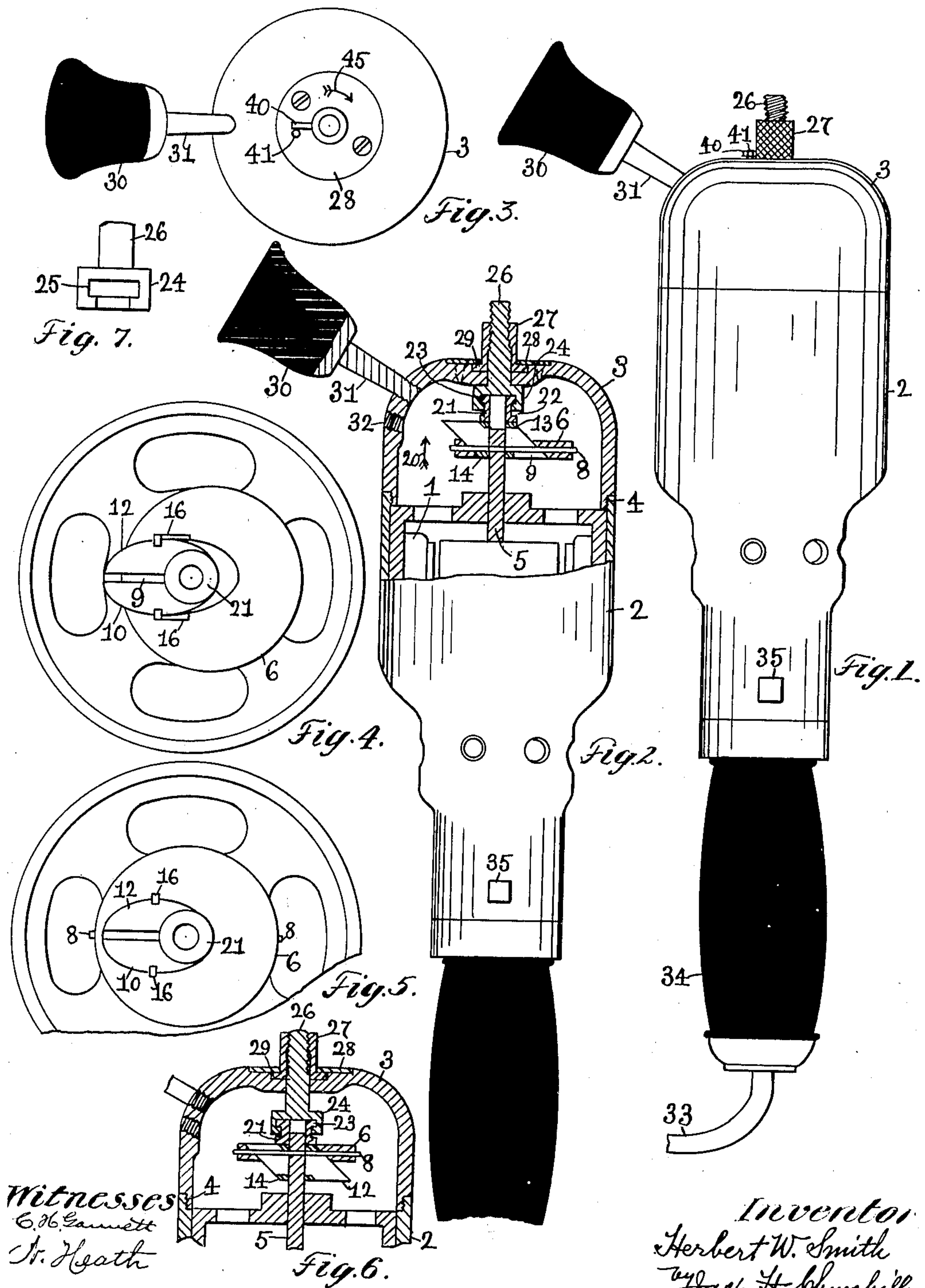


No. 876,103.

PATENTED JAN. 7, 1908.

H. W. SMITH.  
 MASSAGE APPARATUS.  
 APPLICATION FILED APR. 23, 1906.



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# UNITED STATES PATENT OFFICE.

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## MESSAGE APPARATUS.

No. 876,103.

Specification of Letters Patent.

Patented Jan. 7, 1908.

Application filed April 23, 1906. Serial No. 313,187.

*To all whom it may concern:*

Be it known that I, HERBERT W. SMITH, a citizen of the United States, residing in Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Massage Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to massage apparatus of that class in which an eccentric mounted on the shaft of a motor, is moved or adjusted thereon to produce the desired or required vibration. The present invention has for its object to provide a self-contained apparatus in which the rotating parts are located within an inclosing casing, and the danger of accidents to the patient thereby reduced to a minimum.

Provision is also made for adjusting the eccentric from outside the inclosing casing, while the apparatus is in operation.

These and other features of this invention will be pointed out in the claims at the end of this specification.

Figure 1 is an elevation of an apparatus embodying this invention. Fig. 2 is a partial section and elevation of the apparatus shown in Fig. 1. Fig. 3, a plan view of the apparatus shown in Fig. 1. Figs. 4 and 5, details in plan on an enlarged scale, to be referred to. Figs. 6 and 7, details to be referred to.

Referring to the drawings 1 represents an electric motor secured within an inclosing case comprising two parts 2, 3, detachably secured together as by screw-threads 4. The electric motor 1 is provided with an armature shaft 5, upon which is mounted a circular disk or weight 6, which is capable of being moved from a position concentric with the armature shaft as shown in Fig. 5 into one more or less eccentric thereto, as shown in Fig. 4.

In the present instance, the disk or weight 6 is secured to the shaft 5 by a pin or rod 8, extended loosely through said shaft and through a slot 9 formed in a device for effecting movement of the disk transversely of the armature shaft by movement of the device longitudinally of said shaft. The device referred to consists as herein shown of

two parts or members 10, 12 separated by the slot 9 yet tied together at their upper and lower ends by the tie bars 13, 14, which latter coöperate with the rod 8 to limit the movement of the actuating device longitudinally of the shaft 5. The actuating device may be designated a sliding cam and is provided with inclined ribs 16, which move in inclined guideways in the walls of an opening in the disk 6, which opening is inclined with relation to the armature shaft and extends beyond the opposite sides thereof as clearly shown in Figs. 2 and 6. The ribs 16 connect the sliding cam to the eccentric disk, so that the cam rotates with the disk and the armature shaft.

By moving the sliding cam longitudinally of the armature shaft 5 in one direction indicated by the arrow 20, the disk 6 may be moved into various positions eccentric with relation to said shaft, and by moving said cam in the opposite direction, the disk may be moved into a position concentric with said shaft.

Provision is made for accomplishing this adjustment or movement of the eccentric from outside the inclosing casing, and in the present instance, I have shown one form of means for accomplishing this result. For this purpose, the sliding cam has attached to or forming part of it a cylindrical extension or sleeve 21, arranged in line with the armature shaft and provided with an annular groove 22 forming an annular collar or flange 23, which is adapted to be engaged by a substantially semi-circular coupling member 24, (see Fig. 7) which has a substantially semi-circular groove 25 into which the annular collar 23 is adapted to enter. The coupling member 24 is attached to or forms part of a stem or rod 26, which is extended through the upper part 3 of the inclosing casing and is provided with screw-threads which are engaged by a nut 27 located outside of said casing. The nut 27 is secured to the casing in such manner as to permit it to turn freely, and this may be accomplished as shown in Figs. 2 and 6, by means of a plate or disk 28 through which the nut is extended and which overlaps a flange 29 on the lower end of said nut.

By reference to Figs. 2 and 6, it will be seen, that rotation of the nut 27 produces



longitudinal movement of the rod 26 and the slide cam coupled to it, while at the same time the slide cam is free to rotate with the eccentric disk 6, owing to the fact that the coupling member or cylindrical extension 21 is free to turn in the substantially semi-circular groove 25. In this manner, the slide cam can be moved longitudinally of the armature shaft and thereby move the disk 6 from a position concentric with the armature shaft shown in Fig. 5 into a position eccentric with relation thereto as shown in Fig. 4 and vice versa, while the armature shaft is in motion, thereby enabling the vibration imparted to the inclosing casing and a device 30 which is brought into contact with the person treated, to be increased or diminished as desired, while the instrument or apparatus is in operation.

The device 30 is represented as a cup of rubber attached to a stem 31, which is provided with screw-threads to engage one of a series of threaded holes or sockets 32 in the inclosing casing.

The electric motor may be supplied with current by means of wires 33 led through an insulated handle 34 secured to the casing or shell, and said motor may be controlled by a suitable switch or circuit controller located in the casing and not herein shown, as such controller may be of any suitable construction such as now found on the market, but preferably of that class which is closed by pressing on a button 35 (see Fig. 1) to close the motor circuit, and again pressing on said button to open the circuit. Access to the interior of the shell or casing for purpose of repairs may be had by removing the top 3 of the casing and tipping or moving laterally the coupling member 24 so as to disengage it from the coupling member 21. Provision is also made for indicating on the outside of the casing the position of the eccentric disk or weight, which may be accomplished by providing the nut 27 with a lug or pointer 40, which coöperates with a stud 41 on the plate 28, as represented in Fig. 3, wherein the pointer is shown in the position it occupies when the disk or weight is in its concentric position.

By rotating the nut 27 in the direction indicated by the arrow 45, the pointer is brought into engagement with the opposite side of the stud 41, at which time the disk or weight is in its extreme eccentric position indicated in Figs. 2 and 4. The position of the eccentric disk intermediate the two positions mentioned is indicated by the position of the pointer at a point intermediate the extreme positions mentioned.

It will be observed that the parts of the instrument which are in motion are located within the casing or shell and consequently danger of injuring the patient as by rotat-

ing parts being caught in the hair is avoided. It will also be observed that the eccentric disk or weight can be adjusted while the instrument is in operation.

I have herein shown one form of motor which I may prefer, but I do not desire to limit my invention in this respect.

#### Claims.

1. In an apparatus of the class described, in combination, an inclosing casing, a massaging device attached thereto, an electric motor located in said case, a disk or weight mounted on the armature shaft of said motor to be supported thereby and to move transversely thereof, a cam in sliding engagement with said disk to move said disk into a position eccentric with relation to said shaft, a coupling member attached to said cam, a second coupling member having a screw-threaded rod extended through said inclosing casing, a nut engaging said threaded rod on the outside of said casing, and means to secure said nut from movement longitudinally while permitting it to rotate, substantially as described.

2. In an apparatus of the class described, in combination, an inclosing casing, a massaging device attached thereto, a rotatable shaft located in said casing, a motor to rotate said shaft also located in said casing, a disk or weight, a support for said disk or weight carried by and extended transversely of said shaft, and upon which said disk or weight is capable of being moved transversely of said shaft, a cam in sliding engagement with said disk and through which said support is extended, and means located outside of said casing and connected with said cam for effecting movement of said disk or weight transversely of its shaft while said shaft is in rotation, substantially as described.

3. In an apparatus of the class described, in combination, an inclosing casing, a rotatable shaft located therein, means to rotate said shaft, a disk or weight mounted on said shaft, a support for said disk or weight carried by said shaft and upon which said disk or weight is movable transversely, and means located outside of said casing for effecting movement of said disk or weight on its support, substantially as described.

4. In an apparatus of the class described, in combination, an inclosing casing, a rotatable shaft within said casing, a device supported by said shaft to rotate therewith and to permit radial movement with relation thereto, and means exterior to said casing and operatively connected with said device within the casing to effect radial movement of said device, substantially as described.

5. In an apparatus of the class described, in combination, an inclosing casing, a rotatable shaft within said casing, a weight mount-



ed on said shaft, a support for said weight  
carried by said shaft and extended trans-  
versely thereof and upon which said weight  
is capable of moving radially with relation to  
5 said shaft, and means to effect movement of  
said weight on its support, substantially as  
described.

In testimony whereof, I have signed my  
name to this specification in the presence of  
two subscribing witnesses.

HERBERT W. SMITH.

Witnesses:

JAS. H. CHURCHILL,  
J. MURPHY.