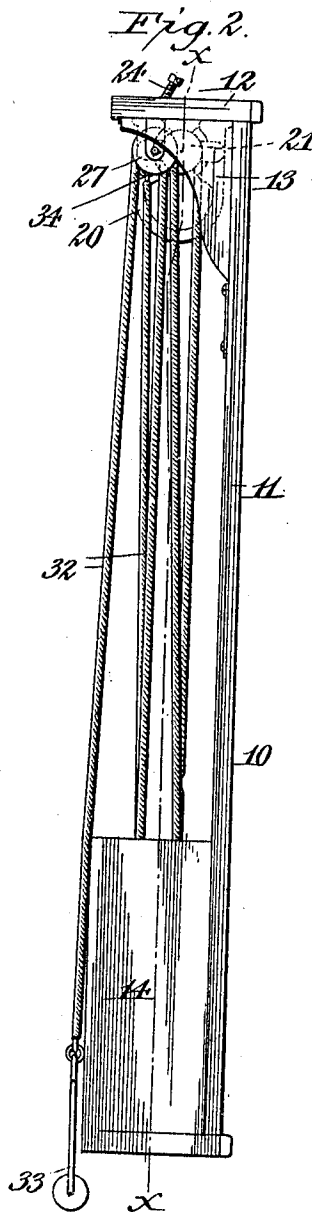
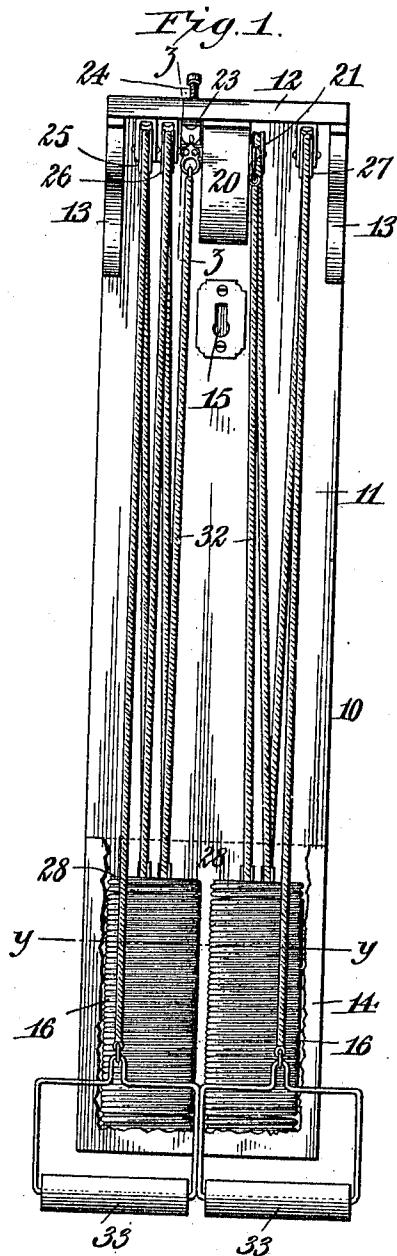


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ELECTRICAL MUSCULAR EXERCISING MACHINE.
APPLICATION FILED JUNE 12, 1906.

955,793.

Patented Apr. 19, 1910.

2 SHEETS—SHEET 1.



Witnesses:
Christ Feinle
Harry Harris

William Harris, Inventor.
By *Emil Neuhart*,
Attorney.

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Fig. 3.

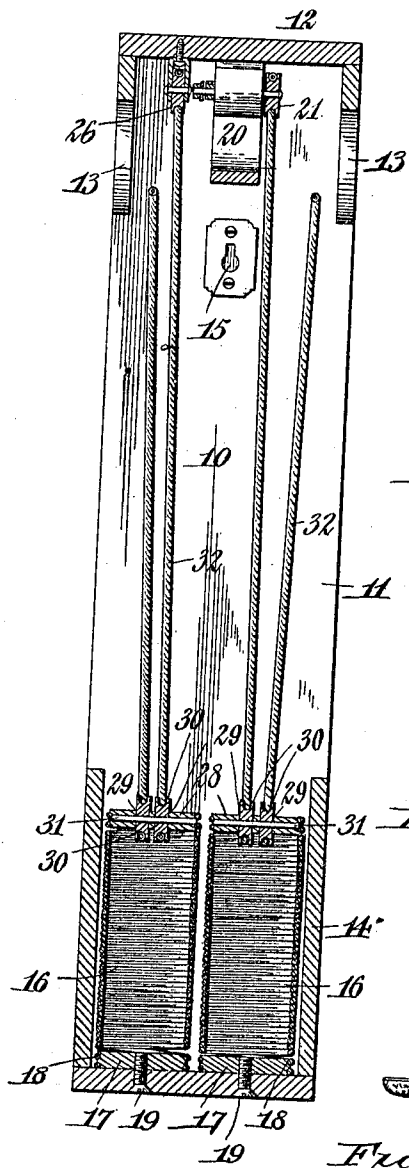


Fig. 4.

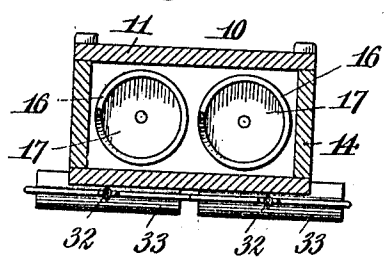


Fig. 5.

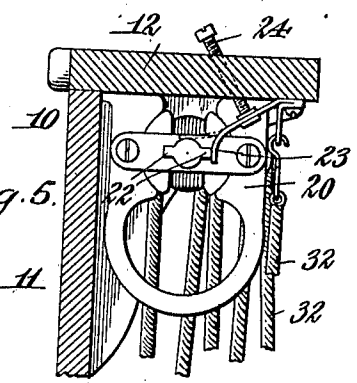


Fig. 6.

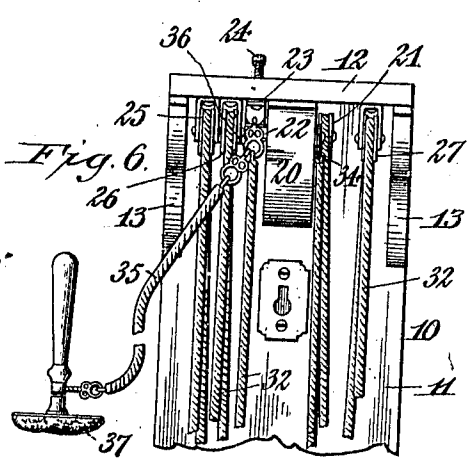
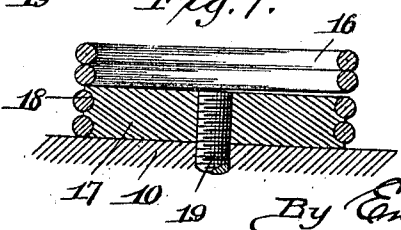


Fig. 7.



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UNITED STATES PATENT OFFICE.

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ELECTRICAL MUSCULAR EXERCISING-MACHINE.

955,793.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed June 12, 1906. Serial No. 321,376.

To all whom it may concern:

Be it known that I, WILLIAM HARRIS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Electrical Muscular Exercising-Machines, of which the following is a specification.

This invention relates to improvements in electrical muscular exercising machines in which an electric current or a succession of electric impulses is passed through the body of the operator.

The object of my invention is the production of a simple, durable, and effective machine of this type in which operating-cords are connected with a resistance-device in the form of springs and in which one of said cords is passed over a pulley affixed to the armature of a fixed magneto electric generator.

Other objects are the provision of simple means for applying an electrode to any part of the body, and to otherwise improve on electric exercising-machines now in use.

My invention consists in the construction, arrangement and combination of parts to be hereinafter described and particularly pointed out in the appended claims.

In the drawings,—Figure 1 is a front elevation of an exercising-machine embodying my invention; the front of the spring-containing box being broken away. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section taken on line $x-x$, Fig. 2. Fig. 4 is a horizontal section, taken on line $y-y$, Fig. 1. Fig. 5 is an enlarged vertical section taken on line $z-z$, Fig. 1. Fig. 6 is a front elevation of the upper portion of the machine showing a pad for local application applied thereto. Fig. 7 is an enlarged vertical cross-section through one of the lower spring-retainer disks.

Referring to the drawings in detail, like numerals of reference refer to like parts in the several figures.

The numeral 10 designates the supporting-frame or body comprising a back-board 11, a head-piece 12, brackets 13 supporting said head-piece and a box-like structure 14 at the lower end of the frame or body forming a housing. The back-board 11 has a slot 15 in the form of an inverted key-hole for suspending the machine on a wall or other object.

Within the box-like structure or housing

14, which is open at its upper end, are two vertically disposed spiral-springs 16 held to the bottom of said structure by spring-retainers 17, each of which is in the form of a disk having spiral-grooves 18 in its peripheral edge into which are turned one or more of the lower convolutions of the springs. Said disks are secured to the bottom by means of screws 19 passed through said bottom and entering threaded apertures central in said disks. In this manner the lower ends of the springs are securely held.

Secured to the bottom of the head-piece is a magneto-electric generator 20 having a cord-pulley 21 secured to one end of the armature-shaft thereof. The opposite end of said shaft has contact lugs 22 which are adapted to act against a contact-spring 23 secured to the head-piece and having a pressure-screw 24 attached thereto, said screw being adjustable in the head-piece and having its lower end passed through the contact-spring with collars above and below said spring to compel the latter to rise or descend therewith. In this manner, the spring offers more or less resistance to the contact-lugs 22, and the current consequently intensified or diminished. If desired, the adjusting screw may be lowered to move the contact-spring out of the path of the contact-lugs, which converts the machine into a non-electrical exerciser.

Affixed to the head-piece, preferably to the left of the electric-generator are cord-pulleys 25, 26, and secured to the head-piece on the opposite side of said generator is a cord-pulley 27.

Pulley-blocks 28 are provided at the upper ends of the resistance-springs; each in the form of a disk having spiral peripheral grooves into which fit the upper convolutions of said springs. Each pulley-block has two apertures 29 in which are held cord-pulleys 30 revoluble on a spindle 31 passed diametrically through said blocks.

Combined electric-conducting and operating-cords 32 are provided to expand the resistance-springs and to drive the magneto-generator to cause the latter to generate an electric-current or electric impulses; each cord having at one of its ends a handle 33 electrically connected therewith. One of said cords is connected with one of the poles of the generator as at 34, and passes down around a pulley in the pulley-block of one of the resistance-springs, thence up and

over pulley 21 on the armature-shaft, thence down and around the second pulley in said pulley-block, thence up and around cord-pulley 27 secured to the head-piece, and finally down to terminate at any point desired; the free end being provided with one of the handles 33. The other of said operating-cords is secured to contact-spring 23 with which the armature-shaft (the other pole of the generator) makes and breaks contact; said cord passing from said contact-spring down around a pulley in the pulley-block of the other resistance-spring, thence up and around pulley 26 secured to the head-piece, thence down and around the second pulley in said pulley-block, thence up and around pulley 25 secured to the head-piece, and finally down to terminate at the point desired; the free end having the other handle 33 secured thereto. By means of this arrangement, the resistance springs are expanded or drawn upward and partly exposed above the box containing the same when drawing outward or downward on the operating-cords; a complete electric-circuit being formed when both handles are grasped by the operator; the operation of the cords causing the generator-armature to revolve and generate the electric-current or impulses.

When it is desired to apply electric treatment locally, that is to say, to any part of the body, a current conducting cord 35 is applied to the machine. This last mentioned cord is removably attached to the connected end of one of the operating-cords, as shown at 36, or if desired, to any point between the handle of said operating-cord and the pole of the generator to which said operating-cord is attached. To the free end of said current conducting-cord, a sponge or other suitable pad 37 is electrically connected, which when moistened, is placed against that part of the body of the operator requiring treatment. The operating-cord revolving the generator-armature is

taken hold of and drawn outward to revolve the armature, whereupon the electric-current passes through the operator from the hand to the part to which the treatment pad is applied. When using the treatment pad, only one operating-cord is actuated, and one resistance spring placed into action.

I do not wish to confine myself to the exact construction herein shown and described, but hold myself at liberty to make such minor changes as fairly fall within the scope of my invention.

Having thus described my invention, what I claim is,—

1. The combination of a suitable frame, an electric-generator fixedly secured to said frame, spiral-springs extensible on said frame, spring-retainers secured to said frame and having each a spiral-groove into which the convolutions of the springs at one end thereof are threaded, and electric-conducting and operating-cords connected to said springs in a manner to cause extension thereof and having connection with said generator to actuate the same.

2. The combination of a suitable frame, an electric-generator fixedly secured to said frame, spiral-springs connected to said frame and extensible thereon, a pulley-block at the upper end of each spring consisting of an apertured disk having peripheral spiral grooves into which the end convolutions at one end of said springs are fitted and pulleys in the apertures of each disk, and electric-conducting and operating-cords passing around said pulley and operatively connected with said electric-generator, as and for the purpose described.

In testimony whereof, I have affixed my signature in the presence of two subscribing witnesses.

WILLIAM HARRIS.

Witnesses:

EMIL NEUHART,
MAY F. SERVETH.