

Sept. 4, 1962

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3,052,235

COMBINATION FURNITURE AND THERAPEUTIC EQUIPMENT

Filed Feb. 5, 1959

5 Sheets-Sheet 1

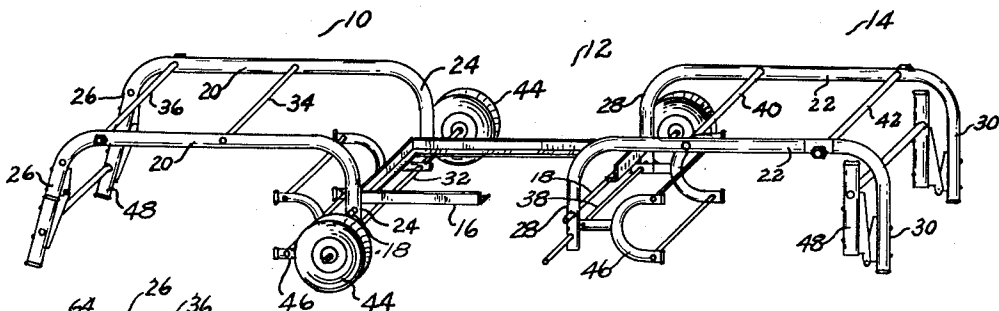


Fig. 1.

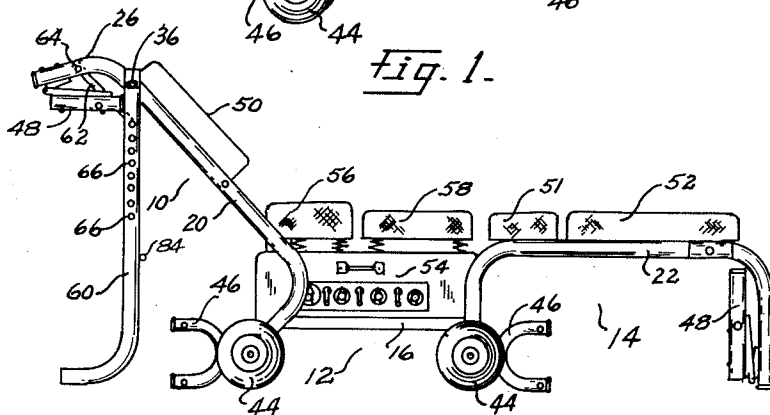


Fig. 2.

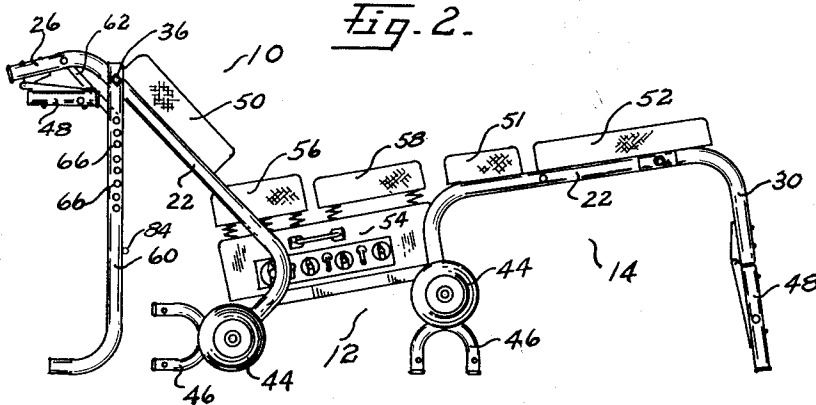


Fig. 3.

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5 Sheets-Sheet 2

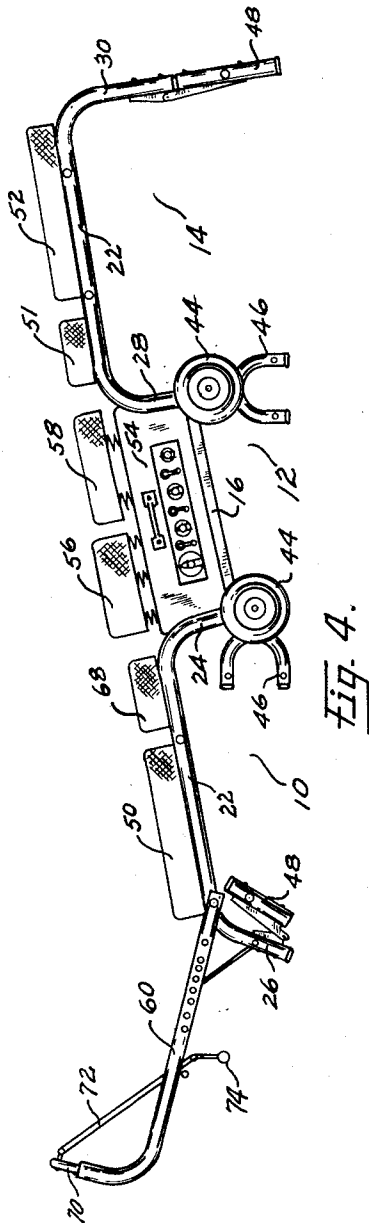


Fig. 4.

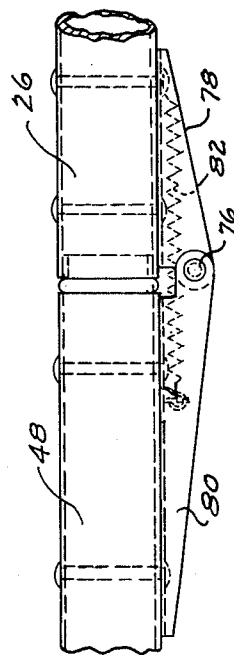


Fig. 10.

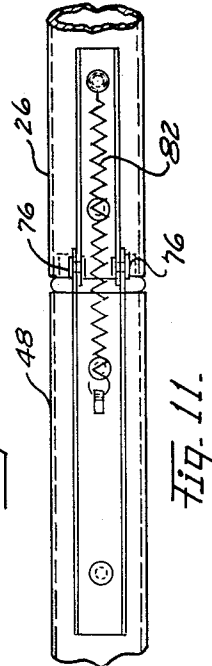


Fig. 11.

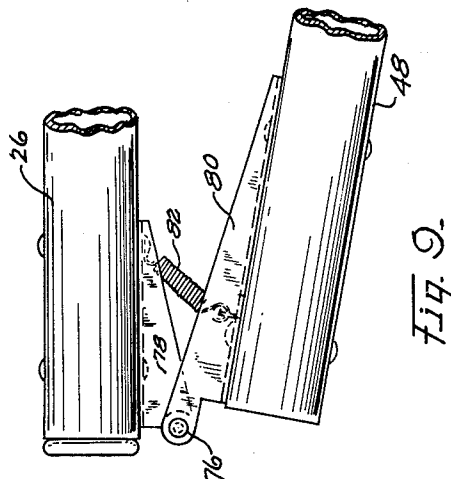


Fig. 9.

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5 Sheets-Sheet 3

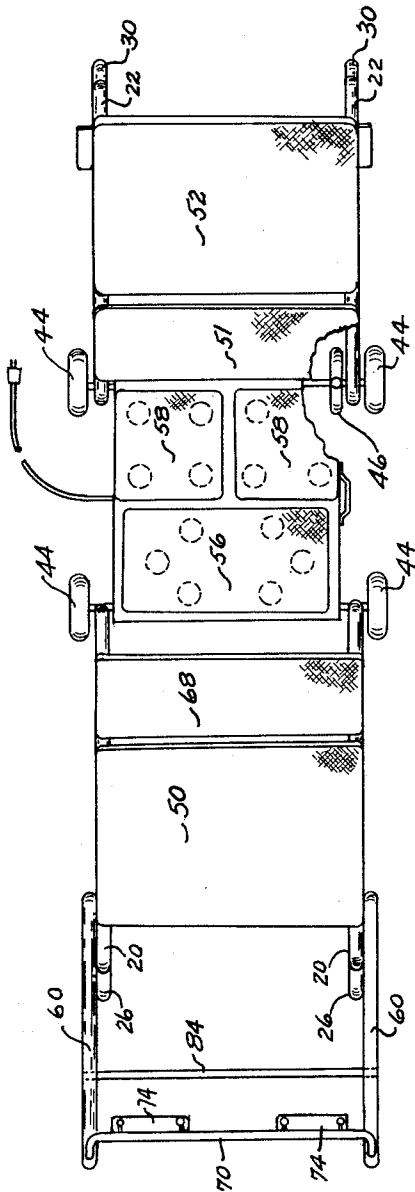


Fig. 6.

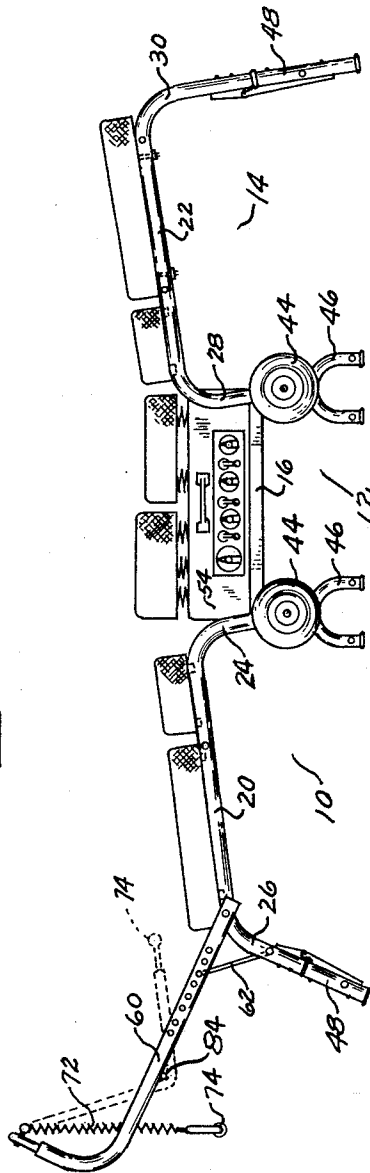


Fig. 5.

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5 Sheets-Sheet 4

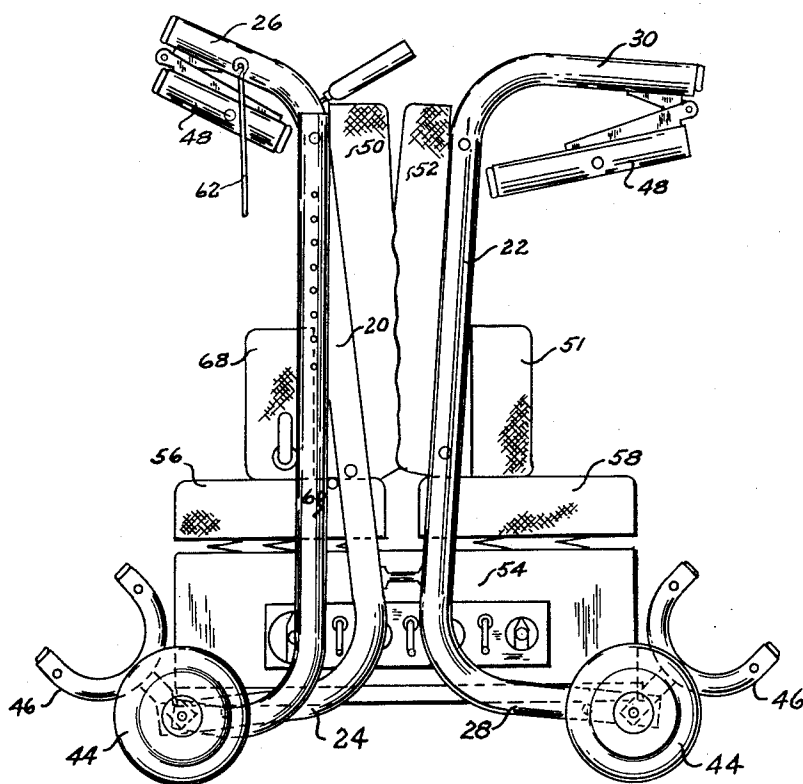


Fig. 7.

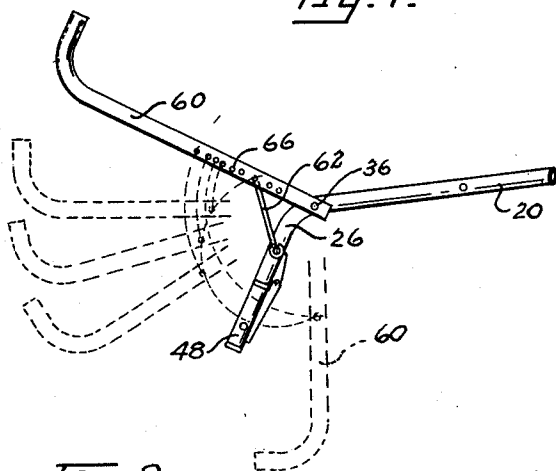


Fig. 8.

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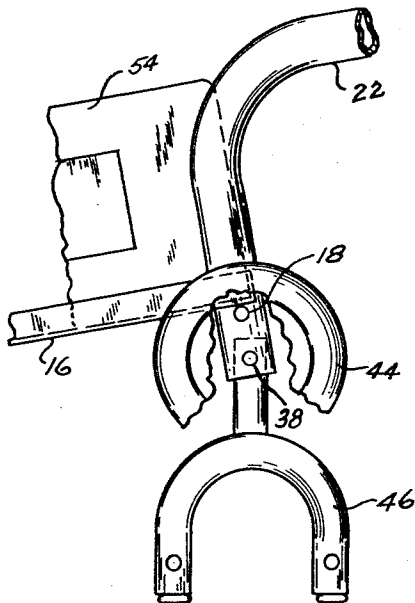


Fig. 12.

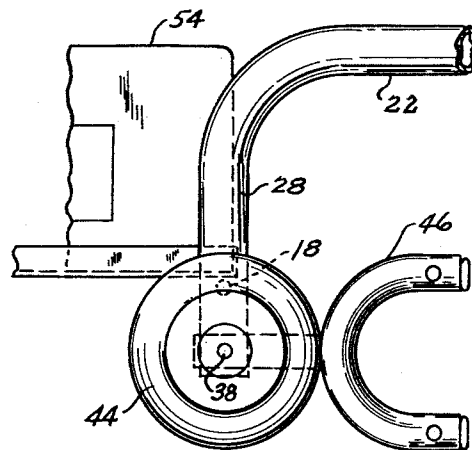


Fig. 13.

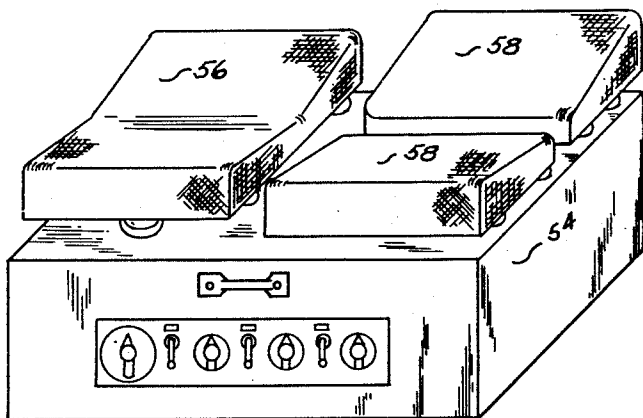


Fig. 14.

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COMBINATION FURNITURE AND  
THERAPEUTIC EQUIPMENT

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6 Claims. (Cl. 128—33)

The present invention relates to improvements in devices characterized by their ability to function as furniture as well as therapeutic equipment and when not desired for either purpose may be conveniently stored or transported. In the illustrated form of the invention there has been combined into a single unit a device which may have its form conveniently altered to provide a chaise longue, a contour chair, a chaise longue with elevation of the feet, an angle board, and a variable supporting surface for prone positions of the body. As an accessory to each of these several forms is associated exercising and massaging means.

To give the device of the present invention flexibility it embodies the pivotal association of three main sections with each section having associated therewith adjustable support structure. These sections support the cushion structure which defines the form of the supporting surface presented to the body of the person using the device.

Thus, an object of the invention is to provide a device of the type described of adjustable, sectional structures for altering the form of its body supporting surface.

Another object is to provide a sectional unit of the type described which may be folded up into a compact mobile structure.

Another object of the invention is to provide an improved combined furniture and therapeutic device which is more versatile as to form than anything heretofore proposed.

A further object is to provide in lounging type furniture a sectional unit having adjustable support structure to vary the form of the lounging.

These and other objects and advantages residing in specific details of construction as well as in the combination and arrangement of component parts of the device will be more fully set forth in the following specification and in the appended claims.

In the drawings:

FIG. 1 is a perspective view of the framework of the device with the back prop and cushions removed,

FIG. 2 is a side elevational view of FIG. 1 with the back prop and cushions shown in place and with the head end of the back section raised,

FIG. 3 is a view similar to FIG. 2, with the thigh end of the buttocks section as well as the foot end of the leg section raised from their level position.

FIG. 4 is a view similar to FIG. 3 with the back prop extended and the head end of the back section lowered.

FIG. 5 is a side elevational view similar to FIG. 4 with the head end of the back section raised to level position and both ends of the buttocks section raised from its level position,

FIG. 6 is a plan view of FIG. 5,

FIG. 7 is a side elevational view of the device folded up,

FIG. 8 illustrates the adjustability of the back prop,

FIG. 9 is an enlarged fragmentary view of the leg adjustment at opposite ends of the device with the outer leg shown in retracted position,

FIG. 10 shows the structure of FIG. 9 with the outer leg extended,

FIG. 11 shows a view similar to FIG. 10 taken at 90° thereto,

FIGS. 12 and 13 are enlarged views of the wheel and prop structure for controlling the height of the center

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section of the device shown in raised and lowered positions, and

FIG. 14 is a perspective view of the vibrating and massaging unit with attached cushions and shown removed from the center section.

Referring to the illustrated form of the invention, the combined reclining and exercising device has been fabricated from three frame sections of skeleton form in order to obtain a sturdy, light-weight, foldable structure capable of assuming a wide range of different contours. As shown, there are three longitudinally aligned sections generally designated 10, 12 and 14. The sections 10 and 14 may be identical in construction or as shown may be the same except for the vertical leg adjustment structure. The section 12 consists merely of a box frame 16 of L-section having the opposite ends of the rods 18 welded to the underside with the ends of the rods 18 projecting beyond the longitudinal sides of the frame 16 and having a pivotal connection with the inverted U-shaped tubular members forming the side rails 20 and 22 and legs 24, 26, 28, and 30 of the sections 10 and 14.

To space and brace the side rails 20 and 22 of the sections 10 and 14, rods 32, 34, 36, 38, 40 and 42 are provided, the rods 32 and 38 extending through the legs 24 and 28 to provide axles for the wheels 44. (In FIG. 1, the frame 16 is shown broken away and one wheel on the rod 38 is shown removed for sake of illustration.) Also supported upon the rods 32 and 38 are adjustable leg stands 46 which may be selectively pivoted from the position shown in FIG. 2 to the position shown in FIG. 12 to raise one or both ends of the section 12 as well as the associated end of one or both of the sections 10 and 14.

To vertically adjust the outer ends of the sections 10 and 14, hinged leg extensions 48 are provided which will be described in detail with reference to FIGS. 9, 10 and 11. In the illustrated arrangement, the extensions 48 at the head end of the section 10 is in its "down" position to level the section 10 with the floor while the extension 48 at the foot end of section 14 is in its "up" position to level the section 14 with the floor.

FIG. 2 shows the device with a contour of a chaise longue. To the disclosure of FIG. 1, the cushions 50 and 52 have been added, being shown supported across the rails 20 and 22. A removable vibrating unit 54 is shown supported on the frame 16 of the section 12. Spring mounted cushions 56 and 58 carried by and vibrated by the unit 54 complete the supporting surface for the device in the contours shown. It will be noted that the rails 20 and 22 straddle the section 12 as well as unit 54 thus permitting relative pivotal movement of the sections 10 and 14 with respect to each other as well as with respect to the section 12. To support the section 10 in its raised position of FIG. 2, a prop 60 is provided which is pivotally mounted on the outer ends of the brace 36 projecting through the rails 20. A brace rod 62 having its opposite ends bent at right angles to its length has a pivotal connection at one end in a hole 64 in the leg 26 with its opposite end selectively positioned in a series of holes 66 along the prop 60 to brace the same and support the section 10 with the desired angularity relative to the floor and the remaining sections 12 and 14.

FIG. 3 shows the contour of the lounge of FIG. 2 varied to elevate the feet of the person reclining thereon while retaining the supporting surfaces of sections 12 and 14 in substantially the same plane. This has been accomplished by rotating the leg stand 46 of section 14 from the position shown in FIG. 2 into the position shown in FIG. 3. At the same time the leg extensions 48 of the legs 30 have been pivoted from their "up" positions to their "down" positions.

In FIG. 4 the contour in FIG. 3 has been altered from a

chaise longue with the feet elevated to an exercising angle board. This has been done by swinging the prop 60 into a forward extension position and by moving the leg extensions 48 of the legs 26 from their "down" position to their "up" position. With this contour, the cushion 68 becomes necessary to complete the supporting surface of the sections 10, 12 and 14 which are now all disposed in substantially the same plane. As the prop 60 is preferably duplicated upon opposite sides of the section 10 and is of tubular structure, it becomes convenient to insert the legs of a U-shaped cross member 70 into the ends of the prop 60 and attach to the member 70 any desired exercising apparatus such as tension springs 72 having handles 74 at their free ends. A person reclining upon the device of FIG. 4 may reach over his head and grasp the handles 74 to exercise his arms. In the contour of FIGS. 5 and 6, the angularity of the prop 60 has been changed by placing the leg extensions of the legs 26 in their "down" position and by swinging the leg stand 46 into its operative position. Thus in FIGS. 5 and 6, the supporting surfaces of the sections 10 and 14 are disposed in different but parallel planes while the section 12 is horizontally and angularly disposed to both of the sections 10 and 14.

As each of the legs 24, 26, 28, and 30 have extensions 46 and 48 associated therewith and thus may be positioned in either of two positions, the number of combinations of leg positions of sections 10, 12 and 14 which will provide different contours to the supporting surfaces defined by the cushions will be readily apparent, it being understood that the several illustrated contours are only selected as representing a few of the many contours that may be obtained.

FIG. 7 shows the device folded up for storage and transportation. The cushions 50 and 52 upon the sections 10 and 14 may be permanently attached to the rails 20 and 22. However, the cushions 51 and 68 are removably attached to the rails 20 and 22 to enable the sections 10 and 14 to swing into the vertical projection of the section 12. The straddle arrangement of the sections 10 and 14 with respect to the section 12 makes this possible, however, it becomes necessary to remove the cushions 51 and 58.

FIG. 8 illustrates the manner in which the props 60 are adjusted about the brace 36 as a pivot and held in the several positions of adjustment shown in dotted outline.

As more clearly shown in FIGS. 9, 10 and 11, the leg extensions 48 for the legs 26 and 30 comprise a hinge having pivots 76 and channel hinge parts 78 and 80 attached to the sides of the legs 26 and extension 48. When the extension 48 is in its "down" position as shown in FIG. 10, the spring 82 holds the extension "down" as the spring is on the inside of the pivots 76. When the extension 48 is "up" as shown in FIG. 9, the spring 82 is on the opposite or outside of the pivots 76 and tends to hold the extension 48 "up."

FIGS. 12 and 13 show on an enlarged scale the arrangement and operation of the leg stands 46. It will be noted that both the wheel 44 and the leg stand 46 are pivotally supported upon the same axis, namely, that provided by the rod 38. The pivotal connection about the axis of the rod 18 between the frame 16 of section 12 and the rail 22 of section 14 is also illustrated.

The electrical vibrating unit 54 is shown in FIG. 14 removed from its position of support upon the frame 16 of the section 12. It is to be understood that the cushions 56, and 58 are an integral part of the unit 54. With this arrangement, the unit 54 is removable for service or for therapeutic use separate from the device of FIG. 2. Also it is contemplated that the electrical vibrating feature of the unit 54 may be entirely eliminated in section 12 in which event the unit 54 becomes only a box frame with a cushioned upper surface. However, the presence of the unit 54 has a functional and structural part of the device for effecting massage of the body while reclined is an important part of the present invention.

With the chaise longue contour of the FIG. 2, the unit 54 through vibration of the cushions 56 and 58 will massage the hips and thighs with the rest of the body com-

pletely relaxed. The contour of FIG. 3 places the body in a position in which the pull of gravity upon the internal organs has been reduced to further relax the body while massage of the hips and thighs may take place.

In FIG. 4, the contour permits full massage of the lower back, hips and thighs by the unit 54. At the same time the pectoral muscles may be exercised through arm manipulation of the exercising tension springs 72.

The contour of FIG. 5 will slightly arch the back of the body. By shifting the leg extension 48 of the legs 30 from the "down" position shown to the "up" position, the degree of arch given the back may be increased. This position tends to push out the rib cage and exercise stomach muscles. Also by shifting the body to bring the shoulders upon the cushion 68 and with the arms stretched out over the head and with the hands grasping the handles 74 of the springs 72 which are pulled from beneath the cross bar 84 (as indicated in dotted outline in FIG. 5) a full body stretch may be obtained with the back, shoulders and hips being massaged at the same time. Cross bar 84 also functions as a hand grip when exercising other parts of the body such as raising the legs while prone.

It will be appreciated that at opposite ends of the leg and back sections 10 and 14 are pairs of vertical adjustment structures, the elements of each pair being selectively engageable with the floor to vary the vertical height, an element of each pair being a pivotal extension of the other element of the pair, i.e., the elements 48 are pivotal extensions of the elements 26 and 30 while the element 46 is a pivotal extension of the elements 44.

Having thus described my invention what I claim to be new and desire to cover by Letters Patent is:

1. A reclining device for the human body comprising three longitudinally aligned and pivotally connected sections which in their extended position approximate the prone length of the human body, one of said sections being a back section having an inner end and an outer head end, another of said sections being a leg section having an inner end and an outer foot end, and the remaining section being a buttocks section having opposite ends, means pivotally connecting the opposite ends of said buttocks section to said inner ends of said back and leg sections, vertically adjustable supports for said inner and outer ends of said back and leg sections for selective vertical adjustment of the ends of said sections with the adjustment of the opposite ends of said buttocks section being common with the inner ends of said back and leg sections, said vertically adjustable supports being in the form of pairs of selective floor engaging elements, one element of each pair being a pivotal extension of the other element of the pair, means associated with each of said sections to provide an independent body supporting surface for each section, whereby upon selective adjustment of said supports said supporting surfaces may be disposed in substantially the same plane as well as in planes angularly disposed to each other.

2. A reclining device for the human body comprising three longitudinally aligned and pivotally connected sections which in their extended position approximate the prone length of the human body, one of said sections being a back section having an inner end and an outer head end, another of said sections being a leg section having an inner end and an outer foot end, and the remaining section being a buttocks section having opposite ends, means pivotally connecting the opposite ends of said buttocks section to said inner ends of said back and leg sections, vertically adjustable supports for said inner and outer ends of said back and leg sections for selective vertical adjustment of the ends of said sections with the adjustment of the opposite ends of said buttocks section being common with the inner ends of said back and leg sections, means associated with each of said sections to provide an independent body supporting surface for each section, whereby upon selective adjustment of

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said supports said supporting surfaces may be disposed in substantially the same plane as well as in planes angularly disposed to each other, said inner ends of the said back and leg sections having their pivotal connection on opposite sides of said opposite ends of said buttocks section, said inner ends of said back and leg sections straddling said buttocks section whereby said back and leg sections have clearance with said buttocks section upon relative pivotal movement.

3. A reclining device for the human body as defined in claim 2, wherein said body supporting surfaces for said back and leg sections are sectional and removable adjacent said buttocks section to provide clearance with said buttocks section upon relative pivotal movement beyond a limited range.

4. A reclining device for the human body as defined in claim 2, wherein said pivotal connection between said sections is substantially below said body supporting surfaces.

5. A reclining device for the human body as defined in claim 2, said sections each having an independent body supporting surface generally disposed in a plane, said sections being aligned and pivotally connected to each other to dispose the supporting surface of each section in the same plane or in planes angularly disposed to each other to alter the contour of said supporting surfaces, the intermediate section of said sections having a straddled pivotal connection with the remaining sections with the pivotal connection between said sections being substantially below said supporting surfaces whereby upon pivotal movement of said remaining sections relative to said intermediate section said remaining sections assume

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a position within the opposite ends of said intermediate section.

6. A reclining device of adjustable contour comprising a pair of frames of inverted U-form in elevation, a substantially flat frame disposed between said pair of U-form frames and substantially below the upper surface thereof, a pivotal connection between opposite ends of said flat frame and the lower parts of the adjacent ends of said U-form frames, said U-form frames being fabricated from spaced, inverted U-form members to define an upper supporting and leg portions, cushioning structure supported between and by said U-form members, a vibrating unit supported upon said flat frame, and a cushioning structure upon said unit disposed in the frame of said cushioning structure of said U-form frames with said U-form frames in one of their positions, said U-form members having a straddling, pivoting connection with said flat frame.

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