Nov. 18, 1941. R. B. LYBARGER 2,263,219

MASSAGING INSTRUMENT

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Fig. 1.

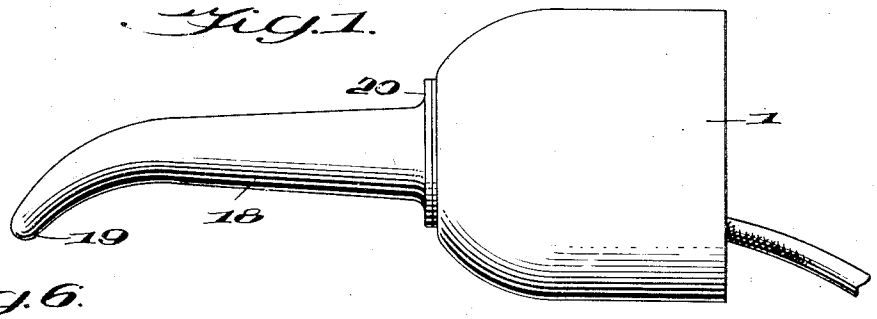


Fig. 6.

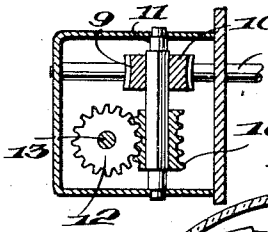


Fig. 2.

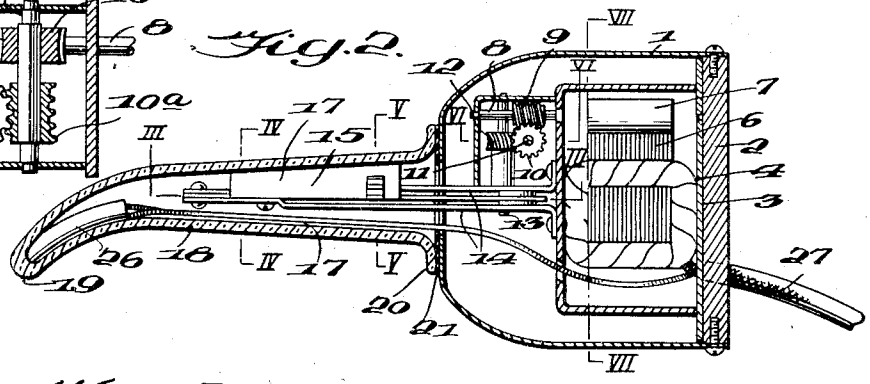


Fig. 3.

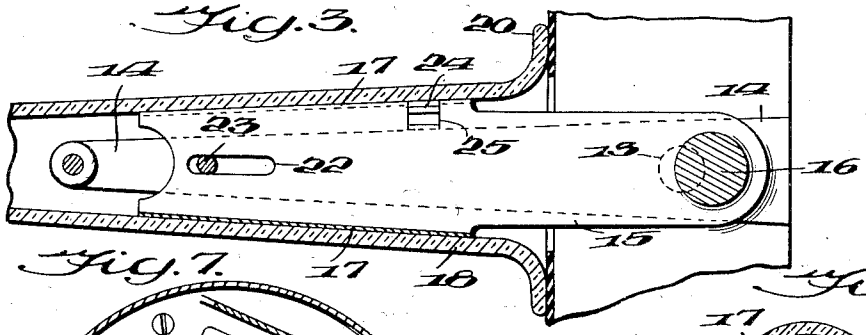


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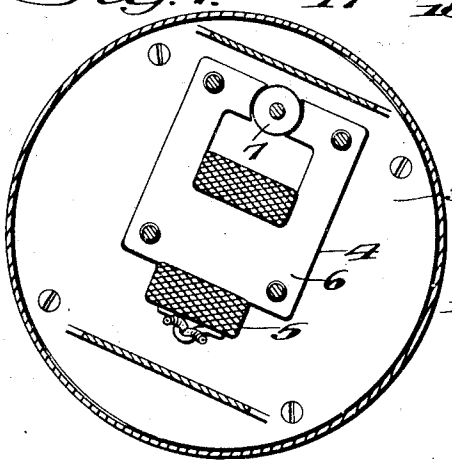


Fig. 5.

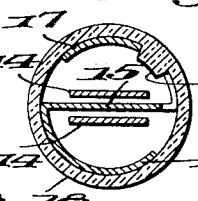
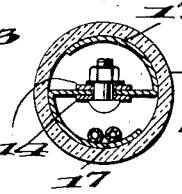


Fig. 4.



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Fig. 8

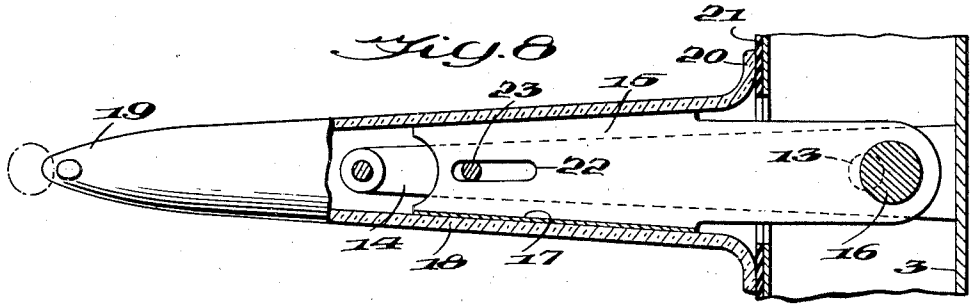


Fig. 9

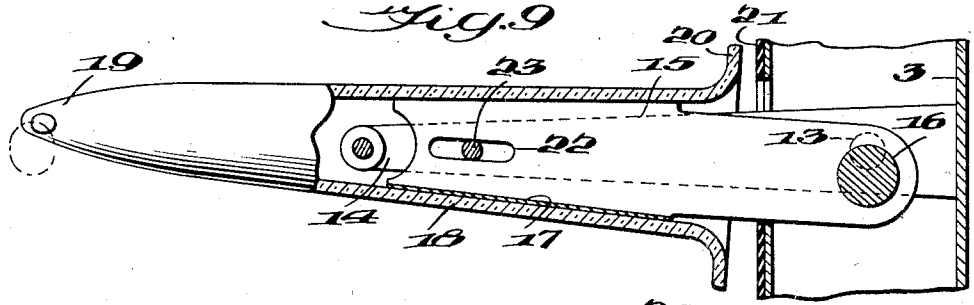


Fig. 10.

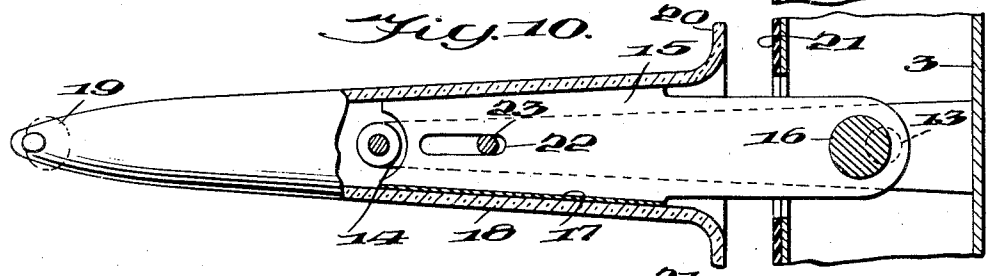


Fig. 11.

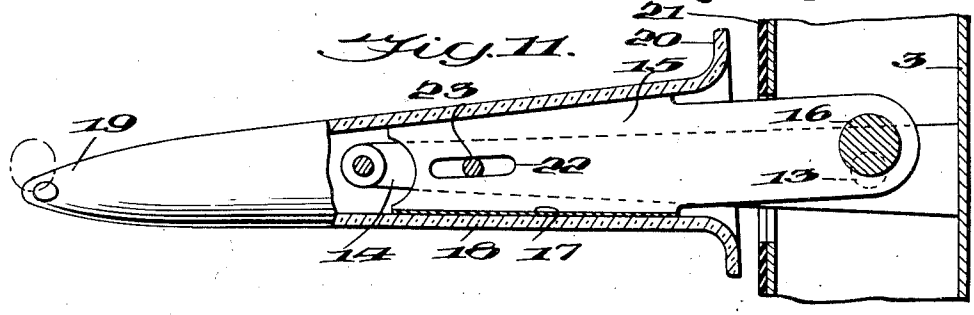
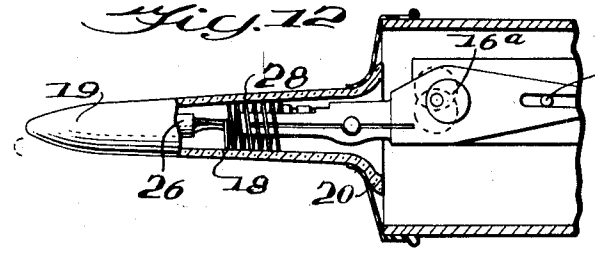


Fig. 12



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UNITED STATES PATENT OFFICE

2,263,219

MASSAGING INSTRUMENT

Robert B. Lybarger, Columbus, Ohio

Application June 28, 1939, Serial No. 281,710

2 Claims. (Cl. 128—24.1)

This invention relates to improvements in instruments for massaging, dilating and heating the surfaces and organs of the human body as an aid in treating many types of pathological conditions by accelerating the physiological process.

More particularly, the invention provides an improved means for effecting a controlled massaging and application of heat to internal bodily cavities or organs by an anatomically shaped movable applicator, the latter being operated by any suitable source of power and containing appropriate heating elements.

Another object of the invention resides in the provision of an applicator for massaging instruments having smooth surfaced walls of rigid or flexible materials, the walls possessing externally a desired anatomical configuration, the interior of the applicator being formed to include an elongated chamber for the reception of means for effecting the support and oscillation of the applicator in association with a conjoined manipulative casing.

A further object of the invention resides in providing the internal chamber of the applicator with an electrically, or otherwise energized heating element, the latter being so mounted and disposed within the applicator as to uniformly heat the latter to a temperature considerably above the normal body temperature in order that the therapeutic value of the instrument will be increased. This is accomplished by providing not only for the mechanical massaging action on the affected areas but also through the action of heat in causing dilation of blood vessels and accompanying increase in rapidity of circulation, together with the expanding and opening of the pores of the cells to facilitate the elimination of waste matter. This also serves to materially increase and accelerate the circulation.

With these and other objects in view as will be apparent as the description proceeds, the invention consists in the novel features of construction, combination of elements and arrangements of parts hereinafter fully described and pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a side elevation of the improved massaging instrument comprising the preferred form of the present invention;

Fig. 2 is a vertical longitudinal sectional view taken through both the casing and applicator of the instrument and disclosing internal mechanism;

Fig. 3 is a horizontal sectional view on the plane indicated by the line III—III of Fig. 2 and illustrating the means for effecting the support and oscillatory or orbital movement of the applicator;

Fig. 4 is a transverse sectional view taken through the applicator on the line IV—IV of Fig. 2;

Fig. 5 is a similar view on the line V—V of Fig. 2;

Fig. 6 is a detailed sectional view taken through the speed reducing gearing on the plane disclosed by the line VI—VI of Fig. 2;

Fig. 7 is a vertical transverse sectional view taken through the casing and electric motor on the plane disclosed by the line VII—VII of Fig. 2.

Figs. 8 to 11 inclusive are horizontal sections partly in elevation and show the applicator in different stages of movement.

Fig. 12 is a horizontal longitudinal sectional view of a slightly modified form of instrument.

Referring more particularly to the drawings, the numeral 1 designates the casing of the massaging appliance, which casing is so proportioned that it may be readily grasped by the hands of the operator. One side of the casing is closed by a removable wall 2, and to the inner side of this wall, there is suitably connected a frame 3 of a synchronous electric motor 4. The field windings of the motor are indicated at 5, the pole frames therefor at 6, and the armature at 7. Preferably the motor is of a type which will maintain a constant speed when excited by a 110 volt A. C. circuit of the usual commercial type.

The armature shaft 8 of the motor drives a worm 9, meshing with a worm gear 10 disposed on a counter-shaft 11, and a worm gear 10a on said counter-shaft 11 drives a complemental gear 12 provided on a vertically journaled eccentric operating shaft 13.

Projecting forwardly from the frame 3 are spaced stationary arms 14—14 between which is received a metallic applicator support 15. The inner end of the support 15 is provided with a circular opening in which is received an eccentric 16 carried by or formed with the lower end of the shaft 13, so that as the shaft 13 revolves, an eccentric back and forth movement will be imparted to the support 15.

The said applicator support comprises a flat horizontally extending section of metal which has its outer portions formed with reversely curved bearing sections 17, which are shaped to snugly engage the inner walls of a hollow applicator 18, the latter possessing a shape or curva-

ture best adapting the same to the bodily passage or cavity in which it is received. Preferably, the applicator is formed from a glazed heat treated ceramic material so that the walls thereof are rigid and unyielding. However, the walls of the applicator may be formed from other suitable materials and may be either rigid or flexible.

In the particular form of the applicator disclosed, the latter is adapted for use in the treatment of prostatic disorders and includes a reduced and laterally curved tip **19**, the body of the applicator gradually increasing from the tip **19** to a relatively wide flange **20** provided at the proximal end thereof, a gasket **21** of yieldable material being interposed between the flange **20** and adjacent surfaces of the casing **1**.

Contiguous to its outer end, the support **15** is provided with an elongated slot **22**, in which is received a fulcrum pin or bolt **23**, the latter being stationarily connected with the arms **14—14**. Since the arcuate portions **17** of the support **15** are snugly received within the interior of the applicator, it follows that as the said support is actuated by the rotating eccentric **16**, the eccentric back and forth movement of the support **15** will be imparted to the applicator, causing the tip end **19** thereof to have an orbital circular movement. The applicator is positively retained on the support **15** by providing the applicator interiorly with a lug or shoulder **24** which is receivable within a slot **25** formed in the support **15**.

Preferably, the applicator is heated by providing the tip end thereof internally with an electric resistor **26**, the resistor being enclosed within an asbestos wrapping which serves to uniformly distribute the heat of the resistor over the tip area of the applicator.

In view of the foregoing, it will be seen that the present invention provides a simple and readily actuated massaging instrumentality wherein the applicator instead of merely vibrating, as in former appliances of this character, possesses an oscillatory back and forth movement by which improved circulation in the bodily areas undergoing treatment is obtainable. The current conveying wires enter the casing by way of a cable **27**, from any suitable source of current supply and extend to the windings of the motor **4** and to the resistor **26**. The worm gearing serves to reduce the high rotative speeds of the motor armature shaft to the desired point, so that the applicator will possess a relatively slow movement best adapted for its efficient operation.

The resistor for heating the applicator to a predetermined degree of temperature is mounted within the hollow interior of the applicator at any suitable position in the length of the same, the applicator being of anatomical configuration conforming to the bodily cavity in which it is adapted for use. The applicator may be so mounted as to oscillate about the axis of the pin **23** in order to have a strictly oscillatory movement. It will be particularly noted that the applicator of the present invention is mounted and operated so that it possesses the oscillatory movements when in use as above set forth, and in this respect the present applicator differs from vibrators of the prior art.

In the modified form of the invention shown in Fig. 12, the fulcrum pin **23***a* has been disposed on the opposite side of the eccentric shaft **16***a* from the applicator. This arrangement provides for increased movement of the applicator and avoids the necessity of extending the stationary frame into the applicator. As also illustrated in Fig. 12, the applicator may be connected with its movable support through the use of a coil spring **28** to give the device a gentler action and avoid injury to the parts of the body with which it contacts in use.

What is claimed is:

1. A massaging appliance comprising a casing having an opening formed in a forward wall thereof, a substantially hollow rigid-walled applicator of anatomical configuration carried by and extending longitudinally from said casing, the inner end of said applicator being open for registration with the opening in said casing wall, a supporting bracket carried by said casing and projecting into the interior of said applicator, a ferrule positioned within and connected with said applicator, a pin and slot connection uniting said ferrule with said bracket, and a motor driven eccentric for oscillating the inner end of said ferrule.

2. In a massaging instrument, a hollow conical applicator having a laterally directed closed end, a casing positioned at the open end of said applicator, motor driven reciprocatory means disposed in said casing, flexible means positioned in said applicator, and motion transmitting means connecting said flexible means with said reciprocatory means whereby the laterally directed end of the applicator will move in a plane parallel with the longitudinal axis of the applicator.

ROBERT B. LYBARGER.