

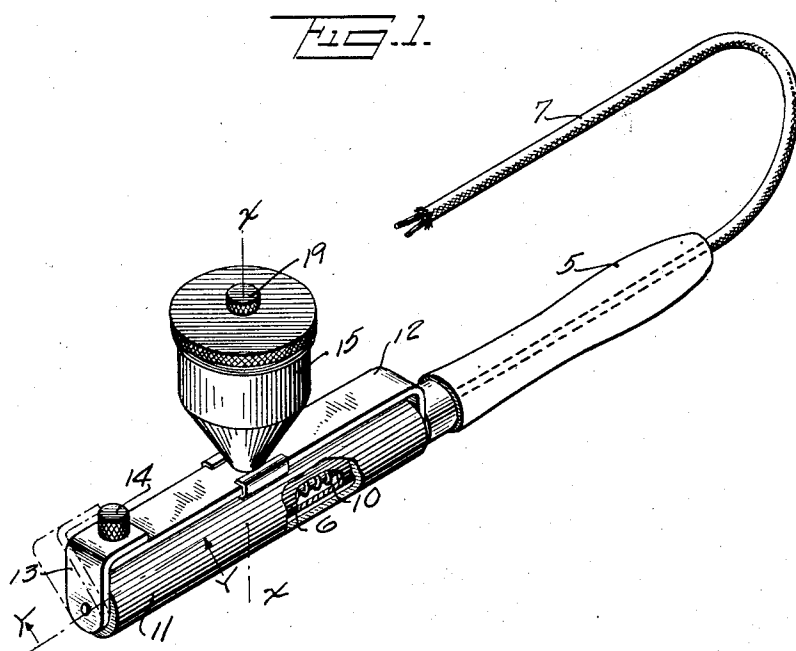
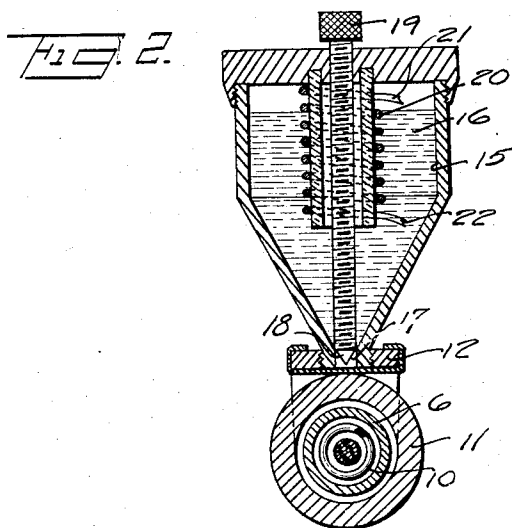
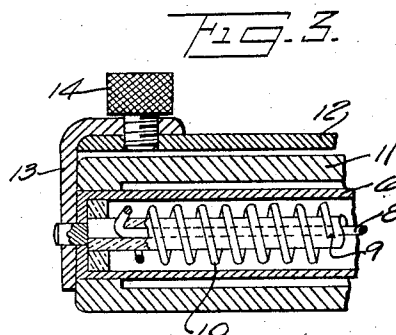
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METHOD AND APPARATUS FOR PROMOTING OSMOTIC ABSORPTION

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METHOD AND APPARATUS FOR PROMOTING OSMOTIC ABSORPTION

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My invention relates to a method and apparatus for promoting osmotic absorption of medicinal preparations through the skin into the blood and tissues. Osmotic absorption of medicinal preparations, as usually practiced, consists in spreading the medicinal preparations on the surface of the skin, and then, through the hand, or by means of a roller, rubbing such preparations into the skin.

As thus practiced, osmotic absorption is very slow, and further, objectionable as many of the medicinal preparations used tend to stain and soil the hands, and further, bring about osmotic absorption by the person making the application, and in the case where the application is made by a physician or nurse, of different preparations, the effect upon such physician or nurse is frequently very unfortunate.

My invention, therefore, consists in a method and means by reason of which medicinal preparations may be applied to the skin, and osmotic absorption materially increased, without the disadvantages mentioned above.

The accompanying drawing will serve to illustrate one form of apparatus which may be employed. I wish it understood, however, that the form and details of construction of the apparatus may be materially modified, without departing from my invention.

In the drawing: Fig. 1 is a view in perspective of my improved apparatus, the view being broken away to show an internal heating tube, and also showing in dotted lines at the left, the mechanism employed, by reason of which the roller may be removed for cleaning or otherwise.

Fig. 2 is a vertical section taken on line $x-x$ of Fig. 1.

Fig. 3 is a longitudinal section taken on line $y-y$ of Fig. 1.

In the drawing: 5 indicates a handle which is connected at its right hand end to a tubular heating unit, 6. 7 is an electric conductor connected at its terminals to the conductors 8—9 of the resistance wire, 10, of the heating unit. 11 indicates a roller which

is supported on the outside of the heating unit, 6, and which is free to revolve thereon. Supported upon the heating unit, 6, at the right hand end, and over the roller, 11, is a frame, 12. Pivotaly connected to the left hand end of the heating unit, is a bracket, 13, the right hand end of which overlaps the top of the frame, 12, and may be secured thereto by the screw 14. Mounted on top of the frame, 12, in any suitable manner is a reservoir, 15, adapted to contain the medicinal preparation, 16, which is to be applied through the apparatus. The orifice, 17, at the lower portion of this reservoir is controlled by a needle valve, 18, which may be actuated by the screws 19 to control the delivery and flow of the medicinal preparation to the surface of the roller, 11. Located within the reservoir, 15, is a heating unit, 20, which has for its purpose to heat the medicinal preparation when desired. This heating unit is connected through the terminals 21—22 to the conductors leading through 7 to the source of electric energy.

Slidably mounted on the frame 12 is a member 23 having upwardly and inwardly turned portions 24 engaging the side edges of said frame, as clearly shown in Figs. 1 and 2 of the drawing. The member 23 is adapted to be moved into registration with the opening 17 so as to cover said opening when the device is not in use. With this construction the needle valve may either be omitted or remain in adjusted position when the massaging device is not in use, the member 23 serving to close the orifice to prevent dripping of the medical preparation. Obviously, when the device is used the slider 23 is moved out of registration with said orifice.

The operation of my improved device will be readily understood. The medicinal preparation to be applied is introduced into the reservoir, and heated if desired. From the reservoir, it is fed upon the outer surface of the roller, 11, which roller is heated if desired, through the instrumentality of the heating unit, 6. Movement of the roller, 11, by hand or otherwise across the part to which the medicinal preparation is to be applied insures a practically even distribution of the medi-

nal preparation over the part and its rapid osmotic absorption without involving the objections previously recited.

Having thus described my invention, I claim:

1. A massaging instrument comprising a handle, a heating element carried by said handle, a frame also carried by said handle having a portion parallel to said heating element, a roller rotatably mounted on said heating element, and an angle shaped member adjustably attached to one end of said portion of said frame, having a portion adapted to engage an end of said roller.
2. A massaging instrument comprising a handle, a heating element carried by said handle, a frame also carried by said handle having a portion parallel to and spaced from said heating element, a roller carried by said heating element, a member having a portion overlying said portion of said frame, and a portion extending at right angles to said portion of said member, adapted to engage one end of said roller, and a setscrew for attaching the first portion of said member to said portion of said frame.
3. A massaging instrument comprising a handle, a heating element carried by said handle, a frame also carried by said handle having a portion parallel to and spaced from said heating element, a roller carried by said heating element, a member having a portion overlying said portion of said frame, and a portion extending at right angles to said portion of said member, adapted to engage one end of said roller, a set screw for attaching the first portion of said member to said portion of said frame, and a container for medical preparation mounted on said portion of said frame and having means to pass said preparation to said roller.
4. A massaging element comprising an elongated handle, an elongated heating element attached to said handle and extending longitudinally thereof, a frame comprising a portion disposed between the heating element and the handle, and extending at right angles to the axis of said handle, and a second portion extending from said first portion and extending parallel to said heating element and spaced therefrom, an elongated hollow roller rotatably mounted on said heating element, and an angle shaped member having a portion screwed to the free end of said second portion of said frame and a portion parallel to said first portion of said frame adapted to contact one end of said roller.
5. A massaging element comprising an elongated handle, an elongated heating element attached to said handle and extending longitudinally thereof, a frame comprising a portion disposed between the heating element and the handle, and extending at right angles to the axis of said handle and a second portion extending from said first portion and

extending parallel to said heating element and spaced therefrom, an elongated hollow roller rotatably mounted on said heating element, an angle shaped member having a portion screwed to the free end of said second portion of said frame and a portion parallel to said first portion of said frame adapted to contact one end of said roller, said second portion of said frame being provided with a screw threaded opening, and a container having a portion screwed to said opening and being provided with an opening to permit substance within said container to pass to said roller.

6. A massaging element comprising an elongated handle, an elongated heating element attached to said handle and extending longitudinally thereof, a frame comprising a portion disposed between the heating element and the handle, and extending at right angles to the axis of said handle and a second portion extending from said first portion and extending parallel to said heating element and spaced therefrom, an elongated hollow roller rotatably mounted on said heating element, an angle-shaped member having a portion screwed to the free end of said second portion of said frame member and a portion parallel to said first portion of said frame member adapted to contact one end of said roller, a container mounted upon said second portion of said frame, said second portion of said frame being provided with an opening to permit substance within said container to pass to said roller, and a closure cap screwed to the upper end of said container.

7. A massaging element comprising an elongated handle, an elongated heating element attached to said handle and extending longitudinally thereof, a frame comprising a portion disposed between the heating element and the handle, and extending at right angles to the axis of said handle, and a second portion extending from said first portion and extending parallel to said heating element and spaced therefrom, an elongated hollow roller rotatably mounted on said heating element, and an angle shaped member having a portion screwed to the free end of said second portion of said frame and a portion parallel to said first portion of said frame adapted to contact one end of said roller, said handle having a longitudinal opening and conductor wires attached to the heating unit extending through said longitudinal opening.

8. A massaging element comprising an elongated handle, an elongated heating element attached to said handle and extending longitudinally thereof, a frame comprising a portion disposed between the heating element and the handle and extending at right angles to the axis of said handle, and a second portion extending from said first

portion and disposed parallel to said heating element and spaced therefrom, an elongated hollow roller rotatably mounted on said heating element and a container mounted on said second portion of the said frame having means to pass a substance therein to said roller.

9. A massaging element comprising an elongated handle, an elongated heating element attached to said handle and extending longitudinally thereof, a frame comprising a portion disposed between the heating element and the handle and extending at right angles to the axis of said handle, and a second portion extending from said first portion and disposed parallel to said heating element and spaced therefrom, an elongated hollow roller rotatably mounted on said heating element and a container mounted on said second portion of said frame having means to pass a substance therein to said roller, said handle having a longitudinal opening therein and wires connected to said heating element extending through said longitudinal opening to the free end of said handle.

In testimony whereof, I affix my signature.

HERBERT OPPENHEIMER.

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