July 22, 1952 C. HANSEN 2,604,091

FOOT MASSAGER

Filed March 21, 1951 2 SHEETS—SHEET 1

Fig. 1.

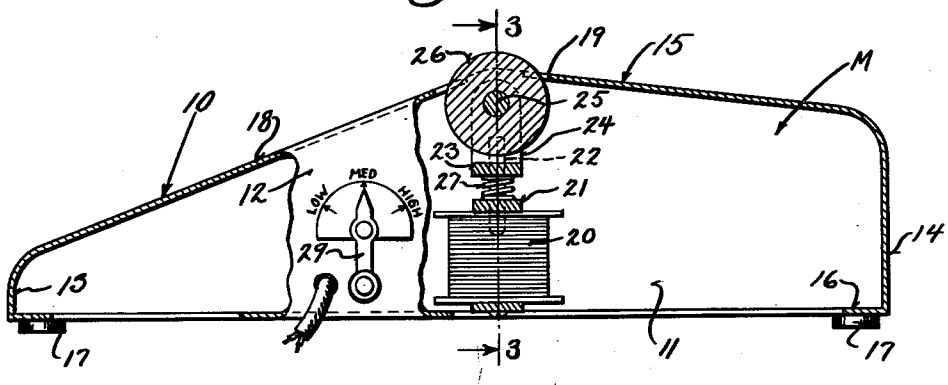


Fig. 2.

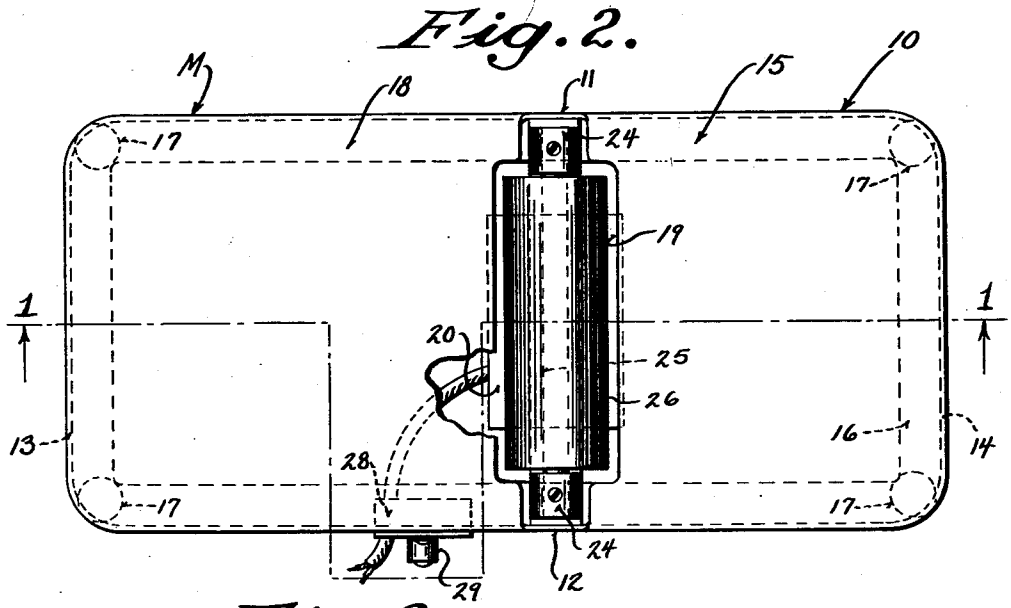
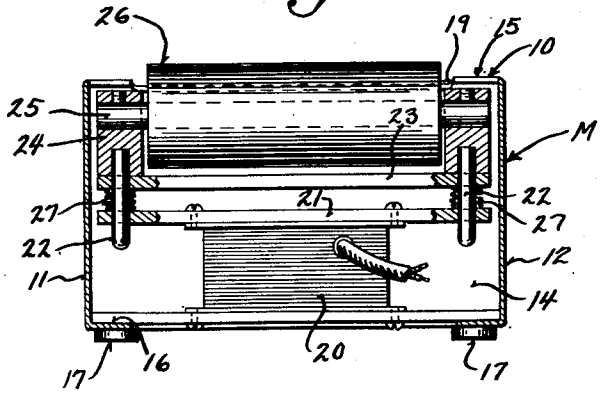


Fig. 3.



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Fig. 4.

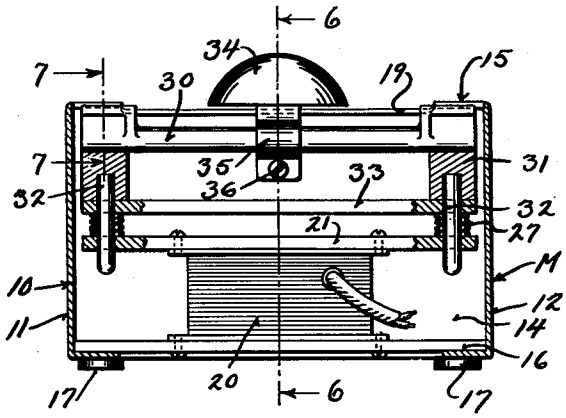


Fig. 5.

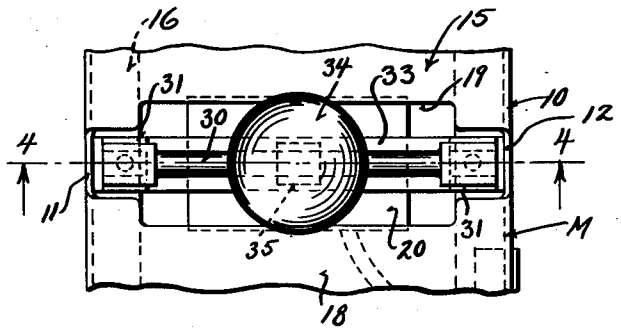


Fig. 6.

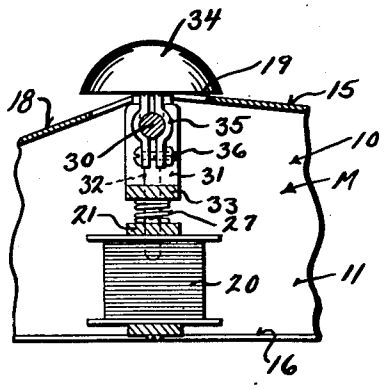
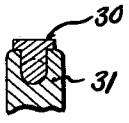


Fig. 7.



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UNITED STATES PATENT OFFICE

2,604,091

FOOT MASSAGER

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Application March 21, 1951, Serial No. 216,709

3 Claims. (Cl. 128—41)

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This invention appertains to an orthopedic appliance and more particularly to a device for massaging and treating the feet.

One of the primary objects of my invention is the provision of a small compact machine adapted to rest on the floor, embodying a vibrating roller over which the foot can be moved back and forth, so that the entire foot, or selected parts thereof, can be effectively massaged and treated for the relief of tired muscles and for efficiently stimulating blood circulation and for strengthening the muscles and bone structure of the foot and toes.

Another salient object of the invention is to provide novel means for mounting the roller relative to the vibrator coil or magnet, so that the vibration of the roller can be controlled by the pressure of the foot thereon.

A further object of the invention is the provision of means for arranging the roller relative to a foot rest formed on the machine, so that the foot will be in proper position for the desired massage.

A further important object of my invention, is the provision of means whereby the roller can be quickly and conveniently removed from the machine, so that other types of massage elements can be substituted therefor.

A still further object of my invention is to provide a foot massager of the above character, which will be durable and efficient in use, one that will be simple and easy to manufacture, and one which can be placed upon the market at a reasonable cost.

With these and other objects in view, the invention consists in the novel construction, arrangement and formation of parts, as will be hereinafter more specifically described and claimed, and illustrated in the accompanying drawings, in which drawings,

Figure 1 is a longitudinal sectional view through my novel foot massager, taken on the line 1—1 of Figure 2, looking in the direction of the arrows.

Figure 2 is a top plan view of the foot massager.

Figure 3 is a transverse sectional view through the massager taken on the line 3—3 of Figure 1, looking in the direction of the arrows, illustrating the mounting of the massage roller.

Figure 4 is a transverse sectional view, similar to Figure 3, but showing another type of massage element associated with the machine in lieu of the roller the section being taken on the line 4—4 of Figure 5, looking in the direction of the arrows.

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Figure 5 is a fragmentary top plan view showing the type of massage element used in Figure 4.

Figure 6 is a fragmentary longitudinal sectional view taken on the line 6—6 of Figure 4, looking in the direction of the arrows.

Figure 7 is a detail sectional view taken on the line 7—7 of Figure 4, looking in the direction of the arrows.

Referring to the drawings in detail, wherein similar reference characters designate corresponding parts throughout the several views, the letter M generally indicates my novel foot massaging machine and the same embodies a casing 10 preferably, but not necessarily, formed from sheet metal. Where the casing is formed from sheet metal, the same can be enameled, or otherwise treated, to enhance the appearance and durability thereof. It is to be also understood that the casing 10, can be constructed from plastic material if such should be preferred. As illustrated, this casing 10 includes spaced parallel side walls 11 and 12, front and rear end walls 13 and 14, and a top wall 15. The side walls 11 and 12 and the front and rear walls 13 and 14 can be provided with inturned flanges 16 to which can be secured rubber or like feet 17. Particular attention is directed to the top wall 15, and it is to be noted that the same inclines downwardly in opposite directions from a transverse line to define a sloping front foot platform 18. The top wall 15 at the transverse line, is provided with a slot 19, the purpose of which will later appear.

Mounted in the lower part of the casing 10, below the slot 19, is a vibratory coil or alternating magnet 20, and this magnet embodies a bar 21, which extends transversely of the casing directly below the slot 19. The coil can be rigidly secured to the flanges 16. The terminals of the bar 21 are provided with openings in which are received guide pins 22. The guide pins 22 are rigidly carried by a transversely extending armature bar 23, and end bearing blocks 24. These bearing blocks 24 carry a transversely extending shaft 25, on which is mounted a massage roller 26. Expansion spring 27 are coiled about the guide pins 22, and are disposed between the bar 21 of the magnet 20 and the armature bar 23 and function to normally hold the armature bar 23, the blocks 24 and the roller 26 in a raised position with a part of the periphery thereof extending through the slot 19 above the platform 18.

Current for the magnet is supplied from any suitable outlet of an alternating current source,

and if desired, a rheostat **28** can also be incorporated with the housing. An operating lever **29** can be provided for the rheostat and this lever can be located on an external surface of the casing **10**.

In this form of my appliance, the foot is placed upon the platform **18**, and is moved back and forth over the roller **26**, and obviously, the foot can be held stationary at a desired point on the roller for treating certain parts of the foot. The roller itself can be constructed from various kinds of pliable materials, such as rubber, synthetic rubber, sponge rubber, sheepskin, wood, plastic or the like. A roller is selected for use which will be best suited for a special purpose.

By pulling up on the roller, the same can be removed entirely from the casing, in view of the fact that the guide pins **22** are rigidly connected with bearings **24**, and are freely slidable in the bar **21**. By pressing down with the foot on the roller **26**, the vibration can be increased or decreased in view of the springs **27**.

In view of the fact that the roller and its associated parts, is freely removable, other characters of massage elements can be used with my machine, and in Figures 4 to 7, inclusive, I have illustrated means by which different kinds of massage elements can be employed. As illustrated, I can provide a transversely extending rod **30**, the terminals of which rigidly carry depending blocks **31**. The blocks **31** in turn carry depending guide pins **32**. The guide pins also extend through an armature bar **33**, which is carried by the blocks **31**. The guide pins **32** are in turn received in the guide openings in the bar **21** of the magnet **20**. The rod **30** can have detachably clamped thereto any desired special type of massage element such as the mushroom type massage head **34**. This head **34** can also be made from various materials and carries dependent resilient jaws **35** which are adapted to snap over the rod **30**. The jaws can be clamped into tight engagement with the rod by means of a bolt **36**.

Much stress is laid on the arrangement of the platform **18** relative to the roller and the massage button or head **34**, as the platform directs the foot over the massage elements at a desired angle.

Various changes in details may be made without departing from the spirit or the scope of my invention but what I claim as new is:

1. A foot massaging device comprising a casing having a top wall provided with a transversely extending slot and an inclined platform leading toward said slot, an alternating electromagnet in said casing including a bar, an armature disposed above said bar, blocks carried by the ends of the armature, depending guide pins carried by the armature and blocks slidably received in the bar, expansion springs coiled about said guide pins and interposed between the bar and the armature, and a massage element carried by the blocks.

2. A foot massager as defined in claim 1, and said massage element including a rotatable roller extending partially through the slot.

3. A foot massager as defined in claim 1, in which said blocks are connected by a transversely extending rod, and said massage element is clamped to the rod.

CLARENCE HANSEN.

REFERENCES CITED

The following references are of record in the file of this patent:

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