United States Patent [19]

Majewski

[11] **3,813,810**

[45] **June 4, 1974**

[54] **COORDINATION TOP**

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[52] **U.S. Cl.** **46/64,** 46/65, 46/73

[51] **Int. Cl.** **A63h 1/00**

[58] **Field of Search** ..... 35/22 R; 46/50, 64, 65, 46/67, 69, 73; 273/134 R

[56] **References Cited**

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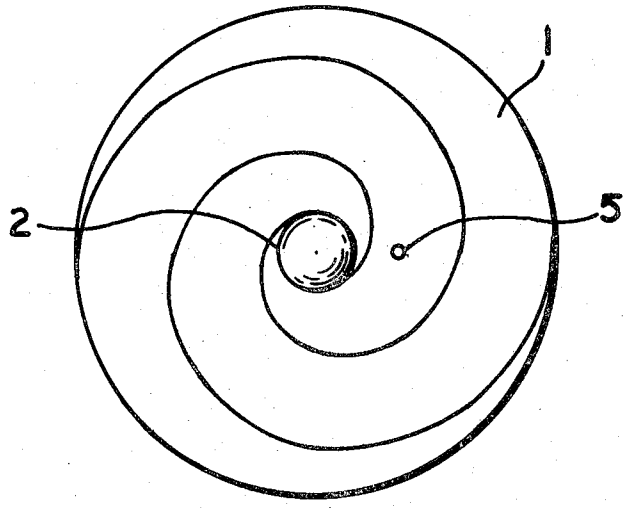
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Primary Examiner—Antonio F. Guida
Assistant Examiner—Robert F. Cutting
Attorney, Agent, or Firm—Ernest S. Kettleson

[57] **ABSTRACT**

A coordination top comprising a radial surface, rounded rotation surface means centrally thereof, and offset means for imparting rotational movement.

3 Claims, 8 Drawing Figures



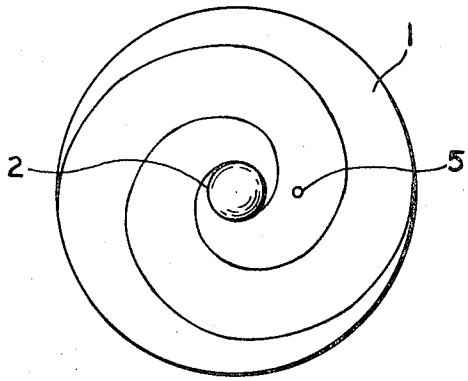


FIG. 1

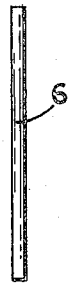


FIG. 2

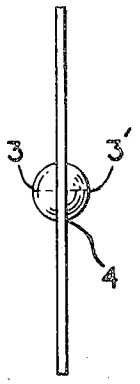


FIG. 3

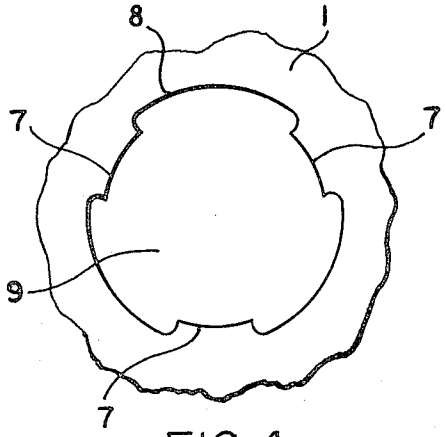


FIG. 4

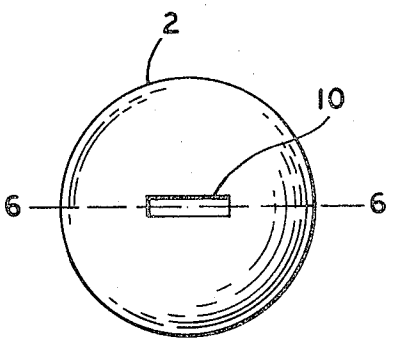


FIG. 5

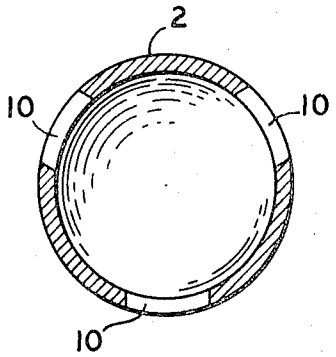


FIG. 6

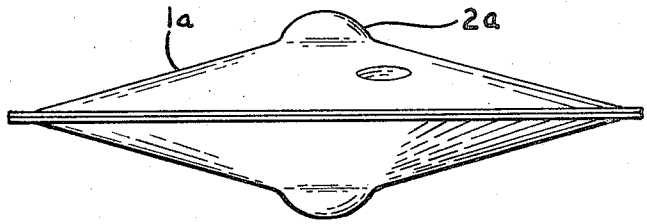


FIG. 7

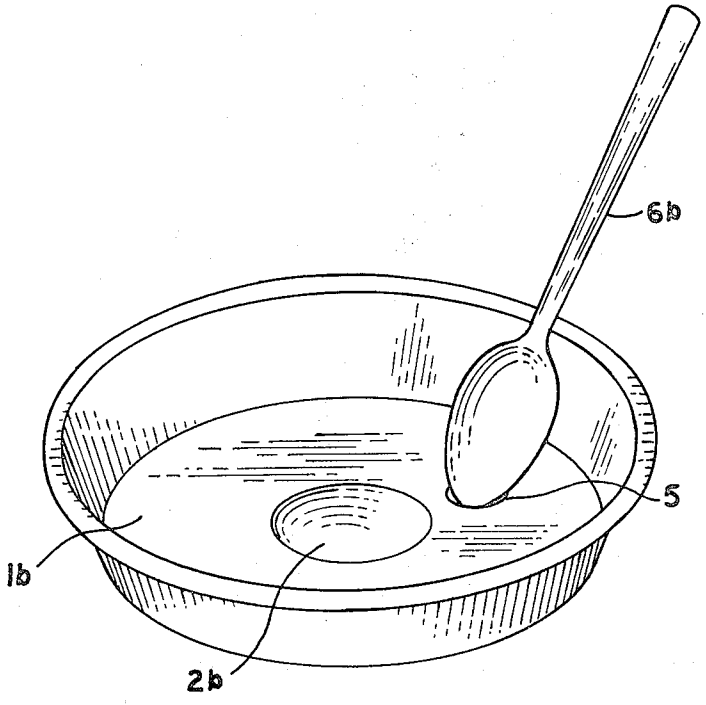


FIG. 8

COORDINATION TOP

BACKGROUND OF THE INVENTION

Rotating devices such as tops have long been known in the toy field for entertainment and amusement. Various other devices have been known in the educational field for testing, evaluating, and developing coordination. This invention combines the entertainment features of a top with the educational features of a coordination device to stimulate and maintain interest of users who are primarily younger physically handicapped children. The offset means by which rotational movement is imparted to this invention is designed to require, to test and to develop coordination and manual dexterity on the part of the user by using the fine motor muscles namely wrist and fingers.

SUMMARY OF THE INVENTION

It is an object of this invention to provide a coordination top comprising a radial surface, a rounded rotation surface centrally thereof, and offset receiving means for imparting rotational movement.

It is an object of this invention to provide a device which combines the entertainment features of a spinning top with the features of a device for testing and for developing coordination abilities of the user.

It is an object of this invention to provide a rotation surface on the spinning top device which is rounded to prevent puncture or other injury to persons who might fall against or otherwise come into contact with such rotation surface.

It is an object of this invention to provide offset means on the radial surface for imparting rotational movement thereto.

It is an object of this invention to provide a spherical body, ellipsoid or blunt cone and a method of mounting it to the radial surface.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of the coordination top in accordance with this invention.

FIG. 2 is an elevation view of a dowel rod for use in imparting rotational motion to the coordination top.

FIG. 3 is a side elevation view of the coordination top in FIG. 1.

FIG. 4 is a partially cut away plan view of the central portion of a radial surface adapted for use in this invention.

FIG. 5 is an elevation view of one side of a spherical body adapted for use in this invention.

FIG. 6 is a sectional view taken on line 6—6 in FIG. 5.

FIG. 7 is an elevation view of a modification showing a top having a hollow conical radial surface.

FIG. 8 is a perspective view of a modification showing a top having the shape of a baking pan.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring to the drawings in detail, a radial surface 1, is provided with a rounded body 2, mounted centrally thereof. The radial surface 1 may have a round peripheral configuration as shown in FIG. 1, but the peripheral configuration may be a variety of other shapes such as triangular or square. Attractive and unique designs of various colors may be painted on each side of the radial surface 1 which produce optical illusions of

motion, color changes and other effects when the top is rapidly rotated.

A rounded body as shown in FIGS. 1 and 3 is spherical, but an ellipsoid or rounded body of other external configuration may be used. The rounded body 2 is affixed to the center of radial surface 1 with its longitudinal axis perpendicular to the plane of radial surface 1. When rotational movement is imparted to radial surface 1 it rotates with one longitudinal axis pole 3 or 3' of rounded body 2, or polar region thereof, in contact with a plane surface such as on a table, floor or the like. A rounded spinning surface is used, rather than a conventional taper or point, to prevent injury to a child or other user who may fall against, or be pushed, or otherwise come in contact with such spinning surface region of the top.

The rounded body 2 is affixed at its equator 4 to radial surface 1. A complete sphere, ellipsoid or other rounded body is preferrable thus providing polar regions at both 3 and 3', one on each side of radial surface 1, on which the top may be spun with either side facing upward. Only one hemisphere, or half or other rounded body 2 may be used if desired, and in that event only one side of radial surface 1 may face upward when the top is rotated. In such case the equatorial base of the hemisphere or hemi-ellipsoid is mounted so as to be co-planar with said radial surface 1, and an axial pole of the hemisphere or hemi-ellipsoid and region surrounding said pole extends from one side of radial surface 1.

Offset rotational means such as a hole 5 is provided on radial surface 1 positioned radially outward from rounded body 2. A dowel rod 6 may be provided for insertion through hole 5 to begin rotation of the top. One end of the rod 6 is grasped in the hand of a child or other user, the opposite end of the rod is inserted through hole 5, and the user then uses his fingers and wrist in a stirring motion to impart rotational movement to the radial surface 1 by means of rod 6. Instead of rod 6, a user may also insert a finger through hole 5 and thereby begin rotational movement of the radial surface 1. As soon as rapid rotation of radial surface 1 is achieved the rod or finger is withdrawn.

The hole 5 is preferably positioned less than half the radial distance from the center of radial surface 1, which provides better control when starting to spin the top. The offset rotational means may be other than a hole, such as a slot, raised shoulders formed on one or both sides of radial surface 1 and other means which a rod or finger may contact to impart rotation to the top.

The foregoing arrangement of parts in a spinning top requires and puts particular emphasis on coordination by the user in order to make the top spin. Some find it almost impossible to make the top spin at all. In most cases, success is eventually achieved. In any event, a user may (1) be tested as to his coordination ability, and (2) improve his coordination faculties by use of this coordination top.

The rounded body 2 may be affixed to the center of a disc 1 by providing lugs 7 extending inwardly from peripheral edge 8 of central opening 9 of disc 1. Central opening 9 conforms in dimension and configuration to the equator of rounded body 2, so the peripheral edge 8 of opening 9 frictionally contacts the equatorial surface of rounded body 2. Rounded body 2 is provided with slots 10 of dimension, configuration, and placement around its equator to snugly receive lugs 7 of disc

1. Both disc 1 and rounded body 2 are preferably made of materials which are shape retaining but which do have some resiliency, such as hardboard in the case of the disc and plastic such as polypropylene or polyethylene in the case of the rounded body. The rounded body 2 with receiving slots 10 may then be pushed into the central opening 9 of disc 1, with receiving slots 10 in alignment with lugs 7. When the equator of rounded body 2 reaches the peripheral edge 8 of disc 1, the lugs 7 snap into receiving slots 10 to snugly retain rounded body 2 in place in the center of disc 1.

The disc 1 may be formed by stamping out of a flat sheet of hardboard discs of desired peripheral configuration having central opening 9 and lugs 7 formed therein. The rounded body 2 may be formed by blow molding a quantity of polypropylene or polyethelene into a spheroid or other desired shape, and slots 10 may then be cut in said rounded body.

A Modification of this invention includes a hollow conical radial surface 1a extending around the centrally located rounded rotation surface 2*a*. When the top is constructed of plastic material such as polyethylene, the hollow conical radial surface 1a may be formed by blow molding. Alternatively two such hollow conical radial surfaces may be bonded together with the apex of each cone extending oppositely outward from the other.

A further modification consists of a top whose radical surface 1*b* is formed as the bottom of a utensil or container such as a pot or pan, with a rounded rotation surface 2*b* formed centrally thereof. Instead of a dowel rod 6 to impart rotational movement, a spoon device 6*b* is inserted through hole 5 and the top is spun by using spoon device 6*b* in a stirring motion.

The particular form of the invention described herein and illustrated in the accompanying drawings is a preferred embodiment, and various changes in the size, shape, materials and arrangement of parts may be

made without departing from the spirit of the invention or the scope of the attached claims.

Having thus set forth my invention, what I claim is:

1. A coordination top comprising a radial surface, rounded rotation surface means centrally thereof comprising a sphere, the longitudinal axis of said sphere being normal to the plane of said radial surface, one hemisphere of said sphere extending from one side of said radial surface, and the opposite hemisphere extending from the opposite side of said radial surface.

2. A top comprising a flat disc, a rounded body mounted centrally thereof having its longitudinal axis normal to said disc, and mounting means to mount and retain said rounded body in position on said disc comprising a central opening in said disc conforming to the equatorial configuration and dimension of said rounded body, lugs extending inwardly from the peripheral edge of said central opening, and cooperating slots around the periphery of the equator of said rounded body to snugly receive said lugs when said rounded body is inserted into said central opening in said disc.

3. A method of making the top as set forth in claim 2, comprising the steps of selecting a sheet of hardboard, cutting discs therefrom of selected peripheral configuration having a central opening conforming to the equatorial configuration and dimension of said rounded body and having lugs extending inwardly from the peripheral edge of said central opening, blow molding a selected quantity of polyethylene into a rounded body of desired configuration and dimension, and cutting cooperating slots around the periphery of the equator of said rounded body adapted to snugly receive said lugs when said rounded body in inserted into said central opening in said disc, and so inserting said central body in said disc.

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