Nov. 7, 1972 T. ZILIUS ET AL 3,702,191

BALL AND RACEWAY AMUSEMENT DEVICE

Filed Feb. 25, 1971 3 Sheets-Sheet 1

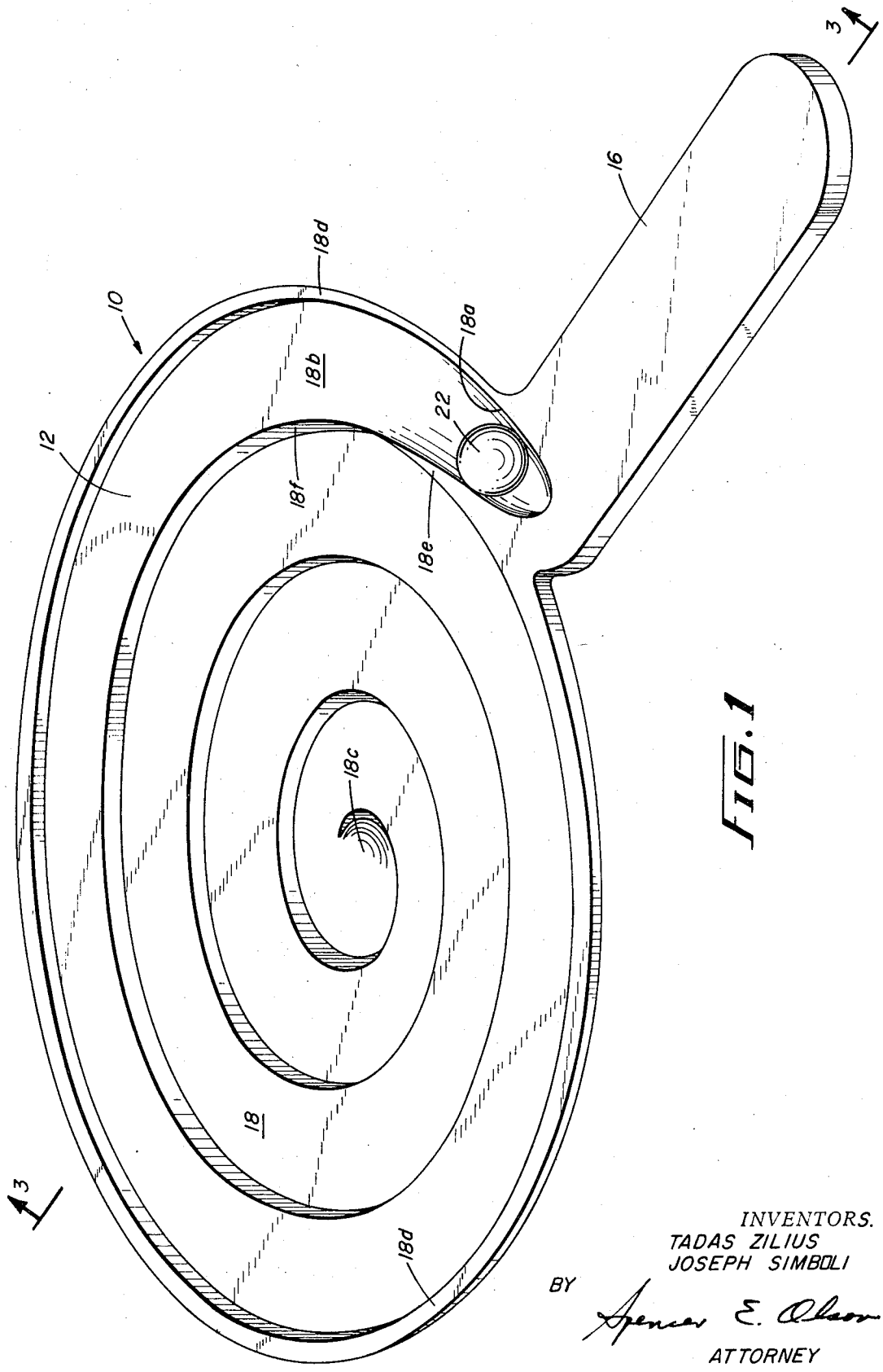


FIG. 1

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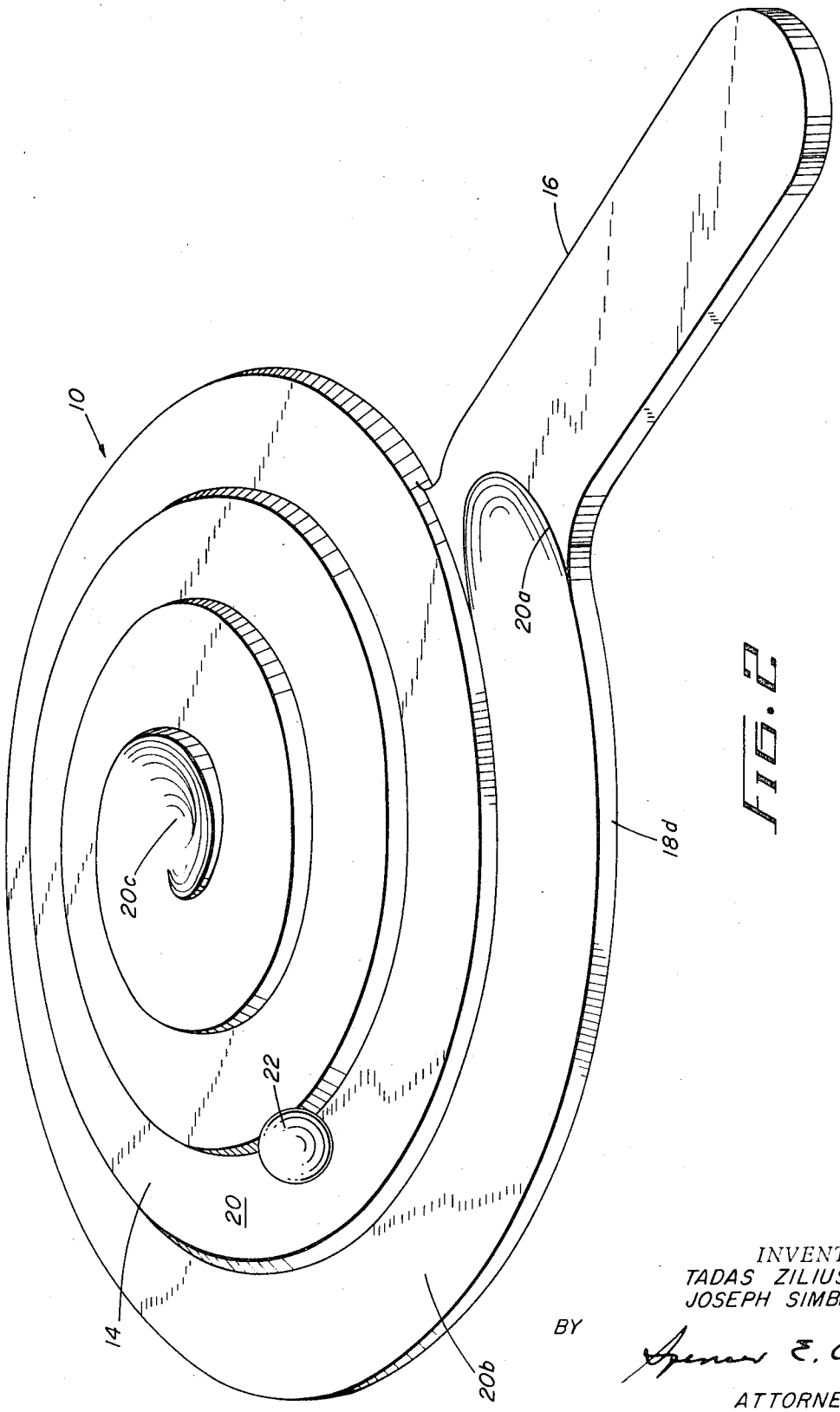


FIG. 2

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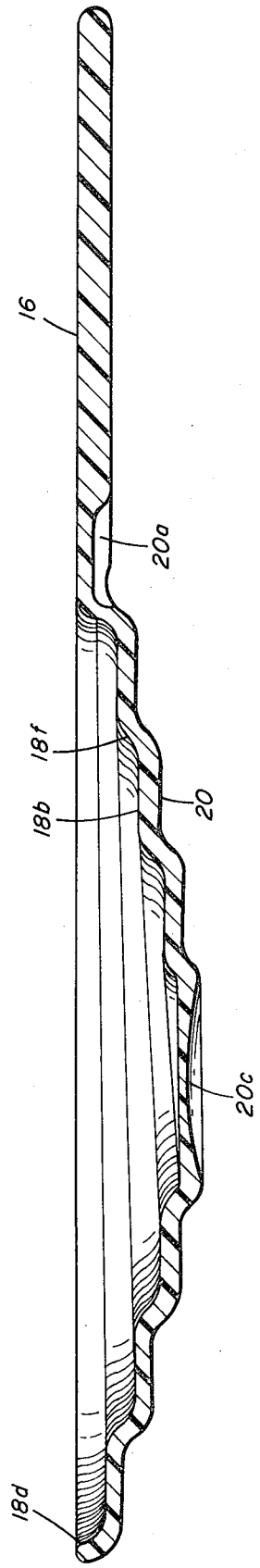


FIG. 3

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3,702,191

BALL AND RACEWAY AMUSEMENT DEVICE

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Int. Cl. A63b 67/14
U.S. Cl. 273—112 6 Claims

ABSTRACT OF THE DISCLOSURE

An amusement device consisting of a pan-like paddle, concave on one face and convex on the other, provided with an integral radially extending handle, both faces having formed thereon an inclined spiral raceway extending from a point at the outer periphery thereof near the handle and terminating in a ball-receiving depression at the center. A ball of marble is caused to move up or down the raceways by properly tilting the paddle, greater skill being required to keep the ball on the raceway on the convex side than on the concave side.

BACKGROUND OF THE INVENTION

This invention relates to amusement devices, and more particularly is concerned with a game requiring manipulative skill to cause a ball to move along a raceway.

Games of the general type to which the present invention is directed have long been known and have taken a variety of forms. For example, U.S. Pat. No. 971,532 described a game known at the time as "Tree the 'Possum," which consists of a box with a pyramidal bottom having formed thereon spiral, upwardly inclined grooves, one of which terminates at the apex of the pyramid, and a pair of marbles sized to roll readily along the grooves. The point of the game is to so tilt the box as to cause one of the marbles to roll up one of the spirally disposed grooves while leaving the other marble at the bottom of the pyramid.

While a degree of manipulative skill was required to master this early game, it lacks a certain challenge in that the pyramid is fully enclosed by a rim around its base and a lid secured to the rim to contain the marbles. Thus, there is no risk, should the box be tilted excessively in attempting to cause the marble to roll up the incline, of the marble falling off the raceway.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an amusement device involving the use of a ball and an inclined spiral raceway which requires a greater degree of manipulative skill than the above-described game, and which offers in a single device the choice of two games which require different degrees of manipulative skill.

Briefly, this object is obtained by forming spiral inclined raceways on both faces of a circular pan-like member provided with an integral radially extending handle which is gripped by the user to manipulate the tilt of the "pan." The circular portion is of substantially uniform thickness throughout its area and in the shape of a shallow cone, with one face convex and the other concave. The raceways on the two faces are spirally aligned, each starting at the outer periphery at a point near the handle and terminating at the center in a ball-receiving depression. Thus, the raceway on the concave face is inclined downwardly toward the center, whereas on the convex face it is inclined upwardly toward the center. While this feature alone makes it easier to manipulate the marble toward the center on the concave side, further "security" against the marble falling off the concave side is afforded by an upturned lip around the outer periphery thereof, whereas this lip, when the convex side of the pan is facing up, is downturned.

Accordingly, smaller children whose coordination is not sufficiently developed to maneuver the marble on the convex side, and people who are first learning to play the game, can become familiar with the manipulation required to controllably roll the marble along the raceway, without risk of it falling off on the floor, by utilizing the concave face of the "pan," and when the technique is mastered can advance to the more difficult convex face.

DESCRIPTION OF THE DRAWINGS

For a more complete understanding of the invention, reference should be made to the accompanying drawings, wherein:

FIG. 1 is an isometric view of the invention, showing the concave face thereof;

FIG. 2 is an isometric view showing the face of the device opposite to the one illustrated in FIG. 1, namely, its convex face; and

FIG. 3 is a cross-sectional view taken along line 3—3 of FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The improved toy according to this invention comprises a generally circular pan-like body member **10**, in the shape of a shallow cone, having opposite concave and convex surfaces **12** and **14**, respectively. A radially extending handle **16**, of relatively thin rectangular cross-section is joined to a point at the periphery of the body member, and is preferably integral therewith. In the interest of smooth surfaces, good appearance, durability and relatively low cost, the body member and handle are preferably formed as a unitary piece by injection molding from a plastic material, the thermoplastic acrylonitrile-butadiene-styrene (ABS) being particularly suitable. As best seen in FIG. 3, the body member **10** is of substantially uniform thickness throughout its area, a thickness of about 0.112 inch having been found satisfactory when formed of ABS. To provide a comfortable grip, the handle **16** is preferably about 1½ inches wide, 0.225 inch thick, and five inches long. Typically, the overall dimension of the "pan" from the extremity of the handle **16** to the far edge of the body member is twelve inches.

Considering now the details of construction of the concave face of the device, illustrated in FIG. 1, there is provided thereon a spiral raceway **18** commencing at approximately the center line of handle **16** as a short groove **18***a* which merges into a generally flat track **18***b* about 9/16 inch wide which spirals inwardly and downwardly to a ball-receiving depression **18***c* at the center of the body member. The outer wall of groove **18***a* smoothly merges into an upturned lip **18***d* which extends around the outer periphery of the body member and at **18***e* at the other end merges into a spirally disposed shoulder **18***f* separating the flat spiral tracks. As best seen in FIG. 3, when the "pan" is positioned horizontally, the flat track **18***b* is inclined slightly downwardly and outwardly toward the shoulder **18***f*.

The point of the game consists in so tilting the body member **10** as to cause ball **22**, which may be a marble having a diameter of the order of 9/16 in. placed in groove **18***a* to roll down the downwardly inclined raceway **18** at a controlled rate of speed so as to come to rest in the depression **18***c* without re-starting up the raceway. Conversely, the marble may initially be placed in depression **18***c* and the body member tilted so as to cause the marble to roll up the spiral raceway and stop at the end of groove **18***a* and not fall off onto the floor. It will be noticed that when the concave face is used, the upturned lip **18***a*

at the periphery of the body member and the pitch of raceway toward the center together tend to prevent the marble from falling off the "pan" onto the floor, even if it should leave the raceway by improper manipulation of the pan. Thus, the concave face of the device may initially be used to familiarize first users of the device with the manipulation required to controllably roll the marble along the raceway without the frustration of having the marble fall off on the floor.

Considerably more skill is required to maneuver the marble along the spiral raceway formed on the convex face of the body member **10**, the details of which are shown in FIG. 2. On this face, as on the concave face, there is provided a flat spiral track **20**, commencing near the center line of handle **16** as a groove **20***a* which merges into the outer course **20***b* which spirals inwardly and upwardly to a shallow ball-receiving depression **20***c* at the apex. The outer wall of groove **20***a* smoothly merges into the lip **18***d*, which is now downturned; consequently, after the marble leaves the confines of groove **20***a* there is nothing to keep it on the body member except a slight inclination inwardly of track **20** (see FIG. 3) and proper manipulation of the pan. As with the concave side, the object of the game is to either cause the marble to roll upwardly along the raceway from a starting point in groove **20***a* to come to rest in the shallow depression, or to cause it to roll downwardly from the depression **20***c* at the center to come to rest at the end of groove **20***a*. Obviously, if the marble leaves the raceway in its travel between the two end points it will roll off the body member and, unless the user is skillful enough to flip the pan and catch it, will drop to the floor. Thus, the challenge to maintain the marble on the raceway is significantly greater than on the concave face.

Although ABS plastic has been suggested as a preferred material for constructing the device, it will now be evident that other materials, including wood or metal, could be used without departing from the spirit of the invention. Also, the typical dimensions of the device suggested above should be understood to be illustrative only, and not limiting.

We claim:

1. An amusement device comprising a relatively thin, generally circular body member having a substantially uniform thickness throughout and having an integral radially extending handle, one side of said body member being convex and having thereon a spiral raceway extending from an entrance disposed approximately at the junction of said handle with the outer periphery of said body at a gradual upward inclination to a relatively shallow ball-receiving depression at the center of said body member, and the other side of said body member being concave and having thereon a spiral raceway extending from an entrance disposed approximately at the junction of said handle with the outer periphery of said body member at a gradual downward inclination to a ball-receiving depression at the center of said body member.

2. An amusement device according to claim **1** wherein the raceway on said one side is defined by a spiral shoulder and a generally flat track which is inclined slightly inwardly toward said shoulder, and wherein the raceway on said other side is defined by a spiral shoulder and a generally flat track which is inclined slightly outwardly toward said shoulder.

3. An amusement device according to claim **2** wherein the shoulder and flat track on said one side of said member are spirally aligned throughout their length with the shoulder and flat track on said other side of said member.

4. An amusement device according to claim **3** wherein said other side of said body member has an upturned lip around its entire periphery, said lip being downturned on said one side of said member.

5. An amusement device according to claim **1** wherein said raceways each terminate at their outer end in a walled groove ending at said junction.

6. An amusement device according to claim **4** wherein the outer end of each of said raceways merge into respective walled grooves which terminate at said junction.

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U.S. Cl. X.R.

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