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E. S. SAIGHMAN.
ELECTRICAL AND THERMAL CUPPING DEVICE.
APPLICATION FILED DEC. 30, 1903.

Fig. 1.

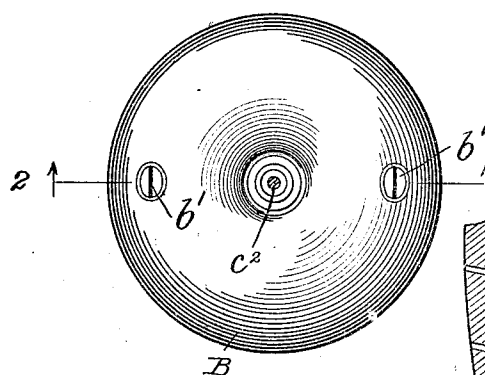


Fig. 4.

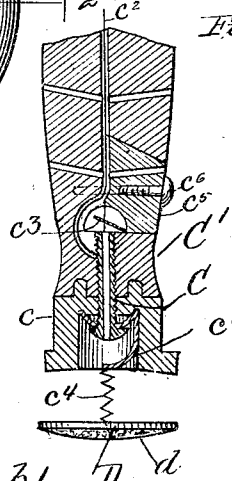


Fig. 2.

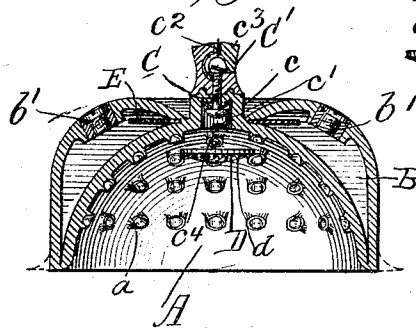


Fig. 3.



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UNITED STATES PATENT OFFICE.

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ELECTRICAL AND THERMAL CUPPING DEVICE.

No. 872,688.

Specification of Letters Patent.

Patented Dec. 3, 1907.

Application filed December 30, 1903. Serial No. 187,151.

To all whom it may concern:

Be it known that I, EDWARD S. SAIGHMAN, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Electrical and Thermal Cupping Devices; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates more particularly to a cupping device adapted to permit application of a higher or lower temperature to the surface operated upon and if desired to apply electricity during the treatment.

While cupping devices have, prior to this, been constructed consisting of a single flexible cup of resilient material, such as rubber, it has been difficult if not impossible to apply heat or cold continuously to the surface treated during the cupping operation. Neither has it been possible in former devices to electrically excite the surface during treatment.

The object of this invention is to provide a device of the class described adapted not only to operate normally as a cupping device, but also to enable thermal effects to be obtained and, if desired, enabling the temperature to be varied during the application.

It is a further object of the invention to provide means adapted to permit the application of electricity to the part treated during the normal operation of the device, as before described.

The invention embraces many novel features and consists in the matters hereinafter described and more fully pointed out and defined in the appended claims.

In the drawings: Figure 1 is a top plan view of a device embodying my invention. Fig. 2 is a central vertical section thereof. Fig. 3 is an enlarged detail of one of the auxiliary cups. Fig. 4 is an enlarged detail illustrating the electrical contact.

As shown in said drawings:—The cup proper comprises a spherically concave suction cup of any suitable material for example, soft rubber, indicated by A, and as shown, though not necessarily, provided in its interior with a plurality of auxiliary suction cups *a* which may be of any desired size or construction and may be arranged in any preferred manner within the cup, but which

are sufficiently remote from the lower or contact edge of the cup to admit close adhesion of the edge of the cup to the surface treated. Surrounding said cup and vulcanized thereto (if of rubber) is an integral water bag B, which may be of any desired or preferred capacity, and as shown extends from the edge or margin of the cup upwardly to the top thereof on the outer side and of which the wall of the cup affords one side. Said water bag is provided in its top with one or more internally screw threaded apertures in which are secured screw plugs *b'*—*b'* which by removal permit the water bag to be filled with fluid of any desired temperature, either hot or cold, as preferred, or, if desired, admit of having connected therein fluid conducting pipes through one of which fluid of the desired temperature is conveyed into the bag from any convenient source of supply and through the other of which the fluid discharges, thus affording a flow through the bag and enabling a constant temperature to be maintained during the operation, or admitting of the temperature being varied from hot to cold or vice versa during the treatment.

Extending upwardly through the top of the cup, as shown through a central boss *c*, is a tubular screw C which may be inserted in place before vulcanizing and affords attachment for the handle which may or may not be connected with a source of electric current supply, as preferred. As shown said boss *c* is provided on its end with projections adapted to engage in complementary sockets in the end of handle C' when applied thereto and in which said screw has threaded engagement. One or more washers indicated by *c'* are secured beneath the head of said screw on the inner side of the cup and extend downwardly and inwardly as shown in Fig. 4 and afford attachment in any desired manner for the electrical contact D which comprises a plate of zinc, silver or other suitable conducting material, centrally supported on the washer *c'* by any suitable conductor herein shown as a spring *c''*. Said plate on its under or contact side is provided with a layer of sponge or fabric or other absorbent conducting material *d* which when dampened affords a desirable contact medium.

The handle C' may of course be of any form or construction and as shown, the same is adapted for threaded engagement with the

screw C as before described and is provided at the inner end of the screw aperture with a recess in which is secured a flap of rubber c^3 adapted for engagement with the open end of the screw and acting as an air valve. Any suitable conductor c^2 leads inwardly through or along the handle into engagement with said screw C and is adapted for any convenient source of current supply.

10 The operation is as follows:—If it is desired to electrically excite the surface treated, the cup and the contact D— d having first been moistened are pressed upon the surface to be treated. The cup A and the auxiliary or interior suction cups a when applied to the surface with pressure are depressed, thereby expelling the air and causing them to adhere closely to said surface. The moist absorbent surface of the contact D rests with more or less pressure upon said surface. The cup being of resilient material acts after being depressed to spring or draw upwardly and tends to return to its normal position thus creating a partial vacuum in the usual manner and tends to open the pores of the skin and to draw the blood to the surface. Electrical excitation may accelerate or retard this effect, dependent upon the strength of the current used, mild electrical excitation tending to increase this tendency, while a greater electrical excitation tends to restrict the capillary vessels, thus retarding the flow of blood to the surface. These effects may be augmented or diminished by varying the temperature. This is accomplished by either filling the bag B with hot or with cold water before application, or by permitting a continuous flow of water therethrough which may be gradually increased in temperature, should it be desired to augment the capillary circulation and excretive action of the skin. Cold water or any refrigerating or cooling fluid may be used to fill the bag, or if a continuous flow is used the temperature may be gradually reduced during the flow as before described thereby diminishing this tendency. Either of these effects may be produced either with or without electrical action as the case requires.

50 With the construction described it is obvious that the cup can be used merely as a suction or vacuum cup, if preferred, without applying the electrical current or making use of the water bag, or either or both of the same may be used in conjunction with the ordinary cupping action as preferred and any means acting to vary the temperature of the cup may be used either before or during application.

60 As shown a plate E of hard rubber, metal or other comparatively rigid material is vulcanized concentrically into the top of the cup and projects into the water bag and acts to distribute downward pressure over a larger area than would be possible by downward

pressure on the handle were this plate absent. The simple outwardly opening air valve facilitates escape of air from the cup and may be constructed in any convenient manner, in the present instance, however, being shown in the handle C' a section c^3 of the handle is shown to be removable to afford access to the valve and is held in place by the screw c^4 and it as well as the handle is perforated to permit escape of the air therefrom.

Obviously many details of construction may be varied without departing from the principles of this invention.

I claim as my invention:—

1. A flexible suction cup having a flexible water bag covering the sides and top thereof and adapted to permit said cup to be depressed upon the surface treated.

2. As an article of manufacture, a flexible cupping device adapted to be depressed upon the surface treated, a flexible water compartment thereon adapted for circulation of water therethrough during treatment, an annular plate in the water compartment adapted to aid in compressing said device and a handle having a valve controlled passage therein adapted to permit the passage of air in one direction only.

3. The combination with an inner resilient cup of an outer resilient cup integral at each end with the respective ends of the inner cup thereby providing a chamber and a plate concentric with one of the connected ends and extending into the chamber.

4. The combination with a flexible suction cup of an outer cup integrally united therewith and affording a chamber therebetween, a handle engaged to said cups having a passage therethrough and a valve positioned in said handle adapted to release the air from the inner cup and to prevent the return of the air thereto when pressed against the surface treated.

5. In a device of the class described the combination with a pair of cups, one nested within the other and providing a compartment between the cups and a plate above the inner cup.

6. In a device of the class described the combination with an outer closed cup of an inner cup united therewith at its margins and center and affording a water chamber therebetween, means for depressing said cups centrally and electrical connections depending therefrom and adapted for connection with a source of electrical supply.

7. A device of the class described comprising a suction cup, a fluid containing receptacle inclosing the same, a plate between said cup and receptacle means adapted to depress said cup to expel the air from the cup and a valve therein adapted to prevent return of air to the cup.

8. In a device of the class described the

combination with a suction cup, of a handle adapted for connection therewith, a conductor leading from a source of supply to the handle and a contact plate within the handle adapted for engagement with said conductor and a yielding supported contact adapted for engagement with the surface treated.

9. A device of the class described comprising a cup adapted to be flattened into engagement with the surface treated, auxiliary suction cups on the inner side thereof and a tubular handle on said cup provided with a valve controlled passage therethrough.

10. In a combined suction cup and water bag the combination with an inner cup of an outer cup thereon a handle engaged to the inner cup and a plate above said suction cup adapted to distribute pressure thereon.

11. A combined suction cup and water bag having flexible-side walls adapted to be forced inwardly to expel the air from the cup and means adapted to press against the suction cup to distribute pressure on the cup.

12. The combination with a flexible suction cup, of a fluid compartment of flexible material inclosing the same, an upwardly opening lug on said cup, a tubular screw therein and a tubular handle adapted to engage on said screw and affording means for introducing an electric current to the interior of the cup.

13. The combination with a suction cup,

of a water bag surrounding the same, means for depressing the top of said cup to expel the air therefrom, a valved air outlet and a plurality of auxiliary suction cups on the interior of the cup adapted to produce suction when brought into contact with the surface treated.

14. In a combination with a flexible vacuum cup, a water bag investing the same, a tubular handle, a tubular screw engaging the handle upon the cup and an annular pressure plate above the cup and adapted to bear thereon.

15. The combination with a flexible suction cup, having a central apertured boss thereon, of a flexible bag investing said cup, a plate engaged between the cup and bag adapted to distribute pressure on the top of the cup and a valved outlet engaged on said boss.

16. A combined water bag and vacuum cup, a plate adapted to distribute pressure upon the cup and an air valve in the vacuum cup.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

EDWARD S. SAIGHMAN.

Witnesses:

C. W. HILLS,
ALFRED C. ODELL.