Jan. 9, 1940. F. LINDBERG 2,186,114

MASSAGING DEVICE

Filed March 14, 1938

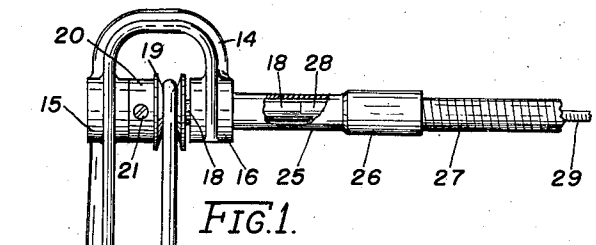
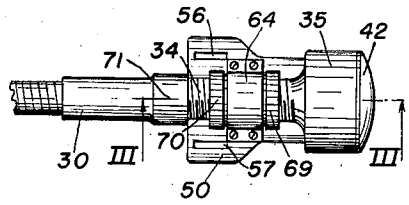
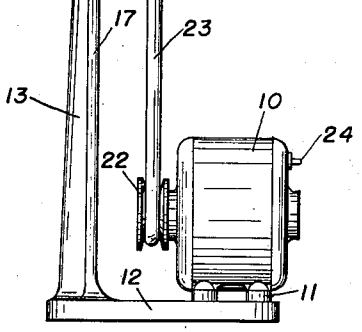


FIG. 1.





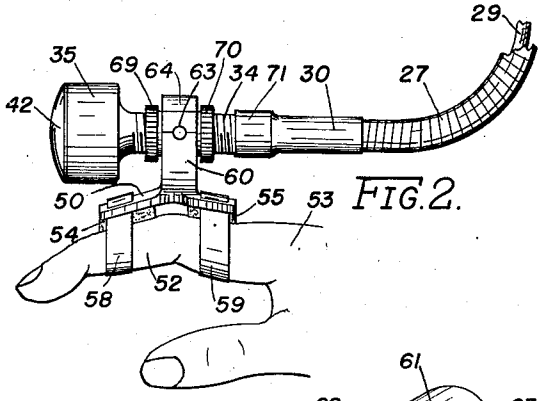


FIG. 2.

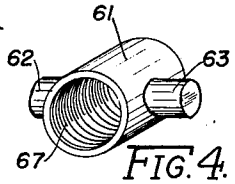


FIG. 4.

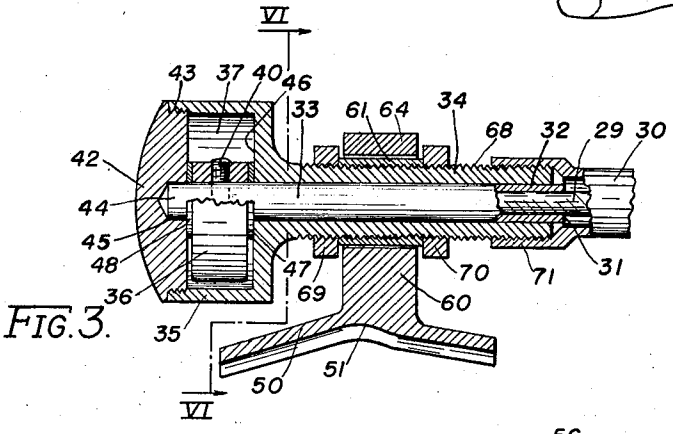


FIG. 3.

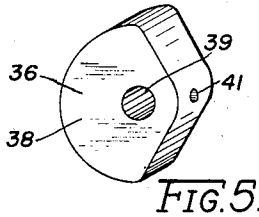


FIG. 5.

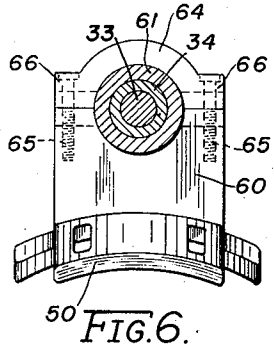


FIG. 6.

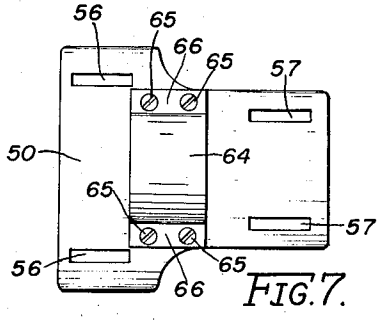


FIG. 7.

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MASSAGING DEVICE

Folke Lindberg, Chicago, Ill.

Application March 14, 1938, Serial No. 195,757

5 Claims. (Cl. 128—41)

This invention relates to vibrators and devices for massage purposes and more particularly to a portable hand massaging device, although certain features thereof may be employed with equal advantage for other purposes.

It contemplates more especially the provision of improved means for adjusting the degree of vibration to be imparted through the hand of an attendant to any part of the human anatomy by direct contact with the patient.

Numerous types of massage devices have heretofore been proposed for attachment to the hand and serving as a medium of imparting vibration to the body of the patient. It is desirable that the degree of vibration may be varied within a wide range depending upon the wishes and requirements of the patient as well as the part of the human anatomy that is intended for massaging. The adjusting or control means for portable hand vibrators must not be too intricate or encumber the device owing to the fact that such must be portable for convenient application to any part of the human anatomy. To this end, it is proposed to provide a portable hand vibrating device having improved adjusting means to control the degree of vibration to be imparted through the hand of the attendant for personal treatment to the patient.

One object of the present invention is to simplify the construction and improve the operation of devices of the character mentioned.

Another object is to provide improved control means to govern the degree of vibration of a portable vibrating device that is applied to the hand as a conveying member for the mechanically produced vibration.

Still another object is to provide improved portable hand attaching means in conjunction with a mechanical portable vibrator to convey the vibrations as well as serve as a vibration adjusting expedient therefor.

A further object is to provide an eccentrically mounted member with driving means therefor together with a hand mount that is adjustable relative thereto to afford varying the degree of vibration.

A still further object is to provide a simple, adjustable, and inexpensive portable vibrator for application to the hand through a support that has an adjustable connection therewith to vary the degree of vibration.

Still a further object is to provide a shaft housing having an eccentrically mounted member driven by a shaft journalled therein together with hand mounting means adjustable along the shaft housing to vary the degree of vibration produced therefrom.

Other objects and advantages will appear from the following description of an illustrative embodiment of the present invention.

In the drawing:

Figure 1 is a view in elevation of a portable hand vibrating mechanism connected through a flexible shaft to a power source, part of the flexible shaft being broken away to clarify the showing.

Figure 2 is a fragmentary view in elevation of a vibrating head and its hand attachment showing the manner of directing the vibrations to the hand for application to the body of the patient.

Figure 3 is a fragmentary sectional view in elevation taken substantially along line III—III of Figure 1.

Figure 4 is a perspective view of a shaft housing bearing which connects with the hand bracket.

Figure 5 is a perspective view of a segmental member that is eccentrically mounted to a shaft rotating at a high speed to create the desired vibration.

Figure 6 is a sectional view taken substantially alone line VI—VI of Figure 3.

Figure 7 is a plan view of the hand attaching bracket shown in the preceding figures.

The structure selected for illustration comprises a source of power such as an electric motor 10 which has base lugs 11 serving as an attaching expedient therefor and mounted on a substantially flat base member 12 serving to support the motor 10 on any suitable surface such as a floor. The base 12 has an upstanding standard 13 terminating in a substantially inverted U-shaped yoke 14 provided with horizontally aligned bearings 15 and 16, the latter being the free terminus of the yoke 14 and is axially aligned with the bearing 15 constituting the terminus of the upstanding standard 13. As shown, the standard 13 together with its yoke 14 is preferably provided with lateral ribs 17 that serve to rigid the structure and render such capable of sustaining an appreciable load.

The rigid shaft 18 is journalled in the bearings 15 and 16 to carry a pulley 19 having an enlarged hub 20 through which a set screw 21 extends to engage the shaft 18. The pulley 19 is aligned with a pulley 22 mounted on the armature shaft of the motor 10 to receive an endless belt 23 thereover. The belt 23 is in frictional engagement with the periphery of the aligned pulleys 19 and 22 so as to impart rotation to the shaft

18, responsive to the operation of the motor 10 provided with a suitable control switch 24. The motor 10 may be rendered adjustable relative to the base lugs 11 so as to vary the tension in the endless belt 23 should occasion arise therefor over an extended period of time.

As shown, the rigid shaft 11 extends through the bearing 16 for confinement in a tubular rigid sleeve 25 that terminates in an enlarged tubular portion 26 serving to receive the exterior flexible tubular cable 27. The shaft 18 within the tubular sleeve 25 terminates in a tubular extension 28 that receives the extremity of a flexible shaft 29 disposed within the tubular flexible cable 27. The extremity of the tubular shaft 29 is rigidly connected to the tubular portion 28 of the rigid shaft 18 so that rotation of the motor 10 will impart corresponding rotation to the flexible shaft 29 confined in the cable 27 that may be of any desired length depending upon the dictates of commercial practice for connection to a vibrating mechanism which will be presently described.

The other extremity of the flexible shaft 27 terminates in a tubular sleeve 30 which is similar in construction and purpose to the sleeve 25 described supra. The cable 27 is mounted in the tubular sleeve 30 for fixed attachment thereto while the flexible shaft 29 is journalled in an elongated bearing 31 that is pressed into the interior of the sleeve 30 (Figure 3), the flexible shaft 29 extending therethrough for attachment within the tubular extremity 32 of the rigid stub shaft 33. The rigid stub shaft 33 is journalled in an elongated cylindrical housing 34 that terminates in an enlarged chambered casing body member or casing 35. The casing 35 is circular in configuration to receive a segmental weight 36 conforming in general configuration with the chambered interior 37 thereof. The segmental weight 36 has, in part, a circular periphery 38 conforming in curvature with the casing interior 37, and is provided with a bore 39 therethrough which normally would be the center of the weight 36 in the event it was a complete circular disc member. The weight 36, however, is cut away to provide a segmental member with the bore 39 serving as an axis of the circular periphery 38 to form an eccentric with the shaft 33 projecting through the bore 39.

A set screw 40 extends radially through the aperture 40 provided in the segmental member 36 to communicate with the normally disposed bore 39 so as to retain the segmental member 36 in fixed connection with the shaft 33 that serves to rotate the weight 36 eccentrically within the chambered interior 37 of the casing 35. A closure top member 42 threadedly engages the peripheral threaded orifice 43 of the casing 35 to enclose the chambered interior 37 thereof and to serve as a bearing member for the extremity 44 of the shaft 33, the closure 42 being provided internally with a suitable recess 45 to receive the extremity 44 of the shaft 33 and externally with a smooth uninterrupted convex end to serve as a body contacting surface to impart a vibratory movement thereto. The segmental weight or eccentric 36 is spaced from the bottom 46 of the chambered interior 37 by means of a shim plate or disc 47 and by a corresponding shim or disk 48 from the interior surface of the casing closure 42, the shims or discs 47 and 48 enveloping the shaft 33 in serving to permit the free rotation of the eccentric 36 within the casing interior 37 responsive to the corresponding rotation of the shaft 33 that is operatively connected to the source of power, in this instance, an electric motor 10.

It will be apparent that rotation of the shaft 33 through the medium of the flexible shaft 29 will impart vibratory effects to the casing 35 and its shaft 34, which is preferably transferred to a bracket plate 50. The bracket plate 50 is shaped to conform with the top contour of the fingers and knuckles as indicated at 51 so as to lie flush with and serve as a complement of the fingers 52 of the human hand 53. To this end, pads 54 and 55 of rubber or other suitable material are adhesively or otherwise associated with the contoured portion 51 of the bracket plate 50 that is provided with oppositely disposed parallel slots 56 and 57 for receiving straps 58 and 59, respectively, therethrough to envelop all of the fingers 52 of the human hand 53. In consequence thereof, the bracket plate 50 may be attached to the upper finger surfaces of the human hand 53 so as to serve as a tiltable mount for the vibrator casing 35, the bracket plate 50 being provided with an upstanding standard 60.

The upstanding standard 60 is, in this instance, formed integral with the bracket plate 50 and is suitably shaped at the upper extremity thereof to loosely receive a cylindrical bushing 61. The cylindrical bushing 61 is provided with pinions 62 and 63 that extend diametrically from the exterior thereof to serve as a rockable support therefor. The top bearing retaining plate 64 fits over and serves as a complement of the top extremity of the bracket plate standard 60 which loosely receives the bushing that is tiltable within a limited range about its pinions 62—63 disposed therebetween. The bearing retention plate 64 is secured by suitable fasteners such as threaded studs 65 projecting through apertures in the edge flanged portion 66 thereof to limit the vibratory effect imparted thereto by the rotation of the eccentric 36. Of course, the motor 10 may be of the variable speed type and have a suitable standard rheostat or speed control operatively connected therewith.

As shown, the bushing 61 is provided with interior threads 67 to engage corresponding threads 68 provided along the exterior of the elongated shaft 34 to enable the adjustment of the hand attaching bracket plate 50 relative to the eccentric weight 36 to vary the degree of vibration that will be produced or imparted to the rockably associated standard 60 in consequence of the rotation of the flexible shaft 29. Suitable lock nuts 69 and 70 threadedly engage the exterior 68 of the housing 34 so as to retain the bracket plate 50 in adjusted position against any possible accidental displacement along the housing 34. The shaft housing 34 is rigidly connected to the sleeve 30 through an enlarged peripheral portion 71 constituting an integral extension of the sleeve 30 having an inner threaded surface to securely engage the interior threads 68 of the shaft housing 34, thereby establishing a rigid connection between the sleeve 30 and the shaft housing 34 to insure operative rotation of the flexible shaft 29 therethrough for connection with the rigid stub shaft 33.

It will be apparent, therefore, that the positioning of the bracket plate 50 with its lug 60 at the extreme rearward position along the cylindrical housing 34 adjacent the sleeve extension 71 will provide maximum vibration, while the positioning thereof along the shaft housing 34 adjacent the casing 35 will provide for minimum vibration with an intermediate vibratory

effect being procured between these two limits. This adjustment can be effected by merely loosening the lock nuts 69—70 and threading the bracket plate with its lug 60 relative to the shaft housing 34. With the lug 60 in its adjusted position along the shaft housing 34, the lock nuts 69—70 are again tightened to preclude accidental displacement. It will be apparent, therefore, that a very simple, inexpensive, and effective hand vibrator has been provided that can be readily adjusted within wide limits and affords the desired massaging treatment by application of the attendant's hand on any part of the anatomy of the human being.

Various changes may be made in the embodiment of the invention herein specifically described without departing from or sacrificing any of the advantages of the invention or any features thereof, and nothing herein shall be construed as limitations upon the invention, its concept or structural embodiment as to the whole or any part thereof except as defined in the appended claims.

I claim:

1. In a device of the character described, the combination with a casing, of a shaft extending into said casing, a member eccentrically mounted on said shaft in said casing, a shaft housing extending from said casing to receive a driving member for connection to said casing shaft, a hand bracket mount associated with said shaft housing for manipulating said casing, a hand massaging gripping member rockably connected to said bracket mount transversely of said shaft axis for free longitudinal rockable movement in the plane thereof, and means for adjusting said bracket mount longitudinally along said shaft housing relative to said casing and independent of said rockable connection between said gripping member and said hand bracket mount to vary the vibratory effect produced at said mount by rotating said eccentric member.

2. In a device of the character described, the combination with a casing, of a shaft extending into said casing, a member eccentrically mounted on said shaft in said casing, an externally threaded shaft housing extending from said casing, a hand bracket mount threadedly associated with said shaft housing for manipulating said casing, a hand massaging gripping member rockably associated with said mount, and locking means for said hand bracket mount effective after adjusting said mount longitudinally along said shaft housing relative to said casing to vary the vibratory effect produced at said mount by rotating said eccentric member.

3. In a device of the character described, the combination with a casing, of a shaft journalled in said casing, a weight member eccentrically mounted to said shaft in said casing, an uninterrupted convex end closure plate for said casing to serve as a body contacting surface to impart a vibratory movement thereto, said closure plate receiving the end of said shaft in said casing for journalled support therein, power means for rotating said shaft to create a vibratory effect from the rotation of said weight member, a shaft housing extending from said casing, a hand bracket mount associated with said shaft housing for manipulating said casing, a hand massaging gripping member rockably connected to said bracket mount transversely of said shaft axis for free longitudinal rockable movement in the plane thereof, and means for adjusting said hand bracket mount longitudinally along the said shaft relative to said casing and independent of said rockable connection between said gripping member and said hand bracket mount to vary the vibratory effect produced at said mount by rotating said eccentric member.

4. In a device of the character described, the combination with a casing, of a tubular shaft housing communicating with the interior of said casing, a shaft journalled in said casing for extension into said casing, a weight member eccentrically mounted on said shaft in said casing, a hand bracket plate extending from said shaft housing, a cylindrical bearing on said shaft housing, bearing means threaded to the exterior of said shaft housing for adjusting said hand bracket plate therealong to vary the vibratory effect produced at said mount by the constantly rotating weight member, and a bearing cap associated with said bracket plate for retaining said cylindrical bearing connected therewith.

5. In a device of the character described, the combination with a casing, of a tubular shaft housing communicating with the interior of said casing, a shaft journalled in said casing for extension into said casing, a weight member eccentrically mounted on said shaft in said casing, a hand bracket plate extending from said shaft housing, a cylindrical bearing on said shaft housing, bearing means threaded to the exterior of said shaft housing for adjusting said hand bracket plate therealong to vary the vibratory effect produced at said mount by the constantly rotating weight member, a bearing cap associated with said bracket plate for retaining said cylindrical bearing connected therewith, and means for locking said cylindrical bearing against adjustment along said shaft housing.

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