

N. LOMBARD.
VACUUM MASSAGE MACHINE.
APPLICATION FILED FEB. 10, 1909.

944,737.

Patented Dec. 28, 1909.

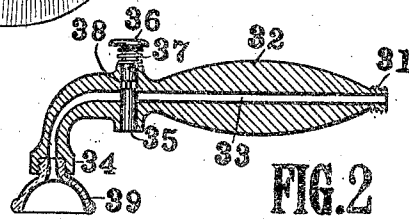
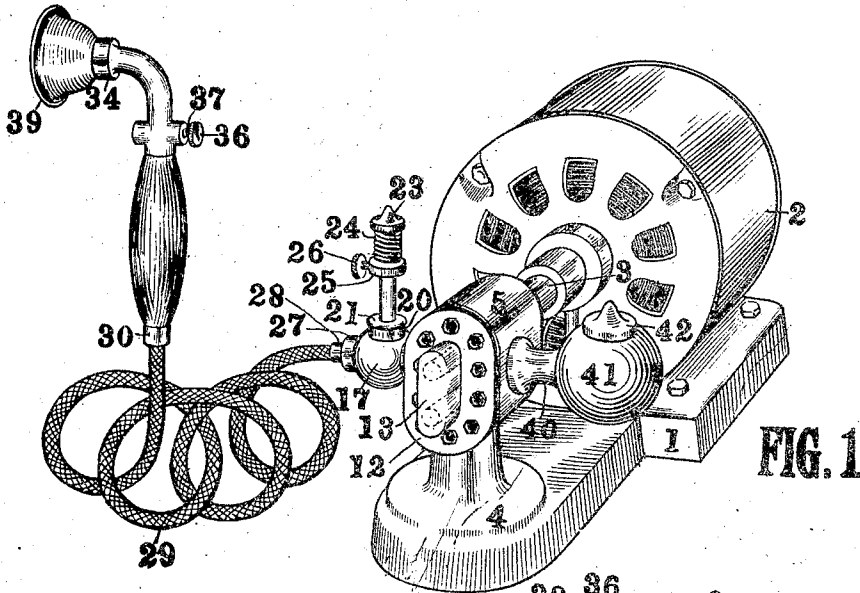
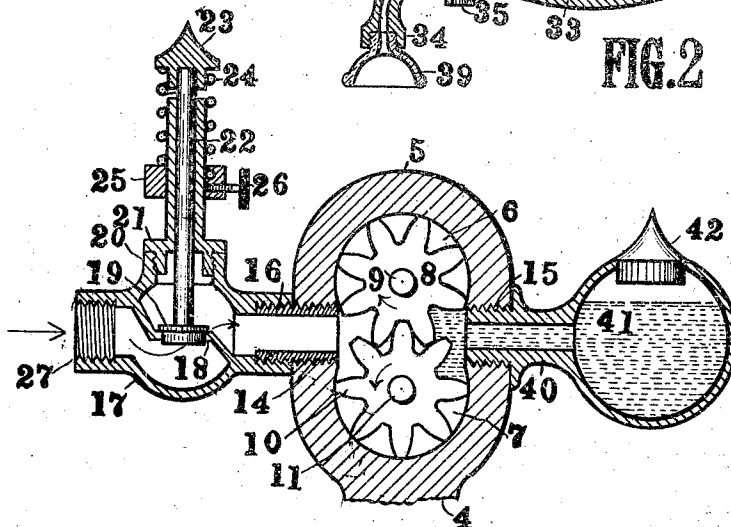


FIG. 3



Witnesses:

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VACUUM MASSAGE-MACHINE.

944,737.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed February 10, 1909. Serial No. 477,153.

To all whom it may concern:

Be it known that I, NATHANIEL LOMBARD, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Vacuum Massage-Machines, of which the following is a specification.

This invention relates to a device for massage purposes and the objects thereof are, primarily, to produce a device embodying a hand piece provided with a cup-shaped tool adapted to be applied to a surface of the human body to effect an action similar to the action of cupping thereon.

The invention further contemplates suitable mechanism for producing a partial vacuum in the tool carried by the hand piece, said hand piece provided with a valve for controlling the production of said vacuum in said tool without the necessity of interrupting the operation of the vacuum-producing mechanism.

A still further object of the invention is to provide the vacuum-producing mechanism with a valve capable of being set at a definite position to control the withdrawal or exhaustion of the air or production of a vacuum in the cup-shaped tool, whereby when said tool is employed the amount of stimulation or cupping action imparted to the parts upon which the same is used may be graduated to suit the different requirements of the various portions of the body, thus enabling the device to be used upon the more delicate parts of the body when indicated and yet capable of being used to produce an intense amount of stimulation or cupping action where necessary.

The invention further contemplates providing a suitable muffler to reduce the noise incident to the operation of the device.

Broadly speaking, the invention contemplates providing a constantly running instrumentality capable of producing a steady withdrawal of air from a tool carried by a suitable hand piece whereby a partial vacuum is produced in said tool capable of being interrupted by a valve carried by the hand piece and further capable of being regulated in intensity through the medium of a valve capable of regulation mounted on the vacuum-producing mechanism, said latter instrumentality provided with a muffler

for reducing the noise incident to the operation of the same.

The invention further provides a hand piece having a socket adapted to receive in alternation cups of different sizes and shapes arranged to fit or be applied to different portions of the human body for causing stimulation thereof by the action of the tool in drawing to a selected part of the body the blood circulating in the immediate vicinity thereof for producing engorgement of the tissues, either to effect enlargement of the same as in the instance when used in connection with the female bust or when used for surgical purposes in withdrawing poisons from wounds, cuts, etc., for promoting the growth of hair or in other special applications wherein a device of this character could or may be employed.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically described and illustrated in the accompanying drawings which form a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings, in which similar reference numerals indicate like parts in the different figures: Figure 1 is a perspective view of the entire device. Fig. 2 is a horizontal, sectional view of a hand piece used in connection therewith; and, Fig. 3 is a transverse, sectional view of the vacuum-producing mechanism shown in Fig. 1.

Referring to the drawings in detail, the reference numeral 1 denotes a base mounted on which is a motor 2, preferably adapted to be operated by an electric current, although any other form or type of motor using any other form may be employed without departing from the scope of this invention. The motor is adapted to rapidly rotate a shaft 3 continuously in one direction. Mounted on the base 1 is a supporting member 4 bearing an integral casing 5 provided with two communicating cylindrical openings 6 and 7.

Mounted on the shaft 3 or on a separate

shaft connected to and in alinement therewith and positioned in the opening 6 is a wide spur gear 8 having projecting from its outer end a stub shaft 9 and in the lower cylindrical opening 7 of the casing 5 is a spur gear 10 similar to the gear 8 provided with a projecting stub shaft 11. The casing is made with one closed end provided with a suitable aperture (not shown) to receive the shaft 3 or a shaft positioned in alinement therewith and connected thereto with the balance of the end of said casing entirely closed. The opposite or front end of the casing 5 is closed by means of a cap 12 provided with a boss 13 suitably recessed to receive the ends of the stub shafts 9 and 11, constituting bearings therefor. The gears 9 and 10 are of such a size as to nicely fit and form an approximately fluid-tight union with the interiors of the respective openings 6 and 7 in which they are positioned, and the axes of these two shafts are so placed with respect to each other that the gears will mesh so perfectly as to constitute a fluid-tight union between them. The opposite sides of the casing 5 are provided with similar threaded openings 14 and 15 in one of which is positioned a nipple 16 having mounted thereon a valve casing 17 provided with a valve seat 18 the opening in which is arranged to be closed by a valve 19. The upper portion of the valve casing 17 is provided with a threaded opening 20 adapted to receive the threaded lower end of a tubular member 21 provided with a vertically-extending opening in which is mounted a valve stem 22 connected at its lower end with the valve 19. Mounted on the upper end of the valve stem 22 is a cap 23 to which is connected the upper end of a coiled resilient element 24, the lower end of which is connected to a vertically-shiftable collar 25 bearing a set screw 26 mounted on the upwardly-extending portion of the member 21. The opposite end of the valve casing 17 is provided with a threaded opening 27 constituting a socket to receive the threaded end of a hose connection 28 from which extends a flexible hose 29 bearing at its opposite end a threaded socket 30.

The socket 30 is adapted to receive the rear threaded end 31 of a hand piece 32 with a longitudinal opening 33 therein having the forward end preferably downwardly bent terminating in an interiorly-threaded socket 34. The member 32 is provided with an opening intersecting the longitudinal opening 33 in which is mounted a transversely-shiftable valve 35 provided with a head 36 and bearing a coiled resilient element 37. The medial portion of the valve 35 is provided with a reduced portion formed by a circumferential groove in the body of the

same which is normally held out of alinement with the opening 33 through the medium of the coiled element 37; but may be brought into alinement with the opening 33 by pressure applied to the head 36 by the operator's finger or thumb whereby when the groove 38 is in registering relation with the longitudinal opening 33, movement of a fluid through the latter is permitted, but when the valve 35 is in the position shown in Fig. 3 the opening 33 is effectually closed.

Any form of cup may be employed in connection with the hand piece provided the same is formed with a threaded perforated stem that can be effectually secured in the socket 34. In the drawings, the cup 39 is shown hemi-spherical in form with a beaded edge to afford protection to the parts on which the same is employed, but any other shape may be used as desired.

Mounted in the opening 15 of the casing 5 is a hollow stem 40 exteriorly-threaded to be self-retaining and terminating at its outer end in a hollow preferably spherical member 41 hereinafter designated as a muffler, the upper portion of which is provided with an opening adapted to be normally closed by a gravity valve 43 having a horizontal annular flange to seat on the member 41 around the opening therein.

The member 41, the opening in the stem 40 and the cavity in the casing 5 adjacent thereto are adapted to be filled with a heavy oil to constitute a muffler to reduce the noise incident to the operation of the device, the operation of which is as follows: Power of a suitable kind is applied to the motor 2 causing a revolution of the shaft 3 and gears 8 and 10. These gears revolve with great speed and fitting snugly within the casing close engagement with each other will, when revolved in the direction of the arrows in Fig. 3, withdraw the air contained in the valve casing 17, the tubular member 29 and the opening 33. If, during the operation of the motor the valve 35 in the hand piece is opened the air will be withdrawn from the interior of the cup through the various members just described and through the opening in the casing 5 and be driven by the movement of the gears which constitute fans or pumping devices for this purpose through the muffler 41 from whence it escapes by slightly raising the valve 42, which, when the pressure decreases, immediately returns to its seat. When the air passes through the muffler it also passes through the oil contained therein which effectually reduces the noise incident to the escape thereof.

It will be obvious that when the tool 39 is applied to the human body and the valve 35 opened a partial vacuum is formed in the cup 39 which produces a suction or cupping

effect on the portion to which the same is applied, causing thereby great stimulation of the parts and in conformity to the well-known laws, blood will flow to the vicinity of the portions on which the cup is applied, thereby producing artificial congestion or stimulation of the parts treated.

In order to regulate the strength or completeness of the vacuum or degree of stimulation to be produced by this device the valve 19 is employed which is normally raised by the current of air passing through the tubular member 29, but when it is desired to reduce the strength or completeness of the vacuum to be produced in the cup-shaped member 39 the collar 25 is moved downwardly on the upwardly-extending portion of the member 21 and locked by the set screw 26 thereby increasing the force of the spring 24 which in turn holds the valve 19 more firmly on its seat thus reducing the operative effect or action of the device.

It will be obvious of course that in using this device the operator can readily test the amount of vacuum which the device will produce and by carefully adjusting the position of the collar 25 the machine will operate with a substantially constant degree of operative energy and when so adjusted the collar 25 may be locked in position through the medium of the set screw 26. It will also be apparent that in setting up a device of this character and the motor is one which runs in a direction reverse to that shown in the drawings, the muffler 41 and nipple 16 may be interchanged and the device work with equal efficacy.

What I claim and desire to secure by Letters Patent, is:—

1. A device of the class described comprising a supporting-instrumentality, a pump-casing mounted thereon, an exhaust pump positioned in said casing, a valve-casing in open communication with said pump-casing, a valve in said casing, resilient means for controlling the movement of said valve, a tube having one end connected to said valve-casing, a tubular hand-piece on the opposite end of said tube and a valve on said hand-piece for controlling the passage of a fluid therethrough.

2. A device of the class described comprising a supporting-instrumentality, a casing mounted thereon, an exhaust pump positioned in said casing comprising a plurality of intermeshing gears, a motor for operating said gears, said gears adapted to fit snugly within said casing, said casing provided with an inlet-opening, a valve-casing connecting said inlet-opening, a valve for controlling the passage of a fluid through said valve-casing, means operating said valve for resiliently holding the same on its

seat, a tube connected with said valve-casing, a tubular hand-piece on the opposite end of said tube and a cup-shaped tool carried by said hand-piece.

3. A device of the class described comprising a supporting-instrumentality, a casing mounted thereon, an exhaust pump positioned in said casing comprising a plurality of intermeshing gears, a motor for operating said gears, said gears adapted to fit snugly within said casing, said casing provided with an inlet-opening, a valve-casing connecting said inlet-opening, a valve for controlling the passage of a fluid through said valve-casing, means operating said valve for resiliently holding the same on its seat, a tube connected with said valve-casing, a tubular hand-piece on the opposite end of said tube, a cup-shaped tool carried by said hand-piece and means for regulating the degree of pressure imposed on said valve by said resilient element.

4. A device of the class described comprising a supporting-instrumentality, a pump-casing mounted thereon, an exhaust pump mounted within said casing, a motor for operating said pump, said casing provided with inlet and exhaust-openings, a tube in open communication with said inlet-opening, a tubular hand-piece connected with the opposite end of said tube, a cup-shaped tool carried by said hand-piece, a muffler communicating with said exhaust-opening provided with an aperture and a valve normally adapted to close said aperture.

5. A device of the class described comprising a supporting-instrumentality, a pump-casing mounted thereon, a pump mounted within said casing, a motor for operating said pump, said casing provided with inlet and exhaust-openings, a tube in open communication with said inlet-opening, a tubular hand-piece connected with the opposite end of said tube, a cup-shaped tool carried by said hand-piece, a muffler communicating with said exhaust-opening provided with an aperture adapted to contain a muffling fluid, and a valve normally adapted to close said aperture.

6. A device of the class described comprising a supporting instrumentality, a pump casing mounted thereon, an exhaust pump positioned in said casing, a valve casing in open communication with said pump casing, a valve in said valve casing, means for controlling the movement of said valve, a tube having one end connected to said valve casing, a tubular hand-piece carrying an exhaust cup on the opposite end of said tube and a muffler adapted to receive air expelled from said valve casing.

7. A device of the class described com-

prising a supporting instrumentality, a casing supported thereby, said casing provided with an opening, a pair of intermeshing gears rotatably-mounted in said opening, a
5 motor for causing continuous rotation of said gears, said casing provided with inlet and outlet openings, a muffler connected with said outlet opening, a valve casing connected with said inlet opening, a valve in
10 said valve casing for controlling the passage of air through said casing and a tubular

member having one end connected with said valve casing and provided on its opposite end with an exhaust cup.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit- 15
nesses.

NATHANIEL LOMBARD.

Witnesses:

GLENARA FOX,
C. E. HUMPHREY.