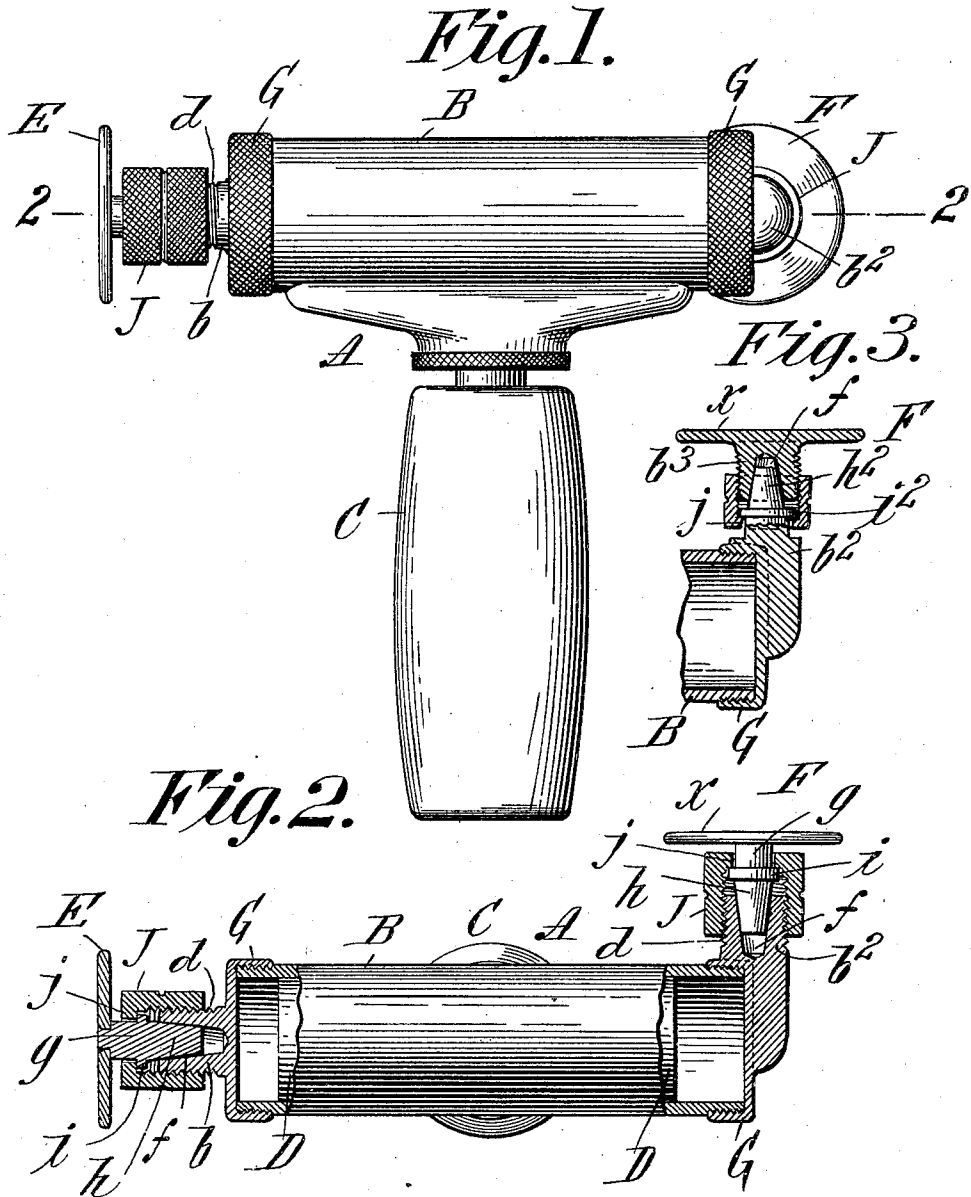


No. 819,458.

PATENTED MAY 1, 1906.

C. H. RICHWOOD.  
VIBRATOR APPLICATOR AND CONNECTION THEREFOR.  
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# UNITED STATES PATENT OFFICE.

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## VIBRATOR-APPLICATOR AND CONNECTION THEREFOR.

No. 819,458.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed April 5, 1905. Serial No. 254,033.

*To all whom it may concern:*

Be it known that I, CLARENCE H. RICHWOOD, a citizen of the United States of America, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Vibrator-Applicators and Connections Therefor, of which the following is a full, clear, and exact description.

This invention relates to that class of device or implement which is employed as a handpiece, comprises a head in which is mechanism for imparting to the head and the applicator carried thereby rapid, tremulous, pulsating, or vibrating effects beneficially available on the person for treatment of various conditions, ailments, or diseases, and somewhat freely referred to as "mechanical massaging."

The general description of device to which this invention pertains may be found in Letters Patent of the United States noticed to be issued to me March 28, 1905, and under No. 786,050. In these devices for subjecting the flesh of the person to the vibratory actions of the applicator the applicator, which almost of necessity is detachably connected on the head of the vibratory device for interchange as occasion may require, is, by reason of the stem-and-socket engagement which it has with the head, liable to become loosened and fall from the vibrator-head or if forced too firmly to its engagement liable to become "set," rendering its detachment a matter of extreme difficulty.

An object of this invention is to provide a means of detachable connection between the vibrator-head and applicator whereby the applicator is with certainty temporarily and during all times of usage interlocked with the head of the vibrator.

Another object is to constitute in the interlocking device last above referred to means whereby a reversal of the motions of the locking parts thereof will result in a positive withdrawal or extraction of the applicator from any binding or setting which may have been established relatively as between the applicator and the vibrator-head.

Another object is to make provision whereby the vibrator-head may have, either solely or in addition to an applicator which is axially coincident with the length of the vibrator-head and which has its vibrations on such axial line to give impacts or blows within

slight limits, an applicator which as to the axis of its body is at right angles to the line of vibration and as to its working face is parallel with the line of vibration of the head, whereby a rubbing or more purely "massaging" effect is possible.

To these ends the invention consists in devices including parts formed, arranged, or combined, and constructed all substantially as hereinafter fully described, and set forth in the claims.

The improved vibrator is illustrated in the accompanying drawings, in which—

Figure 1 is a side view thereof, and Fig. 2 a plan view with end portions thereof in section, each view showing the vibrator as equipped with two applicators having for each means of detachable rigid connections. Fig. 3 is a sectional view of substantially the same applicator-connecting device, but showing a modification in the form thereof.

The same or similar parts are designated by similar reference characters.

In the drawings, A represents a vibratory device of the character and for the purpose indicated, the same comprising a cylindrical head B, arranged at right angles to the handle C, through which latter compressed air has ingress into the chamber in the head for reciprocating the piston or plunger D to cause a tremulous, pulsating, or vibratory effect, which is transmitted to the applicator or applicators E and F, which are temporarily rigidly connected to the vibrator-head. The piston or plunger and the walls of the casing within which it has its back-and-forth movements may be any one of several constructions—as, for instance, that shown and explained in Letters Patent of the United States granted to me March 28, 1905, No. 786,050—and as the present improvements in no way pertain to any means whereby the plunger derives its vibratory or reciprocatory movement a description of any such means is unnecessary. In this class of devices applicators of different forms and different characters of surfaces are to be interchangeably employed, as demanded in different treatments. The applicator shown have the form of disks, although they are sometimes in the form of bulbs, stems, and otherwise, and are variously made with smooth surfaces and with protuberances.

The applicator E, which is shown at the

left of the vibrator-head, is extended from such head axially coincident with the longitudinal line thereof and so that when the vibrator device, used as a handpiece and connected by a flexible conduit with the source of motor-fluid supply, is brought into proximity to the person the latter will receive a succession of impacts either gentle or comparatively forcible, according to predetermination and the adjustment of the vibrator-regulating means, as rendered manifest in the aforementioned patent issued to me. Supported rigidly on the vibrator-head and at a position suitably removed from the location of the applicator E is the second applicator F, extending to one side of the vibrator-head and with its axis transverse thereto, whereby the vibratory movement of the head on its longitudinal line will cause a movement of the applicator F in such a manner that its contacting face  $x$  will rub back and forth on the skin directly or on any covering therefor.

The hollow cylindrical vibrator-head B is shown as provided with screw-engaged end-closing caps G, made with integral bosses  $b$  and  $b^2$ , the one  $b$  being axially coincident with the longitudinal center line on the vibrator-head, while the one  $b^2$  is extended at right angles to such line. Each of said bosses  $b$   $b^2$  is represented as having the external screw-threads  $d$  and constructed with an endwise-opening tapered axial socket  $f$ , and each applicator is made with a centrally-projecting stem or post  $g$ , having its extremity tapered, as shown at  $h$ , and formed with an external shoulder  $i$ , preferably made as a peripheral flange, and for practicability in construction and assemblage the applicator-head and stem are separably made and permanently united, as made clear in the section at the left-hand portion of Fig. 2, after the annular nut J has been interlocked by its internal flange  $j$  with a portion of the applicator-stem between the shoulder  $i$  and the head or applicator proper. It is therefore seen that the applicator carries as a permanent equipment thereof the annular nut having its internally-screw-threaded portion concentrically surrounding the tapered portion of the stem, and when the nut is brought to screw engagement with the externally-threaded boss  $b$  or  $b^2$  and turned sufficiently the extremity of the stem will be drawn to a tight and rigid binding in the socket and there retained until wilfully detached.

It being seen that there is, as the parts are specifically shown in Fig. 2, a small space between the outer end of the annular nut and the stem side of the applicator, so soon as the loosening movement of the nut brings its end against the applicator proper a force is imparted to extract or withdraw the stem from its bind, due to the tapering of the parts in the socket.

In Fig. 3 an almost manifest reversal in the

arrangement for the same coaction of the parts is represented. The tapered stem  $h^2$ , having a shoulder  $i^2$ , is here made as the extension or boss of the vibrator-head, while the axial projection  $b^3$  of the applicator is externally screw-threaded and made with the endwise-opening tapered socket  $f^2$ , and the annular nut having the internal flange or shoulder  $j$  has the interlocking engagement with the shoulder  $i^2$  and retained for permanent rotary movements about the part provided to the vibrator-head and for screw-engaging and drawing down the applicator thereto. I am therefore not to be altogether limited as to whether the nut is carried as a permanent equipment of and by the vibrator-head or the applicator.

I claim—

1. A vibrator-head provided with an external screw-threaded boss formed with an endwise-open inwardly-tapering axial socket, an applicator having a stem provided with a shoulder and an annular nut screw-engaging said boss and having an internal projection engaging said shoulder on the applicator-stem for the purpose set forth.

2. A vibrator-head provided with a boss or projection formed with an endwise-opening tapering socket, and provided with screw-threads combined with an applicator having a stem to be seated in said tapered socket, and having a shoulder or abutment and an element formed with threads and screw-engaging said boss or projection and having a part engaging said shoulder of the applicator-stem, for the purposes set forth.

3. In a device of the character described, a vibrator comprising a cylindrical head having an end-closing cap constructed with an externally-threaded boss or projection having an axial endwise-opening socket, an applicator having a tapered stem to be seated in said socket and formed with an external flange and an annular nut screw-engaging said boss, and formed with an endwise-located internal flange located to surround said stem between the external flange thereof and the applicator proper.

4. In a device of the character described, a vibrator comprising a cylindrical head having a screw-engaging end-closing cap constructed with an integral externally-threaded and axially-socketed boss, the axial line of which is at right angles to the axis of the vibrator-head, and an applicator provided with a stem formed tapered and with an external flange and equipped with an annular nut, concentrically surrounding said stem and provided with an internal projection interlocking between the stem-flange and the applicator proper and thereby retained non-detachable relatively thereto.

5. In a device of the character described, the combination with the head of a vibrator constructed with an extension, and an applicator

5 cator having a shank or extension, one of said extensions being made with a socket and the other being formed tapering, and one of said extensions being constructed with a shoulder, and an annular nut having an internal shoulder engaging the shoulder of the one said extension and screw-engaging the other extension and adapted on being turned to impart

endwise movements of the one part relatively to the other.

Signed by me at Springfield, Massachusetts, in presence of two subscribing witnesses.

CLARENCE H. RICHWOOD.

Witnesses:

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