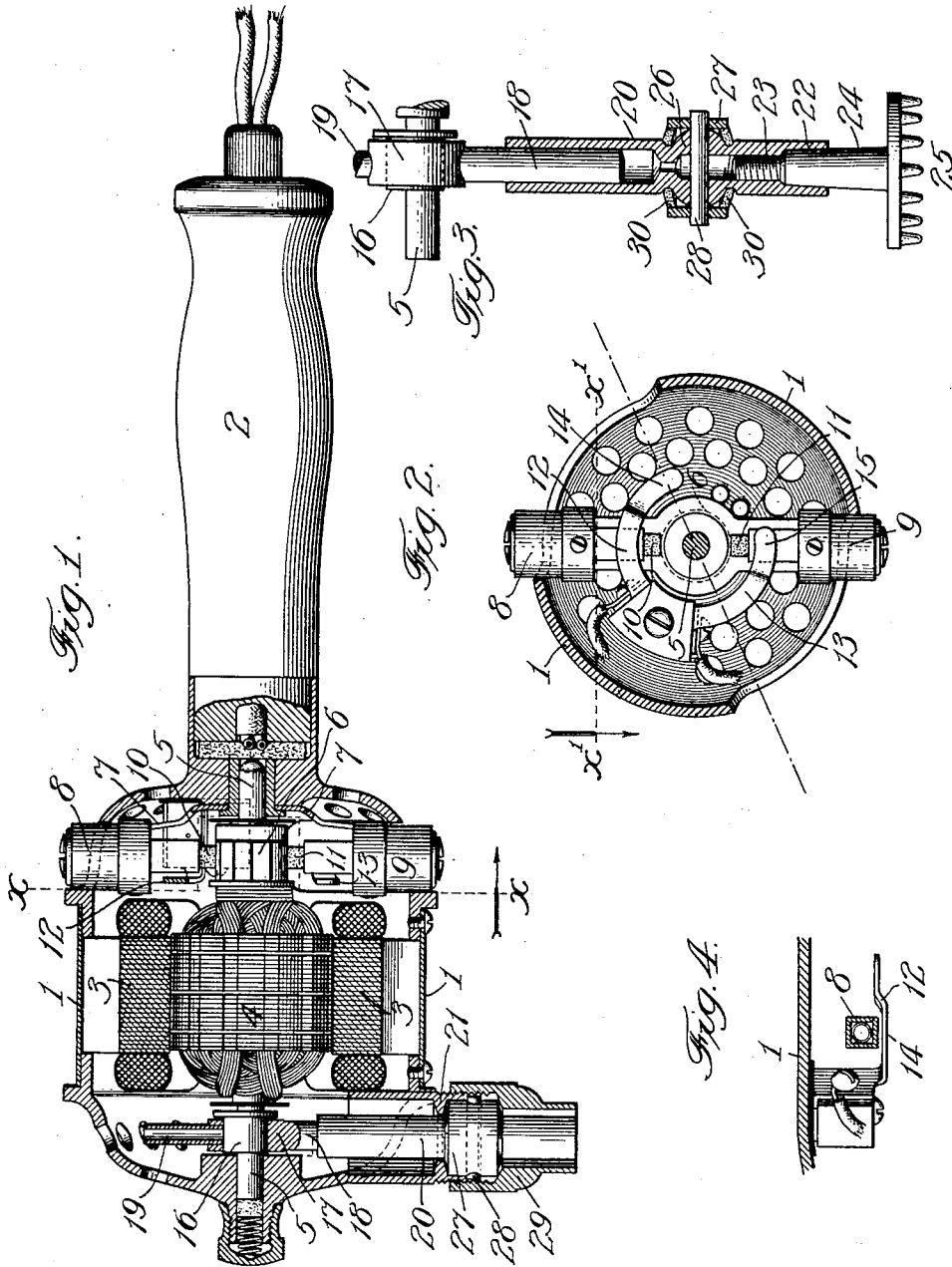


C. ENDORF, JR.
 MASSAGE APPARATUS.
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1,028,999.

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Attest:
 Chas. A. Bull.
 Henry W. W.

Inventor:
 Charles Endorf, Jr.
 by Robert Burns,
 Atty.

UNITED STATES PATENT OFFICE.

CHARLES ENDORF, JR., OF CHICAGO, ILLINOIS, ASSIGNOR TO COMMERCIAL ELECTRIC MOTOR MFG. CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

MASSAGE APPARATUS.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES ENDORF, JR., a citizen of the United States of America, and a resident of Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Massage Apparatus, of which the following is a specification.

This invention relates to that class of vibratory massage apparatus in which an electric motor mounted in a manually held housing is adapted to impart rapid vibration to a pivoted lever carrying at its free end the massage applicator or other like device. And the present improvement has for its object to provide a simple and efficient structural arrangement and combination of parts in which a rapid vibratory movement is imparted to the applicator carrying lever of the apparatus in a ready and effective manner, all as will hereinafter more fully appear.

In the accompanying drawings:—Figure 1, is a central longitudinal sectional elevation of a massage apparatus embodying the present invention: Fig. 2, is a transverse section on line $x-x$, Fig. 1. Fig. 3, is an enlarged detail longitudinal sectional elevation of the vibratory lever and its accessories. Fig. 4, is a detail longitudinal section on line x^1-x^1 , Fig. 2.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the inclosing housing of the motor mechanism, and preferably formed by a central cylindrical shell and inner and outer cup shaped end heads, as shown.

2 is a longitudinal extension or handle secured to the inner head of the housing 1 aforesaid, and adapted to provide means whereby the apparatus is held and conveniently manipulated by the operator.

3 is the field of an electric motor of any usual construction, secured in a stationary manner within the housing 1 aforesaid. 4 is the motor armature mounted to rotate in said housing in operative relation to the field 3 and having the usual shaft 5 by which it is journaled, said shaft also carrying the commutator 6 of said armature.

7 is a yoke having a turning adjustment with relation to the axis of the commutator 6, and carrying at its opposite ends holders 8 and 9 for the usual commutator contacts

or brushes 10 and 11 that have bearing against opposite sides of the aforesaid commutator and in their adjustment in a circular path with relation to the pole pieces of the field, and as usual in electric motors, are adapted to increase or diminish the attraction of said pole pieces for the armature, with a consequent change in the speed and power of the motor. The holders 8 and 9 are insulated from each other as usual, and their outer ends extend through slots in the housing 1 for convenient adjustment by the hand of the operator, in varying the speed of the motor, as well as in effecting a break in the circuit of the armature as herein- after more fully set forth.

12 and 13 are resilient segmental contact fingers secured in an insulated manner inside the housing 1 in adjacent relation to the brush holders 8 and 9 and individual thereto. Said contact fingers are in connection with the supply and return wires from the source of electro-motive force, and normally bear upon the respective brush holders 8 and 9 to transmit the current thereto regardless of the adjustment thereof to regulate the speed of the motor. In the present construction the contact fingers 12 and 13 are formed with offset portions 14 and 15, in diametric relation at opposite sides of the commutator 6, and forming recesses of larger areas than that of the respective brush holders, and into which recesses or spaces said brush holders can be moved to break the electrical connection of the parts when it is desired to stop the operation of the motor.

16 is an eccentric secured near one end of the armature shaft 5, and 17 is an eccentric yoke or collar encircling said eccentric, and provided at one side with an extension or stem 18, and at the other side a tubular extension or sleeve 19 for the reception of the fluid lubricant used to lubricate the bearings of the parts.

20 is an oscillating lever journaled at its mid-length, by means hereinafter described in a lateral neck or extension 21 formed on the outer cup shaped end head of the main housing 1, aforesaid, and located in a plane inside the armature shaped bearing of said head. One arm of said lever is made tubular for sliding engagement with the stem or extension 18 of the eccentric collar 17 above described, and so that the parts will telescope

in the practical operation of the mechanism. The other arm of said lever is formed with an outer tapering counter bore 22, and an inner screw-threaded bore 23 in longitudinal alinement with said tapering counterbore 22. Such construction affords a readily detachable and substantial means of attachment for the correspondingly formed shank 24 of a massage applicator 25, as illustrated in Fig. 3.

The pivotal connection of the oscillating lever 20 to the neck 21 above referred to comprises a detail construction of parts as follows:—26 is a globular enlargement formed on the lever 20 at about its mid-length, and 27 is a cylindrical sleeve fitted outside said enlargement 26, and pivotally connected thereto by a transverse pin 28, as illustrated in Figs. 1 and 3. The said sleeve fits a recess formed therefor in the lateral neck 21 of the main housing 1 and is held in place by a cap piece 29 screwing upon the exterior of said neck, to hold the said sleeve securely in position, and yet permitting the ready separation of the parts when required.

30 are flexible washers of rawhide or the like surrounding the lever 20 immediately above and below the globular enlargement 26, and fitting the upper and lower ends of the cylindrical sleeve 27, to provide closed containing chambers for supplies of semi-solid lubricant for the lubrication of the parts, as well as the prevention of noise and clatter of the parts under the high speed at which the apparatus operates.

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

1. In a massage apparatus of the type herein described, the combination of an inclosing housing formed with a lateral neck, an electric motor arranged in said housing and having an armature shaft, an eccentric collar on said armature shaft, an eccentric collar

encircling said eccentric and having an extension or stem, a vibratory lever formed with a globular enlargement midway of its length, one arm of said lever having sliding engagement with the stem of the afore-
said eccentric collar, the other arm of the lever being adapted for the attachment of the massage applicator, a cylindrical sleeve surrounding the enlargement of the vibratory lever, a transverse pin pivotally connecting the said enlargement and sleeve together, and a cap piece adapted to hold said sleeve in a recess formed therefor in the lateral sleeve of the inclosing housing, substantially as set forth.

2. In a massage apparatus of the type herein described, the combination of an inclosing housing formed with a lateral neck, an electric motor arranged in said housing and having an armature shaft, an eccentric on said armature shaft, an eccentric collar encircling said eccentric and having an extension or stem, a vibratory lever formed with a globular enlargement midway of its length, one arm of said lever having sliding engagement with the stem of the aforesaid eccentric collar, the other arm of the lever being adapted for the attachment of a massage apparatus, a cylindrical sleeve surrounding the enlargement of the vibratory lever, a transverse pin pivotally connecting the said enlargement and sleeve together, flexible washers fitted to the respective upper and lower ends of said cylindrical sleeve, and a cap piece adapted to hold said sleeve in a recess formed therefor in the lateral sleeve of the inclosing housing, substantially as set forth.

Signed at Chicago, Illinois, this 10th day of February 1911.

CHARLES ENDORF, JR.

Witnesses:

ROBERT BURNS,
HENRY MOE.