

M. K. GOLDEN.
ELECTRIC VIBRATOR.
APPLICATION FILED FEB. 13, 1913.

Patented May 6, 1913.

2 SHEETS—SHEET 1.

1,061,065.

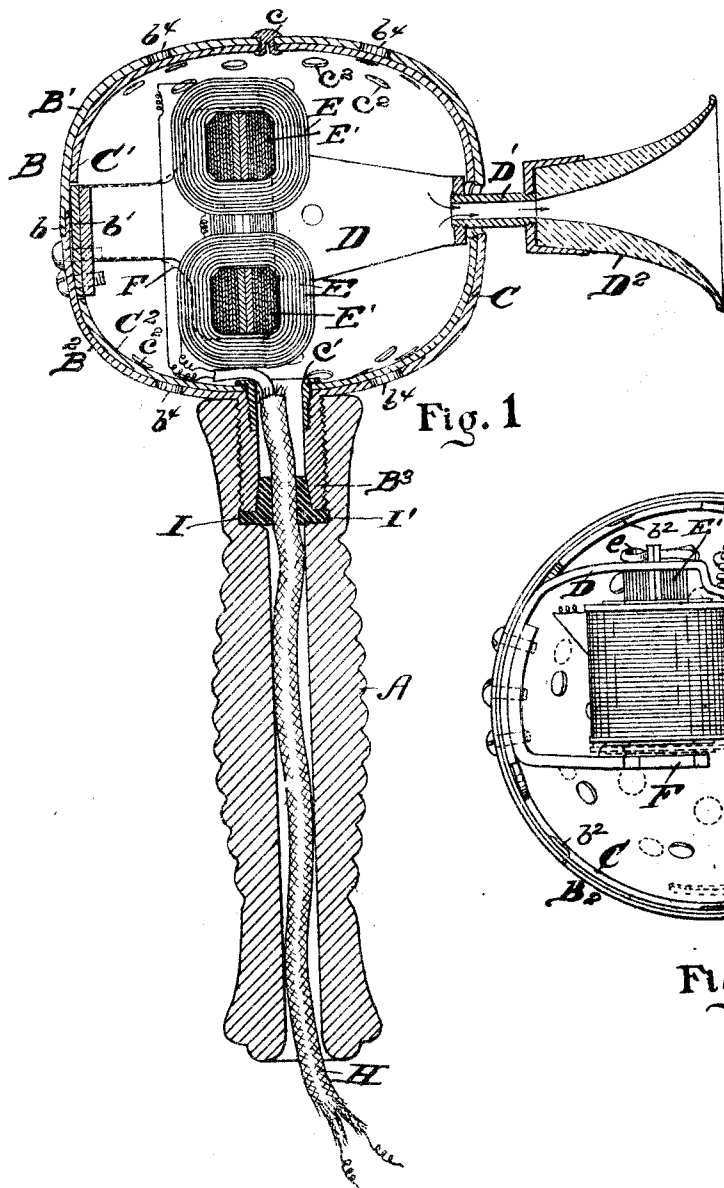


Fig. 1

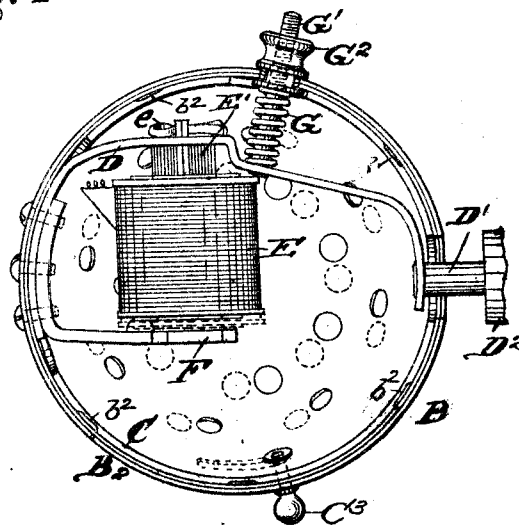


Fig. 2

Witnesses

Carl S. Barry
Grace E. Wyndham.

Inventor

M. K. Golden

By

S. B. Thomas

Attorney

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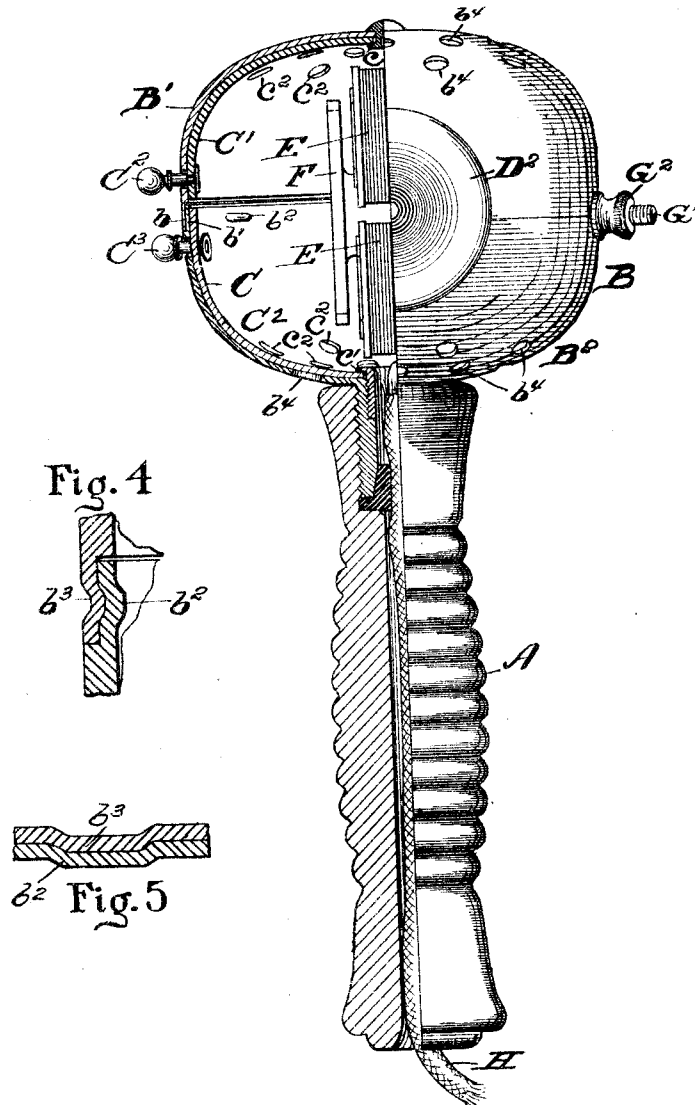


Fig. 4

Fig. 5

Fig. 3

Witnesses
Carl S. Barry
Grace E. Wynkoops

Inventor
Maximilian K. Golden
By *L. B. Thomas*
Attorney

UNITED STATES PATENT OFFICE.

MAXIMILIAN K. GOLDEN, OF DETROIT, MICHIGAN.

ELECTRIC VIBRATOR.

1,061,065.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MAXIMILIAN K. GOLDEN, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Electric Vibrators, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification. My invention relates to an improvement in the general construction of electric vibrators, shown in the accompanying drawings and more particularly pointed out in the following specification and claims.

It is well known that one of the advantages claimed for manual massage over that obtained by mechanical or other means is that the warmth of the operator's hands is imparted to the patient with beneficial effect.

Therefore one of the objects of the present invention is to provide means whereby a gentle heat may be directed toward the patient's flesh at the point of application simultaneously with the manipulation of the vibrator.

Another feature of the invention consists in providing a chambered shell housing the magnets and other operating parts, having ports for the passage of air into and through the shell,—a rotatable concentric shell being also housed therein, having ports designed to register with the ports in the outer shell, by rotating which the openings may be reduced or closed in order that the heated air may be forced through a central port provided in the applicator.

Another feature consists in the means for regulating the distance between the electromagnet and the armature, whereby the coil may become more or less heated (thereby controlling the temperature of the air within the chamber) and the degree of vibratory movement of the arm supporting the applicator, on which the magnet is mounted, is increased or reduced as required.

Another feature is the means for locking the sections of the chambered shell together. Other advantages and improvements will hereafter appear.

In the drawings accompanying this specification:—Figure 1 is a central vertical section of the device through the applicator.

Fig. 2 is a plan view of the vibrator head with the upper shell removed and a portion of the applicator broken away. Fig. 3 is a sectional elevation of the device looking toward the applicator. Fig. 4 is a detail view through a portion of the upper and lower shell, showing the means employed to lock the parts together. Fig. 5 is a horizontal sectional view through the same.

Referring now to the letters of reference placed upon the drawings:—A denotes a tubular handle formed of wood, rubber, or other suitable material.

B indicates a chambered shell consisting of an upper portion B', and a lower portion B² provided with an annular shank B³ screw-threaded to engage the handle A. The upper portion B' is formed with an annular rim b overlapping the rim b' of the lower portion of the shell which at suitable points throughout its circumference is indented as at b² to receive a projecting lug or off-set portion b³ formed in the other half of the shell,—it being obvious that when the upper half of the shell is sprung into engagement with the lower portion of the shell, the lugs b³ will serve to lock the parts together.

b⁴ denotes a plurality of perforations in the portions B' and B² for the passage of air.

C is a shell housed within the chambered shell B and likewise formed in two parts, one of which C', is concentrically arranged within the portion B', and pivoted at c whereby it may be rotated with respect thereto. The other part C², is lodged within the portion B² and pivoted thereto by means of the annular thimble c' engaging the shank B³ of the outer shell.

c² are ports through the inner shell C adapted to register with the ports b⁴ of the outer shell B.

C² and C' are projecting studs respectively engaged to the upper and lower portions of the shell C extending through slots formed in the wall of the outer shell B, whereby the upper and lower portions of the inner shell may be rotated and the passage of air through the ports b⁴ and c² regulated, or entirely cut off.

The inner shell C is preferably formed of a non-heat conducting material.

D indicates a resilient arm housed within the chambered shell and extending from side to side, one end being bolted thereto

and the other supporting a tubular thimble D' in turn supporting an annular bell-shaped applicator D² preferably formed of soft rubber.

5 E is a magnet, preferably formed with a laminated core E' in turn secured to the resilient arm D by means of a cotter pin *e* or other engaging device.

10 F is the armature of the magnet bolted at one end to the shell B.

G is a helical spring sleeved on a screw-threaded bolt G', in turn secured to the resilient arm D which extending through the chambered shell B is engaged by a thumb-screw or milled nut G², by adjusting which the tension of the spring may be increased and the magnet adjusted nearer to or farther away from its armature.

20 H is a cord leading up through the tubular handle A, carrying the conductors supplying potential to the magnet.

I is a rubber thimble sleeved on the cord H having a flange I' adapted to bear against the end of the shank B³.

25 Having indicated the several parts by reference letters, the construction and operation of the device will be readily understood.

The device having been connected with a source of electrical energy, the thumb-screw 30 G² is rotated thereby adjusting the gap between the core of the magnet and the armature F, as indicated in dotted lines in Fig. 2 of the drawings,—it being well understood that the degree of vibration given to the applicator D² and that of the heat generated in the magnet will be in direct ratio with the distance between the magnet and armature.

35 If it is desired to use the applicator without directing the air, inclosed within the shell to the part being manipulated (the temperature of which has been raised by the heat generated in the magnet) the inner shell C is adjusted by means of the projecting studs C² and C³ until the air ports in the inner shell register with those in the outer shell; the air will then circulate 40 through the device without being directed toward the skin of the patient.

When it is desired to direct a warm current of air to the part being massaged, the inner shell is adjusted so as to close the air ports *c*² and *b*⁴, whereupon the only point of egress for the warm air contained within the shell will be out through the annular tube 55 supporting the applicator. It will thus be seen that the warm air will be projected directly to the part being massaged. The intensity of the vibration being increased or diminished in accordance with the degree of adjustment given to the magnet in the 60 manner previously indicated.

Having thus described my invention, what I claim is:—

1. In a device of the class described, a 65 chambered shell, an electro-magnet, an

armature, means for adjusting the electro-magnet with respect to the armature, an applicator adapted to be vibrated through the action of the magnet, and a port through the applicator leading into the shell adapted 70 to direct the warm air to the part manipulated.

2. In a device of the class described, a chambered shell, an electro-magnet, an armature, a resilient arm for supporting the magnet, and a projecting applicator supported by the resilient arm provided with a port communicating with the chambered shell. 75

3. In a device of the class described, a chambered shell provided with a plurality of ports, an electro-magnet supported in the shell, a fixed armature, a resilient arm for supporting the magnet, means for adjusting the magnet with respect to the armature, a projecting applicator provided with a central port communicating with the interior of the shell, and means for closing and reducing the ports leading into the shell. 80 85

4. In a device of the class described, a chambered shell provided with a plurality of ports for the passage of air, a concentric rotatable shell housed within the chambered shell provided with a plurality of ports adapted to register with the ports in the outer shell, means for rotating said inner shell whereby the air ports, through the chambered shell may be reduced or closed, an electro-magnet housed within the shell supported on a resilient arm, a projecting applicator mounted on one end of the resilient arm provided with a port communicating with the interior of the shell, a fixed armature, and means for adjusting the electro-magnet with respect to the armature. 90 95 100 105

5. In a device of the class described, a chambered shell formed in two parts, the abutting ends of which overlap, indentations in the wall of the overlapping portion adapted to receive projecting lugs formed on the connecting portion whereby the parts are locked together, a concentric rotatable shell also formed in sections and pivoted to the respective portions of the outer shell, an electro-magnet housed within the chambered 110 115 120 125 shell, a resilient arm supporting the electro-magnet secured at one end to the shell, a fixed armature secured to the chambered shell, means for rotating the sections of the inner shell, means for adjusting the magnet with respect to the armature, and an applicator carried by a tubular stem mounted on the end of the resilient arm and communicating with the interior of the chambered shell.

6. In a device of the class described, a chambered shell provided with ports for the passage of air through the shell, said shell formed in two sections one of which is provided with an annular shank, a tubular 130

handle adapted to receive the shank, a rubber ferrule fitted in the shank adapted to support a cable for supplying potential to an electro-magnet housed within the shell, the electro-magnet, a resilient arm for supporting the electro-magnet, an annular applicator supported on the end of the resilient arm and communicating with the interior of the shell, a fixed armature, means for adjusting the magnet with respect to the armature, and means for closing the ports in the shell.

7. In a device of the class described, a chambered shell provided with a plurality of ports for the passage of air, a concentric non-heat conducting rotatable shell housed within the chambered shell provided with a plurality of ports adapted to register with

the ports in the outer shell, means for rotating said inner shell whereby the air ports through the chambered shell may be reduced or closed, an electro-magnet housed within the shell supported on a resilient arm, a projecting applicator mounted on one end of the resilient arm provided with a port communicating with the interior of the shell, a fixed armature, and means for adjusting the electro-magnet with respect to the armature.

In testimony whereof, I sign this specification in the presence of two witnesses.

MAXIMILIAN K. GOLDEN.

Witnesses:

GRACE E. WYNKOOP,
SAMUEL E. THOMAS.