Jan. 2, 1968 L. V. ROWE 3,361,130

THERAPEUTIC VIBRATOR DEVICE

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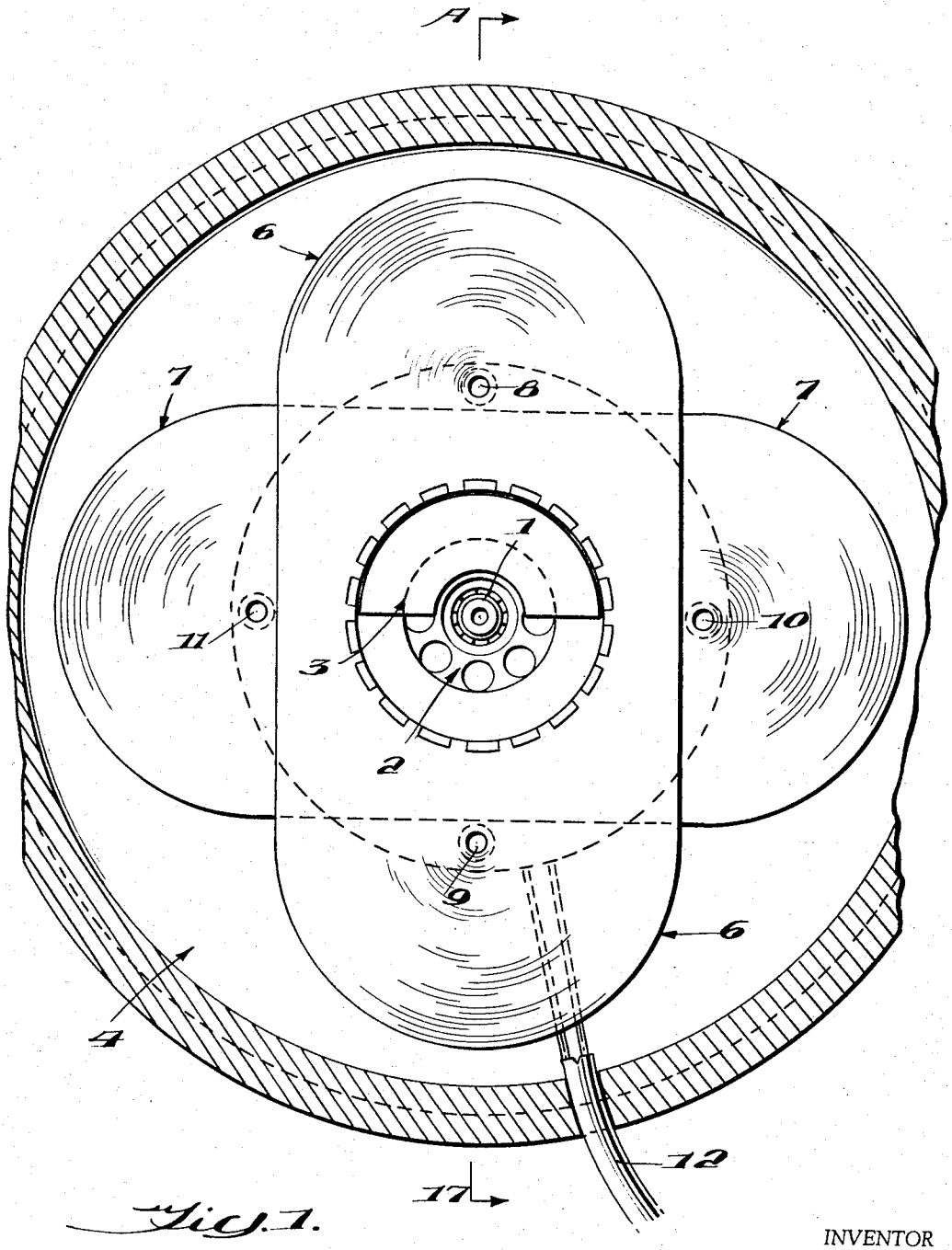


Fig. 1.

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Fig. 2.

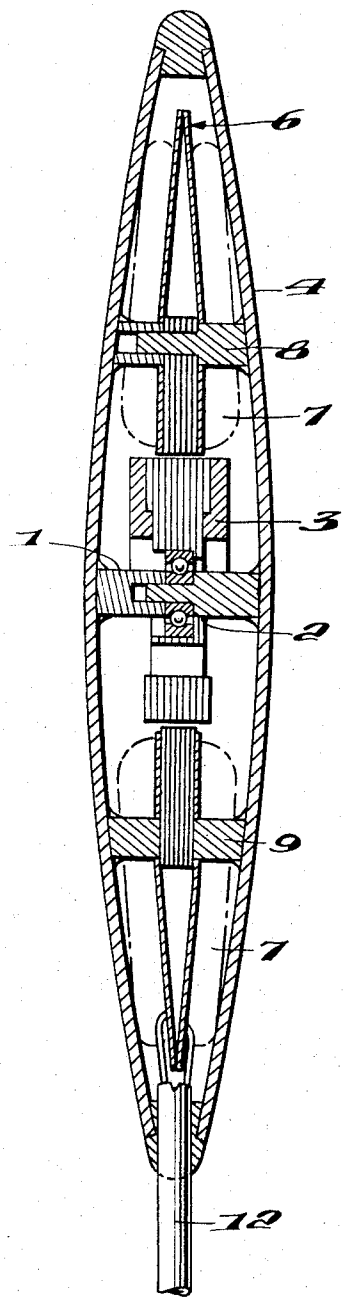


Fig. 5.

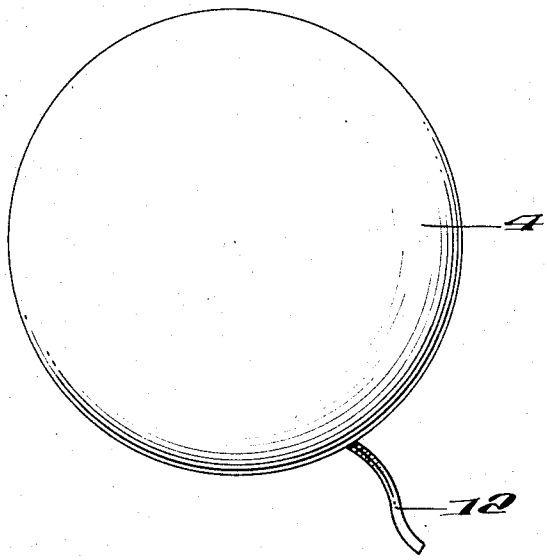
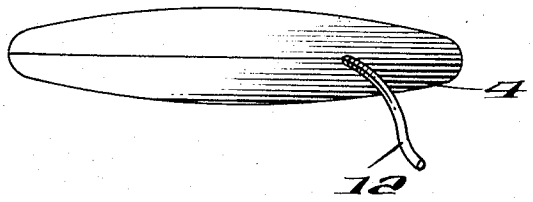


Fig. 6.



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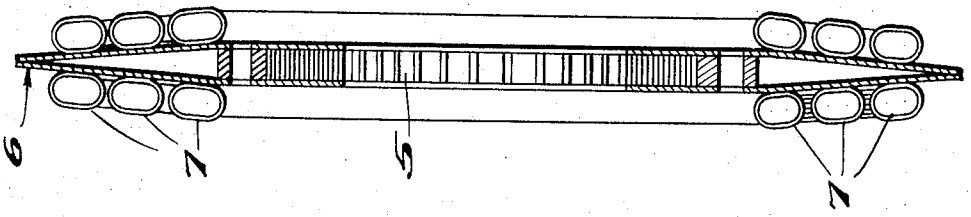


Fig. 4.

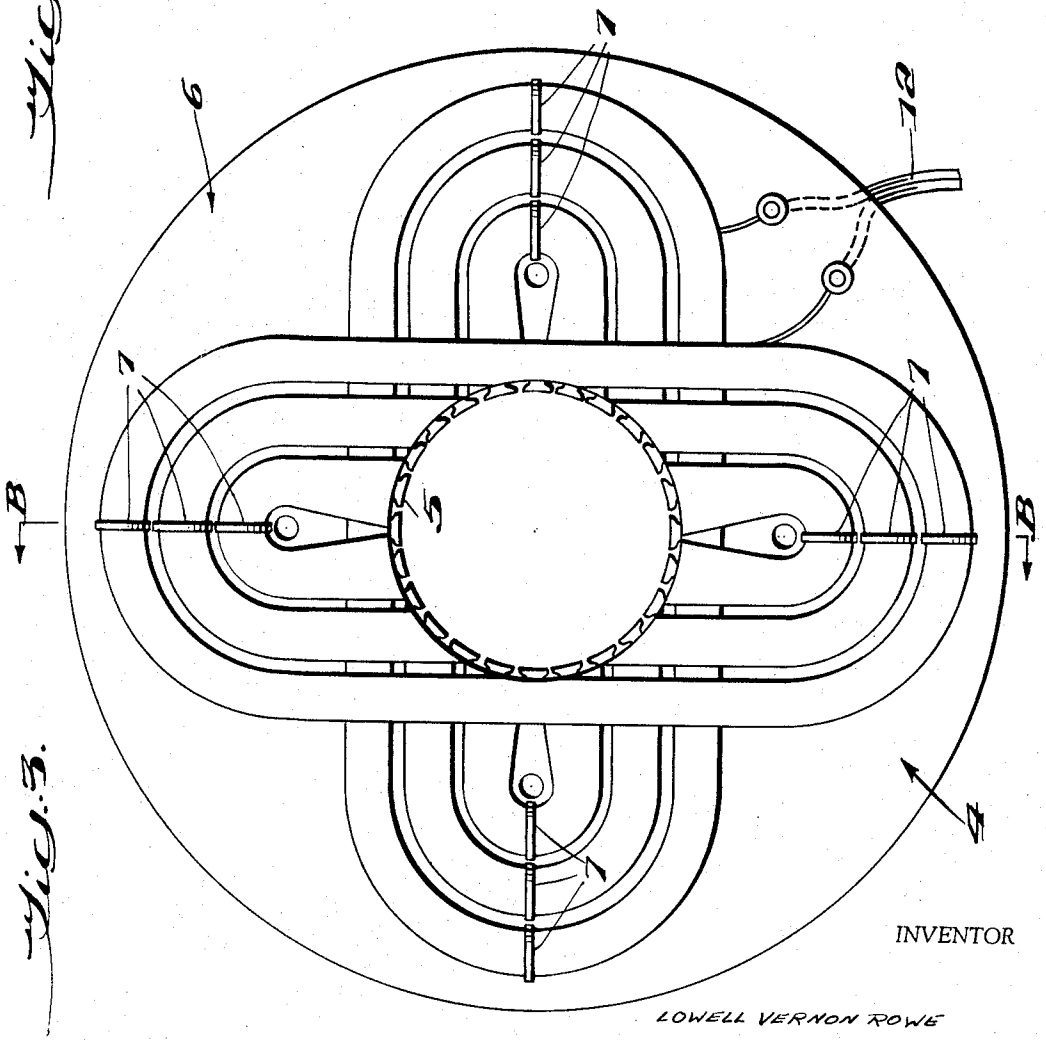


Fig. 3.

INVENTOR

LOWELL VERNON ROWE

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United States Patent Office 3,361,130
Patented Jan. 2, 1968

3,361,130

THERAPEUTIC VIBRATOR DEVICE

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Filed July 15, 1965, Ser. No. 472,103
3 Claims. (Cl. 128—36)

The invention relates to an improved kinesitherapy and vibrator device comprising a casing and motor structure adapted to be held in the hand or inserted between the mattress and springs of a bed to impart vibratory movements directly or indircetly to parts of the human body.

Heretofore, massage machine motors have been proposed for imparting massage action to a person's body through the rotation of an eccentric device at one end of a motor. Such devices are shown, for example, in U.S. Patent No. 2,181,282 issued to John Oster, Nov. 28, 1939, and in U.S. Patent No. 2,707,949, issued to Stephen Sadlon, May 10, 1955. These devices employed heretofore have required use of at least two bearings in the motor and have not been entirely satisfactory.

Moreover, due to the relatively large motor structure, such devices have not been entirely suitable for insertion in, for example, beds. Vibrators employed in beds, exercise tables or the like have usually been permanently built into the mattress or other structure as illustrated in U.S. Patent No. 2,448,162, issued to William L. Wettlanfer, Aug. 31, 1948.

It is an object of the invention to provide a vibrator which can be moved by hand over a person's body and which can also be inserted in other means such as a mattress and springs of a bed and easily removed therefrom.

Another object of the invention is to provide a vibrator having improved motor structure which is simple and highly effective in addition to eliminating the need for multiple motor bearings.

The shape of the vibrator is of prime importance being extremely thin and shaped like a discus.

The vibrator of the invention may accordingly be employed to apply vibratory motion either directly or indirectly to a person's body. The vibrator may be incorporated in other apparatus, devices, or means to impart the vibratory action therethrough. Examples of such other means are pillows, chairs or beds. The vibrator is particularly adapted through its thin design, enabled by the structure of the motor, to be used in relatively inaccessible areas. The vibrator may impose a vibratory motion to the bed or other structure and accordingly to various parts of a person lying on the bed or structure.

The motion caused by the vibrator of the invention is not merely a straight line motion, but more a circular motion which enables a general circular massaging or vibrating action to various regions of the body.

The objects and function of the apparatus of the invention will be apparent from the following description with reference to the accompanying drawings wherein:

FIGURE 1 is a partial cross-sectional view of the vibrator of the invention;

FIGURE 2 is a partial sectional view at A—A of FIGURE 1;

FIGURE 3 is a partial cross-sectional view of the vibrator of the invention illustrating suitable four pole winding;

FIGURE 4 is a partial section at B—B of FIGURE 3;

FIGURE 5 is a top view of the assembled vibrator of the invention;

FIGURE 6 is a side view of the vibrator of FIGURE 5.

While the motor illustrated in the drawings is of the

so-called shaded pole type having four poles, it will be appreciated that the motor may be of the two pole or multiple pole type. The motor may be a synchronous induction type having squirrel cage winding or it may be of the synchronous hysteresis type, both of which types are known. The field may be either solid or wound and the armature may also be either solid or wound. If brushes are employed, these may be either contact type or rotary type. The motor while preferably adapted to run on ordinary 120 volt A.C. current may be adapted for 6–12 volt D.C. current through known means.

As illustrated in FIGURES 1 and 2, the vibrator comprises a central stationary shaft **1**. This shaft does not rotate as in ordinary vibrator motors employed heretofore. Rather a suitable single bearing **2**, shown as a roller bearing, is rotatably mounted on the shaft **1**. The rotor or armature **3** mounted on the bearing **2** rotates about the shaft **1**.

An essential feature of the invention is that the rotor or armature **3** is unbalanced. This may be provided by mounting a weight on one side or portion of the armature. It may also be provided by producing the winding of the armature, or solid portion of the armature if such type is employed, in an unbalanced manner.

Vibration motion, when the unbalanced armature rotates about shaft **1**, is carried through the shaft **1** to the entire device and particularly to the discus shaped casing or outer housing **4**. The single bearing unbalanced rotor feature of the apparatus enables the axial length of shaft **1** to be very small.

The rotor or armature **3** rotates within commutator ring **5**. While the commutator illustrated is of the split type, it will be appreciated that a solid type is suitable. The winding as illustrated comprises the so-called shaded winding **6** and the main winding **7**. These windings are supported on shafts **8**, **9**, **10** and **11** which also are mounted to and support the outer houisng or casing **4**. Other suitable supporting framework may be employed within the casing.

Suitable current is supplied through conductor **12** which may be provided with a plug not shown to be inserted in an appropriate electrical inlet. The motor may be controlled through a suitable switch or control means not shown either mounted between the motor and the electrical inlet or on the motor housing. The switch or control means is preferably of the variable type whereby the speed of the motor may be regulated in order to provide the desired amount of vibration.

The vibrator of the invention is especially adapted for use in hotels or motels wherein the device may be removably held in a suitable bracket mounted on the wall for example. When desired, the device may be removed from the wall, slipped between the mattress and springs of a bed and used for stimulating blood flow, causing faster relaxation and sleep.

Based on the use of the vibrator, the diameter of the casing and accordingly the entire assembly may be substantially larger than illustrated. For example, while the outer diameter of the vibrator is preferably about eight times the axial length of the central stationary shaft, this outer diameter may be nine, ten, eleven or more times said axial length.

I claim:

1. In a vibrator motor assembly the combination comprising a discus shaped outer casing, a single stationary central shaft passing axially within the casing and supporting the casing, a single bearing rotatably mounted on the shaft, a rotor mounted on the bearing and adapted

to rotate with the bearing annularly about the shaft, said rotor comprising an unbalanced armature adapted to cause vibration of the entire assembly, a commutator positioned a small distance from and annularly about the rotor, and a stationary stator body having shaded and main windings positioned around and connected to the commutator.

2. A vibrator motor assembly as in claim 1 wherein the unbalanced armature has a weight on one side thereof.

3. A vibrator motor assembly as in claim 1 wherein the outer diameter of the casing is about eight times the axial length of the stationary central shaft.

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L. W. TRAPP, *Primary Examiner.*