

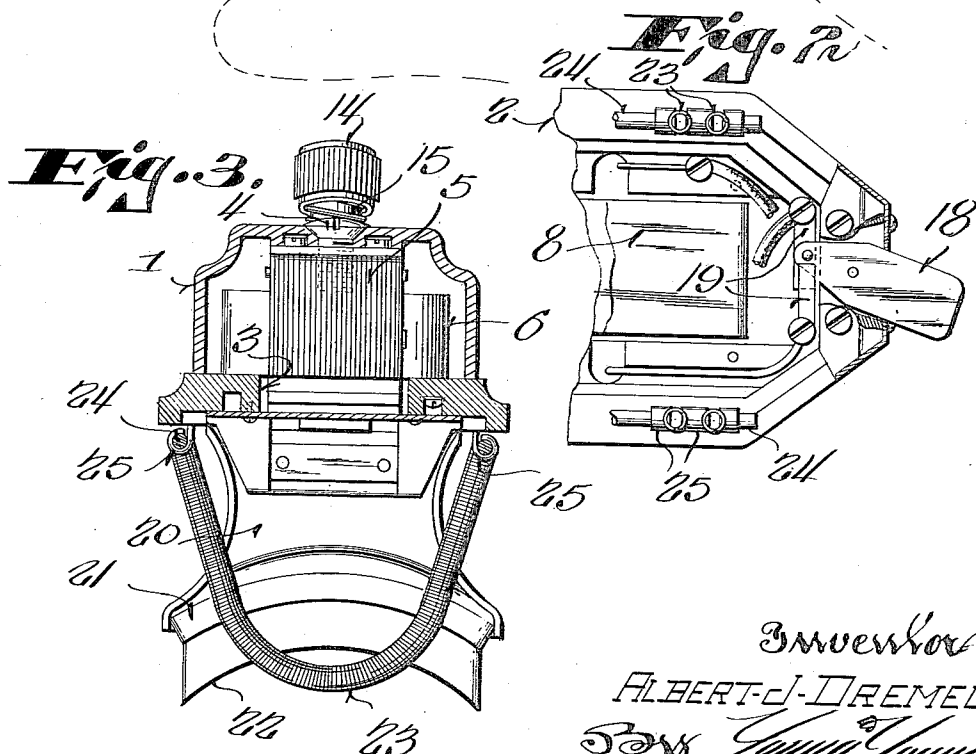
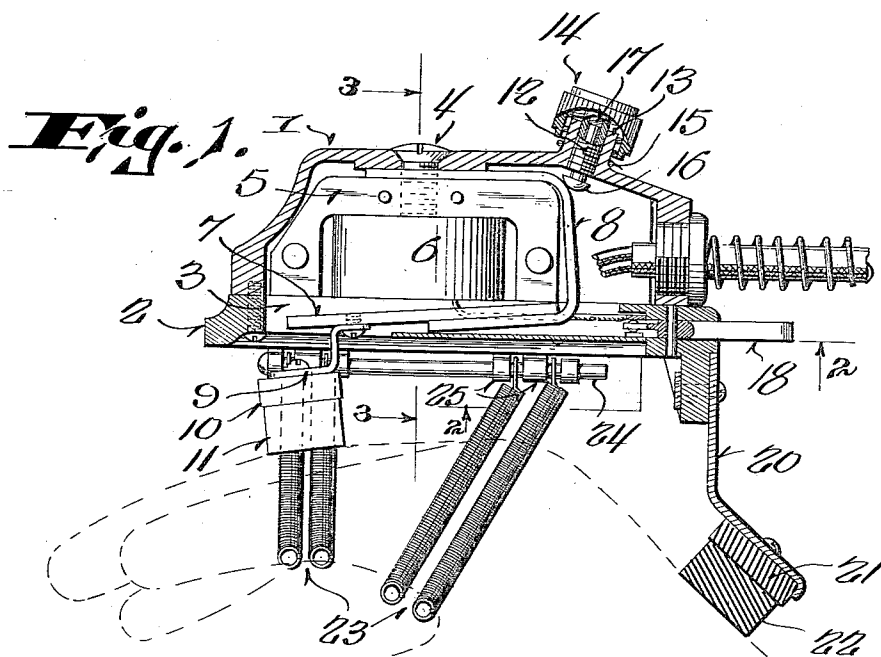
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HAND VIBRATOR

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HAND VIBRATOR

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This invention pertains to hand vibrators, and more particularly to a vibrator adapted to be attached to the hand of an operator to assist in treating and massaging various parts of the body.

The invention has primarily for its object the provision of a comparatively simple, inexpensive, and efficient device of the foregoing character, in which the casing is partially supported substantially rigidly upon a portion of the hand, while the vibratory member engages another portion of the hand to further support the casing and to impart vibratory action to the hand.

Incidental to the foregoing, a more specific object resides in the provision of a casing for housing an electromagnet and supported upon a portion of the hand, and an armature actuated by the electromagnet and engaging another portion of the hand to effect vibration of the same.

A further object resides in the novel means provided to facilitate proper positioning and attachment of the device upon the hand of the operator.

Another object of the invention resides in the provision of novel means for regulating vibratory action of the armature.

A still further object resides in the specific method of mounting the electromagnet and armature within the casing, whereby an exceedingly compact and light structure is obtained to effect the most desirable support and engagement between the vibrator and operator's hand.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

In the accompanying drawing is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far

devised for the practical application of the principles thereof.

In the drawing, Figure 1 is a longitudinal section through a vibrator constructed in accordance with the present invention;

Figure 2 is a fragmentary section taken on the line 2—2 of Figure 1; and

Figure 3 is a transverse section taken on the line 3—3 of Figure 1.

While in the preferred form of the invention as illustrated, it is proposed to use an electromagnet operating upon alternating current, it will be obvious as the description proceeds that other types of actuating means may be employed, such as a make-and-break motor, or a vibrating element driven by a conventional motor through a flexible shaft, the essential features of the present invention residing in the manner of supporting the vibrator upon the hand and providing direct engagement between the hand and the vibratory member.

Referring to the particular form of the invention illustrated, the numeral 1 designates a casing secured to a base plate 2, which plate is provided with a restricted longitudinal opening 3.

Secured to the top of the casing by means of a screw 4 is a conventional E-shaped core 5 which carries a winding 6 comprising the electromagnet, which actuates the armature 7. As best shown in Figure 1, the armature 7 comprises the vibratory element, and in turn is mounted upon a U-shaped spring 8, which is secured between the casing 1 and the core 5. Obviously, as the core 5 is energized by alternating current, the armature 7 will be alternately repelled and attracted at the rate of the usual sixty cycles per second, thus imparting a high rate of vibration to the armature.

Secured to the armature 7 adjacent its outer end is a bracket 9 which carries an arcuate plate 10 having secured thereto a pad 11 preferably formed of rubber or similar cushioning material.

To control the vibratory movement of the armature 7, an adjustment is mounted on the casing 1 which comprises a stud 12 threaded through a boss 13 formed on the casing. The

outer end of the stud is provided with a knurled thumbpiece 14, extending down over the boss and spaced therefrom. A coiled spring 15, positioned between the boss and the thumbpiece, serves to create friction to hold the stud 12 in adjusted position during the rapid vibration imparted to the casing in operation of the vibrator.

As best shown in Figure 1, the stud 12 is provided with a central bore for reception of a headed pin 16, which in turn is resiliently cushioned upon a rubber block 17, or any other suitable means. Obviously, as the stud 12 is threaded into the boss and the headed pin 16 engages the spring 8, the armature 7 will be forced closer to the core 5, thus limiting the vibratory action of the same.

A conventional knife switch 18, carried by the base plate 2, serves to form a contact between the brushes 19 carried by the base plate, and to which the circuit wires to the electromagnet are connected.

Adjacent the rear end of the casing, the base plate 2 has secured thereto a substantially rigid supporting bracket 20, which carries an arcuate block 21 similar to the block 10, and has secured thereto a saddle or pad 22, adapted to engage the rear portion of the hand adjacent the region of the wrist.

In order to properly position and attach the vibrator to the operator's hand, flexible straps 23 are provided which have their extremities secured to the rods 24 secured to the bottom of the base plate 2 adjacent its longitudinal edges, the rods 24 being mounted in eyes 25 carried by the base plate to facilitate their withdrawal for attachment or replacement of the straps when desired.

While the straps 23, as illustrated, are formed of coiled spring, it will be readily understood that any type of strap may be employed, preferably formed of resilient material.

From the foregoing description taken in connection with the drawing, it is believed that the operation of the device will be quite apparent, in that the same is positioned upon the outside of the operator's hand with the rear supporting pad engaging the back of the hand adjacent the wrist, and the armature pad 11 engaged over the back of the fingers intermediate the second and third joints, the straps 23 straddling the palm of the hand and serving to hold the vibrator securely in position.

As the electromagnet is energized, causing the armature 7 to be rapidly vibrated, vibratory movement is transmitted to the fingers of the hand which, when placed on any part of the body results in imparting a massaging action to the same, thus doing away with massaging cups or the necessity of manual movement upon the part of the operator, which is both tedious and tiresome.

It will also be noted that the vibratory action is largely imparted to the fingers, which, if held loosely, avoids the fatigue resulting where the entire hand is vibrated, as in devices heretofore employed.

It will further be noted that the present construction provides for an exceedingly light and compact device which further avoids fatigue to the operator and enables the hands to be readily manipulated over the body without interference.

Also, it will be quite apparent that due to the accessibility of the adjustment provided, vibratory action of the machine can be readily regulated during operation.

I claim:

1. A hand vibrator comprising a casing, resilient means carried by the casing for connection with the hand, a substantially rigid angle support carried by the rear end of the casing for engaging the back of the hand, and a vibrator mounted in the casing and extending partially below the lower face of the casing for direct engagement with the fingers of the hand to vibrate the same.

2. A vibrator for attachment to a hand comprising a casing, a substantially rigid support carried by the casing for engaging a portion of the hand, a vibratory member comprising an armature, a spring for connecting said armature with said casing, means carried by said armature for engaging another portion of the hand, and an electromagnet housed within the casing for actuating said armature.

3. A vibrator for attachment to a hand comprising a casing, a substantially rigid support carried by the casing for engaging a portion of the hand, a vibratory member comprising an armature, a spring for connecting said armature with said casing, means carried by said armature for engaging another portion of the hand, an electromagnet housed within the casing for actuating said armature, and means for attaching the casing to the hand.

4. A vibrator for attachment to a hand comprising a base plate provided with a restricted longitudinal opening, a casing connected to said base plate, a support carried by said base plate for engaging a portion of the hand, a U-shaped spring secured to the top of the casing and having its outer end projecting through said slot, an armature connected to said casing and positioned within said slot, said armature being supported upon another portion of the hand, means engaging said spring for regulating the movement of said armature, an electromagnet secured to said casing and straddled by said spring, and means for attaching said casing to the hand.

5. A hand vibrator comprising a casing, a substantially rigid support carried by the

casing and depending therefrom for engaging a portion of the hand, a vibratory member resiliently connected to the casing and depending therefrom in spaced relation with said rigid support for engagement with another portion of the hand, means within the casing for actuating said vibratory member, and means for attaching the casing to the hand.

6. A vibrator for attachment to a hand comprising a casing, a substantially rigid support carried by the casing and depending therefrom for engaging a portion of the hand, a vibratory member resiliently connected to the casing and depending therefrom in spaced relation with said rigid support for engagement with another portion of

the hand, and an electromagnet mounted within the casing for actuating said vibratory member.

7. A vibrator for attachment to a hand comprising a casing, a substantially rigid support carried by the casing and depending therefrom for engaging a portion of the hand, a vibratory member resiliently connected to the casing and depending therefrom in spaced relation with said rigid support for engagement with another portion of the hand, an electromagnet mounted within the casing for actuating said vibratory member, and means for attaching the casing to the hand.

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