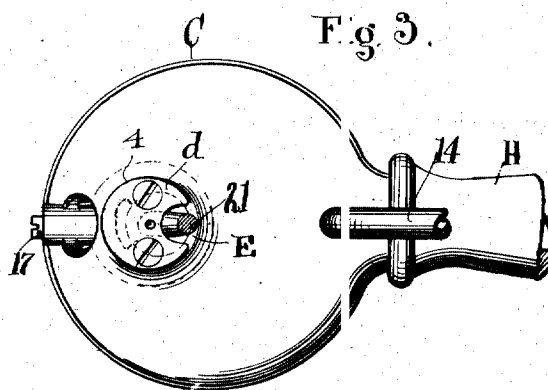
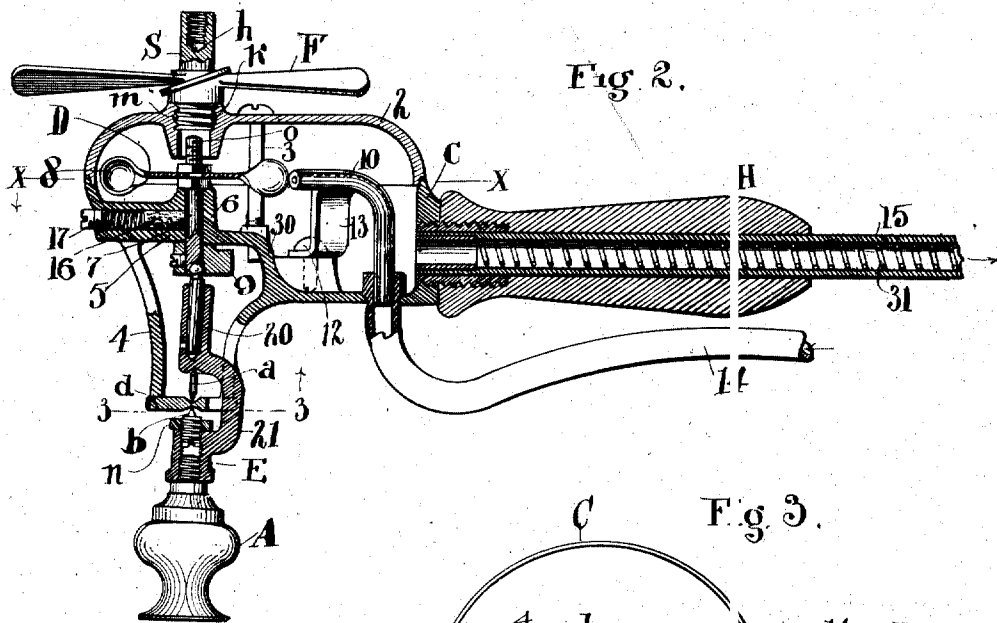
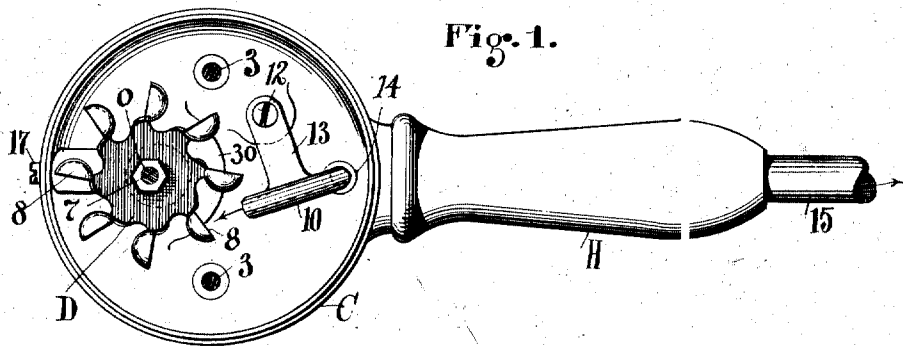


J. B. KIRBY.
 FLUID ACTUATED VIBRATOR.
 APPLICATION FILED OCT. 1, 1908.

1,008,476.

Patented Nov. 14, 1911.



ATTEST
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JAMES B. KIRBY, OF CLEVELAND, OHIO.

FLUID-ACTUATED VIBRATOR.

1,008,476.

Specification of Letters Patent. Patented Nov. 14, 1911.

Application filed October 1, 1908. Serial No. 455,750.

To all whom it may concern:

Be it known that I, JAMES B. KIRBY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Fluid-Actuated Vibrators, and do declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a fluid actuated vibrator constructed and adapted to operate, substantially as shown and described and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of the device on a line corresponding to *x-x*, Fig. 2, with the cap or top removed. Fig. 2 is a central sectional elevation thereof on the line of its working axis. Fig. 3 is a bottom view on line 3-3, Fig. 2, looking upward.

The object of the invention as thus structurally disclosed is to provide a fluid or hydraulically operated vibrator, the plan of the invention contemplating a sufficient water pressure to drive the motor and thus impart the desired action. To these ends I provide a comparatively simple and yet efficient structure consisting of a shell or casing C, having a detachable cap or top 2 constituting a portion thereof and fastened thereon by bolt 3, in this instance, but it might be secured in any other good mechanical way. At its opposite or bottom side the said casing has a neck 4 adapted to carry the applicator actuating mechanism as will presently be seen, and a bearing 6 is provided in the bottom side or wall 5 for the motor shaft 7. The motor or drive wheel D is mounted on said shaft immediately next to or above said bearing, and has vanes or blades 8 adapted to receive the impact from the water jet or pipe 10. The said blades are preferably of approximately saucer shape, and the jet pipe 10 is an elbow, in this instance, and adjustably supported on a stud or post 13 in casing C. A flexible supply tube or hose 14 connects with said elbow, and an exhaust or waste tube 15 runs through handle H. It will be seen therefore that casing C is fluid tight between cap or top 2 and bottom 5, so called.

The shaft 7 of the motor wheel carries a counterweight 9 on its opposite or lower end outside wall 5, and lubrication is provided for said shaft from the outside by a bore through casing C in the plane of bottom 5 and which is supplied with a graphite plug 16, or its equivalent, held in position by a spring and plug 17. Any suitable packing may be employed for said shaft 7, if needed, to prevent possible leakage.

Power and vibration are communicated to applicator A from shaft 7 by a stem 20 having a ball and socket arranged eccentrically to said shaft, in the end thereof and partially in counterweight 9 and its opposite end socketed in the upper tubular portion of the applicator support F, by which a gyratory or vibratory action is imparted to the applicator. The said support is constructed with its ends in alinement, and said ends are united by a yoke 21 at one side of said end centers, and opposed needle point bearing members *a* and *b* have opposed bearings in a disk *d* which is removably fixed to the extremity of the extension or peck 4 of said casing C. The bearing member *a* within said neck is shown as pointed at both ends and sustains the entire member E within said neck against the disk or end plate *d*. The bearing member *b* is threaded adjustably in the outer portion of said member E and provided with a lock nut *n*. The applicator is removably screwed into the member E in the axis thereof next without the bearing *b*, so that when the device is set in motion it will give a gyratory action or motion which is the equivalent of a vibratory motion to the applicator if it be not vibratory in fact.

F represents a fan, which may be used or not at pleasure. To this end the casing cap or top 2 has a threaded opening *m* in axial alinement with motor shaft 7, and said shaft has a threaded extremity *o* exposed in said opening and adapted to be engaged with the internally threaded end *h* of the shaft S of the fan. The other end *k* of said shaft is relatively enlarged as to end *h* and externally threaded to screw into opening *m*. Thus the fan is made reversible, and may be idle, as in Fig. 2, or in operation, as when the end *h* is engaged with end *o* of the motor shaft.

Obviously the particular details of construction shown and described need not be closely followed, but may be varied more or less and not depart from the spirit and nature of the invention, the conception and object of the invention involving a water driven vibrating device for massaging and the like uses, substantially as shown and described.

10 Features of construction are found, first, in the bottom 5 of the casing, which is shown as having a depression or deepened offset from top 2 at its rear where it is entered by handle H. A distinct shoulder 30
15 in said bottom or side 5 marks this depression, and handle H enters thereinto in such position and relation that exhaust tube 15 is thereby greatly promoted. Again, the tube or hose 15 is provided with a spiral
20 wire spring 31 internally and enters said handle, and said wire spring is adapted to keep the hose distended at all times and prevent possible choking off of the water in handling the device. This is highly im-
25 portant especially when the device is used by unskilled persons.

The counterweight 9 as employed herein is adapted to counteract the back effect of

the gyrations or vibrations upon the casing and handle.

What I claim is:

1. A vibrator having a driving shaft and an applicator, a support for the applicator, and a pivot bearing member pointed at both ends and standing substantially in line with the axis of said driving shaft, and a support on the casing for said bearing member and adapted therewith to sustain the support for the applicator.

2. The combination of the vibrator shaft and the applicator and means between said parts adapted to impart vibration to the applicator comprising a yoke on which the applicator is mounted and opposed needle point bearing members engaged with said yoke and a fixed bearing part for said members, said bearing members arranged axially opposite each other and substantially in line with said vibrator shaft.

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

JAMES B. KIRBY.

Witnesses:

E. M. FISHER.

F. C. MUSSUN.