

[54] **BALL FOR TARGET GAMES**

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[58] Field of Search: **273/65 E; 46/DIG. 1; 273/181 B, 186 E, 106 R, 106.5 A, 95 R, 95 A, 106 E, 58 K**

[56] **References Cited**

UNITED STATES PATENTS

2,129,238	9/1938	Riddell	273/65 E
2,317,939	4/1943	Riddell	273/65 E
2,996,212	8/1961	O'Sullivan	273/65 E
3,032,345	5/1962	Lemelson	46/DIG. 1
3,199,873	8/1965	Surratt	46/DIG. 1

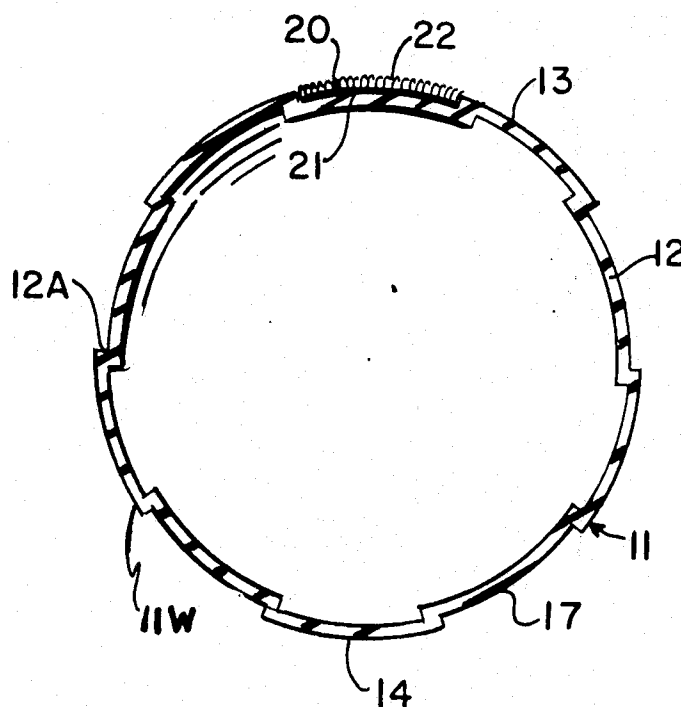
Primary Examiner—George J. Marlo

[57]

ABSTRACT

Structures are provided in missiles for use in toy target games and the like having a multitude of upstanding hook-like formations secured thereto and operable to retain the missiles against a target surface. In one form, a missile in the shape of a hollow spheroid is moulded of plastic and includes in its outer surface a plurality of oblong indentations extending almost halfway around the spheroid. Each adapted to receive and retain a similarly-shaped segment of textile hooking material. The depth of each indentation is preferably such that the upstanding hook-like formations of the material inserted therein will protrude just beyond the adjacent surface portions of the missile so that a minimum discontinuity in the surface of the hollow spheroid is effected. In a particular form, the indentations are five in number, similarly configured and somewhat similar in shape to those portions of the surface of the spheroid which do not contain indentations. The spacing between the oblong segments of hooking material on the ball is such that the ball will adhere to the target regardless of which portion of the ball engages the target. If desired, the missile may be made in the shape of a football and the material forming the body of the ball and the textile hooking material on the ball may be of different colors.

8 Claims, 3 Drawing Figures



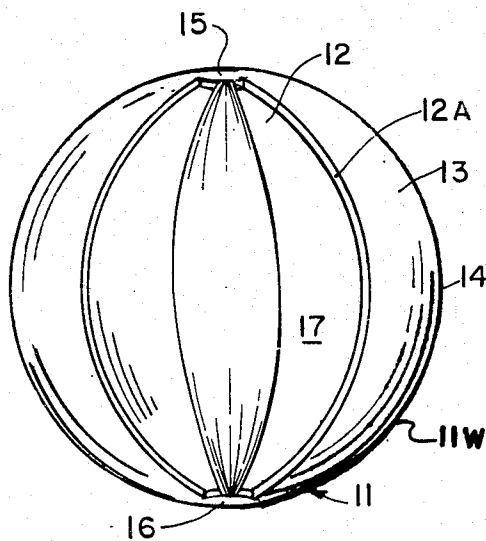


FIG. 1

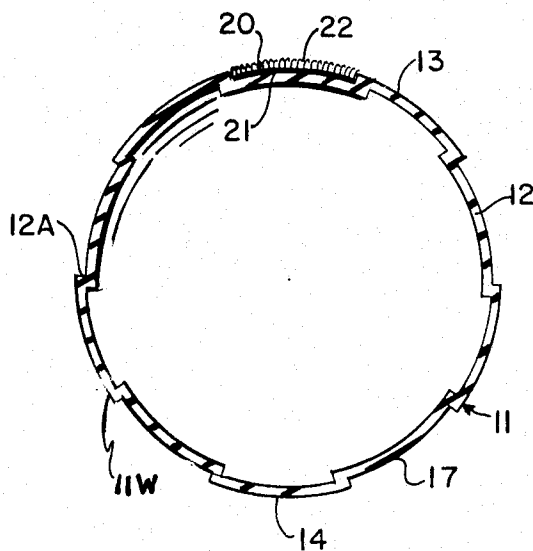


FIG. 2

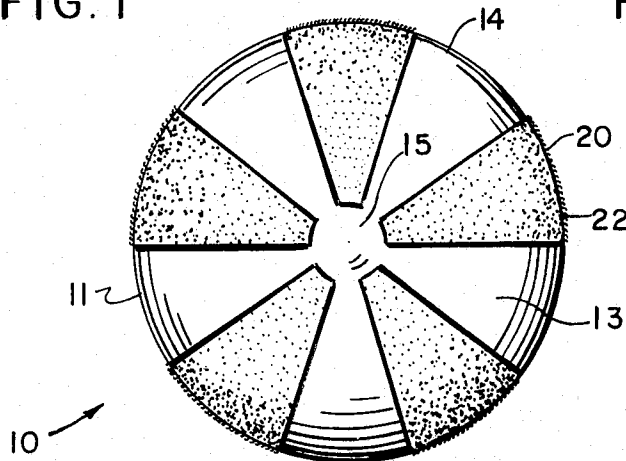


FIG. 3

BALL FOR TARGET GAMES

RELATED APPLICATIONS

This is a continuation-in-part of application Ser. No. 471,760 filed May 20, 1974 and entitled Missiles for Target Games and having as a parent application Ser. No. 436,045 filed Jan. 24, 1974 and entitled Target Game.

SUMMARY OF THE INVENTION

This invention relates to new and improved structures in missiles for target games, and in particular to structures in spherically shaped missiles or balls containing hooking material secluded as a plurality of separate elements in the outer surfaces thereof.

It is known in the art to provide a target game employing a lightweight sphereoid, containing a plurality of segments of textile material known as Velcro attached to the outer surface thereof. For example, in application Ser. No. 436,045 there is provided a number of different constructions for spherical, target-seeking missiles which are completely covered with textile hooking material which is die cut into oblong pieces of similar shape and cemented to the outer surface of a lightweight plastic ball. At least ten such elements are employed involving a substantial amount of the material, which is quite costly, particularly for use in a low-cost toy target game. Such total coverage of a ball with such material has been effected for two reasons, one to provide an outer surface of substantially uninterrupted, spherical configuration and the other to provide a symmetrical array of different-colored elements interposed between each other and decorating the sphereoid.

The instant invention is particularly directed to a new and improved structure in a missile such as a sphereoid of the type described above, wherein substantially half of the hooking material required of the conventional totally covered sphereoid is eliminated thereby substantially reducing the cost for producing same. The ball shaped missile is light enough in weight and is covered with separate sections of hooking material which are so configured and spaced apart around the surface of the missile that the missile will attach itself to the surface of the pile target regardless of which portion of the missile strikes the target.

Accordingly it is a primary object of this invention to provide a new and improved structure in a missile for use in target games employing hooking materials for the target and at least a portion of the missile.

Another object is to provide a structure in a missile, particularly in the shape of a sphereoid or ball containing hooking fastener material attached to its surface wherein said hooking material is provided in both a functional shape arrangement and a decorative arrangement without the need to occupy the entire surface of the missile in order to permit the missile to attach itself to a target containing similar fastening material.

Another object is to provide a missile for use with targets containing textile hooking material wherein the missile is in the shape of a sphereoid and contains a plurality of sections of hooking material attached to its surface and wherein indentations are provided in the surface of the sphereoid which are configured to properly retain said sections of hooking material so that they will not easily peel off.

Another object is to provide a missile construction for use in target games wherein a plurality of sections of hooking material are attached to indentations in the missile's surface and wherein said indentations are of such a depth as to permit the sections of hooking material to dispose their hook elements just beyond the outer surface of the missile to permit same to engage and be retained against the target without substantially interrupting the smooth configuration of the surface of the missile.

With the above and such other objects in view as may hereinafter more fully appear, the invention consists of the novel constructions, combinations and arrangements of parts as will be more fully described and illustrated in the accompanying drawings but it is to be understood that changes, variations, and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

FIG. 1 is a side view of a molded plastic base forming part of a missile coming within the purview of the instant invention,

FIG. 2 is a cross sectional view taken through a diametral plane of the base of FIG. 1 showing the general surface shape of the wall of the base and indentations therein for receiving and holding sections of hooking material and

FIG. 3 is a top view of a spherically shaped missile employing the base shown in FIGS. 1 and 2 and having a plurality of sections of hooking material secured in indentations therein.

In FIG. 1 is shown part of a target game component 11 comprising a hollow spherical shell having a thin shell-like wall 11W which is preferably formed either of single blow molding or a two piece injection molding of such plastic polymers as polystyrene, polyethylene, cellulose acetate, polypropylene or other suitable thermoplastic resin. The wall 11W of shell 11 is molded with a plurality of oblong indentations 12 therein which are shown as separated by spherically shaped wall portions 13 of substantially similar contour configuration as the contours of the indented portions 12 of the wall. The portions 13, which are illustrated as five in number and are interposed between an equal number of indentations 12, are joined at opposite ends of the missile to circular formations 15 and 16 which are preferably extensions of the spherical outer surface 14 of the missile defining portions 13. While the indentations and non-indented portions therebetween may be fewer or greater in number than five each, we have discovered that the configuration illustrated in the drawings provides an arrangement of components to be described which is both esthetic and efficient both from the production cost and operational requisites. By securing oblong sections 20 of flexible hooking material of substantially the same contour configurations as the indentations 12, as shown in FIG. 3, a target game missile is provided which will be retained against a section of pile target material of the type defined, for example in U.S. Pat. No. 3,032,345, regardless of which portion of the missile strikes the target material. For the plastic resins described, the missile shell 11 preferably has a wall thickness as thin as or somewhat less than 1/32 inch and preferably in the range of 0.012 inch to 0.030 inch to provide the assembly 10 light enough so that it will not bounce off the target. The hooking material contains a multitude of filamentary plastic hooks 22 secured to a sheet-like base, the bottom face of which

base is preferably adhesive bonded or welded to the outer surface 17 of each indentation 12. The sections 20 are each configured to completely fill the indentations 12 and, if formed of a material which is a different color than that of the plastic of which shell 11 is molded, a pleasing decorative effect is attained by providing portions of the missile outer surface of one color interposed between the portions thereof defined by the sections 20 of a different color simulating a playball made of a plurality of different sections of similar shape and configuration.

In the preferred embodiment illustrated in the drawings, five oblong indentations 12 are molded in the wall 11W, each of similar contour and equally spaced apart from each other in a circular array around the sphereoid with each containing a similarly configured oblong section of the described hooking material completely filling the indentation. The indentations 12 contain portions of the wall 11W of spherical configuration below the spherical configuration defined by wall portions 13 with the spherical outer surfaces 17 of the indentations supporting the sections 20 of hooking material to permit their hook-like formations 22 to protrude beyond the surfaces of portions 13 a degree to engage and retentively hold the missile 10 against a pile target material of the type defined herein and in U.S. Pat. No. 3,032,345. The depth of the indentations 12 is preferably such, however, that the protruding hook-like formations of the sections 20 do not protrude beyond the spherical shell defined by surface 14 a degree such as to abruptly change or vary the general spherical shape of the missile as illustrated in FIG. 3.

Although the missile shown in the drawings is in the shape of a spherical ball, it may be provided in other concave configurations such as an oblate sphereoid or a football.

For a hooking material such as Velcro material which is produced by the American Velcro Corporation of New York, N.Y. which is approximately 1/16 inch thick, the depth of the cavities 12 is preferably in the order of 1/32 inch allowing the filamentary hook formations thereof to protrude about 1/32 inch beyond the spherical plane of the surface 14 of the hollow shell 11.

While a typical spherically shaped missile of the type illustrated in the drawings may vary in outer diameter from between one inch and two inches and the indentations and sections of textile fastening material may vary from three to seven in number, in a preferred embodiment of the invention, the ball shaped base 11 is about 1 1/2 inch in diameter with a wall thickness of less than 1/32 inch for proper lightness to prevent the missile from bouncing off the target, the indentations and fastening material are approximately 2 inches long and vary from about 1/16 inch to 3/16 inch width at their ends to about 3/8 inch to 3/4 inch at their centers and are five in number. Such a spherically shaped missile is preferably formed of a one piece blow molding of polyethylene, polystyrene, cellulose acetate or other suitable thermoplastic resin.

We claim:

1. A missile for use in target games employing a target which is composed of a planar sheet including a substantial area of pile material having upstanding filamentary formations protruding therefrom which are adapted to engage and hold said missile against any of the various portions of the target which the missile may strike during playing said game,

said missile being formed of a thin-walled light weight generally convex shaped hollow body forming a self supporting bulbous enclosure in the shape of a sphereoid,

the outer surface of the wall of said hollow body defined by convex outer portions thereof surrounding a plurality of oblong indentations therein wherein the depth of each indentation is substantially constant throughout the indentation and wherein each indentation extends almost halfway around said sphereoid body,

a plurality of oblong sections of sheet-like fastening material each configured in contour to the contour of a respective of said indentations,

each of said oblong sections of sheet-like fastening material being secured within a respective indentation in the wall of said hollow body of similar contour thereto,

each of said oblong sections of sheet-like fastening material having a multitude of filamentary formations which are cantilever supported and protrude outwardly from said fastening material in a manner such that they extend substantially radially outwardly from said hollow body when said oblong sections of said fastening material are secured within said indentations in engagement with the bottom walls thereof,

each of said filamentary formations of said fastening material having a shank portion which is formed with an end portion which extends outwardly of the shank portion and extends backwardly in the direction of said fastening material to define a hook-like formation,

said hook-like formations of filamentary fastening material being configured and protruding from the sections of said fastening material in a manner such that they project a degree beyond the surface of those portions of said hollow body which are disposed between said indentations to permit said hook-like formations to engage the formations of the target which said missile strikes to retain said missile thereagainst,

said oblong sections of sheet-like fastening material being configured and spaced apart around the surface of said sphereoid body in a manner such that, regardless of which portion of said sphereoid body engages said substantial area of target pile material, a sufficient number of the hook-like formations of said oblong sections of fastening material will engage and become attached to the filamentary formations of said target and retain said sphereoid body against said target.

2. A missile in accordance with claim 1 wherein said indentations in said wall of said hollow body are of substantially equal shape and are equi-spaced apart around said hollow body.

3. A missile in accordance with claim 2 wherein each of said indentations in said wall of said hollow body and said oblong sections of sheet-like fastening material taper from a maximum width near the center portions thereof to narrower end portions at each end thereof.

4. A missile in accordance with claim 3 wherein each of said oblong sections of fastening material and the indentations in which they are disposed are symmetrically shaped and of similar shape to the shapes of the other indentations and sections of fastening material.

5. A missile in accordance with claim 1 wherein each of said indentations and section of fastening material

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are of substantially equal shape.

6. A missile in accordance with claim 5 wherein each of said indentations in the wall of said hollow body and the non-indented portions of said wall between said indentations is of substantially similar configuration.

7. A toy missile in accordance with claim 6 wherein said indentations and the fastening material filling said indentations are each five in number and wherein the material of which said hollow body is molded and that

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of which said fastening material is made are of different colors.

8. A toy missile in accordance with claim 5 wherein said sphereoid is in the range of 1 inch and 2 inches in diameter and the indentations therein and fastening material filling same vary between 2 inches and 3 inches in length and between $\frac{3}{8}$ and $\frac{3}{4}$ in width at their centers and between $\frac{1}{16}$ inch and $\frac{3}{16}$ inch in width at their ends.

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