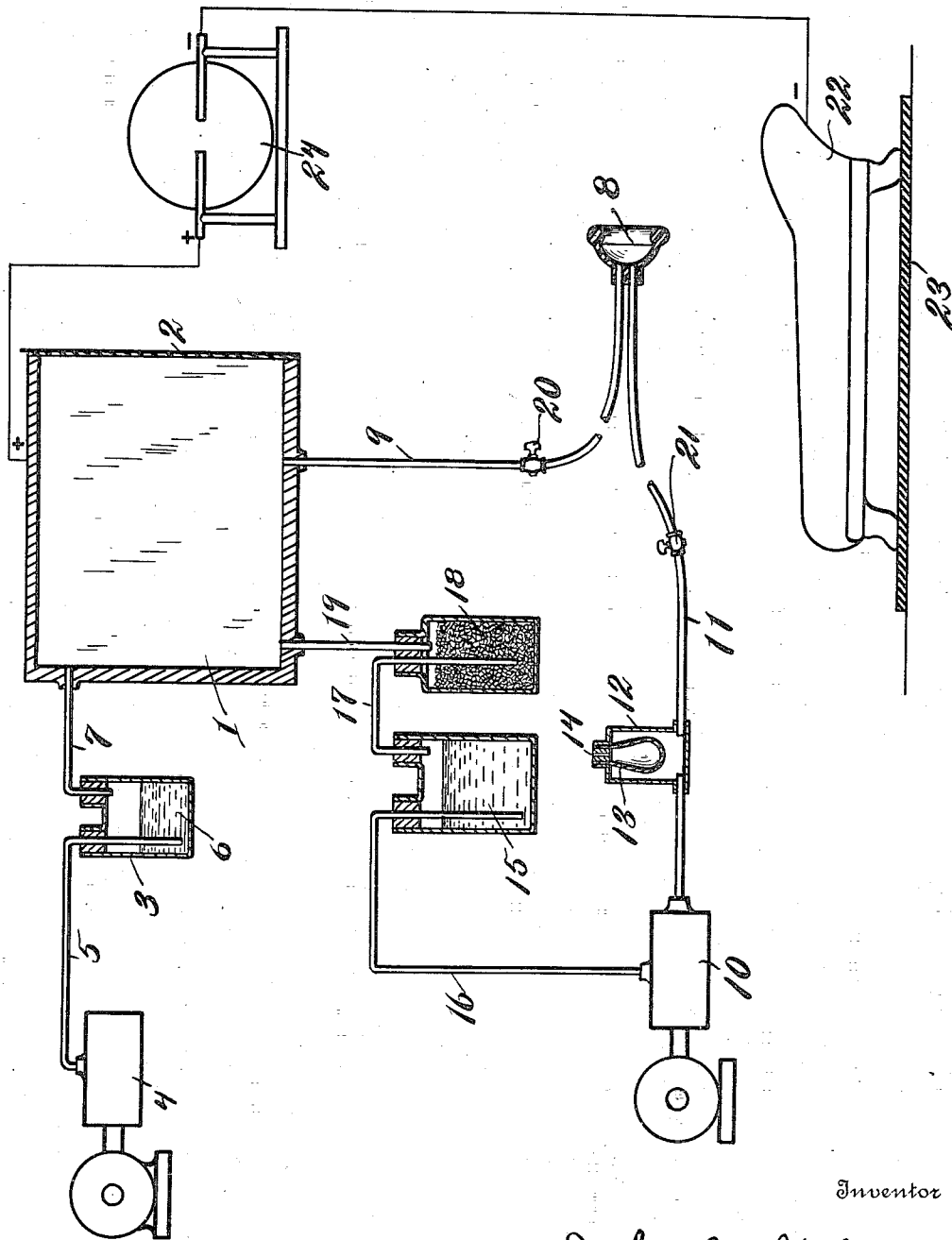


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METHOD OF THERAPEUTIC TREATMENT AND APPARATUS THEREFOR.
APPLICATION FILED MAY 18, 1912.

1,127,897.

Patented Feb. 9, 1915.



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UNITED STATES PATENT OFFICE.

JOHN H. KELLOGG, OF BATTLE CREEK, MICHIGAN.

METHOD OF THERAPEUTIC TREATMENT AND APPARATUS THEREFOR.

1,127,897.

Specification of Letters Patent.

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Application filed May 18, 1912. Serial No. 698,197.

To all whom it may concern:

Be it known that I, JOHN H. KELLOGG, a citizen of the United States, residing at the city of Battle Creek, county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Methods of Therapeutic Treatment and Apparatus Therefor, of which the following is a specification.

This invention relates to methods of therapeutic treatment and apparatus therefor.

The objects of this invention are, first, to provide an improved method of administering radium emanations. Second, to provide an improved method of treatment by use of air or oxygen. Third, to provide an improved therapeutic apparatus for the administration of radium emanations. Fourth, to provide an improved therapeutic apparatus for the treatment by means of air or oxygen.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, which is an illustration of my improved therapeutic apparatus for use in giving treatments according to my improved method, the illustration being largely diagrammatic, the parts being mainly illustrated in conventional form and without regard to relative size or proportion, as the size and proportion and mounting of parts may be varied to a considerable extent to suit the requirements or the taste of the user.

In the accompanying drawing, the air tank or reservoir 1 is provided with a rubber diaphragm 2, the diaphragm being in this structure one of the walls of the tank. When the apparatus is to be used for administering a radium emanation, the air within the reservoir is charged with the radium emanation and this may be done by passing air into the reservoir or tank through a receptacle 3 having water therein charged with the emanation. The air passing through the water takes up the emanation.

I have shown a charging pump 4 which is connected to the receptacle 3 by the pipe 5 which delivers into the receptacle below the water 6 and the discharge pipe connecting the receptacle to the tank.

The breathing mask 8 is adapted to cover the mouth and nose of the person being treated. The mask is connected to the reservoir 1 by the pipe 9 and to the circulating pump 10 by the pipe 11, the impure air being drawn from the mask by the pump and returned to the tank.

In order that the pulsations of the pump may be overcome or reduced, I interpose an equalizing device between the pump and the mask. The apparatus shown is simple and satisfactory, consisting of the receptacle or chamber 12 in which is suspended a rubber bag 13. This bag has a vent opening 14 into the atmosphere. The flexible wall or diaphragm 2 of the receptacle 1 also serves as an equalizing apparatus so that a substantially constant pressure and flow of air to the mask is maintained. The equalizing apparatus between the pump and the mask is not an essential but is of advantage in the matter of the comfort of the patient being treated.

Interposed between the connection for the pump and the reservoir is a purifying apparatus which, in the structure illustrated, consists of the receptacle 15 containing a bath of sulfuric acid, the pipe 16 from the pump delivering into the receptacle at the bottom so that the air bubbles up through the bath of acid and is purified and dried thereby. The air passes from the receptacle 15 through the pipe 17 into the bath of soda lime or other suitable material capable of taking up the carbonic acid gas CO_2 . The pipe 17 delivers well toward the bottom of the receptacle 18 so that the air passes up through the soda lime and through the pipe 19 into the tank or reservoir 1. By this arrangement, the air is purified so that the patient breathes only pure air and a comparatively small quantity of air answers the purpose, which is, of course, a great advantage as it is unnecessary to charge a large quantity of air with the radium emanation. The pipes 9 and 11 are provided with pinch or other suitable valves 20 and 21.

It is found that the radium emanation is attracted by negative electricity and repelled by positive. I take advantage of this fact to secure a retention of a greater por-

tion of the radium emanation in the patient by negatively charging the patient while taking the treatment. This not only causes a greater portion of the radium emanation taken into the lungs to be retained but also prevents its passing from the body as rapidly as it otherwise would. As a convenient means for charging the patient I provide a couch or other support 22 which is insulated as by the insulating mat 23 so that the patient may rest upon the couch while being treated, the couch being connected to the negative pole of the static machine 24 conventionally shown in the drawing. The positive pole of the machine I preferably connect to the tank so that the deposit or collection of the radium on the walls of the tank is prevented, it being, as previously stated, repelled by the positive electricity. By this simple mechanism I provide an apparatus which is very effective for the administration of radium and permits its administration at a comparatively small expense.

Heretofore, the treatment by radium emanation has been by charging the air of a small room or apartment with the radium emanation and confining the person to be treated therein. The air rapidly becomes impure although it has been attempted to partially purify the same by placing in the room a fan or pump passing a portion of the air through a purifying apparatus, the air passed through the apparatus being drawn from the room and discharged into it. This, it is obvious, is an inefficient method. By my improved method only pure air reaches the person being treated and it is only necessary to charge a comparatively small quantity of the air, which, of course, is of great advantage from the point of economy.

The apparatus is efficient and effective for the administration of oxygenized air or ozone or medicated air, although there are various medicaments which cannot be passed through the sulfuric acid bath and some other means of purifying should be substituted.

As stated, I have not attempted to illustrate my apparatus with a regard to the proportion and structural details of the parts as these can be greatly varied according to the requirements of the particular user.

Having thus described my invention, what I claim is new and desire to secure by Letters Patent is:

1. In a therapeutic apparatus, the combination of a reservoir provided with an equalizing means; a breathing mask provided with an inlet and outlet, its inlet being connected to said reservoir; a circulating pump connected to the outlet of said

mask and to said reservoir to circulate the air from the reservoir through the mask; an equalizing device interposed in the connection for the mask to the pump; and a purifying apparatus interposed in the connection for the pump to the reservoir.

2. In a therapeutic apparatus, the combination of a reservoir; a breathing mask provided with an inlet and outlet, its inlet being connected to said reservoir; a circulating pump connected to the outlet of said mask and to said reservoir to circulate the air from the reservoir through the mask; an equalizing device interposed in the connection for the mask to the pump; and a purifying apparatus interposed in the connection for the pump to the reservoir.

3. In a therapeutic apparatus, the combination of a reservoir provided with an equalizing means; a breathing mask provided with an inlet and outlet, its inlet being connected to said reservoir; a circulating pump connected to the outlet of said mask and to said reservoir to circulate the air from the reservoir through the mask; and a purifying apparatus interposed in the connection for the pump to the reservoir.

4. In a therapeutic apparatus, the combination of a reservoir; a breathing mask provided with an inlet and outlet, its inlet being connected to said reservoir; a circulating pump connected to the outlet of said mask and to said reservoir to circulate the air from the reservoir through the mask; and a purifying apparatus interposed in the connection for the pump to the reservoir.

5. In a therapeutic apparatus, the combination of a reservoir; a breathing mask connected to said reservoir; a circulating pump connected to said mask and reservoir to circulate the air from the reservoir through the mask; a purifying apparatus interposed in the connection for the pump to the reservoir; and a negatively charged support for the person treated, said reservoir being positively charged.

6. In a therapeutic apparatus, the combination of a reservoir; a breathing mask connected to said reservoir; a circulating pump connected to said mask and reservoir to circulate the air from the reservoir through the mask; a purifying apparatus interposed in the connection for the pump to the reservoir; and a negatively charged support for the person treated.

7. In a therapeutic apparatus, the combination of a tank provided with a rubber diaphragm; a breathing mask provided with an inlet and outlet, its inlet being connected to said tank; a circulating pump connected to the outlet of said mask and to said tank to circulate the air from the tank through the mask; and an equalizing device interposed in the connection for the mask

to the pump consisting of a chamber having a rubber bag suspended therein, the bag being vented into the atmosphere.

5 8. In a therapeutic apparatus, the combination of a tank; a breathing mask provided with an inlet and outlet, its inlet being connected to said tank; a circulating pump connected to the outlet of said mask and to said tank to circulate the air from the tank through the mask; an equalizing device interposed in the connection for the mask to the pump consisting of a chamber having a rubber bag suspended therein, the bag being vented into the atmosphere.

15 9. In a therapeutic apparatus, the combination of a tank provided with a rubber diaphragm; a breathing mask provided with an inlet and outlet, its inlet being con-

nected to said tank; a circulating pump connected to the outlet of said mask and to said tank to circulate the air from the tank through the mask; and a purifying apparatus interposed in the connection for the pump to the tank.

10. The method of treatment comprising the inhalation of air charged with radium emanation while the person treated is negatively charged.

In witness whereof, I have hereunto set my hand and seal in the presence of two witnesses.

JOHN H. KELLOGG. [L. S.]

Witnesses:

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