EYE-MASSAGE MACHINE.

SPECIFICATION forming part of Letters Patent No. 793,004, dated June 20, 1905.

To all whom it may concern:

Be it known that I, FRANK HOWARD MAY, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented a new and useful Improvement in Eye-Massage Machines, of which the following is a specification.

My invention is in the nature of an eye-massage machine in which mechanical vibrations are imparted to the eye through an electrically-operated vibrator and which is so constructed as to permit the direct application of either primary or Faraday currents to the eye.

The device is intended to relieve occasional troubles of the eye and eyelid and for muscular and nervous weariness; and it consists in the novel construction and arrangement of the device, as will be hereinafter fully described with reference to the drawings, in which—

Figure 1 is a face view of the instrument looking in the eye-socket. Fig. 2 is a longitudinal section through the instrument. Fig. 3 is an end view of the left-hand end in Figs. 1 and 2, and Fig. 4 is a detail showing the detached and separated parts of the eye-socket.

In the drawings, 1 is the case of metal or hard rubber, which at one end is reduced in size into a neck and turned to one side and fashioned into an eye-socket or receiver.

8 is an electromagnet whose poles are arranged at right angles to the length of the case and which electromagnet is fixedly mounted within the case. An armature 7 is arranged to play over the poles of the electromagnet and is normally held away from the same by a coil-spring 18. A spring 20 on the armature makes contact with an adjustable screw 14 when the armature is not attracted by the electromagnet, as shown.

23 and 9 10 are four insulated circuit-wires which are incorporated in a cable 4 and enter the case through a non-conducting bushing 11. Two of these wires 9 and 10 pass to binding-screws on a plate holding the electromagnet. The wire 9 is connected, as shown in dotted lines, with the stationary screw 14, and the other wire 10 is connected with one terminal of the helix of the electromagnet, the other terminal being connected to the armature-spring 20. When an electric current through wires 9 and 10 traverses the coils of the electromagnet 8, the armature 7 is attracted and the circuit is broken between spring 20 and screw 14. When the circuit is broken, spring 13 lifts the armature and puts spring 20 into contact with screw 14, again closing the circuit. This being rapidly repeated causes the armature to vibrate continuously, the rapidity of the vibrations being controlled by the adjustment of screw 14.

The eye-socket 21 of the case is in the nature of an oval rim having an oval groove, in which groove (see Fig. 4) is held the thickened edge of a soft-rubber diaphragm 5. This thickened edge of the diaphragm is held in the groove by two curved and oppositely-placed metal electrodes 2 and 3, which are held in by screws 19. These electrodes are perfectly insulated from each other and connect, respectively, with the two circuit-wires 2 and 3. At the middle of the flexible diaphragm and cemented or otherwise attached to it on the rear side within the case there is a nipple or stem 17, which is connected to the armature 7 by means of a helical spring 8 and a bent rod 15, so that when the armature is in rapid vibration the impulses are transmitted to the diaphragm 5, being suitably softened or modified by transmission through the spring 6.

In making use of the machine the oval socket 21 is placed over the eyeball and gently pressed thereagainst, and when the vibrator is started the gentle vibrations imparted through the diaphragm 5 give to the eye a massage treatment that constitutes a very strengthening and curative agency in certain diseases of the eye and its eyelids. If it is desired to transmit a Faraday or a primary current through the eye, such current is transmitted by suitable switches through the wires 2 and 3 to the electrodes 2 and 3 and thence through the eye.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An eye-massage machine consisting of an eyeball-receiver having a flexible diaphragm and means for vibrating the diaphragm.
2. An eye-massage machine comprising an electromagnetic vibrator, a flexible diaphragm, a marginal frame for the diaphragm, and means for connecting the diaphragm to the vibrator substantially as described.

3. An eye-massage machine comprising an electromagnetic vibrator, a flexible diaphragm, a marginal frame for the diaphragm, means for connecting the diaphragm to the vibrator and insulated electrodes arranged upon opposite sides of the diaphragm substantially as described.

4. An eye-massage machine comprising an electromagnetic vibrator, a flexible diaphragm, a marginal frame for the diaphragm, means for connecting the diaphragm to the vibrator, and oppositely-placed electrodes arranged to secure the diaphragm to its marginal frame substantially as shown and described.

5. An eye-massage machine comprising a flexible diaphragm for the eye, an electromagnetic vibrator, and a cushioning-spring connecting the vibrator to the diaphragm to soften the blow of the impulses substantially as described.

6. An eye-massage machine comprising a hollow case having at one end a laterally-extended neck with a marginal oval frame, a flexible diaphragm held on said frame and a vibrator arranged within the case and connected to the diaphragm.

7. An eye-massage machine comprising a hollow case having at one end a laterally-extended neck with a marginal oval frame, a flexible diaphragm held in said frame, an electromagnetic vibrator and means for connecting the vibrator to the diaphragm substantially as described.

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Witnesses:
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