March 31, 1970 R. E. MEYER 3,503,395

HEATED VIBRATORY MASSAGER

Filed Feb. 1, 1968 2 Sheets-Sheet 1

FIG. 1

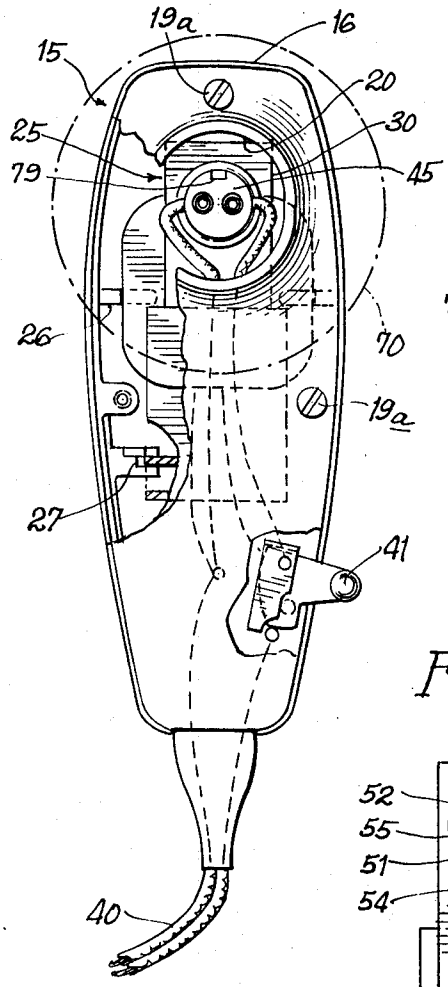


FIG. 2

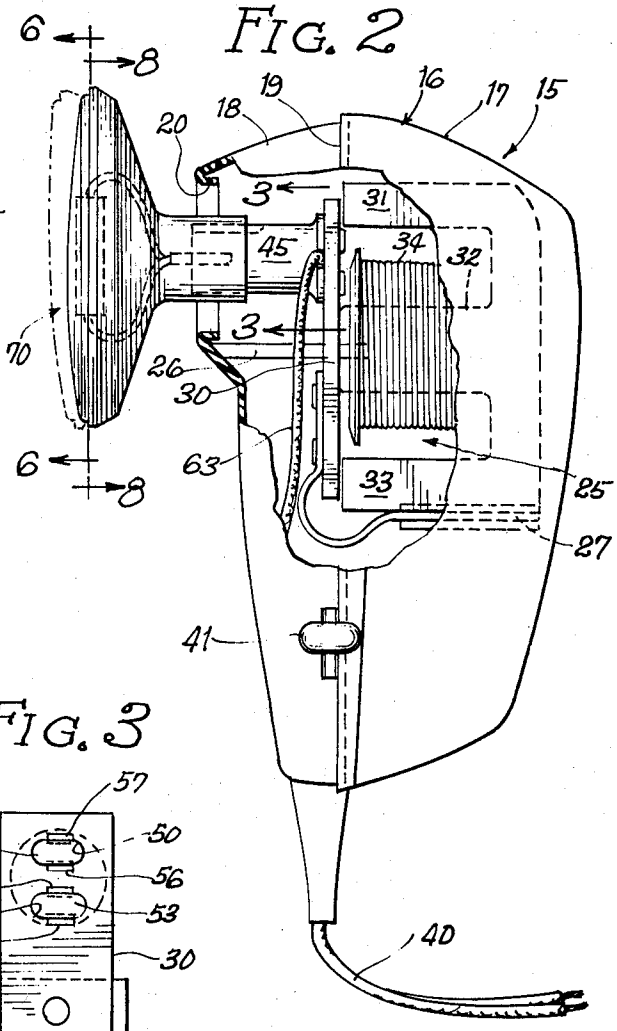


FIG. 3

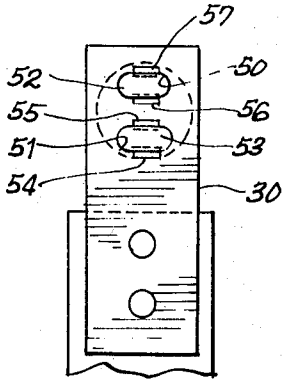


FIG. 4

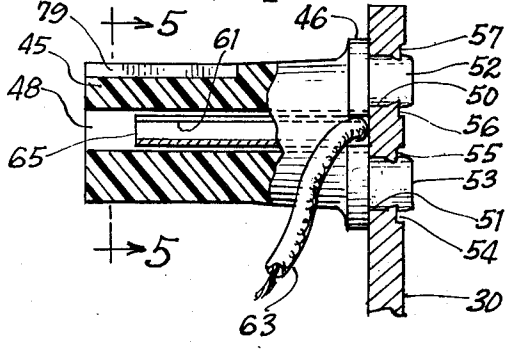
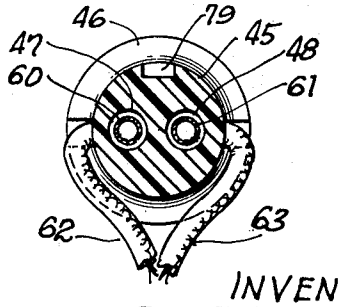


FIG. 5



INVENTOR
Roy E. Meyer
by Zabel, Baker, York, Jones
and Dithmar Attys

March 31, 1970 R. E. MEYER 3,503,395

HEATED VIBRATORY MASSAGER

Filed Feb. 1, 1968 2 Sheets-Sheet 2

FIG. 6

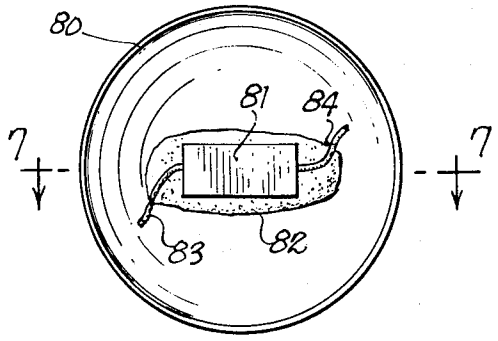


FIG. 7

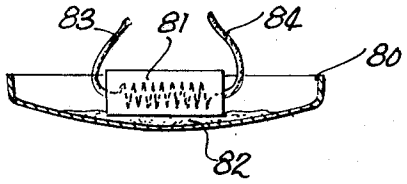


FIG. 8

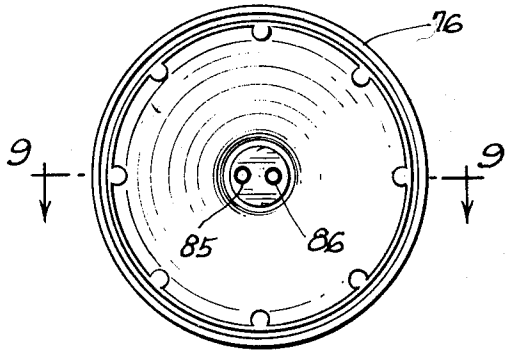
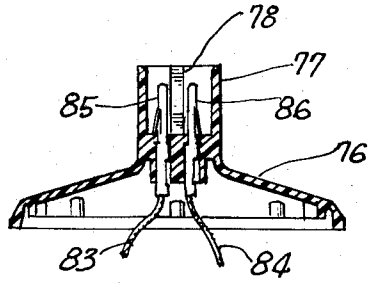


FIG. 9



United States Patent Office 3,503,395 Patented Mar. 31, 1970

3,503,395

HEATED VIBRATORY MASSAGER

Roy E. Meyer, Sterling, Ill., assignor to Wahl Clipper Corporation, Sterling, Ill., a corporation of Illinois

Filed Feb. 1, 1968, Ser. No. 702,242
Int. Cl. A61h 23/02
U.S. Cl. 128—24.2 9 Claims

ABSTRACT OF THE DISCLOSURE

An electromatic vibratory massager having a detachable heatable massaging member which simultaneously provides the therapeutic advantages of both massage and heat. An electric resistance heater mounted within the massaging member automatically is connected in circuit when the member is mounted on the massager. Non-heatable massaging members of conventional type also are detachably mountable on the massager.

Background of the invention

This invention relates to vibratory massagers, and more particularly to a manually held vibratory massager wherein one of the detachable massaging members or applicators is provided with an electric heating element.

Vibratory massagers of the manually held type have been in use for many years. An early example of such a massager is shown in U.S. Patent No. 1,832,437, issued Nov. 17, 1931 to Leo J. Wahl. This patent shows and describes a vibratory massager generally similar to the massager of this invention except that it does not have a heatable massaging member and the structural and functional features incident thereto.

Summary of the invention

The heated vibratory massager of this invention has a conventional housing with an opening therein. It employs a conventional vibratory motor having a metallic armature, the free end of the armature being adjacent the opening. A post secured to the free end portion of the armature extends through the housing opening and is adapted to receive massaging members, including a heatable massaging member, in detachable manner.

A pair of spaced electrically conducting first terminal members is mounted in effective relation with the aforesaid post, and electrical conductors extend from these terminal members to the electrical circuit of the motor.

A heatable massaging member is detachably mounted on the free end of the post, the massaging member having a tubular portion adapted to telescope the post. The massaging member includes a body-engaging member having an electrical heating element secured thereto. Electrical leads from the heating element connect to a pair of second terminal members mounted in effective relation with the aforesaid tubular portion, and these second terminal members become connected to the first terminal members when the massaging member is mounted on the post.

In preferred form, the post is formed of electrical insulating material having a pair of spaced longitudinal passageways therethrough. The first terminal members are disposed within these passageways, the outer ends thereof being recessed with respect to the free end of the post. Also, the second terminal members are disposed within the tubular portion of the massaging member. With this arrangement the terminal members are protected from physical damage by external forces, and the possibility of electric shock to the user from the energized first terminal members is avoided.

The post has bosses received in corresponding openings in the armature of the motor, which bosses are distorted in part to secure the post to the armature.

The terminal members associated with the post are remote from the exterior of the post and hence do not interfere with the ability of the post to receive massaging members of conventional type which are not heatable.

Brief description of the drawings

In the drawings:

FIG. 1 is a front elevational view, partly broken away, of a preferred form vibratory massager embodying the invention, the heatable massaging member being omitted except for diagrammatic showing in broken line.

FIG. 2 is a side elevational view, partly broken away and partly in section, of the massager shown in FIG. 1, the heatable massaging member being shown mounted in place.

FIG. 3 is a fragmentary view taken on line 3—3 of FIG. 2.

FIG. 4 is an enlarged fragmentary elevational view, partly in section, showing certain details of the invention.

FIG. 5 is a sectional view on line 5—5 of FIG. 4.

FIG. 6 is a sectional view through the massaging member taken on line 6—6 of FIG. 2.

FIG. 7 is a sectional view taken on line 7—7 of FIG. 6.

FIG. 8 is a sectional view taken on line 8—8 of FIG. 2.

FIG. 9 is a sectional view taken on line 9—9 of FIG. 8.

Description of the preferred embodiment

Referring to the drawings, a heated vibratory massager, generally designated **15**, is shown in front and side elevations, respectively, in FIGS. 1 and 2. Massager **15** includes a casing **16**, preferably of plastic material, having larger rear portion **17** and smaller front portion **18**, the two portions abutting generally on junction line **19** (FIG. 2) and secured by means **19***a*.

Front housing portion **18** has a forwardly directed opening **20** therein, the purpose of which will be mentioned presently.

An electromagnetic vibratory motor, generally designated **25**, is suitably mounted within rear portion **17** of the housing. This housing portion is provided with bosses **26** and recesses **27** which receive cooperating portions of motor **25** and thereby position and support the motor.

Motor **25** includes a vibratory metallic armature **30** (FIGS. 1–4) which vibrates back and forth in response to the magnetic fields developed at poles **31**, **32** and **33** (FIG. 2) of motor **25**. These poles are energized by an inductance **34** on pole **32**. Alternating current is supplied to inductance **34** through conductors **40**, switch **41** and associated circuitry within housing **16**.

As best shown in FIGS. 1 and 2, the free end of armature **30** is adjacent opening **20** in front portion **18** of housing **16**.

A stem or post **45**, preferably of insulating material and preferably having an enlarged base **46** (FIG. 4), is secured to the free end portion of armature **30** (FIGS. 1 and 2) and extends through housing opening **20**, as best shown in FIG. 2. As shown in FIGS. 4 and 5, preferred post **45** has a pair of spaced longitudinal passageways **47** and **48** extending therethrough from base **46** to the free end.

As best shown in FIGS. 3 and 4, the free end portion of armature **30** has a pair of spaced openings **50** and **51**, and post **45** has a pair of bosses **52** and **53** of shape and spacing corresponding to the shape and spacing of the openings. Bosses **52** and **53** extend into openings **50** and **51**, and, preferably, the metal around the openings is distorted or upset in part, as by a staking process, as shown

at 54, 55, 56, and 57, to establish secure connection between post 45 and armature 30. As shown in FIG. 4, bosses 52 and 53 of post 45 are distorted in part to establish the desired connection, this being true regardless of any distortion in the armature material.

Enlarged base 46 provides increased bearing between the post and armature, as well as increased spacing between the respective openings and bosses, all contributing to a rigid and secure relationship between post and armature. In addition, enlarged base 46 overlies armature 30 in alignment with housing opening 20, and when formed of insulating material provides an extra measure of protection against electric shock from the armature.

Still referring to FIGS. 4 and 5, a pair of electrically conducting first terminal members 60 and 61 are located in effective relation with post 45 and preferably are disposed within passageways 47 and 48 of an insulating post. Electrical conductors 62 and 63 extend, respectively, from first terminal members 60 and 61 to electrical connectors in circuit with motor 25 and switch 41, as shown in broken line in FIG. 1.

In preferred form, first terminal members 60 and 61 are female in characteristic, and the outer ends thereof are recessed within post 45, as shown at 65 in FIG. 4. The recessed arrangement minimizes the possibility of electric shock and physical damage to the terminal members, and renders post 45 capable of receiving massaging members other than the heatable massaging member of this invention, next to be described.

A heatable body-engaging massaging member, generally designated 70, is shown in FIG. 2 mounted on post 45. Details of massaging member 70 are shown in FIGS. 6–9.

Referring first to FIGS. 8 and 9, heatable massaging member 70 includes a dish-shaped base 76 of insulating material having a tubular portion 77 (FIG. 9) adapted to telescope post 45 in snug manner. Tubular portion 77 and post 45 have a recess and interfitting rib arrangement for orientation purposes. As shown, tubular portion 77 has an interior longitudinal rib 78 received within a longitudinal recess 79 (FIGS. 1 and 4) in the free end portion of post 45, although the positions of the recess and rib may be reversed if desired. The rib and recess cooperate to orient heatable message member 70 on post 45 so that electrical terminal members in base 76, presently to be described, will align with and engage first terminal members 60 and 61 in electrically conducting manner when the message member is mounted on post 44.

Massage member 70 also includes a body-engaging member 80 which is mounted as shown in FIG. 2 on the dish-shaped vase 76 of insulating material in manner to close the open end of the base.

An electric heating element 81, preferably of the ceramic type, is secured by suitable adhesive 82 to the inside surface of member 80. Leads 83 and 84 from heating element 81 extend to a pair of second terminal members 85 and 86 (FIGS. 8 and 9) in insulating base 76 of the massaging member. As shown, terminal members 85 and 86 are male in characteristic and extend into tubular portion 77 of the base. The free ends of second terminal members 85 and 86 preferably are wholly within tubular portion 77 of the massaging member, as shown in FIG 9.

Although first terminal members 60 and 61 are shown as of female characteristic and second terminal members 85 and 86 in male characteristic, the respective pairs of terminal members may be reversed as to the noted characteristics.

Body-engaging member 80 with its associated electrical heating element 81 is secured to base 76 in any suitable manner as by adhesive.

It will be appreciated that preferred insulating post 45 is effective to insulate heatable massaging member 70 electrically from the motor and other circuitry within housing 16. Post 45, of course, also is effective to transmit mechanical vibrations from armature 30 to massaging member 70. Further, the respective pairs of terminal members of post 45 and of massaging member 70 automatically are connected when the massaging member is mounted on the post. The terminal members, in preferred form, are recessed within insulating portions and therefore are not accessible for physical damage or electric shock to the user.

From the above description it is thought that the construction and advantages of this invention will be readily apparent to those skilled in the art. Various changes in detail may be made without departing from the spirit or losing the advantages of the invention.

Having thus described the invention, what is claimed as new and desired to secure by Letters Patent is:

1. In a vibratory massager having a housing with an opening therein, an electromagnetic vibratory motor mounted within said housing, said motor having a metallic armature, and electrical connectors including a switch for said motor within said housing, the combination comprising:

a post having a base secured to said armature and extending through said housing opening;

a pair of spaced electrically conducting first terminal members in effective relation with said post;

electrical conductors extending from said first terminal members to said electrical connectors for said motor; and

a heatable body-engaging massaging member detachably mounted on the free end of said post, said massaging member having a tubular portion adapted to telescope said post, a body-engaging member, an electrical heating element secured to the inside surface of said body-engaging member, a pair of spaced electrically conducting second terminal members in effective relation with said tubular portion, and electrical conductors connecting said second terminal members to said heating element, said second terminal members connecting with said first terminal member when said massaging member is mounted on said post.

2. The combination of claim 1 wherein said armature has a pair of spaced openings therein and said post at its base has a pair of bosses of shape and spacing corresponding to the shape and spacing of said openings, said bosses extending into said openings, said bosses in part distorted to establish secure connection between said post and said armature.

3. The combination of claim 1 wherein said post is formed of electrical insulating material and said base of said post is enlarged to provide increased bearing between said post and said armature, increased spacing between said bosses and increased insulation material overlying said armature in alignment with said opening in said housing.

4. The combination of claim 1 wherein said post is formed of electrical insulating material and has a pair of spaced longitudinal passageways therethrough, said first terminal members disposed within said passageways, and wherein said second terminal members extend into said tubular portion of said massaging member.

5. The combination of claim 4 wherein the outer ends of said first terminal members are recessed with respect to the free end of said post.

6. The combination of claim 4 wherein the free ends of said second terminal members are within said tubular portion of said massaging member.

7. The combination of claim 4 wherein one pair of said terminal members are female in characteristic and the other pair of said terminal members are male in characteristic.

8. The combination of claim 1 wherein the end portion of said post on the exterior surface and the interior

surface of said tubular portion of said massaging member have a recess and interfitting rib arrangement to orient said massaging member on said post and thus facilitate connection between said first and second pairs of terminal members.

9. The combination of claim 1 wherein said first electrical terminals have a remote relationship with the exterior of said post, whereby non-heatable massaging members may be detachably mounted in telescoping manner on the free end of said post.

References Cited

UNITED STATES PATENTS

2,742,037	4/1956	Svoren	128—41
2,809,631	10/1957	Smith et al.	128—41

FOREIGN PATENTS

955,214	6/1949	France.

L. W. TRAPP, Primary Examiner

U.S. Cl. X.R.

128—41