June 9, 1953 A. HEMMING 2,641,252

THERAPEUTIC TABLE

Filed July 11, 1951 2 Sheets-Sheet 1

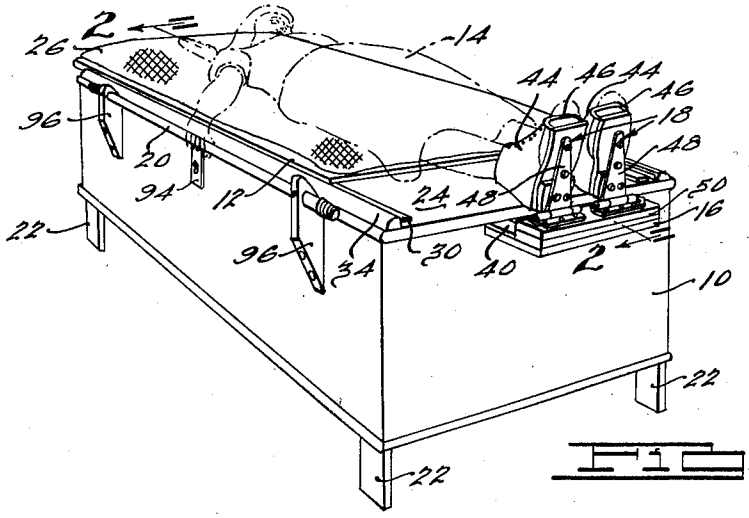


Fig. 1.

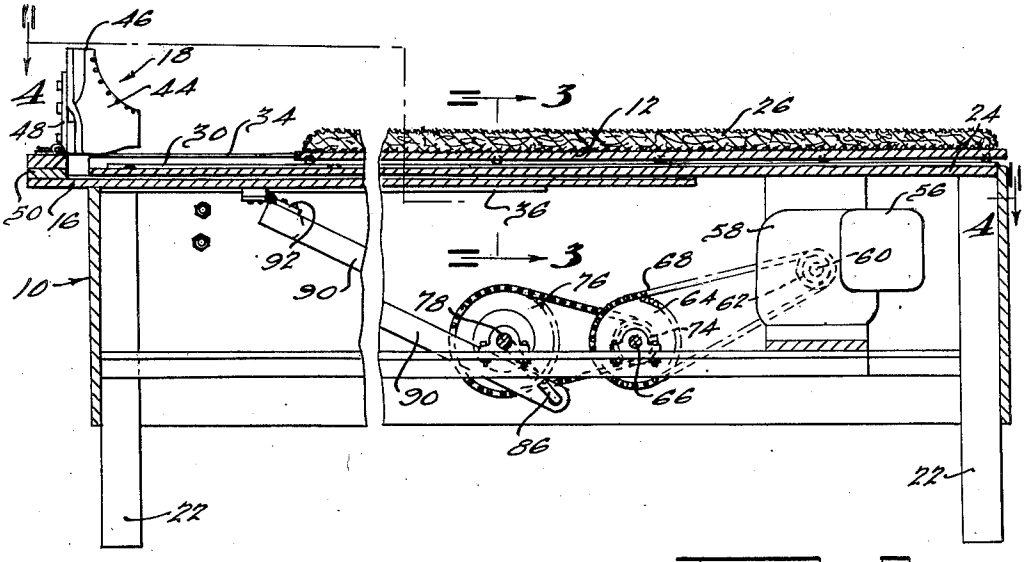


Fig. 2.

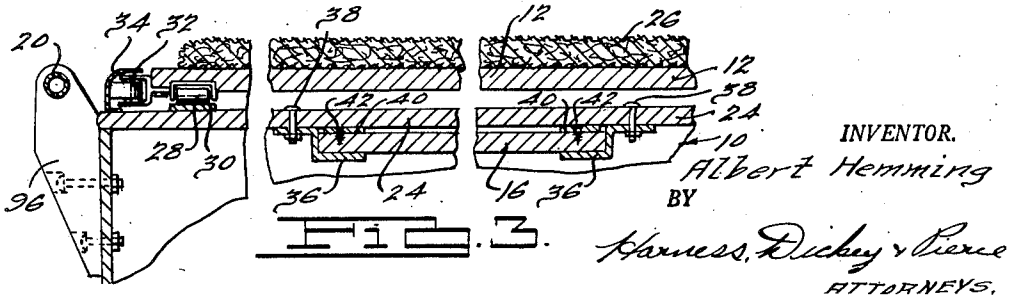


Fig. 3.

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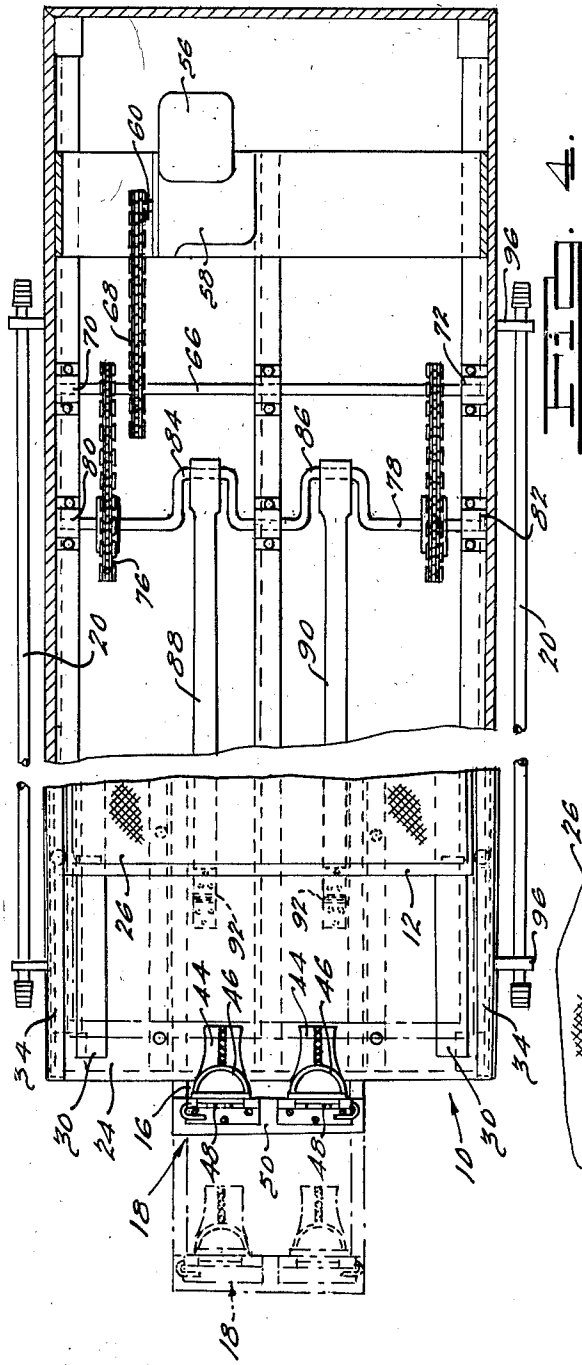


Fig. 4.

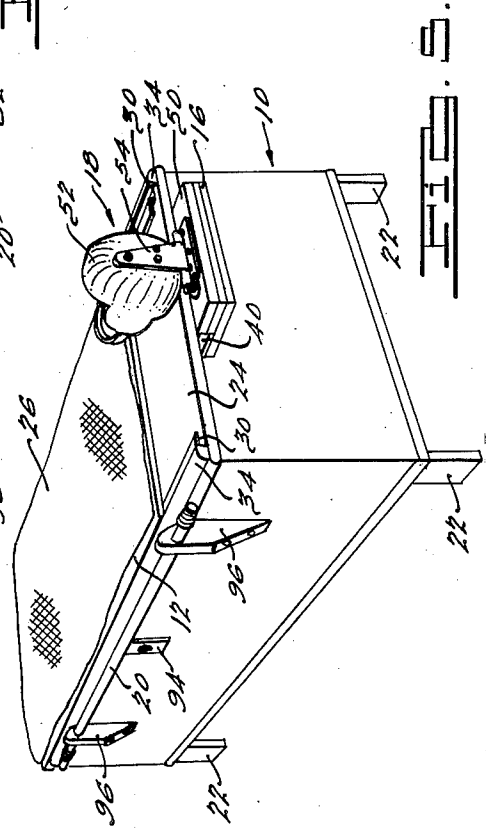


Fig. 5.

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THERAPEUTIC TABLE

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6 Claims. (Cl. 128—33)

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This invention relates to new and useful improvements in therapeutic devices and more particularly to a device of this character adapted to support a patient in supine position and to move the patient back and forth so as to produce a massaging effect.

An important object of the present invention is to provide a therapeutic table that will massage the back of a patient lying thereon so as to have a beneficial effect on the patient.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the drawings forming a part of this specification and wherein like numerals are employed to designate like parts throughout the same:

Fig. 1 is a perspective view of a therapeutic table embodying the invention and illustrating the mode of use of the table;

Fig. 2 is a longitudinal sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged, fragmentary, vertical sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a top plan view of the table showing parts broken away for clearness of illustration; and

Fig. 5 is a perspective view showing a modified form of the invention.

Considered in certain of its broader aspects the device embodying the present invention comprises a base support 10 having a horizontal, elongated upper panel or table 12 mounted for longitudinal sliding movement thereon and adapted to support a patient designated generally at 14 in supine position. A reciprocable lower panel or actuator 16 is mounted in the support 10 below the table 12 for movement back and forth horizontally and in the same direction as the table, and the actuator has devices 18 adapted to be removably fastened to the feet of the patient 14, as shown in Fig. 1. Handrails 20 are provided on the base support 10 at opposite sides of the table 12 and the rails are so positioned that they can be easily grasped by the patient 14 during operation of the device. The actuator 16 can be reciprocably driven in any desired manner, and it is contemplated that any number of well-known mechanical linkages or movements can be employed for driving the actuator.

More specifically, the base support 10 is generally boxlike in construction as shown in the drawings and it should be sufficiently large to accommodate a grown person thereon. Legs 22 are provided at the corners of the support. The particular base support here shown has a top 24, and the table 12 is mounted to roll back and forth on the top. It will be observed that the table 12 covers substantially the entire top of the base support 10 and it is sufficiently large to easily accommodate a grown person. Preferably, the table 12 is covered by a suitable pad 26 which supports the patient 14 in relative comfort. The pad may be either loose on the table or attached

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thereto but it preferably is attached so that it will not slide on the table during operation of the machine.

It is important that the table slide freely back and forth on the top 24, and to this end the table is provided at the underside and adjacent opposite side edges thereof with rollers 28 which travel on wear plates 30 mounted on and suitably fastened to the top 24. Also, the table 12 is provided with rollers 32 which extend laterally beyond the side edges of the table and travel on horizontal guides 34 fastened to the top 24 at opposite sides of the table.

The actuator 16 here shown is in the form of an elongated board or panel. The panel extends into the base support 10 through one end thereof, as shown in Fig. 1, and the portion of the panel within the support is confined and directed in its movement by suitable guides 36. The particular guides 36 here shown are substantially Z-shaped in transverse section (Fig. 3). One flange on each guide is fastened to the bottom 24 by bolts 38, and the other flange thereof extends under the panel 16 to guide and support the same during longitudinal travel thereof. Wear plates 40 are fastened to the top of panel 16 by screws 42, and these wear plates slide against the undersurface of the top 24 during reciprocation of the actuator panel 16. The panel 16 preferably fits relatively loosely in guides 36 so that it is freely reciprocable.

The device 18 may assume a variety of forms, depending upon the part of the patient to which it is adapted for attachment. In the form of the invention shown in Figs. 1–4, the fastening device 18 is in the form of shoes 44, and the toes of the shoes preferably are cut away, as at 46, so that they can be adapted to persons having different foot sizes. Two shoes 44 are provided and the soles of the shoes are fastened to hinges 48 which in turn are fastened to the actuator 16. If necessary or desirable, the projecting end of the actuator panel can be built up, as at 50, to properly position the shoes 44 with respect to the table 12.

In the form of the invention shown in Fig. 5, the fastening means 18 is adapted for attachment to the head of a person supported on the table 12 and it conveniently may take the form of a football helmet 52. The helmet 52 is fastened to a hinge 54 and the latter is fastened to the vertical spacers 50 on actuator 16 in the same manner as the hinges 48.

The particular means here shown for reciprocally actuating the table 12 comprises a motor 56 which drives a speed reducer 58 having an output shaft 60. A sprocket 62 on shaft 60 is connected to a sprocket 64 on a shaft 66 by an endless chain 68. Shaft 66 extends transversely across the base support 10 and the ends thereof are journaled in suitable bearings 70 and 72. Sprockets 74 on and adjacent the ends of shaft 66 are connected to sprockets 76 on and adjacent

the ends of a second shaft 78. The latter shaft extends transversely across the base support 10 parallel to shaft 66 and the ends thereof are journaled in suitable bearings 80 and 82. Shaft 78 is provided with two cranks or throws 84 and 86 which are identically formed and positioned in the shaft. Pusher bars 88 and 90 are journaled at one end to the throws 84 and 86 respectively, and the other ends of the bars are fastened to the underside of the actuator panel 16 by hinges 92.

In operation, energization of the motor 56 rotatably drives the shaft 78 at a reduced speed, and the shaft acts through the pusher bars 88 and 90 to reciprocate the actuator panel 16 a predetermined distance. The distance panel actuator 16 is moved back and forth, may vary over a relatively wide range, and a typical distance is illustrated by full and broken lines in Fig. 4. Also, the speed at which the actuator 16 is driven may vary considerably. Nineteen complete reciprocations per minute are preferred as it produces the desired massaging effect without particular discomfort to the patient. Operation of the motor 56 preferably is controlled by a switch 94 located on one side of the base support 10 and adjacent the top substantially midway between the ends thereof so as to be readily accessible to the patient, as shown in Fig. 1.

The handrails 20 may be supported in any suitable or convenient manner as by the mounting brackets 96. Also, the handrails 20 can be made from any suitable or convenient material. Metal rails are preferred, as they are smooth and are not likely to hurt or damage the hands of the patient. It will be noted in this connection that the patient grasps the handrails 20 sufficiently loosely so that his hands slide back and forth on the rails during reciprocation of the table 12. In this manner he can, to some degree, control the effect produced by the machine.

In operation, the patient lies supine with his back against the table 12, as shown in Fig. 1, and either the feet or head of the patient is attached to the fastening device 18, depending upon whether the machine is equipped as shown in Fig. 1 or as shown in Fig. 5. Either the patient or some other person attending the machine closes the switch 94 to energize motor 56, and the latter then reciprocates the actuator 16 through the interconnecting speed-reducing and motion-transmitting mechanisms. As the actuator 16 operates, it moves the patient back and forth, and the latter, by reason of his weight and frictional engagement with the table 14, causes the latter to reciprocate with the actuator. It will be readily apparent, however, that there is some resistance to movement of the table, depending primarily upon the antifriction characteristics of the rollers 28 and 32 and upon the inertia characteristics of the table which in turn depend somewhat upon its size and weight and upon the relation of these factors to the weight of the patient. None of these factors, however, alter the massaging effect produced by the machine. As the patient moves back and forth supported by the pad 26 the patient's back is massaged and the total effect of the motion promotes circulation of lymphatic fluids in the body.

Having thus described the invention, I claim:

1. A therapeutic device comprising a base support, a horizontal table mounted for free sliding movement on the support and adapted to carry a patient in supine position thereon, a reciprocable actuator parallel to and below said table adapted for attachment at a point spaced longitudinally from one end of the table to a part of a patient supported on said table, and means for reciprocally driving said actuator.

2. A therapeutic device comprising a base support, a horizontal table mounted for free sliding movement on the support and adapted to carry a patient in supine position thereon, a reciprocable actuator parallel to and below and projecting longitudinally beyond one end of said table, means for releasably fastening a part of the patient to the projecting portion of said actuator when the patient is lying supine on the table.

3. A therapeutic device comprising a base support, a horizontal table mounted for free sliding movement on the support and adapted to carry a patient in supine position thereon, a reciprocable actuator parallel to and below said table, said actuator having an end portion projecting beyond one end of said table and the projecting end portion of said actuator being adapted for attachment to a part of a patient supported on said table, means for reciprocally driving said actuator, and handrails on the support at opposite sides of the table positioned to be grasped by the patient during reciprocation of the table.

4. A therapeutic device comprising a base support, a horizontal table mounted for free sliding movement on the support and adapted to carry a patient in supine position thereon, a reciprocable actuator parallel to and below and projecting longitudinally beyond said table, means for releasably fastening a part of the patient to the projecting portion of said actuator when the patient is lying supine on the table whereby reciprocation of the actuator acts through said patient to reciprocate said table, and handrails on the support at opposite sides of the table positioned to be grasped by the patient during reciprocation of the table.

5. A therapeutic device comprising a base support, upper and lower panels carried by the support, said upper panel being mounted for essentially free reciprocatory movement on the base support and adapted to support a patient in supine position thereon; means for attaching a part of the patient to said lower panel while the patient is lying supine on said upper panel; a drive mechanism connected to the lower panel for imparting back-and-forth movement thereto at a predetermined frequency.

6. A therapeutic device comprising a base support, upper and lower panels carried by the support, said upper panel being mounted for essentially free reciprocatory movement on the base support and adapted to support a patient in supine position thereon; means for attaching a part of the patient to said lower panel while the patient is lying supine on said upper panel; a drive mechanism connected to the lower panel for imparting back-and-forth movement thereto at a predetermined frequency; and handrails disposed on said base support at opposite sides of said upper panel positioned to be grasped by the patient during operation of the device.

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