

CERTIFICATE OF TRANSLATION ACCURACY

I am a professional translator, reviewer, and coordinator specializing in translating Korean, Japanese and Chinese to English and vice versa.

I served as Chief Examiner of the certified court interpreter test for the State of California and as a contract translator and interpreter for various federal agencies through the U.S. Department of State for more than a decade. I served as an instructor at the University of California at Berkeley and the Middlebury Institute of International Studies at Monterey (MIIS) Graduate Program in Translation.

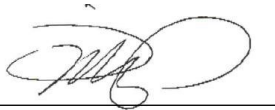
I have more than 30 years of experience translating thousands of technical, legal, and business documents from Korean to English submitted to, among others, Korean judicial authorities, U.S. federal courts, the U.S. International Trade Commission (ITC), and the USPTO Patent Trial and Appeal Board (PTAB).

I certify that I translated the following document from Korean into the English language. I also certify that this is a true, correct, and complete translation of the corresponding source text to the best of my knowledge and ability.

I certify under penalty of perjury that the foregoing is true and correct.

Executed this 15th day of November 2024 in Boston, Massachusetts.

By:



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(54) Title of the Invention: **AUTOMATIC PERCUSSION MASSAGER**

Abstract

The present invention relates to an automatic percussion massager, which is easily portable, and adapted to provide a certain pressure impact to the human body to facilitate recovery from fatigue or breakdown of body fat, comprising a motor (14) operated by an on/off switch (30) for selecting or deselecting a massage function; a rotating gear (18) which is exactly reversely rotated by a gearbox (16) which converts the rotational force of the motor (14) into a reverse direction; a linear gear (20) which meshes with the rotating gear (18) and reciprocates in a linear line along a guide (26); a massage rod (22) which is integrally formed with the rotating gear (18) and the linear gear (20) and reciprocates in and out of a case (40); and a cylindrical protective cover (50) comprising a protective cover (50) having a cylindrical shape with one side pressed against the case (40) and a contact member (52) in planar contact with the human body on the other side, the contact member (52) having a wrinkled member (56) in the middle for adjustable length, the contact member (52) having a heat wire (58) embedded therein whose temperature is regulated by a thermostatic control switch (28), a body fat sensor (54) for measuring body fat, and a temperature sensor (60) for measuring the temperature of the heated area by the heat wire (58), wherein the case (40) is configured with a display (32) for temporally displaying the body fat value under the control of a control device (34) that processes the measurement signal of the body fat sensor (54).

Representative Drawing

FIG. 1

Index Terms

Massager.

Specification

Brief Description of the Drawings

FIG. 1 is a cross-sectional view of a percussion massager according to the present invention.

FIG. 2 is a diagram of the power transmission system of a percussion massager according to the present invention.

FIG. 3 is a side view of a percussion massager according to the present invention.

* Brief descriptions of numeral codes for the main parts of the drawing *

10 : Body	12 : Power
14 : Motor	16 : Gearbox
18 : Rotating gear	20 : Linear gear
22 : Massage rod	24 : Support
26 : Guide	28 : Thermostat control switch
30 : On/Off switch	32 : Display

34 : Control device	36 : Massage ball
38 : Massage bump	40 : Case
50 : Protective cover	52 : Contact member
54 : Body fat sensor	56 : Wrinkled member
58 : Heat wire	60 : Temperature sensor

Detailed Description of the Invention

Object of the Invention

Technical Field of the Invention and the Conventional Art in the Field

[0002] The present invention relates to an automatic percussion massager, which is capable of massaging an area of the body by applying a pressure with a certain amount of impact or more to the human body.

[0003] Currently developed handheld massagers are generally designed to be used by the practitioner to massage or acupressure the desired area by tapping or rubbing with his or her hands, or to vibrate using the rotational force of a motor.

[0004] The problem with these traditional massagers is that they use vibrating forces to tap or rub the skin, which can provide a temporary or momentary sense of relaxation, but they don't provide the satisfaction of actually relieving the body of fatigue in the long run.

Technical Problem To Be Solved by the Invention

[0005] The present invention aims to solve the above-mentioned problems by providing an automatic percussion massager that is easy to carry by a user and that can be used to facilitate fatigue recovery or body fat decomposition by applying pressure to the human body with a certain amount of impact or more.

[0006] Furthermore, the present invention has the further object of providing an automatic percussion massager that can visually determine the amount of body fat on a particular body part and perform the massage accordingly.

[0007] The present invention has a further object in providing an automatic percussion massager that allows the massaged area to be steamed to a predetermined temperature to further enhance the effectiveness of the massage.

[0008] The automatic percussion massager of the present invention for realizing the aforementioned objects comprises a motor operated by operation of an on/off switch for selecting or deselecting a massaging function in the lower part of a case forming an exterior; a rotating gear reversely rotated by a gearbox which converts the rotational force of the motor into a reverse direction; a linear gear which meshes with the rotor and reciprocates in a linear line along a guide; a massaging rod integrally formed with the rotor and linear gear to reciprocate in and out of the case; and a cylindrical protective cover configured to have a length adjustable wrinkled member in the middle part, and a heat wire having a temperature adjustable by a temperature control switch, and a body fat sensor for measuring body fat, wherein a temperature sensor for measuring the temperature of the area heated by the heat wire is installed, and wherein the case comprises a display device for visually displaying the measured body fat value under the control of a control device for processing the measurement signal of the body fat sensor.

Composition and Operation of the Invention

[0009] Hereinafter, the composition and operation of the present invention will be described with reference to the accompanying drawings.

[0010] FIG. 1 is a cross-sectional view of an automatic percussion massager according to the present invention, FIG. 2 is a power transmission system diagram of an automatic percussion massager according to the present invention, and FIG. 3 is a side view of an automatic percussion massager according to the present invention.

[0011] As shown in the drawings, the automatic percussion massager of the present invention comprises a body 10 and a protective cover 50.

[0012] The body 10 has a case 40 having a "T" shape, and a power supply unit 12 mounted on the lower part of the case 40 that converts the rated power into a suitable operating power, and the operating power supplied by the power supply unit 12 is transmitted to the motor 14 as the user operates the on/off switch 30 for selecting or deselecting the massage function. The rapid rotational force of the motor 14, which operates as the operating power is supplied, is slowed down to a suitable speed by the gearbox 16 and transmitted to the rotating gear 18, and the rotational force of the rotating gear 18 is transmitted to the engaged linear gear 20 to cause the massage rod 22 formed integrally with the linear gear 20 to reciprocate in a linear line. The linear motion of the linear gear 20 is performed by the gearbox 16, which is adapted to instantaneously change the direction of rotation of the motor 14.

[0013] The guide 26 keeps the linear gear 20 from deviation, and the guide 26 is fixedly supported on the body 40 by the support 24.

[0014] A massage ball 36 is fixedly or removably attached to the end of the massage rod 22, and a plurality of massage bumps 38 are configured on the surface of the massage ball 36 to enhance the massage effect.

[0015] The massage bumps 38 are preferably made of a soft material to prevent severe impact on the human body, and the thickness of each bump 38 is preferably varied so that the user can easily select and use the desired one.

- [0016] The protective cover 50 is for protecting the massage ball 36 that reciprocates in a linear line outwardly of the body 40, and comprises a human body contact member 52 that is restrained by the body 40 on one side, and a human body contact member 56 that is formed on the other side in direct contact with the human body, and a length adjustment part 56 that can be extended or retracted by a predetermined length in the longitudinal direction to allow free length adjustment.
- [0017] The protective cover 50 can be shortened or lengthened longitudinally to arbitrarily adjust the degree of impact of the massager 36 on the human body, and the human body contact member 52 has a predetermined area for planar contact with the human body.
- [0018] The human body contact member (52) is configured to enhance the massage effect by manufacturing it with magnets, jade, charcoal or ochre, and is configured to perform a compress by applying a predetermined heat to the body part to be massaged by installing a heat wire (58) that emits a predetermined heat by a power supplied by the power supply part (12), A temperature sensor (60) capable of measuring the temperature of the body part being heated by the heat wire (58) and a temperature control switch (28) capable of adjusting the temperature of the heat wire (58) are configured to enable a user to easily adjust a suitable temperature of the compress.
- [0019] In addition, the human body contact member 52 comprises a body fat sensor 54 that measures body fat, a control device 34 that processes data measured by the body fat sensor 54, and a display device 32 that displays the measured body fat value according to a control signal of the control device 34, so that a user can visually check the body fat of a specific area and utilize it for more effective body fat removal.
- [0020] The invention is not limited to the foregoing embodiment, but may be practiced in various configurations without departing from the technical ideas of the invention.

Effect of Invention

- [0021] According to the foregoing invention, there is provided an automatic percussion massager that can be carried by a user and held in the hand for easy massage or acupressure of any part of the body.
- [0022] By applying sufficient heat and sufficient pressure to the skin, the automatic percussion massager according to the present invention has the effect of improving blood circulation and facilitating the decomposition of body fat, and thus has a useful effect in preventing or treating adult diseases.

What is claimed is

Claim 1

A automatic percussion massager configured with a rotary gear (18) rotated in a reverse direction by a gearbox (16) that converts the rotational force of the motor (14) into a reverse direction by operation of an on/off switch (30) for selecting or de-selecting a massage function installed in the lower part of the case (40) forming the exterior; a linear gear (20) that meshes with the rotary gear (18) and reciprocates in a straight line along a guide (26); a massage rod (22) integrally configured with the linear gear (20) to reciprocate in and out of the case (40), with one side pressed against the case (40) and a contact portion (52) in planar contact with the body at the other side, a cylindrical protective cover (50) having a length-adjustable corrugated portion (56) in the middle portion, the contact portion (52) having a heat wire (58) whose temperature is regulated by a thermostatic switch (28) mounted on an outer side of the case (40), wherein a temperature sensor (60) is installed to measure the temperature of the area heated by the heat wire (58), a body fat sensor (54) is installed to measure the body fat of a particular area, and the case (40) is configured with a display unit (32) that visually displays the measured body fat value under the control of a control device (34) that processes the measurement signal of the body fat sensor (54).

Drawings

FIG. 1

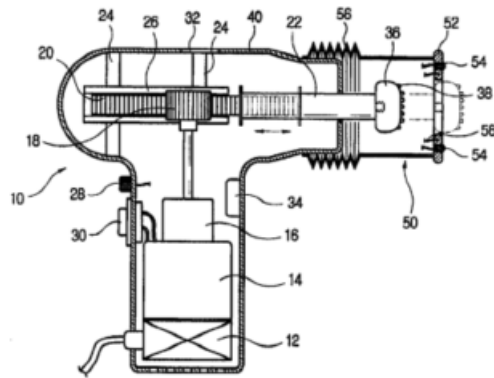


FIG. 2

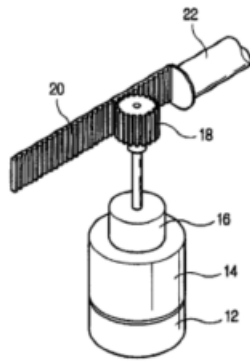


FIG. 3

