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SPINNING TOY HAVING FLEXIBLE ELEMENTS WITH CENTRIFUGAL MASSES THEREON

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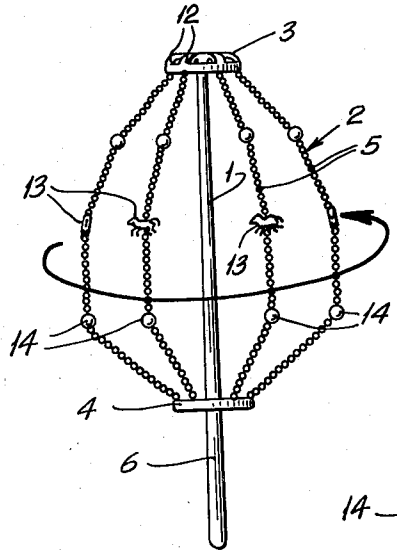


Fig. 2

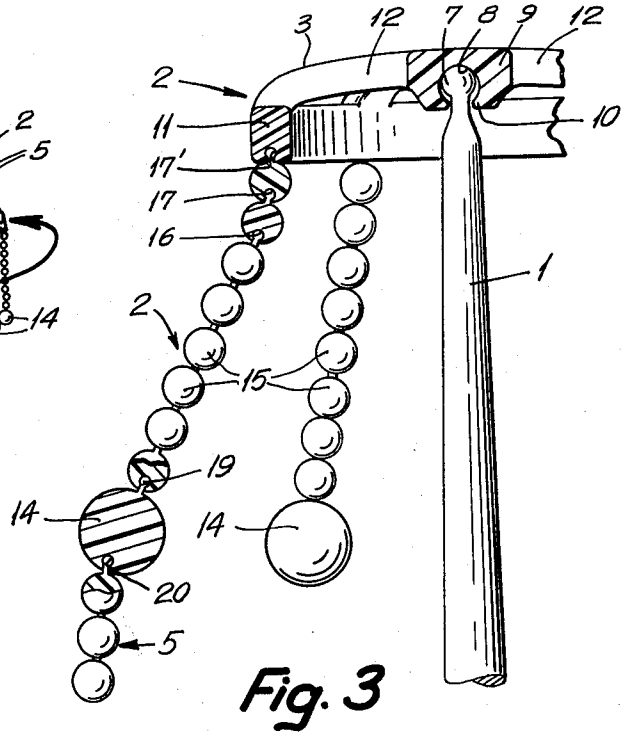


Fig. 3

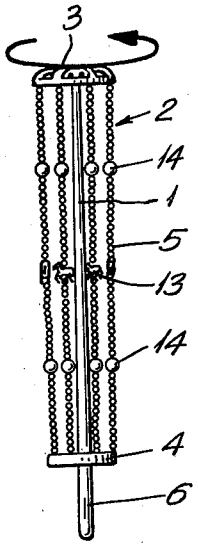


Fig. 1

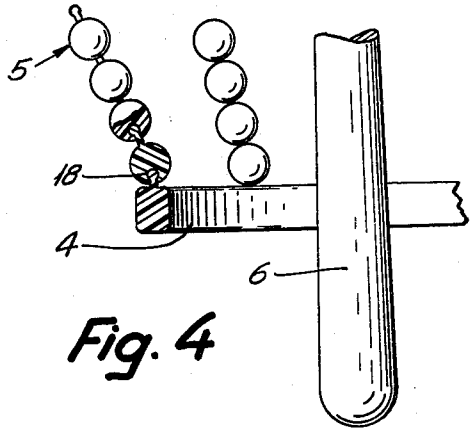


Fig. 4

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SPINNING TOY HAVING FLEXIBLE ELEMENTS WITH CENTRIFUGAL MASSES THEREON

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The present invention relates to toys, and more particularly to centrifugally and gravitationally operated toys.

The general object of the present invention resides in the provision of a toy of the character described which is readily operated by a child to impart thereto a variable rotational speed, the rotating assembly taking different positions and shapes in dependence with the rotational speed.

Another object of the present invention resides in a toy of the character described in which the rotatable assembly comprises animals and/or other figurines rotating in a circle to simulate more or less a merry-go-round.

Another object of the present invention resides in a toy of the character described which is of simple and inexpensive construction yet durable and attractive in operation.

The foregoing and other important objects of the present invention will become more apparent during the following disclosure and by referring to the drawings, in which:

FIGURE 1 is an elevation of the toy at rest position;

FIGURE 2 is an elevation of the toy with the rotatable assembly in rotation;

FIGURE 3 is a sectional elevation and end partial section of the top portion of the toy on an enlarged scale; and

FIGURE 4 is a sectional elevation and partial cross-section of the bottom portion of the toy on an enlarged scale.

Referring now more particularly to the drawings in which like reference characters indicate like elements throughout, the toy of the present invention consists essentially of a stick **1** forming a supporting member of the rotational assembly, generally indicated at **2** and which comprises a circular head member **3** rotatably supported on the upper end of stick, a ring **4** freely surrounding the lower portion of stick **1**, and flexible elongated elements **5** interconnecting head **3** and ring **4** and equally angularly spaced around the periphery of head **3** and ring **4**.

Stick **1** is preferably tapered and forms a handle portion **6** at its lower end while its upper end may be pointed or is preferably terminated by a ball **7**, which freely and rotatably engages a spherical cavity **8** made in the hub portion **9** of circular head **3**. The cavity **8** opens at the underface of hub **9** through a restricted opening **10** through which the ball **7** has to be forced to enter cavity **8**. Hub **9** is preferably made of plastic, rubber or the like slightly resilient or compressible material.

Head **3** may be in the form of a solid disc or as shown in the drawings, constituted by a rim **11** depending from the outer downwardly curved ends of radial spokes **12** rigid with the central hub **9**.

Ring **4** spacedly and freely surrounds the handle portion **6** of stick **1** and may have a rectangular, square or circular cross-section. Ring **4** has preferably a diameter substantially equal to that of head **3**.

Each flexible element **5** is attached at both ends to ring **4** and head **3** and includes intermediate its ends, a centrifugal mass **13** which may have any shape or configuration desired and preferably represents an animal or other suitable figurines. Centrifugal mass **13** is the main mass and is preferably mounted mid-way between the ends of flexible element **5**.

In accordance with the invention, it is preferred to add secondary centrifugal masses **14** connected in flexible elements **5** on each side of the main central mass **13** and at mid-way between said mass and the respective ends of the flexible elements **5**.

The flexible elements **5** interconnecting masses **13** and **14** may consist of wires, strings, tiny rigid rods, or the like, or may consist of a plurality of balls **15** attached to one another to form a string of beads, each bead having a protruding integral stud with an enlarged head **16** removably engaging the spherical cavity **17** of the next bead. The beads are made of a resilient material, such that they may be interconnected to one another by entering the enlarged head **16** under slight force within the cavity **17** of the next bead. This system is similar to certain types of necklace in which the beads are connected in similar fashion.

In similar manner, the top end bead of the flexible element **5** may have its enlarged head **16** engaging a cavity **17'** made in the underface of the head **3**, cavities **17'** being equally spaced from each other around the periphery of head **3**. Inversely, the top face of the ring **4** may be provided with a plurality of headed studs **18** removably engaging the cavity **17** of the bottom end bead **15**.

The secondary masses **14** may also be in the form of spheres with a stud and enlarged head **19** at one end and a cavity **20** at the other end for connecting said secodary masses with the beads of the flexible elements.

Finally, the figurines constituting the main centrifugal masses **13** are preferably provided at one end with an elongated stud with enlarged head adapted to engage the cavity **17** of the next bead and with a cavity similar to cavity **17** at its opposite end for receiving the head **16** of the next bead **15**.

If the series of beads **15** are replaced by thin rods, strings, or the like, the ends of said rods, strings or the like may be provided with elements defining a cavity **17** of one end of the string or rod and a headed stud **16** at the other end.

It will be noted with the bead arrangement shown in the drawings, it is possible to change the relative position of the centrifugal masses **13** and **14** along the flexible elements **5** to thus vary accordingly the shape assumed by the rotating assembly **2**.

To use the toy, the lower handle portion **6** of stick **1** is gripped with one hand and made to oscillate so that the upper end of the stick **1** will describe a circle or other closed figure. During this movement, the central portions of the flexible elements **5** will become spaced from the stick **1** unequal amounts whereby the rotational assembly **2** will become unsymmetrical or/and unbalanced which will set up rotational forces in said assembly **2**. This is possible due to the fact that ring **4** encloses the stick and is attached to the lower ends of the flexible elements **5**. During this initial rotation, the ring **4** abuts the stick at sucessively different zones of its inner face. Once the rotational assembly **2** has been set in rotation, one can diminish the amplitude of the oscillating movement of stick **1** while increasing the speed of said oscillating movement to thereby increase the velocity of assembly **2**. With variable speed of the assembly **2**, the centrifugal forces acting on masses **13** and **14** will vary whereby the assembly **2** will form different shapes with the ring **4** moving up and down along the stick **1**.

It has been found that the ring **4** freely surrounding the stick **1** and attached to the lower ends of the flexible elements is absolutely essential, in accordance with the invention to set up rotational movement of assembly **2**.

While a preferred embodiment in accordance with the invention has been illustrated and described, it is under-

stood that various modifications may be resorted to without departing from the spirit and scope of the appended claims.

What I claim is:

1. A toy comprising a stick forming an integral handle at one end, a circular head element rotatably mounted at its center on the other end of said stick, a ring spacedly and freely surrounding the said stick, a plurality of substantially equally spaced elongated flexible elements connected at their ends to said head and to said ring for suspending said ring from said circular head, and centrifugal masses carried by said flexible elements intermediate their ends, said ring delimiting an inside area greater than the maximum cross-sectional area of said stick, but capable of abutting said stick at any point of the periphery of its inner surface.

2. A toy as claimed in claim 1, wherein said circular head and said ring have substantially equal diameters and said circular head is mounted on said stick for tilting as well as for rotating movement relative to said stick.

3. A toy as claimed in claim 1, wherein said centrifugal masses are located along said flexible elements approximately at mid-distance between the ends of said flexible elements attached to said ring and head.

4. A toy as claimed in claim 3, including additional centrifugal masses attached to said flexible elements beteen said first named masses and the ends of said flexible elements.

5. A toy as claimed in claim 1, wherein the center of said circular head has a spherical cavity with a restricted opening and the end of said stick is formed with an enlarged spherical head for removably and freely engaging said cavity for tilting as well as rotating movement of said circular head relative to said stick.

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