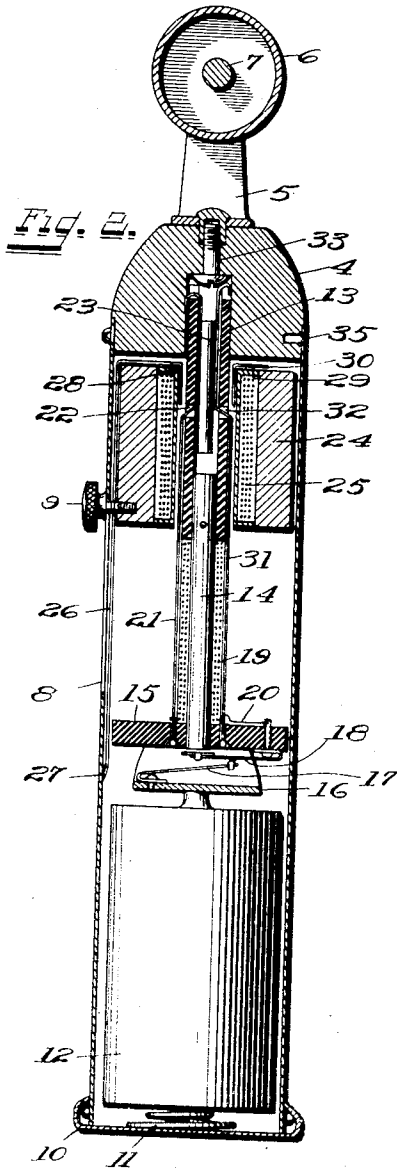
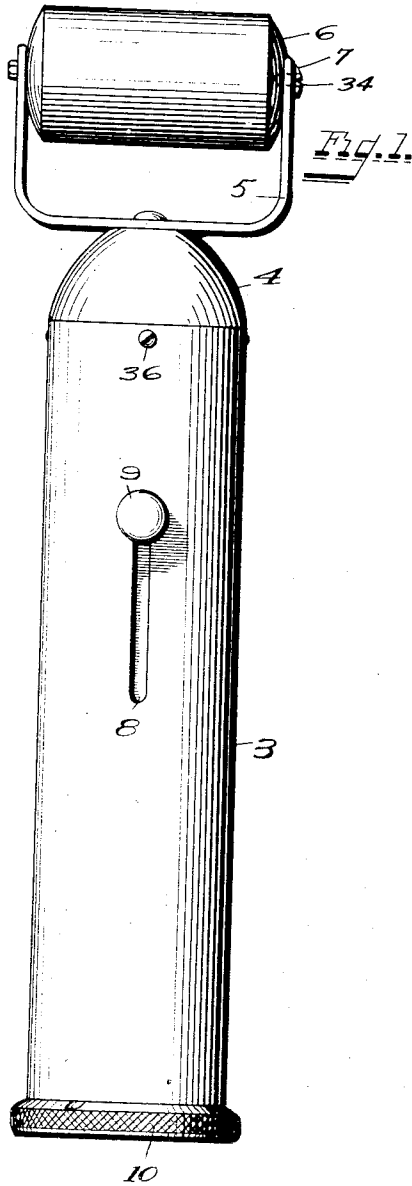


C. W. KENT.
ELECTRIC MASSAGE MACHINE.
APPLICATION FILED JULY 5, 1918.

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ELECTRIC MASSAGE-MACHINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES W. KENT, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Electric Massage-Machines; of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming part of the specification.

My invention relates to machines whereby an induced or secondary current of electricity may be applied locally to the user whereby the beneficial results of electric treatment may be obtained.

One object of my invention is the provision of means whereby the strength or intensity of the secondary current may be varied by the operator to suit individual conditions.

Another object of my invention is the provision of means whereby when the parts are in position for the delivery of the weakest secondary current the primary circuit may be opened thus stopping the operation of the machine.

Another object of my invention is to so arrange the parts of the device that they may be easily reached for inspection, renewal, or repair.

Another object of my invention is to so construct the device that its parts will operate properly for a long period of time, these parts being simple in construction, few in number, and comparatively inexpensive to produce.

Other objects will appear and be described in the specification.

The novelty of my invention will be hereinafter more fully set forth and specifically pointed out in the claims.

In the accompanying drawing.

Figure 1 is a side elevation of a device embodying my invention.

Fig. 2 is a center section of Fig. 1, taken on a plane approximately at right angles to Fig. 1.

The same numerals of reference are used to indicate identical parts in both the figures.

As shown in Fig. 1, the device comprises a metallic tube 3 to which an insulating cap 4 is attached, the cap 4 carrying the fork 5 between the ends of which a massage roller 6 is mounted as by means of the spindle 7.

The handle 3 as shown at 8 is provided

with a slot through which an operating button 9 extends, the stem of the button 9 passing through the slot and connecting to a part of the interior mechanism to be later described. The lower end of the handle 3 is provided with a removable cap 10 which, as shown in Fig. 2 carries a spring 11 which serves to hold the battery 12 in proper position within the case and to maintain an electric connection between the battery 12 and the handle 3.

As shown in Fig. 2 the insulating cap 4 carries a fiber or other suitable non-conducting tube 13 to the lower end of which a core 14 is attached, the core 14 carrying at its lower end an insulating disk 15. A contact member 16 is suitably attached to the disk 15 and the opposite terminal of the battery 12 is pressed against the member 16 by the mechanism previously described.

The interrupter contact 17 is carried by the contact member 16 and is in electrical connection therewith while the interrupter 18 is carried by the disk 15 and its armature lies adjacent the end of the core 18. One terminal of the primary winding 19 is connected as by the lead 20 to the interrupter 18 while the other terminal of the primary winding 19 is connected to a bar 21 which extends upwardly and passes through an opening 22 in the tube 13 and is held in place therein by the insulating plug 23.

A spool 24 is mounted within the handle 3 and the operating button 9, is connected to this spool so that it may be moved within the handle from the outside. The spool 24 carries the secondary winding 25 which, when the device is not in operation occupies the position shown in Fig. 2.

A spring blade 26 is attached to the spool 24 and establishes electric connection with the handle 3 by being bent outward as at 27, from which point the blade passes upwardly and embraces the button 9, passing thence to the upper end of the spool 24, thence radially toward the center and is extended downwardly inside the spool for a short distance in such manner that when the spool 24 is moved toward the battery the blade 26 will come in contact with the bar 21, thereby completing the electric connection from the battery through the primary winding 19 which, through the magnetism incited in the core 14 sets the interrupter in motion.

One terminal of the secondary winding

25 is connected as at 28 with the blade 26 while the other terminal is connected as at 29 with a blade or brush 30 which is arranged and mounted upon the spool 24 and
 5 extending downwardly on the inside of the secondary coil in such manner that when this coil is moved from the position shown in Fig. 2 the blade 30 will contact with a bar 31 which is fastened in the disk 15 and
 10 extended upwardly to an opening 32 in the tube 13, thence inside the tube and is held in place by the plug 23, the bar 31 then being extended to form a contact with a screw 33 by means of which the fork 5 is secured
 15 to the cap 4.

The secondary connections are entirely between the massage roller 6 and the handle 3, these connections being from the handle 3 through the blade 26, secondary coil 25,
 20 blade 30, bar 31, screw 33, fork 5, and thus to the roller 6.

When the electrical connection for the primary circuit has been established by moving the spool 24 downwardly from its
 25 position shown in Fig. 2, the secondary coil begins to enter the field of magnetism established by the primary winding and as the operating button 9, is moved to a greater distance from the cap 4, more and more of
 30 the secondary winding is brought into the magnetic field with the result that the induced current flowing from the secondary coil increases in strength as the button 9 is moved toward the cap 11.

35 From the above it follows that as the button 9 is moved toward the cap 4 a decreasing amount of the secondary winding is left within the magnetic field until the parts are returned to the position shown in Fig. 2
 40 where the primary circuit is opened thus stopping the flow of current.

It is to be noted that by moving the button 9 and with it the secondary coil the secondary current may be controlled so that
 45 its strength may be increased or decreased gradually as the patient may desire, and does not increase or decrease by series of steps as in machines in which series of contact points are employed, the contacts in my
 50 device being through the bars and blades previously described and remaining in connection during the downward and upward travel of the spool, after it has moved down to contact and until it has moved upward off
 55 of the contact.

It is to be noted that the effect of moving the secondary with relation to the primary winding is that a variable flow of secondary current is produced without varying the con-
 60 nections.

Should it be desired to conduct the current from the machine to a point which may not be readily reached by any part of the machine the spindle 7 may be provided with
 65 a hole 34 and the handle 3 may be provided

with a similar hole 35 and any suitable form of lead may be employed and provided with terminals which may engage one or the other or both of the previously mentioned holes to
 70 conduct the current to any desired place.

For inspection or repair of the parts the machine may be completely disassembled by removing the screws 36 and the button 9 whereupon the cap 4 with its associated
 75 parts may be removed from the handle 3 permitting the parts to be inspected or repaired.

If it is desired to remove the secondary coil, this may be done by slipping the tube 13 out of its socket in the cap 4 whereupon
 80 the secondary coil may be dismantled.

It is not necessary in the assembling or disassembling of the machine to connect or disconnect any of the wires or other connections as the parts are made in units and
 85 so arranged that when assembled the proper connections are automatically established.

Having thus fully described my invention, I claim,

1. In an electric massage machine the combination of a handle characterized by conductivity, a primary coil mounted within said handle, a secondary coil movably mounted in said handle and having movement into and out of the magnetic field of
 90 said primary coil, a primary current switch partly carried by the secondary coil for completing the primary circuit by the beginning of the movement of the secondary coil in the magnetic field of the primary coil, a battery
 95 mounted in said handle and a secondary electric terminal carried by said handle.

2. In an electric massage machine the combination of a handle characterized by conductivity, a battery mounted therein, an insulating cap carried by said handle, a primary coil carried by said cap, an interrupter carried by said primary coil, a secondary coil movably mounted in said handle, contact members carried by said secondary coil
 100 whereby when said coil is moved into the magnetic field of said primary coil said interrupter will be set in motion, and a secondary terminal carried by said cap.

3. In an electric massage machine the combination of a handle characterized by conductivity, a battery mounted therein, an insulating cap carried by said handle, a primary coil carried by said cap, an interrupter carried by said primary coil, a guard over
 105 said interrupter and for establishing electrical connection with said battery, a secondary coil mounted in said handle, means for moving said secondary coil into and out of the magnetic field of the primary coil, and
 110 brushes for making and breaking the primary circuit when said secondary coil is moved into and out of the magnetic field of the primary coil said brushes being carried partly by said secondary coil.
 130

4. In an electric massage machine the combination of a conducting handle, an insulating cap carried thereby, a secondary terminal carried by said cap, a primary coil
5 mounted within said handle and maintained in position by said cap, connecting bars mounted on the outside of said primary coil, a secondary coil movably mounted in said
10 handle, brushes carried by said secondary coil and coacting with said connecting bars to make and break the primary circuit, an interrupter mounted within said handle and connected in the primary circuit, and connections between said handle and said sec-
15 ondary terminal and said secondary coil whereby when said secondary coil is moved into the magnetic field of said primary coil and a secondary current produced the secondary current will be conducted to said
20 handle and said secondary terminal.

5. In an electric massage machine the combination of a conducting handle, a secondary current terminal carried thereby and insulated therefrom, a primary coil mounted in
25 said handle, a secondary coil movably mounted within said handle, brushes carried by said secondary coil, connecting bars carried by said primary coil, and connections between said secondary coil and said
30 brushes and said connecting bars whereby when said secondary coil is moved into the magnetic field of said primary coil the latter will be energized to induce a secondary current in said secondary coil and conduct the
35 latter to said handle and said secondary terminal.

6. In an electric massage machine the combination of a handle characterized by conductivity, an insulating cap carried by one
40 end of said handle, a secondary current contact piece carried by said cap, an insulating tube carried by said cap, a primary coil with an extended core carried by said insulating

tube, a circuit breaker and its connections carried by the primary coil, a battery carried within said handle for supplying pri-
45 mary current, a spool movably mounted within said handle, a secondary coil carried by said spool, means projecting outside said handle for moving said spool within said
50 handle and into and out of the field of the primary coil, a primary contact bar passing partly through the interior of the insulating tube and partly along the exterior thereof and continuing on the exterior of
55 the primary coil and electrically connected thereto, a secondary current bar passing partly through the interior of said insulating tube and partly along the exterior thereof and along the exterior of the primary
60 coil, a brush carried by said spool and connected to one terminal of the secondary coil and establishing electrical connection between said handle and said secondary coil and adapted to establish electrical connection with said first mentioned bar, and a
65 second brush carried by said spool and adapted to establish electrical connection between said secondary coil and said second bar.
70

7. In an electric massage machine the combination of a handle characterized by conductivity, an insulating cap carried by said handle, a secondary terminal carried by said cap, an insulating tube carried by said cap,
75 a primary coil carried by said tube, a centering insulator carried by the free end of said coil, a battery contact member carried by said centering insulator, an interrupter for the primary circuit and mounted within
80 the arch of the battery contact member, and a movable secondary coil mounted within the handle whereby the strength of the secondary current may be varied.

CHARLES W. KENT.