

W. MINER.
MESSAGE APPARATUS.
APPLICATION FILED FEB. 6, 1904.

NO MODEL.

Fig. 1.

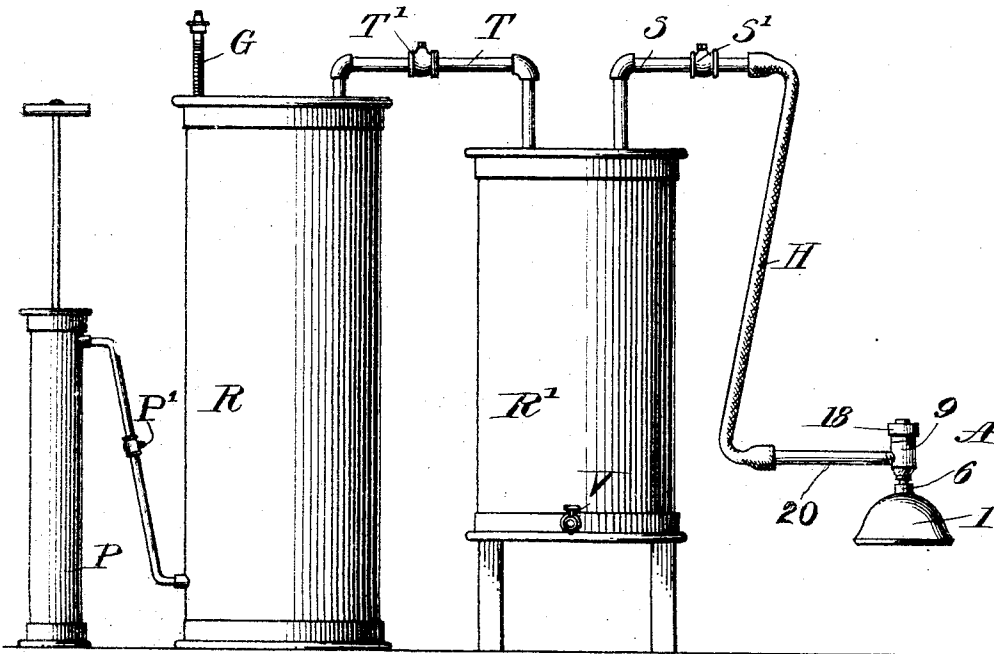


Fig. 3.

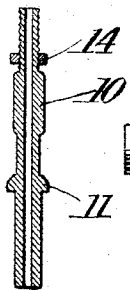
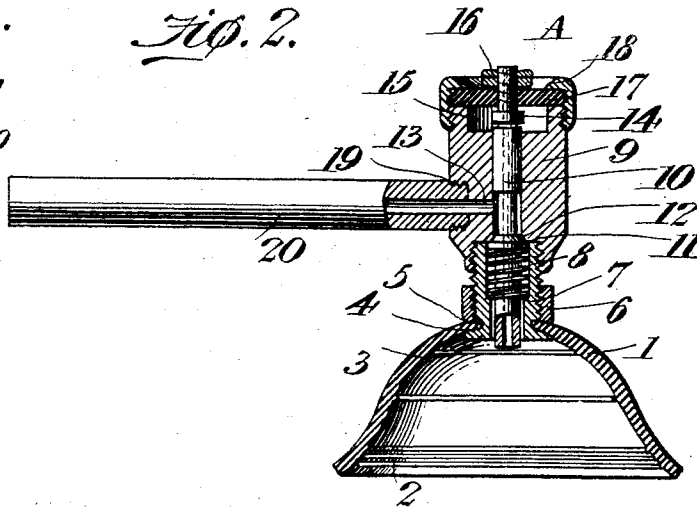


Fig. 2.



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UNITED STATES PATENT OFFICE.

WALTER MINER, OF CRESTON, IOWA, ASSIGNOR OF ONE-HALF TO A. D. GUSTIN, OF CRESTON, IOWA.

MESSAGE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 765,746, dated July 26, 1904.

Application filed February 6, 1904. Serial No. 192,416. (No model.)

To all whom it may concern:

Be it known that I, WALTER MINER, a citizen of the United States, residing at Creston, in the county of Union and State of Iowa, have
5 invented a new and useful Massage Apparatus, of which the following is a specification.

This invention relates to massage apparatus, and has relation more particularly to massage apparatus of the type in which a partial vacuum is the means employed for developing the portion of the body to which the apparatus is applied.
10

The principal object of the invention is to provide an improved form of massage apparatus of the type specified in which means is provided for readily controlling the degree of suction produced by the apparatus and for entirely relieving the part of any suction prior to removing the apparatus from operative
15 position.

In attaining the object above mentioned and others which will appear as the invention is more fully disclosed I prefer to make use of the novel construction and combination of
20 parts hereinafter fully described and having the novel features thereof clearly pointed out in the appended claims.

In describing the invention reference will be had to the accompanying drawings, in which
25 the preferred form of embodiment of the invention is illustrated, it being understood that changes in the form, proportions, and exact mode of assemblage of the elements exhibited may be made within the scope of the appended
30 claims without departing from the spirit of the invention or sacrificing its advantages.

In the drawings, Figure 1 is a view in side elevation of the complete apparatus. Fig. 2 is a view in section, upon an enlarged scale, of
35 the suction device. Fig. 3 is a detail view, in longitudinal section, through the valve-plug.

Referring to the drawings, P designates an exhaust-pump of any suitable construction for producing a vacuum within the reservoir
40 R, to which the pump is operatively connected.

G is a gage of any suitable type mounted upon the reservoir R and used to indicate the degree of exhaustion within the reservoir.

R' is a smaller reservoir connected with the reservoir R by means of a tube T, provided with a check-valve T' intermediate of
45 its ends.

S designates a suction-tube extending from the top of the smaller reservoir R', and H is a hose of rubber or other flexible material attached to the end of the suction-tube S.
50

The exhaust-pump is provided with a valve P', by means of which communication between the exhaust-pump and the reservoir R may be cut off, as shown, and a valve V is provided in the bottom of the reservoir R' to discharge the contents thereof. If desired, a valve S' may be provided in the suction-tube S; but such a valve is not necessary. The hose H forms the flexible connection between the suction-tube S and the device to be applied to the surface of the body and indicated generally as A.
55

The device A consists, essentially, of a substantially hemispherical cup 1, of soft rubber, preferably provided on its concave surface with a plurality of concentric ribs or ridges 2 and having the margins thereof flared slightly outward, as shown. The cup 1 is secured upon a short externally-threaded
60 tube 3, which extends through an opening at the center of the cup and is provided at its end with an outwardly-projecting flange 4, spaced from the threads upon the outside of the tube by a circumferential groove 5, into which the resiliency of the material of the cup causes it to fit closely. The cup is secured upon the tube 3 by means of an internally-threaded collar 6, which is screwed down upon the outer surface of the cup, as shown in
65 Fig. 2, and is provided with a concave clamping-face to correspond to the slope of the flange 4 of the tube 3. Near its lower end the tube 3 is provided with a small inwardly-disposed flange 7, which forms a seat for the support of a spiral valve-spring 8, which is fitted in the bore of the tube. The tube 3 itself is screwed into the end of a valve-casing 9, in which works a valve-plug 10, which is preferably of tubular form, as shown, and is
70 provided with a flange 11, which is held nor-

mally in contact with a shoulder 12 within the valve-casing by the spring 8. The valve-plug is slightly reduced in diameter above the flange 11 to provide an air-passage between
 5 the plug and the wall of the valve-casing, which has a small lateral opening 13 therein slightly above the shoulder 12. At its upper end the valve-plug is externally threaded, as shown, and a small collar 14 is screwed upon
 10 the said threaded portion to limit the longitudinal movement of the valve-plug in the casing. The upper end of the casing is counter-bored, as shown at 15, and the downward movement of the plug against the upward
 15 pressure of the spring 8 is limited by the contact of the collar 14 with the bottom of the said counterbore.

To facilitate the downward movement of the valve-plug against the pressure of the
 20 spring 8, a collar 16 is screwed upon the upper end of the valve-plug, and in order to prevent the escape of air at the upper end of the valve-casing a rubber disk 17 is secured over the counterbore 15 by means of a collar 18,
 25 having an inwardly-disposed flange which presses the disk firmly against the outer end of the valve-casing.

In order to afford a suitable connection between the hose H and the suction-cup 1, the
 30 lateral opening 13 into the bore of the valve-casing is counterbored, as shown at 19, and a tubular handle 20 has one end screwed firmly into said counterbore, and the other end is fitted into the end of the hose.

In using the apparatus as above described the suction-cup 1 is applied to any portion of the body upon which it is desired to maintain suction for any purpose, and, if necessary, a thick ointment or other suitable lute is spread
 40 over the surface of the body at that point in order to insure air-tight contact of the margin of the cup with the cuticle. The valve-plug is then manually depressed against the pressure of the spring 8 in order to permit the passage of
 45 air through the tubular handle from the valve-casing into the suction-tube. The valves in the suction-tube and in the tube connecting the reservoirs R and R' being open, the air will be drawn out of the suction-cup 1 through
 50 the reservoir R' and into the larger reservoir, it being of course understood that a suitable degree of exhaustion has first been produced in the reservoir R by the operation of the exhaust-pump P. When the desired degree of
 55 suction has been produced over the area covered by the cup 1, the pressure of the operator's thumb upon the valve-plug will be slightly relaxed and the spring 8 will at once raise the plug and cut off the escape of air
 60 from the suction-cup. After suction has been maintained for a sufficient length of time the operator will remove his thumb and air will be allowed to enter the suction-cup through the bore of the tubular valve-plug,

thus restoring the normal atmospheric pressure within the cup and permitting the cup to be detached from the surface treated without discomfort to the patient. 65

As is well known, massage devices of the general type to which this invention relates
 70 are used for a great variety of purposes—as, for example, the development of an increase of tissue in portions of the body where abnormal hollows and depressions exist, for dilating the arterioles in subcutaneous tissues
 75 in order to stimulate the activity of the hair-follicles, and for other purposes. Whatever the use to which the massage device is put it is exceedingly desirable that means for accurately gaging the degree of suction pro-
 80 duced be provided, and it is also a desideratum of importance to provide means for restoring the normal atmospheric pressure within the suction-cup prior to the removal of the suction-cup from contact with the surface of
 85 the body, as the removal of the suction-cup is otherwise attended by more or less discomfort to the patient and the good results desired from the use of the apparatus may be in part lost by the production of the small
 90 extravasations of blood into the subcutaneous cellular tissue.

From the foregoing description of the construction and use of the massage device it will be seen that by producing within the
 95 reservoir R and the smaller reservoir R' the desired degree of exhaustion, as indicated by the gage G, the operator may produce over any localized area of the body any degree of suction under fifteen pounds to the square
 100 inch. It will also be seen that the duration of the suction can be accurately gaged and the release of the suction-cup accomplished without any inconvenience or discomfort to the patient. 105

While only one suction-cup has been illustrated in connection with the other portions of the apparatus, it is to be understood that a plurality of suction-cups of different diameters will preferably be furnished with each
 110 apparatus in order that the area subjected to treatment may be accurately localized and the extension of the treatment to other portions of the surface upon which it is not required may be avoided. 115

The provision of the reservoir R' between the reservoir R and the suction-cup is merely to provide a chamber into which fluids drawn from the body by the action of the device
 120 when used for various medical and surgical purposes may be received and no interference with the action of the device be occasioned by the entrance of such fluids into the reservoir or exhaust-chamber R. In order to prevent the entrance of the fluids in the reservoir R' into the connecting-tube T, that tube is connected with the reservoir or chamber R'
 125 at the top, and body fluids entering the said

reservoir or chamber will not come into contact with the end of said tube until the reservoir or chamber is completely filled.

Having thus described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In apparatus of the class described, a suction-cup, a valve-casing operatively connected therewith, and a tubular valve-plug arranged in the casing and held normally in position to prevent escape of air between the plug and the casing.

2. In apparatus of the class described, a suction-cup, a valve-casing operatively associated with said cup, a tubular valve-plug arranged in said casing and held normally in position to prevent the escape of air between said plug and said casing, and an air-exhaust conduit leading outward from said casing.

3. In apparatus of the class described, a suction-cup, a tubular member upon which said cup is clamped, a valve-casing mounted on said tubular member, an air-exhaust conduit leading from said casing, and a spring-operated valve arranged in said casing and adapted to remain normally in position to prevent the passage of air between said plug and said casing.

4. In apparatus of the class described, a suc-

tion-cup, a tubular valve-casing secured upon said cup, an air-exhaust conduit leading from said casing, a valve-plug in said casing held normally in position to prevent the passage of air between said plug and said casing, and a seal upon the outer end of said casing to prevent the passage of air between said casing and said plug, said tubular plug being extended through said seal.

5. In apparatus of the class described, a suction-cup, a tubular valve-casing mounted on said cup and having a lateral aperture, an air-conduit leading from said lateral aperture, a spring-pressed tubular valve in said casing held normally in position to prevent the passage of air between the valve and the casing, a rubber disk having a central aperture through which said plug extends, means for clamping said disk upon the upper end of said casing and means on the valve-plug for clamping said disk in association with said valve-plug.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WALTER MINER.

Witnesses:

CHAS. E. SLAUGHTER,
J. M. McCORNACK.