

May 6, 1941.

B. H. STAUFFER

2,240,679

MUSCLE RELAXING MACHINE

Filed Aug. 1, 1938

2 Sheets-Sheet 1

Fig. 1.

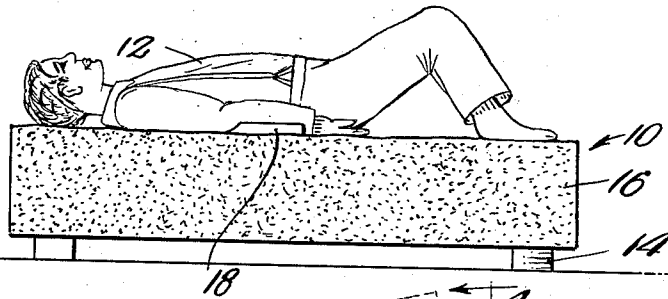


Fig. 2.

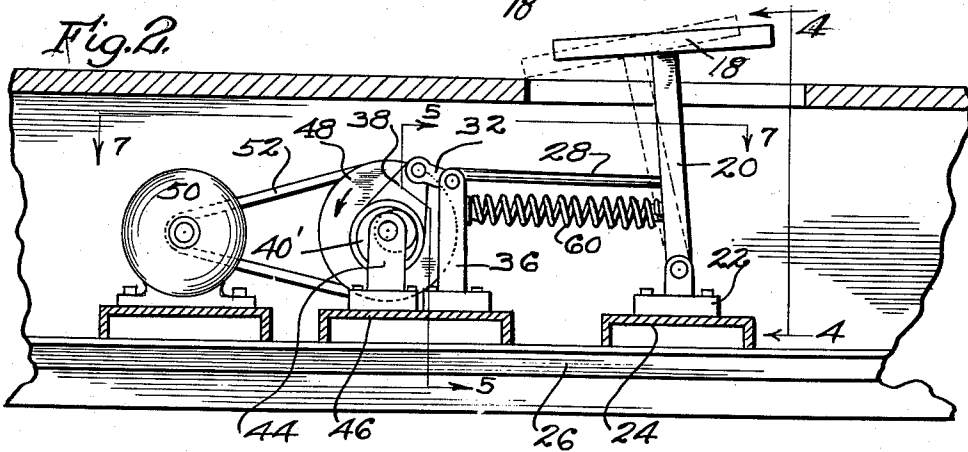
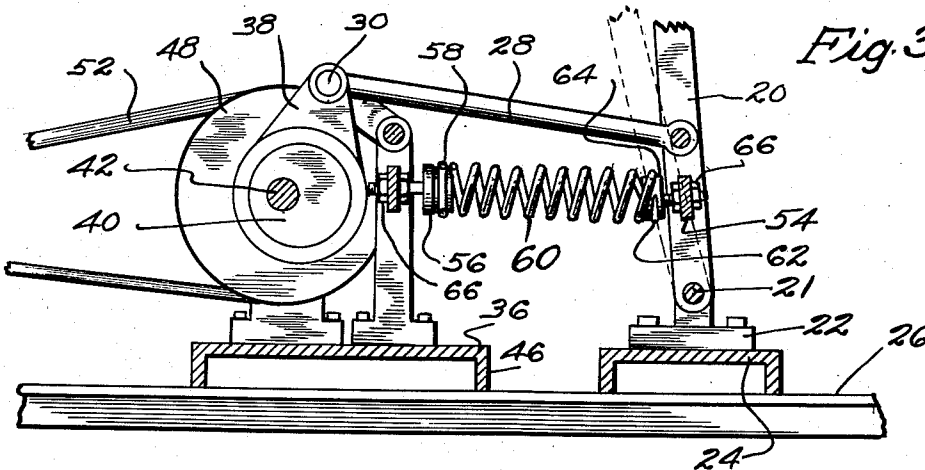


Fig. 3.



INVENTOR.
Bernard H. Stauffer
BY *Robert S. Woolley*
ATTORNEY.

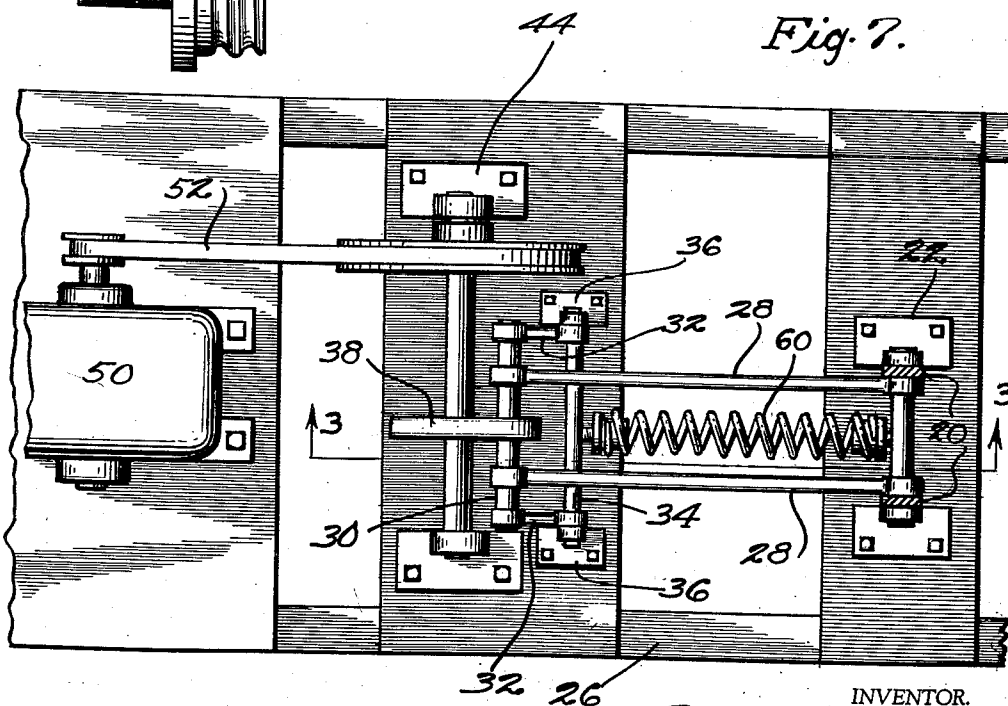
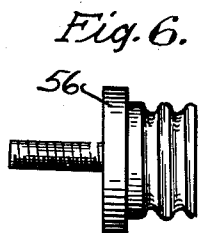
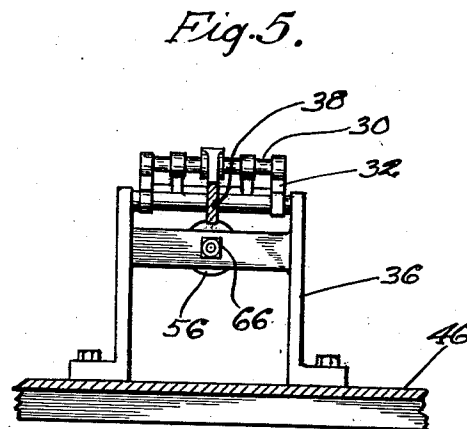
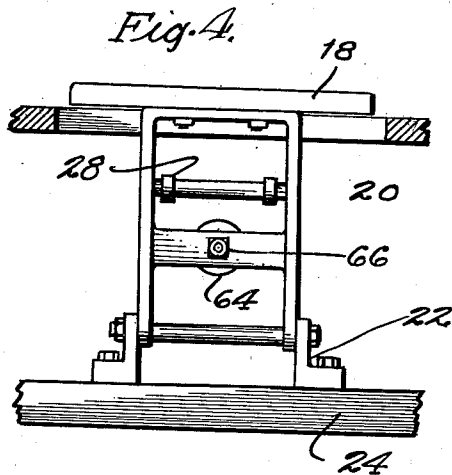
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B. H. STAUFFER
MUSCLE RELAXING MACHINE

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2 Sheets-Sheet 2



INVENTOR.
Bernard H. Stauffer
BY *Ruth Woolley*
ATTORNEY.

UNITED STATES PATENT OFFICE

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MUSCLE RELAXING MACHINE

Bernard H. Stauffer, San Bernardino, Calif.

Application August 1, 1938, Serial No. 222,327

2 Claims. (Cl. 128-70)

Many human disorders arise from strictured nerves which may in part be traceable to such a condition as mis-alignment of certain of the vertebrae, thereby adversely affecting the nerve, control of the supply of blood to such affected region with resulting disorders resulting in mental and physical strain and fatigue; also such a condition as fallen or sagging internal organs can be a cause of great physical distress, due of course to strain placed upon the tissues which normally support the organ, and by placing pressure upon certain of the areas upon which the displaced organ comes to rest as a result of such displacement.

The machine of this invention relates to mechanical means to soothe, relax, and strengthen certain of the muscular areas of the human body for the purpose of alleviating pain due to nerve stricture arising from mal-adjustment of certain of the vertebrae by massage of certain of the muscles of the spinal tract, such as the erector spinae, the semispinalis, multifidus, and latissimus dorsi, whereby strictures may be alleviated in part or whole, for these muscles and associated cartilages all enter into proper support for the spinal tract, and also as a means to alleviate pain and discomfort due to sagging or fallen internal organs, by strengthening due to massage resulting from a gentle, yet strong and repetitious differential lifting or up-stroking of certain of the abdominal muscles, such as the linea alba, rectus abdominis, pyramidalis abdominis, and ligamentum inguinale.

Differential up-stroking or lifting of the aforementioned muscles relieves tension created by stretching certain of the organ supporting tissue, and by so relieving pressure and tension, permits such tissue and co-related muscular support to regain its former strength in part or whole to the infinite betterment, comfort, and relief of the person so afflicted.

With the foregoing statement as a preface of the broader purposes of the invention, it may be said that:

It is a prime object of the present invention to provide in a couch or bed-like support for a human form, a mechanical massaging and muscle relaxing machine, which by reason of employment of what may be termed a differential lifting or up-stroking, tends to place certain of the internal organs in a normal position, after having been removed from such normal position by reason of weakening of the supporting tissue of such organs.

A further object of the invention is to provide

a machine which by reason of massaging certain of the muscles of the back, will alleviate pain and distress due to strictured nerves and blood supply resulting from mal-adjusted vertebrae.

A still further object of the invention is to provide a machine for the above stated purposes which may be used either in the home, or may be used in the office for professional purposes.

Another object of the invention is to provide a simple, reliable, and practical machine for the afore-stated purposes.

Other objects, features, and advantages of the invention may appear from the accompanying drawings, the specification, and the appended claims.

In the drawings of which there are two sheets:

Figure 1 is a view in elevation showing a couch structure provided with the muscle relaxing machine of this invention.

Figure 2 is a sectional view through a portion of the couch, showing detail of construction of the operating features of the invention, see line 2-2, in Figure 7.

Figure 3 is a view drawn to a larger scale than that employed in Figure 2, showing operating mechanism partially in section.

Figure 4 is a view in elevation as seen along line 4-4, in Figure 2.

Figure 5 is a view in elevation as seen along line 5-5, in Figure 2.

Figure 6 is a side elevation of an adjustable spring support employed to vary tension of a cushioning spring employed as a structural feature of the invention.

Figure 7 is a view taken along line 1-1, in Figure 2, showing operating structure drawn to a somewhat larger scale than that employed in Figure 2, the view is modified to the extent of not including that portion of the apparatus which is used to contact the body of the applicant.

In the drawings the reference character 10 indicates a couch or other bed like supporting structure for the human form which is indicated by the numeral 12. The couch 10 is preferably positioned upon supporting legs 14, while the sides and top thereof are covered with a suitable textile material 16 which may be suitably padded to cushion the body of the applicant 12.

A padded structure in the form of a seat 18 is fixedly positioned upon legs 20 which are oscillatably positioned upon bearings 22 secured upon a transversely positioned member 24, which is in turn suitably secured to the frame 26 of the couch 10. The legs 20 as will be noted in the drawings, are inclined toward the head A of the

couch, the degree of inclination being relatively small, being of a probable maximum of 15 degrees from the vertical when in extreme forward position and approximately 5 degrees from the vertical when in the other extreme end stroke position. This arrangement causes the seat 18 to lie at a constant although variable angle with respect to the upper surface of the couch.

The legs 20 are joined by means of connecting rods 28 with a shaft 30 which in turn is hingedly positioned upon links 32, which are in turn hingedly positioned upon a fixed shaft 34 secured in bearing brackets 36.

The shaft 30 is rotatably connected with the free end of a cam follower 38, which is driven by a cam 40 secured upon cam shaft 42. The shaft 42 is rotatably positioned in bearing brackets 44 which are in turn secured upon a transversely positioned structural member 46, which member is also adapted to support bearing brackets 36.

The shaft 42 is also adapted to carry a pulley 48 which is driven by a motor 50 and belt 52.

A web like structure 54 formed integrally between and with the bearing brackets 36 forms an anchorage for a threadedly adjustable spring supporting boss 56, which is used to support the end 58 of an extensile spring 60, while the opposite end 62 of the spring 60 is supported upon a like threadedly adjustable boss 64. The several bosses may be secured in any given adjusted position by means of nuts 66 upon stems 68 of the bosses, thereby enabling the spring 60 to be placed under varying degrees of compression.

Operation of the relaxing machine of this invention and the resulting beneficial results to be expected from the operation thereof, may be set forth as follows:

The patient or applicant for treatment lies upon the couch 10, substantially in the manner indicated by the figure 12 in Figure 1, with the padded structure 18 placed under the small-of-the-back, as an illustration of application, the motor 50 is then energized, through a circuit not shown, causing the same to rotate, which action through belt 52, pulley 48, and shaft 42, causes cam 40 to also rotate, thereby oscillating cam follower 38, shaft 30, links 32, and connecting rods 28, thereby oscillating legs 20 upon which the padded structure 18 is supported, and which structure oscillates therewith.

The spring 60 which is positioned upon the bosses 56, is placed between the webs 54 which form an integral part of the legs 20 and bearing brackets 36, thereby serving as a cushion for the parts associated with the legs 20 to silence noise or chatter resulting from reciprocation of the machine. The bosses 56 and 64 may be adjustably positioned with respect to the webs 54 thereby enabling the spring 60 to be placed under varying degrees of compression, which adjustments may be made in conformity with the requirements of the machine.

The longitudinal movement of the padded structure 18 is shown in dotted lines 18a in Figure 2, the result of this movement will now be described, reference being made to Figure 1 of the drawings and the recumbent figure 12 shown therein.

Previous reference has been made to the position of the patient upon the couch 10 and structure 18. Operation of the machine causes the member 18 to be oscillated upon its hinge at 21, carrying the member forward and upwardly, due to radius of the arm of movement, for as will be noted from the drawings, the degree of move-

ment ranges from about minus 15 to minus 5 degrees from the vertical, thereby causing the manipulator to swing through a range of 10 degrees, during which interval the seat or manipulator support 20 at no time passes the vertical, hence movement imparted to a body lying thereon is accentuated in that its greatest thrust or lift is in one direction only, the return movement being a lowering and receding movement as distinguished from a positive upward and forward lift. Thus it will be apparent that a down strain upon supporting tissues of the organs will be relieved by causing the organs to be lifted toward normal position, while the return stroke of the manipulator 18 being negative in effect, permits the organs, as would naturally follow, to again tend to return to sagged position, but before having reached this position the manipulator again lifts them from sagged position, hence it will be apparent that by relieving tension in the supporting tissue, the same is rested and strengthened and concurrently the patient is given a sense of well being and comfort, which action causes the internal organs to be gently lifted upwardly or toward the head of the patient and then released, during which time there is tendency to again drop to their former position, however, repetitious action of the machine constantly lifts the organs toward their original position, thereby releasing tension upon strained tissue, and giving nature an unrestrained opportunity to return to normal position and function.

It should be here stated that the results obtained are accentuated by placing the knees of the patient in a lifted but bent position as shown in the figure, for this position not only tends to lift the internal organs themselves, but utilizes the mechanics of the limbs in this position, as a means more quickly and more pronouncedly lifting the organs for the purpose intended. Organs which are normal in all apparent respects are given ease and comfort, especially in those individuals who are relatively advanced in years.

Application of the machine for the purpose of relaxing the muscles of the spinal tract is equally effective, for continued use of the machine renders the muscles concerned into a healthy and invigorated condition, whereby they become soft and pliant within their natural limits of functionability.

It is to be noted that in the use of the machine of this invention, the patient is not called upon to put-out energy, all effort is performed by the machine itself, thereby enabling the patient to be at ease, and enabling him to completely enjoy the rhythmic movement of the apparatus.

Use of the machine of this invention does not place a strain upon the heart of the user, in fact its use by those people with weakened hearts is most beneficial for the reason that while it has no direct effect upon that organ, still the beneficial results flowing from a proper re-adjustment of certain of the abdominal organs, indirectly aids the action of the heart in its function.

The machine of this invention is adapted to gently, yet forcibly lift the body in a direction toward the head of the user, a distance of approximately two (2) inches, and then to return the body to the point of beginning, this differential movement, as previously stated, releases all tension upon weakened tissue by reason of the fact that it tends to work oppositely to the natural forces of gravity, which of course constantly pull downwardly upon the organ supporting tissue.

The many unsolicited testimonials of beneficial results obtained by the use and application of the present invention completely justify all claims herein made in behalf of the machine.

It is conceivable that various changes and modifications and variations may be made in practicing the invention in departure from the particular showing of the drawings and description as given, without however, departing from the true spirit of the invention as defined by the scope of the appended claims, and accordingly I do not wish to be limited by the showing in the drawings, but rather to be limited only by the scope of the appended claims.

I claim:

1. A muscle relaxing machine comprising a couch-like structure for repose of a human body in the top surface of which a slot-way is formed and through which a vertically directed and oscillatable support for a single flat rectangular applicator is adapted to tiltingly move, and means to oscillate said applicator axially of the length of said couch-like structure whereby zonular areas of the body may be massaged by mechanical manipulation in a substantially horizontal plane.

2. In a machine of the character described, a couch-like structure having a flat top surface for repose of the human body and being formed with a slot-way therein, a single applicator, a support for the applicator, said support projecting through and being movable forwardly and rearwardly through said slot-way in parallel with the greater axis of said couch while the applicator is in physical contact with a prone body and supporting an area of the body from contact with the couch while other areas of the body are in contact therewith, said support being hingedly positioned upon a base and being movable with respect thereto so as to be less than 90 degrees from the horizontal when in maximum elevated position and a maximum of 80 degrees from the horizontal when in position of minimum inclination whereby said applicator moves through an increasing arc of ascendancy to lift and move a body thereon with a greater degree of sensible effect in one direction than when said applicator moves oppositely to its point of beginning, and power means to oscillate said applicator and support.

BERNARD H. STAUFFER.