H. I. BLATTLE & P. NEWMAN.

ELECTRICAL VIBRATOR.

APPLICATION FILED OCT. 3, 1910.

994,300. Patented June 6, 1911.

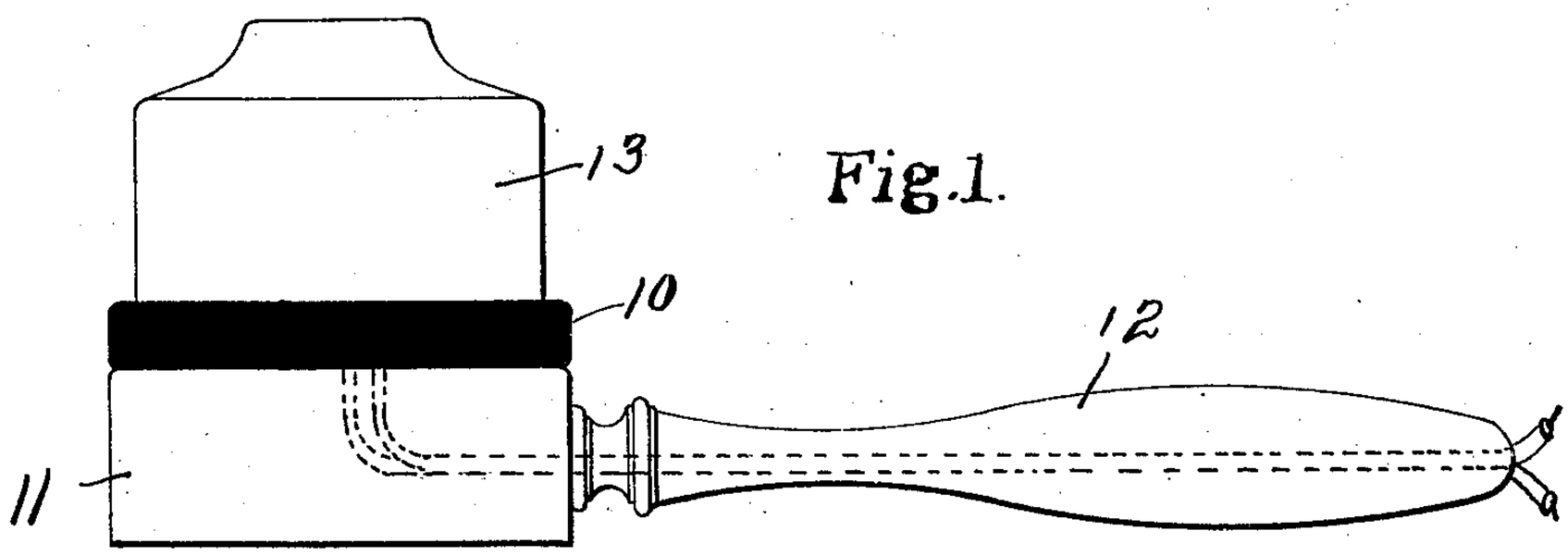

Fig. 1.

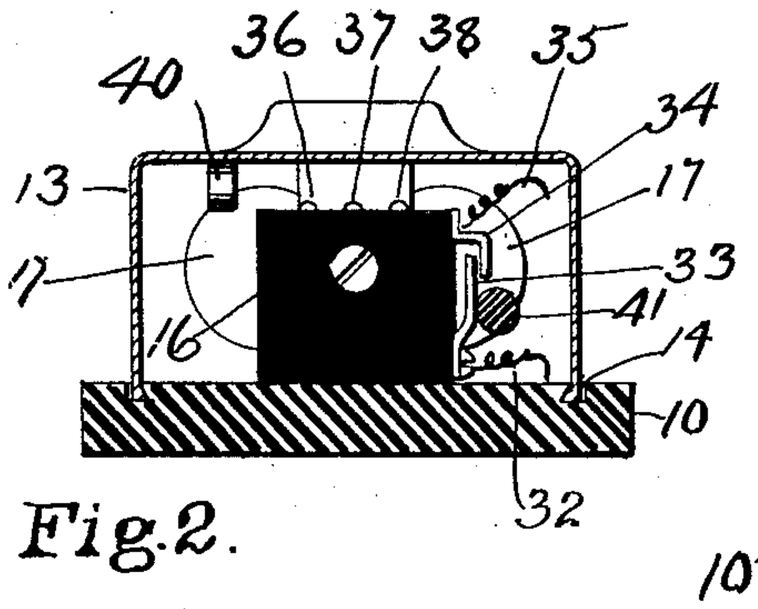

Fig. 2.

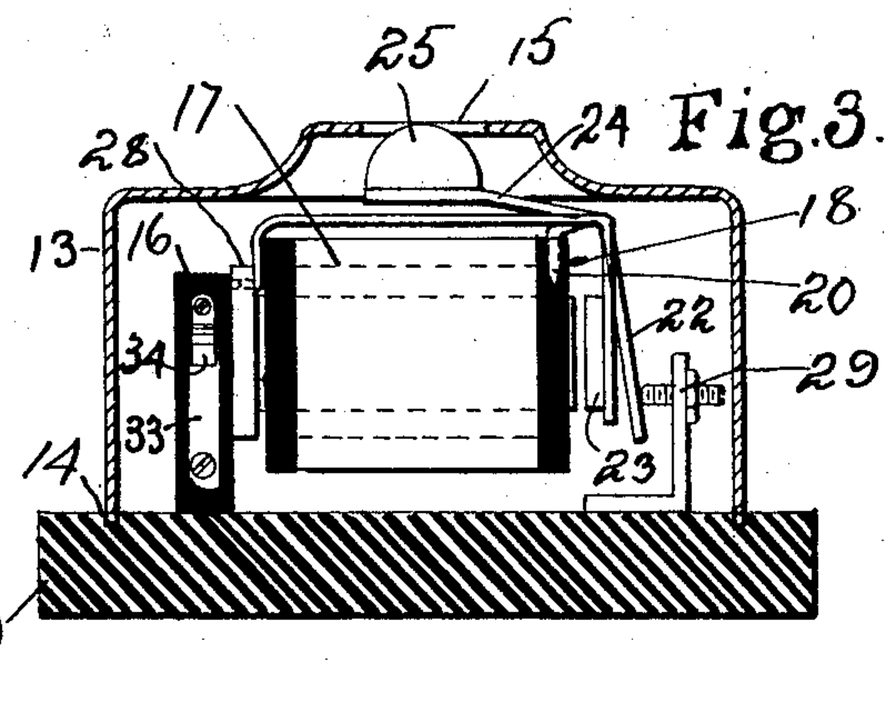

Fig. 3.

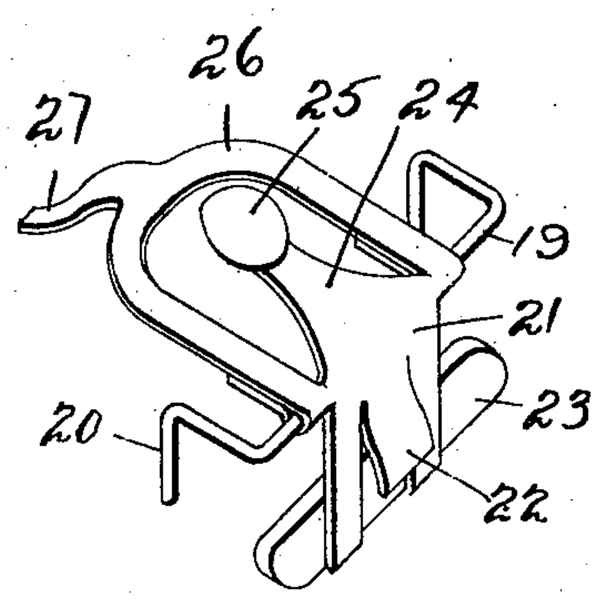

Fig. 4.

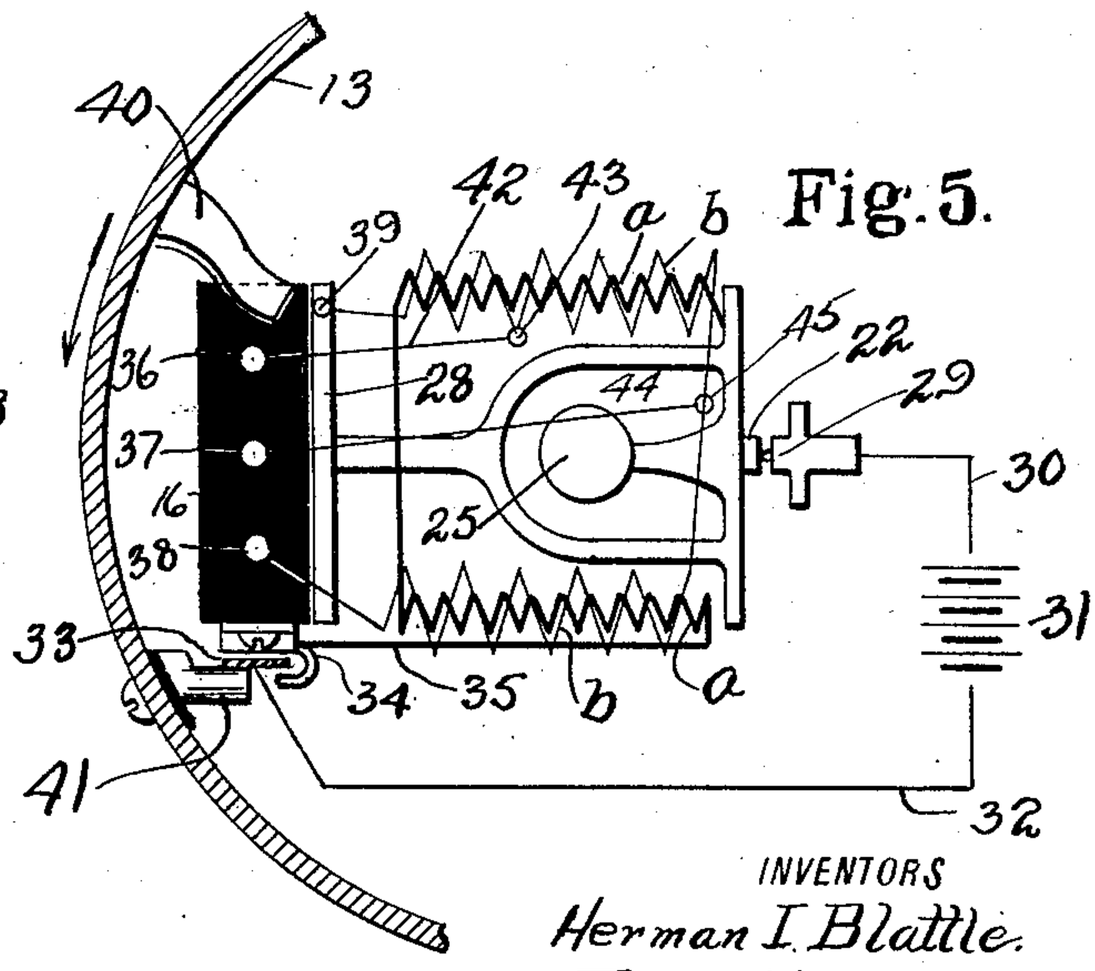

Fig. 5.

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ELECTRICAL VIBRATOR.

994,300. Specification of Letters Patent. Patented June 6, 1911.

Application filed October 3, 1910. Serial No. 585,049.

To all whom it may concern:

Be it known that we, HERMAN I. BLATTLE and PAUL NEWMAN, citizens of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Electrical Vibrators, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to devices sometimes termed electric massage appliances in which a vibrator is caused to produce a sort of hammering action upon the skin, and the invention has particularly for its object the provision of a device of this type or character which will apply a secondary current to the part of the body which is being treated by the vibrator.

To these ends the invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

Of the accompanying drawings: Figure 1— is a side elevation of an appliance embodying our invention. Fig. 2— represents a vertical section through the head of the implement, parts of the interior mechanism being shown in elevation. Fig. 3— is a view similar to Fig. 2 but at a right angle thereto. Fig. 4— is a perspective view of the vibrator and armature. Fig. 5— is a view mainly illustrating the circuits by diagram, but showing a portion of the shell or casing in horizontal section, and parts of the internal mechanism in plan.

Similar reference characters indicate the same or similar parts in all of the views.

A base 10 of suitable insulating material is supported upon a block or disk 11 which may be of wood, the latter having a handle 12 connected thereto. The leads for the current may pass through the handle and block as indicated by dotted lines in Fig. 1.

Rotatively mounted on the base 10 is a metal shell or cover 13. The rotative connection may be by forming the edge of the shell with a flange 14 fitting a dove-tailed groove in the base. The top of the shell is preferably raised somewhat and is formed with an aperture 15 in which the hammer of the vibrator operates as hereinafter described.

Secured to the base 10 is an insulating block 16 which supports spools 17 wound for primary and secondary circuits indicated diagrammatically in Fig. 5 at *a* and *b* respectively. Insulation 18 at the front ends of the spool 17 (see Fig. 3) supports a wire or rod fulcrum 19 for a lever 21, the said wire or rod being shown as formed with prongs 20 driven into the top of the said insulation 18. The lever 21 is of spring metal and is bent to form upper horizontal portions and lower substantially vertical portions. The lower portion is formed with a contact tongue 22 and has arms supporting the armature 23. The upper portion of this lever comprises an arm 24 carrying at its end a ball or hammer 25 which is the portion of the vibrator to contact with the skin of the user. Preferably the portions of this lever so far described are integral, but made of a single piece of sheet metal. It is mounted to oscillate on the fulcrum 19 and has an integral yoke 26, the latter having a tongue 27 extending rearwardly and attached to the metal plate 28 which in turn is supported by the insulating block 16.

Secured to the base 10 is a contact 29, preferably of a form having a screw whereby the distance of the acting portion of the contact may be varied relatively to the tongue 22 of the lever. From the contact 29 a wire 30, see Fig. 5, connects with the battery 31 or generator of electricity, said battery being connected by wire 32 with a resilient clip 33 which is secured to the insulating block 16 (see Figs. 2, 3 and 5). Also secured to said block 16 is a contact 34 having its outer end opposite and normally spaced from the tip of the resilient clip 33. The contact 34 is connected by a lead 35 with the primary winding *a*.

Supported on the top of the block 16 are three contact studs 36, 37 and 38, preferably having rounded tops as shown in Fig. 2. One end of the secondary winding *b* is connected at 39 to the plate 28, the other end of the secondary winding being connected to stud 38.

Carried by the rotatively mounted shell 13 is a spring contact 40 adapted to complete a circuit with either of the studs 36, 37 and 38. Also carried by the shell 13 is a lug 41 which is of course of insulating material, said lug being located in proper position to hold the resilient clip 33 separated from the contact 34 when the parts are in the position shown in Fig. 5. But when said shell is rotated in the direction of the arrow in Fig. 5, the resilient clip 33 will be

released so as to complete a circuit as hereinafter described by its contact with the contact 34.

With the parts in the position shown in Fig. 1, no circuit is completed. When the clip 33 is released however the circuit is completed through the primary coils *a*, the make and break being effected in the same manner as is customary with electric bells resulting in vibrating the arm 24 and causing the hammer 25 to strike rapid, light, resilient blows upon the surface of the skin against which the top of the shell 13 is pressed. The movement of the shell in the manner described brings the contact 40 over the stud 36. Said stud is connected by a wire 42 to the secondary coil at the point 43. Further movement in the same direction will carry the contact 40 over to the stud 37 which is connected by wire 44 with the secondary winding at the point 45. Still further movement in the same direction will place the contact 40 on stud 38. Therefore the strength of the secondary current that is utilized as presently described can be controlled according to which stud 36, 37 or 38 is coöperating with the contact 40. Supposing the contact 40 is resting on stud 36, the secondary current will then pass from the contact 40 through shell 13, then to ball or hammer 25 by way of the skin of the person using the implement, then by the arm 24 through yoke 26, tongue 27 and plate 28 to which one end of the secondary wire *b* is connected. The wiring of the secondary coil from 39 to 43 may be supposed to include 500 turns; while from 39 to 45 there may be 1000 turns, the total secondary winding including 2000 turns. If now the shell be turned so as to bring the contact 40 to the stud 37, the circuit will be completed through the same parts already described but so as to include 1000 turns therefore subjecting the skin of the user to that much stronger secondary current. When the contact 40 bears on stud 38, the secondary current passes as before but includes the entire 2000 turns of the wiring.

It will now be understood that we have provided an implement which enables a secondary current to be applied locally to the body of the user simultaneously with the action of a massaging vibrator; and that by a slight adjustment, the strength of the secondary current that is being applied may be varied. This local application of a secondary current of electricity applied to the body of the user simultaneously with the action of a massage vibrator is due to the fact that the hammer or tappet 25 moves from within to without the casing, and return. In other words, the face portion of the casing or shield having the aperture 15 constitutes a bearing plate which, when resting against the skin of the user, determines the position which the tappet or hammer shall occupy relatively to the skin. The tappet or hammer is movable transversely of the plane of said plate so as to alternately contact with and recede from the skin surface against which the plate bears. Therefore the relationship of the bearing plate and the hammer is always so definitely determined that the hammer must alternately contact with and recede from the skin so as to repeatedly make and break the secondary current, each completion of the circuit being necessarily accompanied by a light blow or tap regardless of the amount of pressure that may be exerted by the entire device against the skin surface.

We claim:

1. An electrical vibrator comprising a metal shell inclosing the actuating mechanism, said shell being provided with an aperture, a vibrator operating through said shell aperture, a magnet for actuating the vibrator, said magnet including a secondary winding, connections including the vibrator for applying a secondary current to the skin, and controlling means carried on the casing for varying the length of the secondary winding to vary the intensity of the current applied to the skin.

2. An electrical vibrator comprising a metal shell having an aperture, a vibrator consisting of a lever carrying the armature of the magnet, an arm integral therewith and having a ball to act on the skin, a yoke integral with the lever and having a tongue, a metal plate to which said tongue is connected, a secondary wiring connected to said plate, an insulated block having a plurality of studs, said studs having independent connections with the secondary wiring, and means carried by said shell to connect with either one of said studs to complete the secondary circuit.

In testimony whereof we affix our signatures in presence of two witnesses.

HERMAN I. BLATTLE.
PAUL NEWMAN.

Witnesses:
HOWARD E. BARLOW,
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