June 24, 1958 S. L. McNAIR 2,840,071

ELECTRICAL VIBRATING DEVICE IN COMBINATION WITH A CUSHION

Filed Nov. 25, 1957 2 Sheets-Sheet 1

Fig. 1.

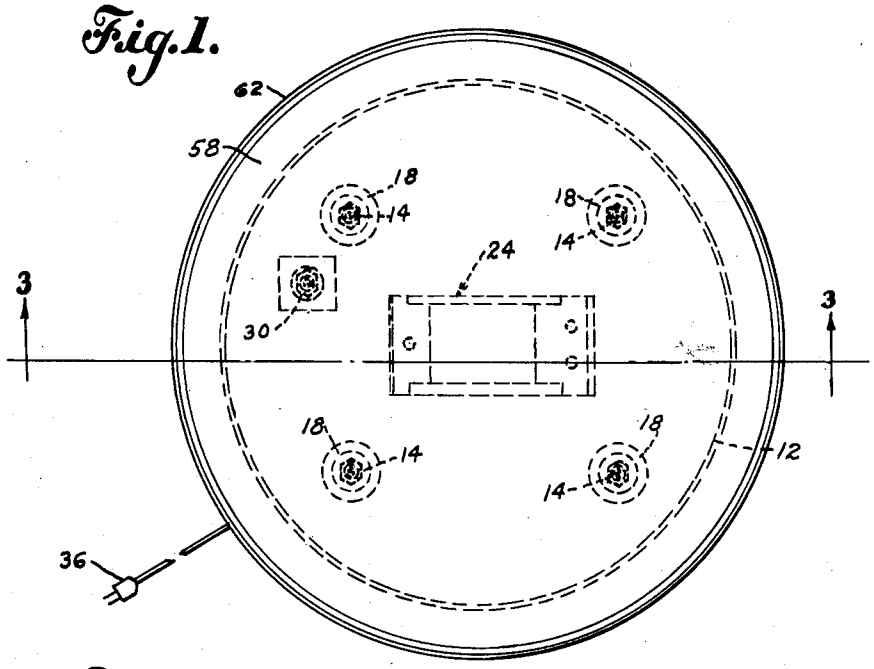
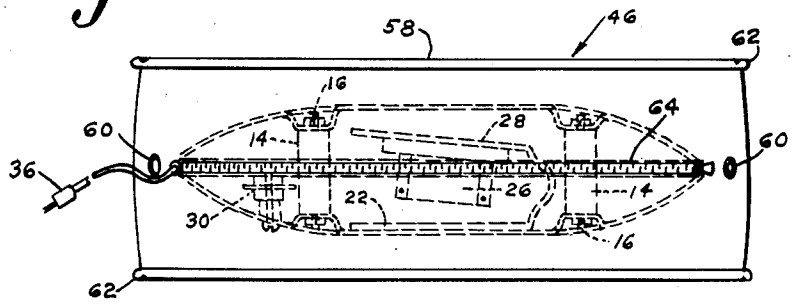


Fig. 2.



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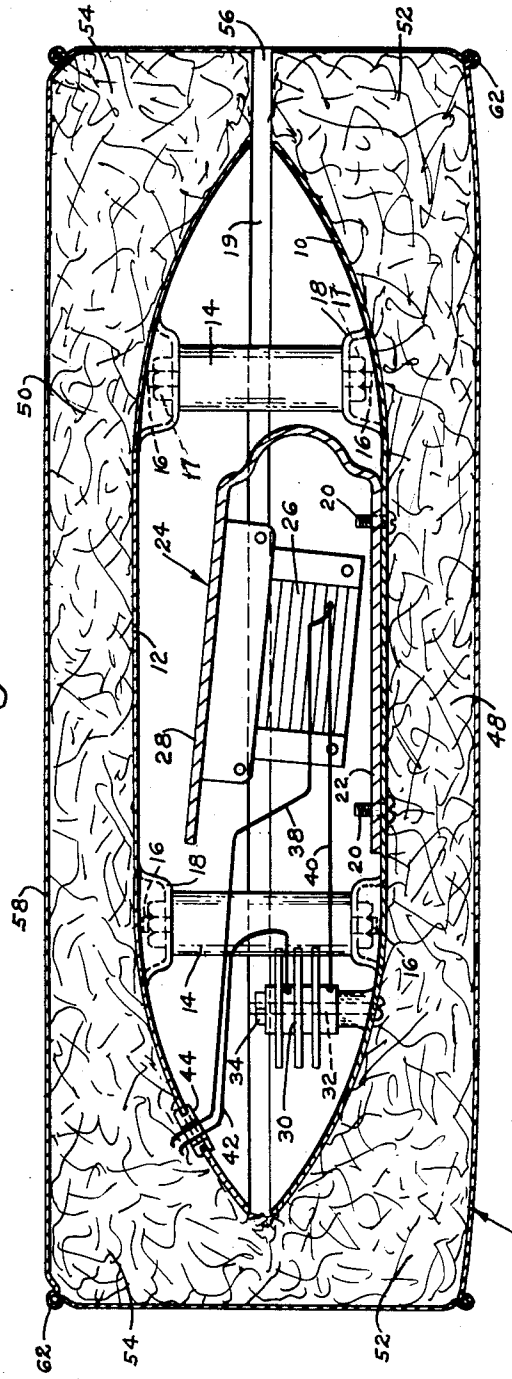

Fig. 3.

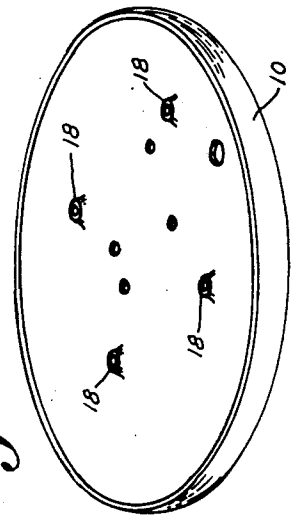

Fig. 5.

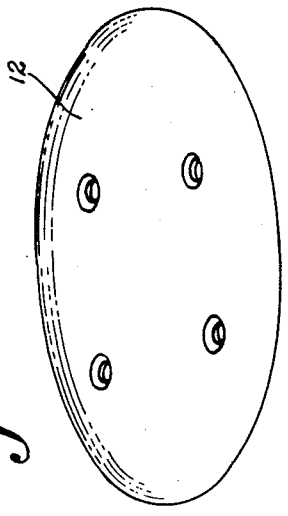

Fig. 4.

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United States Patent Office

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ELECTRICAL VIBRATING DEVICE IN COMBINATION WITH A CUSHION

Samuel L. McNair, Whitman, Mass.

Application November 25, 1957, Serial No. 698,795

6 Claims. (Cl. 128—33)

This invention relates to an electrical vibrating device for use in combination with a resilient cushion.

Reference is made to my patent application Serial No. 668,137, filing date June 26, 1957, for an Electrical Vibrating Device.

One object of my invention is to provide a resilient cushion having an opening to receive an electrically operated vibrating device. The resiliency of the cushion combined with the vibrations of the device provide a gentle, vibratory movement of the head and neck, or any other part of the body that rests upon, or contacts the cushion. A healthful relaxation is thus attained, while receiving a massage through said vibrations.

Another object is to provide such a device that can be used separately from the cushion for other purposes.

A further object is to provide such a construction that the cost of manufacture is relatively low, thus bringing the invention within the price range of the ordinary consumer.

The foregoing and other objects which will appear as the nature of the invention is better understood, may be accomplished by a construction, combination and operative arrangement of parts such as is disclosed by the drawings. The nature of the invention is such as to render it susceptible to various changes and modifications, and therefore, I am not to be limited to the construction disclosed by the drawings nor to the particular parts described in the specification; but am entitled to all such changes therefrom as fall within the scope of my claims.

In the drawings:

Fig. 1 is a top plan view of my electrical vibrating device and a resilient cushion enclosing it.

Fig. 2 is a side elevational view thereof.

Fig. 3 is an enlarged, sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a casing member.

Fig. 5 is a perspective view of another casing member.

As illustrated, my vibrating device has a casing or supporting means which includes a saucer-shaped, casing member **10** and another saucer-shaped, casing member **12**. These two vibration transmitting members are spaced apart by four spacers or posts **14** having reduced threaded ends **16**. At the two opposite ends of said spacers **14** are retainer portions **18** which are integral with said casing members **10** and **12**. Said threaded ends **16** extend through said retainer portions **18**, being held by nuts **17**, to thereby maintain said spacers in predetermined position. This arrangement keeps said casing members **10** and **12** properly positioned in rigid predetermined opposing relationship and spaced apart, as at **19**, to provide for circulation of air and to permit casing members to vibrate in phase unison when vibrations are transmitted to one of them.

Attached to said casing member **10** by screws **20** is a leg **22** of a U-shaped, vibrating member or clapper **24**. This latter member projects into open space between

said casing members **10** and **12**, thus being free to vibrate unattached above said casing member **10**.

Vibrating means in the form of an electric motor **26** is formed by clapper **24** and a coil and core assembly attached to another leg **28** of said clapper **24** and is held thereby, as shown in said Fig. 3. In operation, the vibration of said motor **26** vibrates leg **28** of said clapper member **24**, thus causing vibration of the device itself which vibration is transmitted by members **10** and **12** in a manner hereinafter described. A rectifier **30**, shown attached to said casing member **10** by a bolt **32** and nut **34**, may be used to increase the intensity of said vibrations when connected in the following described manner:

An electrical connector plug **36**, which may be connected to a suitable source of electricity, has a wire **38** extending therefrom to said motor **26**. When said rectifier **30** is used, another wire **40** extends to it from said motor **26**, and another wire **42** extends from said rectifier to said plug **36**. Both said wires **38** and **42** extend through a strain relief bushing **44** mounted in said casing member **12**.

The foregoing provides vibrating means, adaptable for use separately, if desired. It is especially effective when used in combination with a resilient cushion, such as illustrated, particularly in said Fig. 3.

As illustrated, I provide a resilient cushion **46** including two substantially parallel resilient members **48** and **50**, which may be made of foam rubber, for instance, and which have inner surfaces in facing relationship and are positioned respectively in contacting relationship below and above said casing members **10** and **12**, as shown. They surround the latter and extend beyond to provide side extension portions **52** and **54** respectively of said cushions **48** and **50**, and which may be of additional thickness at points beyond said casing members **10** and **12**, as shown in said Fig. 3. It is preferable to leave some space **56** between said resilient members **48** and **50** to permit circulation of air.

Said resilient cushion **46** preferably includes a flexible cover or outer enclosure member **58** having a pair of outer surfaces which member may be made of cloth or plastic, for instance, having vent holes **60** therethrough, and shown evenly beaded at the edges as at **62**. This enclosure member, which is in planar contact with the outer surfaces of said resilient members **48** and **50**, is provided with an opening which is closed by the usual sliding fasteners **64**. At one end of said opening said electrical wires **38** and **42** preferably pass through to connect with said plug **36**.

Both the vibrating device and said resilient cushion **46** cooperate in providing a pleasant massage, since the two resilient members **48** and **50** receive the vibratory motion, transmitting it in gentler form, through their qualities of resilience, to the person in contact with this assembly.

What I claim is:

1. A vibrating cushion comprising, in combination, a flexible cover presenting a pair of outer surfaces, a resilient foam structure enclosed within said cover and formed by two substantially parallel foam cushion portions with inner surfaces in facing relationship and with outer surfaces in planar contact with said cover throughout the area of said outer surfaces thereof, and a vibration device positioned between said inner surfaces of said foam structure and including a first vibration transmitting member in contact with one of said inner surfaces of said foam cushion structure and a second vibration transmitting member in contact with the other of said inner surfaces of said foam cushion structure, said vibration transmitting members being in opposed relationship, said device also including means holding said vibration

transmitting members in rigid predetermined opposing position with respect to each other whereby said vibration transmitting members vibrate in phase unison when vibrations are transmitted to one of them, said device also including a vibration producing electric motor comprising a field coil and core assembly and also comprising a clapper having a portion thereof positioned to be magnetically attracted by, and biased against relative movement toward said coil and core assembly whereby upon energization of said coil relative motion takes place between said portion and said coil and core assembly, and said device also including means mounting said motor on one of said vibration transmitting members, whereby vibrations are produced by said motor and are transmitted by said vibration transmitting members through the respective foam cushion portions to the outer surfaces of said flexible cover.

2. A vibrating cushion as claimed in claim 1, wherein said clapper comprises a U-shaped mounting bracket for said coil and core assembly having one leg fixed to one of said vibration transmitting members and having said coil and core assembly mounted upon the other leg.

3. A vibrating cushion as claimed in claim 2, which

includes a rectifier unit connected in series with said coil.

4. A vibrating cushion as described in claim 1, wherein said means holding said vibration transmitting members comprises a plurality of posts which have threaded ends and nuts thereon.

5. A vibrating cushion as claimed in claim 1, wherein said vibration transmitting members are dished sheet metal members which provide a substantially annular peripheral opening therebetween.

6. A vibrating cushion as claimed in claim 5, wherein said outer cover is fabric and has eyelets substantially in alignment with said substantially annular opening.

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