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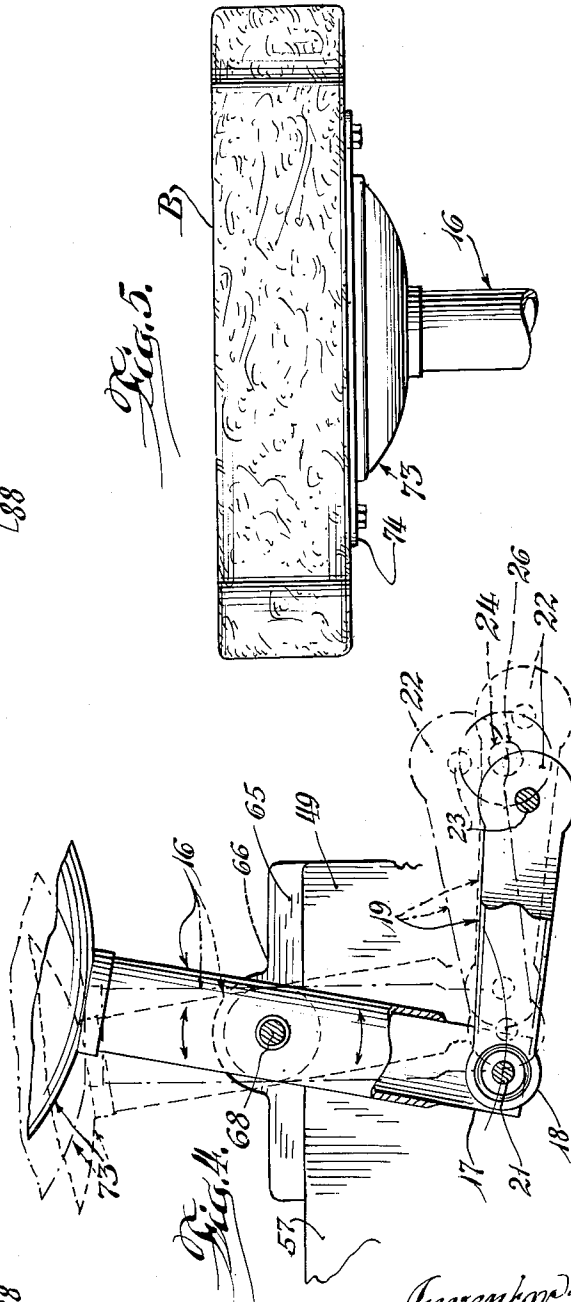
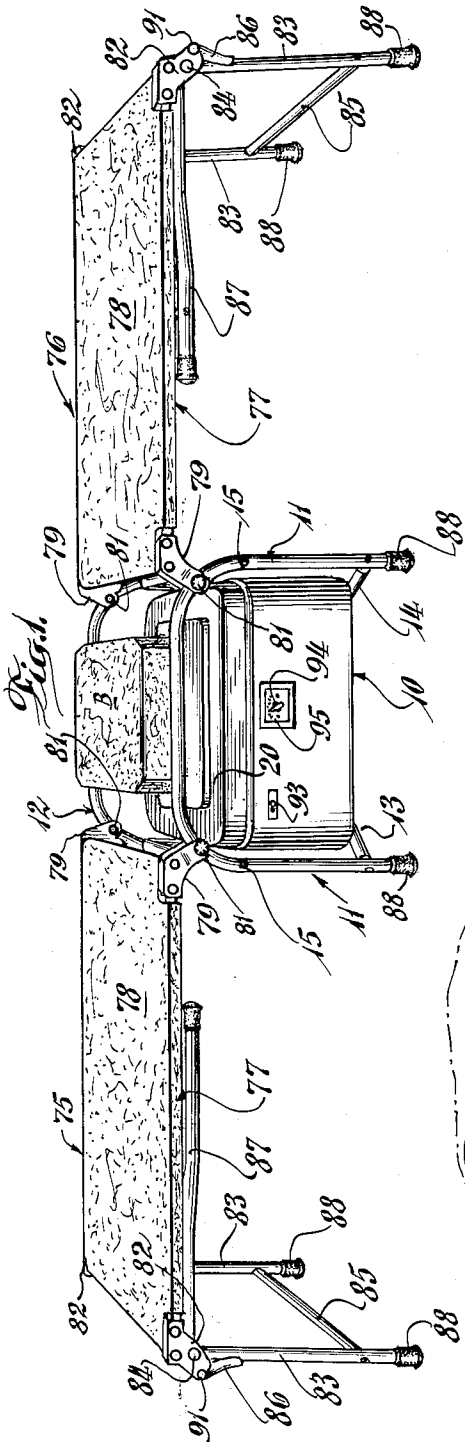
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3,019,786

MASSAGE APPARATUS AND COUCH ASSEMBLY

Filed July 20, 1959

3 Sheets-Sheet 1



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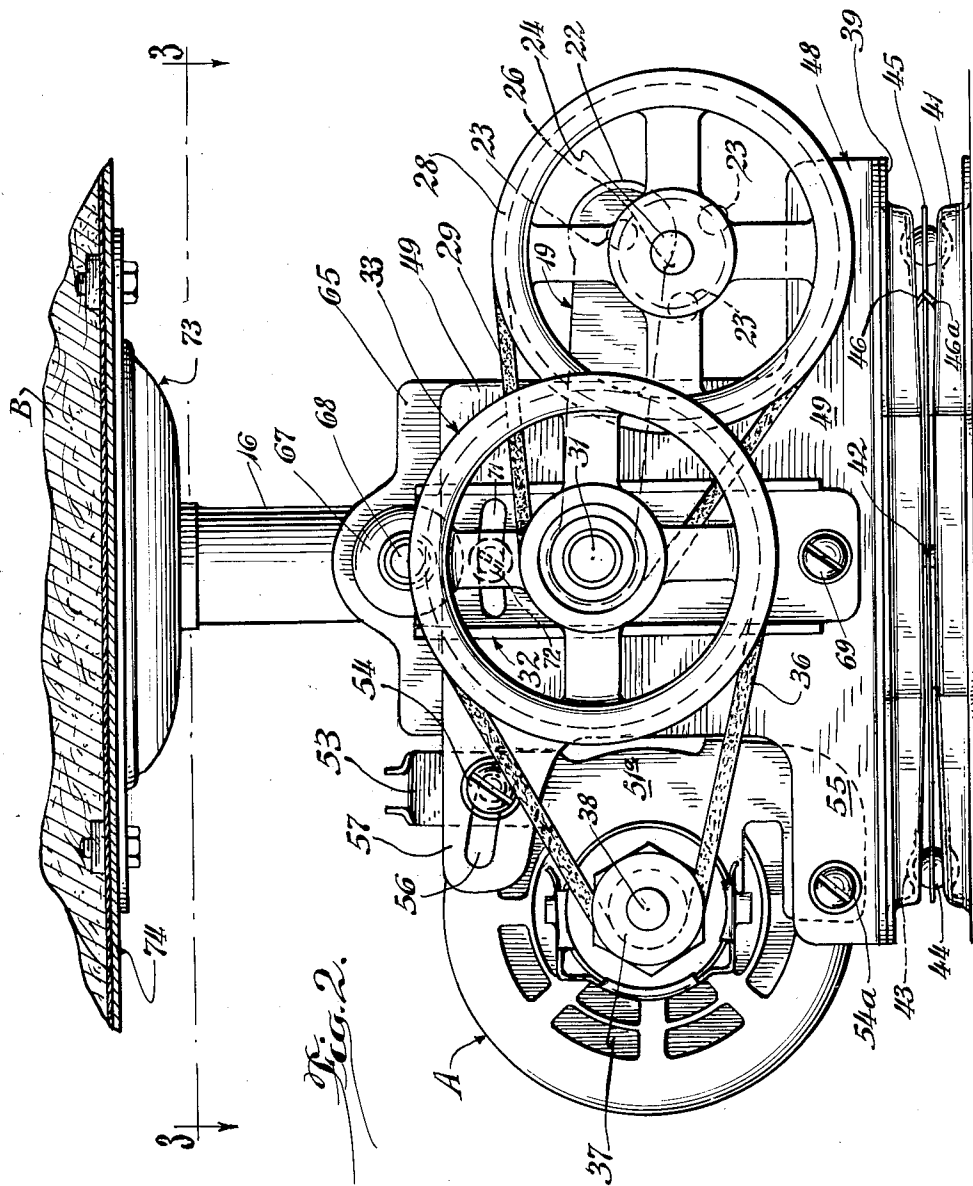
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MASSAGE APPARATUS AND COUCH ASSEMBLY

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3 Sheets-Sheet 2



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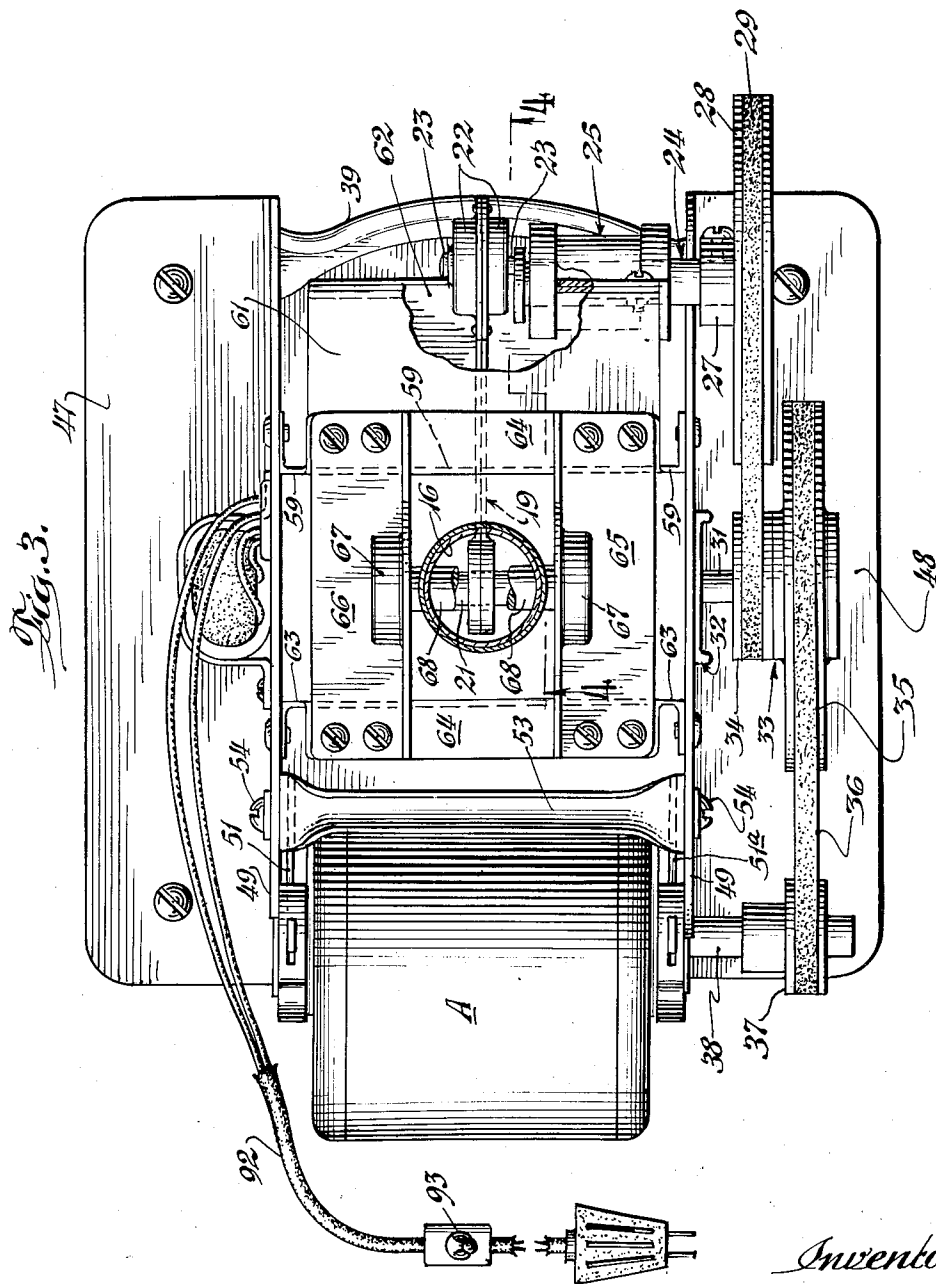
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MASSAGE APPARATUS AND COUCH ASSEMBLY

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3 Sheets-Sheet 3



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3,019,786

MASSAGE APPARATUS AND COUCH ASSEMBLY

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5 Claims. (Cl. 128—33)

The present invention relates to a massage couch and more particularly to a novel massage unit and supporting end sections which combine to form a massage couch assembly upon which a person may lie down and relax while various areas or muscles of the body are being gently yet effectively massaged.

Among the objects of the present invention is the provision of a novel massage unit having novel means for supporting and oscillating a platform in both directions of travel from a vertical axis and thereby massaging or exercising and relaxing the muscles of the body.

The present invention comprehends a novel operating unit for a massage platform in the form of a yieldable pad in which the operating mechanism is of a simple and unique construction whereby to effect positive oscillation of the pad through a predetermined but relatively small arc of travel. In the present novel embodiment, the resilient or yieldable pad is affixed to the upper end of a tubular oscillating standard with the lower bifurcated end of this standard connected to one end of a reciprocating connecting rod actuated by the eccentric end of a rotating crankshaft.

A further important feature of the present invention is the provision of a novel operating mechanism for a massage unit in which the operating mechanism including its drive motor are mounted for rotation about a vertical axis through an arc of approximately 90° whereby the rectangular massage pad may be conveniently rotated to adjust or position the pad so as to present either its narrow or wide dimension transverse of the massage unit and the end couch sections. Thus the operator or user can readily adjust the position of the pad for most effective and beneficial operation thereof.

The present invention further comprehends a novel means and manner of oscillating a massage pad of a massage couch, including novel actuating mechanism therefor in which the assembly is capable of being readily adjusted for most effective operation.

Another object of the present invention is the provision of a novel assembly comprising a massage unit and end sections with the latter mounted and adjustable in a novel manner whereby the user may most effectively exercise and massage different parts of the body when lying or positioned upon these end sections, these end sections being readily mounted one or both at either side of the massage unit and in a substantially horizontal plane or elevated at the outer end, or one or both may be readily removed so that the massage unit may be operated without either or both of these end sections whereby the user may be seated upon a chair at one side of the massage unit or lie upon the floor with the legs elevated onto the pad. Thus, by means of this novel construction and arrangement the user may readily adjust to massage or exercise any part of the body from the feet to the head.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

In the drawings:

FIGURE 1 is a perspective view of the novel massage couch assembly including a massage unit and end sections mounted upon and at the opposite sides of the supporting frame for the massage unit.

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FIG. 2 is an enlarged elevational view of the oscillating or operating mechanism for the massage unit, the housing or enclosure for this operating mechanism having been removed to show the inner assembly.

FIG. 3 is an enlarged view in horizontal cross section through the standard for oscillating the massage pad but showing a top plan view of the remainder of the operating mechanism except for portions broken away to show the inner assembly, the view being taken on the line 3—3 of FIG. 2 and viewed in the direction of the arrows.

FIG. 4 is a fragmentary enlarged view in vertical cross section taken on the irregular line 4—4 of FIG. 3 and viewed in the direction of the arrows.

FIG. 5 is a fragmentary view in side elevation of the upper end of the standard and the massage pad mounted thereon.

Referring to the disclosure in the drawings and to the illustrative embodiment therein shown, the novel assembly comprises a massage unit having a housing or enclosure 10 supported upon a pair of inverted U-shaped legs 11 and 12 having cross braces 13 and 14 adjacent the bottom to support the housing 10 and transverse braces 15 connecting the legs adjacent the upper portion of the housing.

Mounted for oscillation within the housing is a pivot arm assembly including a tubular standard or stem 16 projecting upwardly through the cover 20 of the housing and having its lower end 17 bifurcated to receive therebetween one end 18 of a connecting rod 19 formed of two abutting sheet metal sections. The end 18 is pivotally connected upon a cross pin 21 spanning the bifurcations with the other enlarged end 22 of the connecting rod journaled upon the inner eccentric end 23 of a rotatable crankshaft 24 journaled in a split crankshaft and bearing box 25. Upon the other or outer end 26 of the crankshaft is affixed or keyed the hub 27 of a single groove pulley 28 receiving a drive belt 29 for rotating the pulley and crankshaft and the latter reciprocating the connecting rod 19 to oscillate the lower end of the standard 16.

Rotatably mounted on a fixed stub shaft 31 in a vertically positioned but adjustable bracket 32, is a double groove pulley 33 having a small diameter pulley groove at 34 for receiving and driving the belt 29, and a substantially larger pulley groove at 35 for receiving a motor drive belt 36 encompassing a relatively small pulley 37 keyed or pinned to the motor shaft 38 of a motor A.

The motor A and the entire massage unit assembly is mounted on the upper plate 39 of a ball bearing swivel assembly which is preferably similar to that shown in my prior Patent No. 2,726,907, of December 13, 1955. It consists of the upper plate 39, a lower plate 41 pivotally connected at the indented center by a rivet or pin 42. Each plate is provided with an inwardly opening annular raceway 43 receiving in their aligned annular races or grooves ball bearings or anti-friction devices 44 and a retainer plate 45 for said balls.

The lower plate 41 is rigidly affixed to and supported upon the cross braces 13 and 14 of the support and the upper plate 39 is free to rotate relative to the lower plate and carry its supported assembly, but such arc of rotation or travel is limited to an angle of approximately 90° by means of a pair of depending indentations or stops 46 in the upper plate spaced approximately 90° apart and a single upstanding indentation or projection 46^a in the lower plate limiting the travel of the upper plate 39 between the stops 46.

Mounted upon the upper plate is a supporting frame assembly comprising a pair of spaced angle brackets 47 and 48 each having an upright or supporting member 49 spaced apart to form the sides of an enclosure and upon which is mounted the operating assembly. This support-

ing structure carries motor bracket plates 51 and 51^a one at each end of and disposed inwardly of the uprights 49, and each motor bracket plate contoured to form an arcuate slot for receiving and mounting an end of the motor A, these plates 51 and 51^a being connected in spaced relation by a bridging motor adjustment handle 53 of substantially inverted U-shape, the depending ends of which are in turn affixed to the plates 51 and 51^a by an adjusting screw 54. The lower end of each bracket plate 51 and 51^a is pivotally mounted by a screw 54^a on the adjacent lower laterally projecting end 55 of the uprights 49 on each of the angle brackets 47 and 48.

The upper end of each of the bracket plates 51 and 51^a is adjustably mounted in an arcuate slot 56 in an upper lateral projection 57 on the upper end of the uprights 49 and retained in adjusted position by the adjusting screw 54 projecting through the arcuate slot 56, the depending end of the handle 53 and into a tapped opening in a motor bracket plate 51 or 51^a. Thus by loosening these screws 54 and 54^a at each side of the uprights 49, the operator can grasp the handle 53 and adjust the motor drive belt 36 on the motor shaft 38 and its pulley 37 by adjusting the position of the bracket plates 51 and 51^a.

At the end of the supporting frame assembly opposite to that of motor A is a transverse end plate 59 bridging the adjacent end of the uprights 49 of the brackets 47 and 48, and upon the outer face of this plate is mounted a pair of transversely extending and vertically spaced brackets 61 and 62 between which is mounted the split crankshaft and bearing box 25. At the opposite end of the supporting frame assembly adjacent the motor A is another transverse end plate 63 bridging and reinforcing the adjacent end of the uprights 49 of the brackets 47 and 48, and upon the flanged upper end 64 of the plates 59 and 63 is rigidly mounted two horizontally-spaced angle brackets 65 and 66, the upstanding flange of each provided with a bearing 67 in which is journaled an end of a pivot arm 68 consisting of a transverse pin or stub shaft projecting through and pivotally mounting the upright or stem 16 for oscillatory movement of the latter.

To adjust the tension on the belt 29, the upright bracket 32 on the upright 49 at the pulley side of the assembly is pivotally mounted adjacent its lower end upon a screw 69 and adjacent its upper end this bracket is provided with an arcuate slot 71 through which projects an adjusting screw 72 into a tapped opening in the adjacent upright 49 of the bracket 48. By loosening the screws 69 and 72, the stub shaft 31 is carried with the bracket 32 to adjust the tension on the belt 29. Thus by pulling the bracket 32 to the left as viewed in FIG. 2, the belt 29 is tightened and is then retained in that adjusted position by tightening of the screws 69 and 72.

Rigidly mounted on the upper end of the standard 16 is a massage pad assembly comprising a support 73 mounting the base or platform 74 of a rectangular pad B containing rubber or other compressible cushioning material. This massage pad B being affixed to the stem or upright 16 and the latter pivotally mounted on the pivot arm 68 in the bearings 67 in the fixed angle brackets 65 and 66, permits the complete assembly within the housing 10 and supported upon the rotatable upper swivel plate 39 to be rotated through an arc of approximately 90° whereby the pad with the operating assembly therebelow may be located in the position shown in FIG. 1 or moved to a position at a right angle thereto.

The novel massage couch is provided with two end couch sections 75 and 76 which may be attached to the opposite sides of the massage unit as shown in FIG. 1, or both may be attached to one side of this unit in the manner hereinafter set forth, or either or both may be readily removed. Each section, one of which may be designated the head or upper section and the other the leg or lower section, comprises a rectangular frame 77

having a supporting surface provided with a removable covering 78 and spaced extensions 79 each having a hook at one end of the frame for connection to a pair of receiving knobs 81 mounted on and projecting laterally from the upper ends of the legs 11 and 12 at the front and back of the central massage unit.

At the other end and at each side of a frame 77 is provided a bracket 82 having spaced sides between which is pivotally mounted a leg 83 on a cross pin 84 with the two legs rigidly connected by a cross brace 85, and each bracket provided with a depending stop or abutment 86 for retaining these legs in upright or substantially vertical position. Each leg 87 of a second pair of legs of greater length than the legs 83 is also pivotally mounted on the cross pin 84 and these legs 87 like the legs 83 are adapted to be folded under its couch section. Each leg 83 and 87 is provided with a rubber foot 88.

By this novel arrangement, one or both pairs of the longer legs 87 may be folded under its couch section to the position shown in FIG. 1 if the user of the massage couch desires that one or both end sections be supported on the shorter pair of legs 83 in a substantially horizontal position. In the event the user wants one or both end sections elevated at the outer end, the longer pair or pairs of legs may be moved to upright position alongside the shorter pair of legs and support this end in a more elevated position. When both sets of legs are folded under, each collapsed end section forms a compact assembly that may be stored substantially flat and requires but little space.

To permit both end sections to be placed and connected in tandem at one side of the massage unit, each bracket 82 is provided with a knob 91 projecting laterally from each side of the bracket to receive the spaced hooked extensions 79 on the other end of the other end section.

The novel massage unit is provided with a cord 92 for connection to an outlet of any available 110 volt supply, an on-off switch 93 and an automatic timer having a timer control knob 94 upon an indicator plate 95, shown mounted on the front of the housing 10. The indicator plate is preferably divided into minute designations from 0 to 30 minutes so that the user may set and operate the massage unit for any desired period, and upon the expiration of that period the oscillation of the pad will automatically cease. The arc of oscillation for most effective massage and exercise has been determined at between 5° and 10° from the vertical in both directions of travel with the pad being oscillated at approximately 125 to 130 complete (back and forth) oscillations per minute. However, these figures are not intended as limiting the present invention.

From this assembly, it will be seen that the massage couch may be employed in the following manner.

(1) An end section may be attached to each side of the massage unit and each supported on its shorter pair of legs 83 as shown in FIG. 1. This permits the user to lie as he or she would upon an ordinary couch. In this position, the user may lie with his or her side, back or stomach over the pad or massage platform and massage or exercise the muscles of the hips, buttocks, stomach, back or upper torso.

(2) By raising the outer ends of the end sections for support upon the longer sets of legs 87, the muscles of the buttocks and back may be massaged or exercised with the legs and head in elevated position.

But more important, the raising of one or both end sections in this manner provides for more gentle massage, such as at the beginning of the massage period. This is due to the fact that when an end section is raised by extending its longer legs, the end of that section adjacent the massage pad is elevated and thus reduces the height differential between the massage pad and its adjoining end section.

(3) By attaching both end sections to one side of the

massage unit, the user may lie prone with the head, or with the head and shoulders overlying the pad or platform 74 for exercising, massaging and relaxing the muscles of the neck and/or shoulders, or to relieve facial strain. In this same position of the end sections, the user may extend the ankles over the pad whereby to increase circulation and provide relaxation effective for the lower back.

(4) If the user wishes to massage the feet, the calves, knees or thighs, she may find it more convenient to be seated upon a chair adjacent one side of the massage unit and approximately level with the top of the massage pad or platform 74. In this position, one or both end sections may be removed from the massage unit for placement of the chair. Also in these positions of exercise, the user is frequently benefited by moving the parts of the body being massaged in a forward or sidewise direction. It has been found that a weighted object, such as a sand bag which is supplied with unit, when placed over the part being massaged, increases the intensity of the massage.

(5) In the event the user merely wishes to massage or exercise the calves of the legs, he or she can lie on the floor or on a pillow and place the legs in an elevated position over the massage pad or platform. A sand bag placed over the legs is frequently beneficial as stated under 4.

Having thus disclosed the invention, I claim:

1. An oscillating massage unit for a massage couch, comprising a housing having legs for supporting the massage unit upon the floor, an oscillating standard having a massage pad at its upper end, operating mechanism for oscillating said standard within said housing including a mounting frame, a motor at one end of said frame having a horizontal drive shaft, a pulley mounted on an end of the drive shaft, a horizontally arranged crankshaft journaled in the other end of said frame having a pulley on one end and an eccentric on the other, a substantially horizontally extending connecting rod connected at one end to said eccentric and at its other end to the lower end of said standard for reciprocating the latter, a double groove pulley intermediate the pulley on the motor drive shaft and the pulley on the crankshaft, a drive belt connecting the pulley on the motor drive shaft with one groove of said double groove pulley and a second drive belt connecting the other groove of said double groove pulley to the pulley on the crankshaft, a bracket mounted on and intermediate the ends of the mounting frame, means for pivotally mounting said bracket adjacent its lower end and upon said mounting frame, said bracket having an arcuate slot adjacent its upper end and a stub shaft intermediate its ends and upon which the double groove pulley is rotatably mounted, an adjusting screw extending through said arcuate slot and mounted in said mounting frame for locking said bracket in an adjusted position, a motor bracket plate at each end of and carrying the motor with each bracket plate being pivotally mounted adjacent its lower end on the mounting frame, said mounting frame having an arcuate slot adjacent the upper end of each bracket plate, and an adjusting screw extending through each arcuate slot and mounted in a threaded opening in its bracket plate for locking its bracket plate in an adjusted position.

2. An oscillating massage unit for a massage couch as set forth in claim 1, including a handle extending between and connected at its ends to the upper ends of said motor

bracket plates for pivotally rocking the motor and adjusting the drive belt connecting the pulley of the motor drive shaft to the double pulley wheel.

3. An oscillating massage unit for a massage couch as set forth in claim 1, including a ball bearing swivel assembly in said housing for mounting and supporting the operating mechanism including the standard and massage pad but permitting said operating mechanism to pivot bodily about a vertical axis, and means for limiting the arc of rotation of said operating mechanism.

4. An oscillating massage unit for a massage couch, comprising a housing having legs for supporting the massage unit upon the floor, an oscillating standard having a massage pad at its upper end, a pivotal mounting intermediate its length and a pivot pin at its lower end, operating mechanism for oscillating said standard within said housing including a mounting frame, a motor at one end of said frame having a horizontal drive shaft, a pulley mounted on the drive shaft of the motor, a crankshaft journaled in the other end of said frame having a pulley on one end and an eccentric on the other, a reciprocating connecting rod extending longitudinally of said frame and connected at one end to said eccentric and at its other end connected to the pivot pin at the lower end of said standard, a double groove pulley positioned intermediate the pulley on the motor drive shaft and the pulley on the crankshaft, a belt connecting the motor pulley with one groove of said double groove pulley and a belt connecting the other groove of said double groove pulley to the pulley on the crankshaft, a vertical bracket mounted on and intermediate the ends of said mounting frame, means for pivotally mounting said bracket adjacent its lower end relative to said mounting frame, said bracket having an arcuate slot adjacent its upper end, a horizontal stub shaft carried by said bracket intermediate its upper and lower ends and upon which the double groove pulley is rotatably mounted, an adjusting screw in said arcuate slot for adjusting the tension on the belt connecting one groove of said double groove pulley to the pulley on the crankshaft, a vertically disposed motor bracket plate at each end of and carrying the motor with each bracket plate being pivotally mounted relative to and adjacent one end on said frame and adjacent its other end provided with an adjusting screw movable in an arcuate slot provided in a side wall of the frame, and a handle connecting the other end of the bracket plates for pivotally rocking the motor and adjusting the belt connecting the other groove of said double groove pulley to the pulley of the motor drive shaft.

5. An oscillating massage unit for a massage couch as set forth in claim 4, in which the arc of travel of the massage pad is from 5° to 10° from one side to the other side of the vertical axis of the standard and the pad is oscillated from 125 to 130 complete oscillations per minute.

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