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LEG EXERCISER FOR BED PATIENTS

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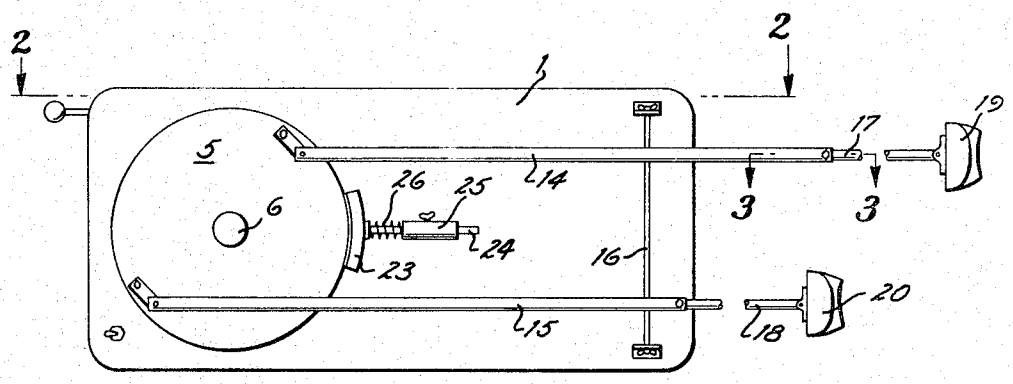


FIG. 1

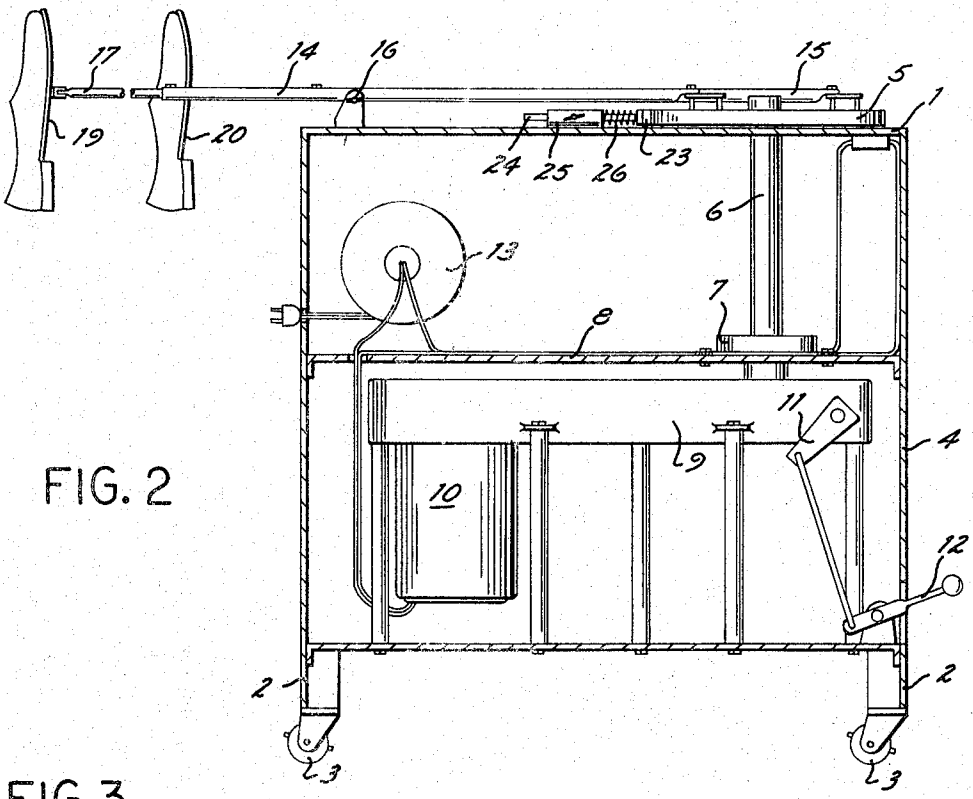
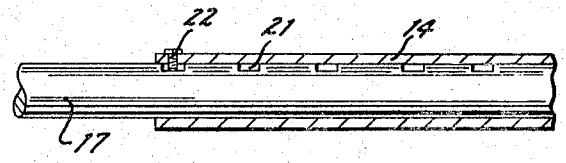


FIG. 2

FIG. 3



INVENTOR.
FLOYD H. BRAKEMAN
BY
ATTORNEY

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LEG EXERCISER FOR BED PATIENTS

Floyd H. Brakeman, Long Beach, Calif., assignor to Jean O. Brakeman, Long Beach, Calif.

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This invention relates to an exerciser for a bed patient whereby the leg muscles of the patient may be exercised while the patient is still lying in bed.

An object of my invention is to provide a novel exerciser for a bed patient in which a power actuated plate will reciprocate bars upon which the patient's feet can rest, thereby causing the legs of the patient to be moved in a manner simulating normal walking.

Another object of my invention is to provide a novel exerciser for a bed patient in which the apparatus is quickly mounted on a portable table which can be easily rolled from place to place, the table being of a proper height to enable the patient to place her feet on the exercising bars while lying in bed.

Still another object of my invention is to provide a novel exerciser of the character stated, in which the exerciser bars can be readily adjusted to easily accommodate to the position of the patient in bed.

Still another object of my invention is to provide an exerciser of the character stated, in which the power unit and the driving unit are all compactly mounted on a single portable table which can be thus easily moved as required.

Other objects, advantages and features of the invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

FIGURE 1 is a top plan view of my exerciser for a bed patient.

FIGURE 2 is a sectional view taken on line 2—2 of FIGURE 1.

FIGURE 3 is an enlarged fragmentary sectional view taken on line 3—3 of FIGURE 1.

Referring more particularly to the drawing the numeral 1 indicates a table which is supported on suitable legs 2 on which rollers or casters 3 are journaled. The table 1 is of a sufficient height to approximate the height of a normal hospital bed, for a reason which will be subsequently stated. The table 1 is preferably inclosed by side walls 4 to form a neat and clean appearance, and also to inclose the driving machinery. A plate 5 is positioned above the table top 1 and is mounted on a shaft 6 which is journaled in the table 1. The bearing 7 for the shaft 6 is preferably mounted on a transverse wall 8 in the table 1 and below the top thereof. The shaft 6 extends into a gear box 9, which gear box is driven by an electric motor 10, and the gear box is so arranged that it will reciprocate the shaft 6 and the plate 5 through an angle of approximately 180°, more or less. A clutch lever 11 is actuated by the handle 12 to start and stop the shaft 6 and plate 5, as might be required. The electric cord which extends to the motor 10 is preferably wound on a reel 13, so that it can be easily disposed of when not in use.

A pair of exercising rods 14–15 are pivotally attached at one end to the plate 5, and these exercising rods are diametrically opposed on the plate 5, substantially as shown. The exercising rods 14 and 15 will be reciprocated as the plate 5 oscillates, this reciprocating motion being imparted to the legs of the patient, as will be subsequently described. The outer ends of the exercising rods 14 and 15 both rest on a transverse bar 16, which is mounted on the table top 1 and acts as a support or bearing for the outer ends of the rods. The rods 14 and 15 are both tubular, and a shaft 17 and 18 extends into the rods 14–15 respectively, and these shafts carry a foot pedal

19–20 on the outer ends thereof to support the feet of the patient. The shafts 17–18 are each adjustable in the rods 14–15 by a suitable toothed or ratchet construction, including notches or teeth 21 which receive a pin 22 in order to hold the shaft in proper adjusted position in the rods.

If it is desired to permit the patient to exercise his muscles voluntarily without being assisted by an electric motor, this is accomplished by shutting off the electric motor and then causing a brake to engage the plate 5 to create a drag on the plate. This brake may consist of a brake shoe 23 which is mounted on a shaft 24, the shaft in turn being slidably mounted in a bearing 25. A spring 26 will yieldably press the brake shoe against the plate 5 to create frictional resistance, and requiring additional work or pressure of the patient to reciprocate the plate 5 by his leg muscles. By adjusting the shaft 24 in its tube or bearing 25, the brake shoe 23 can be pressed with different pressures against the plate 5, to require a greater or lesser amount of work on the part of the patient.

In operation

The table 1 is wheeled to the foot of the patient's bed and the shafts 17–18 are adjusted so that the patient's feet can easily rest on the foot pedals 19–20. The motor 10 is now started and the gear box 9 will oscillate the drive shaft 6 and the plate 5. The rods 14 and 15 are now both reciprocated as the plate 5 oscillates, and this reciprocating motion is transmitted to the shafts 19 and 20, thereby causing the legs of the patient to move in a manner simulating walking, and thus giving the patient needed exercise while in bed.

Having described my invention, I claim:

1. An exerciser for a bed patient comprising a table having a top and legs depending therefrom,
   - a plate journaled in said table top in a horizontal position relative to the top of the table,
   - a motor drive means extending to the plate to oscillate the plate,
   - a pair of rods pivotally attached to the plate in horizontally spaced relation on opposite sides of the axis of rotation of the plate,
   - and a foot rest means on each rod to support the feet of the patient.

2. An exerciser for a bed patient comprising a table having a top and legs depending therefrom,
   - a plate journaled in said table top in a horizontal position relative to the top of the table,
   - a motor drive means extending to the plate to oscillate the plate,
   - a pair of rods pivotally attached to the plate in horizontally spaced relation on opposite sides of the axis of rotation of the plate,
   - a foot rest means on each rod to support the feet of the patient,
   - and means adjustably mounting the foot rest means on each rod for adjustment longitudinally of said rod.

3. An exerciser for a bed patient comprising a table having a top, legs depending from the top, and a caster on each leg,
   - a shaft journaled in said table top and a plate attached to the shaft, said plate being in a horizontal position relative to the top of the table,
   - motor driven means extending to the plate to oscillate the plate,
   - a pair of rods pivotally attached to the plate in horizontal spaced relation on opposite sides of the axis of rotation of the plate,
   - and a foot rest means on each rod to support the feet of the patient.

4. An exerciser for a bed patient comprising a table

having a top, legs depending from the top, and a caster on each leg,

a shaft journaled in said table top and a plate attached to the shaft, said plate being in a horizontal position relative to the top of the table,

motor driven means extending to the plate to oscillate the plate,

a pair of rods pivotally attached to the plate in horizontal spaced relation on opposite sides of the axis of rotation of the plate,

a foot rest means on each rod to support the feet of the patient,

and means adjustably mounting the foot rest means on each rod for adjustment longitudinally of said rod.

5. An exerciser for a bed patient comprising a table having a top, legs depending from the top, and a caster on each leg,

a shaft journaled in said table top and a plate attached to the shaft, said plate being in a horizontal position relative to the top of the table,

motor driven means extending to the plate to oscillate the plate,

a pair of rods pivotally attached to the plate in horizontal spaced relation on opposite sides of the axis of rotation of the plate,

a foot rest means on each rod to support the feet of the patient,

and a horizontal bearing bar on the table top, said rods resting on the bearing bar to support one end of said rods.

6. An exerciser for a bed patient comprising a table having a top and legs depending therefrom,

a plate journaled in said table top in a horizontal position relative to the top of the table,

a motor drive means extending to the plate to oscillate the plate,

a pair of rods pivotally attached to the plate in horizontally spaced relation on opposite sides of the axis of rotation of the plate,

a foot rest means on each rod to support the feet of the patient,

and a brake shoe mounted on the table top and engageable with said plate.

7. An exerciser for a bed patient comprising a table having a top, legs depending from the top, and a caster on each leg,

a shaft journaled in said table top and a plate attached to the shaft, said plate being in a horizontal position relative to the top of the table,

motor driven means extending to the plate to oscillate the plate,

a pair of rods pivotally attached to the plate in horizontal spaced relation on opposite sides of the axis of rotation of the plate,

a foot rest means on each rod to support the feet of the patient,

and a brake shoe mounted on the table top and engageable with said plate.

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RICHARD C. PINKHAM, *Primary Examiner.*

W. E. BROWNE, *Assistant Examiner.*