June 17, 1958 T. HUNTER 2,839,301

LAWN BOWLING BALL

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FIG. 1

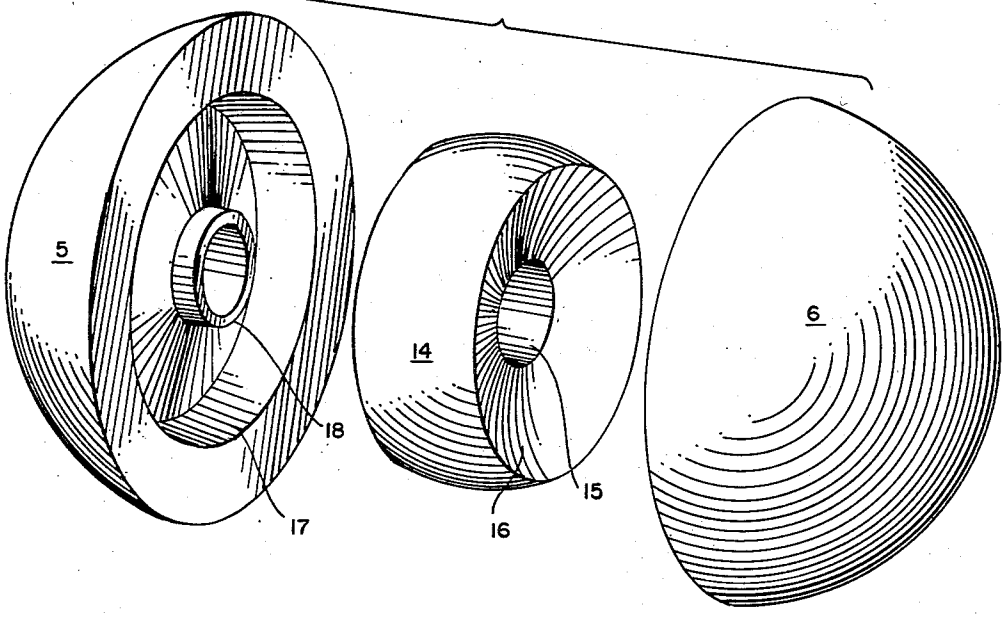
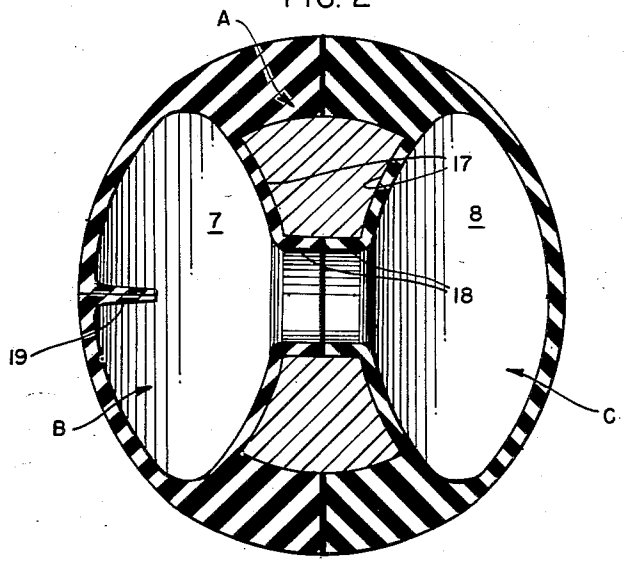


FIG. 2



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FIG. 3

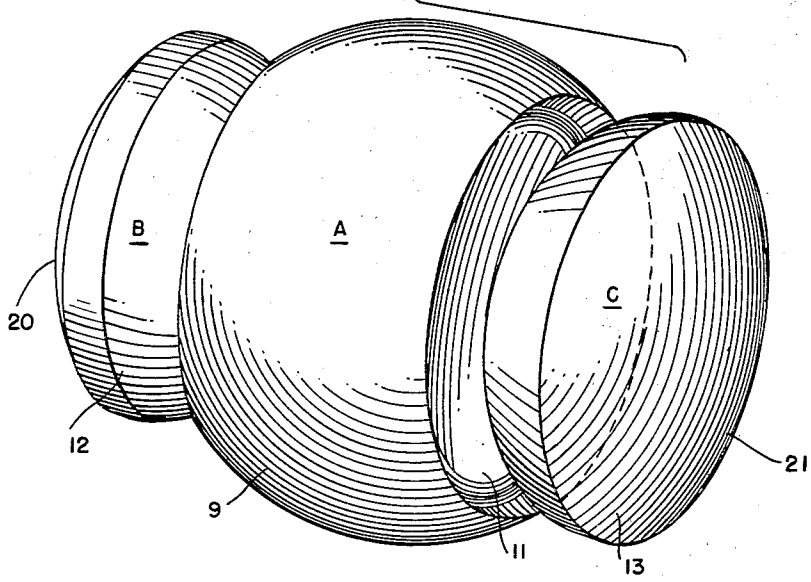
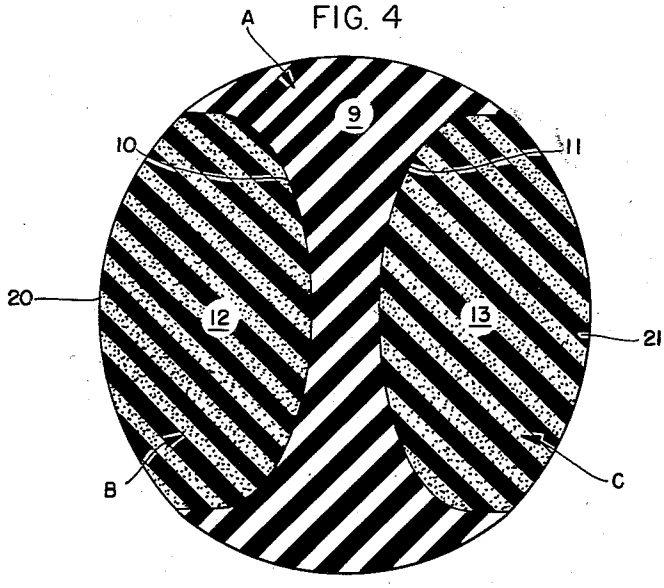


FIG. 4



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LAWN BOWLING BALL

Ted Hunter, Worth, Ill.

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6 Claims. (Cl. 273—63)

This invention relates to the construction of balls used for playing lawn bowling.

The game of lawn bowling, as its name indicates, normally is played on a section of lawn. The object of the players in the game is to roll a ball closest to a target without hitting the target or another player's ball.

The ball is slightly ellipsoidal rather than perfectly spherical. The conventional lawn-bowling ball measures 15½ inches circumferentially around one diameter and 15 inches around a normal diameter. Thus, when the ball is rolled it may be caused to follow a more or less predetermined path. That path may be a straight line from the bowler to the target or it may be an arcuate path. Some players are so skillful that they can make a ball roll in from behind and stop just short of the target.

As the name indicates, the game generally is played on a flat section of lawn. Thus the game play is more or less limited to the summer period in the temperate zones, when lawns are available.

The main objects of this invention are to provide an improved construction of a lawn-bowling type of ball; to provide an improved lawn-bowling type ball which will permit the use thereof in playing the game on hard surfaces in or out of doors and at all seasons of the year; to provide a ball of this kind wherein predetermined parts of the surface of the ball have such materially differing frictional coefficients as will permit a player to vary the arcuate paths which the ball may be caused to travel when projected over a flat surface toward a target; and to provide an improved lawn-bowling ball of such structural form and assembly as will make its manufacture economical and extend its utility beyond the conventional form of bowling on a lawn.

In the adaptations shown on the accompanying drawings:

Figure 1 is an exploded perspective of an inflatable form of lawn-bowling ball constructed in accordance with this invention;

Fig. 2 is a cross-sectional view of such a ball;

Fig. 3 is an exploded perspective of a sponge-rubber inset form of ball constructed in accordance with this invention; and

Fig. 4 is a cross-sectional view of such a ball.

The essential concept of this invention involves a ball made up of three sections of such formulation and assembly that the circumferential dimension and the surface frictional coefficient on one diameter are predeterminedly different from that on a right angle or normal diameter.

A ball embodying the foregoing concept comprises a main or middle section A and two transversely-opposed sections B and C, the section A having the greater circumferential dimension and predetermined surface frictional coefficient and the sections B and C having the smaller circumferential dimension and a surface frictional coefficient greater than that of the section A.

The ball having its circumferential dimensions different on diameters normal to each other results in the

ball being of slightly ellipsoidal form rather than true spherical. The difference in those circumferential dimensions is very small, normally a half inch. The balls herein shown conform with the conventional lawn-bowling ball in that respect, the larger circumferential dimension being 15½ inches and the smaller being 15 inches.

Although the two adaptations of this concept herein shown differ in structure, the above-noted sections A, B and C have the same relative characteristics in each adaptation. This is especially apparent from a comparison of the cross-sectional views of Figs. 2 and 4.

In the adaptation shown in Figs. 1 and 2, the main or middle section A of the ball consists of the opposed and abutting portions of the two identical and complementary half-parts **5** and **6**, whereas the sections B and C are the inflated pockets **7** and **8**. In the adaptation shown in Figs. 3 and 4, the main or middle section A is the part **9**, wherein are formed the axially-spaced cup-shaped recesses **10** and **11**, and the sections B and C are the cup-shaped insets **12** and **13**.

In each adaptation, the main or middle section A is the greater circumferential dimension—conventionally 15½ inches—whereas the opposed sections B and C are in the smaller circumferential dimension—conventionally 15 inches.

In the adaptation shown in Figs. 1 and 2, the two identical and complementary half parts **5** and **6** are formed of rubber and are bonded together on a plastic core **14**. The core **14** is in the form of a disk or annulus, with a central bore **15** and the opposite faces concave, as indicated at **16** in Fig. 1.

Each half part **5** and **6** has the inner face formed with an annular recess **17** concentric and radially outward of a hub **18** which is dimensioned to seat in the bore **15** of the core **14**. When the two half parts **5** and **6** are bonded together, as shown in Fig. 2, the core **14** is wholly embraced within the recesses **17**, the hubs **18** abutting within the bore **15** to afford communication between the opposite air pockets **7** and **8**.

An inwardly-extending, self-sealing valve **19** is formed on the outer wall of one of these pockets. Through this valve **19** air is admitted, in the well-known manner, to inflate the pockets **7** and **8** and thereby determine the circumferential dimension of the ball on a diameter normal to the plane of the bonded faces of the half parts **5** and **6**. The degree of inflation of these pockets **7** and **8** also will determine the surface frictional coefficient of these parts of the ball, when the ball is rolled along a flat surface. That is, the more inflation of these pockets the less these parts of the ball will drag on the surface over which they are rolled. The less the inflation of these pockets **7** and **8**, the looser will be the outer walls of the pockets and the greater tendency they will have to hug the surface over which the ball is rolled.

Thus, if the use of such a ball on hard surfaces requires, the degree of inflation can determine the behavior of the ball in the hands of a player. This would permit players in the game to vary the character of the arcuate paths a ball might be forced to follow when rolled toward the target.

In the adaptation shown in Figs. 3 and 4, the three parts **9**, **12** and **13** are all formed of rubber; the main part being a standard hard rubber whereas the insets **12** and **13** would be a predetermined type of sponge rubber.

The main part **9**, of this adaptation, has the cup-shaped recesses **10** and **11** formed in opposed axial relationship on a diameter normal to that of the diameter of the main part **9**. The insets **12** and **13** are shaped to seat in these cup-shaped recesses **10** and **11** so that the convex exterior faces **20** and **21** of the respective insets **11** and **12** complete the desired ellipsoidal form of the ball.

These insets **11** and **12**, being of more yielding rubber than the intermediate portions of the main part **9**, in addition to being on the smaller circumference of the ball, will have an effect on the ball, when rolled on a hard surface, quite comparable to that which occurs with the inflated pockets **7** and **8** of the adaptation of Figs. 1 and 2. That is, the surface frictional coefficient of these convex faces **20** and **21** will be greater than the frictional coefficient of the face of the main part **9** because the more resilient rubber will make a greater tendency to cling to the surface over which the ball is rolled. Thus it will permit the player to vary the arcuate path the ball will follow when rolled toward the target.

In the manufacture of a ball of this latter type, the character of the sponge rubber insets **11** and **12** may be varied for the purpose of causing balls to follow somewhat different arcuate paths for the seemingly same throw by a player.

Although but two specific embodiments of this invention are herein shown and described, it will be understood that details of the construction shown may be altered or omitted without departing from the spirit of the invention as defined by the following claims.

I claim:

1. A lawn-bowling type ball comprising a plastic disk-shaped core having an axial opening, a pair of complementary substantially nearly semi-spherical rubber sections recessed on their opposed faces to embracively support the core, the sections each having a hollow portion axially flanged to opposedly fit in the axial core opening to afford communication between the two sections, the sections being bonded together on a plane radially of the core so as to oppose the hollow portions normal to the plane of the bonded sections, and a self-sealing air valve in one of the sections to permit inflation of the hollow portions of the respective sections.

2. A lawn-bowling type ball formed of hard rubber with a predetermined circumferential dimension and recessed on a transverse diameter to form axially-spaced cup-shaped pockets, and comparably-shaped sponge-rubber insets secured in the pockets and exteriorly curved to have a circumferential dimension on the transverse diameter of the insets less than the aforesaid predetermined circumferential dimension.

3. A lawn-bowling type ball formed of a rubber-like composition comprising a central annular main section of predetermined compressibility and a pair of diametrically-opposed more-readily compressible portions disposed on an axis normal to the main section, the diameter of the annular main section being slightly greater than the diameter of the normally-disposed more-readily compressible sections.

4. A lawn-bowling type ball comprising a pair of complementary semi-spherical sections formed of a rubber-like composition with the diameter of each section slightly greater than twice its axial radius, each section having an air pocket formed therein, and an axially-disposed hollow hub on each section opening into the respective air pocket, the two sections being bonded together in spherical relationship on a plane normal to the axes of the hubs and with the hubs axially abutting and affording communication between the pockets in the respective sections.

5. A lawn-bowling type ball comprising a pair of complementary semi-spherical sections formed of a rubber-like composition with the diameter of each section slightly greater than twice its axial radius, each section having an air pocket formed therein, an axially-disposed hollow hub on each section opening into the respective air pocket, the two sections being bonded together in spherical relationship on a plane normal to the axes of the hubs and with the hubs axially abutting and affording communication between the pockets in the respective sections, and a self-sealing air valve in one of the sections to permit the inflation of the air pockets in both sections.

6. A lawn-bowling type ball comprising a pair of complementary semi-spherical sections formed of a rubber-like composition with the diameter of each section slightly greater than twice its axial radius, each section being partitioned transversely of its axis and separating an exposed annular recess on the flat face and an opposed concealed air pocket, an axially-disposed hollow hub on each partition opening into the respective air pocket, a spool-like core dimensioned and contoured to fit in the recesses of the superimposed semi-spherical sections, the two sections being bonded together in spherical relationship with the core embedded in the opposed recesses and with the hubs in abutting axial alinement and affording communication between the pockets in the respective sections.

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