June 24, 1924. 1,498,680

L. M. CLEMENT ET AL

MASSAGE APPARATUS

Filed Sept. 26, 1919 2 Sheets-Sheet 1

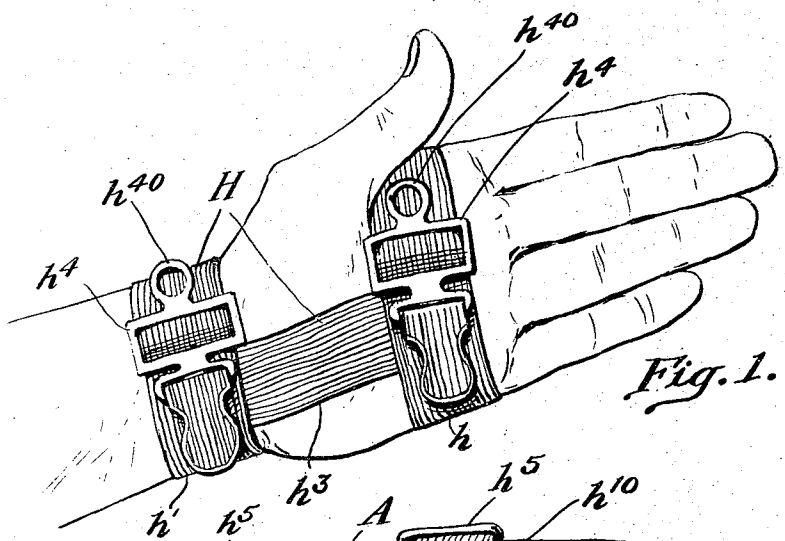

Fig. 1.

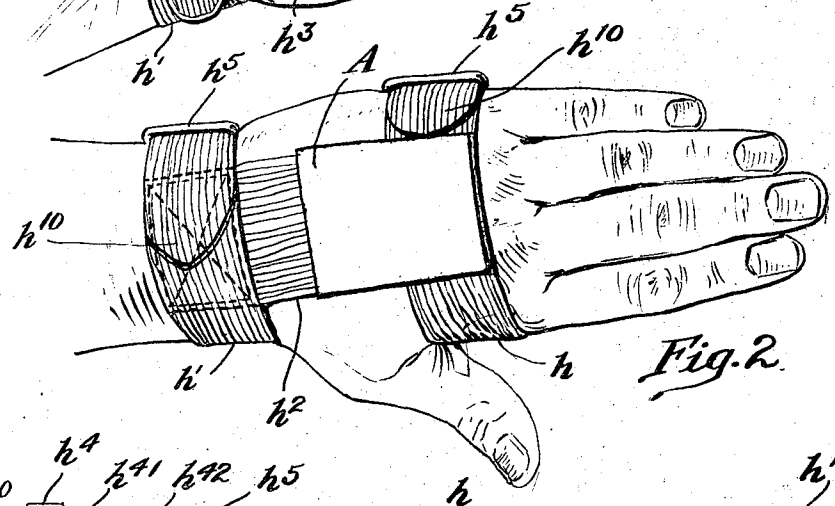

Fig. 2.

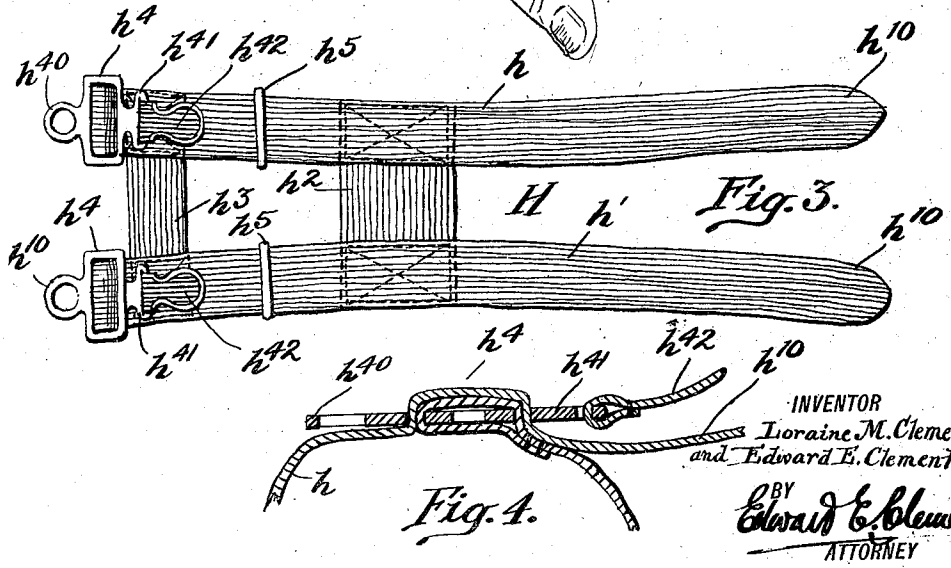

Fig. 3.

Fig. 4.

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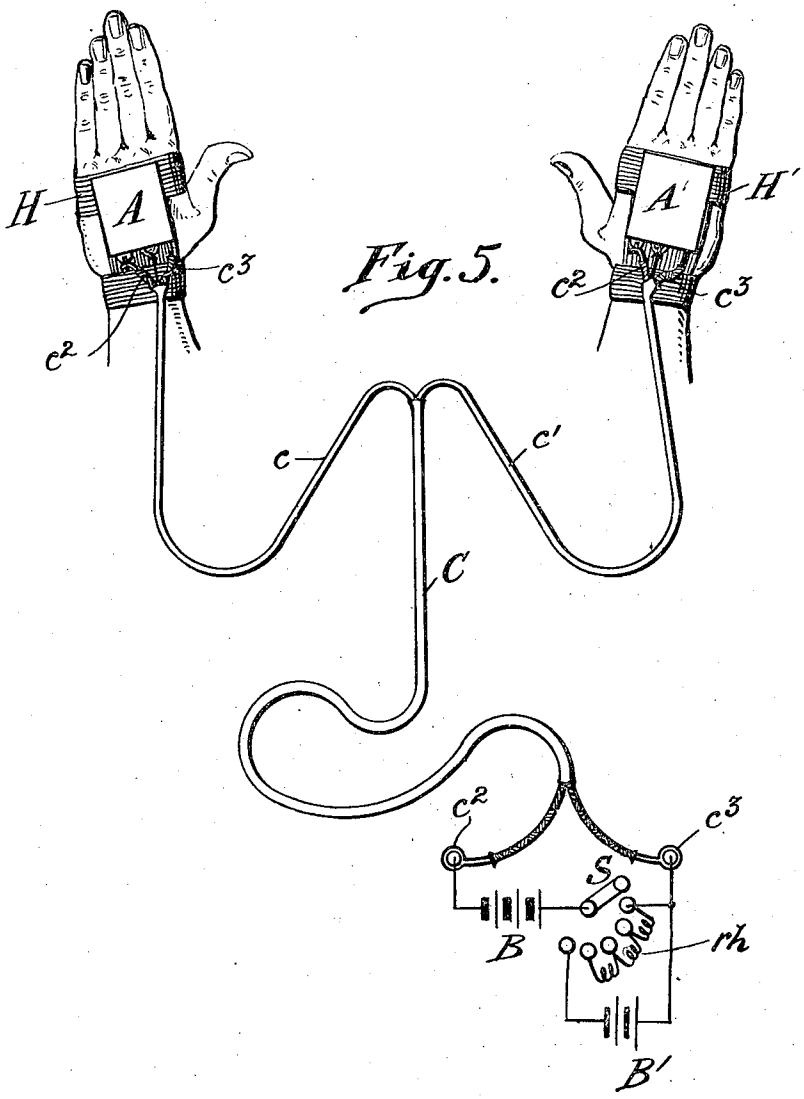

Fig. 5.

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UNITED STATES PATENT OFFICE.

LORAINE M. CLEMENT AND EDWARD E. CLEMENT, OF OCEAN CITY, NEW JERSEY.

MASSAGE APPARATUS.

Application filed September 26, 1919. Serial No. 326,565.

To all whom it may concern:

Be it known that we, LORAINE M. CLEMENT and EDWARD E. CLEMENT, citizens of the United States, residing at Ocean City, in the county of Cape May and State of New Jersey, have invented certain new and useful Improvements in Massage Apparatus, of which the following is a specification.

Our invention relates to apparatus for mechanical massage, and has for its object the provision of means to communicate fine vibrations to the hands of an operator. We produce these vibrations by means of an electrically actuated vibrator to which energy is supplied through suitable conductors from a battery or other source of current. To the vibrator as such we lay no claim, as that is the invention of Edward E. Clement, one of the parties herein named as joint inventors. Our present invention has to do with the art of massaging with both hands simultaneously, after the fashion of so called "Swedish" movements and the like. Such massage is difficult to attain without long practice and is always accompanied by certain difficulties and drawbacks to the operator. By our invention the fine vibratory movements in the hands are produced mechanically, are regulable in intensity and amplitude, and can be applied as required to any part of the body of the subject without shock and without any danger or fatigue to the operator.

Very briefly stated, our invention comprises a pair of metallic plates held firmly to the backs of the hands of the operator by non-resilient harness, the front edges of the plates resting upon and just to the rear of the knuckles of the hands, each plate carrying a vibrator comprising a fixed armature and a magnet structure mounted on a spring to vibrate in the direction of the length of the fingers. The magnet structure carries a contact which cooperates with a fixed contact carried on but insulated from the frame of the vibrator, so that the circuit of the magnet is automatically made and broken as it vibrates. A pair of cords carrying conductors leads from the vibrators, being united behind the back of the operator and the common cord then being led to a battery or other suitable source of current. By regulating the intensity of the current the amplitude and intensity of the vibrations may be regulated.

Our invention is illustrated in the accompanying drawings, in which—

Fig. 1 is a perspective view of the harness for the left hand, attached thereto, the hand being turned palm up.

Fig. 2 is a similar view, the hand being turned palm down.

Fig. 3 is a plan view of the same harness, on a smaller scale, spread out flat.

Fig. 4 is a longitudinal section through one strap and its buckle or slide, showing clearly the means for self attachment and detachment.

Fig. 5 is a diagram showing two vibrators attached to the operator's two hands, the supply cord and a source of current, the hands being in operating position.

Referring first to Figures 1 to 4 inclusive, the harness is generally designated by the letter H. It consists of two bands h and h', of material which will not yield and so lose the energy imparted to it without communicating it to the bony structure of the operator's hand. We have found a suitable material for this purpose to be linen webbing, which is not resilient and faithfully transmits the energy waves of the vibrator to the operator's hand. These waves are too fine to be considered tangible movements of the webbing, which makes it doubly desirable to have as little resilient quality as possible. Cotton webbing, and even silk webbing, may be employed when linen is not available, but in each of these cases there is loss of energy, which makes it necessary to treat a subject at greater length to obtain the same result.

The two bands h and h' are united, as best shown in Figure 3, by a back band h^2 and a palm band h^3, which extend clear across the width of the respective bands h and h' at both ends, and are stitched very solidly thereto. In the drawing these stitchings are shown as extending around the margins of the overlaps and diagonally across the same, but the form of stitching may of course be varied at will.

At the upper end of each band h and h', that is to say the end passing over the upper edge of the hand as shown in Figure 1, we provide a slide buckle which we have spe-

cially designed to meet the necessity for tight holding without slipping while permitting quick and easy adjustment and removal of the harness. Referring to Figure 4, it will be observed that the slide h^4 is generally oblong with a ring at one side and a slotted projection carrying a tab at the other. The ring is marked h^{40}, and is for adjusting the band on the hand. The ring is caught on a hook or nail in a wall or cabinet and the end h^{10} pulled with the free hand, causing the band to slide through the two parallel slots within the oblong body, over the doubled end secured thereto. We have found that when the slots are proportioned so that there is no space beyond that necessary for the accommodation of the two thicknesses of webbing, the friction of one on the other absolutely prevents slipping. To loosen the band, after using the vibrator, a simple pull on the tab h^{42} secured in the slotted projection h^{41} moves the slide on the band until the hand is released. In order to hold the long ends h^{10} and prevent them from obstructing the movements of the operator's hand, we provide flat loops h^5 on both bands, and when the bands are tightly adjusted the ends h^{10} are passed through these loops h^5, as clearly shown in Figure 2.

Referring now to Fig. 5, we have therein shown two metallic plates A and A′ to which the vibrators are attached (as also illustrated in Fig. 2) secured to the respective harnesses H and H′ so that when on the operator's hands the front edges of the plates will rest upon and just to the rear of the knuckles of the hands. By this adjustment the operator is enabled, by merely opening and closing his hand to make the bony portion thereof press more or less tightly against the edge of the plate, and thereby produce the result of greater or less strength in the vibrations as desired. We have not found it necessary to make the vibrators rights and lefts but the harnesses are necessarily rights and lefts as the rings h^{40} must always come up when the hand is in the position of Figure 1.

The electrical connections and the supply of current as such, form no part of the present invention, but will be claimed in combination with other features and elements described and forming parts of our invention. We believe we are the first to present an apparatus of this kind which enables Swedish movements to be given with both hands, as they must be to be effective; also the first to devise a complete apparatus of the character described. We shall claim our method of operation, therefore, as well as the apparatus described, both generically and specifically. Figure 5 shows a simple regulating means in the switch S, the rheostat rh, and the extra cells of battery B′, which when cut in will supplement the regular battery B, connected across the terminals c^2 c^3 of the cord C which branches at c c' to the respective vibrators, whose terminals are marked to correspond, c^2 c^3.

Having thus described our invention, what we claim is:

A harness for mounting an electric vibrator on the hand comprising two parallel bands, one fitting closely around the hand behind and against the knuckles and the other around the wrist behind and against the base of the thumb, with longitudinal bands firmly connecting said parallel bands on the back and palm respectively, a rectangular metallic plate securely attached to said back band and knuckle band so that its upper edge will rest immediately behind and against the knuckles, the said back band and knuckle band serving to hold the vibrator.

In testimony whereof we affix our signatures.

LORAINE M. CLEMENT.
EDWARD E. CLEMENT.