

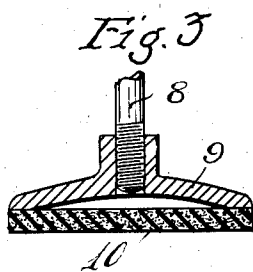
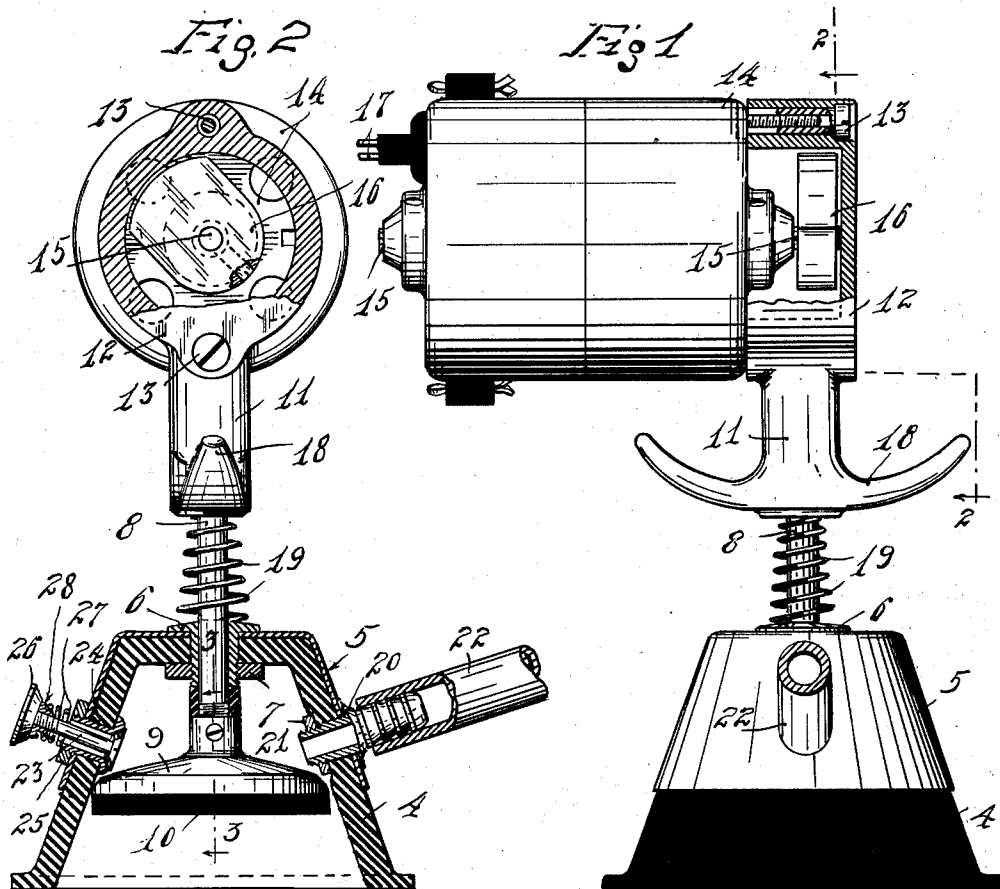
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S. E. FOLLESE

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MASSAGE DEVICE

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INVENTOR
Sigurd E. Follese
By His Attorneys
Merchant & Kilgore

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MESSAGE DEVICE

Sigurd E. Follese, Minneapolis, Minn.

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12 Claims. (Cl. 128—53)

My invention provides an improved massage device and, generally stated, consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

5 This device involves the use of a vacuum cup connected to a source of partial vacuum or suction, and within said vacuum cup a patten head or plate that is arranged to be vibrated against the surface of the flesh to which the cup is applied and to produce a patting or tapping action while the partial vacuum or suction is applied. The vacuum cup, at least in part, is of a flexible material, such as quite soft rubber, and the patten head is faced with a soft material, such as sponge rubber. The partial vacuum or suction maintained in the cup may be produced in various different ways, as by connection to the vacuum tank, a vacuum pump, or to the suction-acting discharge of a stream of water running from a faucet. The vibration or reciprocation of the patten head is preferably produced from a small electric motor, the rotor shaft of which is provided with an out-of-balance or eccentrically offset weight, the vibratory action of which is transmitted to the patten head through a plunger or stem connected to the head, arranged to reciprocate through a bearing in the cup, and connected to the motor casing.

The important and improved actions of this type of a device will hereinafter appear.

While capable of more general use, the massage device has been primarily intended for use on bald or nearly hairless heads to re-establish normal circulation of the blood and to promote the growth of the hair.

A commercial form of the device is illustrated in the accompanying drawing, wherein like characters indicate like parts throughout the several views.

Referring to the drawing:

Fig. 1 is a side elevation, with some parts broken away and some parts sectioned, showing the improved device;

Fig. 2 is a view chiefly in section on the irregular line 2—2 of Fig. 1, with some parts shown in full; and

Fig. 3 is a fragmentary detail in section approximately on the line 3—3 of Fig. 2.

The vacuum cup 4 is of quite soft rubber, the rim of which is very flexible, but the body portion of which is partly encased in a pressed sheet metal casing 5. At the axis of the cup is a tubular sleeve 6 headed at its outer end and provided at its threaded inner end with a clamping nut 7 and whereby the back of the cup and the casing 5 are

rigidly secured together. The sleeve 6 affords a bearing for an axially disposed plunger 8, the inner end of which is rigidly but detachably secured to the hub of a metallic patten head or disc-like plate 9 that is faced with a soft and pliable elastic material, such as sponge rubber 10. At its outer end the plunger 8 is rigidly secured to the axially projecting shank 11 of a hollow crank casing 12. This crank casing 12, in the preferred structure illustrated, is rigidly but detachably secured by screw-threaded devices 13 to one end of the casing 14 of an electric motor, the rotor shaft 15 of which projects into the casing 12 and is provided with a crank-acting element in the form of a radially offset weight 16. The current can be supplied to the motor by any suitable means, such as lead wires 17, shown only in Fig. 1.

The device is adapted to be held in several different ways, but to adapt the same to be held and pressed against the head of the person operating the same, the shank 11 is shown as provided with offset arms or hand grips 18.

A coiled spring 19 is placed around the plunger 8 and compressed between the shank 11 and the head of the sleeve 6. This spring tends to keep the patten head 9 retracted within the vacuum cup and the vacuum cup pressed away from the shank as far as permitted by engagement of the hub of head 9 with the inner end of sleeve 6.

As a means for applying suction or partial vacuum to the interior of the vacuum cup 4, the latter is shown as provided with a nipple 20 that is extended through the wall of said cup and through the casing 5 and is clamped thereto by a nut 21 having threaded engagement with the inner end of said nipple. The outer end of the nipple is connected to a rotor or other flexible tube 22 which, in practice, will be connected to a source of vacuum or suction, such as those already enumerated.

To limit the degree of partial vacuum applied to the interior of the cup, it is provided with an inwardly opening relief valve 23. The head of this relief valve is normally seated against the inner end of the valve seating sleeve 24 that is extended through a wall of the cup and casing 5 and is clamped thereto by a nut 25 having threaded engagement with the outer end of said valve sleeve. At its outer end the stem of the valve 23 is provided with a rigidly secured head 26. A coiled spring 27 is placed around the outer end portion of the stem of the valve 23 and is compressed between the nut 25 and an adjusting collar 28, which latter has threaded engagement with the stem of said valve and affords means

for adjustment to vary the degree of partial vacuum or suction required to open said relief valve and permit air to flow into the vacuum cup.

5 The action of the device described is substantially as follows: When the electric motor is in action the crank-acting weight 16 will produce vibration of the entire casing and of the plunger 8 and pater head 9. When the rim of the cup 4 is pressed tightly into engagement with the
10 flesh, which we assumed to be the bald surface of the head, partial vacuum or suction will be produced in the cup and this will draw the blood from the arteries into the zone covered by the cup. If the electric motor is then started in action and the plunger is pressed so as to bring the
15 soft faced end of the head 9 into contact with the flesh, this latter action will produce a rapid, mild, but very effective tapping action on the flesh. This tapping action, of course, is produced while
20 the partial vacuum is maintained.

In practice it seems to have been effectively demonstrated that the vacuum draws the blood up through the arterial circulatory system and holds it there, while the vibratory patting or pressure is produced; and that this tapping action
25 produced under vacuum pressure forces the blood out through the venous system, thereby establishing that complete circulation through the scalp that is essential to the growth of hair. Also, it is found that the vibratory pressure
30 breaks down the hardened tissues of the skin and permits expansion of the capillaries to their normal size or condition necessary to normal circulation and normal growth of hair.

35 From the foregoing, it will be evident that the device disclosed, and the preferred form of which is illustrated in the drawing, is capable of various modifications within the scope of the invention herein disclosed and sought to be claimed.

40 What I claim is:

1. In a device of the kind described, a vacuum cup, means for producing partial vacuum in said cup, a tapper element within said cup, and means for producing a tapping action of said tapper element within the cup, while subject to partial
45 vacuum.

2. In a device of the kind described, a vacuum cup, means for maintaining partial vacuum in said cup, a pater head working in said cup, and operating means for producing vibratory tapping
50 action of said head, within said cup, while subject to partial vacuum.

3. In a device of the kind described, a vacuum cup, means for maintaining partial vacuum in said cup, a plunger working through said cup and provided within said cup with a pater head,
55 and operating means applied to the outer end of

said plunger for reciprocating said plunger to produce a tapping action of said head, while said head is subject to partial vacuum.

4. The structure defined in claim 1 in which said cup has a pliable rim and the means for producing the tapping action is a plate having a soft elastic facing. 5

5. The structure defined in claim 1 in which said vacuum cup is provided with an inwardly opening relief valve. 10

6. The structure defined in claim 3 in which said plunger is capable of sliding movement through said cup sufficient to carry said tapper head into and out of contact with the surface to which said cup is applied. 15

7. In a device of the kind described, a vacuum cup having a connection for maintaining partial vacuum therein, a plunger working through said cup and provided within the cup with a pater head, said plunger being axially movable to position the head adjacent the rim of said cup, and power transmitting means applied to the outer end of said plunger for vibrating the same and said pater head. 20

8. In a device of the kind described, a vacuum cup having a connection for maintaining partial vacuum therein, a plunger working axially through the back of said cup, and provided within the cup with a pater head, a casing outside of said cup to which said plunger is anchored, and a power-driven shaft in said casing having an offset weight whereby under rotation of said shaft and weight vibrations will be imparted to said casing and to said plunger and pater head. 30

9. The structure defined in claim 8 in further combination with a spring interposed between said casing and cup and tending to retract the pater head into the cup, said plunger being movable against the tension of said spring to position the face of said pater head adjacent the plane of the rim of said cup. 40

10. The structure defined in claim 8 in further combination with a spring interposed between said casing and cup and tending to retract the pater head into the cup, said plunger being movable against the tension of said spring to position the face of said pater head adjacent the plane of the rim of said cup, said cup further having an inwardly opening relief valve. 45

11. The structure defined in claim 8 in which the means for rotating said weight-equipped shaft is an electric motor mounted in said casing. 50

12. The structure defined in claim 3 in further combination with a metal casing fitting the exterior of said cup but terminating short of the rim thereof. 55

SIGURD E. FOLLESE.