

Witnesses
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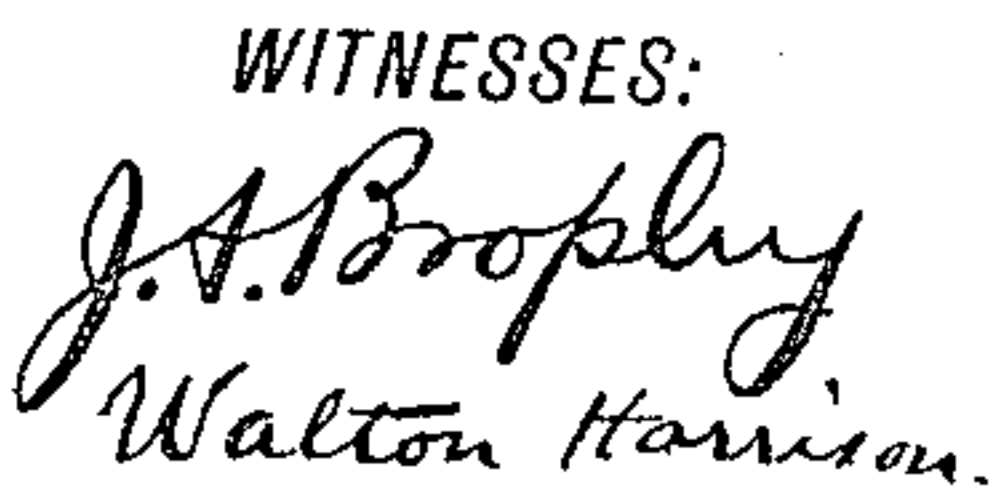
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3 SHEETS--SHEET 1.



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UNITED STATES PATENT OFFICE.

JOHN WESLEY BALLARD, OF INDIANAPOLIS, INDIANA.

MEDICAL APPLIANCE.

993,945.

Specification of Letters Patent.

Patented May 30, 1911.

Application filed February 17, 1910. Serial No. 544,371.

To all whom it may concern:

Be it known that I, JOHN W. BALLARD, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Medical Appliances, of which the following is a specification.

This invention relates to a medical appliance designed especially for treating patients both internally and externally to the action of vapors, medicated or otherwise, the object of the invention being to provide an apparatus which is simple of construction and efficient and sanitary in operation, and by means of which a patient may be given a vapor bath or inhalation treatment, or both simultaneously as circumstances of the case may require.

The invention consists of the features of construction, combination and arrangement of parts hereinafter described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a side elevation of a medical appliance embodying my invention. Fig. 2 is a rear elevation of the same. Fig. 3 is a top plan view of the appliance. Fig. 4 is an enlarged detail horizontal section on the line 4—4 of Fig. 2. Fig. 5 is a section through the top of one of the vapor generators. Fig. 6 is a detail view of one of the locking lugs thereof. Figs. 7 and 8 are detail sections on the lines 7—7 and 8—8 of Fig. 1. Fig. 9 is a detail section through the mask or respirator. Fig. 10 is a section through the air inlet or mixer.

The apparatus comprises a transportable cabinet 1 mounted on wheels or rollers 2 for ready transportation from place to place, and comprising in general a bottom 3, side walls 4 and a front wall 5, which may be made of sheet metal or other suitable material. The walls 4 are reinforced at suitable points by vertical angle iron uprights 6, which are riveted or otherwise secured thereto, and may be arranged as required to strengthen and reinforce the parts to render the body of the cabinet staunch and rigid. The cabinet is preferably of the form shown, in which an open top 7 is provided at the upper rear portion thereof, the

front wall 5 sloping at a downward angle therefrom between said open top and a vertical wall 8 at the lower front portion of the cabinet, said front wall being preferably curved to conform more or less to the general contour of the body of a person seated in the cabinet, so as to provide a chamber in which the vapor will be contained for a most effective action on the surfaces of the body. At a point above its connection with the short wall 8, the wall 5 is formed to provide a horizontal shelf 9, for a purpose hereinafter described.

The rear of the cabinet is fully open for the entrance and the exit of the patient and is adapted to be closed by a pair of counter-part swinging doors 10 and 11 hinged at their outer edges to the rear edges of the walls 4, as indicated at 12. One of the doors, as the door 10, is provided with pivoted latches 13 adapted to engage keepers 14 on the other door 11, whereby the doors may be held closed. Each door consists of a body of sheet metal provided with an inner strengthening frame 15 of angle iron, and for the purpose of closing any space or crevice which may exist between the free edges of the doors a strip 16 of wood, felt, or other suitable material is fastened to the free edge of one door and is adapted to lap over upon the free edge of the other door to close the joint between the doors when the latter are closed.

A chair or other suitable seat support for the patient is provided within the cabinet, and the head of the patient is designed to extend through the open top 7. This open top is adapted to be closed by doors 18 hinged at their outer edges to the side walls, as at 19, and provided at their inner ends with recesses 20 to form an opening for the passage of the neck of the patient, the edge walls of the recesses being provided with a strip of felt or other suitable material adapted to snugly inclose the neck of the patient and prevent the escape of the vapor at this point. Secured to the strip 16, to the free edge of one of the doors, or to a stationary part of the cabinet is a spring catch 22 adapted to engage over the doors 18 to retain the same in closed position.

Supported upon the shelf 9 are vapor generators 23 and 24 for respectively supplying vapor for the cabinet to the inhalation tube. Each generator comprises a vessel 25 resting upon a burner or heater 26, preferably of the electrical type, said burner or heater being supported by legs 27 at a suitable elevation above the shelf. The generator 23 is provided with a discharge tube or nozzle 28 extending into the lower front portion of the cabinet, while the generator 24 is provided with a discharge tube or nozzle 29 adapted for connection with the inhalation tube, hereinafter described. Each vessel 25 is closed by a cover 30 having a pendent flange 31 to fit snugly about the same and a gasket 32 to form a vapor-tight joint. Secured to the cover is a handle 33, and also secured to the cover are oppositely extending spring locking arms 34, which arms project at their free ends beyond the cover and are adapted for engagement with cam-shaped hooks 35 upon the upper ends of keeper lugs 36 fixed to opposite sides of the wall of the vessel 25 whereby the cover may be locked in closed position. The bottom walls of the hooks 35 are inclined and the hooks of the two lugs extend in opposite directions, so that the locking arms may be engaged with and disengaged from said hooks by a partial rotary movement of the cover in one direction or the other. The water or medicated fluid is placed within the generators for conversion into steam or medicated vapor which discharges through the nozzles 28 and 29, the vapor entering the cabinet being confined therein and coming in intimate contact with the body of the patient, whereby an effective external treatment is insured.

The inhalation tube is supported in an inclined position upon the inclined front wall 5 and comprises relatively fixed sections 37 and 38, the lower end of the lower section 38 detachably receiving the free end of the nozzle 29 of the vapor generator 24, while the upper end of said section 38 slidably enters or has a slip joint connection with the lower flaring end of the upper section 37 which is provided with an air inlet or mixer 39 of that type having a rotary valve or damper, by which a desired amount of air may be permitted to enter the tube and commingle with the vapor. The upper end of the section 37 terminates below the top opening 7 and is adapted to receive the lower cylindrical end 40 of a detachable mask or respirator 41, which is flared and properly curved or shaped at its enlarged end to snugly inclose the face of the patient. In the bottom of the enlarged end of the mask is formed an opening 42 and arranged above this opening 42 is a partition or septum 42' forming channels 43 and 44. The lower rear portion of the mask in which the channel 44 is formed is adapted to receive the chin and

mouth of the patient, and the free rear edge of the partition 43 is curved to bear upon the upper lip and cheeks of the face so as to effectually prevent communication between the channels when the respirator is in use. By reference to Fig. 1, it will be seen that the channel 43 receives the nose of the patient and the channel 44 is in communication with the mouth of the patient, so that the patient may inhale the vapor directly from the tube through the nose and expire through the mouth into the channel 44 and through the opening 42. By this means admixture of the vapor with the expired air and rerespiration of the air by the patient is prevented, and if the patient should cough the discharge of any of the particles of sputum into the vapor passage will be obviated, thus permitting the mask to be more readily kept in a sanitary condition and diminishing to the minimum the liability of the transmission of diseases from one patient to another.

From the foregoing description, the construction and mode of use of my improved medical appliance will be apparent, and it will be seen that an apparatus is provided whereby internal and external vapor treatment, separately or together, may be given at will.

By the use of the independent vapor generators, the same or different kinds of vapor may be supplied to the cabinet and respiration tube, and by the construction of the generators as described, each generator after use may be thoroughly cleansed and thereby kept in a sanitary condition.

Having described the invention, I claim:—

1. A medical appliance of the character described comprising a cabinet having a horizontal upper rear portion provided with a neck opening, a horizontal lower front portion forming a shelf, and an inclined wall connecting said top portion and shelf, vapor generators mounted upon the shelf, one of said generators being in communication with the cabinet, and a respiration tube comprising a fixed intermediate section having a tapered nozzle at its lower end provided with an air inlet, a lower section communicating at its lower end with the other vapor generator and having its other end extending into said nozzle, said intermediate and lower section being mounted upon the inclined wall of the cabinet, and a mouth section detachably connected with the upper end of the intermediate section and having a mask provided with a partition forming channels to receive the nose and mouth of the patient, said partition separating said channels from each other, and said mask having an opening communicating with the mouth channel.

2. A medical appliance of the character described comprising a cabinet having an opening for the projection of the head of the patient, a vapor generator communicat-

ing with the cabinet, a respiration tube
mounted upon the cabinet, a second vapor
generator communicating therewith, and a
mask detachably mounted upon the dis-
5 charge end of the said tube, said mask hav-
ing a partition forming channels to receive
the nose and mouth of the patient and sep-
arate the same from each other, and provided

with an opening communicating with the
mouth receiving portion. 10

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

JOHN WESLEY BALLARD.

Witnesses:

DANIEL R. BURNS,
JOHN LE MAY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
