This invention relates to balls for playing games such as football or the like and comprises a casing having an opening for the insertion of a valved bladder and an inflation opening diametrically positioned relative to the first opening.

The invention also provides that the said bladder be removably connected to the casing by means of its neck.

According to the invention, the connection between the bladder and casing is obtained by means of an arrow-shaped member formed of flexible material. This arrow-shaped member is united with the portion of the casing provided with the inflation opening and the sharp ends of this arrow-shaped member are adapted to be inserted through holes of a member united with the neck of the bladder.

According to another form of the invention, the connection between the bladder and casing is effected by means of a plate, for example made of steel, united to the neck of the bladder and inserted in a recess provided in the portion of the casing having the inflation opening.

The annexed drawings show, by way of example and in a non-limiting manner, several embodiments of the invention:

Figure 1 is a fragmentary section through the ball, according to the invention.

Fig. 2 is a fragmentary plan view showing the details of the connection between the bladder and the casing.

Fig. 3 is a fragmentary perspective view of the bladder and the connecting device.

Fig. 4 is a section through the ball.

Fig. 5 is a plan view of the closing flap of the ball.

Fig. 6 is a fragmentary sectional view of a modified form of the invention.

Figs. 7 and 8 are fragmentary plan and sectional views of another modification of the ball, according to the invention.

According to Figs. 1 and 2, the valved bladder 2 is inserted, neck forward, into the casing 3 through a hole 4, the dimensions of which are large enough to avoid deformation and easily allow the insertion and withdrawal of the bladder. The neck of the said bladder is provided at its upper part with a piece 5, made of india-rubber, upon which a metallic plate 6, for example of steel, is attached by means of rivets.

When the bladder is pushed into the casing, the said plate 6 is inserted into a recess 7 positioned diametrically opposite the hole 4 in the portion 8 of the casing. This recess 7 is obtained by the cooperation of the portion 8 of the casing and a piece of leather 8 sewed thereto. The said piece of leather is provided with a hole 10 having a shape similar to that of the metallic plate and is positioned in front of another hole 11 provided in the portion 8 of the casing for the inflation of the bladder. The plate 6 is inserted through hole 10 into the recess and is then turned perpendicularly to the first position, in order to take the position illustrated in Fig. 2. Since plate 8 is made of elastic steel, it takes the shape of the casing.

According to Fig. 6, a rigid, short and threaded pipe 16, made of "Blakelite" for instance, is united to the portion 8 of the casing and positioned axially of the hole 11. In order to obtain the connection between the bladder 2 and the casing, the said pipe is screwed into hole 17 of the neck of the bladder. This latter hole is internally threaded and may be metallically lined. The screwing of the pipe 16 into the hole of the neck may be effected from the exterior of the ball.

When the ball is inflated a stopper 18, the head of which is hidden under a piece of leather, is screwed into the pipe 16 until its leather comes into the plane of the leather of the casing. The screwing of said stopper is obtained by means of a tool which enters into holes such as 19 provided into the head of the said stopper. In proportion as the said bladder inflates, the casing is automatically closed without tools by means of the flap 13 being of leather (Figs. 4 and 5) and which is sewed in the proximity of the hole 4. This flap is provided upon its interior side with a plate 14, made of mica, covered with a piece of leather sewed to the said flap. The dimensions of this plate 14 are greater than those of the hole 4 and prevent the deformation of the ball under the pressure of the inflated bladder.

The stitching providing the connection between the piece 9 and the casing and equally the stitching in the closing flap 13 is similar to the stitching of an ordinary ball. Besides, due to the fact that the recess 7 and the hole 4 are diametrically positioned, the ball is perfectly balanced.

According to Figs. 7 and 8, a kind of arrow-like member 18, made of flexible material and provided with a hole 19, is sewed to the portion 8 of the casing, so that its hole is axially aligned with the hole 11 of the said casing. The neck of the bladder is provided at its upper part with a piece 21, made of flexible material such as leather, provided with two holes 22 through which the sharp ends 23 of the arrow-like member 18 are inserted (see Fig. 9). By this means, the bladder is con-
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connected to the portion 8 of the casing and is main-
tained in this position by means of barbs 24 of
the arrow 18, which engage against the lower side
of the piece 21. When this connection is ob-
tained, the bladder is inflated.

What I claim is:—

1. A ball comprising a bladder, a casing pro-
vided with openings for the introduction of the
bladder and for inflation of the bladder, a piece of
flexible non-metallic material affixed to the in-
terior of the casing adjacent the inflation open-
ing and provided with two tongues, and a collar
of flexible non-metallic material affixed to the
bladder and provided with apertures for the re-
ception of said tongues for connecting the bladder
to the casing.

2. A ball comprising a bladder, a casing pro-
vided with openings for the introduction of the
bladder and for inflation of the bladder, a collar
of flexible non-metallic material attached to the
bladder and provided with apertures, a piece of
flexible non-metallic material attached to the in-
terior of the casing adjacent the inflation open-
ing and provided with arrowhead like tongues
adapted to enter the apertures in the collar at-
tached to the bladder, and barbs on said tongues
adapted after being passed through the apertures
in the collar to engage one face of the collar to
avoid accidental removal of the tongues from said
apertures.

3. A ball comprising a bladder, an outer cas-
ing provided with two diametrically opposed
openings, one of said openings serving for the in-
troduction of the bladder and the other opening
serving for inflation of the bladder, a flap posi-
tioned on the interior of the casing and attached
thereto adjacent the opening for the introduc-
tion of the bladder in the casing, a plate of flex-
ible semi-rigid material of dimension greater than
that of the opening for the introduction of the
bladder, and means for securing said plate to the
internal face of the flap for closing the bladder
introducing opening.

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