United States Patent

Atkinson

[15] **3,660,929**

[45] **May 9, 1972**

[54] WHIRLING HOOP TOY

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[22] Filed: **Feb. 26, 1971**

[21] Appl. No.: **119,286**

[52] **U.S. Cl.** **46/47**

[51] **Int. Cl.** **A63h 1/10**

[58] **Field of Search** 46/47, 51, 52, 114, 220; 213/106

[56] **References Cited**

UNITED STATES PATENTS

2,950,565	8/1960	Bridges	46/51
3,086,315	4/1963	Fasano	46/47
3,494,069	2/1970	Klimko	46/220

FOREIGN PATENTS OR APPLICATIONS

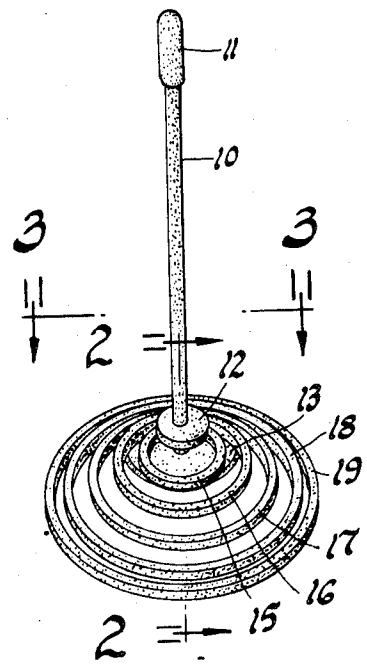
300,588	5/1916	Germany	46/47

Primary Examiner—Louis G. Mancene
Assistant Examiner—Robert F. Cutting
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[57] **ABSTRACT**

A whirling hoop toy for entertainment and competition and as an object of skill. The toy includes a plurality of hoops of decreasingly smaller diameters which are rollably mounted within each other. A rod having a handle at one end and a hoop guard means on the other end is extended through the hoops so as to have the hoops disposed on the rod in operative relation to the hoop guard means, whereby when the rod is whirled, each of the hoops is rolled along the inner periphery of the next larger diameter hoop.

10 Claims, 9 Drawing Figures



PATENTED MAY 9 1972

3,660,929

SHEET 1 OF 2

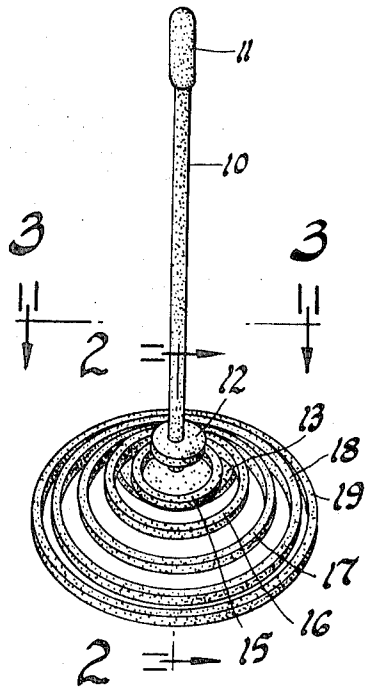


Fig. 1

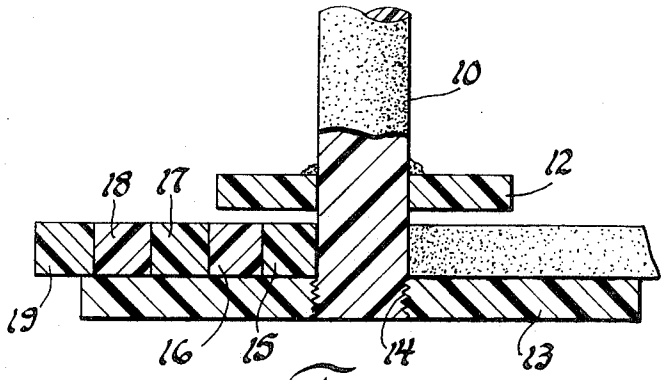


Fig. 2

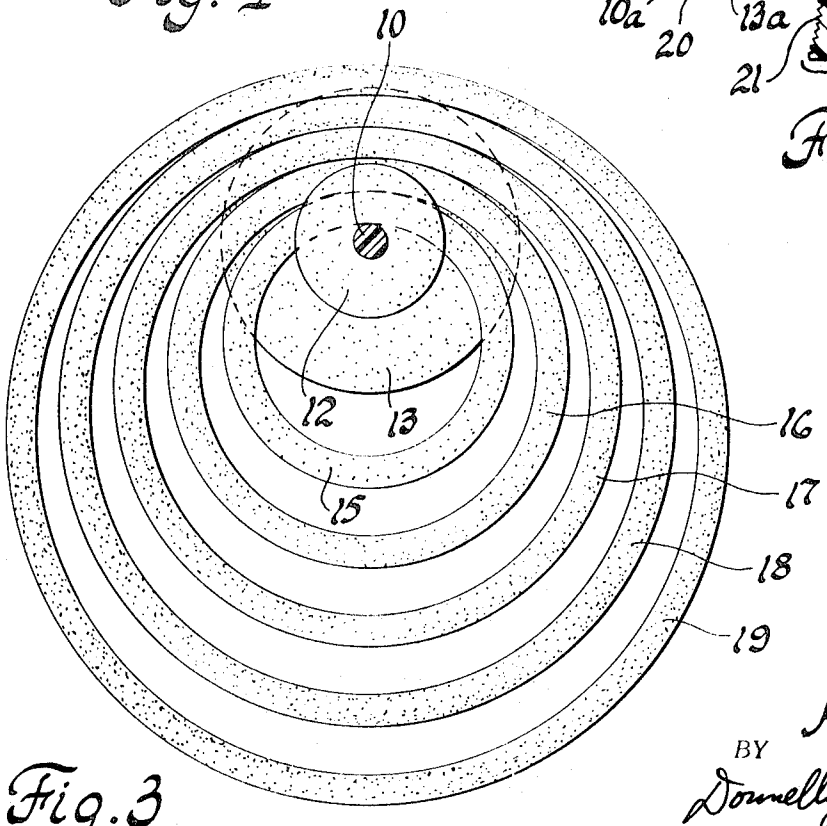


Fig. 3

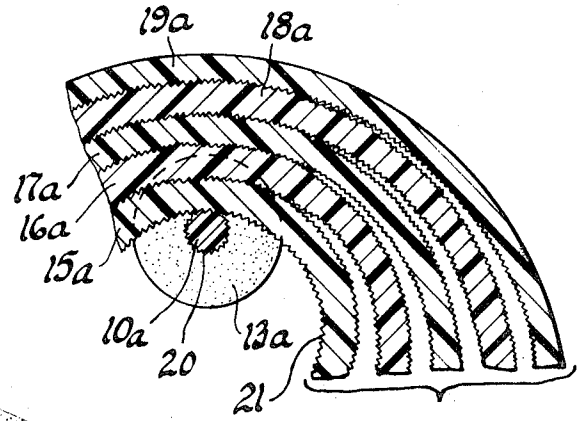


Fig. 4

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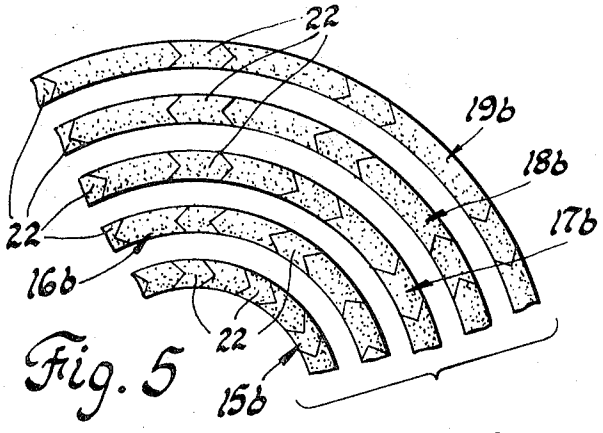


Fig. 5

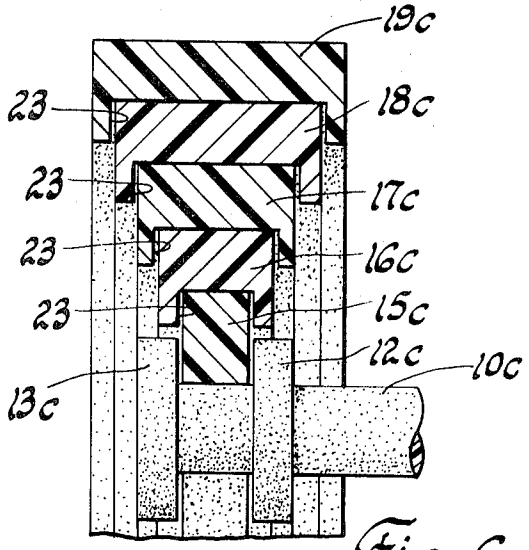


Fig. 6

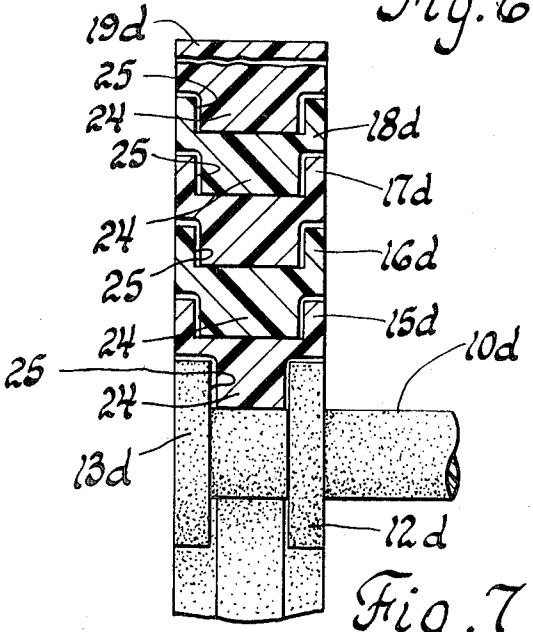


Fig. 7

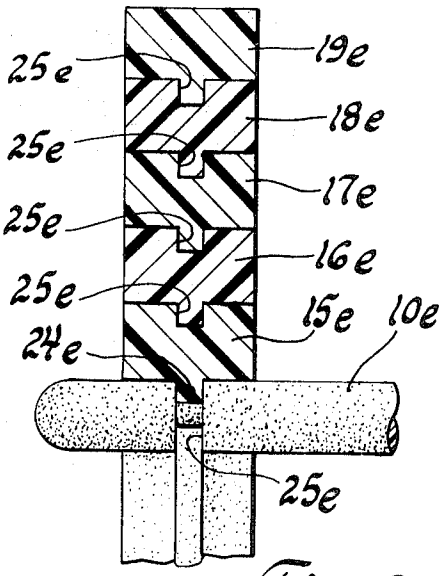


Fig. 8

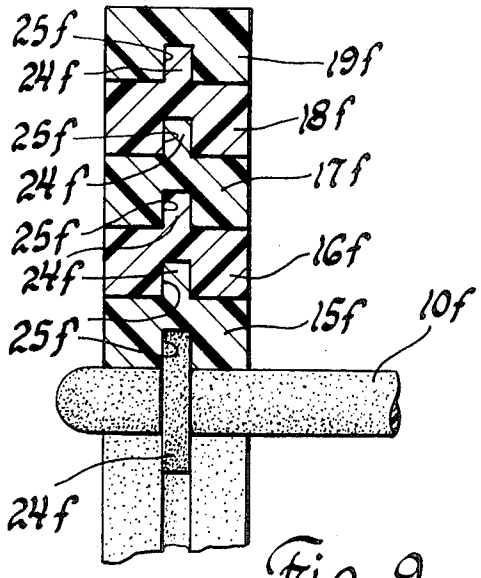


Fig. 9

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WHIRLING HOOP TOY

BACKGROUND OF THE INVENTION

Various types of rolling hoop toys are well known. For example, U.S. Pat. No. 3,494,069 discloses a rolling hoop toy which employs a plurality of hoops that are mounted within each other, and which hoops are propelled along the ground by a pusher member. Heretofore, whirling hoop toys have also been well known, either of the single whirling hoop variety or of the variety wherein a plurality of hoops are simultaneously whirled.

SUMMARY OF THE INVENTION

This invention relates generally to the hoop toy art and more particularly to a novel and improved whirling hoop toy.

As pointed out hereinbefore, various types of prior art rolling and whirling hoop toys have been provided. However, the prior art hoop toys do not disclose the employment of a plurality of hoops of decreasingly smaller diameters which are rollably mounted within each other and which are adapted to be whirled in various directions by a rod.

The whirling hoop toy of the present invention provides a toy for entertainment and competition, as well as being an object of skill. The adeptness or skill of the person holding the whirling rod would determine the number of hoops to be placed on the rod and the number of positions in which he could operate the invention. The invention can be enjoyed by young and old persons and can be used indoors or outdoors, and in any type of climate. The hoops may be provided with various colors and color schemes as desired, to create various illusions or effects as they are whirled.

It is an object of the present invention to provide a novel and improved whirling hoop toy which is simple and compact in construction, entertaining to operate and economical to manufacture.

It is another object of the present invention to provide a novel and improved whirling hoop toy which comprises a plurality of hoops of decreasingly smaller diameters which are rollably mounted within each other, and wherein the hoops are disposed on a rod extended through the innermost one of said hoops. The rod is provided with a handle on one end thereof and hoop guard means on the other end thereof for operative engagement with the hoops, whereby when the rod is whirled, each of the hoops is rolled along the inner periphery of the next larger diameter hoop.

Other objects, features and advantages of this invention will be apparent from the following detailed description, appended claims, and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a whirling hoop toy made in accordance with the principles of the present invention.

FIG. 2 is an enlarged, fragmentary, elevational section view of the whirling hoop structure illustrated in FIG. 1, taken along the line 2—2 thereof, and looking in the direction of the arrows.

FIG. 3 is an enlarged plan view of the whirling hoop structure illustrated in FIG. 1, partially in section, taken along the line 3—3 thereof, and looking in the direction of the arrows.

FIG. 4 is a fragmentary, horizontal section view of a modified whirling hoop toy made in accordance with the principles of the present invention.

FIG. 5 is a fragmentary, plan view of a whirling hoop toy made in accordance with the principles of the present invention, and showing designs on the sides of the hoops.

FIG. 6 is a fragmentary, elevational section view of another embodiment of a whirling hoop toy made in accordance with the principles of the present invention.

FIG. 7 is a fragmentary, broken elevational section view, similar to FIG. 6, and showing a further embodiment of a whirling hoop toy made in accordance with the principles of the present invention.

FIG. 8 is a fragmentary, elevational section view of still another embodiment of a whirling hoop toy made in accordance with the principles of the present invention.

FIG. 9 is a fragmentary, elevational section view of still a further embodiment of a whirling hoop toy made in accordance with the principles of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, and in particular to FIG. 1, the numeral 10 designates a whirling rod 10 which is provided with a handle 11 on one end thereof and a guard means on the other end thereof comprising a pair of inner and outer guard members 12 and 13.

As shown in FIGS. 1 and 3, the guard members 12 and 13 are formed as circular flanges. The flange 13 is provided with an axial hole 14, into which is threadedly mounted a threaded end of the rod 10. The guard 12 is of a smaller diameter than the guard 13 and is spaced upwardly from the guard 13 and it is secured to the rod 10 by any suitable means. The rod 10 and flanges 12 and 13 may be made from any suitable material, as for example, metal, wood or plastic.

A plurality of hoops 15, 16, 17, 18 and 19 are adapted to be carried on the rod 10 between the guards 12 and 13. The hoops 15 through 19 are of decreasingly smaller diameters commencing with the outermost hoop 19 inwardly to the innermost hoop 15. The hoops illustrated in FIGS. 1 through 3 are provided with smooth inner and outer peripheries. The hoops 15 through 19 may be made from any suitable material, as for example, metal, wood or plastic. It will be understood that the hoops 15 through 19 may be of any desired width and thickness.

In use, the handle 11 of the rod 10 is grasped by the hand of the user and held in a horizontal position with the hoops, as shown in FIG. 3, disposed between the guards 12 and 13. The rod 10 is then rotated and moved upwardly and downwardly in a circular motion whereby the hoops 15 through 19 start spinning, and as the hoops pick up speed and momentum, the rod 10 may be moved into other diagonal, oblique or vertical positions. The rod 10 may also be moved in a complete circle as the hoops are rotated with increased speed and momentum. Five hoops are shown as being used, but it will be understood that any number of the hoops may be used. The adeptness or skill of the person operating the rod 10 would determine the number of hoops placed on the rod and the number of positions into which the hoops can be made to operate. The invention is for entertainment and competition. It can be enjoyed by young or older children, men or women, and indoors or outdoors.

FIG. 4 illustrates a fragmentary, horizontal view of a modified whirling hoop toy made in accordance with the present invention. Parts of the embodiment of FIG. 4 which are the same as the embodiment of FIG. 1 have been designated with the same reference numerals, followed by the small letter "a." as shown in FIG. 4, the rod 10 is provided with cogs or gear teeth 20 around the periphery thereof, between the guard means or flanges 12 and 13. The gear teeth 20 are adapted to mesh with mating gear teeth 21 on the inner periphery of the inner hoop 15*a*. The hoops 15*a*, 16*a*, 17*a* and 18*a* are provided with the gear teeth 21 on both the inner and outer peripheries. The outer hoop 19 is provided with gear teeth as 21 only on the inner periphery thereof and the outer periphery is smooth. The embodiment of FIG. 4 functions in the same manner as the embodiment of FIGS. 1 through 3.

FIG. 5 illustrates a fragmentary, plan view of a whirling hoop toy made in accordance with the principles of the present invention, and wherein the outer sides of the hoops have been provided with various colored designs indicated by the numeral 22. The hoops which are the same as the hoops of the embodiment of FIGS. 1 through 3 have been marked with the same reference numerals followed by the small letter "b." It will be understood that various designs, colors and color schemes may be used in making the hoops employed in the present invention.

FIG. 6 is an elevational, sectional view of another embodiment of a whirling hoop toy made in accordance with the principles of the present invention. The parts of the embodiment of FIG. 6 which are the same as parts of the embodiment of FIGS. 1 through 3 have been marked with the same reference numerals followed by the small letter "c."

As shown in FIG. 6, the innermost hoop 15*c* is provided with smooth inner and outer peripheries, and it is adapted to be seated between the guard means or flanges 12*c* and 13*c* which are fixed on the rod 10*c* in spaced apart positions. The guard flanges 12*c* and 13*c* are of equal diameter. The hoops 16*c*, 17*c*, 18*c* and 19*c* are provided with internal peripheral recesses as indicated by the numeral 23. It will be seen that the hoops of FIG. 6 are of increasing width as they increase in diameter. The hoop toy of FIG. 6 would be operated in the same manner as the embodiment of FIG. 1.

FIG. 7 is a fragmentary, broken, elevational section view of a further embodiment of a whirling hoop toy made in accordance with the principles of the present invention. In the embodiment of FIG. 7, the parts of the hoop structure which are similar to parts in the embodiment of FIGS. 1 through 3 have been marked with the same reference numerals, followed by the small letter "d." The rod 10*d* is provided with a guard means comprising a pair of equal size guard flanges 12*d* and 13*d* which are spaced apart and adapted to receive therebetween a tongue 24 formed on the inner periphery of the innermost hoop 15*d*. The space 25 between the guard flanges 12*d* and 13*d* forms a groove for the reception of the tongue 24. Similar grooves 25 are formed on the outer periphery of the hoops 15*d*, 16*d*, 17*d* and 18*d* for the reception of tongues 24 formed on the inner periphery of the next larger diameter hoop. The outer hoop 19*d* is formed with a smooth surface on its outer periphery. The hoop structure of FIG. 7 functions in the same manner as the embodiment of FIGS. 1 through 3.

FIG. 8 illustrates a fragmentary, elevational section view of another embodiment of a whirling hoop toy made in accordance with the principles of the present invention. The parts of the embodiment of FIG. 8 which are the same as the parts of the embodiment of FIG. 7 are marked with the same reference numerals followed by the small letter "e." In the embodiment of FIG. 8, a guard means is provided in the form of a groove 25*e* which is formed directly in the one end of the whirling rod 10*e*. The inner hoops 15*e*, 16*e*, 17*e* and 18*e* are each provided with a groove 25*e* on the outer periphery thereof. The grooves 25*e* in these hoops are smaller in width than the grooves 25 in the embodiment of FIG. 7, and they are axially aligned with the groove 25*e* in the rod 10*e*. The grooves 25*e* rollably receive the mating tongue 24*e* formed on the next largest diameter hoop. The outermost hoop 19*e* is smooth on its outer surface.

FIG. 9 is a fragmentary, elevational section view of still another embodiment of a whirling hoop toy made in accordance with the principles of the present invention. The hoop structure of FIG. 9 is formed with a tongue and groove arrangement similar to that of FIG. 8, but in a reversed position. The parts of the embodiment of FIG. 9 which are the same as parts in the embodiment of FIG. 8 have been marked with the same reference numerals followed by the small letter "f." As shown in FIG. 9, the rod 10*f* is provided with a guard means comprising a single guard flange 24*f* which functions as a tongue on the rod 10*f*. The hoops 15*f*, 16*f*, 17*f* and 18*f* are each provided with peripheral tongues 24*f* on their outer peripheries which mate with grooves 25*f* formed in the inner periphery of the next larger diameter hoop. The outermost hoop 19*f* is provided with a smooth outer peripheral surface. The embodiment of FIG. 9 functions in the same manner as the previously described embodiments.

While it will be apparent that the preferred embodiments of the invention herein disclosed are well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modification, variation and change.

What I claim is:

1. A whirling hoop toy comprising in combination, a plurality of hoops of decreasingly smaller diameters rollably mounted within each other, said hoops being disposed on a rod extended through the innermost one of said hoops, and said rod being provided with a handle on one end thereof and hoop guard means on the other end thereof operatively engaged with said hoops, whereby, when the rod is whirled, each of the hoops is rolled along the inner periphery of the next larger diameter hoop.

2. A whirling hoop toy as defined in claim 1, wherein:

a. each of said hoops is provided with decorative designs.

3. A whirling hoop toy as defined in claim 1, wherein:

a. each of said hoops is smooth faced on the inner and outer peripheries thereof; and

b. said hoop guard means comprises a pair of spaced apart guard flanges.

4. A whirling hoop toy as defined in claim 3, wherein:

a. the pair of guard flanges includes an outer circular flange of a size large enough to extend alongside the hoops when they are being rolled and twirled, and an inner circular flange of a diameter smaller than the diameter of said outer flange.

5. A whirling hoop toy as defined in claim 1, wherein:

a. said hoop guard means comprises a pair of spaced apart guard flanges;

b. said rod is provided with gear teeth therearound on the portion thereof between said guard flanges;

c. the largest diameter hoop of said plurality of hoops comprises the outer hoop and the other hoops comprise the inner hoops;

d. all of said inner hoops are provided with gear teeth on the inner and outer peripheries thereof; and,

e. said outer hoops is provided with gear teeth on the inner periphery, whereby when said hoops are whirled by said rod the gear teeth on the inner periphery of the innermost hoop will mesh with the gear teeth on said rod and the gear teeth on the adjacent peripheries of the other hoops will mesh with each other.

6. A whirling hoop toy as defined in claim 1, wherein:

a. said hoop guard means comprises a pair of spaced apart circular guard flanges of equal size diameters and the space therebetween forms a groove; and,

b. the largest diameter hoop of said plurality of hoops comprises the outer hoop and the other hoops comprise the inner hoops.

7. A whirling hoop toy as defined in claim 6, wherein:

a. the innermost one of said inner hoops is rollably disposed between said circular guard flanges; and,

b. each of the other inner hoops and the outer hoops is provided with an inwardly extended recess around the inner periphery thereof, whereby when said hoops are whirled by said rod the outer periphery of each of the inner hoops is rollably engaged in the recess in the inner periphery of the next larger diameter hoop.

8. A whirling hoop toy as defined in claim 6, wherein:

a. each of said hoops is provided with a radially inward extended tongue on its inner periphery, and with the tongue on the innermost one of said inner hoops rollably disposed in the groove between said circular guard flanges; and,

b. each of said inner hoops is provided with a groove around its outer periphery, whereby when said hoops are whirled by said rod the tongue on each of the hoops is rollably engaged in an adjacent groove.

9. A whirling hoop toy as defined in claim 1, wherein:

a. said hoop guard means comprises an annular groove formed in the outer periphery of said rod;

b. the largest diameter hoop of said plurality of hoops comprises the outer hoop and the other hoops comprise the inner hoops;

c. each of said hoops is provided with a radially inward extended tongue on its inner periphery, and with the tongue on the innermost one of said hoops rollably disposed in

said annular groove formed in the outer periphery of said rod; and,

d. each of said inner hoops is provided with a groove around its outer periphery, whereby when said hoops are whirled by said rod the tongue on each of the hoops is rollably engaged in an adjacent groove.

10. A whirling hoop toy as defined in claim 1, wherein:

a. said hoop guard means comprises a single circular guard flange forming a tongue around said rod;

b. each of said hoops is provided with an inwardly extended groove around the inner periphery thereof with the tongue on said rod being rollably disposed in the groove on said innermost one of said inner hoops; and,

c. each of said inner hoops is provided with a radially outward extended tongue on its outer periphery, whereby when said hoops are whirled by said rod the tongues on each of the hoops is rollably engaged in an adjacent groove.

* * * * *

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,660,929 Dated May 9, 1972

Inventor(s) A.W. ATKINSON

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 4, line 34, "hoops" should be -- hoop --; column 4, line 51, "hoops", second occurrence, should be -- hoop --.

Signed and sealed this 26th day of September 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

FORM PO-1050 (10-69)

USCOMM-DC 60376-P69
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