April 4, 1967 R. A. KERR 3,312,472

THROWING DISC EMPLOYING RAISED AERODYNAMIC SECTIONS

Filed July 5, 1963

Fig. 1.

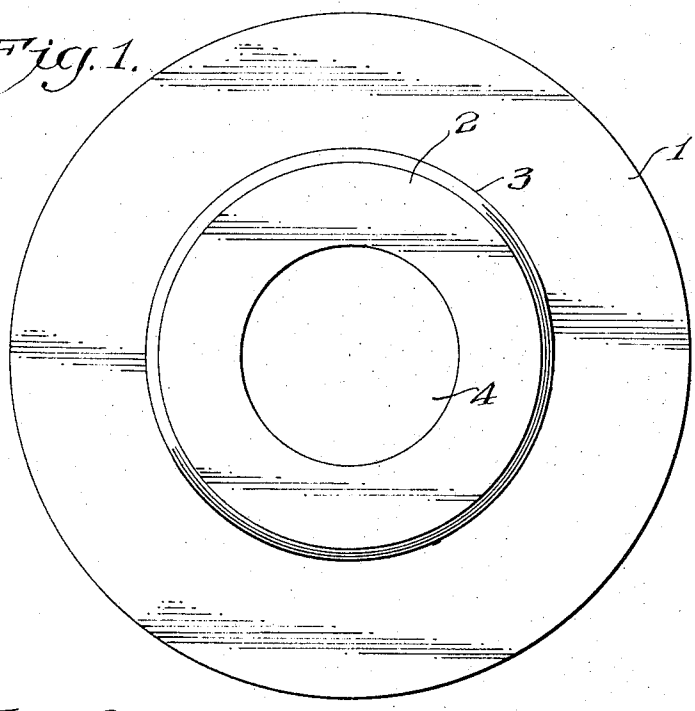


Fig. 4

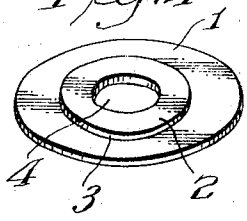


Fig. 2.

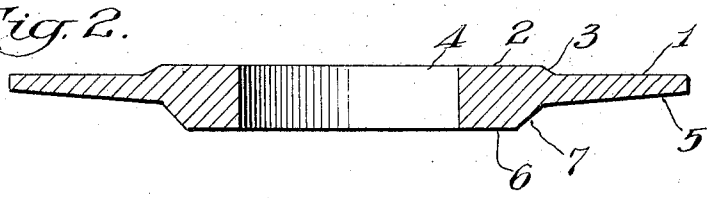


Fig. 5

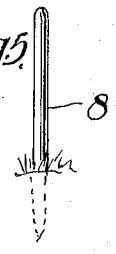
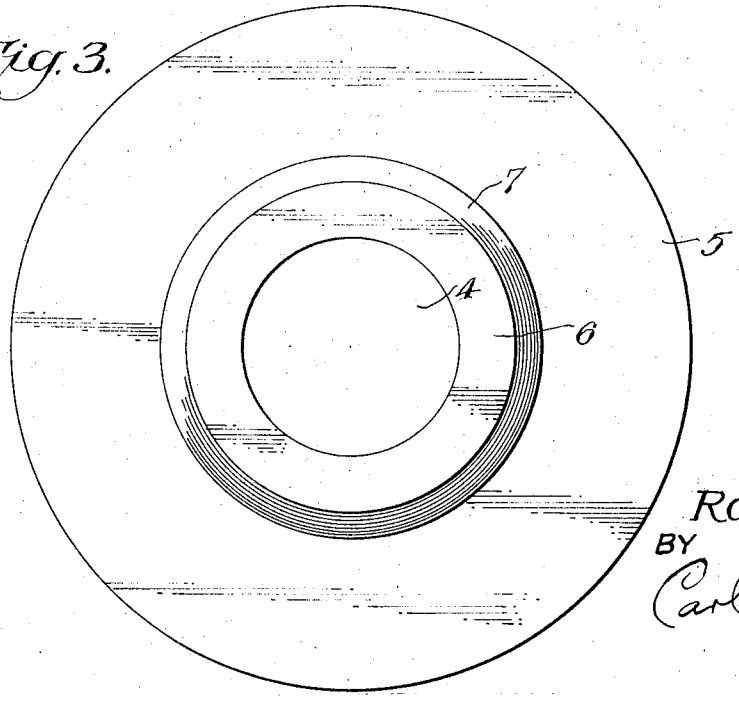


Fig. 3.



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THROWING DISC EMPLOYING RAISED AERODYNAMIC SECTIONS

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2 Claims. (Cl. 273—106)

This invention relates to a device and more particularly to a game device that is adapted to be thrown or tossed at or toward a fixed peg or post with the objective of having the device settle over and around the peg or post.

The invention has as an object the provision of a game device which may be readily grasped by a player and tossed or thrown toward a fixed peg or post partially embedded in and extending vertically from a base, such as the ground. Another object is the provision of a game device to which may be imparted a spinning motion during its flight and which maintains a substantially horizontal position during flight and final landing. A further object is the provision of a game device which greatly reduces skidding or bouncing when it lands on the ground or other base. A still further object is the provision of a game device which is formed or shaped and decorated to simulate "Flying Saucer" or an "outerspace aircraft." Other objects will become apparent as the description of the invention proceeds.

These objects are accomplished by means of a rigid or semi-rigid annular disc constructed or fabricated with projected or elevated sections on both top and bottom surfaces of the disc, the wall of the projected or elevated sections being at an angle to the horizontal surface of the disc, said sections following the general circular contour of the disc and comprising only a portion of the total surface area of the disc.

Referring now to the attached drawings which illustrate the invention:

FIGURE 1 is a plan view of the top of the annular disc showing the position of the angular walled, elevated area and its approximate size in relation to the top surface of the main body area of the disc;

FIGURE 2 is a side elevation view of the disc illustrating the angular walls of the elevated areas on both surfaces of the disc body;

FIGURE 3 is a plan view of the bottom of the annular disc showing the position of the bottom angular walled, elevated area and its approximate size in relation to the bottom surface of the main body area of the disc;

FIGURE 4 is a perspective view of the top surface of the annular disc illustrating the elevated area on that surface and its approximate size relation to the main surface area of the disc; and

FIGURE 5 shows the vertical peg or post which comprises the target for the thrown disc.

Referring to the several views in the drawing wherein like characters designate corresponding parts:

In FIGURE 1, the main portion of the top of the flat annular disc is shown as **1**. On the surface is an elevated portion **2** with angular walls **3**. The circular aperture in the disc is represented by **4**. In the side elevation shown in FIGURE 2 the relation of the elevated portions of the disc to the main body of the disc for both top and bottom surfaces is illustrated with the top surface characters corresponding to those shown in FIGURE 1. In addition, **5** represents the main bottom surface of the disc, **6** the elevated portion and **7** the angular wall of the elevated portion on the bottom of the disc. In FIGURE 3, showing the bottom of the disc the various elements are designated by characters corresponding to those shown in FIGURES 1 and 2. Likewise in FIGURE 4 which is a perspective top view of the

disc and the several elements of the top surface, the characters corresponding to the same elements shown in FIGURES 1 and 2 apply here. The peg or post representing the target for the annular disc is illustrated as **8** in FIGURE 5. As shown, the elevated sections on the top and bottom differ in size. They differ both in respect to their diameter and to their thickness. The heavier mass of the one contributes to flight stability while the air foil contours of the sections afford longer flights.

Although the invention is not thereby restricted, I have found that a convenient size disc may be about 11 inches in total diameter and about 0.25 inch thick at its outermost edge, with a centered circular aperture of about 3.5 inches in diameter with a height of 0.375 inch for the elevated portion on the top surface and an angle of the wall of this portion about 150° to the horizontal surface of the main top surface of the disc and a height of about 0.5 inch for the elevated portion on the bottom surface of the disc. The top surface of the elevated portion on the top of the disc may be about 1.25 inches in width and the top surface of the elevated portion on the bottom of the disc about 0.875 inch in width. The angles that the sides of the beveled portions **2** and **6** make with the rim or main body of the device are more than 90° and are between about 100° and 165°. While these dimensions are not extremely or precisely critical, they are preferred, with angles near 150° being most generally used, and represent a desirably operative embodiment of the invention. Very good flight patterns are obtained with such dimensions. From the above and as shown in the drawings one elevated section has a mean or average diameter significantly smaller than the mean diameter of the other elevated section, and one of said sections has a thickness significantly greater than that of the other.

The device can be made of a wide variety of materials. For example, papier-mache; aluminum or other metals; polyformaldehyde; nylon; and the like may be used. Generally, an inexpensive, lightweight durable plastic is used.

The discs may be constructed or fabricated of wood, metal or molded plastics and if desired painted or otherwise decorated with radial strips on the flat areas and port holes in the angular elevated portion of the top surface to simulate "Flying Saucers" or "outerspace aircraft."

In using the annular disc the player will normally face the vertical peg or post partially embedded in the ground, grip the disc near its outer edge and impart a spinning flight toward the target by a back-hand toss or throw with the disc in a horizontal position. The specially constructed angular walls of the elevated portions of the disc tend to assist in stabilizing the disc in its spinning flight and to prevent skidding and bouncing when the disc strikes the ground.

It is to be appreciated that the device of this invention is quite different from the ordinary quoit or horseshoe or the like which are thrown directly at the target. The dimensions of the device of this invention are such that it curves in flight. The curving is attained by the beveled sections on the top and bottom of the device, the tapered rim and the differences in size and weight of these elements. The disc flies substantially in a horizontal path that curves dependent mainly upon the above elements but also to some extent on the force and speed. It is air-supported in its sidewise, curved flight for considerable distances due to its lightness and its tapered under surface. These various factors make for an interesting contest, for the game can be played by a variety of numbers in team play as well as in individual games.

While the invention has been described herein in connection with certain embodiments and certain structural details, it is clear that changes, modifications or equivalents can be used by those skilled in the art; accordingly,

such changes within the principles of this invention are intended to be included within the scope of the following claims.

I claim:

1. A device comprising an annular, substantially rigid disc which is asymmetrical with reference to its horizontal axis and which has an elevated section on its top surface and an elevated section on its bottom surface, each of said sections comprising less than one-half of the total surface area of its corresponding side and said sections having annular walls relative to the horizontal surfaces of the disc and one of said sections having a mean diameter significantly smaller than the mean diameter of the other and one of said sections having a thickness significantly greater than the thickness of the other of said sections and said disc being substantially solid in its cross section and the angle of the wall of said elevated section on said top surface being from about 100° to about 165° to the horizontal top surface of the disc and the angle of the wall of said elevated section of said bottom surface being about 100° to about 165° to the horizontal bottom surface of said disc.

2. A device in accordance with claim 1 which contains in said disc a centered, circular aperture having a diameter of about one-third of the total diameter of the disc.

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