

No. 655,747.

Patented Aug. 14, 1900.

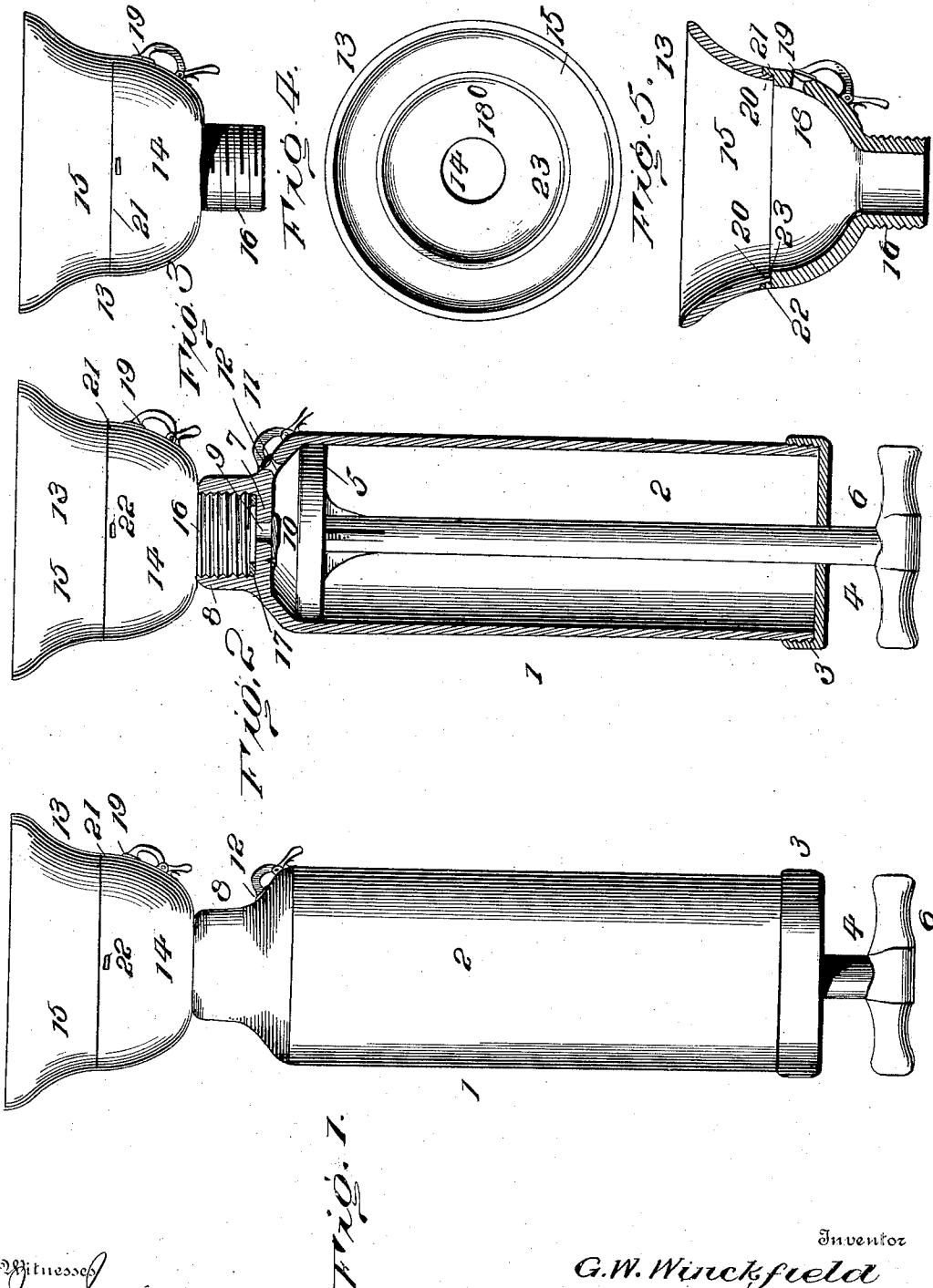
G. W. WINCKFIELD.

ELECTROMEDICAL VACUUM APPARATUS.

(Application filed Nov. 29, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
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Fig. 1.

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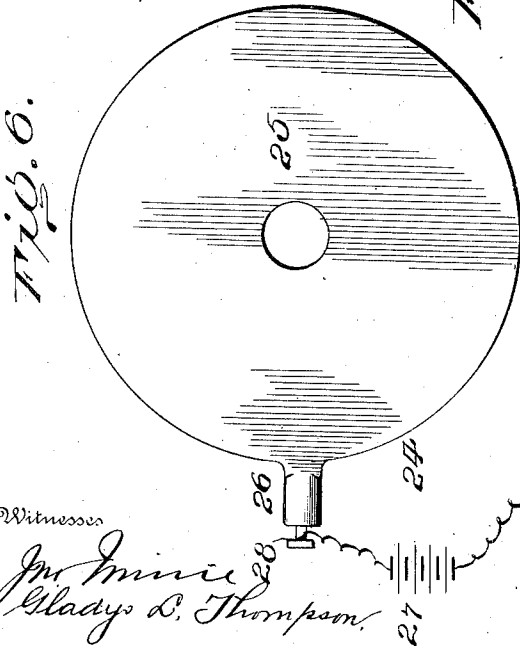
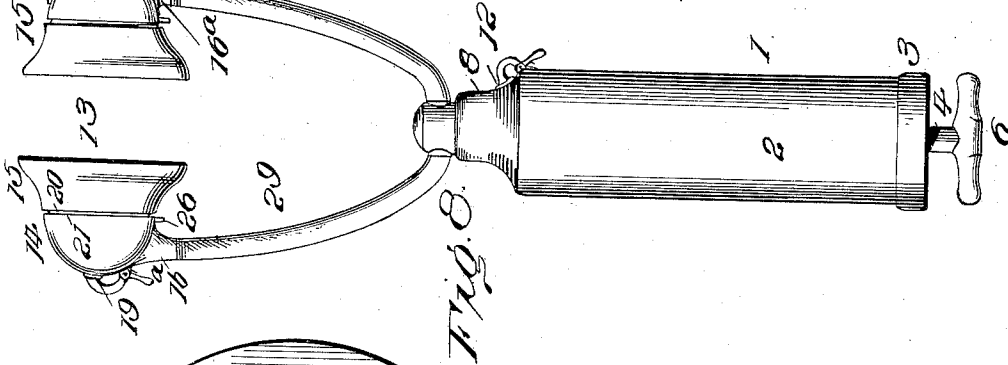
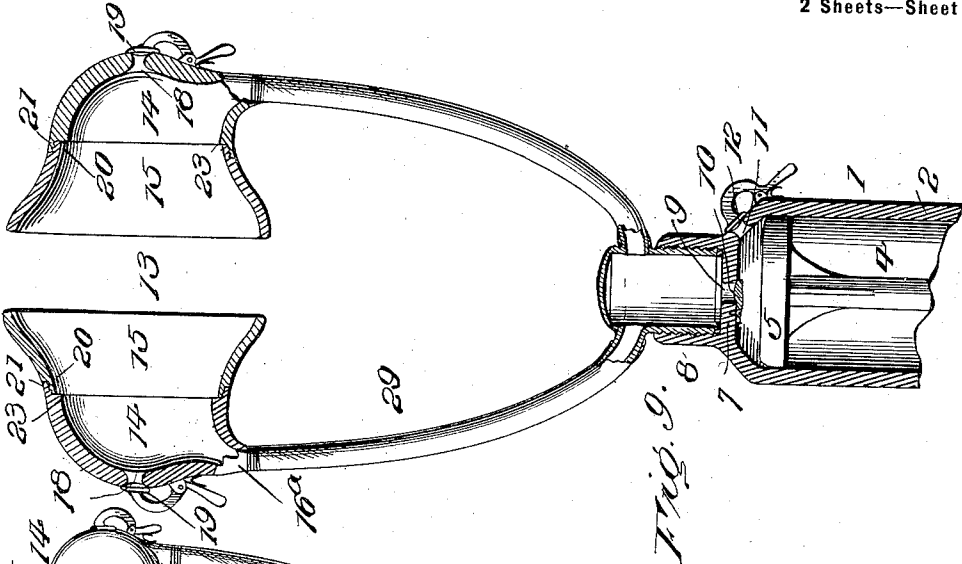
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2 Sheets—Sheet 2.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. WINCKFIELD, OF ALAMEDA, CALIFORNIA, ASSIGNOR OF ONE-FOURTH TO GEORGE C. FABENS, OF SAME PLACE.

ELECTROMEDICAL VACUUM APPARATUS.

SPECIFICATION forming part of Letters Patent No. 655,747, dated August 14, 1900.

Application filed November 29, 1899. Serial No. 733,661. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WINCKFIELD, a citizen of the United States, residing at Alameda, in the county of Alameda and State of California, have invented certain new and useful Improvements in Surgical Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in vacuumeters or surgical instruments of that character employing vacuum-cups for treating diseases and developing and strengthening wasted and deformed parts of the body.

The object of the invention is to provide an instrument which is simple, durable, and efficient in construction and operation, which has its parts applied and arranged in such manner as to be readily and conveniently assembled for use and disassembled for cleaning, and which is further adapted to be employed for electrical treatment.

With these and other minor objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the drawings hereto annexed and forming a part of this specification, Figure 1 is an elevational view of a vacuumeter or surgical instrument constructed in accordance with my invention. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 is a side view of the vacuum-cup. Fig. 4 is a top plan view of the same. Fig. 5 is a vertical longitudinal section of the vacuum-cup on an enlarged scale. Fig. 6 is a plan view of the electrode and shows the battery connections. Fig. 7 is a sectional view thereof, showing the split pin of the conducting-wire fitted in the binding post or socket. Fig. 8 is an elevation of a duplex instrument for treating opposite sides of a part of the body. Fig. 9 is a vertical longitudinal section of the same.

In carrying my invention into practice I employ a vacuum-pump 1, comprising in its construction a cylinder 2, having at one end a removable head 3, provided with an open-

ing, in which the rod 4 of the piston 5 is fitted to slide, said rod having at its outer end a detachable handle 6, by means of which it and the piston attached thereto may be operated. By removing the head 3 and handle 6 the piston may be easily and conveniently applied and removed in a manner readily understood. The cylinder is closed at its opposite end by a head 7, from which projects a collar or socket 8, threaded interiorly, as shown. An inlet opening or passage 9 is formed in the head 7 and forms a communication between the cylinder and socket, and this opening is controlled by an outwardly-closing check-valve 10. A discharge-opening 11 is likewise formed in the cylinder-wall adjacent to said head 7 and is controlled by an outwardly-opening check-valve 12. In the operation of the pump the air is drawn into the cylinder upon the backward or outward movement of the piston toward the head 3 through the said passage 9, and upon the movement of the piston forward or inward the check-valve 10 closes, while the check-valve 12 is forced open to allow the air to discharge through the opening 11.

A vacuum-cup 13 is adapted to be applied to the pump and in accordance with the invention is preferably made of bell form and composed of base or bowl and rim sections 14 and 15, having detachable interfitting connections for engagement with each other and with the pump. The base or bowl section 14 is provided with a threaded nozzle or stem 16, which, as shown in Figs. 1 and 2, is designed to be threaded into the socket or collar 8 of the pump and to rest upon a packing ring or gasket 17 therein to form an air-tight connection to prevent inlet of air to the cup. It is also provided with an opening 18, controlled by a relief-valve 19, which is designed to be opened to admit air into the cup when it is desired to cease treatment and allow the cup to be removed. The two sections of the cup may be detachably connected by interfitting connections of any preferred kind, and a slip-joint connection may be used, if desired; but I prefer to provide said parts with interfitting threaded flanges 20 and 21 to effect a more positive engagement without using extraneous fastenings. As shown in the draw-

ings, the flange 21 of the base-section 14 is formed with a notch or slot 22 at one point in its circumference, and the threads of the two flanges are so arranged that when the flange 21 is screwed part way down on the flange 20 the notch or slot will be left exposed, while if it is screwed fully down the said notch or slot will be fully closed. An internal bead or shoulder 23 is formed upon the base-section 21 of the pump, at the base of the threads thereon, to support the packing-ring 17 when the device is employed for vacuum treatment and an electrode when the device is used for electric treatment. In employing the instrument as thus constructed as a vacuum device the parts of the pump are first properly connected and arranged, the sections of the cup firmly and tightly connected, and the stem or nozzle 16 fitted in the collar or socket of the pump. The cup is then applied to the part of the body to be treated and the pump operated to exhaust the air therefrom in the usual way.

To adapt the device for electrotherapeutic use, an electrode 24 and suitable battery connections are employed. This electrode consists of a metallic disk or plate 25, provided at a suitable point with a binding post, keeper, or socket 26, and is adapted to be clamped between the sections of the vacuum-cup and rest upon the said shoulder 23, with its binding-post occupying or arranged in line with the notch or slot 22. When the rim-section is partly screwed down on the base-section of the cup, the electrode-disk will be firmly clamped between the sections, and the entire cup will form an electrode, which is applied to the part to be treated in the well-known way. The battery connection may be made in any approved manner, as by means of an insulated wire 27, carrying split pins 28 or analogous devices for connection with the binding-post 26 and one of the poles of the battery. Connection with the other pole of the battery is made by means of a wire 28^a, to which is connected a handle 28^b, which is grasped by the patient, whereby the circuit is completed and the current caused to pass through the part of the body under treatment. The battery connection is shown in Fig. 6 of the drawings.

In treating opposite sides of an affected part a duplex device of the construction shown in Figs. 8 and 9 is employed. In this embodiment of the invention the vacuum-cups are arranged with their mouths in apposition or facing each other and the stems or nozzles 16^a extend at right angles thereto and are connected to the outer ends of flexible arms 29, which are connected at their inner or proximal ends to a threaded hollow or tubular coupling 30, which is fitted in the collar or socket 8. It will be understood that in electrical treatment with this form of in-

strument two connections with a pole of the battery are made, but that the other parts are constructed and employed as in the single-cup instrument.

Changes in the form, proportion, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed as new is—

1. A vacuum-cup composed of sections detachably connected, and an electrode clamped between said sections.

2. A vacuum-cup composed of detachable sections, and a valve applied to one of said sections and controlling a relief-opening therein.

3. A vacuum-cup comprising a rim-section and a bowl-section detachably connected, and said rim-section having a fitting stem or nozzle and a valve-controlled relief-opening.

4. A vacuum-cup comprising sections having engaging flanges, one of which is provided with a notch or slot, and an electrode disk or plate clamped between said sections and having a binding-post exposed at said slot for attachment with a battery connection.

5. A cup of the character described, comprising detachable sections, an electrode composed of a metallic disk or plate clamped between said sections, and suitable battery connections for said electrode.

6. A cup of the character described, comprising a bowl-section having a nozzle for connection with a vacuum-pump, a valve-controlled relief-opening and a connecting-flange, and a rim-section also having a connecting-flange for engagement with that on the bowl-section.

7. In an instrument of the character described, the combination of a vacuum-pump having at one end valve-controlled inlet and eduction openings and a collar or socket in communication with said inlet-opening, and a vacuum-cup provided with a nozzle for engagement with said collar or nozzle.

8. In an instrument of the character described, the combination of a vacuum-pump having at one end of its cylinder a head provided with a check-valved inlet-opening, a valve-controlled discharge-opening in the wall of the cylinder adjacent to said head, a collar or socket rising from the head and in communication with said inlet-opening, and a vacuum-cup having a nozzle for engagement with said socket.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. WINCKFIELD. [L. S.]

Witnesses:

R. B. TAPPAN,
M. W. SIMPSON.