

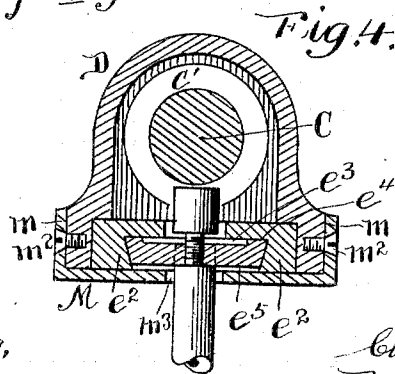
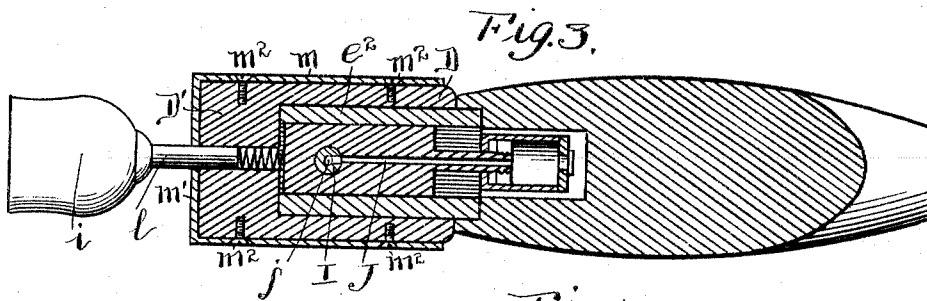
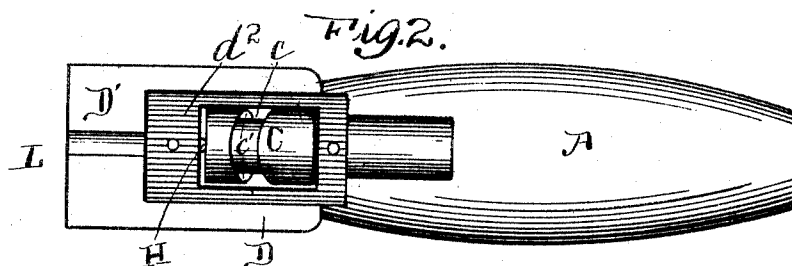
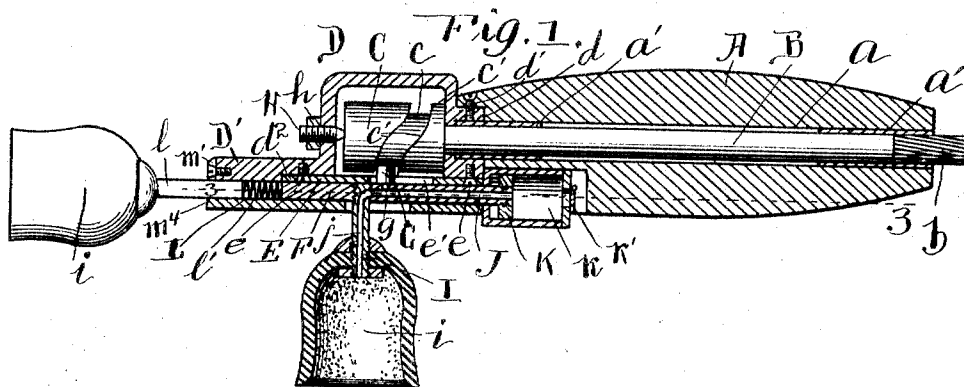
No. 766,970.

PATENTED AUG. 9, 1904.

C. PFANSCHMIDT.
MASSAGE MACHINE.

APPLICATION FILED SEPT. 21, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

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MASSAGE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 766,970, dated August 9, 1904.

Application filed September 21, 1903. Serial No. 174,058. (No model.)

To all whom it may concern:

Be it known that I, CHARLES PFANSCHMIDT, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Massage-Machines, of which the following is a specification.

This invention relates to that class of machines employing a suitable cup or pad for imparting a vibratory motion to the skin; and the invention more particularly relates to the means by which said vibratory motion is imparted to the pad or cup and the manner in which the parts are assembled so as to insure uniformity of movement and freedom from undue friction and at the same time combine simplicity and durability.

The invention consists of the features of construction and combination of parts hereinafter described and claimed.

In drawings illustrating the invention, Figure 1 is a longitudinal sectional view of the operative parts of the invention; Fig. 2, a bottom view of the handle and head, showing some of the parts removed; Fig. 3, a sectional plan view taken on line 3 3 of Fig. 1; and Fig. 4, a cross-sectional view of the head or casing, showing the operative parts therein.

As constructed, the massage-machine of this invention consists of a handle A, preferably constructed of wood, fiber, or other suitable material and provided in its interior with a longitudinally-extending hole *a*, provided with suitable bushings *a'*, and within the hole is a rigid shaft B, provided on its outer end with a flexible shaft *b*, leading to an electric motor or other suitable source of energy. (Not shown.) The shaft at its opposite end is provided with a cylindrical head C, within which is a spiral groove *c*, forming a spiral cam having inner contact-faces *c'*. The head C is inclosed within a casing D, terminating in a neck *d*, which is secured within the handle by means of screws *d'* or otherwise. The head or case is provided on its forward end with a projecting portion D', on the flat face of which is a recess *d''*, within which is secured a plate E, which plate is likewise secured to the neck *d* by means of screws

e or otherwise, thus inclosing the spiral cam within the head or case.

The flat plate E is provided with a longitudinally-extending slot *e'* and with outwardly-projecting beveled guide-walls *e''*. (Best shown in Figs. 3 and 4.) Mounted within the flat plate between the guide-walls is a reciprocating plate F, terminating in a piston rod or stem *f'*, projecting back into the handle, and the reciprocating plate has its outer edges beveled, as shown in Fig. 3, to conform to the beveled inner faces of the guide-walls, allowing the reciprocating plate to travel back and forth between the guide-walls and preventing its withdrawal therefrom.

In order to prevent undue friction, it is desirable to construct the reciprocating plate, as shown in Fig. 4, to have a recessed inner face *e''*, with contacting flanges *e'''* around its edges, and to make the plate of a thickness to leave a space *e'''* between it and the outer edges of the beveled guide-walls of the flat plate.

Upon the reciprocating plate is mounted a roller G, journaled upon a pin *g* and adapted to rotate when brought into contact with the contacting inner faces of the spiral cam, and said roller is constructed of a diameter to allow it to contact but one of the faces of the spiral cam, so that on the forward thrust of the plate the roller will be contacted by one of the faces and on the rear thrust of the cam by the other face, allowing its partial revolution first in one direction and then in the opposite direction, depending upon the forward or backward thrust of the reciprocating plate. This arrangement prevents the parts from being unduly heated by friction during the operation of the machine.

The cam-head is journaled at its forward end by a screw-threaded cone bearing-pin H, provided with a lock-nut *h*, which arrangement enables the parts to be adjusted to meet the requirements of use.

Outwardly projecting from the reciprocating plate and at right angles thereto is a shaft I, which is screw-threaded into the plate, and on the end of the shaft there is secured a suitable massage member *i*. Within the recip-

reciprocating plate and piston-rod is a longitudinally-extending air-passage J, which passage communicates with a similar passage in the shaft I, communicating with the interior of the massage member, as shown in Fig. 1. The piston-rod f terminates in a piston-head K, which is screw-threaded or otherwise secured to the piston, allowing the air-passage to open through the piston-head within a cylinder k , located within the handle of the machine and provided with an outwardly-opening valve k' of any suitable construction, which arrangement permits a discharge of air through the valve on the backward thrust of the piston and prevents its admission on the forward thrust of the piston, thereby creating a suction up through the air-passages and within the hollow massage-cup, as shown in Fig. 1.

In order to provide for a variety of movements, a longitudinally-extending recess L is cut in the outwardly-projecting portion of the head or case, and within said recess is located a reciprocating shaft l , having attached thereto a massage member, and between the flat reciprocating plate and the reciprocating shaft is located a spring l' , which is normally held in no tension, but which when the reciprocating shaft is inwardly pressed will establish communication between the reciprocating shaft and the reciprocating plate and impart a vibratory motion to the massage member, and the strength of the motion will depend entirely upon the amount of pressure exerted against the massage member from without, which pressure serves to bring the parts more closely into contact with one another.

The parts are inclosed by means of an exterior cap or plate M, provided with side walls m and end wall m' , through which walls pass screws m'' , uniting the exterior cap or plate to the casing. The casing is provided with a longitudinally-extending slot m''' , through which projects the shaft I, and with a hole m^4 , through which projects the shaft l .

The operation of the device will be partially understood from the foregoing description, but may be briefly stated as follows: When rotation is applied to the fixed shaft, the spiral cam-head will be rotated and the cam-faces alternately brought to bear against the roller G, forcing the reciprocating plate back and forth along a line of travel parallel to the handle, thereby imparting a sidewise travel to the massage member, causing a rubbing or kneading operation to be transmitted to the portion of the body acted upon. The edge of the massage-cup will be closely pressed against the skin, and upon the inward thrust of the reciprocating plate the valves k' , will be closed, and a suction from the interior of the massage-cup will be induced to fill the vacuum within the cylinder caused by the backward thrust of the piston-head therein and by the closing of the valve against the

admission of air from without. This suction will tend to draw the blood to the skin, and at the same time the edges of the massage member rubbing over the skin will produce a kneading or frictional effect thereon, which will be found highly advantageous in the treatment of the skin and scalp, and at the same time the vibratory motion will be sufficiently strong to affect portions of the body away from the immediate vicinity of the part acted upon. The amount of sidewise travel of the massage member can be regulated by changing the degree of spirality of the groove within the cam-head, and the amount of suction produced can be varied by increasing or decreasing the size of the cylinder and piston-head employed; but such changes do not in any way affect the character of the invention.

When the reciprocating shaft l is not employed, it can be removed from the massage-machine and not interfere in any way with the operation of the other parts, or the machine can be constructed without any such shaft without changing the operation in any way. Although the invention has been described with considerable minuteness as to mechanical details and features, it is plain that the same can be varied considerably and that the parts can be assembled and inclosed in a somewhat different manner without in any way departing from the spirit of the invention.

What I regard as new, and desire to secure by Letters Patent, is—

1. In a massage-machine, the combination of a handle adapted to be grasped by the hand, a rotary shaft within the handle, a cam on the rotary shaft, a reciprocating member actuated by the cam, a laterally-projected arm carried by the reciprocating member, and a massage member on said arm having a sidewise motion imparted thereto by reciprocation of the reciprocating member and adapted to be moved by the handle over the part to be treated, substantially as described.

2. In a massage-machine the combination of a handle, a rotary shaft therein, a cam-head on the rotary shaft, provided with a spiral recess therein, a casing surrounding the cam-head, an inner plate secured to the casing, and provided with side guide-walls, a reciprocating plate carried between the side walls, an arm carried by the reciprocating plate and adapted to have a sidewise motion imparted thereto by the reciprocation of the reciprocating plate, substantially as described.

3. In a massage-machine the combination of a handle, a rotary shaft extending longitudinally thereof, a casing on the end of the handle, a cam on the shaft within the casing, a reciprocating member actuated by the cam, provided with an air-passage through its body, a laterally-projecting arm carried by the reciprocating member and provided with an air-passage, communicating with the passage in

the reciprocating member, a hollow massage member, carried by the said arm, a piston-head on the end of the reciprocating member, a cylinder within which the piston-head operates and a valve in the cylinder, for preventing the ingress of air and causing a suction within the interior of the massage member upon the reciprocation of the reciprocating member, substantially as described.

4. In a massage-machine the combination of a reciprocating member, provided with an air-passage, a massage member carried by the reciprocating member to have its interior in communication with the air-passage, means for reciprocating the reciprocating member, and a cylinder into which the reciprocating member is entered to produce a suction within the massage member, substantially as described.

5. In a massage-machine the combination of a reciprocating member, means for actuating the reciprocating member, a massage member carried by the reciprocating member, a cylinder in communication with the interior of the massage member and a piston within the cylinder actuated by the movement of the reciprocating member, for producing a suction within the interior of the massage member, substantially as described.

6. In a massage-machine the combination of a handle adapted to be grasped by the hand, a reciprocating member carried by the handle, means for actuating the reciprocating member, and a laterally-projecting massage member carried by the reciprocating member and having a sidewise travel imparted thereto by the movement of the reciprocating member and adapted to be moved by the handle over the part to be treated, substantially as described.

7. In a massage-machine the combination of a handle adapted to be grasped by the hand, a reciprocating member carried by the handle,

means for actuating the reciprocating member, a laterally-projecting massage member carried by the reciprocating member, and a second massage member having a direct reciprocation imparted thereto by the action of the reciprocating member and adapted to be moved by the handle over the part to be treated, substantially as described.

8. In a massage-machine the combination of a flat reciprocating plate, a guide-plate within which the reciprocating plate is carried, a piston-rod carried by the reciprocating plate, a piston-head on the end of the piston-rod, a cylinder within which the piston-head operates, a valve allowing the egress of air from and preventing the ingress of air to the cylinder, an air-passage to the cylinder through the piston-rod and the reciprocating plate, and a massage member actuated by the reciprocating plate and having its interior in communication with the air-passage through the piston-rod, for producing a suction within the massage member and means for actuating the reciprocating plate, substantially as described.

9. In a massage-machine, the combination of a reciprocating member, means for actuating the reciprocating member, a massage member adapted to be reciprocated by the reciprocating member and a normally relaxed spring between the reciprocating member and the massage member adapted to be compressed by pressure exerted against the massage member to press against the reciprocating member and impart motion therefrom to the massage member, whereby the strength of the motion imparted to the massage member will depend upon the external pressure exerted against the massage member, substantially as described.

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