(No Model.) 2 Sheets—Sheet 1.

W. J. HARRIS.

PNEUMATIC CABINET.

No. 365,067. Patented June 21, 1887.

Fig. 1.

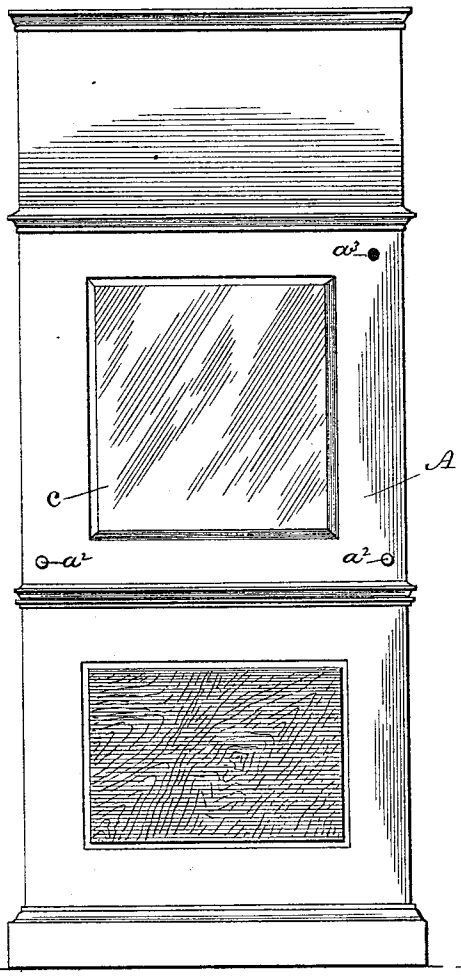


Fig. 2.

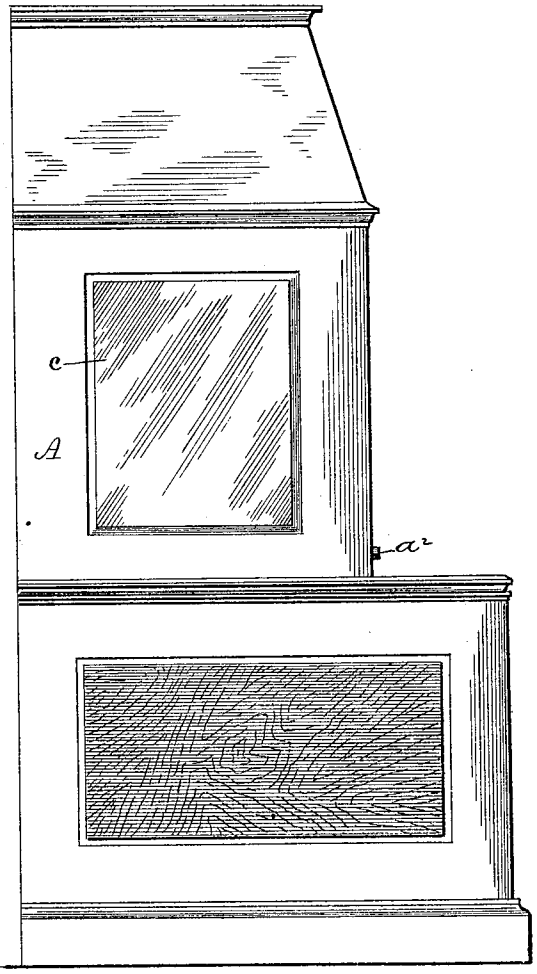
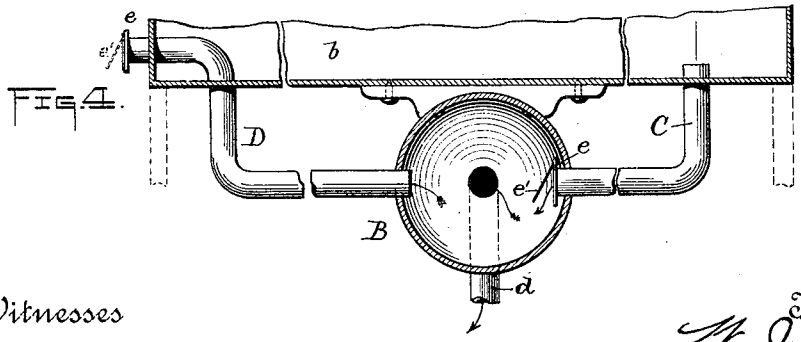


Fig. 4.



Witnesses

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By his Attorney

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(No Model.) 2 Sheets—Sheet 2.

W. J. HARRIS.

PNEUMATIC CABINET.

No. 365,067. Patented June 21, 1887.

Fig. 3.

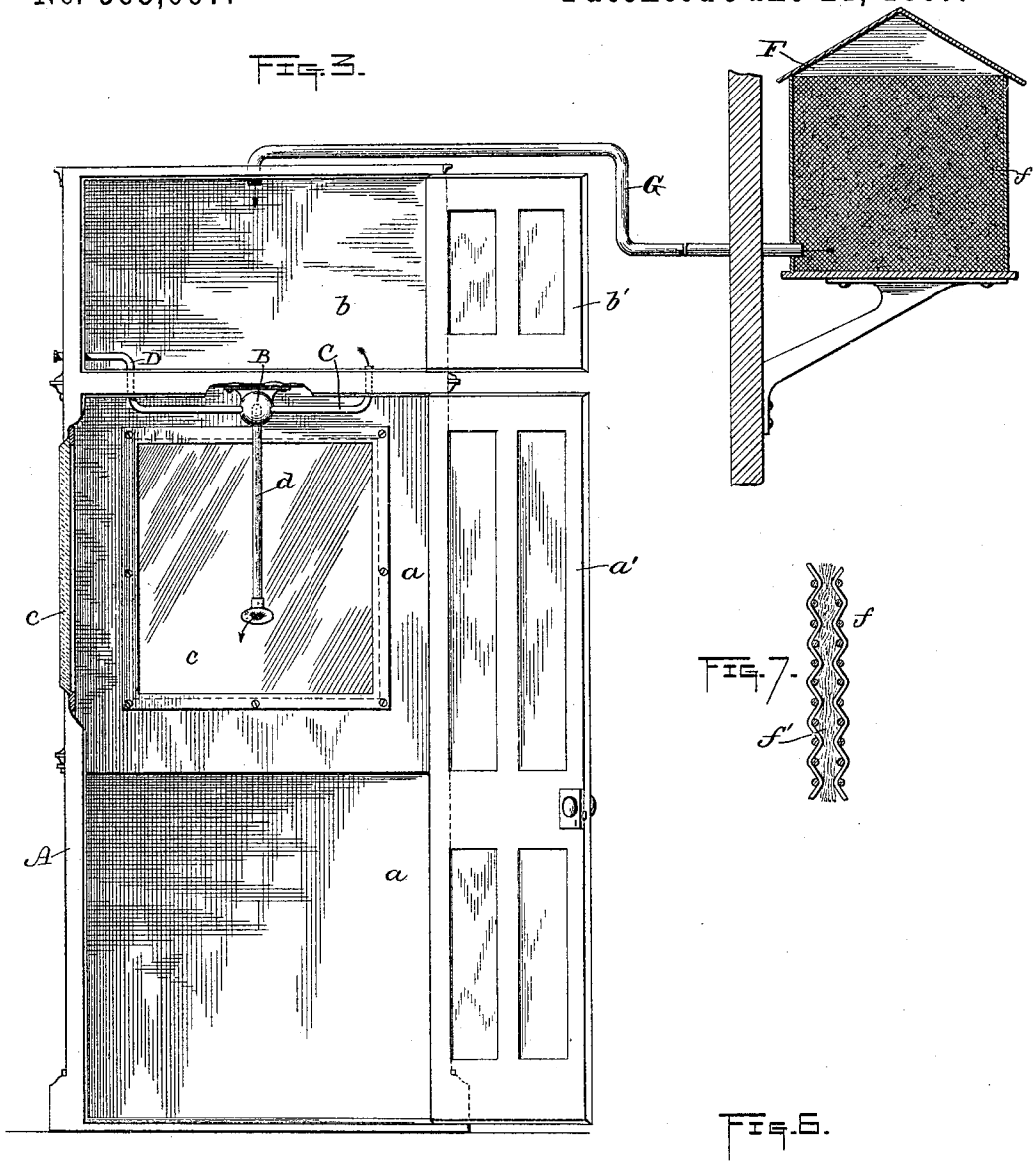
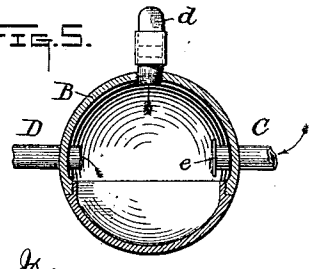


Fig. 7.

Fig. 6.



Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

W. JOHN HARRIS, OF ST. LOUIS, MISSOURI.

PNEUMATIC CABINET.

SPECIFICATION forming part of Letters Patent No. 365,067, dated June 21, 1887.

Application filed February 24, 1887. Serial No. 228,671. (No model.)

To all whom it may concern:

Be it known that I, W. JOHN HARRIS, a citizen of the United States, residing at St. Louis, in the county of St. Louis and State of Missouri, have invented certain new and useful Improvements in Pneumatic Cabinets, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of pneumatic cabinets in which persons in ill-health may be temporarily confined for the purpose of treating them with medicated air, the object of my invention being to provide an attractive and convenient cabinet and apparatus for use for the purpose stated. To this end I make a cabinet of wood of suitable size to contain one person at a time in a sitting posture, said cabinet being preferably of ash or similar hard wood veneered on both sides to prevent warping, the lower part of the cabinet being neatly paneled and the central portion thereof having windows in the sides and front to make it light and pleasant for the patient. At the top of the cabinet is an air-tight chamber divided from the main portion of the cabinet and communicating by a suitable tube with an air-box in the outer atmosphere, this outer air-box having openings, as at its ends, closed or covered by doors consisting, preferably, of two sheets of fine wire-gauze, between which is placed a thin layer of cotton-batting, the gauze and cotton serving as a strainer or filter to cleanse the air admitted to the box from dust and other impurities. The substances by which the air is to be medicated are placed in the air-chamber at the top of the cabinet, and the said chamber communicates by an air-inlet tube with a valve-ball in the upper part of the main chamber of the cabinet, the said valve-ball having an air-outlet tube, which, for symmetry of construction, I prefer to have pass upward into the air-chamber, and thence out of the cabinet into the room. The valve-ball is provided with a removable glass mouth-piece, (so that a separate mouth-piece may be used for each person,) and the said ball is preferably made in two parts, screwed together, so that it may be opened and cleansed after use by one person before another person is placed in the cabinet, and thus avoid contamination. The air inlet and outlet tubes are provided with valves which open and close in proper order as the patient breathes, so that the medicated air is drawn from the air-chamber above and the respirated air is expelled through the outlet-tube. The cabinet is made air-tight, so that the air may be partly exhausted therefrom to secure any desired light pressure or partial vacuum, the joints being for this purpose packed in any suitable manner, the doors at the backs of the air and main chambers of the cabinet closing against suitable packing, as strips of rubber or similar substance, to insure tightness.

In the drawings, Figures 1 and 2 are front and side views, respectively, of my improved cabinet. Fig. 3 is a rear view of the same, with the doors opened and with one of the windows in section, this figure also showing the outside air-box. Figs. 4 and 5 are detail views to show the valve-ball, and Fig. 6 a detail of one of the valves. Fig. 7 is a detail view to show the strainer of the outer air-box.

A denotes the cabinet, *a* the main chamber thereof, and *b* the medicating-air chamber above the said main chamber, the said chambers having at the rear of the cabinet the doors *a'* and *b'*, respectively. The cabinet is preferably made of thoroughly-seasoned hard wood veneered on both sides to prevent warping, and is provided at its front and sides with windows *c*, preferably of thick plate-glass, with beveled edges, as shown.

B denotes the valve-ball in the upper part of the main chamber *a*, the said ball communicating by an air-inlet tube, C, with the air-chamber *b* and with the air of the room by an outlet-tube, D. The said ball, which is of metal, is preferably some two or three inches in diameter, and is made in two parts, screwed together, so that it can be opened to be wiped out after using. A glass or porcelain mouth piece or tube, *d*, is removably attached to the ball B by a suitable coupling, such mouth piece or tube to be exchanged for another like it before a new patient enters the cabinet. The inlet-tube C has a valve, *e*, inside the ball, and the outlet-tube D has a similar valve at its outer end. These valves may each consist simply of a diaphragm, *e'*, of rubber or other similar flexible air-tight material cover hinged at the top and arranged to cover the ends of

the tubes, so that they will open and close in regular order, as will be readily understood, as the air is breathed in and out by the patient.

To give the tubes connected with the valve-ball a symmetrical or like appearance inside the main chamber of the cabinet, I prefer to run the air-outlet tube D up into the air-chamber *b*, and thence out of the cabinet.

The fresh-air box F is supported in the outer atmosphere in any suitable manner, and its sides or ends are formed as air filters or strainers *f*, consisting of two separated sheets of wire-gauze with a sheet, *f''*, of cotton-batting between them, the air passing from the said box to the medicating-air chamber *b* through the tube G. As the box F is air-tight, except for the strainers, all of the air entering the said box must pass through the strainers, and will thus be cleansed from dust, soot, and other impurities.

From the foregoing it will be apparent that when a patient is placed in my cabinet in position to breathe through the mouth piece or tube he will inhale the medicated air from the chamber *b* and will respire it out through the tube D. Thus a fresh supply of air will be drawn from the said chamber at each breath, the ball B being so comparatively small that but very little of the respired air will be breathed a second time, the air thus breathed being purified and medicated. As the respired air is at once expelled from the cabinet, the temperature thereof will not be raised by the patient's breath.

The cabinet, being of wood, is comparatively light, and, being made neat and attractive in appearance, will not be repulsive to sensitive invalids, and, as it is well lighted through the windows *c*, the patient will not be depressed by confinement therein.

The cabinet will preferably be provided with small pipes or openings, as a^2, where taps can be inserted to exhaust and admit air, and with an opening, a^3, where the tap for the air-gage can be inserted.

The interior of the valve-ball forms, it will be seen, a respiration-chamber, and a cabinet, provided with such a chamber, through which fresh air can pass inward to the patient and the respired air outward from the cabinet, is an important feature of my invention; and it is obvious that the size and shape of the said chamber may be changed without departing from the spirit of my invention, but it is desirable that it should be capable of access to be cleansed after use by each patient.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination, with a pneumatic cabinet having main and air-medicating chambers, suitable windows, and a respiration-chamber, of an inlet tube or pipe forming a passage from the said medicating-chamber to the said respiration-chamber, a tube or pipe forming a passage from the latter chamber to the outside of the cabinet, and suitable self-operating valves for the said tubes or pipes, substantially as set forth.

2. The combination, with a pneumatic cabinet having main and air-medicating chambers, suitable windows, a respiration-chamber, and inlet and outlet pipes for the latter provided with automatic valves, of an air-filtering box provided with screens for cleansing the air to be admitted to the medicating-chamber, as set forth.

3. The combination, with the cabinet A, having the chambers *a* and *b*, of the two-part valve-ball B, the valved inlet and outlet air pipes or tubes C and D, and the removable mouth-piece, substantially as set forth.

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

W. JOHN HARRIS.

Witnesses:
FRANCIS VALLÉ,
D. A. HAILMAN.