

[54] **MASSAGING DEVICE**

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[51] Int. Cl. **A61h 21/00**

[58] Field of Search **310/DIG. 1, 68, 50; 128/24.1, 128/33, 24 R, 24.2, 32; 331/112; 15/23**

[56] **References Cited**

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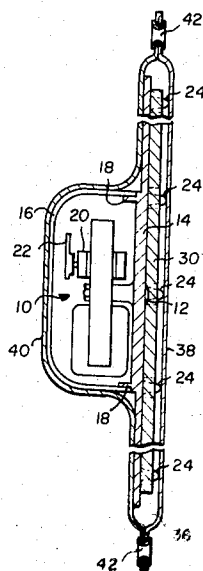
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Primary Examiner—J. D. Miller
Assistant Examiner—Robert J. Hickey
Attorney—Steve W. Gremban

[57] **ABSTRACT**

A massaging device comprising a plate adapted when vibrated by any suitable vibrating device and placed into intimate contact with a portion of a body to massage the portion. The plate is preferably flexible, and provided with projections extending from one surface thereof. A heating pad is held in register with the plate surface; the pad having openings through which the projections extend. The plate and pad are preferably provided with a belt or straps having fastening means for releasably securing the massaging device to the body portion with the heating pad and projection ends in engagement with the body portion. Alternatively, the massaging device may be provided with a handle by which the device may be manually placed into intimate contact with the body portion.

19 Claims, 9 Drawing Figures



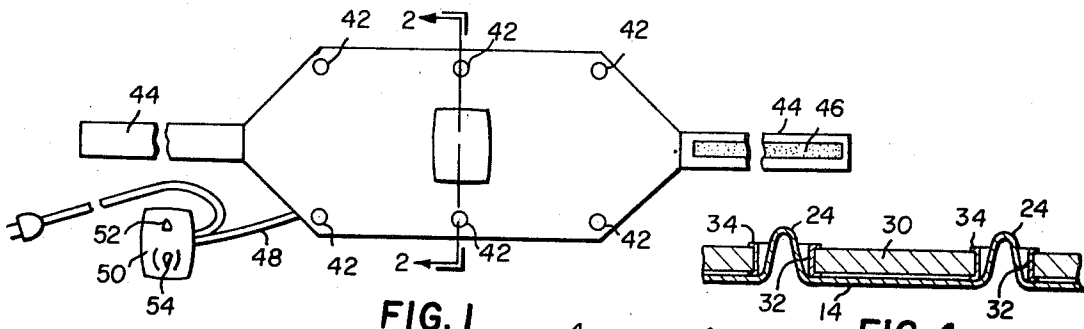


FIG. 1

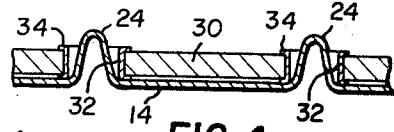


FIG. 4

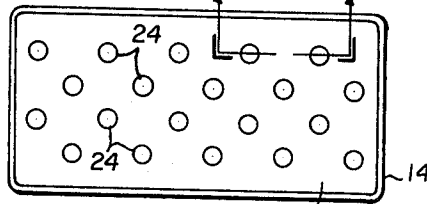


FIG. 3

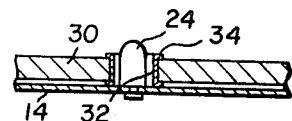


FIG. 5

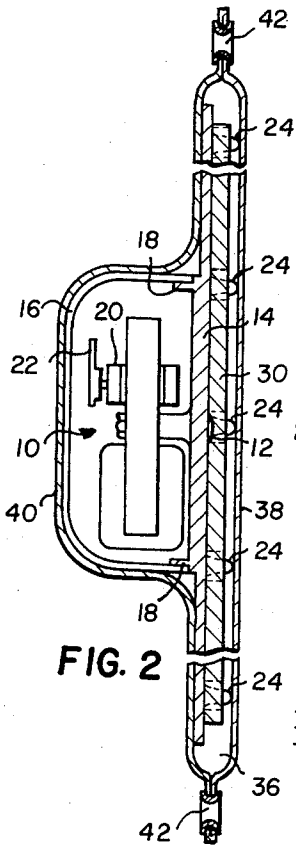


FIG. 2

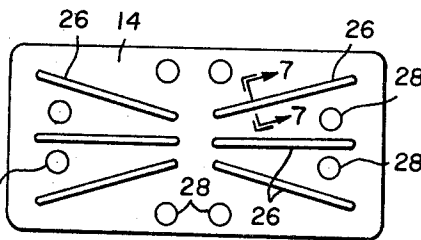


FIG. 6

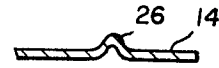


FIG. 7

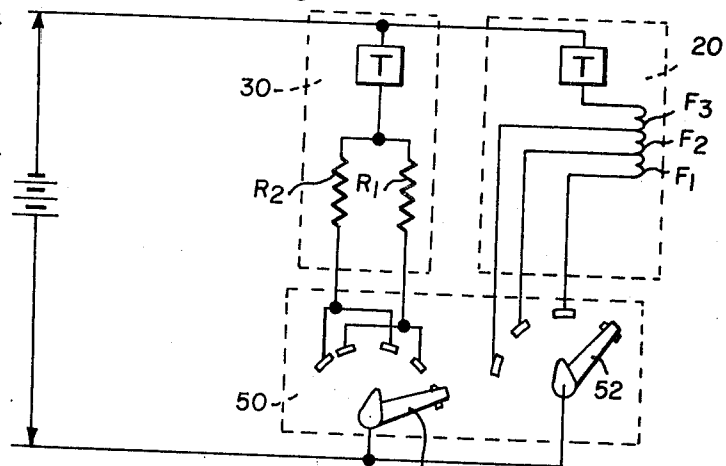


FIG. 9

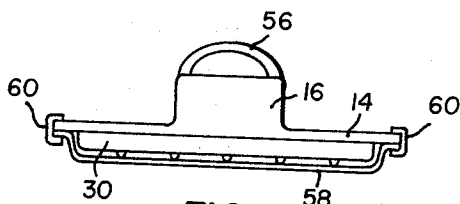


FIG. 8

MASSAGING DEVICE

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to the field of health, and more specifically to a massaging device for mechanically manipulating a portion of a body.

2. Description of the Prior Art

It is known in the prior art to provide heating pads and the like for applying heat to body areas to provide relief from muscular aches and pains. It is also known to provide mechanical devices with or without heat for achieving the same result. Although such prior art devices may operate satisfactorily, they are relatively complicated and costly, and further suffer from lack of versatility and convenience. In addition, due to the design and construction of such prior art devices, they are incapable of simulating human manual manipulation.

SUMMARY OF THE INVENTION

This invention includes within its scope a massaging device that is believed to more closely simulate human manual manipulation than any device known heretofore. The massaging device in one embodiment comprises a preferably thin, flexible plate having projections such as fingers or ribs extending laterally outwardly from one surface, a heating pad having an inner surface adjacent to and in register with the plate, and having complimentary openings through which the projections extend with the ends of the projections extending outwardly from the outer surface of the pad, and means for supporting the plate and pad for application to a body portion requiring massaging.

In a more specific embodiment of the invention, the massaging device comprises a flexible plate secured to a vibratory device, the plate having a plurality of spaced-apart fingers extending laterally from one surface thereof. A heating pad of any suitable type having substantially the same outer diameter as the plate is placed with its inner surface adjacent to and in register with the plate. The pad is provided with openings slightly larger in diameter than the corresponding diameter of the fingers which extend therethrough with the ends thereof extending past the outer surface of the pad. The vibratory device, plate, and pad is enclosed as a unit within a pocket formed by a belt, and the straps of the belt are provided with fastening means to facilitate releasably supporting the massaging device with the pad and finger ends in intimate contact with the portion of a body to be massaged.

It is accordingly one of the objects of the present invention to provide an improved massaging device for massaging portions of a body and relieving bodily aches and pains.

A further object of the invention is to provide an improved massaging device that is versatile and convenient to use.

Another object of the invention is to provide an improved massaging device that more closely simulates human manipulation than any prior known devices.

Another object of the invention is to provide an improved massaging device in which the amount of heat and vibration applied to a body portion is controllable.

Another object of the invention is to provide an improved massaging device that is of simple design and

construction, thoroughly reliable and efficient in operation, and economical to manufacture.

The invention and its objects and advantages will become more apparent from the detailed description of the preferred embodiments presented below.

BRIEF DESCRIPTION OF THE DRAWING

In the detailed description of the preferred embodiments of the invention presented below, reference is made to the accompanying drawings, in which:

FIG. 1 is a rear side elevational view of a preferred embodiment of this invention;

FIG. 2 is an enlarged section view taken substantially along line 2—2 of FIG. 1;

FIG. 3 is a right side elevational view of the device of FIG. 2 showing the plate and pad with portions of the device omitted for purposes of clarity;

FIG. 4 is an enlarged segmental view in section taken substantially along line 4—4 of FIG. 3;

FIG. 5 is a segmental view in section similar to FIG. 4 showing a modification of the plate;

FIG. 6 is a view similar to FIG. 3 showing another modification of the plate of this invention;

FIG. 7 is an enlarged segmental section view taken substantially along line 7—7 of FIG. 6;

FIG. 8 is a view similar to FIG. 2 illustrating a modification of the invention; and

FIG. 9 is an electrical circuit diagram for the massaging device of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIGS. 1 through 5, a preferred embodiment of the massaging device of this invention is disclosed comprising a vibratory device 10 secured by any suitable means, such as a rivet 12, to a preferably thin, flexible plate 14 of any suitable shape or contour, such as planar. The vibratory device 10 is enclosed in a cup-shaped housing 16 secured to flanges 18 on plate 14, and may comprise any suitable electric motor 20 drivingly coupled to an off-center weight 22, or an electrical solenoid, not shown, coupled to a tuned plate. When operated, the vibratory device 10 imparts a vibratory motion to plate 14. The plate is preferably flexible, and made of any suitable material, such as plastic or metal. The outer surface of plate 14 is provided with a plurality of spaced projections, such as laterally extending fingers 24 (FIGS. 2 and 3) or radially extending ribs 26 (FIGS. 6 and 7). The projections 24 may be integral with plate 14 as seen in FIG. 4 or secured thereto by rivets or the like as seen in FIG. 5. The projections are further shaped and designed with regard to flexibility and resilience to simulate finger tips. The plate 14 further may be provided with a plurality of holes 28 as seen in FIG. 6 to better distribute the vibratory motion. A heating pad 30 having an outer dimension substantially equal to that of plate 14 is placed adjacent to and in register with plate 14. The pad 30 has openings 32 therein corresponding to and through which projections 24 extend. The openings in pad 30 are preferably larger than the size of the projections in the plane of the pad to provide a loose fit therebetween so that plate 14 and projections 24 may vibrate and flex to conform to the surface of a body portion without subjecting the pad to undue stress and

vibrational movement which may damage the pad. The heating pad 30 may be of any suitable type, such as a soft cloth-like material having heating wires mounted therein, or a flexible support material coated with a metallic material. The openings 32 in heating pad 30 may be surrounded by reinforcing supports, such as eyelets or grommets 34. The vibratory device 10, plate 14, and pad 30 are enclosed as a unit in a pocket 36 of a belt formed by inner and outer flexible layers 38,40 of plastic or cloth material. The belt layers 38,40 may be secured together along the periphery of the plate and pad by any suitable means such as grommets 42, sewing, or cementing. The belt is further provided with straps 44 of any suitable flexible material of sufficient length to wrap around any portion of a body, and the straps are provided with fastening means for releasably securing the massaging device to the body. The fastening means may comprise any suitable fastening devices, such as belt buckles, snap fasteners, or plastic "Velcron" (trademark) indicated at 46. The vibratory device 10 and heating pad 30 are electrically connected by a cord 48 or the like to any suitable electric power source, and may be provided with a control panel 50 (FIG. 1) having adjustable knobs 52,54 for controlling the speed of the vibratory device and the temperature of the heating pad, respectively. As illustrated in FIG. 9, different settings of knob 54 connect the power to different values of resistances R_1, R_2 to vary the heat, and different settings of knob 52 varies the field windings F_1, F_2 , and F_3 to vary the motor speed. The circuits may be provided with any suitable thermostats T. When the massaging device is releasably secured to a body portion with the belt layer 38, pad 30, and finger ends 24 in intimate contact with the body portion, manually setting the speed and heat knobs 52,54 causes plate 14 and projections 24 to vibrate relative to heating pad 30 to massage the body portion while the pad simultaneously applies heat to the body area.

In the modification of the invention illustrated in FIG. 8, the massaging device is provided with a handle portion 56, in lieu of the belt straps, preferably secured to the housing of the vibratory device 10. The pad 30 is held on plate 14 by a flexible sheet 58 of fabric or the like secured to the periphery of the plate by any suitable means, such as spring clips 60, or the like.

The invention has been described in detail with particular reference to preferred embodiments thereof, but it will be understood that variations and modifications can be effected within the spirit and scope of the invention as described hereinabove.

I claim:

1. In a massaging device, the combination comprising:
 - a plate having at least one projection extending from one surface thereof;
 - means coupled to the opposite surface of said plate for imparting vibration to said plate in a plane at an angle to said projection; and
 - an electrical heat pad adjacent to and in register with said one plate surface, and having an opening through which said projection extends with the end of said projection extending past the outermost surface of said pad.

2. The invention according to claim 1 wherein the area of said opening is greater than the cross-sectional area of the portion of said projection lying in the same plane as said pad, whereby said projection can vibrate without engaging said pad.

3. The invention according to claim 1 wherein said plate is flexible, and the area of said opening is greater than the cross-sectional area of the portion of said projection lying in the same plane as said pad, whereby said projection can vibrate without engaging said pad.

4. The invention according to claim 1 wherein said plate, vibratory means, and heat pad are enclosed as a unit within an enclosure in which the portion thereof adjacent said heat pad is formed of a flexible material.

5. The invention according to claim 1 wherein said plate, vibratory means, and heat pad are enclosed as a unit within an enclosure in which the portion thereof adjacent said heat pad is formed of a flexible material, and fastening means on said enclosure for releasably securing said enclosure to an object with said flexible material in intimate contact with said object.

6. The invention according to claim 5 wherein said fastening means comprises straps secured to said enclosure, and latch means at the ends of said straps.

7. The invention according to claim 1 wherein said plate, vibrating means, and heat pad are enclosed as a unit within an enclosure in which the portion thereof adjacent said heat pad is formed of a flexible material, and handle means secured to said vibrating means by which said flexible material may be manually pressed into intimate engagement with an object.

8. The invention according to claim 1 wherein said plate is flexible, and said projection comprises a finger.

9. The invention according to claim 1 wherein said plate is flexible, and said projection comprises an elongated rib.

10. In a device, the combination comprising:

- a flexible plate having a plurality of spaced-apart projections extending from one surface thereof;
- means coupled to the opposite surface of said plate for imparting vibration to said plate in a direction at an angle to said projections;
- an electrically heated pad in register with said one surface of said plate and having openings through which said projections extend with the ends of said projections extending past the outermost surface of said pad; and

- means for holding said pad adjacent said plate.

11. The invention according to claim 10 wherein said plate is provided with a plurality of spaced-apart holes therethrough to distribute the vibratory action on said plate so that all portions of the plate will have equal amplitude of vibration.

12. The invention according to claim 10 wherein said projections are resilient fingers, and the area of each of said openings is greater than the cross-sectional area of the complimentary portion of each of said fingers lying in the same plane as said pad, whereby said fingers can vibrate without engaging said pad.

13. The invention according to claim 10 wherein said holding means comprises a flexible material secured to said plate.

14. The invention according to claim 13, and further comprising fastening means for releasably securing said plate to an object with said flexible material, pad, and ends of said fingers in intimate contact with the object.

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15. The invention according to claim 14 wherein said fastening means comprises straps secured to said plate, and latch means at the ends of said straps.

16. The invention according to claim 10 wherein said holding means comprises an enclosure enclosing said vibratory means, plate, and pad.

17. The invention according to claim 16 wherein the portion of said enclosure adjacent said pad and the ends of said fingers is formed of a flexible material.

18. The invention according to claim 17, and further including fastening means on said enclosure for

releasably securing said enclosure to an object with said flexible material in intimate contact with said object.

19. The invention according to claim 10 wherein said holding means comprises a flexible material secured to said plate, and said device further comprises handle means secured to said plate by which said plate, pad, finger ends, and flexible material may be manually pressed into intimate engagement with an object.

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