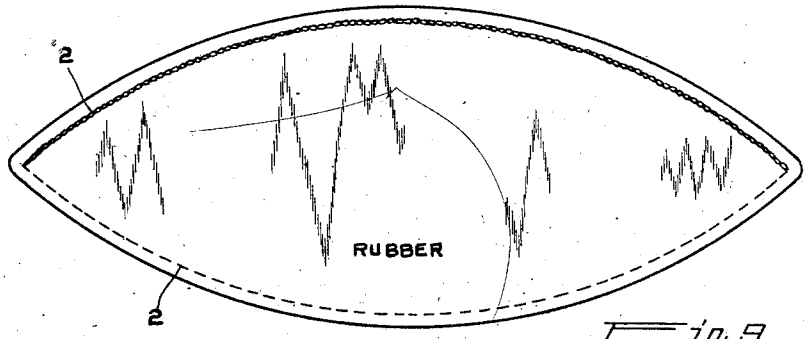


Fig. 9

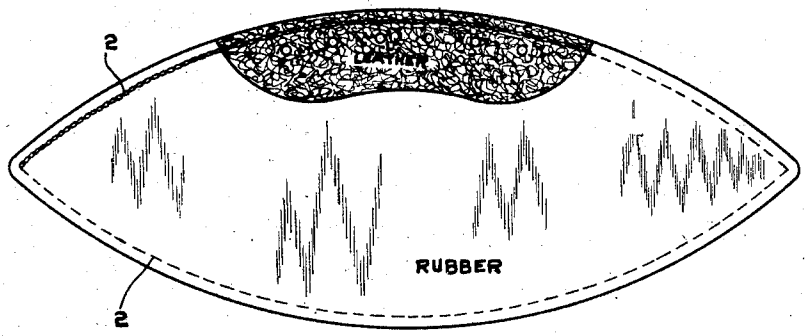


Fig. 10

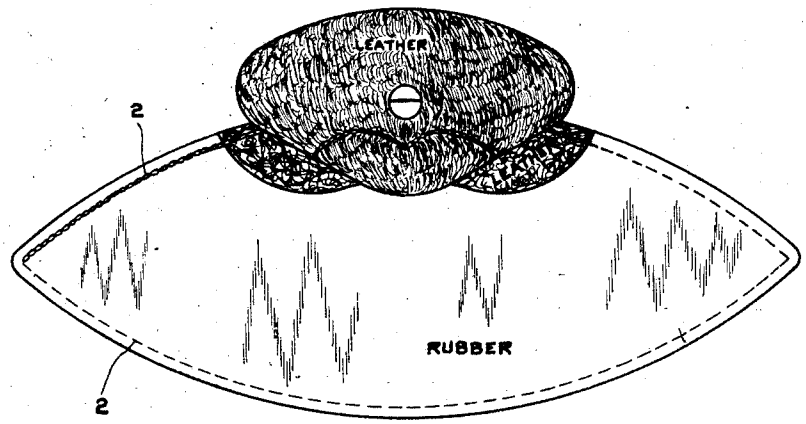


Fig. 11

INVENTOR
John W. Brandt
BY
Ricley Slough & Watts,
HIS ATTORNEYS.

Patented Aug. 24, 1926. 1,597,308

UNITED STATES PATENT OFFICE.

JOHN W. BRANDT, OF ELYRIA, OHIO.

FOOTBALL.

Application filed January 9, 1925. Serial No. 1,362.

My invention relates to footballs and has as an object to provide a football of greater resiliency than the footballs commonly in use.

Another object of my invention is to provide a heavier football than that commonly in use but of the same size and without impairing the resiliency thereof.

Another object of my invention is to provide a football which is more durable than those of the prior art with which I am acquainted.

Another object of my invention is to secure the results sought in each and all of the aforesaid objects in a football which can be manufactured inexpensively and without the provision of special machinery therefor.

Other objects of my invention and the nature of the invention itself will become readily apparent as the description of the specific embodiments thereof progresses and in which description reference will be had to the accompanying drawings forming a part of this specification.

Referring to the drawings—Fig. 1 shows a side elevational view of an embodiment of my invention, a fragment thereof being shown as broken away so as to make a portion of the view in longitudinal, medial section for the purpose of disclosing the structure of the inner parts.

Fig. 2 shows a transverse, medial section of the embodiment of Fig. 1.

Fig. 3 shows inside elevation of one of four similar walls of the foot ball outer casing as illustrated in Figs. 1 and 2, the view being of an inner wall and taken when the football is turned inside out to expose such inner wall.

Fig. 4 shows a like view of another similar wall of the casing of the ball of the foregoing figures.

Fig. 5 shows the ball of the foregoing figures in end elevational view, the ball being first turned inside out to disclose the method of making up the seams of the ball and the relative positioning of the different parts.

Fig. 6 shows a view similar to that of Fig. 3 of a casing wall comprised in another embodiment of my invention.

Fig. 7 shows a like view of a similar other casing wall of the ball of Fig. 6.

Fig. 8 shows a like view of a third wall thereof.

Fig. 9 shows a view similar to that of Fig. 3 of a casing wall of a third embodiment of my invention.

Fig. 10 shows a like view of a similar other wall for the ball illustrated.

Fig. 11 shows a third wall of the ball of the Figs. 9 and 10.

Fig. 12 shows a wall of a ball which is a fourth embodiment of my invention.

Referring now first to the embodiment of my invention illustrated in Figs. 1 to 5, inclusive, I preferably construct the ball of my invention by securing the edges of four casing walls together, as by stitching the same with threads projected through adjoining edges of the walls, as illustrated at 2. The walls of the football of my invention comprise, first, an outer layer 3 of leather which is soft and pliable as commonly employed for such purposes, the outer casing being preferably, as is the custom, in foreign segments as illustrated in Figs. 1 to 5 at 4, 5, 6 and 7. On the inner surface of each said wall, I face the wall with a fabric covering such as coarse muslin or like canvas, the same being stitched at its borders to the borders of the leather, by the stitching threads 2 illustrated at various places in the drawings.

So far as the description of this first embodiment of my invention has progressed, it is of the common form of football now well known in the art. To the inner surface of the plurality of walls, such as the walls 4, 5, 6 and 7 of such a football, I secure a rubber band or girdle 8 extending from seam to seam of each of the walls on the interior surface thereof, the same being secured to the walls by stitching it together with the canvas lining therefor directly to the borders of the leather facing 3. I then consolidate the four walls of the football into the form of the plain ball by sewing the walls together at their edges as described and turning the ball inside out until it takes the form illustrated in Figs. 1 and 2.

The form taken by such a ball previous to being turned inside out is that shown in Fig. 5, which represents the ball which has been manufactured by consolidating the four walls into an integral ball casing by stitching these walls together with their linings and the elastic band or girdle for each wall section shown at 8.

Such a ball casing constructed as described will have an elastic rubber bladder

9 placed within the casing through the opening 10 provided in the casing and which opening may be closed by laces 11, such as commonly provided for the purpose, and the bladder inflated by pumping air into the same under pressure through a duct 12 and which duct may be closed thereafter by doubling the tubular wall thereof back upon itself and securely tying it as shown in Fig. 2 in the customary manner. Such a ball when inflated will become distended as shown in Fig. 1, the ball in all transverse cross sections becoming approximately circular and in all longitudinal cross sections being oval, and the seams between the casing sections will be turned inwardly as illustrated at 13 in Figs. 1 and 2.

I find that a band of soft, relatively thin, pliable and flexible rubber stitched in this way at its ends to seams at opposite borders of the casing wall segments perform the function of weighting the ball, at the same time forming together with the other rubber band portions of the ball which altogether comprise a substantially closed band of rubber encircling the ball, secures for the ball a degree of additional resiliency not had in plain balls without this rubber inner band, and that such weighting is balanced so that the ball will not, due to any unbalancing effect of the weight thereof, travel through the air after being kicked in a direction at variance to the behavior of a like ball with out the rubber material contained there, as described.

I find that also due to the fact that the rubber material is of perceptible thickness the bladder 9 which by its contained air under pressure is forced into intimate contact with the inner surface of the rubber band 8 and the other inner casing wall portions which "flow" over the adjoining portions of the rubber material and the inner wall of the canvas not faced with rubber and as shown at 14, will secure a grip at such points on the inner wall of the ball casing to prevent dislodgement of the bladder as is sometimes the case in plain balls which have been in common vogue previous to my invention.

Such displacement causes a stretching of the bladder at some points with a resultant decrease in tensile stress at other points and will cause the weight to be unequally distributed, and in some cases causes the life of the bladder to be decreasd as well.

I have found that it is impracticable to secure the advantages of increased weight and resiliency had with a ball of my invention to merely increase the thickness of the wall of the bladder, since when this is done the bladder will not "flow" around the inwardly protruding seams between the casing wall sections to a degree which will cause a gripping between the bladder and such seams to prevent displacement of the bladder within the casing and that a great deal of displacement and consequent unbalancing of the ball occurs. Also such a ball is not as resilient as one constructed in accordance with the above description of an embodiment of my invention wherein the additional rubber material is applied to the inner wall of the casing sections and not to the bladder.

Another advantage of facing the inner wall of the casing with rubber material is that the rubber material of such casing inner wall will adhere tightly to the rubber material of the bladder, since rubber against rubber has a high coefficient of friction as compared to rubber against canvas and rubber against leather, and like material, which might be employed in plain balls.

In Figs. 6 to 8, inclusive, I illustrate another form of my invention wherein the rubber bands are, as shown at 15, 16, 17 and 18, secured along the borders of each of the wall sections, being stitched at 19 along an edge of the rubber bands which are curved in form so that the stitching at a remote point 20 for a band 17, for instance, is at an opposite end and in line with the stresses set up in the band to a point 21 at the other end thereof, the same being true of the other bands 15. 16 and 18.

The band 22 is in two parts since the inner lining of leather 23 for the throat of the casing is stitched as shown at 24 to join the sections 22 and the rubber material provided in the other bands is omitted between the two sections 22, since the additional leather facing 23 will give the weighting otherwise given by the omitted rubber portion.

The construction on the opposite side of the seam shown in the upper part of Fig. 7 is similar to that shown for the upper side of Fig. 8, except that as illustrated in Fig. 8 there is a flap 25 secured by stitching 26 to the wall of the casing, this flap having an aperture 27 adapted to be passed over the tubular duct such as illustrated in Fig. 2 at 12 for the bladder and through which duct the inflation of the bladder takes place. This construction of flap and duct is like that of the prior art and requires no further description.

It will be noted that the rubber band portions illustrated at 28 on either side of the leather facing 23, as shown in Fig. 8 are, like the portions 22 of Fig. 7, separated but joined by the leather 23.

In this embodiment of my invention which is illustrated in Figs. 6 to 8 by views of the inner walls of the football casing, but with the football turned inside out to expose the inner construction and to illustrate as well the step in the manufacture of the casing prior to the turning of the casing inside out,

the rubber bands extend longitudinally of the ball instead of transversely, as in the case of the band 8 for the wall sections of the first embodiment of my invention described. The advantages, however, are like in kind though different in detail and I may employ either construction and secure such advantages.

Referring now to the embodiment of my invention illustrated in Figs. 9, 10 and 11, in this embodiment I provide an inner lining of rubber for each of the sections of the rubber casing applied directly to the inner surface of the leather outer casing segments and stitched thereto at the border portions of the rubber and leather sheets, as shown at 2. In this embodiment of my invention the effect, substantially, is to provide an entire rubber lining for the ball outer casing, and reliance is placed upon the coefficient of friction as between two rubber surfaces, the material being soft rubber or like elastic material having a high coefficient of friction for adherence of the rubber bladder to the walls of the casing and without becoming displaced within the casing, in addition to the reliance placed upon the inwardly turned seams, faced with rubber at their sides for holding the inner bladder in place.

In the embodiment of Fig. 12, I stitch the rubber to the canvas only, at points closely adjacent the stitched seams joining the sections. By so securing the rubber to the inside of the casing I find that the tendency of the seams to spread apart on the exterior of the completed and reversed ball is eliminated, and the same results secured as in the other embodiments. In the broadest aspects of my invention it is only important that the rubber girdle or band within the casing be properly distributed within the casing and intermediate the casing and inflated bladder. In some embodiments of my invention I even propose to eliminate the stitching entirely, though for most purposes I prefer that the rubber be securely fastened to the interior of the casing.

What is claimed is:

1. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber extending along the inner surface of each leather casing section and intimately secured thereto at a plurality of separated portions thereof.

2. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber extending along the inner surface of each leather casing section and intimately secured thereto at a plurality of separated portions thereof, by sewing the rubber sheet for each section securely to such section at portions adjacent the edge thereof.

3. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber extending along the inner surface of each leather casing section and intimately secured thereto at a plurality of separated portions thereof, by sewing the rubber sheet for each section securely to such section at opposite edge portions thereof.

4. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber extending along the inner surface of each leather casing section and intimately secured thereto at a plurality of separated portions thereof, said rubber sheets being applied to each of the ball casing sections at corresponding points thereon.

5. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber extending along the inner surface of each leather casing section and intimately secured thereto at a plurality of separated portions thereof, portions of the interior surface of the sections being left uncovered by such rubber sheets, said rubber bladder being sufficiently thin that when inflated it fits snugly to said rubber covered sheet surfaces and to all portions of the uncovered portions, including such uncovered portions adjacent to the edges of the sheets and also to such edges, such rubber sheets serving to prevent displacement of the bladder, and also to add to the weight and resiliency of the ball.

6. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all con-

verging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber extending transversely of each of said sections along the inner surfaces thereof and intimately secured thereto at a plurality of separated portions thereof, portions of the interior surface of the sections being left uncovered by such rubber sheets, said rubber bladder being sufficiently thin that when inflated it fits snugly to said rubber sheet covered surfaces and to all portions of the uncovered portions, including such uncovered portions adjacent to the edges of the sheets and also to such edges, such rubber sheets serving to prevent displacement of the bladder, and also to add to the weight and resiliency of the ball.

7. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a strip of rubber extending transversely of each of said sections centrally along the inner surfaces thereof and intimately secured thereto at a plurality of separated portions thereof, portions of the interior surface of the sections being left uncovered by such rubber sheets, said rubber bladder being sufficiently thin that when inflated it fits snugly to said rubber sheet covered surfaces and to all portions of the uncovered portions, including such uncovered portions adjacent to the edges of the sheets and also to such edges, such rubber sheets serving to prevent displacement of the bladder, and also to add to the weight and resiliency of the ball.

8. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber secured to each of said sections at corresponding points along one edge thereof.

9. In a football, the combination with an outer leather casing comprising a plurality of sections joined together in seams running longitudinally of the ball and all converging to two opposite ends of the ball, the joined edges of the sections being inwardly turned, of an inflatable rubber bladder for the interior of the ball, and a sheet of rubber secured to each of said sections along one edge thereof and running longitudinally of the ball.

10. In a play-ball, the combination with a relatively non-resilient casing, an inflatable bladder disposed therein and an interposed central band of rubber material of a width less than the longer diameter of the bladder encompassing the bladder.

In testimony whereof I hereunto affix my signature this 5th day of January, 1925.

JOHN W. BRANDT.