

July 17, 1962

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3,044,462

MASSAGING APPARATUS

Filed Sept. 8, 1960

3 Sheets-Sheet 1

FIG. 1

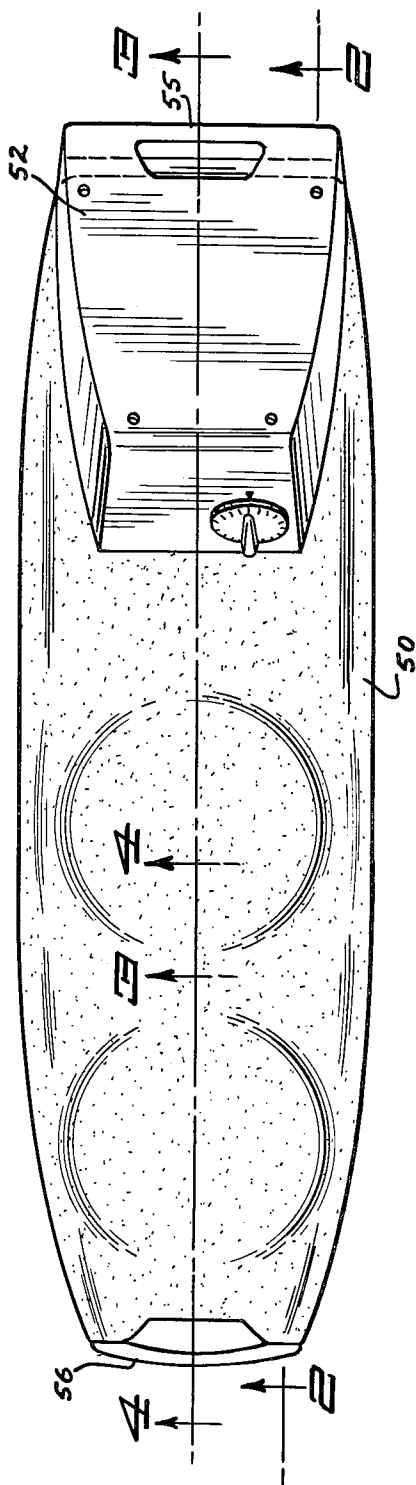
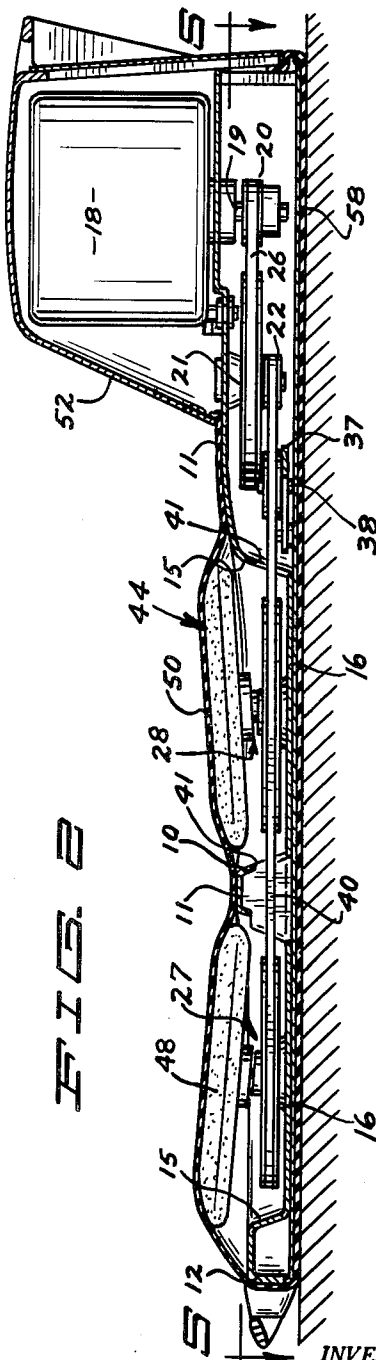


FIG. 2



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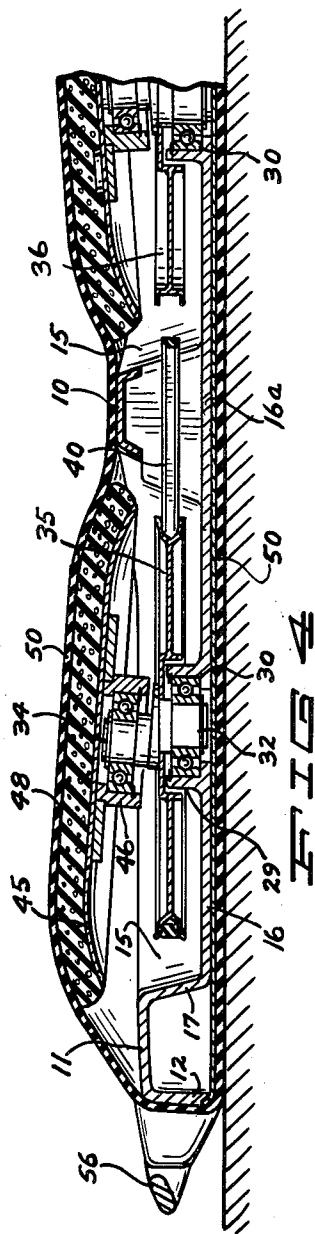
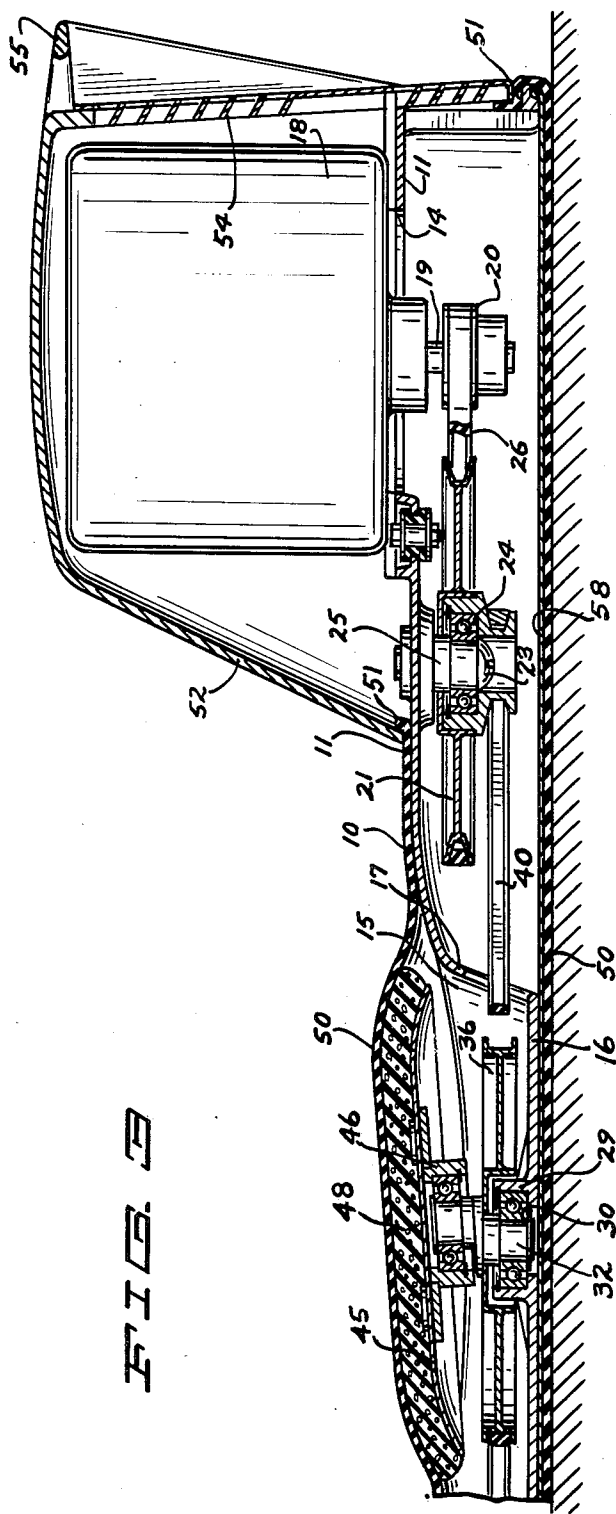
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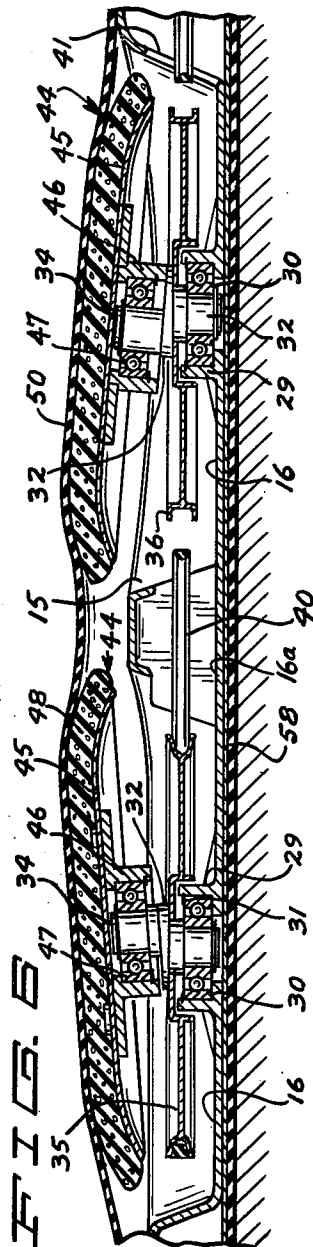
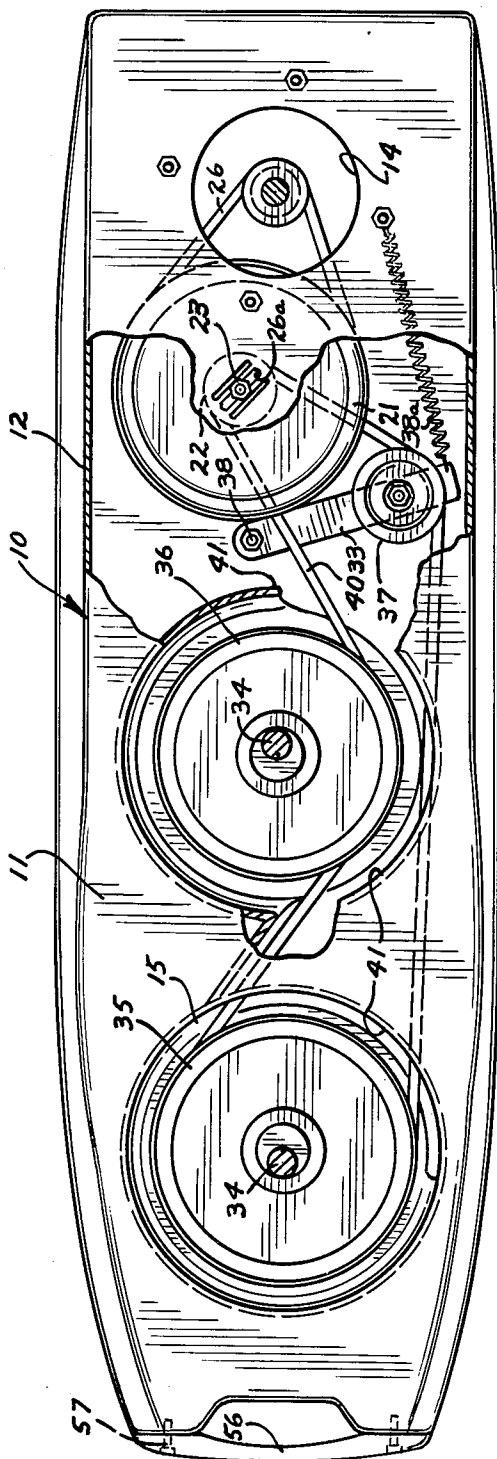
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FIG. 5



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MASSAGING APPARATUS

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5 Claims. (Cl. 128—33)

This invention relates to motor driven massaging apparatus. It is more particularly directed to improvements in such apparatus of the type disclosed in my copending application for United States patent Serial No. 774,347, filed November 17, 1958.

The primary object of the invention is to provide a massaging apparatus of the type having a pair of power driven massaging elements mounted on a surrounding base under a common covering which elements both tilt and move toward and away from each other in an orbital movement about parallel axes and each of which elements is so mounted as to tilt away from the other element and the surrounding base portions as it moves theretoward to prohibit the creation of slack in the covering which might result in the pinching of body portions in pressure contact with the cover.

Another object of the invention is to provide a massaging apparatus with a new and improved enveloping enclosure.

Still another object of the invention is to provide a massaging apparatus wherein massaging elements driven to wobble in a circular path are held against rotation primarily by pressure contact of the elements against an enveloping enclosure with which they are in contact.

The above mentioned and still additional objects of the invention will be brought to light during the course of the following specification, reference being made to the accompanying drawings, in which:

FIG. 1 is a plan view of the apparatus.

FIG. 2 is a longitudinal vertical section through the machine taken on line 2—2 of FIG. 1.

FIGS. 3 and 4 are complementary portions of a longitudinal vertical section through the machine taken along the line 3—3, 4—4 of FIG. 1.

FIG. 5 is a horizontal section taken on line 5—5 of FIG. 2 and showing the drive mechanism for the machine.

FIG. 6 is a fragmentary longitudinal vertical section similar to FIG. 4 but showing the massaging elements in different relative positions.

Referring now more specifically to the drawings reference numerals will be used to denote like parts or structural features in the different views. A unitary base, designated generally at 10, of metal has a top wall 11 and a peripheral depending flange 12 extending therearound. An opening 14 is provided in wall 11 near one end of the base, shown at the right in the drawings, which for the sake of convenience will be referred to as the rear end of the base. The base is also provided with a pair of wells 15 spaced longitudinally therealong one at the approximate center and the other near the forward end of the base. These wells open upwardly and each is provided with a bottom wall 16 and an upright annular wall 17 connecting wall 16 with the top wall 11 of the base.

An electric motor 18 is mounted on the base over the opening 14 and has a drive shaft 19 projecting downwardly through the opening and carrying a pulley 20. A speed reduction pulley having a large sheave 21 in horizontal alignment with pulley 20 and a diametrically reduced sheave 22 integral therewith is journaled as by bearing 24 on spindle 25 mounted on the base top wall 11 by bolt and nut assembly 23. This pulley rotates on a vertical axis and is driven from pulley 20 through belt 26 which rides in the V-groove of sheave 21. Spindle 25 is adjustable along slot 25^a (FIG. 5) to retain belt 26 in tight condition.

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A pair of massage assemblies are mounted one in each of the wells 15. These assemblies are of substantially identical construction and are generally designated as the front or outer assembly 27 and the rear or inner assembly 28. In each of the wells 15 an annular boss 29 extends upwardly from the bottom wall 16, the boss being concentric with the well wall 17. A bearing 30 is seated within the boss 29 and held in place by a split ring 31. A rotary element 32 is journaled in bearing 30 for rotation on a vertical axis. Each element 32 has an upwardly projecting stub 34 which is offset from the axis of rotation of the shaft and tilted at an angle thereto, as clearly shown in FIG. 6. Also the front and inner elements 32 respectively carry fixedly mounted pulley sheaves 35 and 36, said pulleys being in horizontal alignment. The sheave 35 has a V-groove for reception of a V-belt while sheave 36 is provided with a channel-shaped groove for reception of the back side of the same belt. A tightener pulley 37 is journaled on a swingable arm 33 pivoted as at 38 and tensioned to pull the pulley rearwardly by means of spring 38^a. Sheaves 35, 36 and 37 are all disposed on a common horizontal plane with sheave 22 and are interconnected therewith by a V-drive belt 40. Belt 40 has its inner or V-side extending around the sheaves 22, 37 and 35 with its outer surface in engagement with the channel groove of sheave 36, as shown in FIG. 5. It will thus be understood that sheaves 35 and 36 and the rotary elements 32 upon which they are respectively mounted will be rotated in opposite directions about their respective vertical turning axes.

The annular walls 17 of wells 15 are cut away, as indicated at 41, to allow the belt 40 to extend between the various pulleys. Sheaves 35 and 36 are of slightly different diameters so as to be rotated by belt 40 at slightly different speeds. Between the two wells 15 and under the area where belt 40 travels, the well bottoms 16 are joined by the continuation 16^a.

As hereinbefore pointed out the stubs 34 are offset with respect to the axis of rotation of elements 32 so that these stubs will orbit as the elements rotate. These offset stubs 34 are tilted inwardly toward the axis of rotation. In other words, the base or lower end of each stub is offset a greater distance from the axis of rotation of the element 32 than is the upper end of the stub. The importance of this feature will shortly be made clear.

A massaging element, designated generally at 44, is mounted on each of the stub shafts 34. Each of these elements comprises a concavo-convex metal disk 45 having an annular bushing 46 mounted centrally on its underside and containing a bearing 47 which encircles stub 34 enabling the stub to freely rotate within the bushing 46. The top convex surface of disk 45 is covered with a thickness of sponge rubber 48 which serves as a pad. The pad 48 is preferably cemented or otherwise secured to disk 45.

A molded cover 50 of rubber, plastic or other resilient, pliant material is preformed to fit over the base and the massaging assemblies. This cover is in reality an elongated bag adapted to be pulled rearwardly over the apparatus with the open end having a peripheral bead 51 which fits under and is held tightly against the base by a motor cover 52 which is secured to the base or directly to the motor in any desired manner. The cover has a perforate grill 54 along one side and a handle 55 near the top thereof. A second carrying handle 56 is mounted on the front end of the apparatus being secured directly to the base as by screws 57 which extend through the cover 50. A bottom shield of rigid sheet material which is coextensive in area with the base is held against the bottom of the base by cover 50 to reinforce the cover portion extending along the underside of the base.

In use the apparatus is placed upon the floor, or a bed, or other suitable horizontal supporting area with the mas-

saging elements facing upwardly, as shown in FIG. 2. The body portion to be treated is then positioned to lie over the portion of the cover 50 which covers the massaging elements. As the motor 18 is energized it will rotate the pulley sheaves 35 and 36 through means of the belt 40 which is trained over the pulley 22. Pulley 22 is driven through connection of its associated sheave 21 with motor driven pulley 20 by means of belt 26. It is desirable that the pulleys 35 and 36 be driven at a speed of approximately 75 to 150 revolutions per minute. It will be obvious that with the back of the belt 40 being trained around pulley 36, it will be rotated in an opposite direction from the pulley 35. Moreover, while the pulleys 35 and 36 are substantially equal in diameter, they will be rotated at different speeds in view of the fact that the belt 40 will seat more deeply in the V-shaped groove of the pulley 35 than in the channel groove of pulley 36. As these pulleys are driven the rotary elements 32 will be rotated thereby about vertical axes. The angularity offset portion 34 of each element 32 will move in an orbital path about the axis of rotation. Accordingly, the massage element 44 journaled on the stub shaft 34 will wobble in a circular path about the axis of rotation of the element 32. The cover 50, conforming closely over the top surface of the sponge padding mounted on the massage element, will frictionally prohibit rotation of the element and allow the stub shaft 34 to rotate freely within the bearing 47.

As hereinbefore mentioned it is an important feature of this invention that the stub shaft portions 34 are angularly offset so as to be inclined toward the axis of rotation of the elements 32 in their upward extension. Thus, as each of the massage elements 44 wobbles in its circular path, its portion moving toward the other massage element or toward the well wall 15 will be rising. It will be noted in FIG. 6 that as the massage elements are tilted away from each other, they have their closest relationship and as they tilt toward each other and to the relative position shown in FIG. 4, their outer edges are raised to prohibit any slack in the cover and consequent pinching between the element and surrounding portions of the base 10.

With each of the massage elements 44 having a continuous circular wobble, the high side of each of the pads 48 disposed thereon will follow a circular path which moves back and forth longitudinally of the base, creating a constantly changing up and down massaging action and sideways kneading and stroking action upon the body portions.

The direct and broad contact between the pads 48 and the cover 50, both of which are formed of a resilient, highly frictional material, eliminates the necessity of any means for positively holding the massage elements against rotation.

The cover 50 is preformed as an elongated bag or sock and serves as a highly desirable covering for the apparatus in view of its neat appearance and its ease of cleaning. This type of cover also renders the apparatus relatively waterproof and the cover is simply held in place by the motor hood, allowing it to be readily removed for access to the moving parts of the apparatus.

It is understood that suitable modifications may be made in the structure as disclosed, provided such modifications come within the spirit and scope of the appended claims. Having now therefore fully illustrated and described my invention, what I claim to be new and desire to protect by Letters Patent is:

1. In a massaging apparatus, an elongated horizontal base, a pair of rotary massaging elements journaled on the base for orbital movement about an upright axis, power means mounted at one end of the base and having a driv-

ing connection with the massaging elements, and an elongated bag-shaped cover of pliable material extending longitudinally over and around the base, massaging elements and driving connection to completely enclose the same.

2. In a massaging apparatus, a base, a pair of massage disks mounted on the base in side by side relation, a flexible covering extending over the disks in contact with the upper surfaces thereof, and drive means on the base for causing the disks to tilt toward and away from each other and simultaneously move toward and away from each other, and means for mounting the disks so that the entire upper surface of each will necessarily move away from the other as it tilts toward the other.

3. In a massaging apparatus, a horizontal base, a pair of rotary elements journaled on the base in side by side relation for rotation on vertical axes, drive means on the base for rotating said elements, each of said elements having an integral upwardly projecting stub shaft for rotation therewith, a pair of massage elements journaled one on each stub shaft, means on the base engaging the massage elements to prohibit rotation thereof with the rotary elements, each of said stub shafts extending upwardly at a slight angle to the vertical to cause the massage elements to wobble in a circular path as the rotary elements are rotated, and each of said stub shafts being offset from its axis of rotation and having its contained center axis in its upward extension angling toward but not extending as far as its axis of rotation whereby as each massage element tilts toward the other massage element during such wobbling movement the entire upper portion thereof will be moving away from the axis of rotation of the stub shaft carrying said other massage element.

4. In a massaging apparatus, an elongated horizontal base, a drive motor mounted at one end of the base, a circular massaging element mounted at the other end of the base and having driven connection with the motor to wobble in a circular path about a generally upright axis to have a massaging action upon body tissues disposed thereon, a hood over the motor, an elongated bag of flexible waterproof material extending over and around to completely enclose said other end of the base and said massaging element and having its open end peripherally secured between the base and said hood.

5. An apparatus for massaging body tissues comprising a base, a pair of rotary elements journaled on the base for rotation on parallel axes, means on the base to rotate the rotary elements, a circular massage element centrally journaled on each of the rotary elements on an axis angularly displaced from the axis of rotation of said rotary element and having a radial dimension substantially greater than the spacing between the massage elements, a pad of sponge-like material secured to the top of each massage element, means for rotating said rotary elements at different speeds, a cover of resilient flexible material extending over the pads to lie between the pads and body tissues when the massage elements are placed in pressure contact with said tissues, said cover being independent of the pads but being in broad frictional engagement therewith and being attached to the base to prevent rotation of the massage elements so that said massage elements will wobble with respect to the axis of the rotary elements when the latter are rotated.

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