June 30, 1964 R. KAPLAN 3,138,813

SPRING ACTUATED VIBRATOR

Filed June 4, 1962

FIG.2

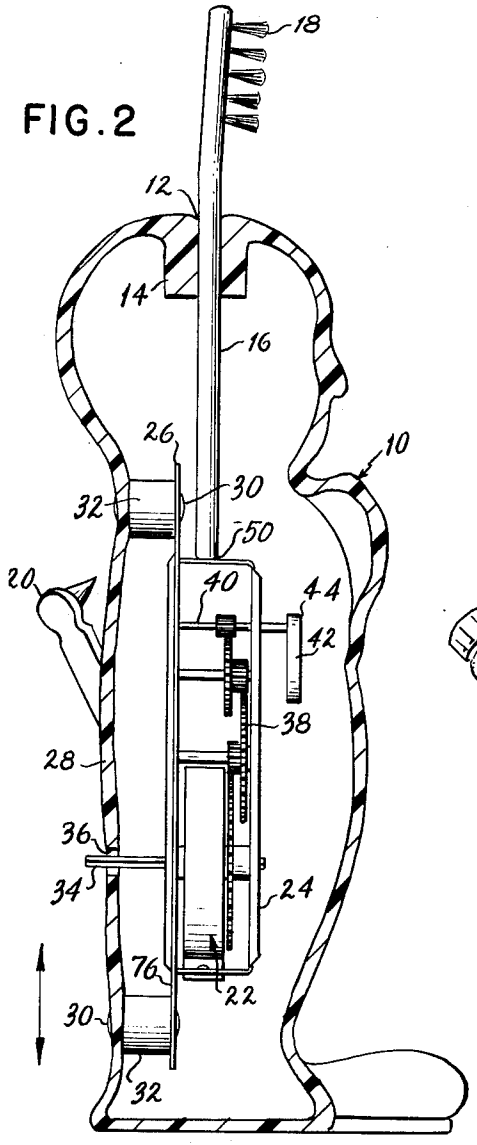
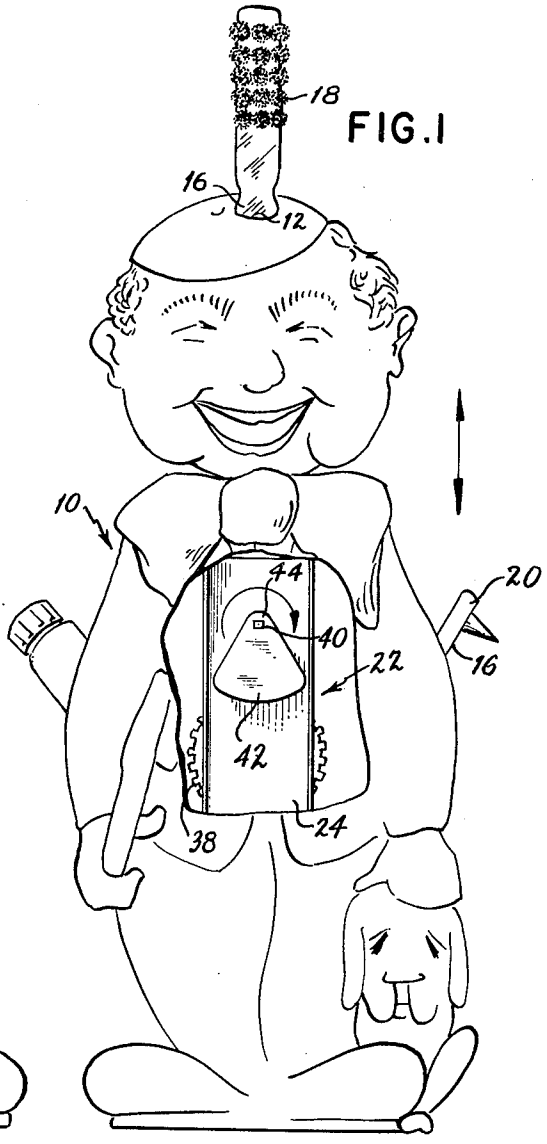


FIG.1



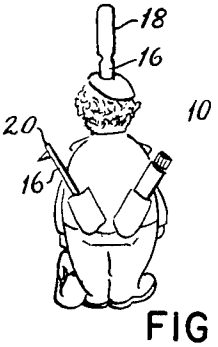


FIG.3

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SPRING ACTUATED VIBRATOR

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3 Claims. (Cl. 15—22)

The present invention relates to a vibrator and, more particularly, to a mechanically vibratable holder for an implement of oral hygiene such as a toothbrush or gum massaging device. It is one object of the present invention to provide a vibrator of the character described which is of highly simplified construction.

It is another object of the present invention to provide a vibrator of the character described which is simple and easy to operate and is particularly adaptable for use by children in training them in oral hygiene.

It is still another object of the present invention to provide a vibrating device of the character described which may be formed in various interesting and attractive shapes, especially such shapes that will readily appeal to children and encourage them in the practice of oral hygiene.

It is a further object of the present invention to provide a vibrator of the character described in which the implement, such as a toothbrush and gum massaging device, may be readily and easily substituted for one another, even by a child.

It is still a further object of the present invention to provide a vibrating device of the character described which may also serve as a holder for at least one of the replaceable units thereof, as well as for containers, such as tubes, of toothpaste or the like, to thereby make the device a fully self-contained unit.

It is yet a further object of the present invention to provide a device of the character described which may be economically mass produced, and distributed at relatively low cost.

The foregoing and other objects and advantages of the vibrator of the present invention, will become more readily apparent to those skilled in the art from the embodiment thereof shown in the accompanying drawings and from the description following. It is to be understood, however, that such embodiment is shown by way of illustration only, to make the principles and practice of the invention more readily comprehensible and without intent of limiting the invention to the specific details therein shown.

In the drawings:

FIG. 1 is a front elevation of a vibrating device embodying the present invention, shown as having a toothbrush associated therewith; partly broken away to show details and arrangement of the vibrating mechanism;

FIG. 2 is a vertical, sectional, partly elevational view of the device of FIG. 1; and

FIG. 3 is a rear elevation, on a reduced scale of the device shown in FIGS. 1 and 2.

Generally stated, the present invention contemplates the provision of a thin-walled, rigid, hollow body formed of vibratile material that may serve as a handle, which contains therein thin spring-wound unit or motor for causing the vibration of the wall thereof; such hollow body having means for frictionally holding, by its handle, a toothbrush or gum-massaging device or similar implement, to which vibrations are transmitted by the vibration of the wall of the hollow body without direct action thereon by the spring-wound vibrating motor or unit.

More specifically stated, the device of the present invention comprises a hollow, relatively thin-walled and relatively rigid, elongated hollow body, generally designated as **10**, which may be formed of readily vibratable material, as relatively rigid synthetic plastic material, as by molding, and may be made in a fanciful, decorative

shape such as in the shape of a figurine, which in the illustrated embodiment, consists of the shape of a comically-appearing child with a dog. One end of the hollow body, **10**, as the head of the illustrated embodiment, is formed with an opening, **12**, in approximate alinement with the longitudinal axis of the body **10**, preferably defined by an inwardly extending sleeve, **14**, into which the handle, **16**, of the implement to be vibrated as of the toothbrush, **18**, or gum-massager, **20**, may be inserted and frictionally and tightly held.

Disposed within the body **10** and rigidly connected thereto is a spring motor, generally designated as **22**, set within a preferably U-shaped frame **24**, having extensions, **26**, by which it is secured in spaced relation to the rear wall, **28**, of the body **10** in alinement with the longitudinal axis thereof as by rivets, **30**, and spacing washer, **32**, fitted over such rivets. The rivets and washers **30** and **32** are of such length as to dispose an end of the motor frame **24** below the opening **12**, so as to enable the end of the handle **16** to contact the adjacent end wall of the frame **24**, as at **50**. The spring motor **22** may be of generally conventional type and is provided with a winding stem, **34**, that extends to the exterior of the housing **10**, as through an opening, **36**, formed in its rear wall, **28**. The spring winding shaft of the spring motor **22** is operatively connected by a train of gears, **38**, to a shaft, **40**, which is journaled in the walls of frame **24** and extends to the exterior thereof at one end and mounts on its projecting end an eccentrically supported counter-balance, **42**, which may be of generally triangular shape and is secured on the shaft **40**, at an apex, **44**, thereof.

It will be readily apparent that after the motor **22** is wound, as by the use of a key engaged over the winding stem **34**, and is then released, rotation of shaft **40** will be effected, and the presence of the eccentric counterbalance **42** on the shaft **40** will cause the vibration of the motor and such vibration will be transmitted through wall of the housing **10** and through the motor frame **24**, at point of contact **50** to the handle **16** of the toothbrush or gum massager, **18** or **20**, as the case may be, and that such vibration will continue until the motor spring is unwound.

The body **10** may be provided with openings or pockets, **44**, on its rear, which openings or pockets may receive a toothpaste tube, or the handle **16** of one of the toothbrush or gum-treating units that may be stored therein, while the other unit is positioned in the opening **12**, in readiness for use.

This completes the description of the vibrating device of the present invention and of the manner of its operation and use. It will be readily apparent that such device is of relatively simple construction and may be economically mass produced.

It will also be apparent that the device of the present invention is effective and efficient in its operation, and that, when embodied in an attractive or decorative shape, will have great appeal to children and be of great assistance in training them in oral hygiene.

It will be apparent that numerous variations and modifications in the vibrating device of the present invention may be made by anyone skilled in the art, in accordance with the principles and practice of the invention hereinabove set forth, and without the exercise of any inventive ingenuity. I desire, therefore, to be protected for any and all such variations and modifications that may be made within the spirit of the invention and the scope of the claims hereto appended.

What I claim is:

1. A vibrating device for association with an implement having a handle, comprising an elongated, thin-walled, hollow body formed of relatively rigid, readily-vibratable material, said body having an opening formed therein in alinement with the longitudinal axis thereof for receiving

the handle of an implement in closely-fitted relation therein, and a spring-wound motor, said motor including a frame, a driven shaft, and a weight eccentrically mounted on said driven shaft, said motor secured by said frame to a wall section of said body at a pair of spaced points alined substantially parallel to said axis, with the axis of rotation of said driven shaft disposed at right angles to said handle axis and in spaced relation to said wall section, in position to have a portion of said frame underlie said opening and be contacted by said handle.

2. The vibrating device of claim 1, wherein said frame is formed with extensions projecting from each of two opposed sides thereof and is secured to said body wall section by said frame extensions.

3. A vibrating device for association with an implement having a handle, comprising an elongated, thin-walled, hollow body formed of relatively rigid, readily vibratable material, said body having an opening formed therein, in alinement with an axis thereof, for receiving an implement

handle in closely-fitted relation therein, and a spring-wound motor, said motor including a substantially U-shaped frame member, a driven shaft and a weight eccentrically mounted on said driven shaft, said motor secured by said frame member to a wall section of said body at a pair of spaced points alined substantially parallel to said axis, with the axis of rotation of said driven shaft disposed at right angles to said handle axis, in position to have a side of said frame member underlie said opening and be contacted by said handle.

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