

Aug. 14, 1934.

H. HERTZBERG

1,970,233

MESSAGE DEVICE

Filed Sept. 2, 1933

SUBSTITUTE FOR MISSING XR

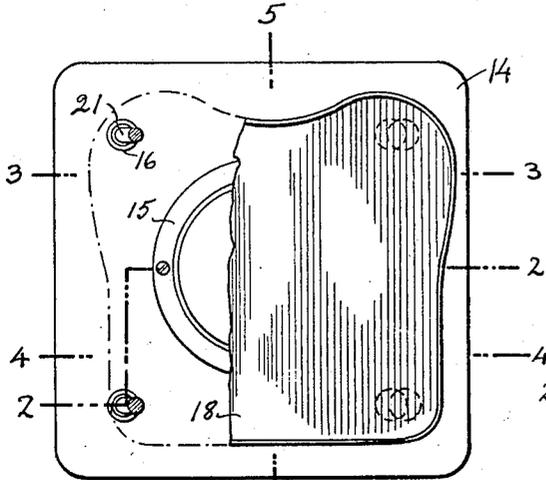


Fig. 1.

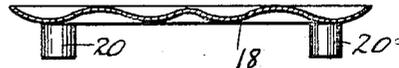


Fig. 3.

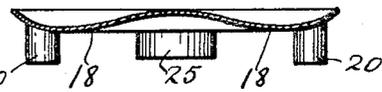


Fig. 4.

person  
stands  
on plate

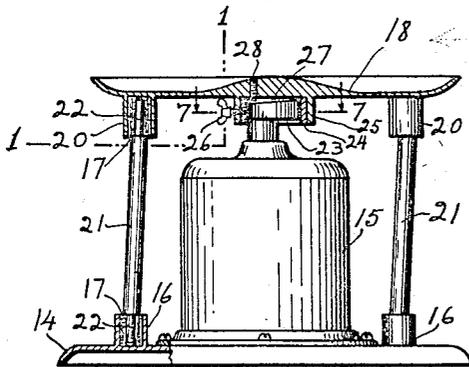


Fig. 2.

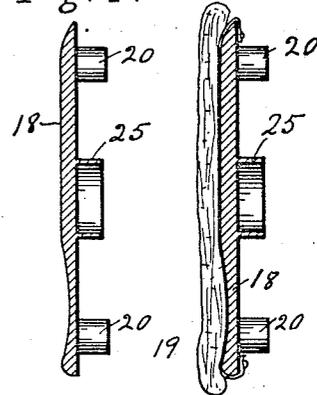


Fig. 5.

Fig. 6.

both

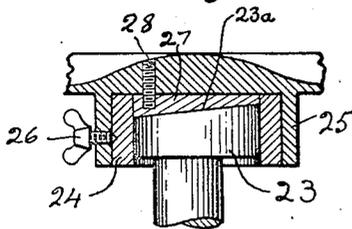


Fig. 8.

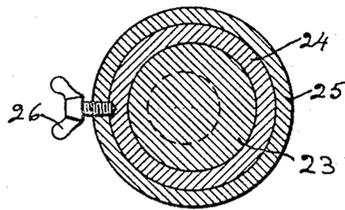


Fig. 7.

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# UNITED STATES PATENT OFFICE

1,970,233

## MESSAGE DEVICE

Harry Hertzberg, Brooklyn, N. Y.

Application September 2, 1933, Serial No. 687,933

12 Claims. (Cl. 128—33)

This invention relates to massaging devices and more particularly to that type of such devices in which a rotary movement is given to a part of the human body by mechanical means which are preferably operated by an electric motor.

It is a particular object of the present invention to produce an improved device for massaging the muscles of the feet, legs and other parts of the human body, thereby improving circulation, tending to promote health by invigorating the body and relieving it from fatigue.

It is an object of this invention to produce a device by which the circular hand movement of an expert masseur may be simulated in massaging the body and if it is desired, vibration or oscillation may be combined with this circular motion simultaneously.

Massaging devices heretofore in use have included movements of vibrations, oscillations, reciprocations, hammering, centrifugal force and flexing each applied singly but not in combination with a rotary massaging movement.

The basic principle of the present invention is a novel circular movement of a massaging plate or member of this device which alone excels all other movements in results, is more efficient requiring less space and power and has means to alter this motion into a vibrating, oscillating, or hammering motion, and also means for combining these two motions causing them to act in synchronism producing a novel movement for massaging, vibrating and exercising purposes.

The invention will be more clearly understood by reference to the following description of a preferred form thereof shown in the accompanying drawing in which:

Fig. 1 is a top plan of the massaging device, partly in section on line 1—1 of Fig. 2.

Fig. 2 is a front elevation of the massaging device partly in section on line 2—2 of Fig. 1.

Fig. 3 is a section through foot plate 18 on line 3—3 of Fig. 1.

Fig. 4 is a section through foot plate 18 on line 4—4 of Fig. 1.

Fig. 5 is a section through foot plate 18 on line 5—5 of Fig. 1.

Fig. 6 shows a detachable cushion plate attached to the massage plate 18 as shown in Fig. 5.

Fig. 7 is a detail sectional plan on line 7—7 of Fig. 2.

Fig. 8 is an enlarged sectional elevation of the eccentric cam 23 and its housing.

Referring to Fig. 2 of the drawing 14 is a preferably square bed plate on which is rigidly mounted an electric motor 15 having its rotor or arma-

ture axis mounted vertically and centrally of plate 14. This plate has on its top face four vertical tubular sockets 16, one near each corner of said plate 14. In each socket is mounted a bushing 17 preferably made of soft and resilient pliable rubber. The top of the massaging device is formed by a horizontal massaging plate 18 provided with concave portions to accommodate both feet of a person simultaneously. This foot plate is shown in detail in Figs. 3, 4, and 5 and preferably covered with a removable cushion plate 19 as shown in Fig. 6. The underside of foot plate 18 has four tubular sockets 20 similar to and normally in vertical alinement with sockets 16. These sockets are also provided with bushings 17 of resilient material as rubber. Four vertical posts or rods 21 preferably with shoulders near both ends and having end portions 22 of smaller diameter, support plate 18 a spaced distance above bed plate 14, the lower end portion 22 of each post 21 is held by a bushing 17 in one of the sockets 16 on bed plate 14 and its upper end portion 22 within a bushing 17 accommodated in one of the sockets 20 on the lower face of massaging plate 18.

The rotor shaft of motor 15 carries at its upper end an eccentric disk and cam 23 which is surrounded by a tubular ring 24 preferably of vulcanized fiber or bakelite which is mounted within a tubular sleeve 25 having its axis coinciding with the center of massage plate 18. A thumb screw 26 threaded horizontally into sleeve 25 may engage ring 24 when tightened and prevent its rotation within sleeve 25. The upper face of eccentric disk 23 is inclined so that a wedge shaped space is formed within ring 24 between the lower face of plate 18 and the upper face of eccentric disk 23. This space is occupied by a circular wedge 27 which may be fastened to plate 18 by means of screw 28.

The operation of this massaging device is as follows: If it is desired to vibrate the massage plate vertically only, screw 28 is lowered into wedge piece 27 fastening it to the massage plate 18, wing screw 26 is loosened to free ring 24 which is removed from sleeve 25. The eccentric disk 23 is then disengaged and may rotate freely within sleeve 25, and its slanted top surface acting as a cam against wedge piece 27 will lift plate 18 a short distance vertically during each revolution of disk 23 by motor 15. The rubber bushings 17 hold the rods 21 in vertical position and plate 18 with sleeve 25 in axial alinement with the rotor of motor 15. The bushings 17 however stretch sufficiently to follow the vertical motion pro-

duced by cam 23 and wedge piece 27, and their contraction on the return motion is assisted by the weight of a body on plate 18.

If a rotary motion of the massage plate 18 is desired, then the circular bearing ring 24 is secured to plate 18 within sleeve 25 by means of screw 26, and wedge piece 27 is released from the massage plate 18 by removing screw 28 from wedge 27. The eccentric disk 23, when rotated by the motor 15, will then produce a circular motion of the foot plate 18. The four supporting posts 21 assume a slanting position as shown in Fig. 2. The upper end of each rod will perform a circular motion around the lower end, and bushings 17 will act as universal joints to permit that circular motion. At the same time these bushings dampen the sound of the device and prevent any shock in the motion of the massaging plate.

If it is desired to rotate the massage plate 18 and to vibrate or oscillate the same simultaneously to produce a hammering effect, the device remains set as described above for rotary motion of foot plate 18, but the screw 28 must be lowered into wedge piece 27 and the latter tightened against plate 18. The action of eccentric disk 23 then causes the massage plate 18 to move very rapidly within the circular throw of said eccentric disk and its slanted cam surface 23a, acting on wedge 27, causes simultaneously a very rapid vibration perpendicular to the circular motion of plate 18. While either of these two motions separately applied produce a highly invigorating and stimulating massaging effect throughout the body of a person standing on foot plate 18, their combined application simultaneously applied is of especially valuable massaging effect.

The massage plate 18 as shown is designed for foot and body treatment while a person is standing erect thereon, but other plates are made suitable for other parts of the human body. The device is also made small and portable to fit the hand of the operator. Pads or cushions 19 of soft sponge rubber may be used on this device for application to any part of the body, the parts to be treated resting on said cushions.

It shall therefore be understood that while a preferred form of my massaging device has been described hereinabove as an example of the many ways of constructing it, that such changes may be made in the arrangement of parts and the construction of minor details thereof, as come within the scope of the invention as claimed, without departing from the spirit of the invention.

I claim:

1. In a device of the kind described, a member for supporting a part of the human body and means associated with said member and being adapted to move same in a continuous and unidirectional circular motion in a horizontal plane and to produce a vertically vibrating effect, said member describing a continuous eccentric circular movement in a horizontal plane.

2. In a device of the kind described, an exterior plate, means to automatically impart a complete and continuous eccentric circular movement to said plate about an axis perpendicular thereto and means to vibrate said plate in longitudinal direction of said axis.

3. In a device of the kind described, a base, a plate parallel thereto and spaced therefrom, said plate being formed on its upper surface with concave portions shaped to conform to the shape of a part of the human body, a motor positioned between said base and plate and having its shaft

perpendicular to said plate and means actuated by said motor to rotate the center of said plate about the axis of said motor.

4. In a device of the kind described, a base, a motor on said base, a massage plate connected to and rotated by said motor, universal joints on said base and on said plate, a plurality of supports perpendicular to said base and said massaging plate, each of said supports being connected at one end to said base and at the opposite end to said plate by means of said universal joints.

5. In a device of the kind described, a base, a massaging plate spaced from said base, a sleeve on said plate, a shaft perpendicular to said plate, an eccentric disk mounted on said shaft within said sleeve and adapted to impart circular motion to said plate, inclined faces on said plate and on said eccentric disk within said sleeve and cooperating with each other forming means to move said plate perpendicularly to its rotary motion when said shaft is rotated.

6. In a device of the kind described, a base, a plate, flexible supports holding said plate spaced from said base, a sleeve on the bottom face of said plate, a bearing ring within said sleeve, an eccentric disk within said ring adapted to rotate said plate and said supports and means on said sleeve for releasing said ring therefrom.

7. In a device of the kind described, a base, a plate, flexible supports holding said plate spaced from said base, a sleeve on the bottom face of said plate, an inclined surface on said plate within said sleeve, a rotatable disk having a cam surface on one of its faces cooperating with said inclined surface to vibrate said plate.

8. In a device of the kind described, a base, a plate, flexible supports holding said plate spaced from said base, a sleeve on the bottom face of said plate, a disk normally fixed to said plate and having an inclined bottom face and a rotatable disk having an inclined top face within said sleeve, said inclined faces cooperating with each other to lift said plate by the operation of said rotatable disk and means to release said normally fixed disk to stop said vibration.

9. In a device of the kind described, a base, a plate, a plurality of tubular sockets arranged in pairs on said base and on said plate in axial alignment with each other, tubular bushings of resilient material in each socket, a plurality of bars, each bar having one of its end portions in an aperture of a bushing on said base and its opposite end portion in an aperture of a bushing on said plate and means for rotating said plate and the sockets thereon about the axes of the sockets on said base.

10. In a device of the kind described, a base, a plate, a plurality of tubular sockets arranged in pairs on said base and on said plate in axial alignment with each other, tubular bushings of resilient material in each socket, a plurality of bars, each bar having one of its end portions in an aperture of a bushing on said base and its opposite end portion in an aperture of a bushing on said plate and means for vibrating said plate in a direction perpendicular to its plane.

11. In a device of the kind described, a base, a plate, a plurality of tubular sockets arranged in pairs on said base and on said plate in axial alignment with each other, tubular bushings of resilient material in each socket, a plurality of bars, each bar having one of its end portions in an aperture of a bushing on said base and its opposite end portion in an aperture of a bushing on said plate and means for selectively rotating

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said plate and the sockets thereon about the axis of the sockets on said base or for vibrating said plate in a direction perpendicular to its plane.

thereto, a motor on said base and means including a camming device adapted to be actuated by said motor to rotate said plate in a plane parallel to said base and to reciprocate said plate simultaneously in a direction perpendicular to its rotary motion.

5 12. In a device of the kind described, a base, a plate, a plurality of flexible spaced supports holding said plate spaced from the base parallel

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