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HAND-HELD DOUBLE-ACTING NERVE REFLEX MASSAGER

Filed July 28, 1965

FIG. 1

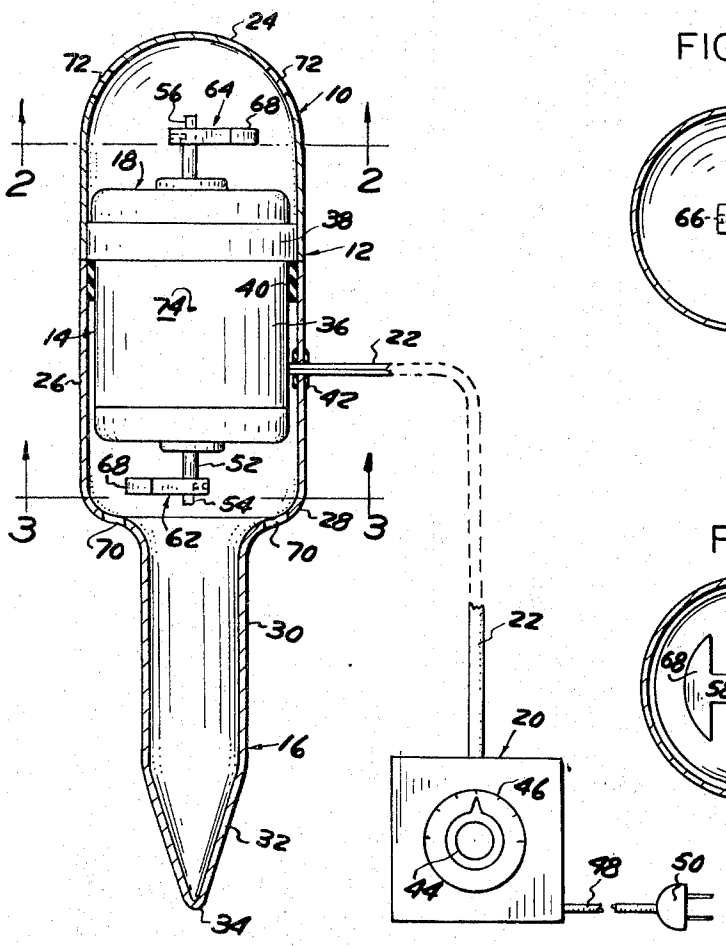



FIG. 2

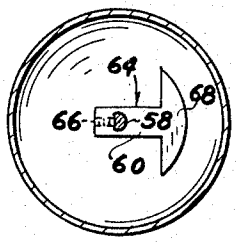
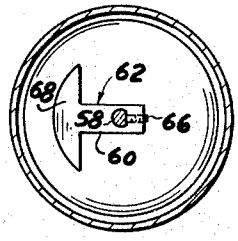



FIG. 3




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# HAND-HELD DOUBLE-ACTING NERVE REFLEX MASSAGER

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This invention relates to therapeutic massagers and, in particular, to nerve reflex massagers for massaging, agitating and stimulating nerve endings in the human body.

One object of this invention is to provide a hand-held double-acting nerve reflex massager having a casing with an applicator nose and a motor within the casing having a rotary shaft with oppositely-directed flyweights on opposite ends of the rotary motor shaft effective simultaneously to pull the opposite ends of the casing to and fro in opposite directions so as to impart a double-acting oscillating effect to the applicator nose applied to the body.

Another object is to provide a hand-held double-acting nerve reflex massager of the foregoing character wherein the oppositely-directed flyweights simultaneously generate laterally-directed forces amplifying the vibratory effect on the applicator nose by oscillating simultaneously in opposite directions around an axis located intermediate the two oppositely-directed flyweights.

Another object is to provide a hand-held double-acting nerve reflex massager of the foregoing character wherein the applicator nose is integral with the part of the casing containing the motor, this one-piece construction transmitting the oscillations from the flyweights to the applicator nose without lost motion occurring therebetween and without the danger of separation of separate parts brought about by the excessive oscillation of the oppositely-acting double flyweights.

Other objects and advantages of the invention will become apparent during the course of the following description of the accompanying drawing, wherein:

FIGURE 1 is a longitudinal section through the casing of a hand-held double-acting nerve reflex massager, according to one form of the invention, with the driving motor and associated parts thereof in side elevation, and with a portion of the electric cable between the rheostat and the motor indicated by dotted lines as omitted;

FIGURE 2 is a cross-section taken along the line 2—2 in FIGURE 1, showing the rearward flyweight; and

FIGURE 3 is a cross-section taken along the line 3—3 in FIGURE 1, showing the forward flyweight.

Referring to the drawing in detail, FIGURE 1 shows a hand-held double-acting nerve reflex massager, generally designated **10**, as consisting generally of a hollow substantially rigid casing **12** containing a double-acting motor-driven massager device **14** for imparting oscillations to an applicator nose **16** in response to the frequency determined by the speed of the rotary electric driving motor **18** as determined by the adjustment of a rheostat **20** connected to the motor **18** by a delivery conductor cable **22**. The casing **12** consists of a cup-shaped or dome-shaped rearward half or cap **24** abutting a forward cylindrical casing half portion **26** with a forward end wall **28** leading to the reduced-diameter intermediate cylindrical portion **30** of the applicator nose **16** which terminates in a tapered forward side wall portion **32** with a rounded contact tip **34**.

The driving motor **18** of the double-acting massager **14** is of generally conventional design and its internal details are beyond the scope of the present invention. The motor **18** is provided with a housing **36** having near one end an annular enlargement or ring **38** applied thereto and frictionally receiving and holding the rearward end cap **24**



of the casing **12**. Immediately adjacent the annular enlargement **38**, the motor **18** is provided with an annular band **40** of elastic deformable material, such as natural or synthetic rubber or resilient synthetic plastic, which receives and frictionally holds the forward cylindrical casing portion **26** of the casing **12** in end-to-end abutting relationship with the end cap **24**. The forward casing portion **26** is drilled and insulated at **42** for the passage of the conductor cable **22** from the rheostat **20** through the motor casing **36** into the interior of the motor **18**. The rheostat **20** is of conventional construction with an adjusting knob **44** registering on a graduated dial **46** and receiving electric current through a supply conductor cable **48** from a conventional plug **50**, the prongs of which are inserted into a conventional wall outlet.

The motor **18** drives a rotary shaft **52** which projects from the opposite ends of the motor casing **36** and is provided at its forward and rearward ends with flattened portions **54** and **56** which receive the correspondingly-drilled holes **58** in the inner ends of arms **60** of eccentric forward and rearward flyweights **62** and **64** respectively drilled and threaded at their inner ends to receive set screws **66** and terminating at their outer ends in segmental weights **68**. From FIGURES 2 and 3 it will be seen that the flyweights **62** and **64** are disposed in opposite directions 180 degrees apart and that the axes of the arms lie in a common plane and are parallel to one another and perpendicular to the axis of the shaft **52**. The motor **18** contains the usual fan (not shown) mounted on the rotary shaft **52** and adapted to circulate cooling air through the perforated ends (not shown) of the motor housing **36**, and thence through holes **70** and **72** in the forward and rearward portions **26** and **24** respectively of the casing **12**.

In the operation of the double-acting nerve reflex massager **10**, the operator holds the casing **12** in one hand and adjusts the speed of the motor **18** to give the desired frequency of oscillation, such as, for example, from a normal motor speed of 1750 r.p.m. to about 200 r.p.m. This he does by adjusting the knob **44** of the rheostat **20** which is receiving current through the supply cable **48** from the plug **50** and transmitting it through the delivery cable **22** to the motor **18**. As the motor shaft **52**, rotates, the oppositely-directed forward and rearward flyweights **62** and **64** simultaneously apply pulls in opposite directions to the shaft **52**, these pulls being transmitted through the annular members **38** and **40** to the forward casing portion **26** and the end to the contact tip **34** of the applicator nose **16** which is held in contact with the portion of the body within which it is desired to massage and stimulate the terminal nerve endings. Such treatment is frequently made on the nerve endings of the feet. The frequency with which the tip **34** is rapidly oscillated in opposite directions is dependent upon the speed at which the motor **18** is rotating the shaft **52** but the lateral force applied to oscillate the contact tip **34** is greatly increased as well as stabilized by the oppositely-disposed forward and rearward flyweights **62** and **64** around the axis of oscillation located approximately at the point **74** which is roughly halfway between them. Meanwhile, cooling air is circulated through the casing holes **70** and **72** by the fan on the motor shaft **52** within the motor housing **36** so as to maintain the casing **12** in a reasonably cool condition.

What I claim is:

1. A hand-held double-acting nerve reflex massager, comprising

an elongated hollow substantially rigid casing having an applicator nose projecting forwardly therefrom,

an electric motor disposed within said casing in oscillation-imparting relationship thereto,

said motor having a motor housing and a rotary motor shaft disposed substantially coaxial with

said casing with its forward and rearward ends projecting forwardly and rearwardly beyond the forward and rearward ends respectively of said motor housing,

and forward and rearward oscillation-generating flyweights mounted on said forward and rearward motor shaft ends in eccentric relationship thereto and projecting laterally in opposite directions therefrom.

2. A hand-held double-acting nerve reflex massager, according to claim 1, wherein each of said flyweights has an arm with its inner end secured to its respective shaft end and a weight element secured to the outer end of said arm.

3. A hand-held double-acting nerve reflex massager, according to claim 2, wherein said weight element is of approximately segmental shape.

4. A hand-held double-acting nerve reflex massager, according to claim 2, wherein said arms are mounted with their axes lying in a substantially common plane but disposed in said opposite directions.

5. A hand-held double-acting nerve reflex massager, according to claim 4, wherein said axes of said arms are disposed substantially parallel to one another.

6. A hand-held double-acting nerve reflex massager,



according to claim 5, wherein said axes of said arms are also disposed substantially perpendicular to the axis of said motor shaft.

7. A hand-held double-acting nerve reflex massager, according to claim 1, wherein said casing includes forward and rearward casing halves and wherein said forward casing half has a reduced diameter portion projecting forwardly therefrom, said nose being disposed on the forward end of said reduced diameter portion.

8. A hand-held double-acting nerve reflex massager, according to claim 7, wherein said nose has a contact tip and a tapered side wall portion projecting forwardly from the forward end of said reduced diameter portion to said contact tip.


**References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 2,674,994 | 4/1954 | Murphy | 128—36 |
| 2,833,277 | 5/1958 | Kline | 128—35 |
| 3,096,757 | 7/1963 | Berard | 128—36 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 434 | 1907 | Great Britain. |


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