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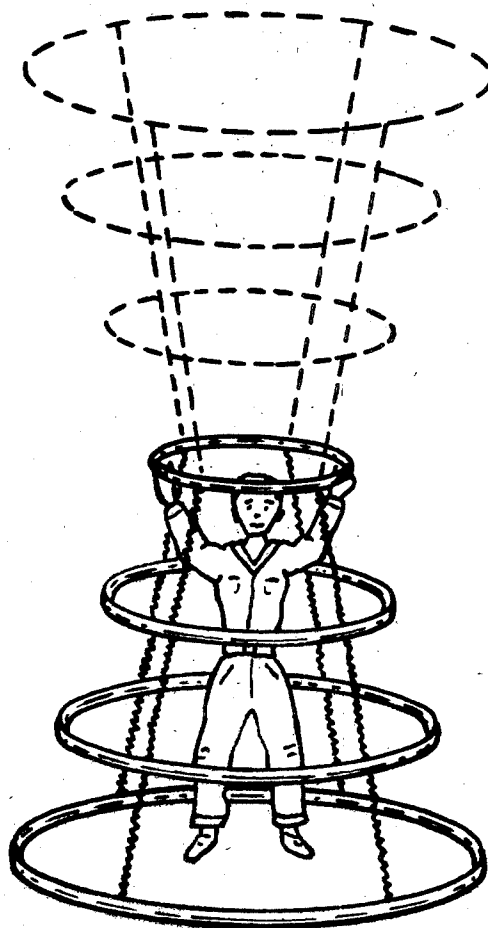
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[54] **SPRING-COUPLED RINGS FOR AMUSEMENT**
7 Claims, 3 Drawing Figs.

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[51] Int. Cl..... **A63b 19/00**,
A63b 23/02, A63b 21/00
[50] Field of Search..... 272/1, 57,
79, 80; 273/1, 106; 124/16; 46/47

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ABSTRACT: Amusement and agility-developing means comprising a plurality of generally circular toroidal structures including a first generally toroidal member having a certain predetermined diameter and a number of additional toroidal structures, each additional structure having a diameter greater than its neighbor, and resilient coupling means interposed between adjacent toroidal members at substantially equal arcuate dispositions about the periphery of each of the toroidal structures. The unit preferably has at least three resilient coupling means interposed between adjacent toroidal members.



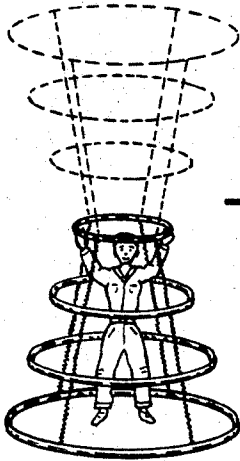


Fig. 1

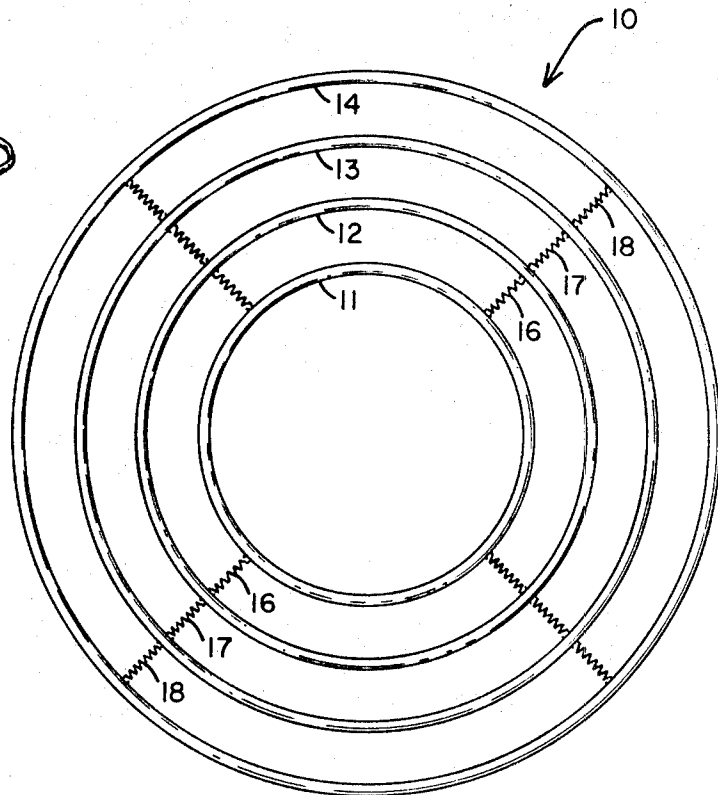


Fig. 2

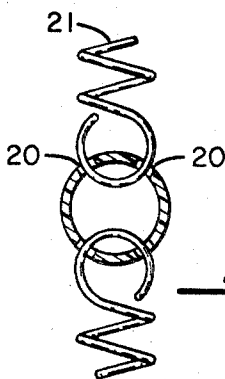


Fig. 3

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SPRING-COUPLED RINGS FOR AMUSEMENT

The present invention relates generally to an amusement and agility-developing means, and more particularly to such a means which includes a plurality of generally circular toroidal structures which may be moved in a reciprocatory up-and-down pattern about the head of the user. The diameter of the smallest toroidal structure is sufficient to circumscribe the head of the user, and preferably is about 16 inches in diameter. The additional toroidal structures have a larger diameter, and preferably are sufficiently large to conveniently surround the body of the user from head to toe.

In learning agility of hands and arms in a coordinated fashion, it is desirable to utilize a device which can be rhythmically moved or bounced in a repeating up-and-down motion. The present structure permits the user to articulate the device in a fashion whereby the unit will alternately form an upright conical structure and an inverted conical structure. When in distended position about the body of the user, the structure forms a generally conical structure, and when extended upwardly over the head of the user, the structure forms an inverted conical configuration.

For ease of fabrication, the device may be fabricated from a plurality of molded polyethylene tubular members held together by a number of resilient devices such as springs, or other elastic means. Preferably, the resilient members are disposed at equal arcuate locations about the periphery so as to permit motion alternately upwardly and downwardly. The resilient coupling may be obtained from metallic spring members, or, in the alternative, strips of resilient material such as strips of rubber or the like.

Therefore, it is the primary object of the present invention to provide an amusement and agility-developing means which includes a plurality of generally circular toroidal structures which may be carried by the hands of the user, and by a plurality of alternate up-and-down motions, the toroidal structures may alternately form an upright conical form and an inverted conical form, the upright conical form generally enveloping the body of the user.

It is a further object of the present invention to provide an improved amusement and agility-developing means which includes a plurality of generally circular toroidal structures wherein the structures have an increasing diameter from a first member through an ultimate or final member, each member having a diameter greater than its inwardly disposed neighbor.

Other and further objects of the present invention will become apparent to those skilled in the art upon a study of the following specification, appended claims, and accompanying drawing wherein:

FIG. 1 is a perspective view of the amusement and agility-developing means of the present invention showing a user having the device arranged about his body in a generally conical configuration, and also illustrating in phantom the configuration assumed by the structure when ballistically extended upwardly;

FIG. 2 is a top plan view of the amusement and agility-developing means illustrated in FIG. 1 and showing the configuration assumed by the structure while at rest; and

FIG. 3 is a detailed view of the resilient coupling means extending between adjacent toroidal members.

With particular attention now being directed to the drawings, the amusement and agility-developing means generally designated 10 includes a plurality of generally circular toroidal structures, 11, 12, 13, and 14. Each of these structures is preferably fabricated from a soft pliable substance such as molded polyethylene or the like, preferably having an OD of about $\frac{1}{2}$ inch, and an ID of about $\frac{3}{8}$ inch. Such tubing is commercially available, and the ends of individual segments may be butted together and welded so as to form enclosed toroidal structures such as is illustrated here. It will be appreciated, however, that there is no intent to limit the structure to this type of material, and other materials, including metal and the like, may be utilized to prepare this unit.

The individual toroidal structures 11, 12, 13, and 14 are coupled together by resilient members such as the springs 16-16, 17-17, and 18-18. These individual springs are provided in order to hold the unit in a normal disposition, and permit distended motion between individual rings so as to provide the expanded structure shown in FIG. 1. In order to accommodate a regular interval or spacing between adjacent units, it may be desirable to program the resilient bias available in the individual springs so that the force to which the individual springs are subjected is substantially equal, from one to another. Therefore, in such a configuration, the members 16-16 will be somewhat more rigid than the members 18-18.

For ease of mounting, the walls may be perforated such as at 20-20 in order to permit the end of spring member 21, for example, to be hooked through the system. In this connection, however, it will be appreciated that when other resilient members are employed, such as rubber strips or the like, other binding techniques will be employed. For protection to the user's eyes, expansible rubber bands are exceptionally desirable.

Attention is now directed to FIG. 1 of the drawings wherein the user is shown with the device extending downwardly about his body. In order to achieve such a result, the user will grasp the ring of smaller diameter such as the ring 11, and with a series of regular and rhythmic thrusts, will cause the entire assembly to assume a distended configuration, thereby forming the generally conical structure about the body of the user. Upon responding to this distended configuration, the unit will assume the configuration shown in phantom, this being an inverted conical arrangement.

For general use, with children, the units should preferably have the following diameters:

Toroidal Member	Diameter in Inches
11	16"
12	24"
13	32"
14	40"

It will be observed, therefore, that the diameters increase at a regular step integral, and this arrangement, while not critical to the use of the system, will enhance the user's technique in utilizing the apparatus.

It will also be appreciated that the sizes are not critical to obtaining a useful structure for all users, and that some individuals may require a larger series, while others may require a smaller series. Generally, a number of individual toroidal segments may be packaged together, and ultimately assembled by the purchaser in a desired regular pattern, while either selecting or discarding either of the largest or the smallest toroidal member.

What I claim is:

1. Amusement and agility-developing means comprising:

a. a plurality of generally circular toroidal structures including a first generally toroidal member having a certain predetermined diameter and a series of additional toroidal structures, each member of the series having a diameter greater than its neighbor; and

b. resilient coupling means interposed between adjacent toroidal structures at at least three substantially equal arcuate dispositions about the periphery of said toroidal members.

2. The amusement and agility-developing means as defined in claim 1 being particularly characterized in that said generally circular toroidal structures are fabricated from molded polyethylene.

3. The amusement and agility-developing means as defined in claim 1 being particularly characterized in that said circular toroidal structures have diameters which increase in a regular stepped series.

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- 4. The amusement and agility-developing means as defined in claim 1 being particularly characterized in that said device includes four circular toroidal structures.
- 5. The amusement and agility-developing means as defined in claim 1 being particularly characterized in that said resilient coupling means consists of four resilient members disposed at 90° intervals about the periphery of said toroidal structures.
- 6. The amusement and agility-developing means as defined in claim 5 being particularly characterized in that said resilient

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coupling means have a programmed resiliency which decreases as the diameter of the toroidal structures increases.

7. The amusement and agility-developing means as defined in claim 1 being particularly characterized in that said resilient coupling means are capable of supporting the weight of the circular toroidal structures without exceeding their elastic limit.

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