Feb. 24, 1953 S. H. LAUSTEDT 2,629,373

EXERCISE MACHINE

Filed Dec. 6, 1951

FIG. 1

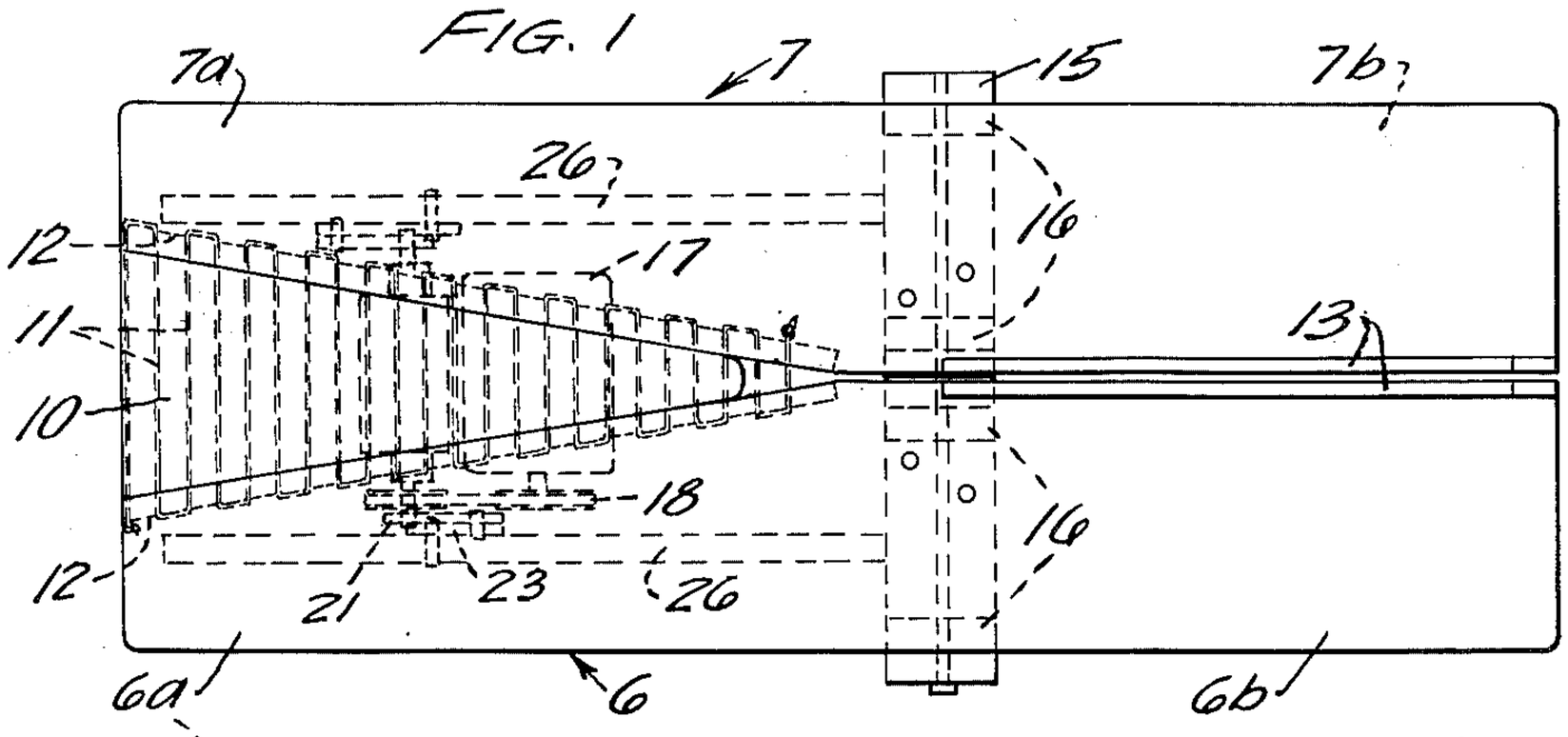


FIG. 2

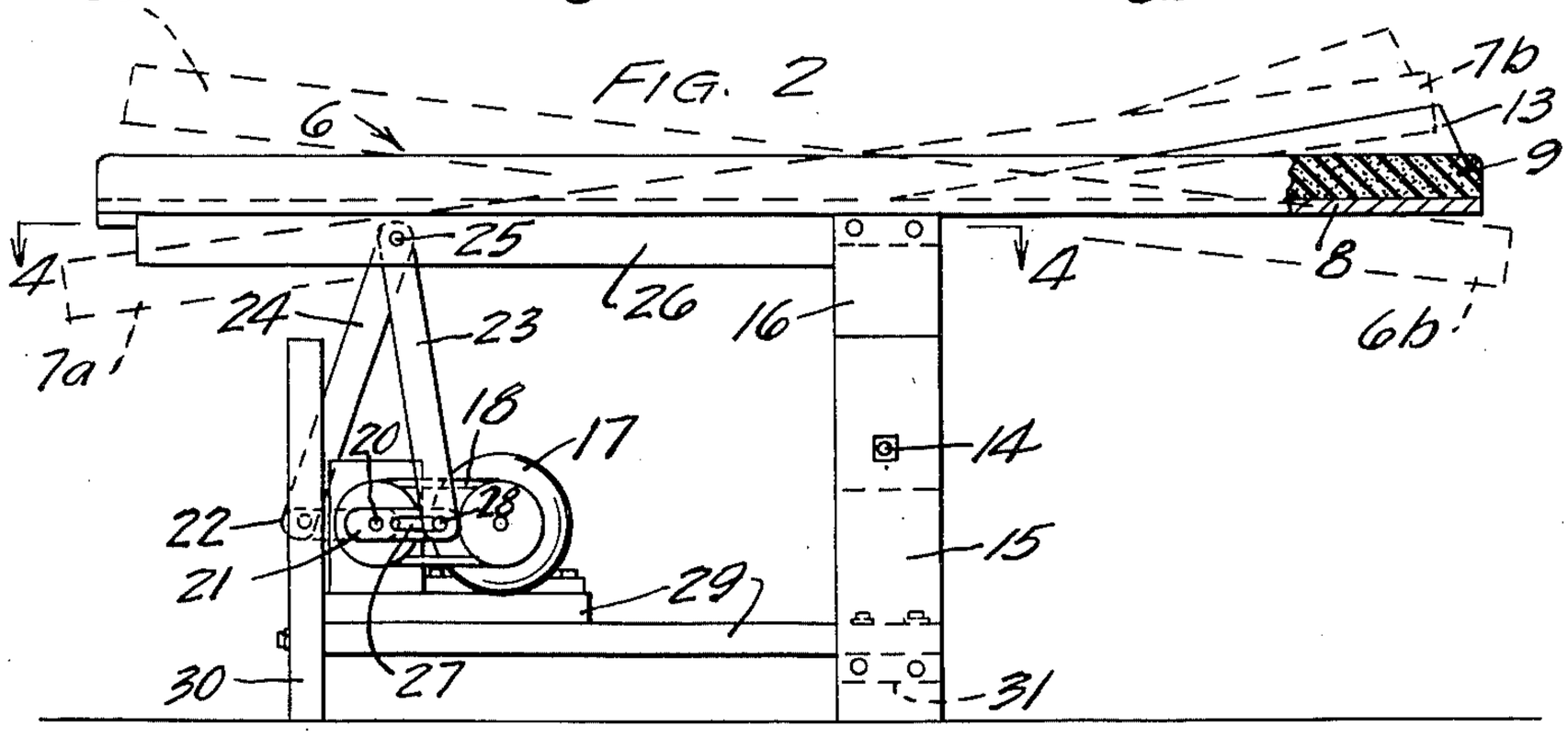


FIG. 3

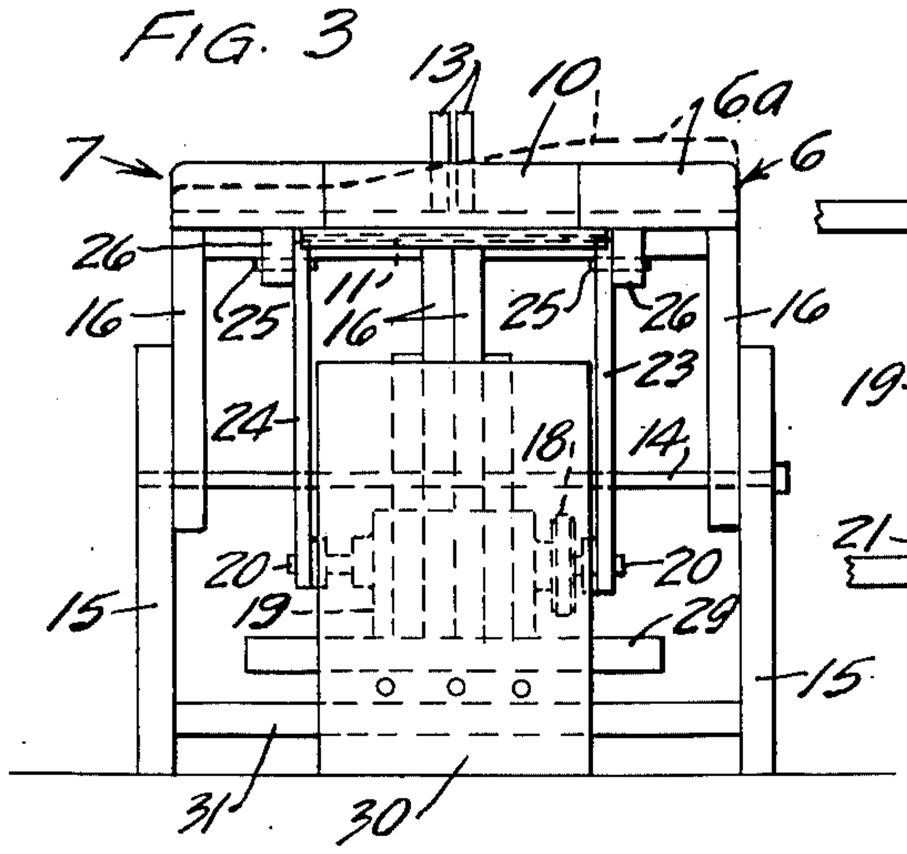
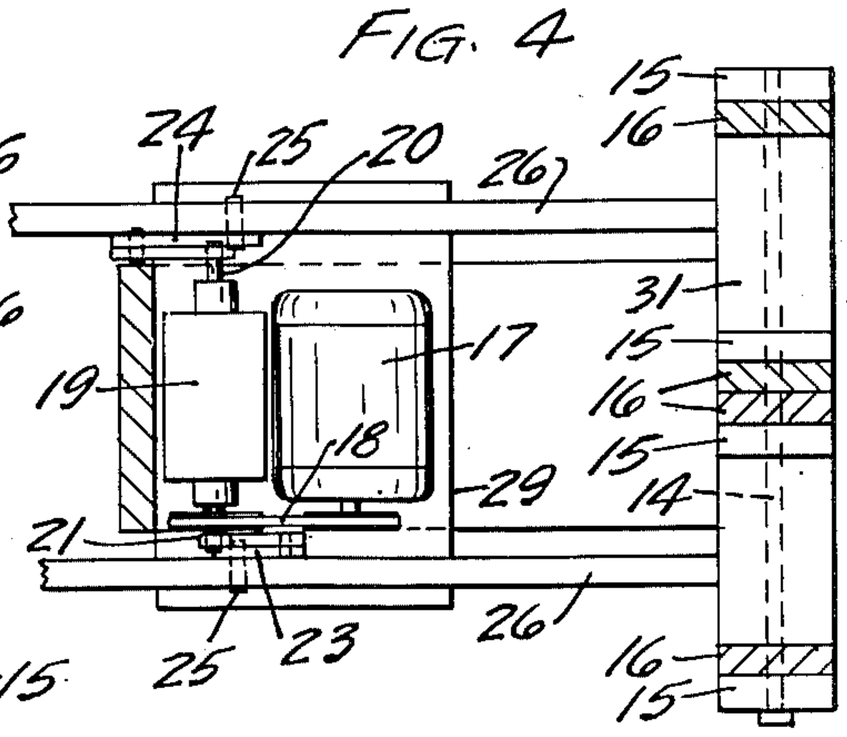


FIG. 4



INVENTOR
Samuel H. Laustedt
BY John E. Stryker
ATTORNEY

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EXERCISE MACHINE

Samuel H. Laustedt, Menomonie, Wis.

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6 Claims. (Cl. 128—33)

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This invention relates to an exercise machine in the nature of a couch having body engaging members which are operative to exercise the spinal column and muscles of the back, neck and hips in a uniquely beneficial manner.

A particular object of the invention is to provide a machine of the class described which is adapted to support the body of a person in reclining position on members which are so formed, arranged and operated as to impart a rhythmic roll or twist to the spinal column from side to side, first in one direction and then in the opposite direction.

This is accomplished by providing a pair of body supporting members each adapted to support one side of the reclining body, each tiltable longitudinally as a unit and each provided with power actuated means for imparting oscillatory tilting movement in the opposite direction or phase with respect to the oscillatory movement of the other body supporting member. The effect, starting with both supporting members in a common horizontal or neutral position, is to raise the patient's left leg simultaneously with the lowering of his right leg while the right shoulder is raised and the left shoulder is lowered from the horizontal position. This oppositely directed tilting movement is repeated in the reverse direction to complete the cycle, thereby causing the desired twisting action in alternately opposite directions combined with intermittent tension on the spinal column and affected muscles.

The invention also includes certain other novel features of construction which will be more fully pointed out in the following specification and claims.

Referring to the accompanying drawing which illustrates, by way of example and not for the purpose of limitation, a preferred embodiment of my invention:

Figure 1 is a plan view of the machine;

Fig. 2 is a side elevational view, partially in vertical section;

Fig. 3 is an end elevational view of the same, and

Fig. 4 is a fragmentary horizontal section taken approximately on the line 4—4 of Fig. 2.

In the drawing, the numerals 6 and 7 indicate the respective members of a pair of body supporting members each adapted to support one side of the person undergoing treatment. As indicated in section in Fig. 2, each of these members 6 and 7 comprises a rigid panel 8 carrying on its upper surface a suitable cushion 9 which is preferably constructed from air foam rubber or

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similar material with a durable sheet material cover. The members 6 and 7 are of such length as to support the body and legs of the person to be treated, these members having end portions 6*a* and 7*a* adapted to support the shoulders and, at their opposite ends, elongated portions 6*b* and 7*b* adapted to support the legs. The intermediate or central portions of the members 6 and 7 are adapted to support the hips and back of the user.

The shoulder supporting portions 6*a* and 7*a* are spaced apart laterally to define a triangular opening between them and a flexible cushion 10 of approximately triangular shape substantially fills this opening and is supported on flexible elastic members 11. As shown, the members 11 are cords, having suitable elasticity, interwoven through openings in rigid supporting bars 12 extending along the inner margins of the members 6 and 7 and rigidly fastened thereon. The leg supporting portions 6*b* and 7*b* are only slightly spaced apart along the longitudinal center line of the structure and triangular guard members 13 are disposed to project upward from the upper surface of the leg supporting cushions to guard against injury to the legs of the user during the operation of the machine.

Extending laterally beneath the body supporting members hereinbefore described is a pivotal support comprising, a shaft 14 having bearings in leg members 15 and in pairs of bearing members 16 depending from the members 6 and 7. Preferably, the pivot shaft 14 extends laterally directly beneath the hip supporting portions of the members 6 and 7 so that the latter are free to oscillate and tilt longitudinally about the horizontal axis defined by the shaft 14.

Power actuated mechanism for oscillating the members 6 and 7 about the axis of the shaft 14 may comprise an electric motor 17 operatively connected by a belt 18 and suitable pulleys to speed reducing mechanism in a housing 19 and a driven, low speed crank shaft 20 projecting from the housing 19 at both ends thereof. Fixed on the opposite ends respectively of the shaft 20 are crank arms 21 and 22 which are operatively connected by rigid links 23 and 24 respectively with the body supporting members 6 and 7. The connections between the arms 23 and 24 and the members 6 and 7 may comprise pins 25 and frame members 26 rigidly secured to the members 6 and 7 respectively. Each of the cranks 21 and 22 may be provided with an elongated slot 27 in which a crank pin 28 is adjustable so that the amplitude of the oscillating movement trans-

mitted to the members 6 and 7 may be adjusted.

A platform 29 for supporting the motor 17 and power transmission mechanism is rigidly connected to a wide leg member 30 at one end and to a cross frame member 31 extending between the legs 15 at the other end. Suitable controls for the motor, including a stop and start switch (not shown) are provided within convenient reach of the person undergoing treatment.

Preparatory to operation of the machine for giving an exercise treatment, the members 6 and 7 are placed in their neutral, horizontal positions shown in full lines in the drawing. For best results the user lies in the dorsal position with his head resting on the wider end of the cushion 10 and with the guard members 13 extending between his legs supported on the portions 6*b* and 7*b*. The motor 17 is then started to oscillate the members 6 and 7 about the axis of the shaft 14, as indicated in broken lines in Fig. 2. Thus the shoulder supporting end portions 6*a* and 7*a* are alternately raised and lowered from their substantially horizontal positions, the portion 6*a* being raised while the portion 7*a* is being depressed, and the leg supporting portions 6*b* and 7*b* are similarly oscillated and tilted longitudinally. By reason of the fact that the hip supporting or central portions of the members 6 and 7 are located directly above the pivot axis comprising the shaft 14, the movement of these portions in contact with the body of the user is a substantially horizontal reciprocating motion which results in a massage-like rubbing of the hips, thighs and lower portions of the user's back. Since the head of the user rests centrally on the wider end portion of the cushion 10, as one shoulder is raised and the other lowered alternately, the head of the user is rocked from side to side while the spinal column is twisted alternately in opposite directions from side to side and is at the same time placed under traction longitudinally and intermittently due to the substantially horizontal reciprocating movement of the cushions in contact with the lower back and hips of the user's body.

It will thus be evident that my improved machine is operative to give exercise treatment which is a novel and beneficial combination of twisting, tension and massage, particularly for the joints and muscles of the neck, vertebrae, back and hips.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A machine of the class described comprising, a pair of elongated body supporting members each adapted to support one side of the body of a person in a reclining position thereon, end portions of said members being spaced apart laterally, a central back support bridging the space between said end portions, means pivotally supporting said members for oscillating movement about a substantially horizontal axis extending transversely of said members intermediate the ends thereof and power-actuated means operatively connected to said members whereby they may be oscillated and tilted about said substantially horizontal axis.

2. A machine of the class described comprising, a pair of elongated body supporting members each adapted to support one side of the body of a person in a reclining position thereon and each comprising unitary shoulder, hip and leg supporting portions, means pivotally supporting said members for oscillating movement about a substantially horizontal axis extending transversely beneath the hip supporting portions of said members and power actuated means operatively connected to said members whereby they may be oscillated and tilted about said substantially horizontal axis.

3. A machine of the class described comprising, a pair of elongated body supporting members each adapted to support one side of the body of a person in a reclining position thereon, head end portions of said members being spaced apart laterally, a central, laterally tiltable back support bridging the space between said end portions, means pivotally supporting said members for oscillating movement about a substantially horizontal axis extending laterally intermediate the ends and beneath said members and power-actuated means operatively connected to said members whereby they may be oscillated and tilted longitudinally about said substantially horizontal axis.

4. A machine of the class described comprising, a pair of elongated body supporting members each adapted to support one side of the body of a person in reclining position thereon, each of said members having shoulder, hip and leg supporting portions, the shoulder supporting portions of said members being spaced apart laterally, a flexible back support bridging the space between said shoulder supporting portions, means pivotally supporting said members for oscillating movement about a substantially horizontal laterally extending axis located beneath the hip supporting portions of said members and power-actuated means operatively connected to said members whereby they may be oscillated and tilted about said substantially horizontal axis.

5. A machine of the class described comprising, a pair of elongated body supporting members each adapted to support one side of the body of a person in reclining position thereon, each of said members having unitary shoulder, hip and leg supporting portions adapted to be tilted as a unit, means pivotally supporting said members for oscillating movement about a substantially horizontal laterally extending axis located beneath the hip supporting portions of said members and power actuated means operatively connected to said members whereby they may be tilted about said substantially horizontal axis in opposite directions and to and from horizontal positions.

6. A machine of the class described comprising, a pair of elongated body supporting members each adapted to support a shoulder, hip and leg of a person in a reclining position thereon, the shoulder supporting portions of said members being spaced apart laterally and having edges converging one relative to the other and extending substantially to the hip supporting portions of said members, a substantially triangular, flexible back and head support bridging the space between said shoulder supporting portions, means pivotally supporting said members for oscillating movement about a substantially horizontal laterally extending axis located beneath the hip supporting portions of the respective body supporting members and power actuated means operatively connected to said members whereby they may be oscillated in unison and in opposite directions about said substantially horizontal axis.

SAMUEL H. LAUSTEDT.

No references cited.