

No. 698,022.

Patented Apr. 22, 1902.

E. B. JACOBSON.
ELECTRIC MASSAGE MACHINE.

(Application filed Sept. 12, 1899.)

(No Model.)

2 Sheets—Sheet 1.

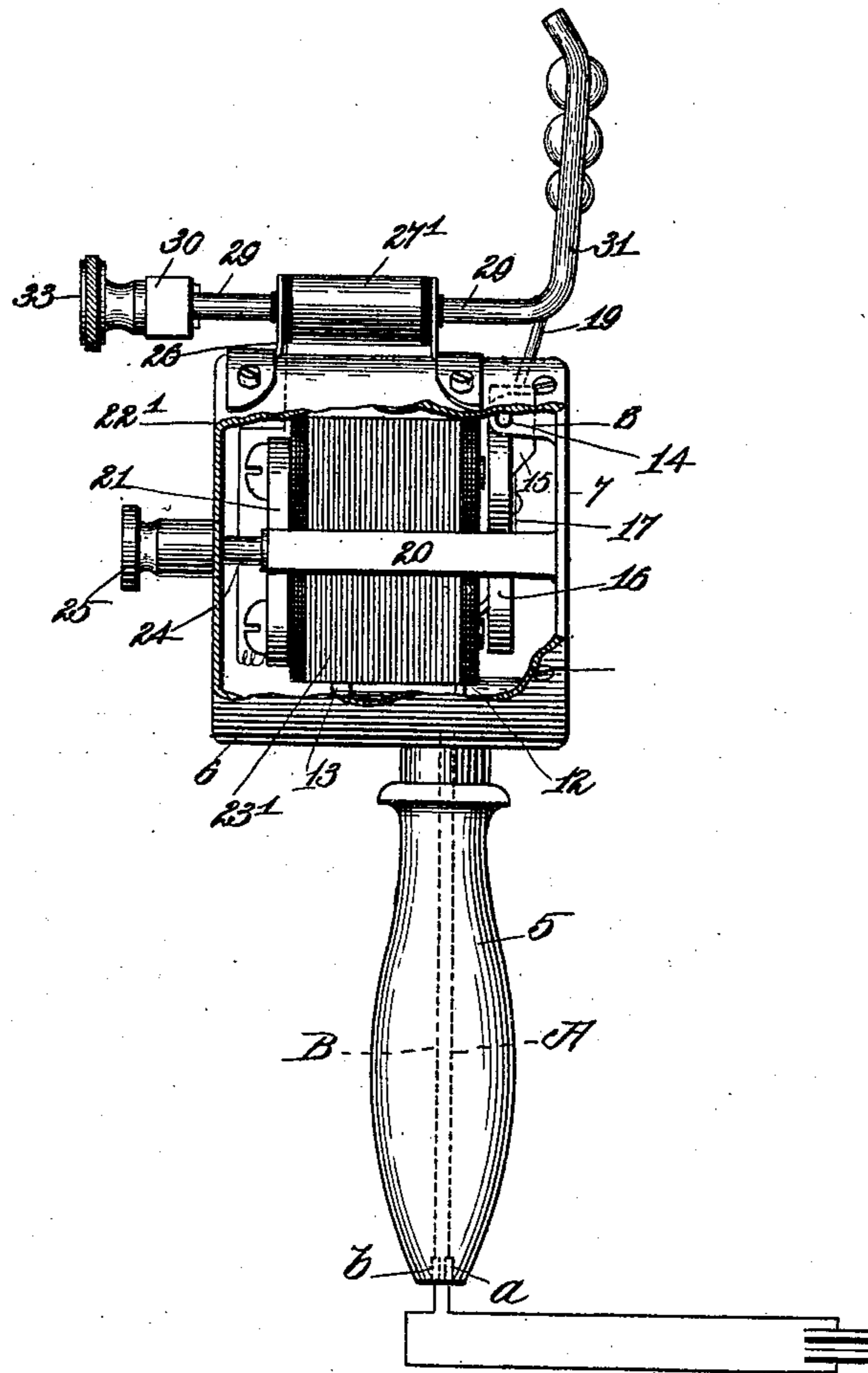


Fig. 1.

Witnesses:

Wm. H. Oarnum.

A. W. H. Ambler.

Inventor:

Edward B. Jacobson.
by Henry J. Miller
att'y.

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2 Sheets—Sheet 2.

Fig. 2.

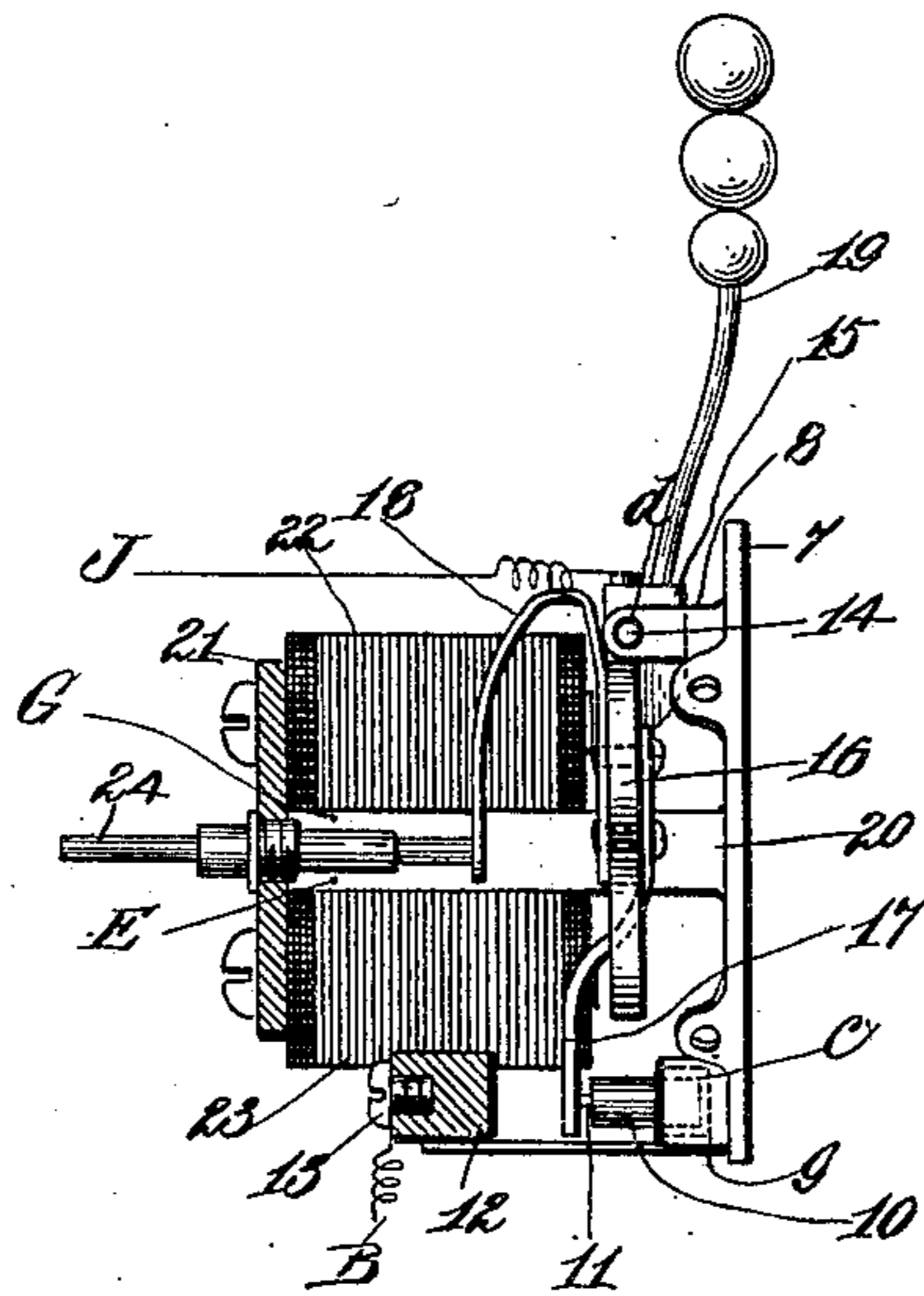
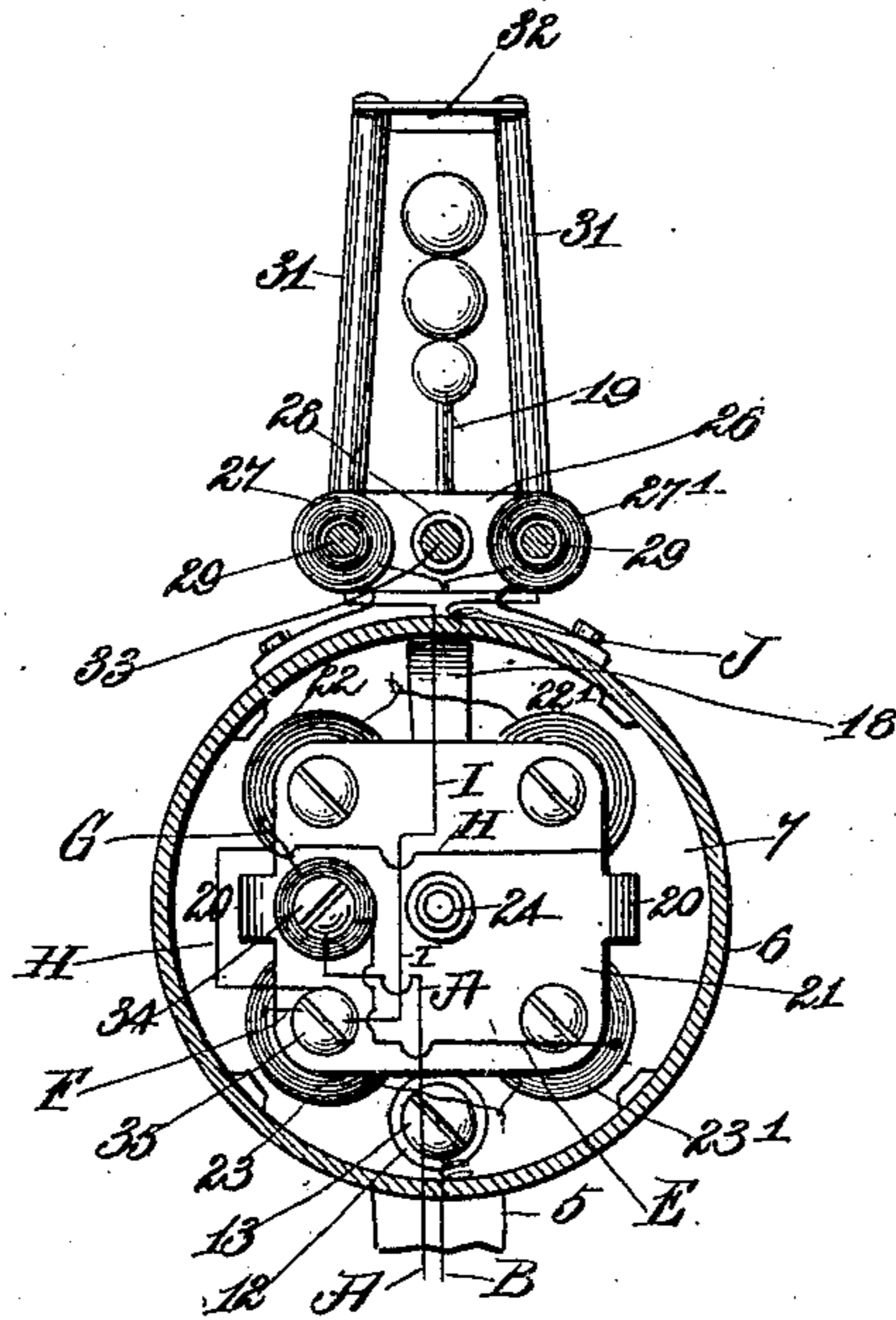


Fig. 3.

Witnesses:

Wm. H. Varnum.

A. W. Hambley.

Inventor.
Edward B. Jacobson
by Henry J. Miller
att'y.

UNITED STATES PATENT OFFICE.

EDWARD B. JACOBSON, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THOR H. NEILSEN, OF BOSTON, MASSACHUSETTS.

ELECTRIC MASSAGE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 698,022, dated April 22, 1902.

Application filed September 12, 1899. Serial No. 730,214. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. JACOBSON, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improvement in Massage-Machines and in the Method of Treatment, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to improvements in devices for use in mechanical massage or in electromechanical massage.

One object of this invention is to so construct a massage mechanism that the manipulating implement can be protected from injury and the impact of the same against the patient limited.

Another object of the invention is to so construct a massage-machine that the manipulating implement may be mechanically regulated as to rapidity and intensity of stroke.

Another object of the invention is to so construct an electromechanical vibrator that an electrical discharge is effected from the vibrator at intervals.

Another object of the invention is to provide a massage instrument with a guard-frame adapted to be energized.

Another object of the invention is to so construct a mechanism of this nature that it shall be simple and effective in operation, durable in construction, and adapted to be readily repaired.

The invention consists in an electromechanical vibrator combined with a controller, whereby the rapidity of the stroke thereof may be continuously under the control of the operator.

The invention also consists in an electromechanical vibrator combined with a reciprocal controller adapted to be actuated by the operator.

The invention also consists in an electromechanical vibrator permanently connected with one arm of an electric circuit.

The invention also consists in an electromechanical vibrator adapted to act as a manipulating implement and a frame for determining the approach of said implement to the part to be manipulated.

The invention also consists in the means for controlling the impact of the vibrator-arm.

The invention also consists in electromagnetic coils having adjustable cores connected with a guard-frame.

The invention also consists in an electromechanical vibrator having its arm connected with an electrical circuit combined with a frame in which the vibrator-arm works, the frame being adapted to be magnetized.

The invention also consists in the construction of the electromechanical vibrator and in its combination with the peculiar guard-frame.

The invention still further consists in such other novel features of construction and combination of parts as shall hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents a perspective view of the manipulating instrument, parts of the casing being broken away. Fig. 2 represents a vertical cross-sectional view of portions of the device. Fig. 3 represents a vertical sectional view of the vibrator mechanism removed from the case.

Similar characters of reference designate corresponding parts throughout.

The practical carrying forward of my invention has for its principal object the production of an electromechanism whereby percussive manipulation of any portion of the body, combined with the simultaneous subsection of that portion to the action of an electrical current, may be effected.

In carrying my invention into practice I have produced an electromechanical device which is useful for many other purposes than that under direct consideration.

The improved device comprises the handle 5, to which the open-ended casing 6 is secured. The handle is furnished with electrical conductors A and B and with means, as the sockets *a* and *b*, whereby electric connection may be had with a flexible electric cable leading to any suitable source of electric energy. The closure for the open end of the casing 6 consists of the plate 7, adapted to fit such open end and to be secured therein. On the inner surface of this plate 7 are the ears 8 at the upper portion and the stud 9 at

the lower portion, and in the stud 9, electrically insulated therefrom at C, is secured the screw 10, having the contact-point 11, and the frame 12, carrying the binding-screw 13, to which is secured the end of the conductor B. In the ears 8 and electrically insulated therefrom at d is the pivot 14, on which is pivoted the block 15 of the armature 16, which has the spring 17, adapted to contact with the point 11, and the bent tension-spring 18, while from the block 15 extends the manipulating implement or arm 19, of any suitable shape. To the plate 7 is also secured a frame, comprising the arms 20 20 and the plate 21, and to the plate 21 are secured the electromagnet-coils 22 22' and 23 23', connected in pairs, as shown in Fig. 2 of the drawings, and having their poles located adjacent to the armature 16. In a bearing in the center of this plate 21 is reciprocally mounted the controller-rod 24, which is furnished at its outer end with a head 25, working in an opening in the end of the casing 6, and at its inner end bearing on the free end of the tension-spring 18.

On the top of the casing 6 is secured the magnet-frame 26, carrying the tubular electromagnets 27 27 and the screw-sleeve 28. Working through the tubular coils 27 27 are cores 29 29, of soft iron or other suitable material, which are connected at their rear ends by the cross-piece 30 and at their forward ends are bent up, as at 31 31, and connected together by the strip 32 to form a guard-frame, within which the manipulating-arm 19 works, the percussive action of that implement being regulated by the adjustment of the cores 29 29 to limit the approach of the implement to the part under treatment, this adjustment of the cores 29 29 and the frame, comprising the arms 31 31, being effected by means of the screw 33, rotatably mounted in the cross-piece 30 and engaging in the screw-sleeve 28, so that the rotation of this screw advances or retracts the cores and the guard-frame with relation to the manipulating implement. The conductor A, passing through the handle 5 into the casing 6, is connected with the binding-post 34 on the plate 21. From thence an electrical connection E is made to the wire of the spool 23', which wire is connected with that of the spool 23 and this in turn with the binding-screw 35 at F. From the post 34 the circuit is also made through the conductor G to the spool 22, thence back through the spool 22', and at H connects with the post 35. From the binding-screw 35 the connection I extends to the primary coil 27, which is connected with the coil 27', and this in turn with the block 15 of the armature by the conductor J.

When the conductors A and B are connected with any suitable source of electricity, as a battery, the current follows the circuits described, energizing the coils 22 22' and 23 23' and attracting the armature 16 against the initial tension of the spring 18, the strength

of the magnetic attraction being finally overcome and a vibratory action being effected in the armature and its arm or implement 19. As often as the spring 17 contacts with the point 11 the circuit is completed through the armature; but on the breaking of this circuit there is a tendency to attract an electric discharge from the head of the arm 19 to the energized guard-arms 31 31, depending on the resistance to the passage of the current, but the more or less positive contact of these members and the conductivity of the portion under manipulation against which these members contact.

The guard-frame, comprising the arms 31 31, is adjusted to be brought into contact with the surface of the body to support the main portion of the instrument, and particularly the implement 19, in position to determine the percussive action of the implement against that portion. The instrument, being connected in circuit with the source of electricity, is actuated as described, causing the rapid percussive action of the implement 19 against the portion of the body under treatment and at the same time subjecting this portion to the vivification of the electric current, the rapidity of vibration of the implement 19 being controlled by the controller-arm 24, by pressure on its button 25, to increase or diminish the tension of the spring 18.

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

1. A massage instrument comprising an intermittently-acting percussive impact member, and a guard for limiting the approach of said instrument to the body under treatment.

2. A massage instrument comprising a vibrating percussive implement, and a guard for limiting the impact of the same on the object under treatment.

3. A massage implement comprising an electrically-actuated impact-vibrator, and mechanical means continuously under the control of the operator for governing the vibration thereof.

4. A massage implement comprising an electrically-actuated impact-vibrator connected with an electric circuit, and an electrically-energized member in proximity to the vibrator.

5. A massage mechanism comprising a casing adapted for convenient handling, an electromagnetically-actuated vibrator contained within the casing and having a percussive portion extending outside the casing, and a mechanical controller for said vibrator working through an opening in the casing.

6. A massage mechanism comprising an electromagnetically-excited guard-frame, and a percussive implement working in said frame.

7. A massage mechanism comprising an electromagnetically-actuated vibrator and a pair of electromagnets the cores of which are extended to form a frame for the vibrator.

8. A massage implement comprising tubular electromagnetic coils, cores reciprocally

mounted therein, means for adjusting the cores longitudinally, and a frame connected with said cores.

9. A massage mechanism comprising a casing, an electromagnetically-actuated vibrator contained therein and having a percussive arm extending therefrom, electromagnets mounted on the casing, and a frame, adjustable with relation to the percussive arm electrically connected with said magnets.

10. A massage mechanism comprising a casing, an electromagnetically-actuated percussive implement mounted therein and having a portion extending therefrom, arms mounted for longitudinal adjustment on the casing and carrying a frame which partially embraces the outer portion of the percussive implement, and means for adjusting the arms.

11. The combination with the casing 6 having the handle 5 and the open end, of the plate 7 for closing the end and having the ears 8 and the stud 9, the screw 10 secured in the stud 9 and insulated therefrom, the post 12 on said screw, the block 15 pivotally supported in the ears 8 and having the armature

16 furnished with the springs 17 and 18 and the arm 19, the magnet-frame comprising the plate 21 and arms 20 20, the magnets secured to said plate, and the controller-rod 24 reciprocal in a bearing in the plate 21, bearing on the spring 18 and having the button 25 working in an opening in the casing.

12. The combination with the casing 6, the frame 26 mounted thereon and provided with the screw-threaded sleeve 28, and the magnets 27 27 in said frame, of the cores 29 29 reciprocal in said magnets and having the bent-up arms 31 31 connected by the strip 32, the cross-piece 30 secured to the rear ends of the cores 29 29, and the adjusting-screw 33 rotatable in said cross-piece and engaging the screw-threaded sleeve 28, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD B. JACOBSON.

Witnesses:

W. STANLEY CAMPBELL,
H. J. MILLER.