

[54] **HEAD MESSAGE MACHINE**
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 [51] Int. Cl. **A61h 7/00**
 [58] Field of Search **128/48-50, 65, 128/61, 44, 52**

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[57] **ABSTRACT**

A head massaging machine consisting of a hollow double-walled helmet having a rotary inner shell member formed with sinusoidal cam channels. Resiliently mounted in the inner wall of the helmet are inwardly projecting resilient head-massaging fingers provided with rigid follower pins engaged in the cam channels. A motor mounted in the helmet rotates the shell member, causing the massaging fingers to oscillate, to thereby provide the head-massaging action.

8 Claims, 5 Drawing Figures

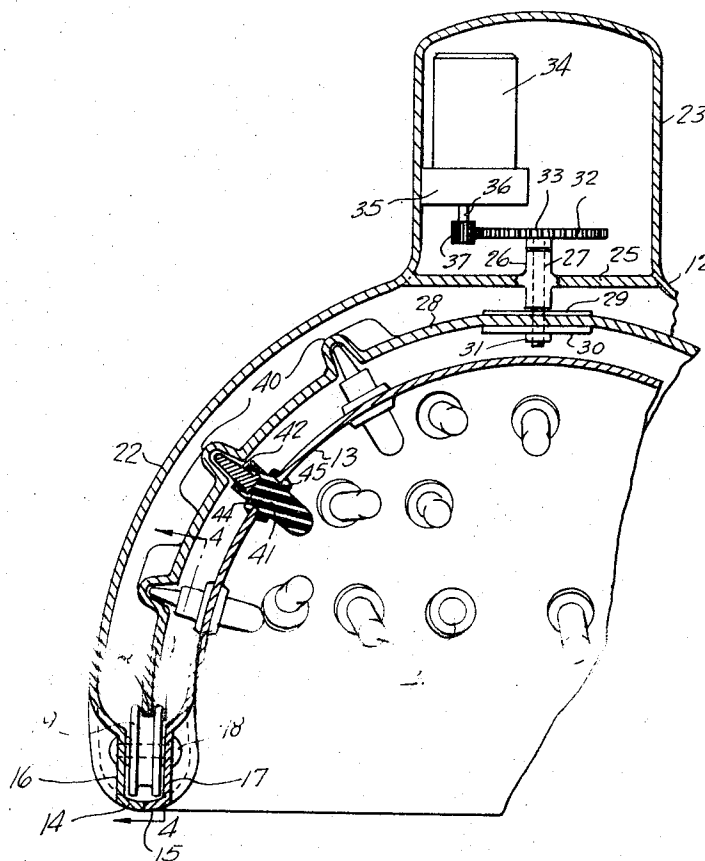


FIG. 1.

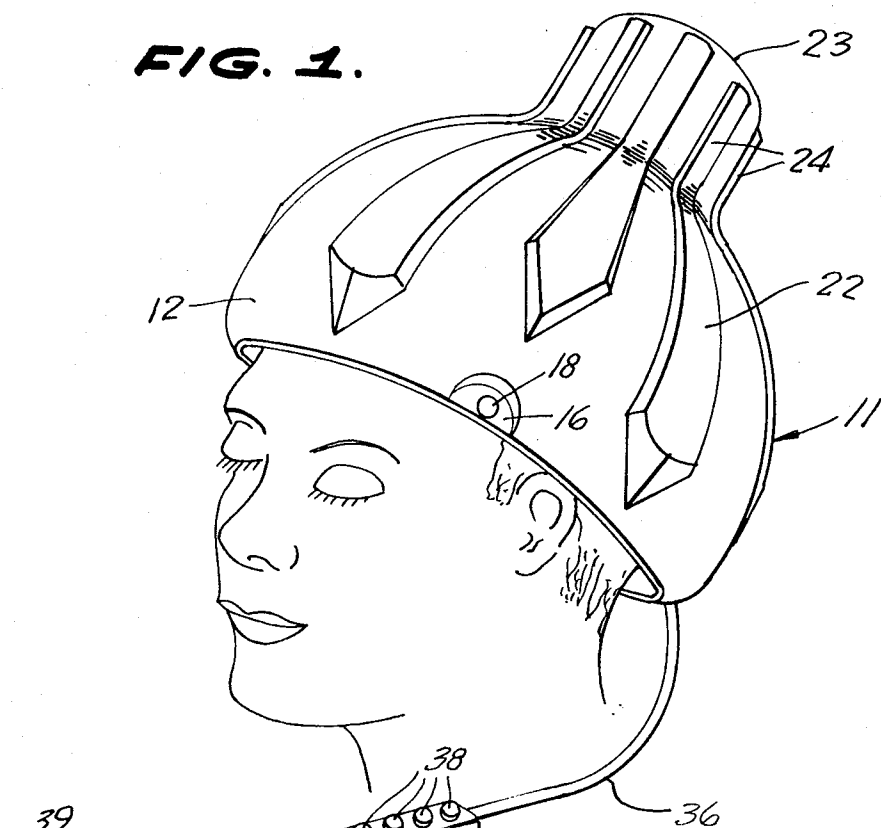
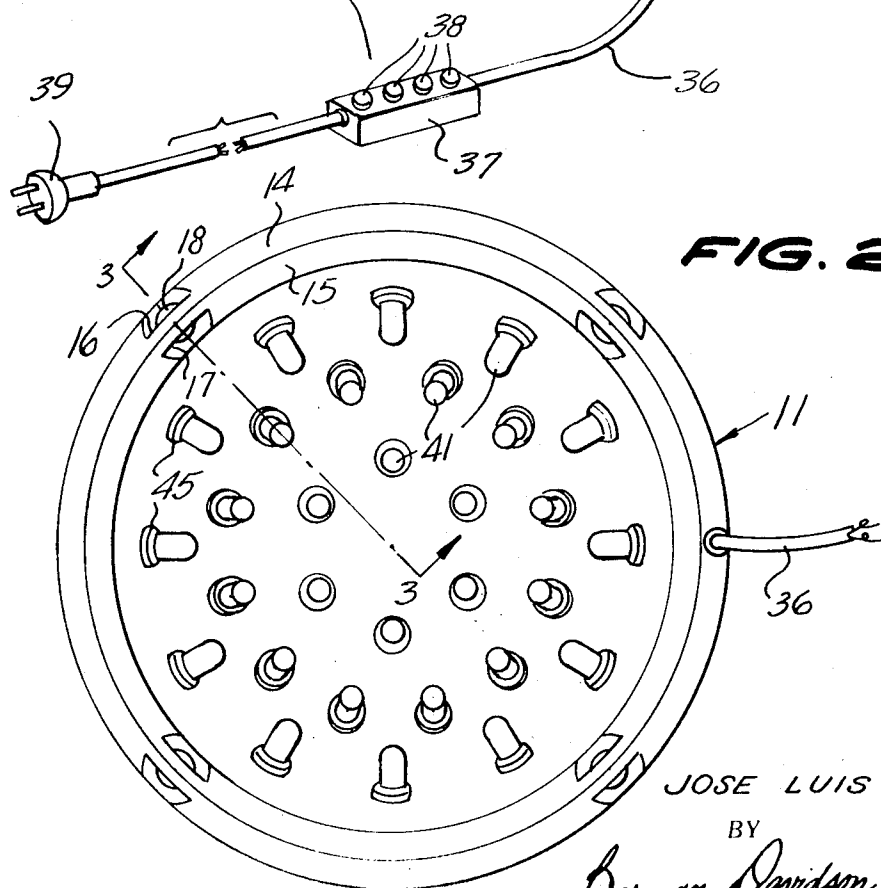
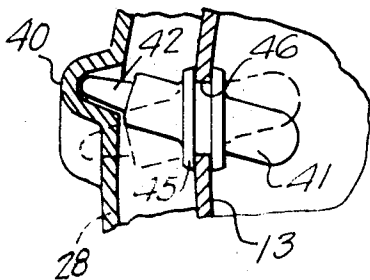
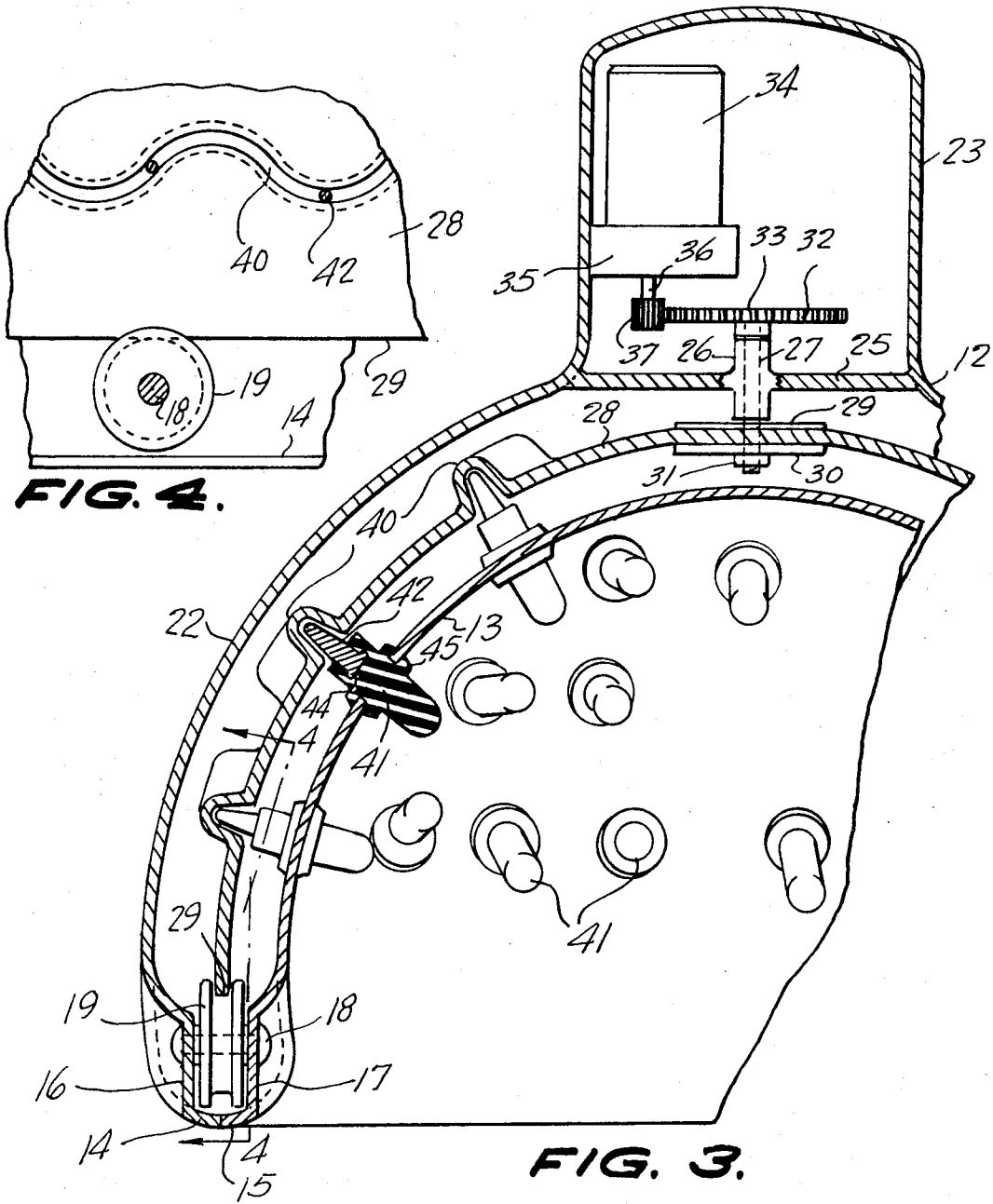


FIG. 2.



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HEAD MASSAGE MACHINE

This invention relates to physical therapy apparatus, and more particularly to a head-massaging machine.

A main object of the invention is to provide a novel and improved head-massaging machine which is relatively simple in construction, which is easy to use, and which provides a scalp-massaging effect substantially equivalent to that obtained by the finger action of professional masseur.

A further object of the invention is to provide an improved massaging machine which is inexpensive to fabricate, which is durable in construction, which is relatively light in weight and compact in size, and which provides not only a massaging effect similar to that obtained by the manual actions produced by the hands of a professional masseur, but which also provides a vibratory effect which aids in stimulating the circulation of blood in the scalp, as well as providing stimulation of the hair roots.

A still further object of the invention is to provide an improved head massage machine which provides vigorous finger action over the entire area of the scalp and also provides the relaxing finger-pressure effect which would otherwise be obtained only from the action of dozens of fingers working on the scalp and which provides a treatment which could otherwise be obtained only by employing the services of a professional masseur, the improved machine being reliable in operation, being adjustable to provide different speeds of massaging action, and being safe to use.

Further objects and advantages of the invention will become apparent from the following description and claims, and from the accompanying drawings, wherein:

FIG. 1 is a perspective view showing a person employing an improved head massage machine constructed in accordance with the present invention.

FIG. 2 is a bottom view of the head massage machine illustrated in FIG. 1.

FIG. 3 is an enlarged fragmentary vertical cross-sectional view taken substantially on the line 3—3 of FIG. 2.

FIG. 4 is a fragmentary cross-sectional view taken substantially on the line 4—4 of FIG. 3.

FIG. 5 is an enlarged cross-sectional detail view taken substantially through a portion of the assembly of FIG. 3 containing one of the massage fingers and illustrating the manner in which the finger is oscillated to provide the finger-massage action of the machine.

Referring to the drawings, 11 generally designates an improved head-massage machine constructed in accordance with the present invention. The machine 11 comprises a hollow double-walled helmet having a rigid outer wall 12 and a rigid inner wall 13, the walls being substantially hemispherical in shape and being substantially concentric. The outer wall 12 and the inner wall 13 are provided with respective opposing, abutting, peripheral rim flanges 14 and 15 and have registering spaced recessed portions 16 and 17 through which extend fastening rivets 18 to secure the wall segments 12 and 13 together and on which are rotatably mounted respective peripherally grooved rollers 19, as shown in FIG. 3.

The outer helmet wall 12 may be provided with a plurality of outwardly pressed hollow stiffening ribs 22. The crown portion of the outer wall segment 12 is integrally formed with an upstanding cup or housing 23

for a purpose presently to be described, and the ribs 22 preferably have vertical end extensions 24 rising along the upstanding cup or housing member 23, as is clearly shown in FIG. 1. The hollow ribs 22 and their extensions 24 serve as stiffeners for the outer wall of the helmet and thereby enable the outer wall to be made of relatively thin rigid material, such as molded plastic material or the like.

The generally cylindrical upstanding housing member 23 is internally provided with a rigidly fixed bottom wall 25 which is integrally formed with a central axially extending bearing sleeve 26 in which is rotatably mounted an axial shaft 27. Secured to the lower end portion of shaft 27 is a generally hemispherical rotary inner shell member 28 which is disposed between outer wall 12 and inner wall 13 and which has its bottom rim 29 supportingly engaged in the peripheral grooves of the spaced rollers 19, as shown in FIG. 3. The shell member 28 is substantially coaxial with the substantially hemispherical inner and outer walls 13 and 12 and the shaft 27 is secured to the shell member 28 at the common axis of members 12, 28 and 13. Thus, the shaft 27 extends centrally through the crown portion of the inner shell member 28 and is suitably secured thereto, for example, by the provision of an upper abutment washer 29 on the shaft member rigidly affixed thereto and by a lower clamping washer 30 forced against the central portion of the shell member 28 with clamping action provided by a nut 31 threadedly engaged on the lower end portion of shaft member 27. Obviously any other suitable fastening means may be provided for rigidly securing the crown portion of the inner shell member 28 to the lower end portion of shaft 27.

Rigidly secured to the top end portion of shaft 27 is a gear 32, a suitable bearing collar 33 being provided beneath gear 32 to rotatably support the gear on the top end of the bearing sleeve 26. An electric motor 34 is suitably mounted in the housing 23, for example, on a horizontal supporting bracket 35 rigidly secured in housing 23, the motor shaft 36 extending through the bracket 35 and being provided with a drive pinion 37 meshing with gear 32. Motor 34 is provided with a conventional line-cord assembly 36 which includes a conventional speed-changing switch assembly 37. The motor 34 is of a conventional type whose speed may be changed by actuating selected switch push buttons 38 of the assembly 37. The line cord assembly 36 is provided with the conventional male plug 39 for connecting the machine to a suitable power supply receptacle.

The inner shell member 28 is integrally formed with a plurality of spaced concentrically arranged sinusoidally curved, inwardly facing cam channels 40, the channels being continuous and extending around the inner shell member 28 coaxially with the shaft 27. As shown in FIG. 4, the channels 40 are sinusoidally shaped and are located on three circles which are coaxial with the shaft 27 and which are spaced apart angularly substantially in the manner illustrated in FIG. 3, at least three sinusoidally curved continuous cam grooves 40 being provided. Obviously, any desired number of such continuous cam grooves may be provided in the assembly.

Resiliently mounted in the inner wall 13 of the helmet are a plurality of inwardly projecting head-massag-

ing fingers 41, the fingers 41 being arranged on concentric circles substantially registering with the base circles of the sinusoidally curved cam channels 40, and the fingers 41 being provided with rigid follower pin elements 42 engaged in the channels 40 in the manner illustrated in FIGS. 3, 4 and 5. The fingers 41 are uniformly spaced around their respective circular location circles and are thereby distributed so as to provide substantially uniform spacing of the fingers over the internal surface area of the inner helmet wall 13.

In a typical embodiment of the invention, the fingers 41 are made of rubber and the follower tips 42 are of molded solid nylon. The tips 42 have enlarged base portions 44 which are molded in the leftwardly projecting end portions of the fingers 41, as viewed in FIG. 3, the fingers being integrally formed with middle enlarged grommet portions 45 having peripheral grooves which are inter-engaged with receiving apertures 46 provided in the inner helmet wall member 13 so as to lockingly secure the fingers 41 to the helmet inner wall 13 but so as to provide resilient connections of the fingers to said inner helmet wall and so as to permit the fingers to be oscillated by the follower pins 42 as said pins are moved by the camming action provided by channels 40. Thus, as illustrated in FIG. 5, the fingers 41 are oscillated substantially in vertical planes as the shell member 28 is rotated by motor 34 around the axis defined by shaft 27. The rate of oscillation of the fingers 41 may be adjusted in accordance with the desired massaging action, since the rate of oscillation of the fingers 41 is determined by the selected speed of operation of the motor 34. Thus, if a relatively rapid speed is selected, namely, by actuating a corresponding push button 38, the fingers 41 will provide a rapid oscillation and vibratory action on the scalp, providing a corresponding degree of stimulation.

By selecting the desired speed, any desired massaging effect may be obtained. As will be seen from FIG. 5, the oscillation of the fingers 41 provides a vibratory and massaging effect, a further effect simulating the relaxing finger-pressure action normally obtainable only by employing the services of a competent professional masseur. Since each finger element 41 corresponds to a masseur's finger, by employing a relatively large number of flexible finger elements 41, the machine provides an action obtainable only from the action of the order of several dozen fingers working simultaneously on the scalp.

As shown in FIG. 1, in using the machine, the helmet assembly is placed over the user's head with the inner ends of the massaging fingers 41 in contact with the user's scalp. If so desired, a suitable fastening strap may be provided on the helmet and the strap may be fastened under the user's chin. The strap may be further provided with an adjustable conventional fastening buckle arrangement to secure the helmet assembly in a position providing proper finger pressure on the user's scalp. By the provision of such a strap, the assembly will be held in proper position and will be prevented from slipping out of proper adjustment relative to the individual user's head.

As will be described, the machine provides a combination of vibratory and massaging action including the relaxing finger-pressure effect above mentioned, the action being obtained from the large number of

massaging fingers 41 acting simultaneously on the scalp and distributed uniformly over the area of the scalp. The combined vibratory and massaging action results in a type of massage treatment that is normally obtainable only from highly skilled professional masseurs. The use of the machine thereby provides a highly desirable stimulatory and therapeutic action without the actual utilization of human hands and without the necessity of going to the expense of employing a professional masseur.

It will be noted from FIG. 2 that the concentric rows of massaging fingers 41 are preferably staggered relative to each other to provide a more homogeneous distribution of the fingers over the area of the scalp. Preferably the concentrically arranged sinusoidally shaped cam channels 40 have their lobes staggered, and not necessarily of the same periodicity so as to provide a dispersed massaging action more nearly simulating the massaging action provided by the fingers of an actual masseur, wherein the fingers are not of the same length and wherein each of the masseur's fingers may have an individual massaging movement. Likewise, the channels 40 may vary in depth along their lengths so as to reciprocate as well as oscillate the massaging finger elements 41, thereby providing a vibratory as well as an oscillatory finger action.

While a specific embodiment of an improved head-massaging machine has been disclosed in the foregoing description, it will be understood that various modifications within the spirit of the invention may be occur to those skilled in the art. Therefore, it is intended that no limitation be placed on the invention except as defined by the scope of the appended claims.

What is claimed is:

1. A head-massaging apparatus comprising a helmet, a plurality of inwardly extending massaging projections movably mounted on the interior surface of the helmet, a motor in the helmet, and means drivingly coupling said motor to said massaging projections, wherein said helmet is hollow and has an outer wall and an inner wall, said projections being movably mounted in said inner wall, and wherein the projections are resiliently mounted and the means drivingly coupling the motor to said projections comprises a rotary cam member connected to said motor and drivingly engaging said projections.

2. The head-massaging apparatus of claim 1, and wherein said cam member comprises a shell element located between said outer and inner wall and having cam channel elements, said projections having follower members engaged in said cam channel elements.

3. The head-massaging apparatus of claim 2, and wherein said cam channel elements are substantially sinusoidally curved, whereby to oscillate the projections responsive to movement of the shell element.

4. The head-massaging apparatus of claim 3, and wherein said shell element is of substantially spherical curvature and said cam channel elements are formed on base circles substantially coaxial with said shell element.

5. The head-massaging apparatus of claim 4, and wherein said projections comprise finger-like bodies of resilient material secured in said inner wall, said follower members comprising relatively rod-like members embedded in the inside ends of said projections and extending into said cam channel elements.

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6. The head-massaging apparatus of claim 5, and wherein a plurality of spaced rollers are journaled between the peripheral marginal portions of said outer and inner walls, and wherein the rim of said shell element supportingly engages said rollers.

7. The head-massaging apparatus of claim 6, and wherein said projections are arranged in staggered concentric circular rows on said inner wall.

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8. The head-massaging apparatus of claim 2, and wherein said means drivingly coupling the motor to the projections comprises an axial drive shaft at the crown of the shell element, said outer wall being provided with a bearing sleeve in which said drive shaft is journaled, and gearing means coupling said motor to said drive shaft.

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