Portable apparatus for treating a patient with a medicated or tempered atmosphere / [Auguste Cazaux].

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Publication/Creation

London : Printed for Her Majesty's Stationery Office by Darling and Son, Ltd, 1893.

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N° 17,782 A.D. 1893

Date of Application, 21st Sept., 1893—Accepted, 4th Nov., 1893

COMPLETE SPECIFICATION.

Portable Apparatus for Treating a Patient with a Medicated or Tempered Atmosphere.

I, AUGUSTE CAZAUX, of Villa Verdier, Nice, Alpes Maritimes, France, C.E. do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement :—

This invention relates to simple and conveniently portable apparatus by which a patient can be made to inhale medicated or tempered air and to have his body subjected to the influence of such air at various degrees of pressure.

In the accompanying drawings I shew examples of the several parts of the apparatus which I employ for this purpose, but it is to be understood that details of these may be varied without departing from the essential character of my invention.

Figure 1 illustrates the whole apparatus, the other figures illustrate details hereinafter referred to.

As shewn in Fig. 1 the apparatus consists of the following parts :—

1. A loosely fitting dress A of light, strong, impermeable material, entirely enclosing the body head and limbs of the patient, and having a mask, which may be of glass, in front of the face.

2. A medicating or tempering vessel B in which air passing through it can be impregnated with vapours, or heated or cooled.

3. An air compressing pump C.

4. Pipes connecting the pump C to the medicating or tempering vessel B, and that vessel to the interior of the dress A ; and other pipes hereinafter referred to.

The 4 parts of apparatus above mentioned are constructed and arranged as follows :—

1. The dress A is made in two portions, the lower portion or trousers D and the upper portion E, these portions being tightly connected at the waist as shewn in section in Fig. 6. The upper margin of the trousers D is folded over so as to enclose a steel ring *e* of channel section, the edge of the folded over part being united to D at D^1. The steel ring *e* is considerably larger than the waist so that there is perfect freedom within it ; a band *f* of caoutchouc presses the fabric of the trousers against the interior of the steel ring *e*. The fabric of the upper portion E is also folded over to enclose a caoutchouc band *g* and within the folded part is a band *h* of leather or equivalent material which presses *g* and its enclosing fabric against *f*. As shewn in section in Fig. 5 the margin of the transparent mask *i* is engaged within an oval metal ring *k* of U section having one limb of the U elongated ; the fabric E of the dress is folded over the short limb of the U and extends to bear against the interior of the mask *i* which is thus held between the margin of the fabric and a caoutchouc washer *l* within the longer limb of *k*. A steel ring *n* partly enclosed within a caoutchouc band *m* serves to keep the parts in position to make an impermeable joint of the mask to the fabric. When it is desired to supply the patient with cordial or medicine, a flexible pipe *o* which is passed through the fabric E and made good by impermeable jointings *p*, terminates within the dress with a slit mouth piece *s* forming a valve which closes against escape of air under pressure within the dress but opens to allow liquid to pass when the patient sucks. The outer end of the pipe *o* is attached to a nozzle *q* which is usually screwed to a stopper *r*, but from which *r* is unscrewed when it is desired to let the patient suck liquid from a phial or other vessel, to which the nozzle is in that case connected. M is a pressure gauge and N a pocket.

[*Price* 8*d*.]

2. The medicating or tempering vessel B, shewn in section in Fig. 2, is made of metal internally tinned and is covered by a hinged lid Q which can be tightly closed on a washer of caoutchouc. A nozzle R, provided with a spring check valve T, admits the air from the pump C. A stop cock *t* serves to drain off moisture or other liquid. A valved outlet X has a nozzle X^1 to which is attached the flexible pipe G which leads into the upper portion E of the dress A. Within the vessel are several perforated diaphragms V on which are placed pine shavings impregnated with antiseptic or other medicaments which can be introduced by a filter Z, having two cocks, against the internal pressure which can be regulated as desired by an adjustable spring safety valve s^1. The diaphragms V are all attached by a central bolt to the uppermost V^1, which rests on a shoulder, so that they can all be lifted out together.

The vessel B is furnished with a pressure gauge *u*. By heating or cooling the vessel B, the air supplied to the patient may be varied in temperature.

3. The pump C, of which Fig. 3 is a vertical section, and Fig. 4 also a vertical section on the line *c d* of Fig. 3, consists of two cylinders containing a quantity of water which, by means of a packed piston 1 worked by lever 2 in the one cylinder 3, is caused to move up and down in the other cylinder 4, thus causing air to be expelled by valve 8 and drawn in by valve 7. By applying the piston to move the water, the air pumped is not affected by the lubricant employed for the piston.

4. Besides the pipe *o* for supplying the patient with liquid, there is the flexible pipe R connecting the discharge nozzle 9 of the pump to the vessel B; there is the flexible pipe G connecting the nozzle X^1 of the vessel B to the upper part E of the dress A preferably behind the patient's neck, and there is finally the pipe H for escape of air from the interior of the dress, as determined by an adjustable valve P.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is :—

1. The air tight dress A and mask *i* with the impermeable jointings, substantially as described.

2. The medicating and tempering vessel B with its fittings, substantially as described.

3. The pump C with water piston, substantially as described.

4. The pipes R and G connecting the pump C and vessel B to the dress A, the pipe H and adjustable valve P for escape of air from the dress, and the pipe *o* with valve, nozzle and stopper, substantially as described.

5. The combination of the parts referred to in the preceding claims, constituting portable apparatus for treating a patient with a medicated or tempered atmosphere, substantially as described.

Dated this 21st day of September 1893.

ABEL & IMRAY,
Agents for the Applicant.

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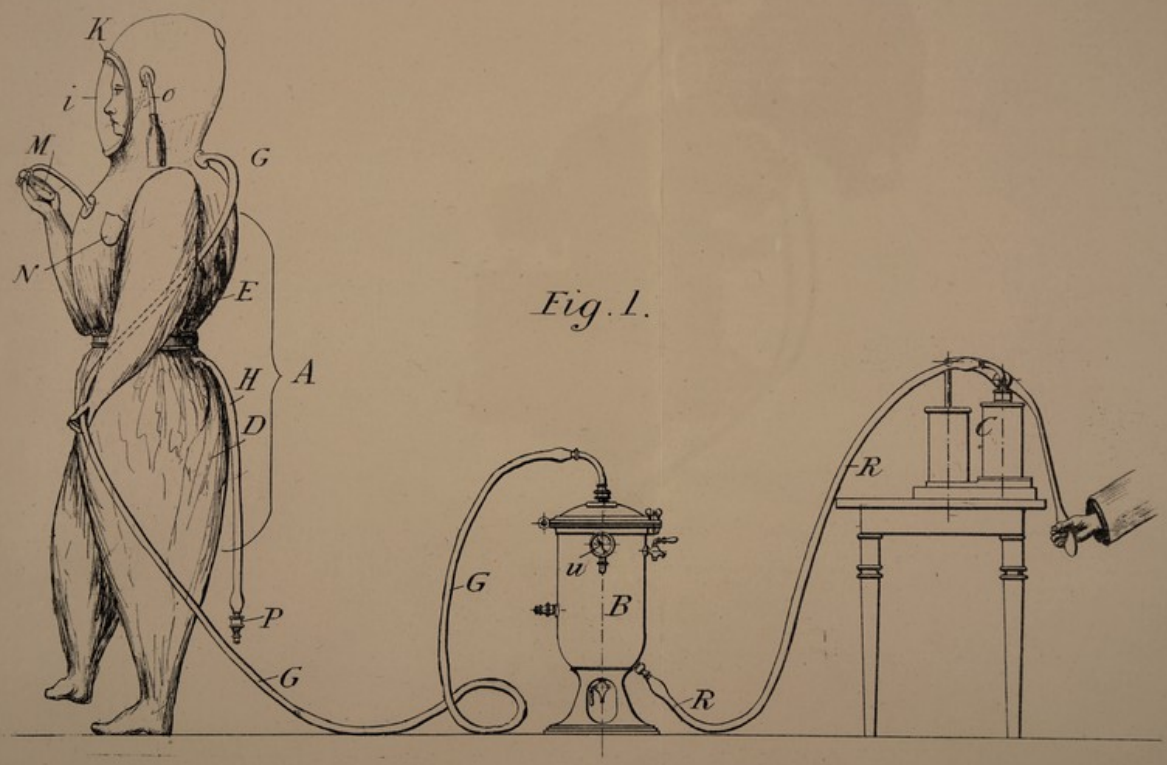

Fig. 1.

[This Drawing is a full-size reproduction of the Original.]

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Fig. 2.

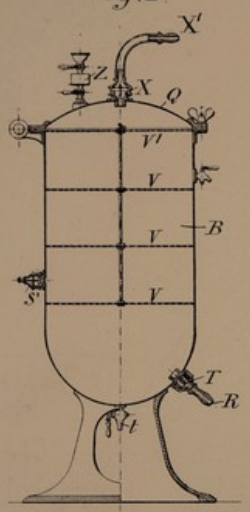


Fig. 3.

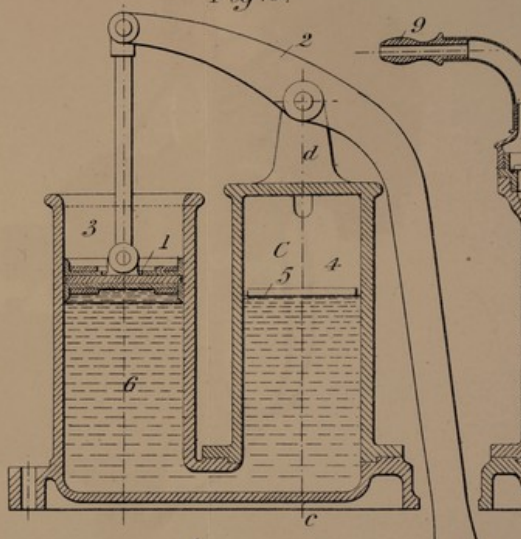


Fig. 4.

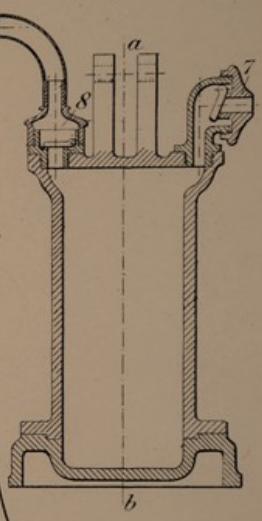


Fig. 5.

Fig. 6.

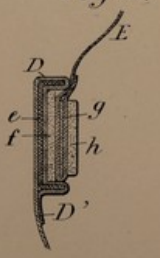
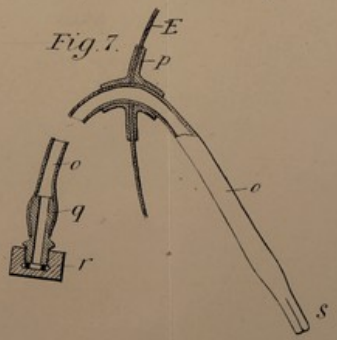


Fig. 7.



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