

No. 659,551.

Patented Oct. 9, 1900.

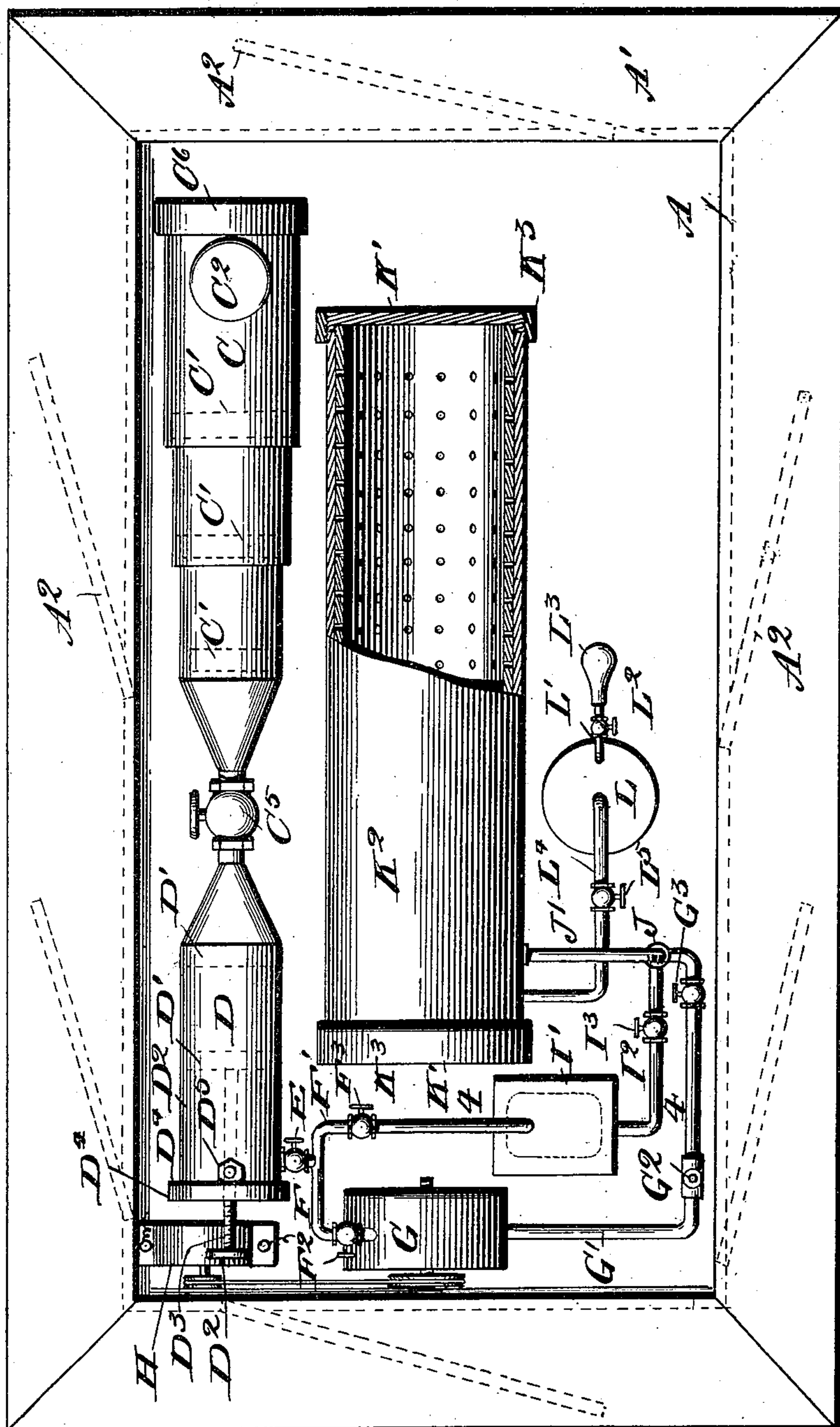
F. R. RYAN.
VAPOR TREATMENT APPARATUS.

(Application filed May 25, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.



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2 Sheets—Sheet 2.

Fig. 2.

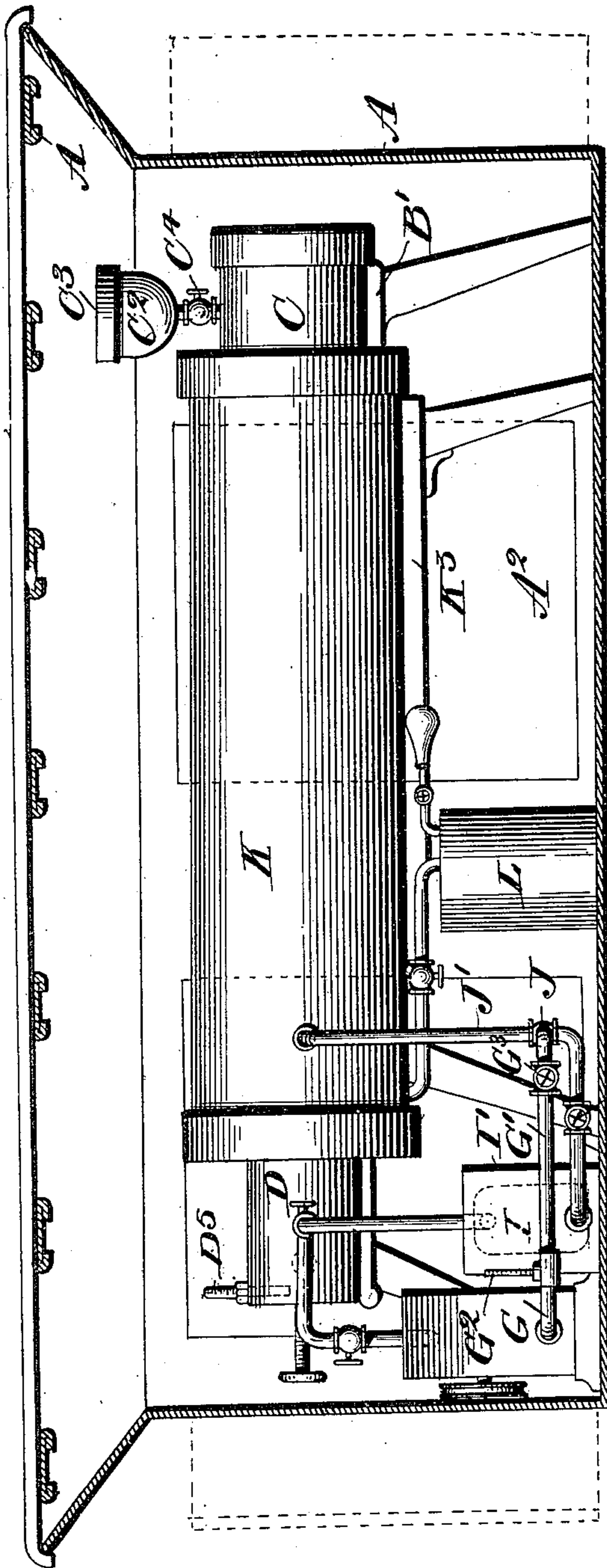


Fig. 4.

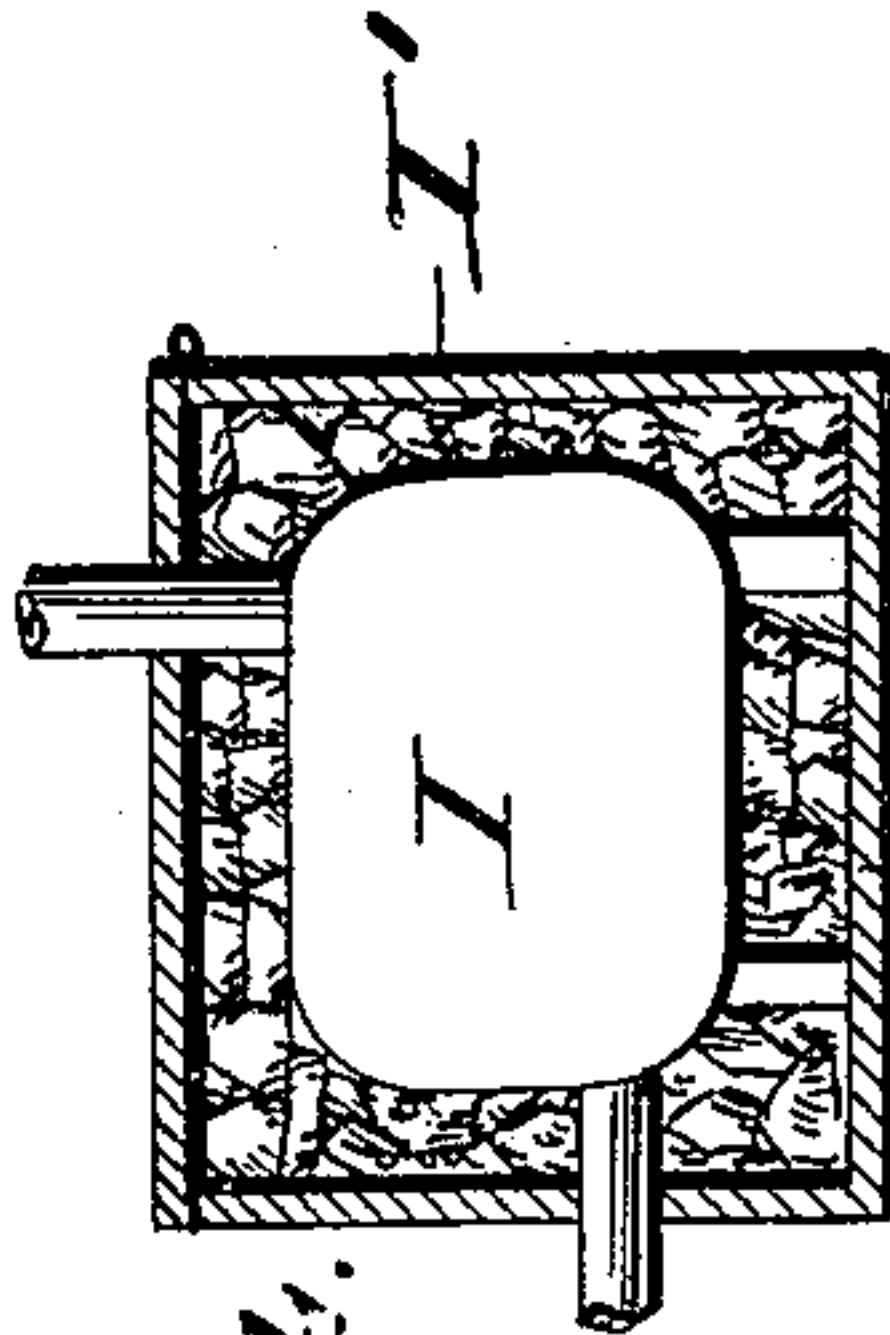
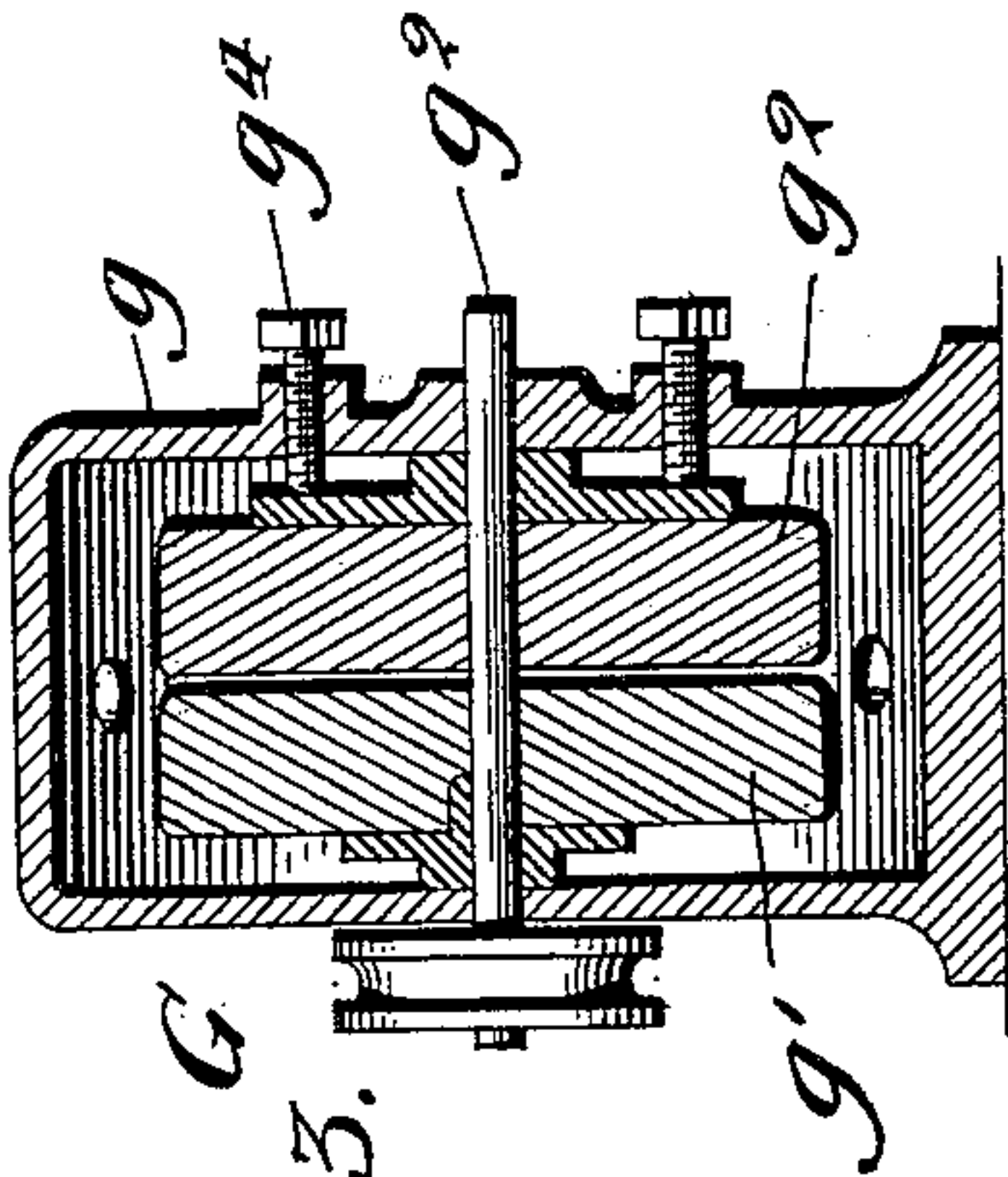


Fig. 3.



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UNITED STATES PATENT OFFICE.

FORTUNÉE R. RYAN, OF MEMPHIS, TENNESSEE.

VAPOR-TREATMENT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 659,551, dated October 9, 1900.

Application filed May 25, 1900. Serial No. 17,959. (No model.)

To all whom it may concern:

Be it known that I, FORTUNÉE R. RYAN, a citizen of the United States, residing at Memphis, in the county of Shelby, State of Tennessee, have invented certain new and useful Improvements in Vapor-Treatment Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention has relation to a vapor-treatment apparatus; and the object of the invention is to provide an apparatus in which remedial agents in the form of vapor may be applied to the body of a patient for the treatment of diseases, which apparatus will give
15 an attendant convenient and important control in regard to the quantity, strength, temperature, and continuance or discontinuance of the application of the remedial agent employed.

20 This application is in the nature of a modification or improvement upon an apparatus disclosed in my application (Case A) filed on even date and pending herewith. For this
25 reason several features herein shown and described are not claimed, as they form in part the subject-matter of said copending application.

30 Among the several specific objects in view is the provision of a comparatively-large quantity of a remedial agent from which smaller quantities may be separated and subjected to either a heating or cooling operation before their application to the body of the patient.

35 Another specific object is the provision of a vapor-evolving device of comparatively-large capacity and capable of long-continued operation.

40 Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

45 In the drawings, Figure 1 is a plan of my invention. Fig. 2 is a substantially central vertical longitudinal section thereof. Fig. 3 is a similar section of a frictional heating device employed, and Fig. 4 is a cross-section
50 of a cooling device employed.

Like letters of reference indicate like parts

throughout the several figures of the drawings.

A is a cabinet in box form, having at its upper portion flaring walls A' and surmounted by a series of slats B, which form a support upon which a patient may recline while receiving treatment. No covering which wholly incloses the patient is employed, in order that secretions from the pores of the body may be at once disseminated with the rising vapor into the surrounding atmosphere. Doors A² are located in the end and side walls of the cabinet to give access to the various parts of the apparatus arranged therein. Upon the table B' or other desired support there is arranged a filtration-chamber C and a distributing-chamber D. The chamber C consists of a cylindrical body portion having sections of varying diameters, as shown, whereby filtering-disks C' (see dotted lines in Fig. 1) of varying diameters may be arranged within each section. The chamber C is surmounted at one end by a receptacle C², having a cap or cover C³ and a controlling-valve C⁴. A valve C⁵ is arranged between the filtering-receptacle and the distributing-receptacle D, and within the latter are arranged filtering-disks D', one of which is slidably arranged within the receptacle and connected with a disk-controlling rod D², having graduations or marks D³ thereon to indicate the quantity of liquid contained between the movable disk and the end of the chamber. By this means measurements of the remedial agent are secured before it is conducted into other parts of the apparatus. A thermometer D⁵ shows the temperature of the contents. The screw-threaded or otherwise connected caps C⁶ and D⁴ are provided for giving access to the interior of these receptacles. These receptacles may be made of any desired non-corrodible material—such as sheet metal properly enameled, glass, porcelain, or any equivalent material—whereby contamination of the remedial agent arising from corrosion is avoided and cleanliness and disinfection assisted. From the distributing-receptacle D there extends a pipe having a valve E and leading into branch pipes F and F', each having a valve F² and F³, respectively. The branch pipe F leads into a frictional heating device G, which is operated by

an electric motor H, or it may be operated by hand, if desired. The branch pipe F' leads into a cooling-chamber I, as shown by dotted lines, which chamber is surrounded by ice or any other suitable cooling agent (see Fig. 4) contained in the outer casing I'. The heating device G is a liquid-tight case, having a disk g' rotatably mounted on shaft g^2 , connected with a motor, and a fixed disk g^3 adjustably held in contact with disk g' by screws g^4 . From the heating device G extends a pipe G', having therein a thermometer G² and valve G³, while from the cooling-chamber I there extends a pipe I², having a valve I³. The pipes G' and I² join in a coupling J, connected with a pipe J', which enters the vapor-evolving device K. An air-cylinder L, provided with an inlet-pipe L', having a valve L² and a hand or other desired air-pump L³, has a discharge-pipe L⁴, with a controlling-valve L⁵, which pipe also enters the vapor-evolving device K, which rests upon a table K³ or other suitable support. This latter device consists of a cylinder K, preferably of glass or other vitrified material, although it may be constructed of sheet metal, thoroughly enameled interiorly and exteriorly. The body of the cylinder is provided with numerous perforations, and its ends are closed by caps K', screw-threaded or otherwise secured in a removable liquid-tight manner. An outer covering K² is provided, which completely encircles the cylinder K and is maintained thereon by collars K³, screw-threaded upon the periphery of the cap, one at each end. The covering K² may be of any desired porous material; but by reason of the difficulty and, in a measure, the uncertainty of disinfection of coverings K², formed of textile fabric, such as woolen or other woven material, I prefer to employ a covering of porous paper, whereby the necessity of disinfection is avoided by reason of the cheapness of the material, so that after it is used in connection with the treatment of a patient it can be discarded and properly destroyed by fire or other suitable means. This feature of the invention reduces the danger of communication by infection of patients rather than their cure by reason of the apparatus, and thus contributes in a great measure to the production of a large percentage of cures.

It is not necessary to designate any particular remedial agent employed; but for the purpose of giving a clear understanding of the construction and operation of the apparatus it may be said that any desired remedial agent, in solid, powdered, or other suitable form, for the production of a solution thereof by filtration is placed within the receptacle C². Any desired liquid, either heated or cold, is passed through the substance in the receptacle C² into the filtering-chamber C', where the remedy now in solution is filtered a desired number of times, in accordance with the number of filtering-disks C' within the receptacle. The filtering opera-

tions taking place simultaneously, there will be collected a quantity of the remedial agent between the several filtering-disks and beyond the last disk in the series. From this source of supply there may be drawn a quantity of solution by opening the valve C⁵ when the remedial agent is conducted into the distributing-receptacle D. By locating the movable filtering-disk D' at a certain point (indicated by the scale D³) upon the rod D² the quantity of remedial agent between said disk and the end of the receptacle may be determined, and this quantity can be conducted from the receptacle D through either of the pipes F or F'. The temperature of the measured quantity of the remedy having been indicated by the thermometer D⁵ and the temperature of the remedy required in the vapor-cylinder K being known, the liquid may be directed into and through either the heating device or the cooler, as required, by a proper manipulation of the proper valves, so that the remedy will reach the vapor-evolving cylinder at the desired temperature. By means of the air-pressure or pump L³ and the intermediate connections with the cylinder K the remedy may be forced into the porous coverings K² from the cylinder, and by a proper control of the temperature the quantity of the vapor discharged upwardly upon the body of the patient may be controlled.

It is obvious that various modifications in size, proportion, location, and arrangement may be made without departing from the spirit of the invention.

Having described my invention, what I claim is—

1. The combination with a porous vapor-evolving device adapted to contain a remedial agent and having an outer covering of porous sheet material, of a receptacle for the remedial agent and connections between the vapor device and receptacle, said connections communicating with a heating device; substantially as specified.

2. A vapor-evolving device consisting of a perforated cylinder of vitrified material or its described equivalent having removable caps, a porous covering surrounding the cylinder, and removable rings mounted on said caps for overlapping and securing the covering in position on the cylinder; substantially as specified.

3. The combination with a porous vapor-evolving device adapted to contain a remedial agent, of a receptacle for a remedial agent and connections between the vapor device and receptacle, said connections communicating respectively with a heating device and a cooling device; substantially as specified.

4. The combination with a vapor-evolving device adapted to contain a remedial agent and having a porous covering, of a separate air-pressure device, separated heating and cooling devices, and means for conducting a remedial agent at will through said heating

and cooling devices; substantially as specified.

5 5. In an apparatus of the class described, a filtration-receptacle and a distributing-receptacle, an interposed valve, and a movable measuring filtering-disk in the latter receptacle; substantially as specified.

10 6. A distributing-receptacle provided with a movable filtering-disk and means extending from the receptacle and adapted to indicate the position of the disk; substantially as specified.

15 7. A distributing-receptacle provided with a thermometer, a discharge-pipe and branch pipes, a heating device and a cooling device

connected one with each of said branch pipes and having discharge-pipes joining in a common discharge-pipe communicating with a vapor-evolving device adapted to contain a remedial agent, whereby the temperature of a remedial agent may be raised or lowered as desired before its application to use; substantially as specified.

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

FORTUNEÉ R. RYAN.

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