United States Patent

Smith

[15] **3,679,212**

[45] **July 25, 1972**

[54] CHANCE READOUT EDUCATIONAL BALL

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[22] Filed: **May 28, 1971**

[21] Appl. No.: **147,777**

[52] **U.S. Cl.**.....**273/144 B,** 273/138 A, 273/58 B, 273/58 F

[51] **Int. Cl.**.....**A63b 39/00,** A63f 5/04

[58] **Field of Search**.....273/138 R, 138 A, 58 R, 58 B, 273/58 BA, 58 D, 58 E, 58 F, 58 G, 58 H, 58 K, 1 M, 1 R, 144 R, 144 A, 144 B, 147, 161; 46/64, 65

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[57] **ABSTRACT**

A hollow substantially spherical ball having a plurality of apertures therein and a plurality of movable members, generally in the form of pellets, having indicia thereon and shaped to fit partially into the apertures from the interior thereof but incapable of passing out through the apertures whereby the indicia may be observed externally of the ball. Magnetic means is associated with each aperture and associated with a metal ring on each pellet for retaining the pellets in the aperture during rolling movement of the ball so that each aperture of the ball will be provided with a pellet during rolling movement of the ball. The ball is provided with a weighted and flattened bottom surface so that it will come to rest in a predetermined position with indicia being provided on the external surface of the ball for association with the indicia revealed through the apertures for enabling various games to be played and enabling various educational processes to be practiced.

8 Claims, 5 Drawing Figures

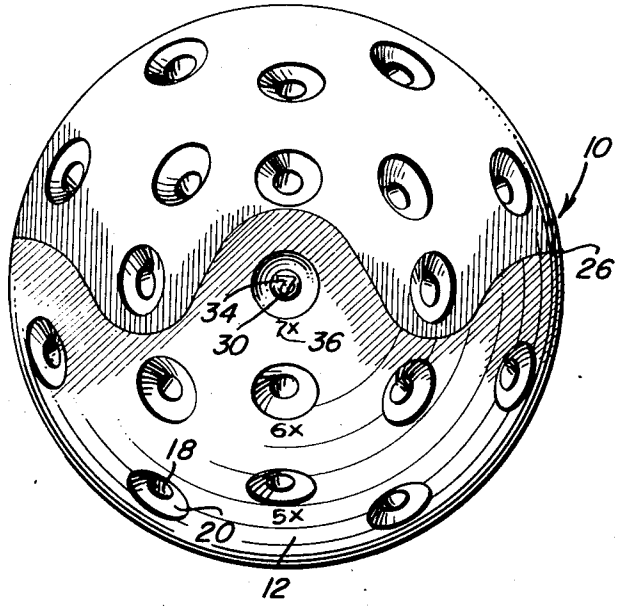


Fig. 1

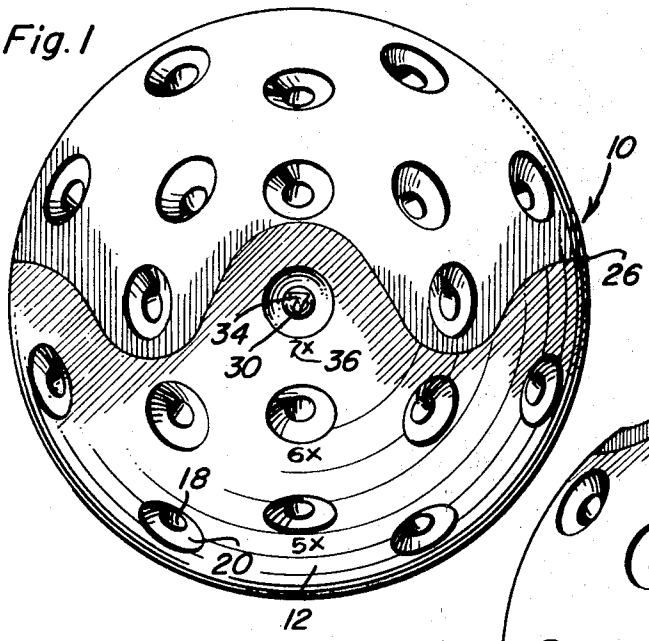


Fig. 5

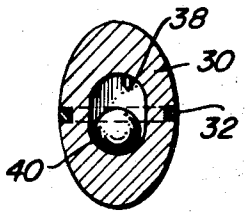


Fig. 2

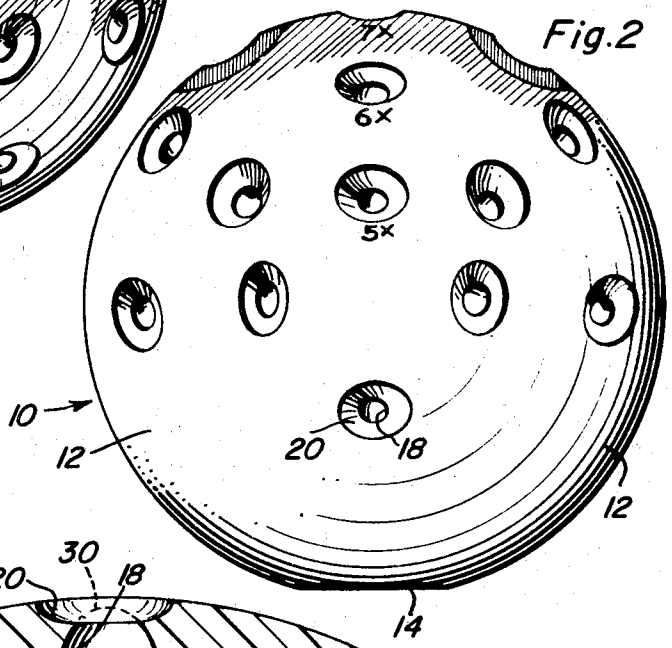


Fig. 4

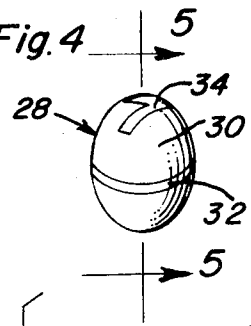
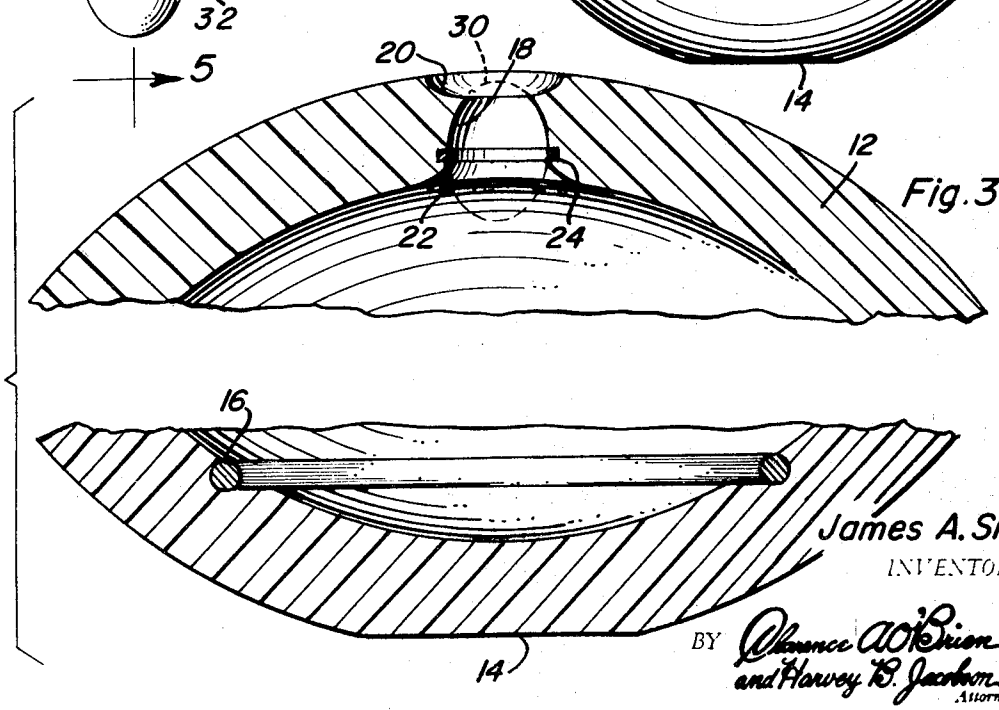


Fig. 3



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CHANCE READOUT EDUCATIONAL BALL

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention generally relates to educational toys and more particularly a spherical ball which may be provided with decorative indicia to simulate the surface of the moon with a plurality of apertures formed therein simulating moon craters, together with internally disposed movable members which are freely movable in relation to the interior surface of the ball but which are retained in position by a magnetic construction to enable indicia on the movable members to be observed from the exterior of the ball.

2. Description of the Prior Art

Various educational toys and games have been provided in which indicia is associated with various structural devices, so that educational processes are practiced by children using such devices. Such devices sometimes have the problem of separate movable game pieces or indicia carrying members, such as dice or the like, which frequently become lost or misplaced and present a problem of storage and handling. While such devices are workable, certain of the devices are relatively inexpensive and sometimes do not satisfactorily perform the desired function.

SUMMARY OF THE INVENTION

An object of the present invention is to provide an educational toy in the form of a hollow ball having a flattened portion on the periphery thereof provided with a weight which will assure that the ball comes to rest on the flattened portion after the ball has been rolled along a supporting surface.

Another object of the present invention is to provide a ball type educational toy in which the ball is provided with a plurality of apertures therein with the apertures being divided into two sections by a meandering division line with the portions of the ball on opposite sides of the division line being distinguishably colored with an equal number of apertures on each side of the division line.

Still another object of the invention is to provide an educational toy in accordance with the preceding objects in which the interior of the ball is provided with a plurality of freely movable pieces in the form of generally elliptical bodies or pellets of a size to be partially received within each aperture but which will not pass through the apertures, thus revealing any and all of the movable body through the apertures for observation from the exterior thereof with the movable body including indicia thereon to enable such indicia to be observed externally of the ball.

A still further object of the invention is to provide a toy in accordance with the preceding objects in which each aperture is provided with an associated magnet and each movable body is provided with a ferrous metallic ring insert so that the movable bodies or pellets will be retained in position in the apertures to enable the indicia revealed through the apertures to be employed in various educational processes by combining it with indicia printed on the exterior of the ball adjacent each of the apertures to enable various educational manipulations to be performed, such as practicing solutions of mathematical problems.

Still another important feature of the present invention is to provide an educational toy in accordance with the preceding objects in which each of the movable bodies or pellets is hollow and provided with a freely movable weight therein so that the pellets or bodies will roll in an erratic manner along the inner surface of the ball as the ball is rolled along a surface thereby facilitating entry of one end of each of the pellets into an aperture.

Still another important feature of this invention is the provision of an educational toy which is relatively inexpensive to manufacture, highly entertaining and yet effective for developing skills in various educational processes.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top plan view of the ball type educational toy of the present invention.

FIG. 2 is a side elevational view thereof.

FIG. 3 is a vertical sectional view of the bottom portion of the ball, on an enlarged scale, illustrating the weight and flattened bottom, as well as the details of the upper portion of the ball illustrating one of the apertures therein.

FIG. 4 is a perspective view of one of the movable bodies or pellets employed interiorly of the ball.

FIG. 5 is a vertical sectional view taken substantially upon a plane passing along section line 5—5 on FIG. 4 illustrating the specific structural details of the movable body or pellet.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now specifically to the drawings, the ball type educational toy of the present invention is generally designated by the numeral **10** and is in the form of a hollow spherical ball **12** having a flattened peripheral portion **14** forming a bottom thereof which will engage a surface in order to maintain the ball in predetermined relationship to a supporting surface. The ball is preferably constructed of plastic material of any desired thickness and of any suitable type of plastic material. To provide self-righting of the ball on the flat bottom **14**, a ring type weight **16** is connected thereto or embedded therein adjacent the flattened bottom **14** as illustrated in FIG. 3. Thus, as the ball rolls along a supporting surface, it will normally come to rest with the flattened bottom **14** supporting the ball in the manner illustrated in FIG. 2.

The ball **12** is provided with a plurality of apertures **18** extending therethrough with the outer end of each aperture **18** being surrounded by a concave recess **20** which are shaped to simulate moon craters. The aperture itself is of partial elliptical configuration as illustrated in FIG. 3 and the inner end of the aperture is provided with an outwardly flared portion **22** which forms a guide for the inner end of the opening **18** with the outer end of the opening **18** being of less diameter than the inner end of the opening **18**.

Embedded in the periphery of each aperture **18** is an annular or ring type magnet **24** which is in the form of a permanent magnet **24** which is flush with the inner peripheral surface of the aperture **18**. As illustrated in FIG. 1, the apertures are divided into two areas by a dividing line **26** so that an equal number of apertures **18** are on each side thereof and the area of the ball on one side of the dividing line **26** is distinguishably colored as compared with the area on the other side of the dividing line thereby enabling the surface of the ball to be divided into two separate playing areas each having the same number of apertures **18** therein.

Disposed within the interior of the ball **12** is a plurality of freely moving bodies or pellets generally designated by the numeral **28** each of which are in the form of an elliptical body **30** of a size to be partially received in the aperture **18** but of a size which will not pass outwardly through the apertures **18**. Peripherally at the belt of the elliptical body **30** is a ferrous metal ring **32** which will align with and be engaged by the permanent ring magnet **24** thus securing the body **30** with the aperture **18** with a portion of the end thereof projecting above the bottom of the recess **20** as illustrated by dotted line in FIG. 3 so that indicia **34** on either end of the body **30** may be observed externally of the ball **12**. The indicia **34** is associated with indicia **36** on the external surface of the ball to provide problems such as mathematical problems which may be solved by the players to enable an interesting game or games to be played with the ball and at the same time enable educational

processes to be practiced. Also, each of the bodies **30** is provided with an elongated hollow interior **38** receiving a small movable weight **40** which may be in the form of spherical ball bearing or the like which movement causes erratic rolling of the movable pellets **28** as the ball is rolled along a surface thereby assuring that the end of one of the pellets is received in each of the holes **18**.

The ball may be constructed of any suitable color and the exterior surface thereof provided with indicia simulating the surface of the moon with the indicia **36** being printed thereon enabling the various games and educational processes to be practiced. For example, mathematical indicia enables various mathematical problems to be practiced, such as multiplication tables, or the like. Various competitive games may be played between two players, one of which is assigned to one area of the ball and the other being assigned the other colored area of the ball thereby introducing a competitive challenge to children employing the device. The device may be constructed of plastic material and formed as two semi-spheres joined together in any suitable manner with it being pointed out that the number of apertures as well as the size and shape thereof being variable with the movable bodies internally of the ball also being variable as to shape, size and configuration with the indicia being easily distinguishable by using colors that are readily observable which enables the device to be relatively inexpensive to manufacture but yet effective for its particular purposes.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. An educational toy comprising a substantially spherical ball of hollow construction provided with a plurality of apertures therein, a plurality of normally freely movable members within the interior of the ball dimensioned to be partially received in the apertures but incapable of movement therethrough thereby enabling observation of the movable members from exteriorly of the ball, means releasably retaining the movable members within the apertures regardless of the orientation of the ball, and indicia on the movable members observable through the apertures when disposed in the apertures to enable the indicia to be employed in playing the game.

2. The structure as defined in claim **1** wherein said spherical ball is provided with a flattened bottom and a weight incorporated therein so that the ball will roll into position with the flattened bottom engaging a supported surface.

3. The structure as defined in claim **1** wherein said apertures are divided into two sections by a dividing line peripherally of the ball with the portion of the ball on one side of the dividing line being distinguishably colored from the portion of the ball on the opposite side of the dividing line.

4. The structure as defined in claim **1** wherein said apertures each include a surrounding recess on the exterior thereof simulating moon craters.

5. The structure as defined in claim **1** wherein said means retaining the movable members in the apertures including magnetic means including a permanent magnet associated with each aperture and a ferrous metal insert in each movable member.

6. The structure as defined in claim **5** wherein said aperture is partially elliptical, each of said movable members is elliptical for reception in the aperture, the ferrous insert in the movable member being in the form of an annular ring at the belt line of the elliptical member.

7. The structure as defined in claim **6** wherein each of the movable members is provided with a movable interior weight capable of moving eccentrically of the movable member to cause the movable member to roll in an erratic path.

8. The structure as defined in claim **7** wherein the indicia on said movable member is disposed on each end thereof for observation through the apertures, the external surface of said ball having indicia adjacent each aperture for association with the indicia revealed through the aperture to enable educational processes to be practiced.

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