F. H. BRAUTIGAM.

MASSAGE VIBRATOR.

APPLICATION FILED AUG. 26, 1910.

1,001,501. Patented Aug. 22, 1911.

Fig. 1.

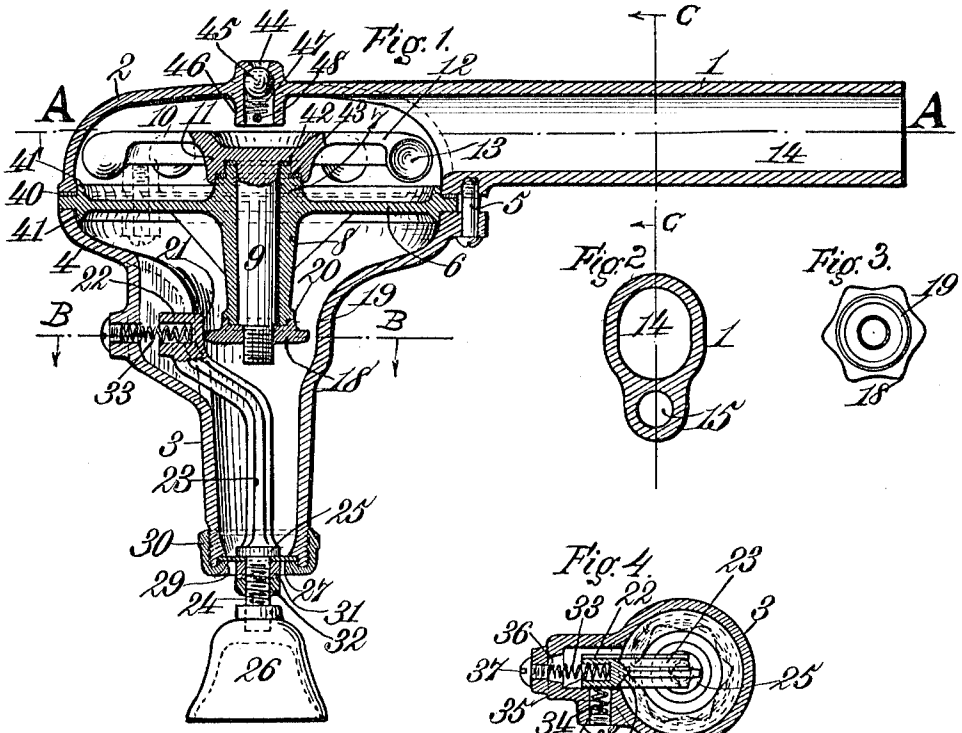


Fig. 2.

Fig. 3.

Fig. 4.

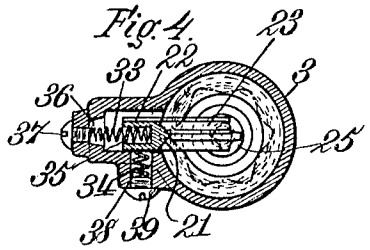
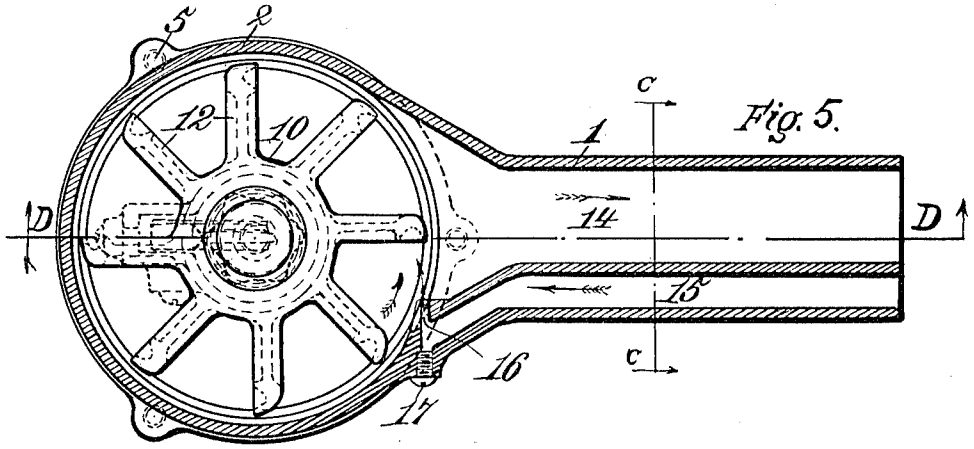


Fig. 5.



WITNESSES

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MASSAGE-VIBRATOR.

1,001,501. Specification of Letters Patent. **Patented Aug. 22, 1911.**

Application filed August 26, 1910. Serial No. 579,018.

To all whom it may concern:

Be it known that I, FREDERICK H. BRAUTIGAM, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Massage-Vibrators, of which the following is a specification.

The present invention has reference to improvements in massage vibrators, and more especially in that type of vibrator which includes an applicator carried by a rocking lever. Its object comprehends, generally, the production of a massage implement of the type specified wherein the construction is simplified and the efficiency increased to a maximum extent by the employment of as few parts as possible for effecting the rocking movements of the lever, and by rendering these parts certain and positive in their operation.

A structural embodiment of the invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a longitudinal vertical sectional view of the improved vibrator, taken on the line D—D of Fig. 5. Fig. 2 is a transverse vertical sectional view taken on the line C—C of Figs. 1 and 5. Fig. 3 is a detail plan view of the star wheel which operates the applicator lever. Fig. 4 is a horizontal section taken on the line B—B of Fig. 1. Fig. 5 is a horizontal sectional view taken on the line A—A of Fig. 1.

The casing of the implement, wherein the various working parts are arranged, comprises a tubular handle portion 1 terminating at its front end in a cup-like extension 2, and a hollow tapering neck or stem 3 formed at its upper end with a cup 4, which is a counterpart of cup 2, above referred to, the two cups being connected together by a series of bolts 5. Between the cups 2 and 4 is interposed a horizontal partition plate 6 formed upon its upper face with a centrally located stepped bearing 7, and upon its lower face with a similarly located depending sleeve 8, the bore of said sleeve opening through the upper end of the bearing 7. The sleeve 8 constitutes a support for the vertical shaft 9 of a water wheel 10, the stepped central portion or hub 11 of said wheel fitting upon the stepped portion 7 of plate 6.

The water wheel, shown in Figs. 1 and 5, preferably comprises a series of arms 12 which radiate from the hub portion 11 and have their enlarged free ends cupped, as indicated by the numeral 13. While any preferred means may be utilized for effecting the rotation of the water wheel, as will be apparent, it is considered advisable to employ a current of water for this purpose. Accordingly, the interior of the handle portion 1 of the casing is divided into two isolated water passages or conduits 14 and 15, shown in Figs. 1, 2 and 5, the second-named passage constituting the water inlet and being provided at its inner ends with an aperture 16 through which the water is injected tangentially against the wheel cups. To form this aperture 16, an opening is preferably drilled through the casing from the outside, the opening in the outer wall being subsequently closed by a screw 17 or other suitable plug. The lower end of the wheel shaft 9 is reduced, as shown in Fig. 1, and constitutes a spindle on which is threaded a multi-pointed member 18, preferably in the form of a star wheel. Upon the upper face of this wheel there is formed an annular flange 19 which fits against an annular shoulder 20 formed upon the lower end of the bearing sleeve 8, the arrangement being such that while the wheel shaft, when in motion, will rotate the star wheel, the interengagement of the flange and shoulder will preclude upward movement and consequent displacement of the water wheel and wheel shaft. During the rotation of the star wheel, its teeth are designed to successively strike against the nose 21 formed upon the enlarged head 22 of the applicator lever 23, thereby imparting the necessary rocking movements to the latter, as hereinafter described. In its preferred form, this lever comprises an angular metal rod, the two arms of which lie in different planes, the upper arm terminating at its free end in the above mentioned head 22, and the lower arm in a threaded pin 24, an enlargement or collar 25 being formed at the upper end of the pin. To the lower end of said pin there is affixed the usual cup 26. The said lever is mounted adjacent its lower end in a diaphragm 27 constructed of rubber or other suitable elastic material and supported at its peripheral edge between a circumferential shoulder formed on the inner surface of the neck 3 at the lower end thereof,

and the in-turned lower end 29 of a cap nut 30, which nut is threaded upon the neck end. The lever is fastened to this diaphragm by inserting its pin 24 through a central opening therein until the under face of the collar 25 rests upon the upper face of the diaphragm, after which a pair of nuts 31 and 32 are threaded upon said pin to clamp the diaphragm against the under face of said collar, the attachment of the cup 26 to the lever being effected subsequent to the positioning of the two clamping nuts, as will be understood.

Owing to the flexibility of the diaphragm, the desired rocking movements or vibrations may be imparted to the lever. To effect such movements, there is provided, in conjunction with the star wheel already described, a pair of springs 33 and 34, which are arranged at right angles to each other. Spring 33 is arranged in the vertical plane of the lever and has one end thereof received in a recess 35 formed in the head 22, the other end of said spring projecting into an opening 36 formed through the casing wall and closed by a plug 37. The spring 34, in like manner, is received at one end in an opening 38 formed through the casing wall at right angles to the opening 36, and bears at its opposite end against one side of head 22. See Fig. 4. Opening 38 is likewise closed by a plug 39 similar to the plug 37. The arrangement of the two springs 33 and 34 with respect to the head of the lever is such that the first spring will tend to move said lever laterally inward toward the star wheel, while the second spring tends to normally impart a lateral movement to said lever at right angles to the first movement. Both springs bear continuously against the head of the lever, and, in consequence, hold said head at all times against the periphery of the star wheel. Consequently, when the star wheel is in motion, the successive contact of its teeth against the nose of said head will result in a compound vibratory movement of the lever, *i. e.*, the lever is vibrated laterally by two separate forces acting at right angles to each other, which movement is in turn imparted to the cup 26.

In order to prevent the escape of water from the upper cup into the lower cup, an annular washer 40 is interposed between the adjacent edges of the cup 2 and the partition plate 6, the latter element being formed upon opposite sides with circumferential flanges 41, which facilitate its correct positioning with respect to the cups 2 and 4. The upper of the two flanges also assists in preventing the escape of the water from the upper cup. Additional annular washers 42 and 43 are also interposed between the adjacent faces of the stepped hub 11 and the stepped bearing 7.

In order to provide for the admission of air into the interior of the casing, when the water wheel is in motion, the upper wall of said casing is provided with a vent 44 located directly above the wheel shaft and normally closed by a ball valve 45 movable in a tubular boss 46. Said boss is likewise formed integral with the casing wall and depends therefrom. It is of sufficient extent to receive a coil spring 47, which presses the ball upward against the vent, the lower end of the spring bearing against a cross pin 48 inserted in said boss.

The operation of the implement is believed to be apparent from the foregoing, and further description thereof is accordingly omitted.

I claim as my invention:

1. In a massage implement, the combination of a casing, a rocking lever mounted therein, an applicator carried by said lever, a multi-pointed rotary member directly engaging said lever at a predetermined point thereon, means for rotating said member, and a pair of resilient members arranged at an angle to each other for exerting pressure in different directions upon said lever to hold the same continuously in contact at such point with said rotary member when the latter is in motion, for imparting combined lateral vibrations thereto.

2. In a massage implement, the combination of a casing, a rocking lever mounted therein, an applicator carried by said lever, a multi-pointed rotary member directly engaging said lever at a predetermined point thereon, means for rotating said member, and a pair of presser members arranged at an angle to each other and bearing directly against the upper end of said lever to hold said end continuously against the edges of the points of said rotary member when the latter is in motion, for imparting combined lateral vibrations to said lever.

3. In a massage implement, the combination of a casing, a rocking lever mounted therein and provided at one end with a head having a beveled nose, an applicator connected to the other end of said lever, a multi-pointed rotary member engaging said nose, means for rotating said member, and separate members for exerting pressure in different directions directly upon said head for holding the nose thereof continuously in contact with the edges of the points of said rotary member when the latter is in motion to impart combined lateral vibrations to said lever.

4. In a massage implement, the combination of a casing, a rocking lever mounted in said casing and provided with a head having a recess formed therein, an applicator secured to said lever, a multi-pointed rotary member engaging said head, means for rotating said member, a spring having one end seated in said recess for exerting pressure in

one direction upon said lever, and a second spring arranged at right angles to the first spring for simultaneously exerting pressure in another direction upon said lever, said springs serving to hold said head continuously against the edges of the points of said rotary member when the latter is in motion, to impart combined lateral vibrations to said lever.

5. In a massage instrument, the combination of a casing, a rocking lever mounted therein and provided with a head having a beveled nose and formed with a recess, an applicator secured to said lever, a multi-pointed rotary member engaging said nose, means for rotating said member, a spring having one end thereof seated in said recess for normally exerting pressure in one direction upon said head, and a second spring arranged at right angles to the first spring for simultaneously exerting pressure in another direction upon said head, said springs serving to hold said nose continuously in contact with the edges of the points of said rotary member when the latter is in motion, to impart combined lateral vibrations to said lever.

6. In a massage implement, the combination of a casing formed with a tubular stem, a flexible diaphragm fitted in the outer end thereof and provided with a central opening, a rocking lever arranged within said stem and formed at one end with a head and at the other end with a pin designed to project through the opening in said diaphragm and with a collar located at the upper end of said pin, an applicator secured to said pin, means carried by said pin for clamping said diaphragm against the under face of said collar, a multi-pointed rotary member engaging said head, means for rotating said member, and a pair of springs arranged at an angle to each other and bearing directly against said head for holding the same continuously against the edges of the points of said rotary member when the latter is in motion, to impart combined lateral vibrations to the lever.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

FREDERICK H. BRAUTIGAM.

Witnesses:
CHAS. K. LUKACSEN,
GEO. F. PATTON.