No. 856,378.

PATENTED JUNE 11, 1907.

E. P. WARD & A. H. HERRON.

MECHANICAL VIBRATOR.

APPLICATION FILED APR. 16, 1906.

FIG. 1.

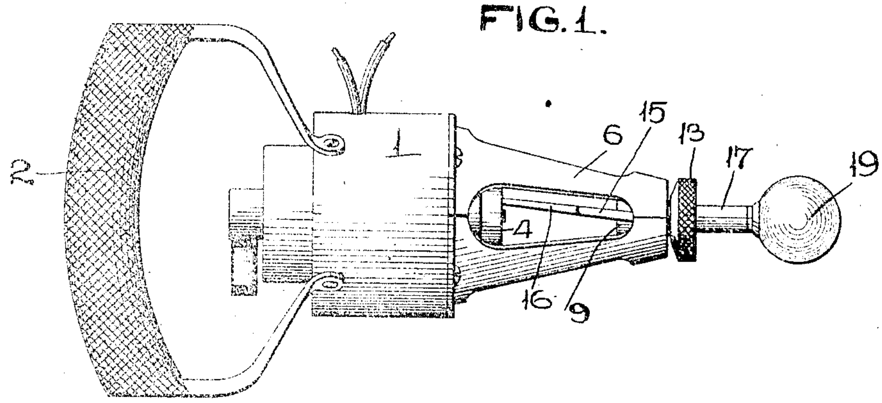


FIG. 2.

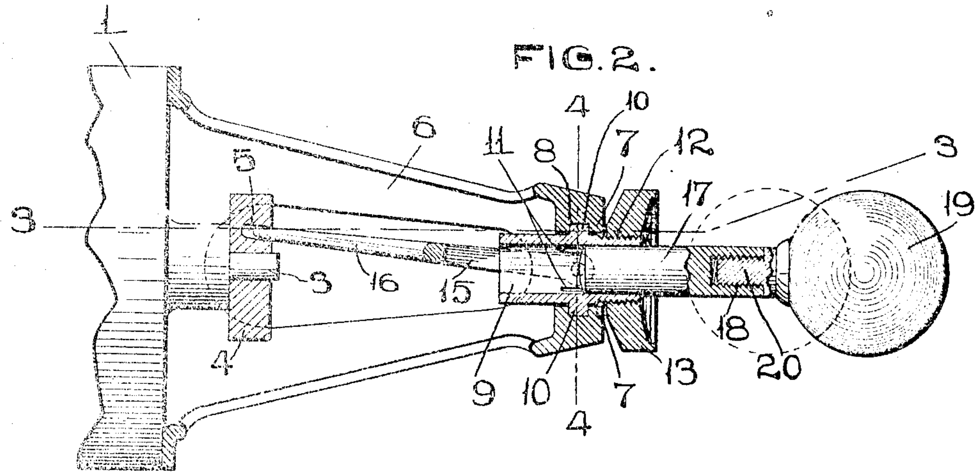


FIG. 3.

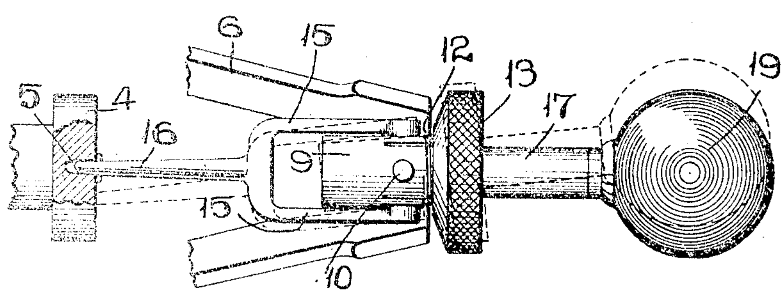
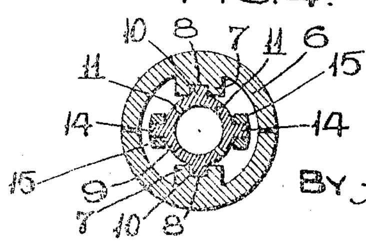


FIG. 4.



ATTEST.

H. G. Pfletschus.

W. P. Lewis.

INVENTORS
EDGAR P. WARD.
AL H. HERRON.

BY Higdon & Longan
ATTY'S.

UNITED STATES PATENT OFFICE.

EDGAR P. WARD AND AL H. HERRON, OF ST. LOUIS, MISSOURI.

MECHANICAL VIBRATOR.

No. 856,378. Specification of Letters Patent. Patented June 11, 1907.

Application filed April 16, 1906. Serial No. 312,000.

To all whom it may concern:

Be it known that we, EDGAR P. WARD and AL H. HERRON, citizens of the United States, and residents of St. Louis, Missouri, have invented certain new and useful Improvements in Mechanical Vibrators, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

Our invention relates generally to a mechanical vibrator, and more particularly to an instrument for mechanically applying vibratory massage treatment to the skin and scalp.

The object of our invention is to provide a simple and inexpensive instrument for applying vibratory massage treatment, and which is easily operated by any motor producing a rotary motion, and which instrument can be easily and quickly adjusted so as to vary the stroke of the applicator which contacts directly with the skin or scalp.

To the above purposes, our invention consists of certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in our claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of an instrument of our improved construction; Fig. 2 is a vertical section taken longitudinally through the forward portion of the instrument; Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2; Fig. 4 is a cross section taken on the line 4—4 of Fig. 2.

In the construction of the instrument as shown, 1 designates a suitable housing which incloses a small electric motor, (not shown,) and secured to said housing is a suitable handle 2 by means of which the instrument is manipulated.

3 designates the motor shaft on which is fixed a disk 4, and formed in the front face thereof, slightly to one side of the motor shaft 3 is a recess 5.

6 designates a bracket which is preferably formed in two parts, and which is fixed to and extends forwardly from the motor casing 1. Formed integral with the interior of this bracket 6, at the forward end thereof, are the oppositely arranged lugs 7, in which are formed bearings 8.

9 designates a tubular socket which is located in the forward end of the bracket 6, and formed integral with the central portion of said socket are the oppositely arranged outwardly projecting trunnions 10, which operate in the bearings 8. The forward portion of this socket 9 is provided with the longitudinally extending slots 11, and the exterior of the forward end of said socket is screw threaded, as indicated by 12. Seated upon this screw threaded portion of the socket 9 is a nut 13. Formed integral with the sides of the socket 9, at the center thereof, and at right angles to the trunnions 10, are the outwardly projecting trunnions 14. Pivotally mounted on said trunnions are the forward ends 15 of a bifurcated lever 16, the rear end of which is loosely seated in the recess 5.

Arranged for longitudinal adjustment in the socket 9 is a stem 17, in the forward end of which is formed a screw threaded recess 18. An applicator head 19, preferably in the form of a small spherical body is provided with a screw threaded shank 20, which is seated in the screw threaded recess 18.

In assembling our improved tool for use, the stem 17 with the applicator 19 at the outer end thereof is inserted in the slotted forward end of the socket 9, after the nut 13 has been loosened thereon, and when said stem is properly positioned in said socket, the nut 13 is tightened to rigidly fix said stem in said socket. The handle 2 is now manually engaged, and when the motor is started, the disk 4 carried by the forward end of the motor shaft 3 will rapidly rotate, and as a result the bifurcated lever 16 is actuated, and in turn the socket 9 is oscillated upon its trunnions 10 which operate in the bearings 8, and this oscillation necessarily imparts a corresponding motion to the applicator 19.

The stroke or length of movement of the applicator 19 depends on the location of the stem 17 in the socket 9, and by loosening the nut 13, the stem can be adjusted longitudinally in the socket so as to increase or diminish the length of stroke of said applicator.

The rear end of the lever 16 operates freely in the recess 5 with very little friction, and the movement of the trunnions 10 in the bearings 8 is slight, so that very little friction results in the actuation of our improved vibrator.

Our improved apparatus is simple, inexpensive, can be operated with any motor capable of producing rotary motion, and is so constructed as to transform rotary motion into an oscillating motion. The stem carry-

ing the applicator is easily and quickly adjusted so that the stroke of the head can be varied to suit different conditions.

I claim:

1. In a mechanical vibrator, a frame, a motor arranged therein, a disk mounted on the motor shaft within the frame, there being an eccentrically arranged aperture formed in said disk, a tubular socket arranged for oscillation in the forward end of the frame, a yoke pivotally connected to the socket at right angles to the line of oscillation thereof, a stem integral with said yoke and projecting rearwardly therefrom into the recess in the disk, a stem adjustably arranged in the forward end of the socket, means arranged on the socket for locking the stem therein and an applicator carried by said stem; substantially as specified.

2. In a mechanical vibrator, a frame, a motor arranged therein, a disk fixed on the motor shaft within the frame, there being an eccentrically arranged aperture formed in the face of said disk, a tubular socket journaled for oscillation in the forward end of the frame the outer end of which socket is longitudinally slotted and exteriorly screw threaded, a yoke pivotally connected to the socket at right angles to the line of oscillation thereof, a stem integral with said yoke and projecting rearwardly therefrom into the aperture in the disk, a stem arranged in the forward end of the socket, an applicator carried by said stem, and a lock nut arranged on the screw threaded end of the socket; substantially as specified.

In testimony whereof, we have signed our names to this specification, in presence of two subscribing witnesses.

EDGAR P. WARD.
AL H. HERRON.

Witnesses:
M. P. SMITH,
E. M. HARRINGTON.