Nov. 9, 1965 J. E. BRIESE 3,216,149

HEAD SUPPORTED AMUSEMENT DEVICE OPERABLE BY MOVEMENT OF USER'S HEAD AND BODY

Filed July 16, 1962

FIG. 1

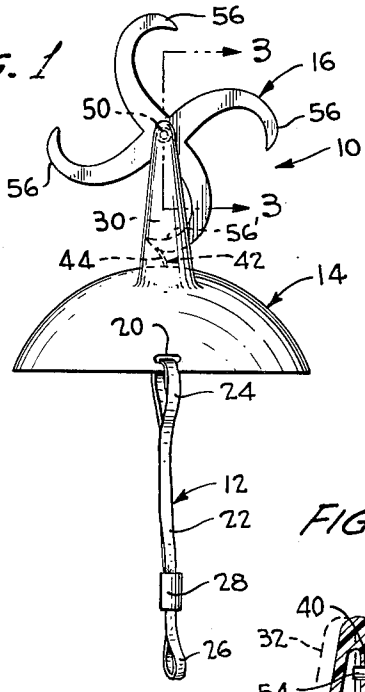


FIG. 2

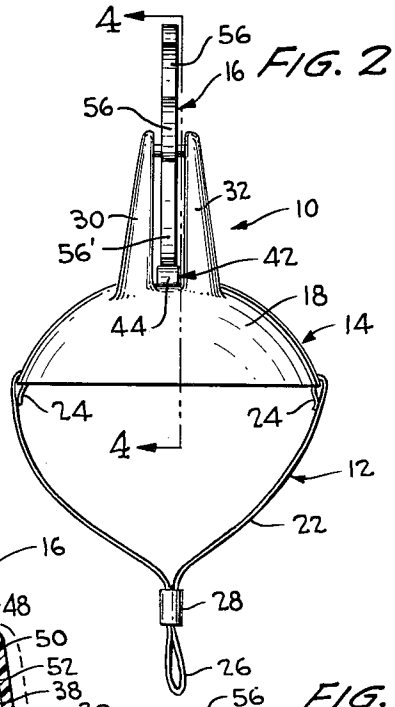


FIG. 3

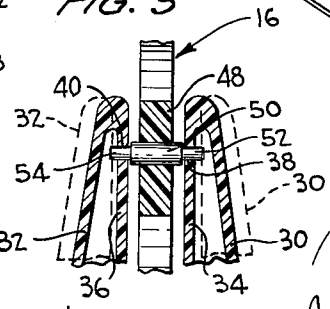


FIG. 4

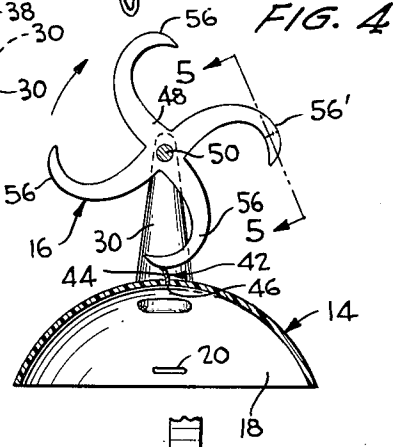


FIG. 5

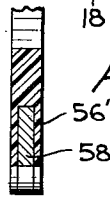


FIG. 6

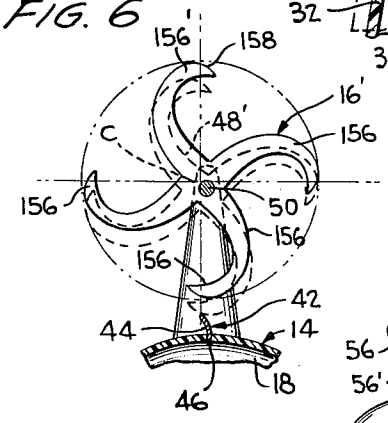
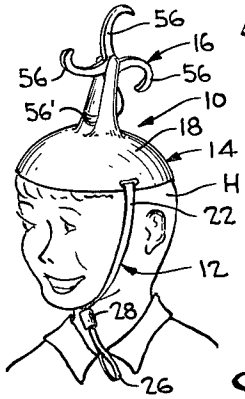


FIG. 7



INVENTOR

JOHN E. BRIESE

BY Samuel Mearkowitz

ATTORNEY

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HEAD SUPPORTED AMUSEMENT DEVICE OPERABLE BY MOVEMENT OF USER'S HEAD AND BODY

John E. Briese, 607 Baltimore St., Monterey Park, Calif.

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This invention relates generally to exercising and amusement devices, and more particularly to a novel device which can be physically moved in a particular fashion whereby the individual is amused, exercises and develops coordination.

A primary object of the present invention is to provide a novel device which preferably, but not necessarily, is supported on a user's head and a part movably supported but is in a state of equilibrium or balance whereby considerable physical effort and coordination are required in order to keep the movable part in continuous motion.

A further object of the invention is to provide a novel hat or the like whereby a rotor thereon has an axis of rotation and an eccentric mass with respect to the axis of rotation whereby physical energy must be expended in order to overcome the rotor inertia and thereafter coordinate movement in harmony with initial oscillation of the rotor will afford a "flywheel effect" to the rotor and cause continuous rotation of the rotor.

A still further object of the present invention is to provide a novel device of the character set forth whereby rotor-operated signal means are activated by continued rotor rotation to apprise a user of the movement thereof.

These together with other objects of the invention will become apparent to those skilled in the art upon consideration of a description of an exemplary embodiment as set forth in the following specification when considered with the drawing forming a part thereof.

In the drawing:

FIGURE 1 is a side elevational view of the novel exercising device;

FIGURE 2 is a rear elevation looking from right to left at FIGURE 1;

FIGURE 3 is an enlarged vertical section taken substantially on the plane of line 3—3 of FIGURE 1, and showing by phantom lines the manner in which the rotor may be removed;

FIGURE 4 is a vertical section taken substantially on the plane of line 4—4 of FIGURE 2;

FIGURE 5 is an enlarged, fragmentary section taken substantially on the plane of line 5—5 of FIGURE 4, and shows one way of locating the rotor mass eccentric of the rotor axis of rotation;

FIGURE 6 is a section similar to FIGURE 5 showing another way of locating the rotor mass eccentric to the rotor axis of rotation; and

FIGURE 7 is a reduced perspective view showing the appearance of the novel device on a user's head.

Before referring to the drawings in detail, the novel exercising device, as shown in the exemplary embodiment, will be constructed principally from readily moldable plastic materials, however, suitable metals, etc., may also be used.

Additionally, the configuration of the rotor is shown for purposes of illustration, however, other shapes such as a disc, elliptically-shaped disc, etc., are considered to fall within the scope of the invention.

Likewise, although a preferred embodiment of signal means is shown, i.e., one that emits a periodic "clicking noise," signal means electrically actuated and controlled by rotor rotation are considered to be encompassed within the term "signal means."

Still further, the use of the device, on other portions

of a user's anatomy, held in a user's hand, stapped on his foot, etc., are uses contemplated to be within the scope of this invention, and thus the terms such as "support" are to be regarded in their broadest context.

Various positional-directional terms used in the description of this device are for purposes of description, and are not to be considered by way of liimtation.

The exemplary embodiment of the exercising device is indicated generally at **10** and will be secured on a user's head H by means of a securing assembly or the like indicated generally at **12**.

Briefly describing the mode of operation of the exemplary device, without discussing the detailed structure, the rotor will have its mass located eccentric of the axis of rotation. Thus the rotor will tend to assume a position where the eccentric mass is directly beneath the axis of rotation, i.e., when the user of the device is standing still.

A series of continuous, up and down movements with a slight circular movement at the end of each up and down movement, will initially cause the rotor to oscillate about its axis of rotation and the rotor inertia will tend to prevent the rotor from rotating about its axis of rotation. However, as the rotor initially oscillates and the kinetic energy expended by the user is applied in harmony with the period of oscillation, the rotor will begin to rotate, and continued, coordinated movement will cause the rotor to continue to rotate, due to the "flywheel" effect of the eccentric mass.

In the two embodiments to subsequently be described in detail, it will be observed that in the embodiment of FIGURES 1–5, the eccentric mass is much farther from the rotor axis of rotation, while in the embodiment of FIGURE 6, the eccentric mass is quite close to the rotor axis. Thus, variations or different means may be used to "unbalance" the rotor, it being readily apparent that a "balanced" rotor will not afford the operation mentioned with respect to the disclosed embodiments.

Referring more particularly to the drawings, and first considering FIGURES 1–5, the exercising and amusement apparatus **10** comprises a support indicated generally at **14** to which is attached the securing assembly **12**, and journaled on the support is a rotor assembly indicated generally at **16**.

The support **14**, in the exemplary embodiment, comprises a plastic dome-shaped hat or head piece **18** including diametrically opposed slots **20**. The securing assembly **12** comprises a strap **22** looped at terminal ends **24** through the slots **20**. The intermediate portion of the strap is formed as a loop **26** over which is frictionally engaged a slidable slide element **28** to accommodate different sized users and permit ready removal from the user's head.

The hat or head piece has formed integrally therewith, a pair of hollow and vertically tapered support arms **30** and **32** which provide substantial rigidity and yet may be laterally displaced as shown by phantom lines in FIGURE 3 to permit insertion and removal of the rotor assembly **16**.

The inner surfaces **34** and **36** of the arms **30** and **32**, respectively, include aligned apertures **38** and **40**, respectively which define bearing means or a transverse axis of rotation on the support arms.

The hat **18** includes below the axis of rotation and in the plane of rotation of the rotor assembly **16** signal means indicated generally at **42** and comprising in the exemplary embodiment a resilient, leaf spring-like element **44** which is embedded at its lower end **46** in the hat. The displaceable element **44** will emit a "click-like" sound when engaged by an abutment portion of the rotor assembly **16**. The rotor assembly may comprise many forms in addition to those shown, for example, having a

picture formed on a disc, an annular outline such as a tumbling monkey, etc. The signal means (although not shown) is conducive for use as a switch element for energizing an electrically operated audible or visual signal with batteries supported in the hat.

The signal means apprizes a user that the rotor is rotating, since it is difficult to determine such rotation unless the user faces a mirror, or someone is watching him use the device.

The rotor **16** comprises a relatively solid body member **48** having extending transversely through the center thereof a shaft element **50**, having reduced diameter end portions **52** and **54** at opposite ends which are removably received in the aligned apertures **38** and **40**, respectively, see FIGURE 3. The shaft element **50** may be fixedly secured in the body member **48** or may comprise a "Teflon" shaft or the like upon which the member **48** is journaled. Preferably, the shaft **50** is fixed to the member **48** to positively orient the rotor assembly between the inner walls **34** and **36** of the respective arms **30** and **32**.

In FIGURES 1–5, the member **48** includes a plurality of radially extending, circumferentially spaced, arms, blades or fingers **56**, one of which is indicated at **56'** having embedded therein a weight element **58**. The member **48** is symmetrical about the axis of rotation defined by shaft **50**, however, the weight **52** causes the mass of the rotor to be located eccentric to the axis of rotation, and the member **48** to generally tend to assume the position indicated in FIGURES 1, 2 and 4. The blades **56**, **56'** will abuttingly engage the signal means element **44** during rotation and four "clicks" per rotation of the rotor will be emitted.

Considering FIGURE 6, another embodiment of the rotor assembly is indicated generally at **16'**, the remaining portions of the device being similar to and identified by the reference characters previously used. The external appearance of rotor assembly **16'** is at first glance similar to that indicated at **16**, and the rotor assembly **16'** includes a body member **48'** formed with radially extending, circumferentially spaced arms or blades **156**. The blades **156** are equidistantly located with respect to the center C of member **48'**, however, the shaft **50** is offset from center C, i.e., the terminal end **158** of arm **156'** is a greater distance from the rotor axis than are the remaining arms **156**. In this manner, the mass of the rotor is eccentric to the rotor axis defined by shaft **50**, and only the terminal end **158** of arm **156'** will engage the signal means element **44**, i.e., one click per rotor assembly revolution.

The manner of use and operation of the device has previously been described in detail. The user secures the hat or head piece on his head, and by moving up and down with a slight nodding movement at the upper and lower limits of such movement is able to overcome rotor assembly inertia and cause the rotor assembly to continuously rotate when the movements are in harmony with the weight distribution or oscillations of the rotor.

It will be obvious to those skilled in the art that various changes may be made wtihout departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawings and described in the specification, but only as indicated in the appended claims.

What is claimed is as follows:

1. An exercising and amusement device comprising a hat member, mounting means on said hat member for securing said hat member on a user's head, said hat member including a pair of generally vertical spaced, parallel support arms extending from the outer surface thereof, said support arms including opposed bearing portions adjacent the terminal ends of said support arms, and a rotor member including transverse shaft means journaled for free rotation in said opposed bearing portions, said rotor member including an eccentrically located mass with respect to the axis of rotation of said rotor member defined by said shaft means, said rotor member tending to remain in a relatively fixed position due to the eccentrically located mass and being rotatable initially due to physical movement of a user's head and body in a generally vertical direction, and continued rotation being promoted by continuous physical movement in harmony with the period of oscillation of said rotor member due to said eccentrically located mass said rotor member including at least one radially projecting abutment portion, and signal means on said hat member and disposed in the path of travel of said rotor member abutment portion for periodic engagement thereby to apprize the user that his physical movement is in harmony with the period of rotation of said abutment portion.

2. The structure of claim **1** wherein said last mentioned means comprises a displaceable element extending toward the axis of rotation of said rotor member.

3. The structure of claim **1** wherein said mounting means comprises a depending chin strap means for engaging beneath the chin of a user of the device.

4. The structure of claim **1** wherein said rotor member comprises a plurality of radially extending arms circumferentially spaced about said axis of rotation.

5. The structure of claim **4** wherein said radial arms are symmetrical with respect to the center of said rotor member, the axis of rotation of said rotor member being spaced from the center of said rotor.

6. The structure of claim **4** wherein said radial arms are symmetrical with respect to the center of said rotor member, said rotor member including an increased weight portion eccentric of the axis of rotation of said rotor member.

7. The structure of claim **4** wherein said signal means comprise a spring-like, leaf element extending vertically into the path of travel of said arms and engageable with the terminal ends thereof for periodic displacement thereby to emit an audible "click-like" noise.

8. The structure of claim **1** wherein said support arms are displaceable with respect to each other for removably supporting said rotor.

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DELBERT B. LOWE, *Primary Examiner.*

JAMES W. LOVE, *Examiner.*