Aug. 4, 1931. D. GUSTAVESON 1,817,077

ROLLER MASSAGE MACHINE

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Fig. 1.

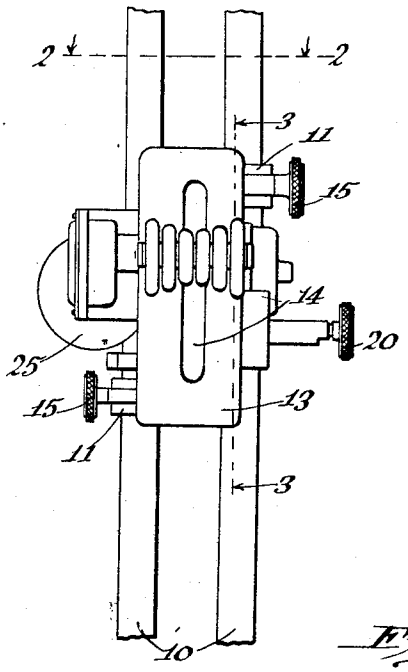


Fig. 2.

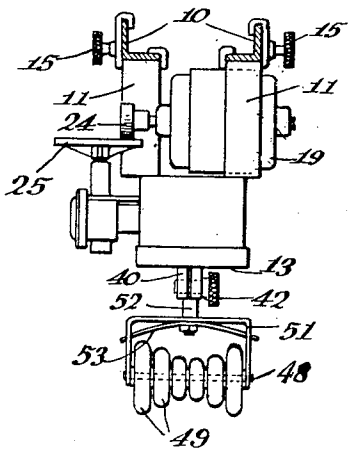


Fig. 3.

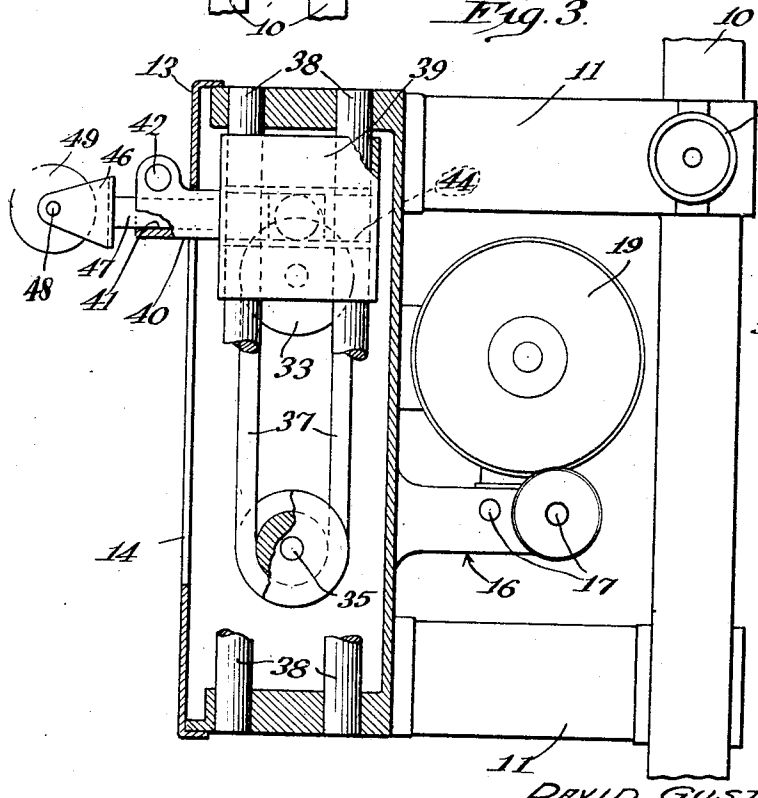
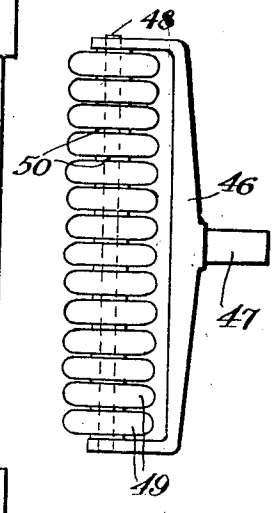


Fig. 4.



Inventor.

DAVID GUSTAVESON.

By Martin C. Smith Attorney.

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Fig. 6.

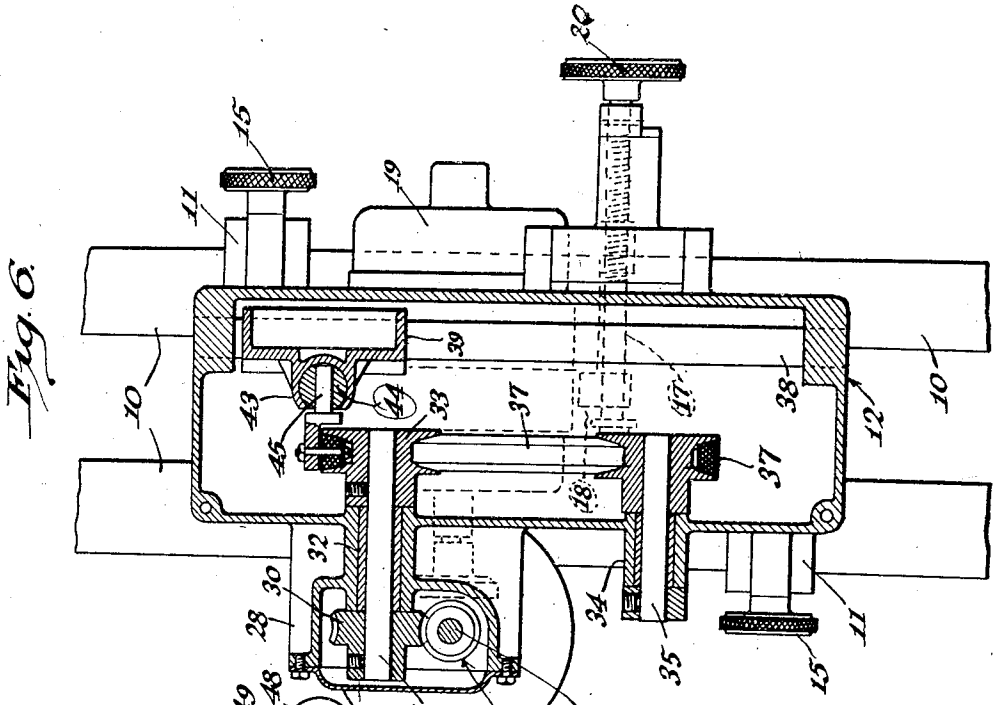
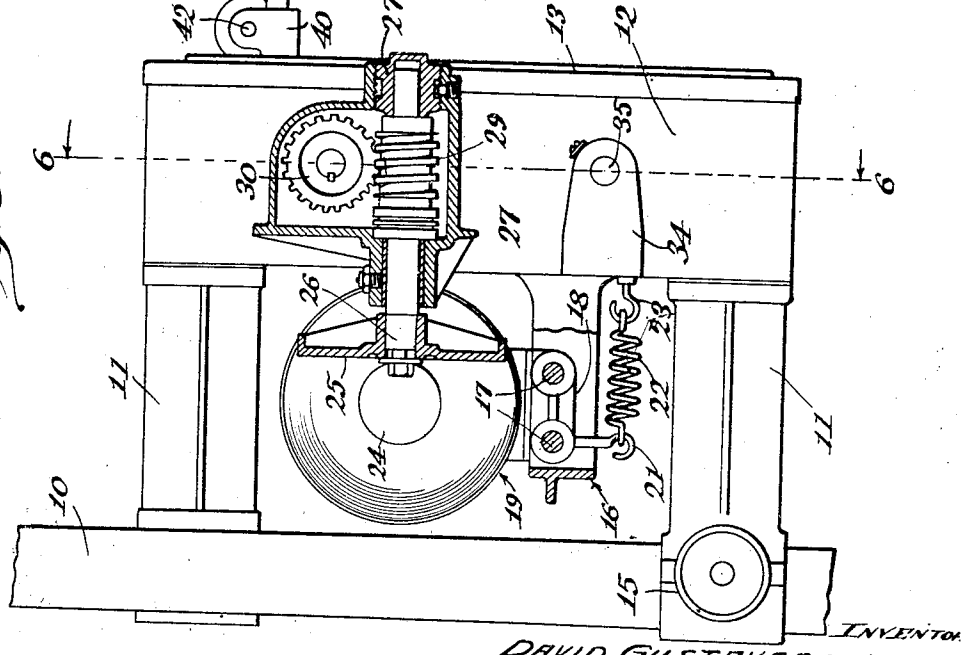


Fig. 5.



INVENTOR.
DAVID GUSTAVESON.
BY Martin P. Smith
ATTORNEY.

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UNITED STATES PATENT OFFICE

DAVID GUSTAVESON, OF LOS ANGELES, CALIFORNIA

ROLLER MASSAGE MACHINE

Application filed March 14, 1929. Serial No. 346,851.

My invention relates to a roller massage machine that is especially designed for effecting a reduction of weight as a result of breaking down and eliminating adipose tissue, and the principle object of my invention is to provide a relatively simple, practical and inexpensive machine wherein an applicator in the form of a roller, or a series of associated rollers is reciprocated, so as to produce the rolling action against the body of the user.

Further objects of my invention are to adjustably mount the machine on a vertical support or supports so that said machine may be elevated or lowered for engagement with different portions of the body, further, to provide simple and efficient means including an electric motor for driving the reciprocating applicator and further to provide simple and efficient means for regulating and controlling the speed of the reciprocating applicator.

Further objects of my invention are to provide an applicator that is made up of a series of discs or rollers and further to provide means whereby the applicator may be mounted on a yielding support so that said applicator while in operation may change its position to conform to the curvature of the body or limb to which it is applied.

With the foregoing and other objects in view, my invention consists in certain novel features of construction and arrangement of parts that will hereinafter be more fully described and claimed and illustrated in the accompanying drawings, in which:

Fig. 1 is a front elevational view of a roller massage machine embodying the principles of my invention.

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1.

Fig. 3 is an enlarged vertical section taken on the line 3—3 of Fig. 1.

Fig. 4 is a top plan view of one of the applicators used in my improved massage machine.

Fig. 5 is a side elevational view of the machine with parts thereof in vertical section.

Fig. 6 is a vertical section taken on the line 6—6 of Fig. 5.

Referring by numerals to the accompanying drawings which illustrate a practical embodiment of my invention 10, 10 designates a pair of upright supporting rails which may be secured to a wall or other vertical support and arranged for sliding movement upon said upright rails are horizontally disposed brackets 11 to the outer ends of which are connected the upper and lower portions of a vertically disposed boxlike housing 12.

The front plate 13 of this housing is readily removable in order to give access to the interior of the housing and formed in said front plate is a vertically disposed slot 14.

The rear ends of the brackets 11 or those portions that are mounted for sliding movement upon the uprights 10 are provided with suitable means for firmly securing the brackets to the uprights at differently adjusted elevations and these locking or clamping devices may be in the form of set screws provided on their outer ends with small hand wheels or discs 15.

Projecting rearwardly from the intermediate portion of the housing 12 is a horizontally disposed bracket 16, and extending lengthwise therethrough is a pair of parallel rods 17 and mounted for sliding movement upon said rods is a plate 18 upon which is mounted a small electric motor 19. The outer portion of one of the rods 17 is screw-threaded for engagement with a threaded lug that forms a part of the base plate 18 and mounted on the outer end of this threaded rod is a hand wheel 20.

The parts just described provide simple means for moving the electric motor carrying plate 18 longitudinally of the supporting rods 17. Depending from the plate 18 is a hook 21 and attached thereto is the outer end of a retractile spring 22, the inner end of which is connected to a hook 23 on the rear side of housing 12 and which spring yieldingly holds the motor carrying plate in its adjusted position and at the same time tends to draw said plate toward the housing 12.

Mounted on the inner end of the motor shaft is a friction driving disc 24 that engages the face of a larger friction disc 25, which latter is secured on the rear end of a shaft 26. This shaft is journaled in bear-

ings 27 that are formed in the front and rear wall of gear case 28 and which latter is formed integral with and projects outwardly from the left hand side wall of housing 12.

Within this gear case, shaft 26 is provided with a worm 29 that engages a worm wheel 30 and the latter being secured on the outer end of a shaft 31 that is journaled in a bearing 32. Shaft 31 projects into the upper portion of the housing 12 and carries a grooved pulley 33.

Journaled in a bearing 34 in the lower portion of the lefthand side wall of the housing 12 is a shaft 35, the inner end of which carries a grooved pulley 36 that has the same diameter as pulley 33 and mounted for operation upon the pulleys 33 and 36 is a belt 37.

Arranged in the right hand portion of the chamber within housing 12 and directly to the rear of the slot 14 in the front wall is a pair of upright guide rods 38, the ends of which are fixed in the top and bottom plates of the housing and arranged to slide freely upon these guide rods is a block 39 having a bracket 40 that projects forwardly through the slot 14, and said bracket is provided with a recess 41 and with a clamping screw 42. Formed on the rear side of block 39 is a horizontally disposed housing 43 and arranged to slide freely therethrough is a cylindrical block 44 in which is loosely mounted a pin 45 and the outer end of this pin is secured in any suitable manner to the belt 37.

The applicator utilized in my improved massage machine may take various forms, but I prefer to use sectional rollers as illustrated in Figs. 1, 2 and 4.

In the form of applicator illustrated in Fig. 4 a horizontally disposed U-shaped frame 46 is provided with a centrally arranged stud 47 that is adapted to be positioned in the recess 41 in bracket 40 and to be clamped to said bracket by screw 42 and seated in the outer ends of the arms of said bracket 46 are the ends of a rod 48. Loosely mounted on said rod between the arms of the bracket are discs or rollers 49 of uniform diameter with rounded peripheries and said rollers being constructed of hard rubber, composition or the like. These rollers are maintained in spaced relation by relatively small thin washers 50.

This particular form of applicator may be conveniently employed while imparting rotary massage to the back, breast or abdomen of the user, but where it is desired to impart rotary massage to the lower portions of the legs or to the neck and chin I prefer to use an applicator of the form shown in Figs. 1 and 2.

This form of applicator includes a horizontally disposed U-shaped frame 51 that is mounted for sliding movement upon a stud 52, which latter is adapted to be clamped in the bracket 40 and secured on the outer end of the stud 52 in front of the rear bar of the frame 51 is a bow spring 53, the ends of which pass through apertures that are formed in the parallel arms of the frame 51. This spring 53 yieldingly resists the rearward movement of the frame 51 and thus the rollers carried by said frame will yieldingly bear upon the limb, neck or other curved portion of the body to which the applicator is applied. In this form of applicator the rollers that are journaled between the arms of the U-shaped frame gradually decrease in diameter from both ends toward the center, thus producing, in effect, a concave roller which may be conveniently used on the limbs or neck for imparting rolling massage thereto.

In the practical use of my improved roller massage machine the housing and parts carried thereby is adjusted to the desired vertical height on the supply supports 10 and the machine is clamped in its adjusted position by tightening the clamping screws 15, and following the turning on of the current to the electric motor the latter will be operated in the usual manner.

Friction disc 24 engaging the face of disc 25 will rotate the latter and the shaft 26 which latter carries worm 29 and said worm drives worm wheel 30 carried by shaft 31 and which latter carries the pulley 33. As pulley 33 is thus rotated the belt 37 will be driven over the pulleys 33 and 36 and the pin 45 which enters sliding block 44 will in its vertical travel reciprocate the block 39 upon the guide rods 38.

During the vertical reciprocation of block 39 or at the ends of its travel the pin 45 in passing from one side of the pulleys to the other will move the cylindrical block 44 horizontally through its housing or bearing 43.

The reciprocating block 39 carries an applicator and as the latter is reciprocated vertically it will engage and impart rolling massage to that portion of the body that is positioned immediately in front of the machine. By rotation of the screw rod that carries the handle 20 the base 18 that carries the motor may be moved laterally relative to the housing and as this adjustment takes place the friction disc 24 will be moved toward or away from the center of the friction disc 25 with the result that speed at which the machine operates may be readily controlled and regulated.

Thus it will be seen that I have provided a roller massage machine that is relatively simple in construction, inexpensive of manufacture, capable of being readily adjusted to different elevations and capable of being operated at different speeds and which machine may be very effectively used for imparting rolling massage to practically all portions of the body and limbs of the user.

It will be understood that minor changes in the size, form and construction of the va-

rious parts of my improved roller massage machine may be made and substituted for those herein shown and described without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim as my invention

1. In a roller massage machine, a housing, a pair of shafts journaled in one of the walls of said housing, grooved pulleys mounted on said shafts, a belt operating over said grooved pulleys, a pin projecting from said belt, a member mounted for vertical sliding movement within said housing, a ball and socket connection between said sliding member and pin, a bracket projecting from said sliding member and an applicator carried by said bracket.

2. In a roller massage machine, a housing, a pair of shafts journaled in one of the walls of said housing, grooved pulleys mounted on said shafts, a belt operating over said grooved pulleys, a pin projecting from said belt, a member mounted for vertical sliding movement within said housing, a ball and socket connection between said sliding member and pin, a bracket projecting from said sliding member, an applicator carried by said bracket and means for imparting rotary motion to one of said shafts.

3. In a roller massage machine, a housing, a pair of shafts journaled in one of the walls of said housing, grooved pulleys mounted on said shafts, a belt operating over said grooved pulleys, a pin projecting from said belt, a member mounted for vertical sliding movement within said housing, a ball and socket connection between said sliding member and pin, a bracket projecting from said sliding member, an applicator carried by said bracket, means for imparting rotary motion to one of said shafts and means whereby the speed of the rotary motion imparted to said shaft may be regulated.

4. In a roller massage machine, a vertical support, a housing mounted for vertical adjustment on said support, a pair of shafts journaled in said housing, means carried by the housing for imparting rotary motion to one of said shafts, means forming a part of the driving connections for regulating the speed of the transmitted rotary motion, grooved pulleys carried by said shafts, a belt arranged for operation on said pulleys, a pin projecting from said belt, a member mounted for vertical sliding movement within the housing, a ball and socket connection between said sliding member and said pin and a rolling applicator carried by said sliding member.

5. In a roller massage machine, the combination with a vertically reciprocating member of a stud projecting from said reciprocating member, a frame mounted for sliding movement on said stud, a series of rollers journaled in said frame and a spring arranged between said frame and stud for yieldingly resisting the movement of said frame and rollers in one direction.

In testimony whereof I affix my signature.

DAVID GUSTAVESON.