May 28, 1935. H. RYBERG, JR 2,002,586

MYOGENIC FOOT MANIPULATOR

Filed Dec. 12, 1934

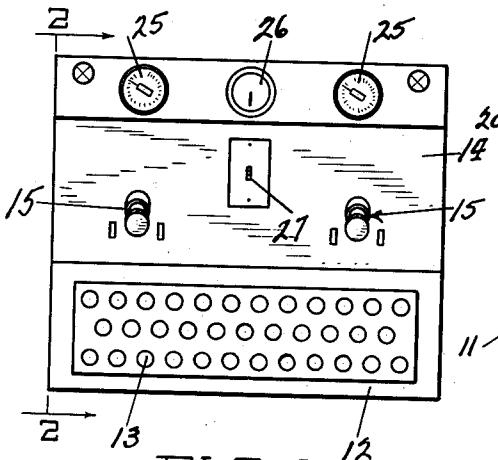


FIG. 1

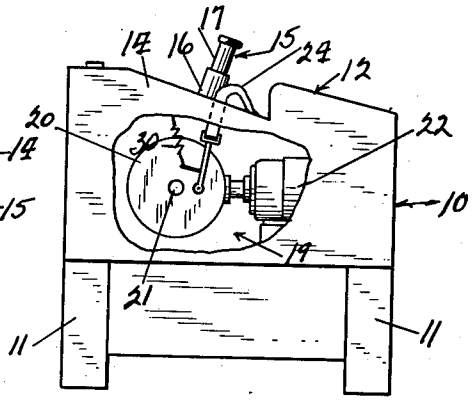
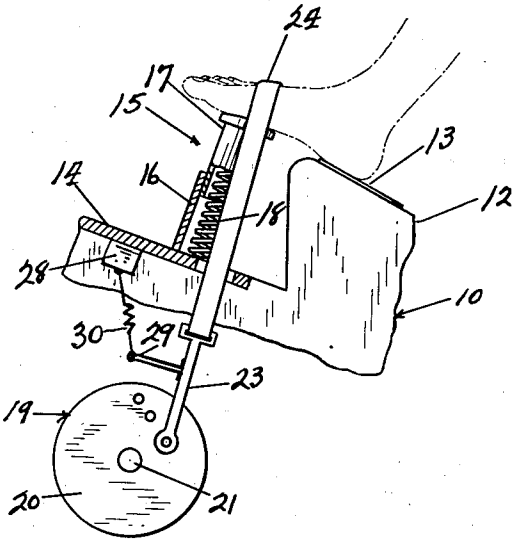


FIG. 2

FIG. 3



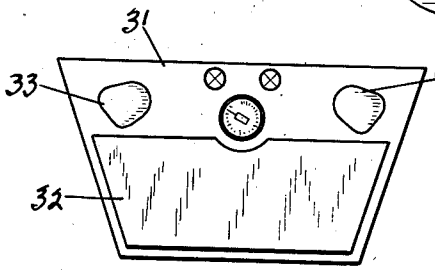


FIG. 4

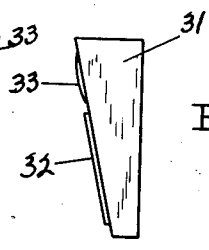


FIG. 5

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MYOGENIC FOOT MANIPULATOR

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Application December 12, 1934, Serial No. 757,139

1 Claim. (Cl. 174—89)

This invention relates generally to apparatus for exercising and treating the muscles of the pedal extremities and has particular reference to improvements in myogenic foot manipulators for the purpose of effectually exercising and treating the feet.

In the exercise or manipulation and treatment of the feet it is necessary to have the foot properly positioned while the manipulation thereof is taking place, that is, the bones of the foot must be held in proper alignment so that the motor points of the muscles are properly treated and for this purpose I have produced apparatus employing electrodes adapted to contact the ball of the foot while the heel thereof is held in a substantially fixed position and employing means for automatically manipulating the muscles of the foot while current is passed therethrough from the electrodes.

The principal object of my invention is to provide a myogenic apparatus for the manipulation of the feet while being electrically treated thru means of telescopic electrodes positioned on the apparatus and adapted to contact the ball of the foot.

Another object of the invention is to provide a myogenic apparatus of the class described that employs electrodes adapted to automatically contact correct parts of the foot while the foot is being manipulated by the apparatus.

A further object of the invention is to provide an apparatus of the class described having electrodes of self adjusting character and in which the electric wires are concealed.

A still further object of the invention is to provide an apparatus having safety telescopic members employing spring features and means for automatically making and breaking the electric circuit in said electrodes as the foot is being manipulated.

An additional object of the invention is to provide an apparatus including means for energizing the electrodes only when the bones of the foot are in their normal alignment.

Additional to the foregoing objects is that of providing an apparatus of this class with straps for pulling the ball of the foot downwardly while the telescopic electrodes hold up the middle bones of the foot in their proper alignment.

Ancillary to the foregoing objects is that of providing an apparatus in which the electrodes thereof strike the ball of the foot, sole and heel while making the proper contact.

Other objects and advantages of the invention will become apparent with reference to the subjoined specification and the accompanying drawing in which:—

Figure 1 is a top plan view of the apparatus showing the telescopic electrodes and the fixed heel electrode, also the various instruments in the electrical circuit;

Figure 2 is an end elevation of the apparatus with a portion thereof broken away to disclose the motor driven manipulating means of the device;

Figure 3 is a sectional detail illustrating the telescopic and heel electrodes and the crank means of the apparatus for manipulating the muscles of the foot;

Figure 4 is a plan view of a modified form of apparatus for home use; and

Figure 5 is an edge view of said apparatus.

In the treatment and manipulation of the pedal extremities it is very important that the bones and muscles of the feet be properly exercised while being treated and that the electric current should be passed from the ball of the foot to the heel thereof only at the time said bones and muscles are in normal alignment and for this purpose I have produced a manipulating apparatus that properly accomplishes these objects and one that is entirely automatic in its functioning during this treatment.

Referring to the drawing in which the preferred form of my invention is disclosed the apparatus consists of a cabinet 10, legs 11 and a heel rest section 12, said heel rest being provided with an electrode plate 13 upon which the heels of the feet normally rest.

The forward inclined section 14 of the cabinet is provided with a pair of telescopic electrodes 15 inclined toward the ball of the foot as shown in Figure 3, said electrodes embodying fixed sleeves 16 and telescoping foot rests 17 and springs 18 included therein normally hold the member 17 in extended position.

Cooperatively associated with the telescopic electrodes is the maniplating mechanism 19 which mechanism comprises discs 20 carried by a shaft 21, said shaft being connected in a suitable manner by means of reduction gears to the driving motor 22. Connected to the discs 20 are links 23 to which in turn are connected looped straps 24 adapted to fit over the instep of the feet while the heels thereof are resting upon the electrode 13.

The loops 24 normally hold the ball of the foot against the telescopic foot rests 17, and when the motor is started the crank motion of the links causes the ball of the foot to be manipulated in

an up and down motion, the springs **18** returning the electrodes and holding the same in constant contact with the ball of the foot.

The electric circuit, not shown, includes the electrodes **15** and the various rheostats **25**, meter **26** and switch **27**, however, as this circuit is considered no part of the invention it will not be described in detail except as to the functioning of the electrodes.

The means for intermittently energizing the electrodes consists of a switch **28** attached in a suitable manner to the arm **29** carried by the links **23** and connected to the switch by a light spring wire **30** so that when the foot is in the correct position, as shown in Figure 3, the electrodes will become energized and the current will pass through the ball of the foot, bones and muscles, to the heel electrode **13** and when the crank motion again draws the toe end of the foot downwardly the electrodes are de-energized by the switch **28**. It is to be understood that a flasher may be used if desired in place of the switch mechanism above described.

It is therefore, obvious that a gentle yet effective manipulation of the foot, or feet, is constantly carried on and when the bones and muscles of the feet are in properly aligned positions current is applied thereto thus rendering the treatment much more effective than would otherwise be possible under ordinary circumstances.

In the modified forms shown in Figures 4 and 5 I provide an apparatus for home use and this apparatus embodies a small floor cabinet **31** having a heel electrode **32** and resilient pads **33** for the ball of the foot so that the operator may manipulate the pads manually in a rocking motion of the feet to manipulate the same, the circuit being actuated by a flasher button not shown, which button makes and breaks the circuit automatically. The electrical impulses through the electrodes **32** and **33** being controlled in this manner by said flasher button.

I claim and desire to secure by Letters Patent of the United States the following:—

In a device of the class described for the treatment and manipulation of the feet, embodying compressible telescopic electrodes and a fixed heel electrode, crank mechanism carrying loops adapted to encircle the foot when placed on said electrodes and adapted to actuate said telescopic electrodes, and means for intermittently energizing said electrodes to cause current to flow from the ball of the foot to the heel thereof.

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