

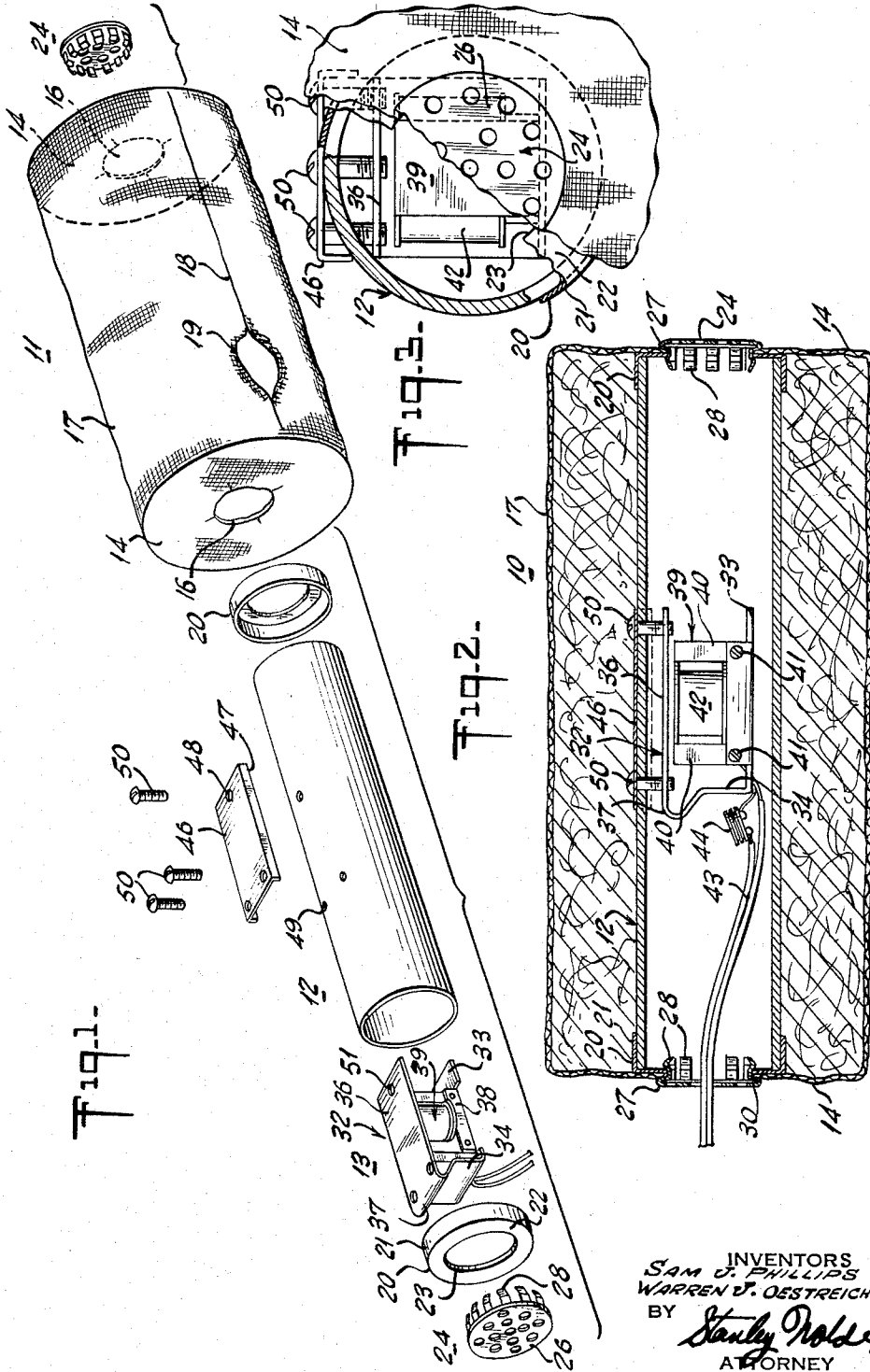
July 5, 1960

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2,943,621

VIBRATING PILLOW

Filed Aug. 26, 1958



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VIBRATING PILLOW

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Filed Aug. 26, 1958, Ser. No. 757,332

2 Claims. (Cl. 128—33)

The present invention relates generally to improvements in the field of massage devices and it relates more particularly to an improved vibrating pillow or cushion and to an improved method for producing the same.

Many types of electrically actuated vibrating devices have been long employed for massaging various parts of the human body. A common form of such a device is a pillow, cushion or other padded structure which houses an electrical vibrator. The vibrating pillows heretofore available possess numerous drawbacks and disadvantages. They were awkward, uncomfortable and costly. The conventional vibrating cushion includes a heavy frame having upper and lower parallel metal plates interconnected by vertical posts. An electrical vibrator is mounted on the inner face of one of the plates, the outer faces of which are covered with resilient sheets such as foam rubber or polyurethane. The frame and vibrator unit assembly is enclosed in a flexible envelope. It is apparent that the above structure is uncomfortable, expensive, heavy, and of limited application and leaves much to be desired.

It is thus a principal object of the present invention to provide an improved massage device.

Another object of the present invention is to provide an improved vibrating cushion, pillow or the like.

Still another object of the present invention is to provide an improved vibrating cushion which is highly efficient and is of simple, rugged and inexpensive construction.

A further object of the present invention is to provide an improved method for producing vibrating cushions.

The above and other objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawings, wherein—

Figure 1 is an exploded perspective view of a massaging device embodying the present invention, the outer envelope being shown partially open for the reception of a filling material;

Figure 2 is a longitudinal sectional view of the improved device in assembled condition; and

Figure 3 is an end view thereof partially broken away and partially in section.

In a sense, the present invention contemplates the provision of an improved massage device, comprising an outer flexible envelope, a tubular casing disposed within said envelope and having its ends registering with opposite walls of said envelope, an electrical vibrator disposed in said casing and having a vibratory element secured to the wall of said casing and a stuffing material disposed in said envelope and surrounding said casing.

In accordance with a preferred embodiment of the present invention, the outer flexible envelope has a pair of oppositely disposed openings formed therein, the ends of the casing abutting the inner borders of the said openings. Perforated caps which register with the ends of the casing have outwardly directed peripheral flanges which engage the outer border surrounding the aligned openings. The electrical vibrator includes a core and a sole-

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noid wound about the core and an associated armature. A reinforcing plate is disposed along the outer face of the casing and the vibrator armature is secured to the wall of the casing by suitable fasteners passing through the casing and engaging the reinforcing plate.

In producing the improved massage device, the outer envelope, the casing, vibrator and various other elements are assembled, an opening being left along the seam of the outer envelope. Thereafter, the outer envelope surrounding the casing is filled with a suitable particulate or divided stuffing material through the opening, such as by blowing, whereafter the opening is closed to complete the device.

Referring now to the drawings, the numeral 10 generally designates a preferred embodiment of the present invention, which includes an outer envelope 11 and an inner casing 12, which houses a vibrator unit 13. The outer envelope 11 is formed of fabric or other suitable flexible material, such as thermoplastic sheeting, leather, or the like, and consists of annular end walls 14 having centrally located aligned circular openings 16 formed therein. The end walls 14 are connected by a cylindrical wall 17, the ends of which are joined by stitching to the outer edges of the end walls 14, which may be decorated by piping or other suitable decorative material. The cylindrical wall 14 is formed of a rectangular panel, the side edges of which are brought together and stitched as at 18 for only part of the length thereof so as to provide an opening 19 to permit the filling of the envelope 11, and subsequent sealing thereof, as will be hereinafter set forth.

The casing 12 is of tubular construction and is formed of a relatively rigid material, such as heavy cardboard or the like. The ends of the casing 12 are provided with end pieces 20 preferably formed of sheet metal and including axial collars 21 which tightly engage the outer end walls of the casing 12 and inwardly directed annular flanges 22 surrounding circular openings 23. The casing 12 and the end pieces 20 are axially disposed within the envelope 11 in alignment with the opening 16, the annular flanges 22 abutting the inner borders of the envelope wall openings 16.

Registering with each of the end piece openings 23 is a cap member 24 which includes a disc-shaped perforated head portion 26, the border of which is folded under to provide an outwardly directed peripheral flange 27. Projecting rearwardly directed resilient fingers 28 terminating in outwardly curved legs which define with the confronting face of the flange 27, recesses 30. The recesses 30 releasably engage the edge of the annular flange 22, the underface of the flanges 27 abutting the borders of the envelope openings 16 to sandwich and tightly engage the opening borders between the confronting faces of the flanges 27 and the flanges 22.

The electrical vibrator 13 comprises a U-shaped frame member 32 formed of a resilient magnetic material, such as sheet steel, and includes a base plate 33, an upright cross arm 34 and an upper flat leg 36 which defines an armature. The armature 36 is connected to the upright cross arm 34 by way of an integral arcuate section 37 to impart greater resiliency to the armature 36. The base 33 is provided with a pair of upright parallel longitudinally extending lips 38 which embrace between their confronting faces the base of an E-shaped laminated core of magnetic material 39 having upright end legs 40. The core member 39 is affixed to the base 33 by means of screws 41 passing through aligned openings formed in the lips 38 and in the base of the core member 39. Registering with the central leg of the core member 39 is an electrical solenoid 42 which has its terminals connected to a two conductor electric line 43. A rectifier 44, such as a selenium or other suitable rectifier, is

located between one of the solenoid terminals and one of the line conductors. The purpose of the rectifier 44 is to reduce the frequency of the vibrator unit 13 by electrically energizing the vibrator only during alternate half cycles of the alternating current.

A longitudinally extending reinforcing plate 46, provided with depending flanges 47, rests on the outer face of the casing 12 and has a plurality of openings 48 which are aligned with corresponding openings 49 formed in the casing 12. Screws 50 pass through the aligned openings 48 and 49 and engage tapped openings 51 formed in the vibrator armature 36 to bring the armature 36 into tight contact with the inner face of the casing 12 and to support the armature within the casing.

In assembling the improved massage device described above, the electrical vibrator unit 13 is inserted in the casing 10 and secured in position by means of the reinforcing plate 46 and the screws 50. The end pieces 20 are then applied to the casing 12 and the assembly is inserted within the envelope 11, the end piece openings 23 registering with the envelope opening 16, the flange 22 abutting the inner face of the end walls 14. The line 43 is drawn through an opening in cap 24 and the caps 24 are then brought into locking engagement with the end piece openings 23 to secure the casing assembly within the envelope 11 in alignment with and between the openings 16.

Thereafter, a suitable divided filling material is introduced into the envelope 11 to fill the envelope and completely surround the casing 12. The filling operation may be effected in a conventional manner by blowing the filling into the envelope through the opening 19. The opening 19 is then closed by stitching or the like to complete the vibrating cushion.

In use, the vibrator 13 is actuated by connecting line 43 to a source of alternating current in the usual manner. The core 39 is thus magnetized at the frequency of the alternating current to impart a corresponding vibration to the solenoid 42 and core 39, which is transmitted by way of the casing affixed armature 36 to the casing 12 thereby transversely vibrating the entire casing. The vibration of the casing 12 is transmitted through the filling in the envelope 11 to the surface of the cushion 10, which may be applied to any desired part of the body.

By reason of the armature 36 being affixed to the wall of the casing 12 and the free vibration of the relatively heavy core 39 and solenoid 42, a vibration of relatively high amplitude is transmitted to the surface of the cushion 10. Moreover, because of the openings at the end of the casing 12 and a configuration of the vibrator frame base 33, a continuous circulation of air is produced through the casing 12 to effect a cooling of the vibrator 13 and the rectifier 44.

While there has been described and illustrated a preferred embodiment of the present invention, it is apparent that numerous alterations and omissions may be made without departing from the spirit thereof. For example, while the envelope 11 and the casing 12 have been illustrated as being of circular cross-section, they may assume any other desired shape. Furthermore, instead of introducing the filling into the envelope 11 through an opening 19 along a side edge, the opening may be formed in any other suitable portion of the envelope, preferably along a seam thereof.

We claim:

1. An improved vibration device comprising an outer flexible envelope having formed in opposite walls thereof aligned openings surrounded by peripheral borders, a tubular casing located in said envelope and having open ends aligned with and abutting the inner faces of said opening borders, said open ends terminating in radially inwardly directed annular flanges, perforated caps engaging said casing open ends and provided with outwardly directed flanges abutting the outer faces of said annular flanges to embrace said opening borders between the confronting faces of said annular flanges and said cap flanges, an electrical vibrator disposed in said casing and having a vibratory element secured to the wall of said casing and a stuffing material disposed in said envelope and surrounding said casing, said caps being provided with rearwardly directed resilient fingers having outwardly directed portions engaging said annular flanges.

2. An improved vibration device comprising an outer flexible envelope having formed in opposite walls thereof aligned openings surrounded by peripheral borders, a tubular casing located in said envelope and having open ends aligned with and abutting the inner faces of said opening borders, said open ends terminating in radially inwardly directed annular flanges, perforated caps engaging said casing open ends and provided with outwardly directed flanges abutting the outer faces of said annular flanges to embrace said opening borders between the confronting faces of said annular flanges and said cap flanges, an electrical vibrator disposed in said casing and having a vibratory element secured to the wall of said casing and a stuffing material disposed in said envelope and surrounding said casing.

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