No. 737,465. PATENTED AUG. 25, 1903.

C. PFANSCHMIDT & J. SIEFERT.

MASSAGE MACHINE.

APPLICATION FILED FEB. 28, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

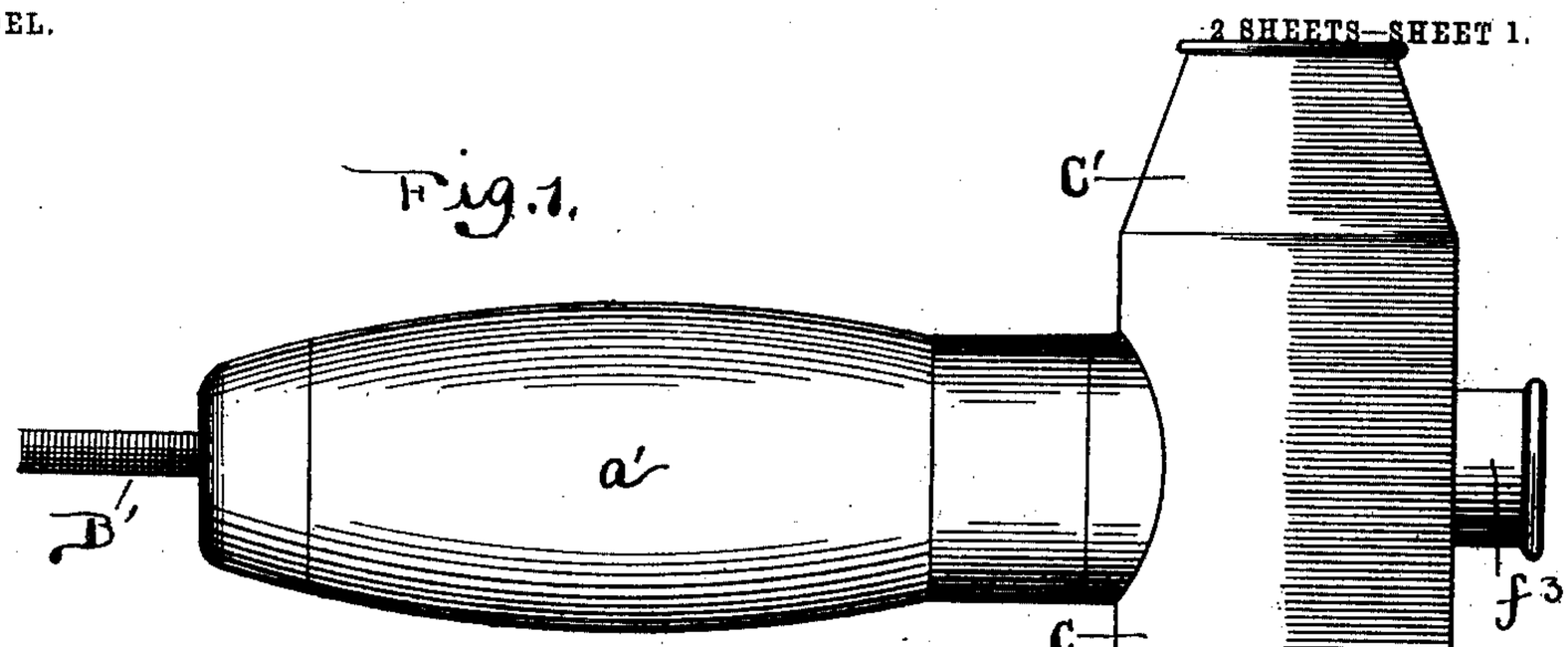


Fig. 2.

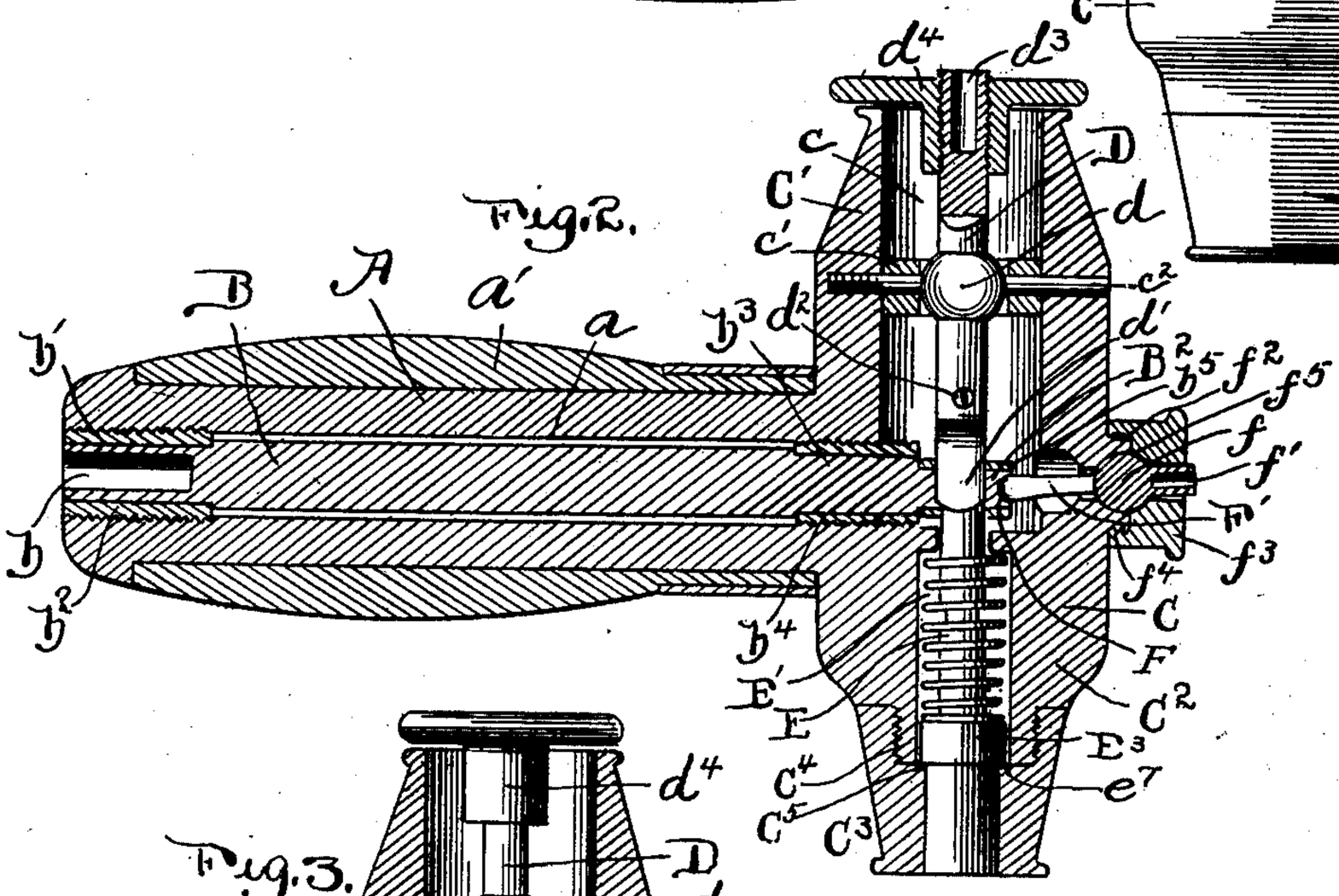
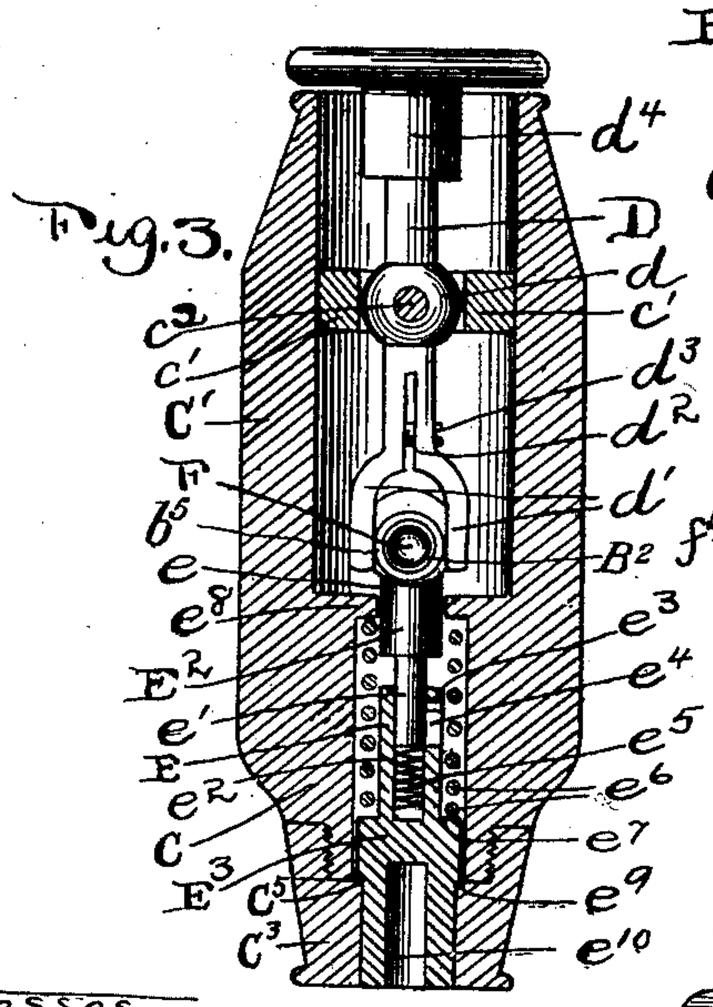


Fig. 3.



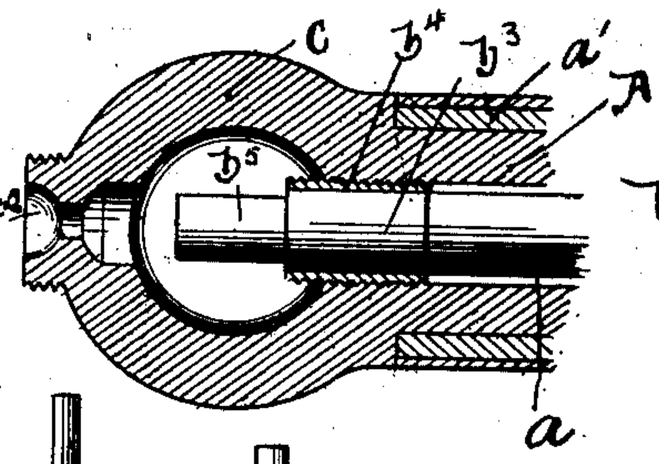


Fig. 4.

Fig 5

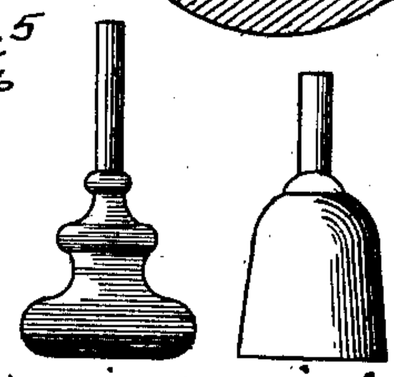


Fig. 6.

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MASSAGE MACHINE.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 7.

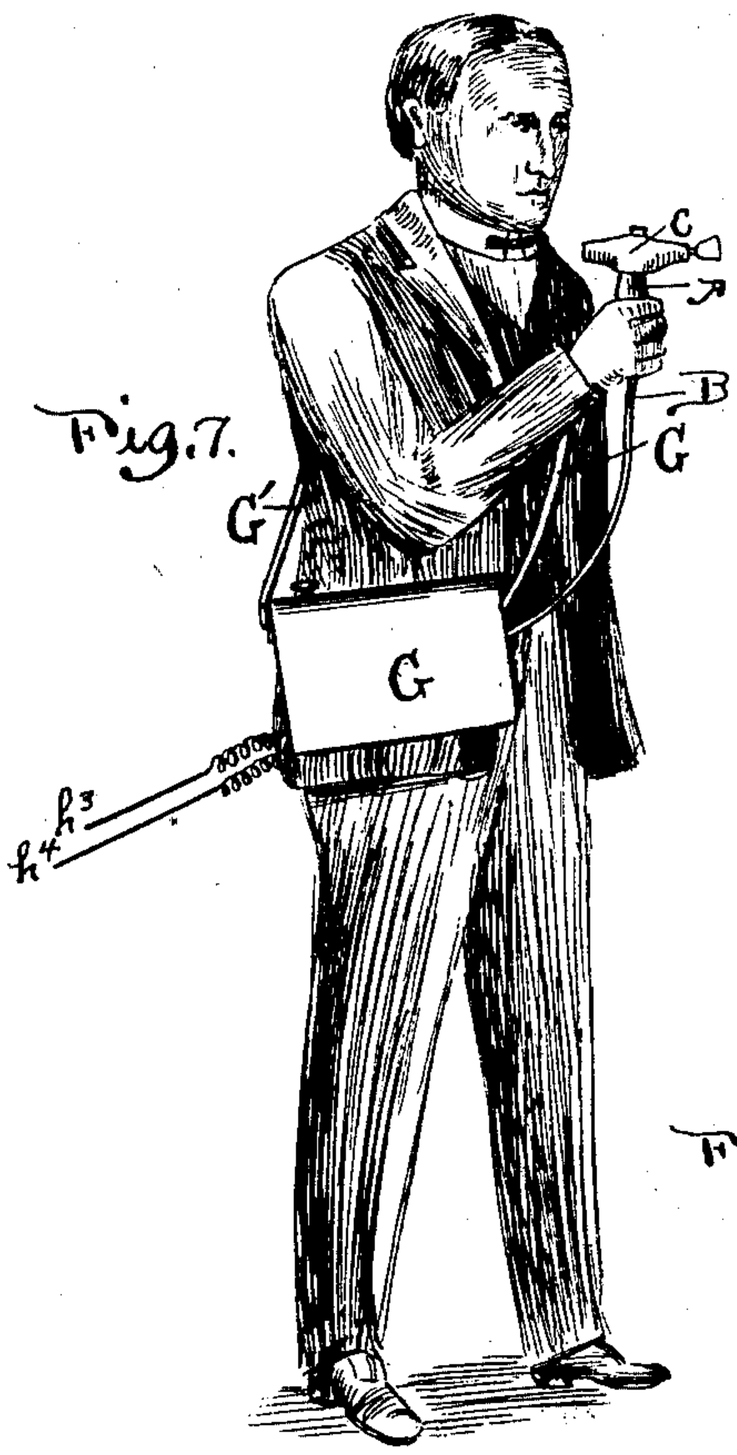


Fig. 10.

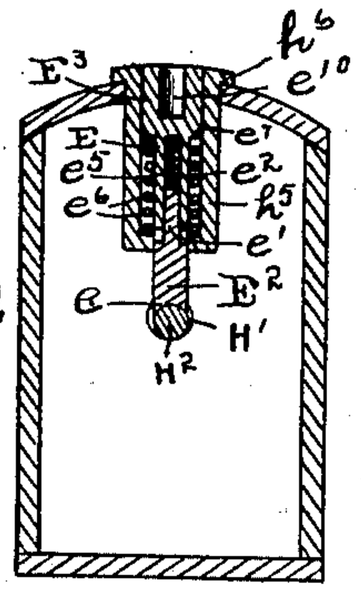


Fig 8

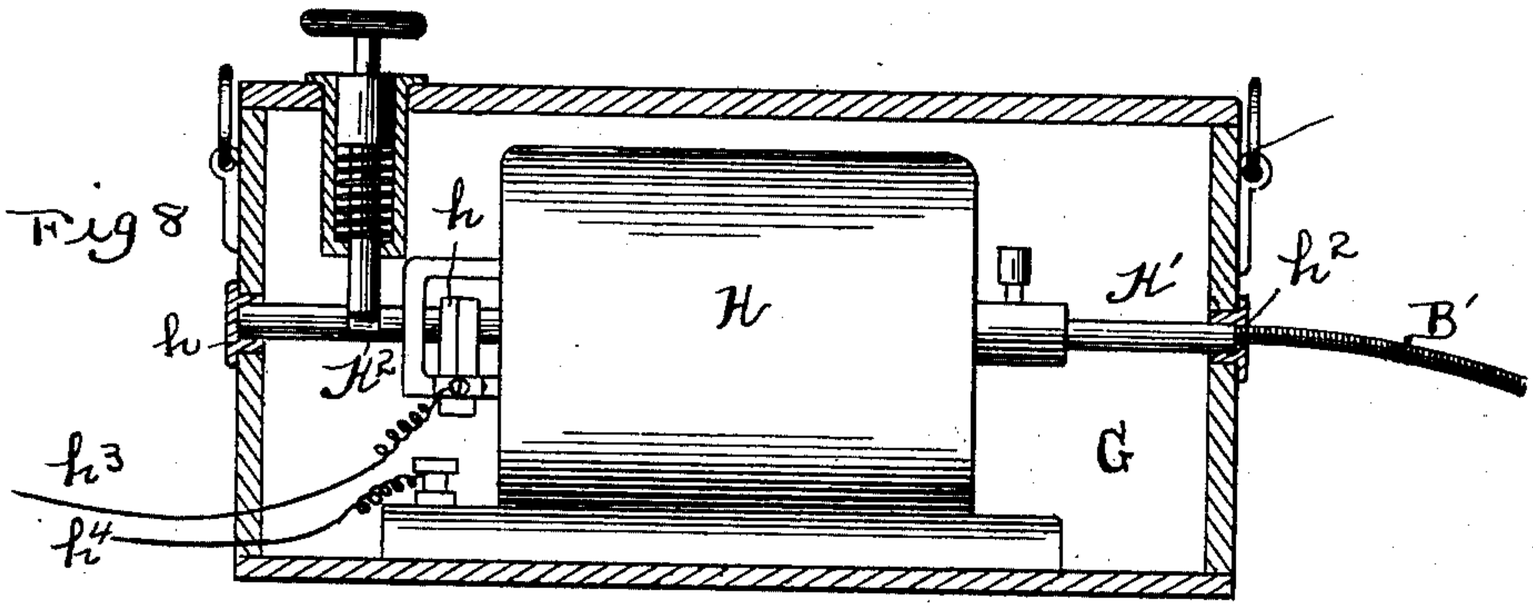
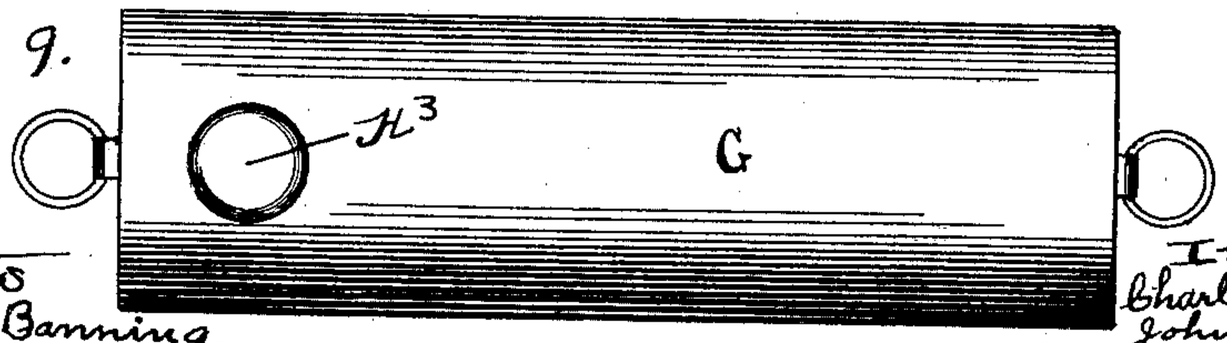


Fig 9.



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No. 737,465. Patented August 25, 1903.

UNITED STATES PATENT OFFICE.

CHARLES PFANSCHMIDT AND JOHN SIEFERT, OF CHICAGO, ILLINOIS.

MASSAGE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 737,465, dated August 25, 1903.

Application filed February 28, 1903. Serial No. 145,614. (No model.)

To all whom it may concern:

Be it known that we, CHARLES PFANSCHMIDT and JOHN SIEFERT, citizens of the United States, both residing at 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.

The object of this invention is to produce a machine which combines within a small space mechanism for imparting a variety of motions to the massage cups or disks, thereby enabling the same machine to be used in various massage operations, so that the operator may change the character of the treatment to suit the requirements of each particular case without the necessity for the use of a new machine or for an extensive readjustment of the parts composing the machine. The machine is further intended to be portable and of light weight, so that a physician or masseur may carry the instrument from place to place, thereby enabling the patient to take home treatments and obviating the necessity for visits to the office or parlor of the operator. The operating-head is so arranged that three motions may be imparted—an oscillating or vibratory motion, a reciprocating or pounding motion, and a rotary or gyrating motion. These three motions are all imparted from a single shaft, which is adapted to be rotated by a motor carried by the operator, enabling a great variety of massage operations to be performed at a single treatment.

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

In the drawings, Figure 1 is a side elevation of the operating-head; Fig. 2, a longitudinal section of the same; Fig. 3, a longitudinal section taken at right angles to the plane of the section of Fig. 2; Fig. 4, a cross-section showing the handle broken away; Figs. 5 and 6, views showing massage instruments adapted for use with the machine; Fig. 7, a view showing the entire device as carried by the operator; Fig. 8, a longitudinal sectional view of the portable box or casing containing the motor; Fig. 9, a top or plan view of the same, and Fig. 10 a cross-sectional view of the same.

The mechanism for imparting the various motions above referred to is contained within a casing which is substantially T-shaped or hammer-shaped, as shown in Figs. 1 and 2, and consists of a longitudinally-extending handle A, through the center of which extends a hole or opening a, and said handle is preferably provided on its exterior with an insulating-casing a', of wood, fiber, or other heat-non-conducting material, which arrangement is desirable in order that the hand of the operator may not be heated by the heat incident to the operation of the parts. Within the longitudinally-extending hole in the handle is a shaft B, provided in its end with a recess b, adapted for the insertion thereinto of a flexible shaft B′, leading to the source of energy. The outer end b' of the rigid shaft is turned down to a smaller diameter than the shaft, and, as shown, is encircled by an exterior bearing-collar b^2, preferably of hardened material, screw-threaded into the body of the handle, as shown in Fig. 2, and the end b^3 is likewise encircled by a hardened interior collar b^4, which two collars are of sufficient thickness to prevent contact between the face of the shaft and the walls of the hole, affording an easy rotation for the shaft causing the entire frictional contact of the shaft to be against the hardened bearings, thereby preventing undue wear or strain on the other parts of the machine. The inner end of the shaft terminates in an eccentric-stud B^2, which, as shown, is surrounded by a hardened bearing-sleeve b^5, against which bearing-collar the mechanism operating the vibrating and reciprocating shafts is adapted to contact. The handle terminates in a cross-head C, consisting of a casing C′, inclosing the vibrating mechanism, and a casing C^2, inclosing the reciprocating mechanism, which latter casing terminates in a section C^3, screw-threaded onto a ring C^4, to form a shoulder or ledge C^5 at the point of contact. The body or casing C′ is hollowed or recessed to have a cylindrical chamber c in its interior, and suitably located therein is a ring c', preferably of hardened material, the outer face of which ring contacts the wall of the casing, and through said ring extends a bearing-pin c^2 of sufficient length to extend entirely through the ring and be screw-threaded into

the opposite wall of the body or casing, affording an axle or bearing for mounting thereon the vibrating shaft D, which is provided near its center with a hardened ball *d*, through which the pivotal pin or axle passes, and said ball is of a sufficient diameter to contact the inner walls of the hardened ring and prevent any lateral movement of the vibrating shaft and secure a firm and perfect bearing-surface for the vibration of the shaft D. The inner end of the vibratable shaft is forked with arms *d'*, between which extends a slot d^2 into the body of the shaft, and through said slot is screw-threaded an adjusting-screw d^3 for regulating the divergence of the arms of the shaft and enabling the same to be adjusted to take up any wear incident to the operation of the machine. The two arms are substantially parallel at their operating ends and are spaced a sufficient distance apart to snugly embrace the collar on the eccentric at the end of the shaft, so that a rocking or vibratory motion will be imparted to the vibratory shaft with the rotation of the main shaft, the vibrating shaft swinging back and forth on its pivotal axle or bearing. The vibrating shaft is provided at its outer end with a slotted recess d^3, for the insertion thereinto of a cup, pad, or other massage implement, and said implement is retained in its place by the clamping action of a head d^4, which is screw-threaded onto the end of the vibrating shaft and, as shown, is of a sufficient diameter to inclose the end of the recess in the body or casing of the vibratory mechanism. At the opposite end of the cross-head C is a reciprocating shaft E, located within a recess E' in the body or casing C^2, and said recess is of a diameter slightly larger than the recess in the screw-threaded end section C^3, forming the shoulder or ledge C^5, before referred to. The reciprocating shaft, as shown, is composed of two sections, an inner section E^2 and an outer section E^3, the inner section terminating at its inner end in a hardened concave bearing-face *e*, adapted to contact the eccentric collar on its free side and terminating at its outer end in a stud *e'*, adapted to enter the inner end e^2 of the outer section. The stud is provided with a laterally-extending pin e^3, operating within a slot e^4 in the wall of the outer section of the shaft, as shown in Fig. 3, and within the section e^2 is a spring e^5, of a less length than the recess within which it operates, contacted by the end of the stud *e'*, permitting the sections of the shaft to be telescoped one within the other when pressure is brought to bear upon the spring e^5. Around the two sections of the shaft is an exterior spring e^6, which bears at one end against a shoulder e^7, formed on the outer section of the vibratable shaft, and at its other end against a ledge e^8, formed at the inner end of the recess E' in the shell or casing, which arrangement causes the outer section of the reciprocating shaft to be forced outwardly until the shoulder or ledge C^5 contacts with a shoulder e^9, formed on the face of the outer section, which contact limits the outward thrust of the reciprocating shaft. The reciprocating shaft is provided with an inwardly-extending recess e^{10} in its outer end for the insertion thereinto of a massage implement suitable for use in a pounding operation. In the end of the eccentric stud is a depression F, against which bears a gyrating shaft F', provided with a ball-bearing *f*, suitably located and terminating in a recessed socket *f'* for the insertion thereinto of an instrument suitable in massage operations. The ball-bearing F bears against a hardened socket f^2, having a curvature conforming to the curvature of the ball-bearing, and said ball-bearing is held in place by means of a cap f^3, screw-threaded down onto a boss f^4 and provided with a bearing-face f^5, curved to coincide with the curvature of the ball-bearing and the socket heretofore referred to. When it is desirable to remove either the reciprocating or gyrating shaft, the same may be readily accomplished by unscrewing the caps or sections by which the respective shafts are held in place, which is the only thing necessary to effect the removal.

In operation the eccentric movement of the main shaft will cause the vibrating shaft to be oscillated or rocked rapidly by the contact of the eccentric-collar against the arms of the slotted vibrating shaft, and at the same time the gyrating shaft will be moved rapidly in a circle by reason of its contact against the end of the eccentric-stud; but the reciprocating or pounding shaft will not be operated until pressure is brought to bear against the shaft, which arrangement is important, since the energy of the machine is not expended in useless operations nor are the parts heated or worn unless actually in use. In the pounding operation when the pounding disk or knob has been inserted into place and pressed against the surface of the skin to be operated upon the outer section of the oscillating or pounding shaft will be pressed back against the pressure of the outer spring e^6, and likewise against the pressure of the inner spring e^5, which, however, is of a less length than the recess within which it operates, which arrangement allows the outer section to be forced back slightly before movement is imparted to the inner section, after which, however, the spring e^5 will be compressed, imparting pressure to the inner section and gradually forcing the latter back against the rapidly-revolving eccentric-collar until the inner spring has been compressed sufficiently to allow the end of the outer section of the shaft to contact the shoulder formed on the inner shaft, at which point the shaft becomes, in effect, a solid shaft and the full force of the pounding or reciprocating motion will be felt. This arrangement allows the pounding effect to be varied or regulated by the pressure which is brought to bear thereon, a light pressure producing a correspondingly light-pounding effect and a heavy pressure a heavy

pounding effect. The transmission, however, from a light to a heavy pounding is gradual by reason of the tension of the spring, so that the machine will not be injured by a sudden motion imparted to the reciprocating or pounding shaft, nor will the effect produced on the skin of the person operated upon be sudden and severe, but gradual, so that the effect produced may be regulated to suit the conditions of the case. When pressure is released from the shaft, the outer section will be acted upon by the interior spring and forced back into contact with the shoulder C^5, the pin e^3 of the inner section meanwhile contacting the end of the slot in the outer section, which contact serves to withdraw the concave contact end of the inner section from contact with the revolving shaft, so that the reciprocating shaft is drawn entirely out of contact with the eccentric and its motion stopped.

Figs. 7, 8, 9, and 10 illustrate the portable mechanism employed to operate the devices hitherto described. As shown, such portable mechanism is contained within a box G, of narrow formation, having a curved top and provided at its ends with straps G′, by which it may be supported from the shoulder of the operator. Within the box is an electric motor H, provided with a motor-shaft H′ and suitable brushes h of any ordinary formation. The motor-shaft operates within journal-bearings h' and h^2, and to the end of the motor-shaft is attached the flexible shaft B′, above referred to. The motor is provided with supply-wires h^3 and h^4, leading to any suitable source of electrical supply. The reciprocating shaft of this invention may be otherwise arranged than in the manner hitherto described. It is intended that the box containing the motor shall further serve as a support or rest for the body of a patient when it is desirable to treat such patient for weakness or affection of the prostate gland, and for this reason the top of the box is rounded, so that the patient may sit thereon during treatment. It has been found beneficial to impart a pounding or oscillating motion to the prostate gland and surrounding parts in order to increase the circulation and nerve action, and the box is fitted with a reciprocating shaft similar to the one hitherto described, which shaft operates within a suitable socket or casing h^5, extending down from the top of the box and secured thereto by means of a flange h^6, as shown in Figs. 8 and 10, although other arrangements may be employed, if desired. The reciprocating shaft contacts directly against an eccentric H^2 on the motor-shaft and receives its motion directly therefrom, imparting such motion to a pad or disk H^3, which rises above the top of the box and against which the patient presses when receiving the treatment above referred to, the intensity of the operation being regulated by the pressure brought to bear against the pad or disk, which regulation is entirely within the control of the patient himself while undergoing treatment. In order that the patient may be more easily raised upon the box or case, it is intended that the same shall be fitted into any suitable support (not shown) of such a size and height that the patient may rest his feet upon the floor during the operation in order that he may himself regulate the amount of pressure exhibited against the pad or disk. It will thus be seen that the entire device is easily portable and enables the operator to vary the character of treatment without changing or regulating the machine to any appreciable extent, that the motor-case is so arranged that it not only serves as a receptacle for the motor, but also as a support for the patient while undergoing one kind of treatment, and that the parts are so arranged and related that they interfere in no wise with one another when in operation.

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

1. In a massage-machine, a reciprocating shaft, a suitable casing for the shaft, an eccentric against which the reciprocating shaft is adapted to contact, and a spring surrounding the reciprocating shaft for allowing the same to be brought against the pressure of the spring into contact with the eccentric, substantially as described.

2. In a massage-machine, the combination of a reciprocating shaft consisting of two sections slidable one within the other, a suitable casing for the shaft, an eccentric against which the reciprocating shaft is adapted to contact, and a spring surrounding the reciprocating shaft for allowing the same to be brought against the pressure of the spring into contact with the eccentric, substantially as described.

3. In a massage-machine, the combination of a reciprocating shaft consisting of two sections, an inner section and an outer section, the inner section being provided with a stud and the outer section being provided with a recess into which the stud may be entered, an interior spring within the recess, an exterior spring surrounding the reciprocating shaft and bearing against the outer section thereof, a casing inclosing the reciprocating shaft against which the exterior spring contacts, and a main shaft within the casing provided with an eccentric against which the reciprocating shaft is adapted to be forced against the pressure of the exterior spring, substantially as described.

4. In a massage-machine, the combination of a handle provided with a longitudinally-extending hole therein, a main shaft entered into the hole in the handle, an eccentric on the end of the main shaft within a cross-head attached to the handle, a vibrating shaft pivoted within one section of the cross-head and provided at its inner end with a contact for the eccentric, a reciprocating shaft operating within the opposite end of the cross-head and adapted to contact with the eccentric, and a

spring normally holding the reciprocating shaft out of contact with the eccentric, substantially as described.

5. In a massage-machine, the combination of a handle provided with a longitudinally-extending hole therein, a main shaft entered into the hole in the handle, an eccentric on the end of the main shaft within a cross-head attached to the handle, a vibrating shaft pivoted within one section of the cross-head and provided at its inner end with a contact for the eccentric, a reciprocating shaft operating within the opposite end of the cross-head adapted to contact with the eccentric, and a coil-spring surrounding the reciprocating shaft and normally holding the same out of contact with the eccentric, substantially as described.

6. In a massage-machine, the combination of a handle provided with a longitudinally-extending hole therein, a main shaft entered into the hole in the handle, an eccentric on the end of the main shaft within a cross-head attached to the handle, a vibrating shaft pivoted within one section of the cross-head and provided at its inner end with a contact for the eccentric, a reciprocating shaft consisting of an outer section and an inner section inserted thereinto, an interior spring within the inner section, and an exterior spring encircling the reciprocating shaft and normally holding the same out of contact with the eccentric, substantially as described.

7. In a massage-machine, the combination of a handle provided with a head at right angles thereto, a main shaft within the handle terminating in an eccentric operating within the head, a reciprocating shaft within the head consisting of an outer section and an inner section inserted thereinto, an interior spring within the inner section, an exterior spring surrounding the reciprocating shaft and normally holding the same out of contact with the eccentric, and a gyrating shaft pivoted in line with the main shaft and fitting into the end of the eccentric on the main shaft for imparting a gyratory motion to the gyrating shaft, substantially as described.

8. In a massage-machine, the combination of a handle, a cross-head at an angle thereto, a main shaft within the handle, an eccentric on the end of the main shaft within the cross-head, an oscillating or rocking shaft pivoted within the cross-head and provided at its inner end with a fork contacting the eccentric, a gyrating shaft provided with a ball-bearing pivoted in line with the main shaft and adapted to enter a recess in the end of the eccentric, substantially as described.

9. In a massage-machine, the combination of a handle, a main shaft within the handle, an eccentric on the end of the main shaft provided in its end with a recess, a gyratory shaft adapted to enter the recess, a ball on the gyratory shaft, a longitudinally-extending socket projecting from the ball, a rounded socket within which the ball is adapted to rotate, and a cap fitting down over the ball and provided with a rounded socket coinciding with its companion socket inclosing the ball, substantially as described.

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