Nov. 14, 1950 W. J. SONNETT ET AL 2,529,637

FORM FOR MAKING INFLATABLE GAME BALL CARCASSES

Filed May 12, 1948

Fig. 2

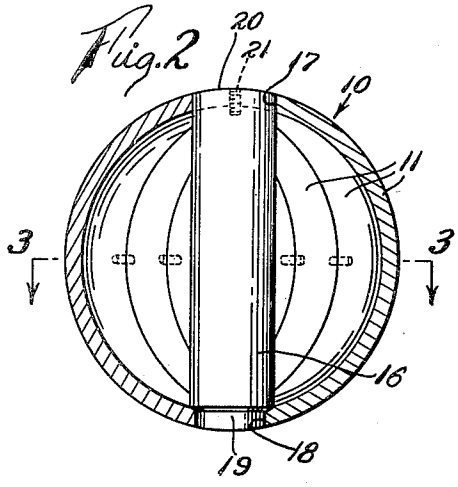


Fig. 1

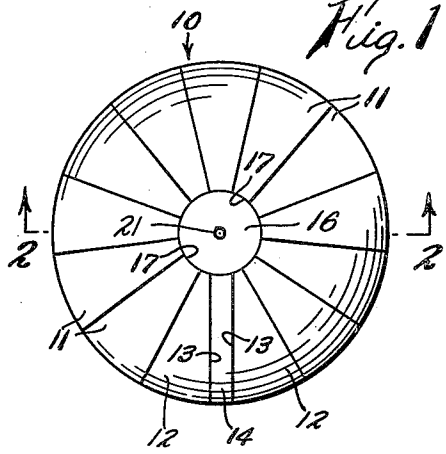


Fig. 3

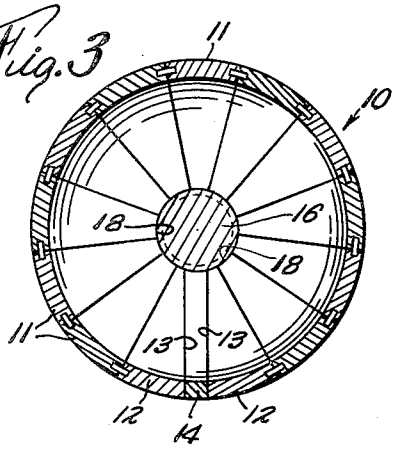


Fig. 6

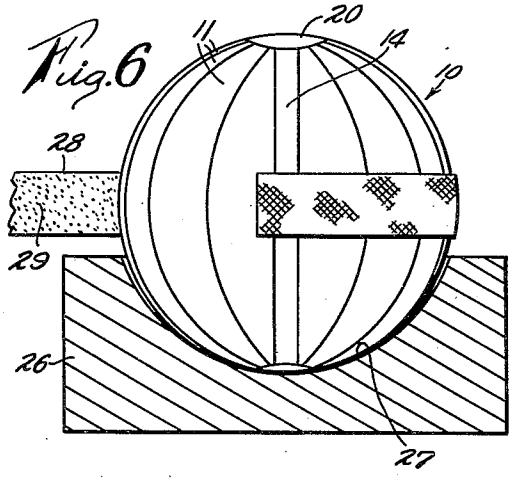
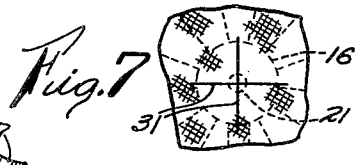


Fig. 7



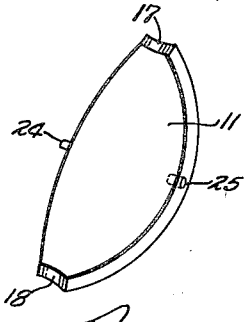


Fig. 4

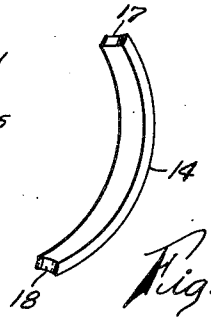
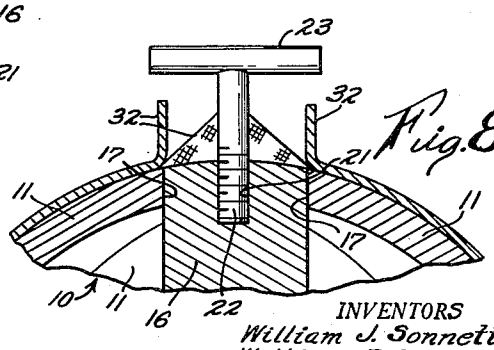


Fig. 5

Fig. 8



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Patented Nov. 14, 1950 2,529,637

UNITED STATES PATENT OFFICE

2,529,637

FORM FOR MAKING INFLATABLE GAME BALL CARCASSES

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Application May 12, 1948, Serial No. 26,568

2 Claims. (Cl. 18—45)

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This invention relates to a form for making inflatable game ball carcasses and is principally directed to improvements in the construction of a sectional form on which the ball carcass is built up by winding strip material thereon and the subsequent removal of the form section-by-section through a relatively small sealable opening made in the built up carcass.

An object of the invention is to provide an improved device having a few sectional parts which are quickly assembled to secure a rigid ball carcass former and which is readily collapsed within the carcass for removal section-by-section through a small opening in the carcass.

Another object of the invention is to provide a sectional form for making inflatable game ball carcasses which is comparatively simple in construction, is strong and durable in use, which is compact and reliable in operation and can be manufactured at low cost.

All of the foregoing and still further objects will become apparent from the following specification, taken in connection with the accompanying drawings, wherein like numbers refer to corresponding parts throughout the several views, and wherein:

Fig. 1 is a plan view of the assembled, sectional form for making inflatable game ball carcasses.

Fig. 2 is a section taken on line 2—2 of Fig. 1.

Fig. 3 is a section taken on line 3—3 of Fig. 2.

Fig. 4 is a perspective view of a sector piece for the form illustrated in Figs. 1 and 3.

Fig. 5 is a perspective view of the straight piece for said form.

Fig. 6 is a view illustrative of the manner in which the sectional form is employed in building up a ball carcass.

Fig. 7 is a fragmental plan view of a suitable means for providing a hole in the carcass built up on the sectional form and through which the parts of the section are removed.

Fig. 8 is a fragmental, cross-section illustrating the manner in which the master rod is removed through the form removing hole in the ball carcass.

The embodiment of the present invention comprises a hollow spherical form which is shown in its assembled condition in the several views of the drawings. The form or mold is generally indicated by the reference numeral 10 and is constructed from a number of separable sector plates or pieces 11 which are assembled in edge to edge relationship with the abutting surfaces lying along plane sections which include the center of

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the form. With particular reference to Figs. 1 and 3 it will be noted that the arcuately formed edges of adjacent sector plates are defined by great circles passing through the center of the spherical mold. One pair 12—12 of the sector plates are provided with spaced apart edges 13 lying in parallel plane sections of the form and preferably said edges are defined by parallel small circles of the spherical mold assembly lying on opposed sides of the mold axis. A straight section 14, having opposed edges 15—15 which slidably engage with the edges 13—13 of the pair of sector plates 12—12 is inserted in the opening between said pair of sector plates. The sector plates and the straight plate have exterior surfaces constituting portions of the periphery of the assembled form.

All of the plates are provided at their pole portions with arcuately formed ends which in assembled positions define opposed, axially aligned holes for the reception of a master rod 16. As most clearly illustrated in Fig. 2 the master rod is cylindrical in form and is positioned coaxially within the form with its pole portions in surface contact with the arcuately formed, opposed ends 17 and 18 of all the plates. Preferably the lower pole portion 19 of the master rod is reduced to provide a means for precluding axial movement of the rod in a downward direction relative to the assembled plates. The upper pole portion 20 of the master rod is provided with a threaded opening 21 (Fig. 8) for receiving the threaded end 22 of a suitable tool 23 which is used to withdraw the master rod 16 from the form as the initial step in collapsing said form within the finished game ball carcass made thereon.

It is also contemplated that a means be provided for precluding relative axial movement of the sector plates 11 when the form is assembled and to this end adjacent sector plates preferably carry cooperating pins 24 and aligned holes 25 in their proximate abutting edges. It will be noted that the adjacent edges between the straight plate and the pair of sector plates 12—12 are smooth and are devoid of a locking means so that said plate may be readily moved out of abutting relation with the pair of sector plates. It will further be observed that the master rod 16 has a diameter slightly greater than the greatest width dimension of any one of the plates 11 for purposes to be hereinafter described.

With reference to Figs. 6, 7 and 8 the form 10 may be assembled and placed in a suitable holder 26 which has a hemispherical cavity 27 formed therein on a slightly larger radius than that of

the mold (Fig. 6). Fabric strip material 28 having an inner liner of unvulcanized rubber 29 is then wound upon the mold with each turn defining an approximate great circle. The interior surface of the strip material is provided with a suitable adhesive material 30 which tacks the strip material to the periphery of the mold and the plies of the built up strip material to each other. When the ball carcass has been completed a pair of cross slits 31 are formed through the carcass which intersect at the extended axis of the master rod 16 (Fig. 7). The slits have a length just slightly greater than the diameter of the master rod 16 and as illustrated in Fig. 8 the spaced portions of the carcass 32 formed by the slits are opened outwardly so that a suitable tool 23 may be engaged with the threaded opening 21 formed in the master rod 16 of the mold which then axially slides the rod out of the form and the surrounding carcass. Thereafter the straight piece 14 is dislodged and removed through the carcass opening. The sector plates 11 are then removed section-by-section through the hole in the carcass, and subsequently a suitable inflatable bladder is inserted through the opening in the carcass. The hole in the carcass is then sealed by a suitable patch, the bladder inflated and the carcass inserted in a mold for vulcanization. After vulcanizing, sectional covers may be adhesively applied to the exterior surface of the carcass in any suitable manner to form a completed, inflatable game ball.

What is claimed is:

1. A core mold for making an inflatable game ball carcass having a number of sector pieces assembled in edge to edge relationship, arcuately formed ends on each piece, the common ends of the pieces forming round, axially aligned openings in diametrically opposed portions of the core mold, a cylindrical master rod snugly positioned in the openings with each of the pole portions of its side wall in surface contact with the common ends of the sector pieces forming an opening, the ends of the rod being provided with convex surfaces flush with, and complementary to, the spherical surface formed by the assembled sector pieces, said ends constituting with the exterior surfaces of the sector pieces an unbroken mold surface for the core, and an attachment means inset in one convex end surface of the master rod.

2. A core mold for making an inflatable game ball carcass having a number of sector pieces assembled in edge to edge relationship, arcuately formed ends on each piece, the common ends of the pieces forming round, axially aligned openings in diametrically opposed portions of the core mold, a cylindrical master rod snugly positioned in the openings with each of the pole portions of its side wall in surface contact with the common ends of the sector pieces forming an opening, the ends of the rod being provided with convex surfaces flush with, and complementary to, the spherical surface formed by the assembled sector pieces, said ends constituting with the exterior surfaces of the sector pieces an unbroken mold surface for the core, and a relatively small threaded bore formed through one convex surface of the master rod.

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