

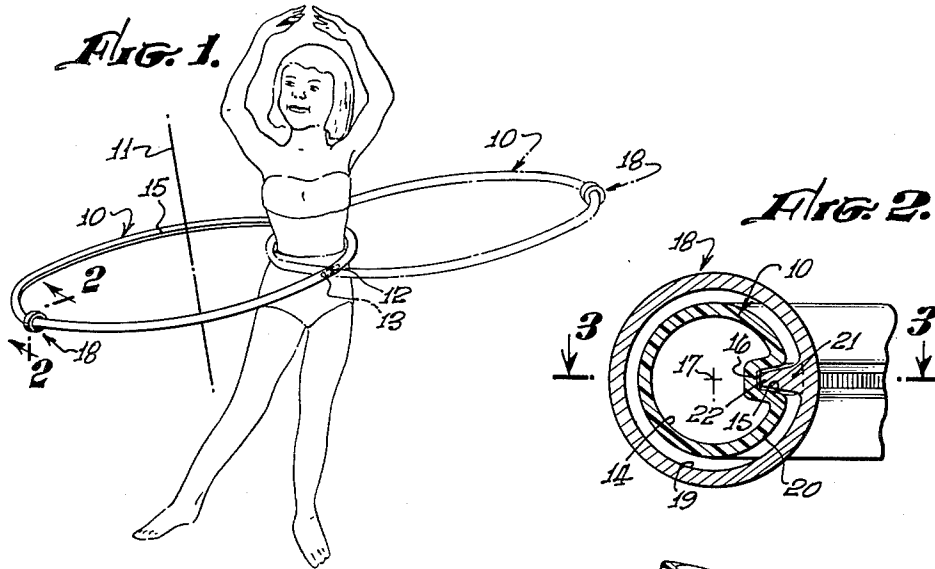
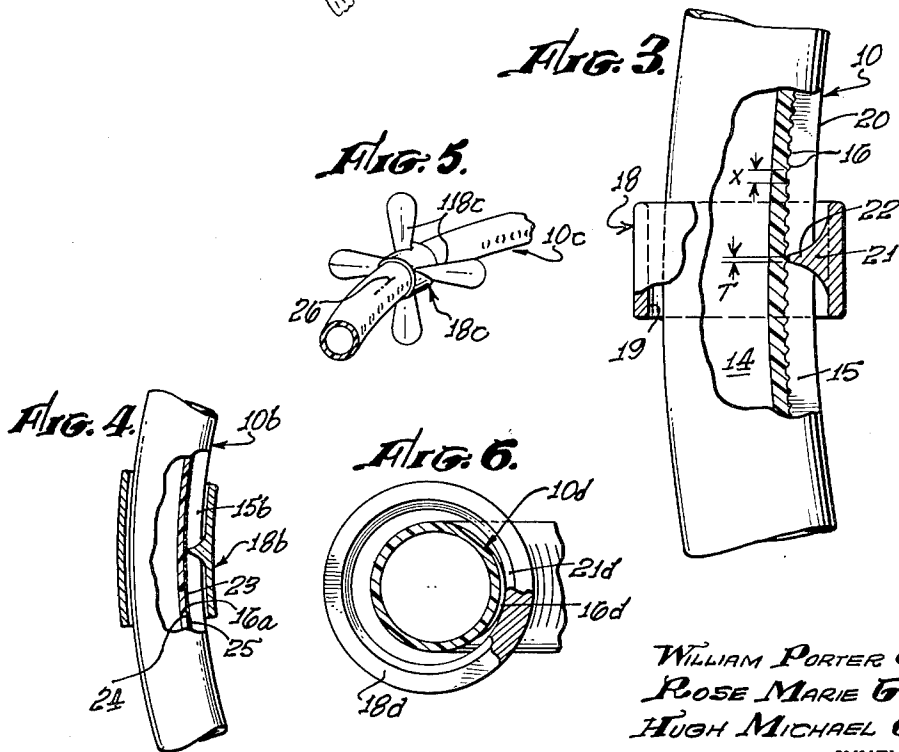
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HOOP TOY

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This invention relates to an improved toy of the type commonly referred to as "hula hoops," consisting of a relatively large hoop adapted to be whirled about a person's body by a hula type motion of the body.

The general object of the present invention is to provide a toy which includes a whirling hoop of the above mentioned type, but which in addition includes also another part or unit so designed as to introduce considerable added interest to the use of the hoop. This part is mounted to the hoop in a manner such that the part can move freely along the circular extent or length of the hoop, as the hoop is whirled around the user's body. During such whirling, the centrifugal force exerted against the added part or unit causes that part to be continuously urged away from the user's body, so that the part always stays on that portion of the hoop that is spaced away from the user's body. As the hoop whirls around the body, the shifting part automatically moves or slides along the hoop at a rate which is just sufficient to assure such maintenance of the shifting part at or near the outer extremity of the hoop at all times.

In certain forms of the invention, an extremely novel effect is attained by utilizing the relative motion between the hoop and the shifting part to produce a sound or sounds as the hoop is whirled. It is contemplated that these sounds may be either a uniform tone, or more preferably a changing series of sounds which give the effect of spoken words or a musical tone. The sounds may be produced by a series of irregularities, notches, or the like formed on the hoop, and adapted to produce the predetermined sounds as a result of movement of the shifting part along the circular extent of the hoop. The shifting part may carry a lug or other means adapted to engage such a series of irregularities in a manner producing vibrations resulting in the sound.

In another form of the invention, the shifting part has one or more vanes, which act by virtue of their movement through the air, during whirling of the hoop, to cause rotation of the shifting part relative to the hoop. This vane element desirably extends about the material of the hoop, and rotates about the axis of that material.

The above and other features and objects of the present invention will be better understood from the following detailed description of the typical embodiments illustrated in the accompanying drawing in which:

FIG. 1 is a perspective view showing a person utilizing a hoop assembly constructed in accordance with the invention;

FIG. 2 is an enlarged transverse or vertical section taken on line 2—2 of FIG. 1;

FIG. 3 is a section taken on line 3—3 of FIG. 2;

FIG. 4 is a section similar to FIG. 3, but showing a variational form of the invention;

FIG. 5 is a fragmentary perspective view showing another variation; and

FIG. 6 is a section similar to FIG. 2 through another variation.

Referring first to FIGS. 1 through 3, and particularly to FIG. 1, we have shown at 10 a hoop which is adapted to be whirled continuously about a person's torso, as shown, with the hoop remaining in essentially a horizontal plane during such whirling motion. The whirling action is attained by a hula type motion of the person's

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body, the motion preferably being an alternate or oscillating forward and rearward movement at a frequency just sufficient to properly maintain the continuous whirling action. The hoop should of course have an internal diameter which is considerably greater than the external diameter of the engaged hip or near hip portion of the user's body. Preferably, the internal diameter of the hoop, with respect to the main axis 11 of the hoop, should be between about 23 inches and 43 inches, for best results about 33 inches, with the external diameter of the hoop being somewhat greater, say about 1½ to 2 inches greater.

The hoop 10 may be formed of any suitable material, such as a resinous plastic material of the type commonly employed in similar hoops. For example, it is contemplated that a relatively stiff polyethylene, vinyl, polystyrene, or other similar resin may be utilized for this purpose. As seen best in FIG. 2, the hoop 10 may be formed of a tubular material, which is typically extruded or otherwise formed to be of a uniform cross-section along the entire circular extent of the hoop, that cross-section being shown clearly in FIG. 2. The material of the hoop is continuous entirely about the circular extent of the hoop, except at one point 12, where the ends of the tubular material are securely joined together, as by means of a wooden plug 13 telescoping into both ends of the hoop material, and stapled or otherwise securely fastened thereto. This plug 13 should for best results be shaped externally in correspondence with the shape of the internal cavity 14 formed within the tubular hoop material, so that the plug tightly and closely fits within the tubular material to hold its ends in fixed relation. When the ends are secured together in this way, the external surfaces of the two ends are in alignment with one another, and form essentially a continuation of one another.

At its radially inner side, facing directly toward axis 11, the hoop 10 contains an annular groove 15, which extends circularly along the entire length of the circular hoop. Within this groove 15, the material of hoop 10 forms a series of irregularities 16 (see FIG. 3), which are spaced apart circularly with respect to axis 11 in rather closely spaced relation. The groove 15 may be formed by deforming the entire radially inner wall of hoop 10 radially outwardly, as seen in FIG. 2. Except at the location of this groove 15, the cross sectional shape of the tubular material of hoop 10 may be essentially circular, about a center 17.

Disposed about the tubular material of hoop 10 there is provided a relatively shiftable element 18, which may take the form of a simple ring disposed about the tubular hoop material, but loose enough thereon to be freely slidable along the material through the entire 360° circular extent of the hoop. The inner surface 19 of ring 18 may be essentially cylindrical, and of a diameter slightly greater than the external diameter of outer toroidal surface 20 of hoop 10. At the location of recess 15 formed in the hoop, the ring 18 carries a tongue 21, projecting radially outwardly with respect to main axis 11, and into groove 15. This tongue 21 may have an end portion 22 which is directly engageable with the irregularities 16 formed on the hoop, and which extremity 22 is preferably of a small enough extent T circularly about axis 11 to engage and be deflected by the projections 16 individually. That is, the dimension T representing the circular extent of the inner extremity of lug 21 should not be greater than the spacing X between the closest projections 16 formed on the hoop. The inner extremity 22 of lug 21 may be of a substantial extent vertically, as seen in FIG. 2, and similarly the projections or teeth 16 formed on the hoop may have a corresponding very substantial vertical extent, though they are normally of very limited extent circularly about axis 11.

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In using the hoop assembly of FIGS. 1 to 3, the user merely whirls the hoop 10 in the conventional manner, by forward and rearward alternating movement of the user's body, so that hoop 10 continuously whirls around the body. As the hoop whirls, the inner surface of the hoop engages and rolls along the outer surface of the person's body, so that the portion of the hoop which is in engagement with the body is constantly changing. Similarly, the portion of the hoop which is spaced farthest outwardly from the body is also continuously changing. The centrifugal force exerted against ring 18 as a result of the whirling motion causes that part to constantly remain as far away from the user's body as is possible. The rolling action of the hoop on the user's body causes the hoop to advance through ring 18, or stated reversely, the ring 18 progressively shifts or advances circularly relative to or along the hoop. This relative movement causes extremity 22 of projection 21 on ring 18 to move along the series of teeth or notches 16 formed on the hoop, and by successive engagement with those different teeth 16, ring 18 causes a predetermined vibrating movement of the material of hoop 10, and of ring 18. The teeth 16 are so spaced that this vibrating movement is within the audible range, so that sound is produced, and is amplified by the material of hoop 10 and ring 18. The materials of these parts are so chosen as to produce a relatively loud tone or series of sounds during whirling movement of the hoop.

The material of ring 18 is also so selected as to have sufficient mass to always be maintained by centrifugal force in the desired outer position, away from the body of the user. It is contemplated that the material of ring 18 may be die cast metal, a suitable essentially rigid or stiff resinous plastic material, or any other suitable material having the desired characteristics. Also, hoop 10 and ring 18 should be formed of materials such that their coefficient of friction is very small, to allow free sliding movement of ring 18 along the hoop.

FIG. 4 shows a variational form of the invention, in which the hoop may be considered to be identical with that of FIGS. 1 to 3 except that the sound producing irregularities 16b are not formed integrally with hoop 10, but are rather formed on a separately made strip of material 23, having an adhesive 24 on its outer surface which adheres tightly to the radially inwardly facing wall 25 formed by the hoop material within groove 15b. The tape 23 may be preformed of just the right length to extend about the 360° circular extent of the hoop, so that a purchaser may select at the time of purchase any desired type of sound, and may apply adhesively to the hoop a tape 23 having that desired sound or series of sounds formed on it. The ring 18b of FIG. 4 is represented as having an increased extent circularly about the axis of the hoop, in order to increase the vibrating mass of part 18b and thus further amplify the produced sound. It will of course be understood that a suitable sound amplifying arrangement may also be provided in any of the other forms of the invention.

In FIGS. 1 to 3, and in the FIG. 4 form of the invention, it is preferred that the irregularities 16 and 16a be spaced apart non-uniformly, and in a relation such as to produce either spoken words, or a musical tune. However, if desired, the spacing of these irregularities may be uniform, to produce a constant tone. If spoken words or a musical tune are formed on the device, the words or tune may be long enough to last for two, three, or more revolutions of the hoop about the user's body, depending on the size of the user, since the hoop does roll in the previously mentioned manner, and since the shifting part 18 therefore does not move entirely about the circular extent of the hoop on each revolution of the hoop about the user. Thus, a short sentence or tune can easily be provided on the hoop.

FIG. 5 shows another variational form of the invention, in which the novelty residing in the provision of

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the shifting part 18c is perceived visually instead of (or in addition to) audibly. The part 18c in this case may typically be a ring having angular vanes 118c, which are pitched to cause the part 18c to turn about the material of the hoop 10c (that is, about an axis represented at 26) by virtue of the whirling movement of the part 18c through the air during whirling of the hoop. The hoop 10c in FIG. 5 may have sound producing irregularities, so that a sound is produced in FIG. 5 in addition to the visual propeller spinning effect.

FIG. 6 shows another form of the invention in which both the hoop 19d and ring 18d are of essentially circular cross section, with the hoop having a series of teeth or projections 16d spaced along its inner surface. The lug 21d formed at the inner side of the ring in this form of the invention is annular, so that the lug can effectively engage teeth 16d in any position to which ring 18d may turn about its axis. Also, the inner extremity of annular lug or projection 21d should of course be narrow enough in a direction circularly about the axis of the hoop to engage the teeth 16d individually and in succession, to thus produce the desired sound vibrations upon whirling of the hoop. It is contemplated that the FIG. 6 type of sound producing mechanism is probably the most desirable type of mechanism for use in FIG. 5 in conjunction with the turning propeller, since the FIG. 6 ring 18c can turn freely without affecting the sound producing action.

As will be apparent from the drawing, the spacing between the successive sound producing teeth in the various forms of the invention has been greatly exaggerated in certain of the figures for purposes of illustration. For example, in FIGS. 3 and 6, the teeth 16 and 16d would normally be spaced much closer together than in the drawing, particularly where spoken words are to be produced.

We claim:

1. A toy comprising a hula hoop of a size and weight adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by such engagement to produce a predetermined sound controlled in frequency by the spacing of said irregularities as a result of said relative movement of the device along the hoop successively past the irregularities while in engagement therewith.

2. A toy as recited in claim 1, in which said device extends about the material of and is slidable along said hoop.

3. A toy as recited in claim 1, in which said hoop is a tubular length of resinous plastic material deformed to a circular shape and having its ends connected together to form the hoop.

4. A toy comprising a hula hoop of a size and weight adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by such engagement to produce a predetermined sound controlled in frequency by the spacing of said irreg-

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ularities as a result of said relative movement of the device along the hoop successively past the irregularities while in engagement therewith, said irregularities being spaced apart non-uniformly in a predetermined pattern to produce a predetermined non-uniform sound.

5. A toy comprising a hula hoop of a size and weight adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by such engagement to produce a predetermined sound controlled in frequency by the spacing of said irregularities as a result of said relative movement of the device along the hoop successively past the irregularities while in engagement therewith, said irregularities being spaced apart in a predetermined non-uniform pattern acting to produce audible words.

6. A toy comprising a hula hoop of a size and weight adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by such engagement to produce a predetermined sound controlled in frequency by the spacing of said irregularities as a result of said relative movement of the device along the hoop and successively past the irregularities while in engagement therewith, said irregularities being spaced apart in a predetermined non-uniform pattern acting to produce a musical tune.

7. A toy comprising a hula hoop having an internal diameter between about 23 and 43 inches and adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by such engagement to produce a predetermined sound controlled in frequency by the spacing of said irregularities as a result of said relative movement of the device along the hoop successively past the irregularities while in engagement therewith.

8. A toy comprising a hula hoop having an internal diameter between about 23 and 43 inches and adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by

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such engagement to produce a predetermined sound controlled in frequency by the spacing of said irregularities as a result of said relative movement of the device along the hoop and successively past the irregularities while in engagement therewith, said irregularities being spaced apart non-uniformly in a predetermined pattern to produce a predetermined non-uniform sound.

9. A toy comprising a hula hoop of a size and weight to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, said hoop having a groove formed therein and extending along its circular extent, and means carried by said device and said hoop within said groove and coacting to produce sound upon movement of the device along the hoop.

10. A toy comprising a hula hoop of a size and weight adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, said hoop having a groove formed in the inner side thereof and extending along its circular extent, said device being disposed about the material of said hoop and being slidable therealong, and sound producing means including an element carried by said device and projecting into said groove, and including a series of successive irregularities carried by the hoop within said groove and adapted to be engaged by said element and to produce predetermined sound as a result of movement thereof along said irregularities.

11. A toy comprising a hula hoop as recited in claim 10, in which said irregularities are formed on a strip of material which is initially made separately from the hoop and is adhesively attached thereto within said groove.

12. A toy comprising a hula hoop of a size and weight adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by such engagement to produce a predetermined sound as a result of said relative movement of the device and controlled in frequency by the spacing of said irregularities, said irregularities being formed on a strip of material which is initially made separately from the hoop and is attached thereto in fixed relation to the hoop.

13. A toy comprising a hula hoop of a size and weight adapted to be whirled about a person's body in a generally horizontal plane by a hula type motion of the body, a device movably carried by the hoop for movement relative thereto along its circular extent and adapted during whirling of the hoop to be continuously maintained on the outer portion of the hoop away from the person's body by virtue of the developed centrifugal force and resultant relative movement of said device along the length of the hoop, and a series of irregularities on said hoop positioned to be engaged successively by said device as the latter moves along the hoop during whirling and operable by such engagement to produce a predetermined sound con-

trolled in frequency by the spacing of said irregularities as a result of said relative movement of the device along the hoop successively past the irregularities while in engagement therewith, said irregularities being formed on a strip of material which is initially made separately from the hoop and is adhesively attached thereto in fixed relation to the hoop.

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