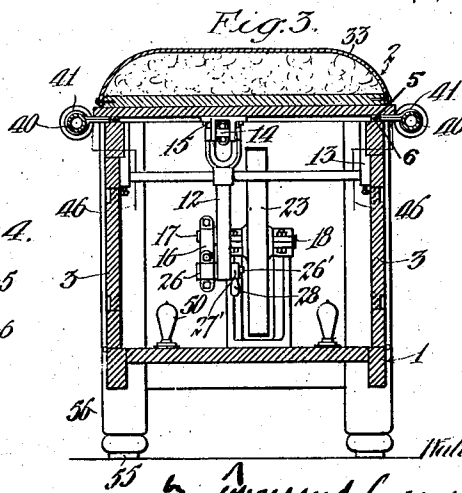
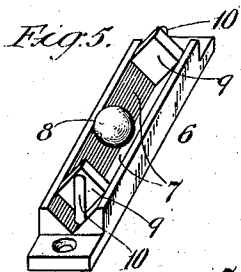
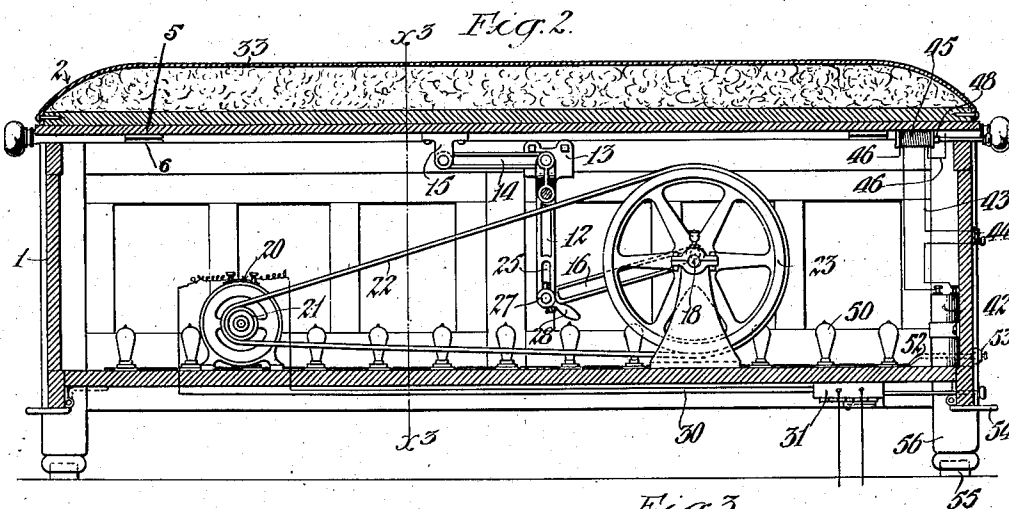
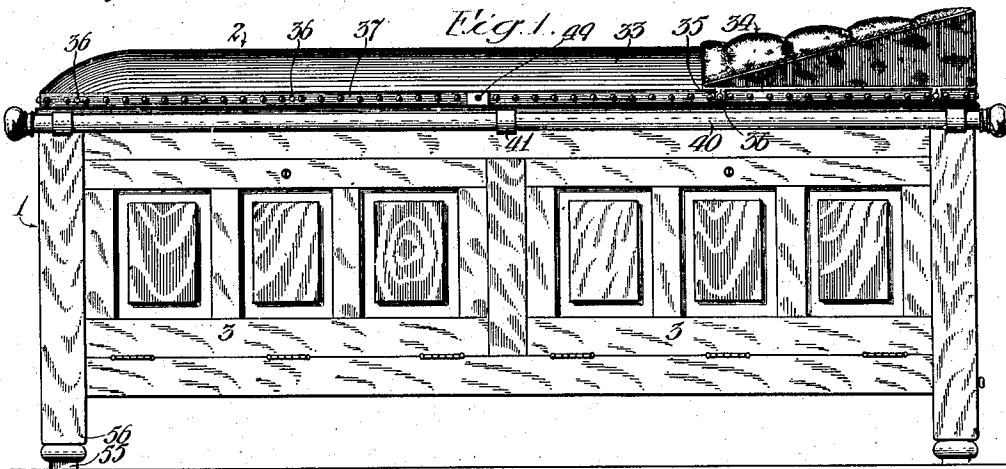


W. A. CHURCH.
ELECTROVIBRATORY COUCH.
APPLICATION FILED DEC. 21, 1908.

941,673.

Patented Nov. 30, 1909.



Witnesses:-
Louis W. Gatz.
Frank L. Minkley.

Inventor
Walter A. Church.

7 Invented by our attorney
attys

UNITED STATES PATENT OFFICE.

WALTER A. CHURCH, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO ELECTRO-VIBRATING COUCH COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

ELECTROVIBRATORY COUCH.

941,673.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed December 21, 1908. Serial No. 468,877.

To all whom it may concern:

Be it known that I, WALTER A. CHURCH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Electro-vibratory Couch, of which the following is a specification.

The main object of the present invention is to provide means for simulating the effects of exercise on the muscles and particularly for producing the beneficial effects of horseback riding.

A further object of the invention is to provide means for imparting to the human body a rapid vibratory motion in such manner that exercise can be obtained without physical effort.

Another object is to stimulate the circulation of the blood.

Another object of the invention is to provide, in connection with such an apparatus, means for obtaining electro therapeutic action simultaneously with the vibratory action.

Another object of the invention is to provide, in connection with such an apparatus, means for supplying heat to the body when required.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate the invention.

Figure 1 is a side elevation of the couch. Fig. 2 is a longitudinal, vertical section thereof. Fig. 3 is a transverse section on line x^3-x^3 Fig. 2. Fig. 4 is a transverse section of one of the antifriction supports for the couch top. Fig. 5 is a perspective of the antifriction race way.

The couch comprises a base or body member 1 and a top member 2 adapted to reciprocate longitudinally on said body member. Body member 1 is formed as a box, frame or case, preferably of elongated, rectangular shape, having, if desired, doors or closures 3 at both sides thereof for permitting access to the interior. The top member 2 is supported on this case by antifriction bearings, each bearing comprising two members 5, 6, secured respectively to the supporting case and to the top, said members being formed with opposing channels 7 to receive and form a race way for an antifriction ball 8, the longitudinal movement of said ball in the race way being limited by elastic

blocks 9 of rubber or other yielding material, supported by pins 10. One of these antifriction bearings may be provided near each corner of the top member.

The means for reciprocation or vibration of the couch consists of a lever 12 pivoted to a bracket 13 on base member 1 and having a link connection 14 with a bracket 15 on the top member 2, said lever being operated by a pitman 16 from a crank 17 on an operating shaft 18. Said shaft 18 is driven by an electric motor 20 connected by pulley 21, belt 22 and pulley 23 with said shaft. To enable adjustment of the throw or length of vibratory motion the connection of the pitman 16 to the lever 12 is made adjustable, said lever having a slot 25 which receives a pivot block 26 having a fastening bolt 26' which can be set to any position in said slot by means of a clamping nut 27 having a handle 28. All of the bearings for aforesaid parts are preferably babbitted to provide for renewal.

The operating circuit 30 for the electric motor may be provided with a controlling rheostat 31 whereby the speed of operation may be controlled.

The top member 2 is provided with suitable padding or cushion means 33 for the convenience of the person taking the treatment, a removable pillow or head support 34 being also provided, said head support resting on top of the cushion 33 and being held in position by lugs 35 which may be fastened by buttons 36 or other suitable fastening devices on the side strips 37 of the top member.

Extending along and secured to each side of the couch is a metallic bar 40 supported by brackets 41 and located in convenient position to be grasped by a hand of a person reclining on the couch. Means are provided for applying electric current to said bars, said means consisting, for example, of a battery 42, a primary circuit 43 including said battery, a switch 44, and the primary coil of induction coil 45, the secondary of said induction coil being connected by a circuit 46 to the said bars 40. Said induction coil may have an adjustable core 48 to vary the intensity of the electric current, as may be required. Said circuit may also be connected to terminals 49 on the top member 2 for the connection of any suitable electrodes for applying an electric current to

any portion of the body, for example, the hands or feet.

The means for supplying heat, when required, consists of any suitable resistance means, for example, a plurality of electric lamps 50 supported within the case 1 and connected to a supply circuit 52 controlled by a switch 53.

Suitable handles 54 may be provided at the bottom of case 1 said handles being adapted to be swung up out of the way, as shown in dotted lines in Fig. 2, or to be pulled out to position shown in full lines to enable convenient transportation of the couch. In order to ease off the jar on the floor and prevent rubbing, rubber pads or blocks 55 may be provided in each leg 56 of the case 1.

The apparatus is used in the following manner: The person taking the treatment reclines back downward on the couch and the electric motor being set in operation the resulting rapid vibratory motion of the couch produces a corresponding motion of the body, the rapidity of this motion being such that the involuntary reflex action of the muscles produces exercise of substantially all the muscles of the body. At the same time the person can by grasping the bars 40 (the switch 44 being closed) receive electric current which further stimulates the nervous and muscular action of the body. In case the body is lacking in vitality it will sometimes be desirable to supply external heat and this may be done by turning on the heating circuit which energizes the lamps 50, the heat therefrom passing out through the space between the top of case 1 and the bottom of the top 2 and upwardly around the body. The crank mechanism for imparting reciprocatory motion to the couch top provides for a smooth undulatory motion in distinction to a jarring or violent motion such as would be produced by cam action or the like. The vibratory motion also has the effect of stimulating the circulation of the blood. The rapidity of the vibratory motion can be regulated by control of the driving motor. In any case however, the motion should be vibratory in the sense of being a rapid, to-and-fro motion, so as to obtain the peculiar physiological effects of vibration, due to the inertia of the body and the rapid changes of motion, acting as

a stimulus. Such effects are not produced by slow oscillations. The term vibratory motion is here used only in this limited or proper sense, that is, of rapid oscillatory motion. It is also essential that the motion should be horizontal and rectilinear, or reciprocatory, since vertical motion produces an objectionable effect on account of the action of gravity, and rocking motion is not beneficial. The conductor bars 40, in addition to serving as electrodes, serve also as hand grips, whereby the patient may hold himself to the couch or shift his position if desired, or by grasping these bars very lightly, he can take the current; while allowing his hands to slide on the bars. In this connection the horizontal position of the bars is of importance, in view of the fact that the reciprocating motion is also horizontal.

What I claim is:

1. A vibratory couch comprising a bottom member, a top member mounted to reciprocate horizontally on said bottom member, a motor, and a crank operated thereby and connected to the top member to impart there-to a smooth vibratory horizontal motion.

2. A vibratory couch comprising a bottom member, a top member mounted to reciprocate horizontally on said bottom member, a motor, a crank device connected thereto and to said top member to impart to the top member a smooth horizontal vibratory motion, and means for adjustment of the length of stroke of the crank device.

3. A vibratory couch comprising a bottom member, a top member mounted to reciprocate horizontally on said bottom member, a motor, and a crank operated thereby and connected to the top member to impart there-to a smooth vibratory horizontal motion, in combination with a hand grip bar extending horizontally on each side of the top member and attached to the top member, said hand grip bars being of conducting material, and adapted for use as electrodes.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 15th day of December 1908.

WALTER A. CHURCH.

In presence of—

A. P. KNIGHT,
FRANK L. A. GRAHAM.