July 9, 1963 T. C. BERARD 3,096,757

KINESITHERAPY DEVICE

Filed Dec. 18, 1961

Fig. 2.

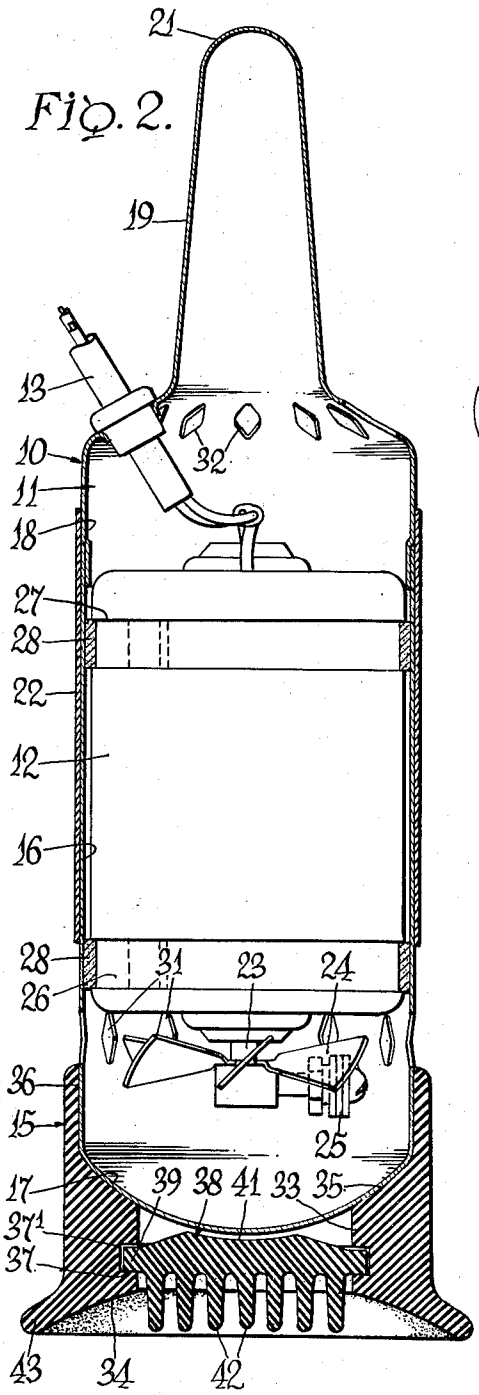


Fig. 1.

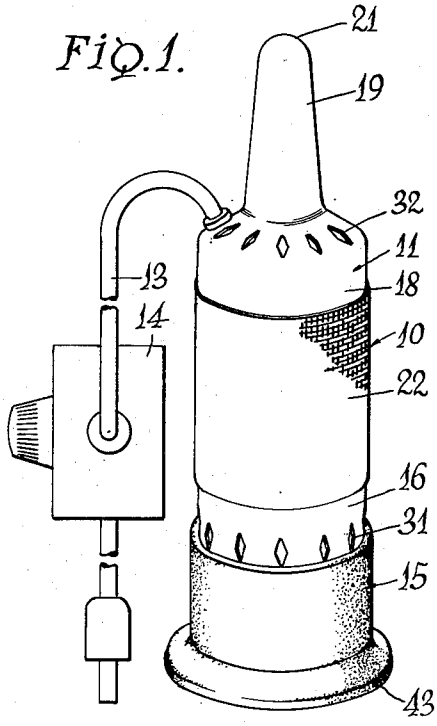
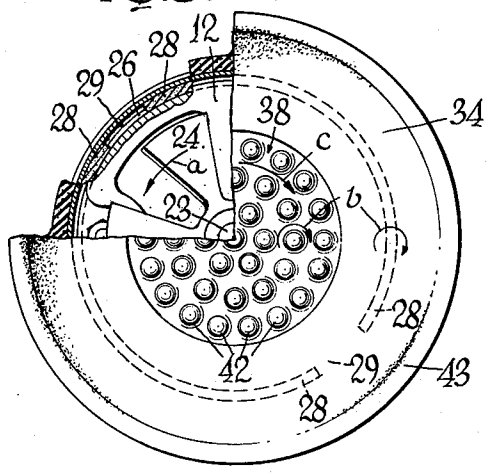


Fig. 3.



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KINESITHERAPY DEVICE

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This invention relates to kinesitherapy devices and proposes a motor operated device to be held in the hand and which has releasable means subject to vibratory movements and combined vibratory and rotary movements for massaging application to parts of the human body.

One of the objects of the present invention is to provide such a hand manipulatable kinesitherapy device with hard bendable strip means for substantially rigidly mounting an electric motor in spaced concentric relation to and within a housing, whereby vibrations produced by rotation of an unbalanced part of said motor in one direction are directly transmitted by said means to the housing, without appreciable diminution and cause a like vibration thereof in the opposite direction.

Another object is to form and arrange the strips to provide a space between their ends for the circulation of cooling air therethrough.

Another object is to provide one end portion of the housing with a detachable annular body formed with a concave end surface and a central plug axially alined therewith and rotatably carried by the body, whereby vibration of the housing in a small closed loop path of gyratory vibrating movements in one direction causes a like vibrating movement of the body and the plug and also causes rotation of the plug in the same direction.

Another object is to provide the vibratable and rotatable plug with a plurality of teeth formed to extend beyond the concave surface of the body for imparting beneficial vibratory movements and combined vibratory and rotary movements to parts of a person.

These and other objects of the present invention will appear from a persual of the following detailed description of a presently preferred form thereof and the drawing wherein:

FIGURE 1 is a perspective view of a kinesitherapy device constructed in accordance with the prinicples of the invention and includes an elevational showing of a speed control device interposed in and operably connectable by a conventional electric cord to a source of electric power.

FIGURE 2 is an enlarged longitudinal sectional view of the device shown in FIGURE 1, and

FIGURE 3 is an enlarged elevational end view with parts broken away and sectioned to more clearly show the construction of the device.

Referring now to FIGURE 1 of the drawing, a presently preferred form of the device is generally indicated by the numeral **10** and includes a housing **11** for an electrical variable speed vibration producing motor **12** connectable by a cable **13**, having a speed control device **14** interposed therein, to an electrical outlet (not shown) and an annular resilient body **15** detachably securable upon one end portion of the housing **11**. The motor housing comprises a cylindrical section **16** of greater length than the motor **12** having at one end a wall **17**, preferably of convex outline, its opposite end being open, and a second cylindrical section **18** telescopically fitted and frictionally held within the open end of the section **16**. The cylindrical section **18** is formed with a centrally located outward extension **19** of tapering outline which terminates in a rounded end **21** to facilitate the application of vibrations to small areas of a person's body and said extension **19** may be provided with suitable resilient means (not shown) for applying vibrations to selected portions of the person's body.

In order to cover the joint between the cylindrical sections **16** and **18** and to prevent their inadvertent displacement a suitable sheet **22** of tough pliable material, preferably formed with a decorative surface, is adhesively secured upon said sections as clearly indicated in the drawing.

As best seen in FIGURES 2 and 3 of the drawing the motor **12**, as is usual in such devices, includes a rotatable shaft **23** provided with a fan **24** and an eccentrically located weight **25** which when the shaft **23** is rotated at selected speeds in the direction of the arrow *a* in FIGURE 3 produces a relatively small closed loop path of gyratory vibrating movements of the motor casing. The opposite ends of the casing of the motor **12** are each circumferentially grooved as at **26** and **27** to receive a like pair of substantially hard but bendable strips **28** which are preferably secured therein by a suitable adhesive or cement (not shown). The outside diameter of the casing of the motor **12** is less than the inside diameter of the cylindrical portion **16** and the thickness of the strips **28** is such that the diameter defined by their outer surfaces is substantially coextensive with the inside diameter of the housing portion **16**, so that when the motor **12** carrying the strips **28** is forced into the section **16** the strips **28** serve to space and frictionally secure the motor **12** in spaced concentric relation to the section **16**. The strips **28**, being substantially hard also serve to directly transmit the vibrations produced by the motor to the housing **11** without appreciable diminution or loss.

The rotation of the eccentric weight in the direction of the arrow *a* causes the housing **11** to have a small closed loop path of gyratory movements in the opposite direction, that is to say, in the direction of the arrow *b* shown on the body **15** in FIGURE 3.

As shown 'n FIGURES 1 and 2 the housing portions **16** and **18** are respectively formed with the openings **31** and **32** thru which air moved by the fan may flow for cooling the motor **12** and the housing **11**. As indicated in FIGURE 3 the ends of the strips **28** are spaced one from the other to provide the spaces **29** thru which the cooling air may also flow to more effectively cool the device.

The annular resilient body **15** is formed with a central through bore **33** preferably terminating in a concave surface **34** at its outer end and in a concave surface **35** adjoining a counterbore **36** at its inner end. The diameter of the counter bore **36** is equal to or slightly less than the diameter of the cylindrical housing section **16** so that it may be detachably frictionally secured thereon with its concave surface **35** frictionally engaged with the surface of the wall **17**. The surface **35** serves as a stop shoulder and thereby locates the shoulder **37** of an annular groove **37'** formed in the bore **33** intermediate its ends a predetermined distance from the surface **17**.

A circular resilient plug **38** has a peripheral portion **39** loosely fitted in the groove **37'** for rotation therein in the direction of the arrow *c* in FIGURE 3, a top surface **41** concentric to and normally slightly spaced from the wall **17** and a bottom surface formed with a plurality of spaced axially disposed teeth **42** which extend outwardly therefrom and preferably terminate beyond the concave surface **34**.

Should it be found desirable to selectably substitute any one of a series of plugs, each having a different size and/or form and arrangement of its teeth, for the plug **38**, the outer peripheral wall of the groove **37'** may be simply extended to the surface **35** of the body **15** to facilitate such selective substitution. The surface **34** is continued along a flange **43** to provide the body **15** with an enlarged area and a more enjoyable beneficial therapeutic effect.

Assuming that the device **10** has been connected by the cable **13** to an electrical outlet and the speed control device **14** has been set for the vibration of the housing

11 at a selected degree per unit of time the vibration of the housing 11 is transmitted to the body 15, the plug 38 and its teeth 42 with resultant rotation of the plug 38 in the direction of the arrow "c."

Thus combining the vibratory movements of the aforesaid parts 15, 38 and 42, with the rotary movement of the plug 38, produces a novel action which is considered especially beneficial when applied to certain parts of the user's body.

As noted above, the concave top surface 41 of the resilient plug 38 is normally spaced from the wall 17 and normally rotates without contact therewith, however, its rate of rotation may be automatically retarded or its rotation may be stopped during normal use of the device without stopping its vibration by simply exerting sufficient force against the teeth 42 to hold the surface 41 in contact with the wall 17.

It should be understood that the form of kinesitherapy device shown in the drawing and described above is intended to exemplify the principles of the present invention and that various modifications and rearrangements of its component parts may be made within the scope of the appended claims.

I claim:

1. A kinesitherapy device comprising, in combination: an electric motor having a casing and a shaft, an eccentirc weight carried by the shaft and operative to effect gyratory vibration of the motor casing, a housing of cylindrical outline to be held in the hand, the housing enclosing the motor and having an end wall, annular strips rigidly fitted upon the casing of the motor and bearing frictionally upon the housing, the strips spacing the housing from the motor and also causing it to participate in the vibration of the motor casing, an annular body fitted upon the housing in adjacency to its end wall and having a central opening and a circular plug fashioned to engage parts of the human body for massaging purposes and fitted coaxially in the central opening, the fitting of the plug in the annular body being such that the plug participates in the vibratory motion of the annular body and also during such participation has rotatable movement relatively to the annular body and about its axial center.

2. A kinesitherapy device as set forth in claim 1 wherein the annular body is composed of resilient material.

3. A kinesitherapy device as set forth in claim 1 wherein the annular body and the plug are composed of resilient material.

4. A kinesitherapy device as set forth in claim 1 wherein the annular body is composed of resilient material and has a concave outer face and the plug projects beyond such outer face.

5. A kinesitherapy device as set forth in claim 1 wherein the central opening of the annular body is formed with an annular groove and the plug has a peripheral portion which fits somewhat loosely in the groove, the annular groove and the peripheral portion enabling the participation of the plug in the vibratory motion of the annular body and its rotation during such participation.

6. A kinesitherapy device as set forth in claim 1 wherein the fitting of the plug in the annular body is such that the plug is removable from the annular body.

7. A kinesitherapy device comprising, in combination: a cylindrical housing to be held in the hand, power driven means enclosed within the housing and connected to it to effect its gyratory vibration in a small closed loop path, an annular body fitted upon one end of the housing and having a central opening, a circular plug fashioned to engage parts of the human body for massaging purposes and fitted coaxially in the central opening, the fitting of the plug being such that it participates in the vibratory motion of the annular body and also during such participation has rotatable movement relatively to the annular body and about its axial center.

8. A kinesitherapy device as set forth in claim 7 wherein the annular body is composed of resilient material.

9. A kinesitherapy device as set forth in claim 7 wherein the annular body and the plug are composed of resilient material.

10. A kinesitherapy device as set forth in claim 7 wherein the fitting of the plug in the annular body is such that the plug is removable from the annular body.

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