

(No Model.)

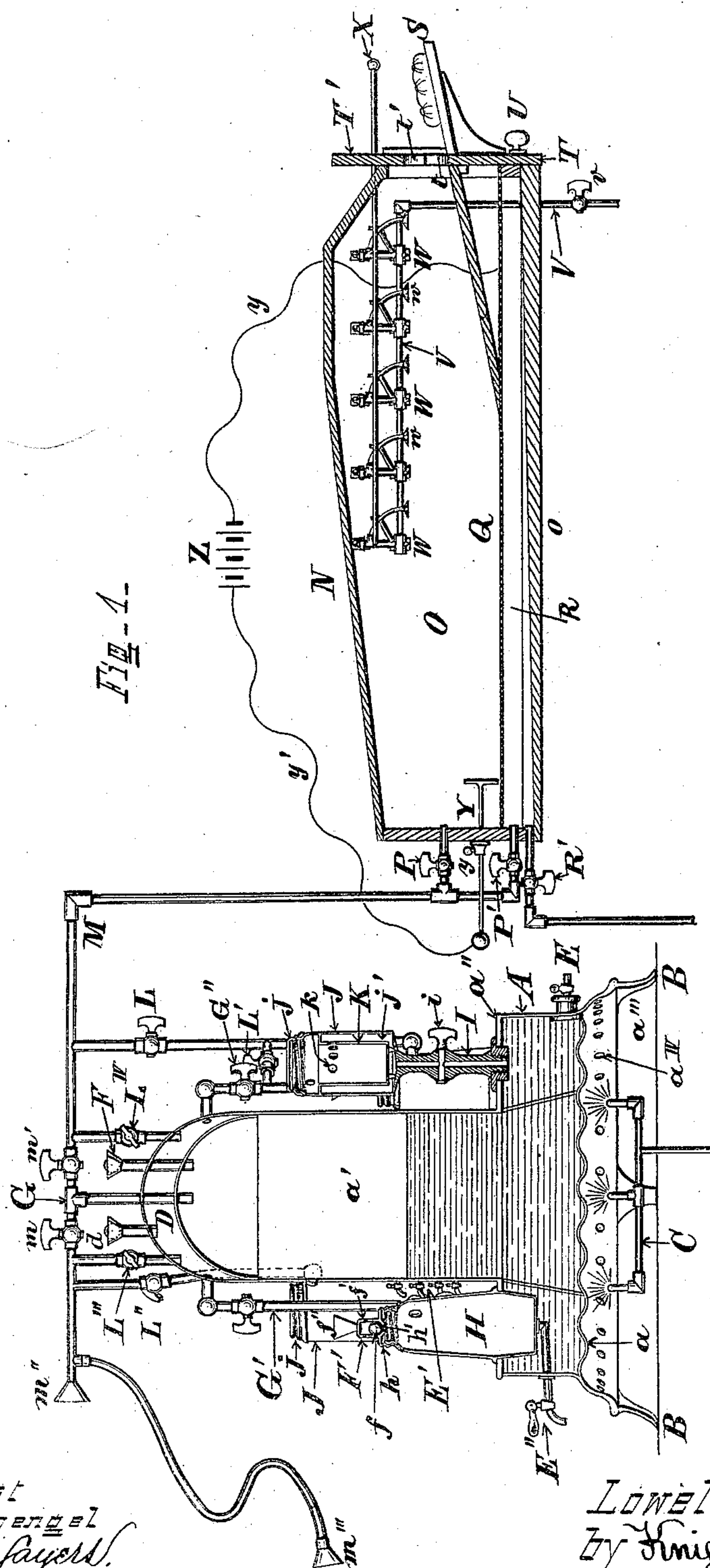
3 Sheets—Sheet 1.

L. M. EMERY.

MEDICAL STILL OR VAPOR GENERATOR.

No. 310,568.

Patented Jan. 13, 1885.



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Inventor  
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Fig. 2.

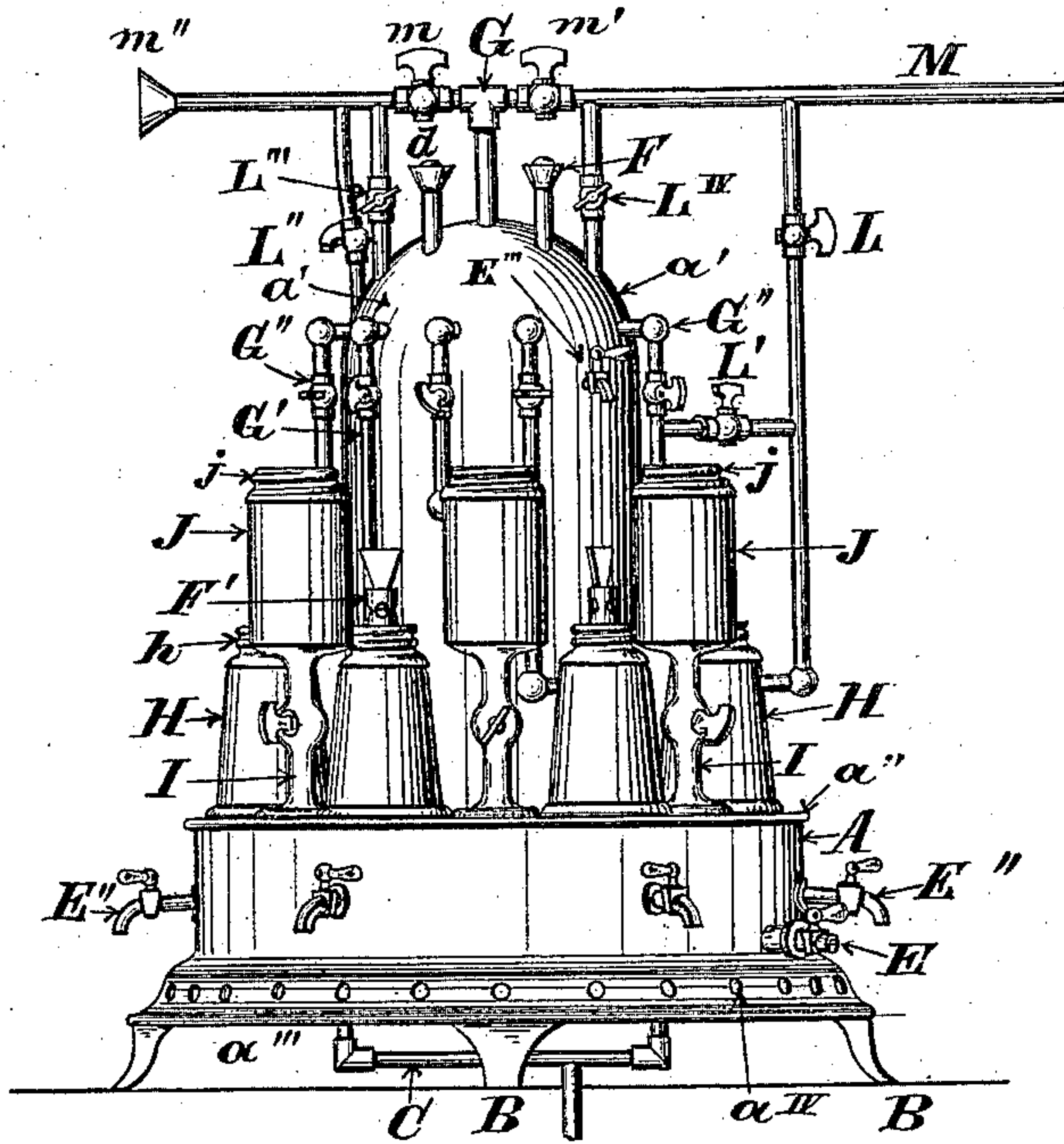
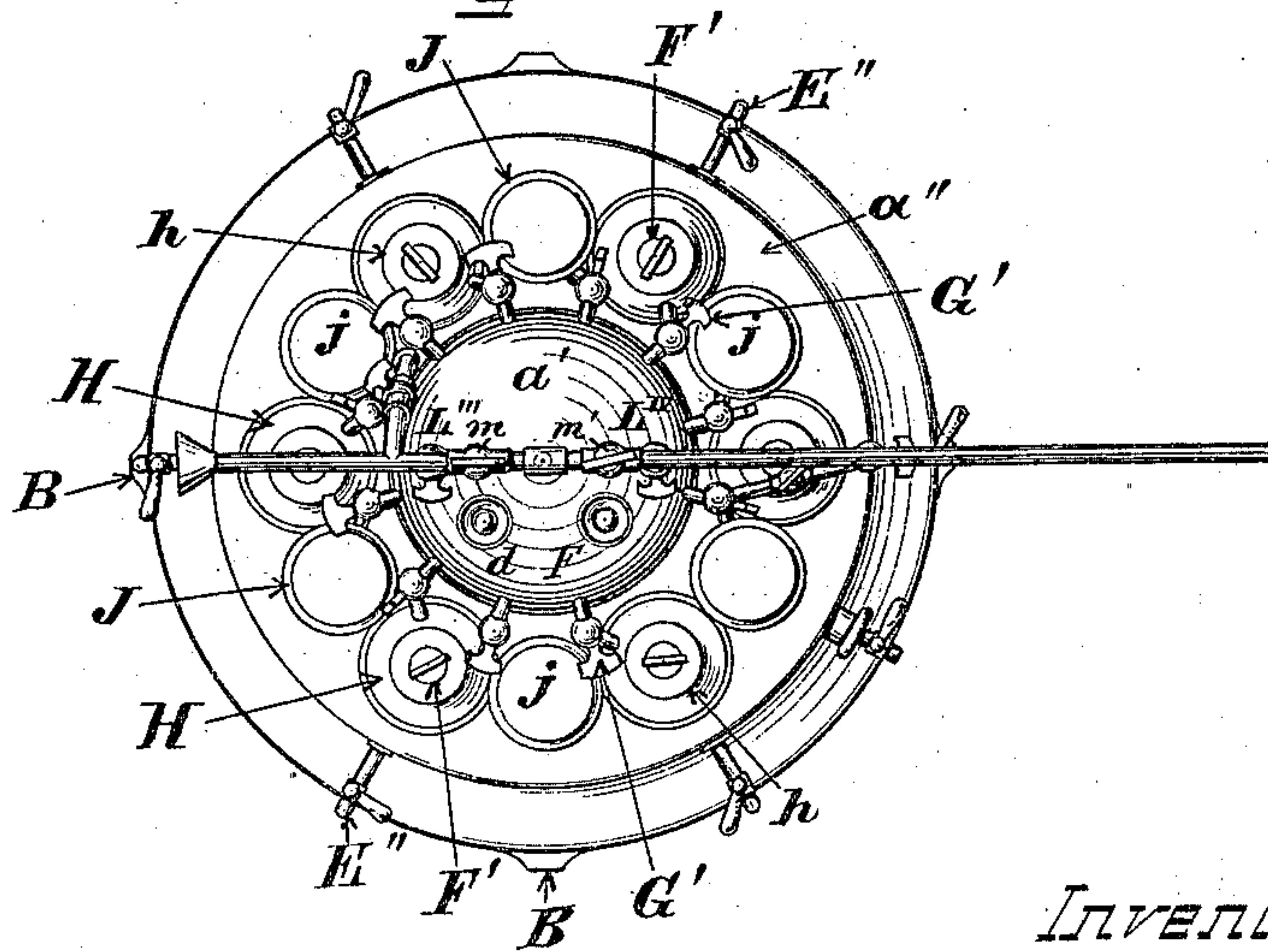


Fig. 3.



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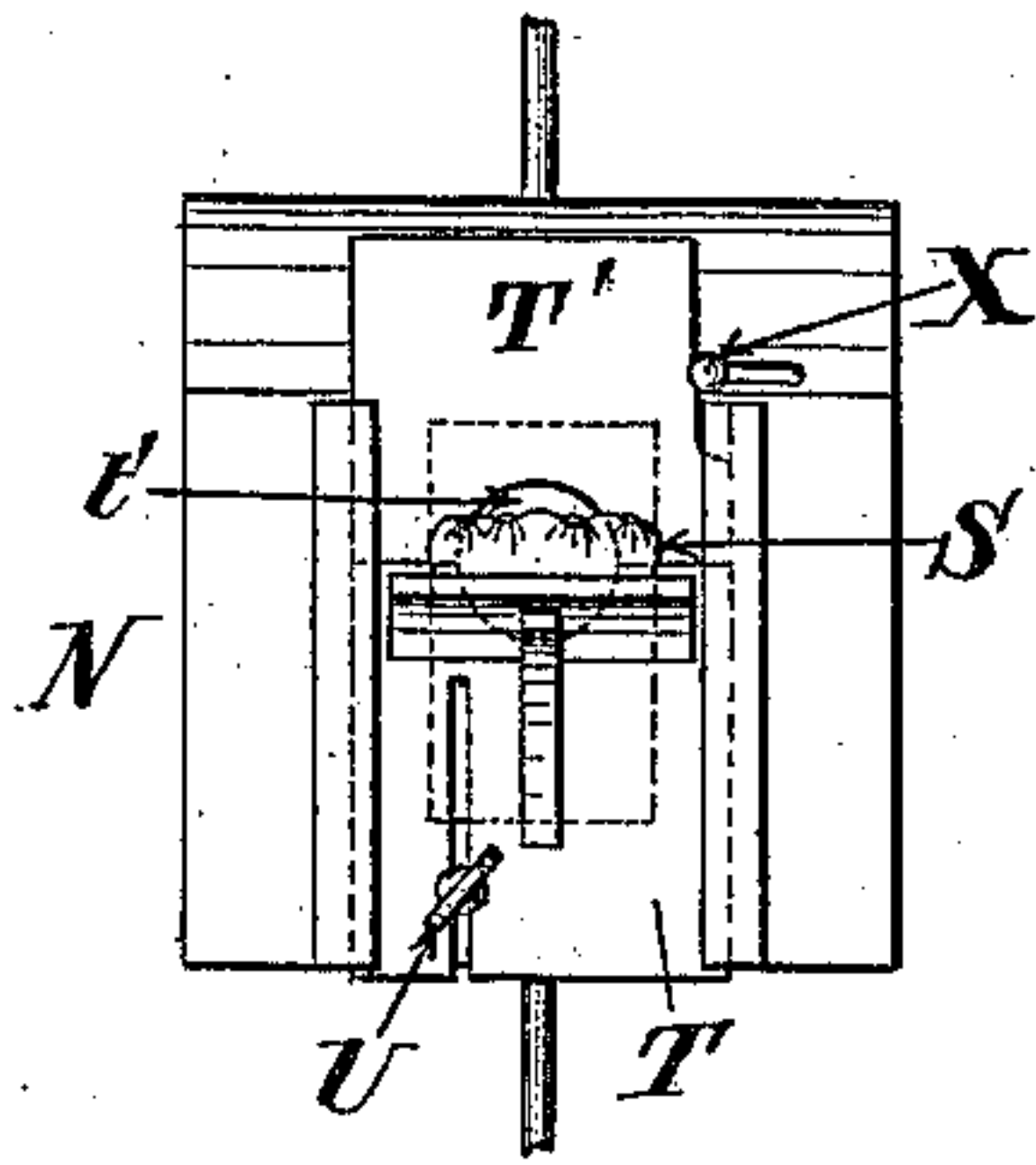
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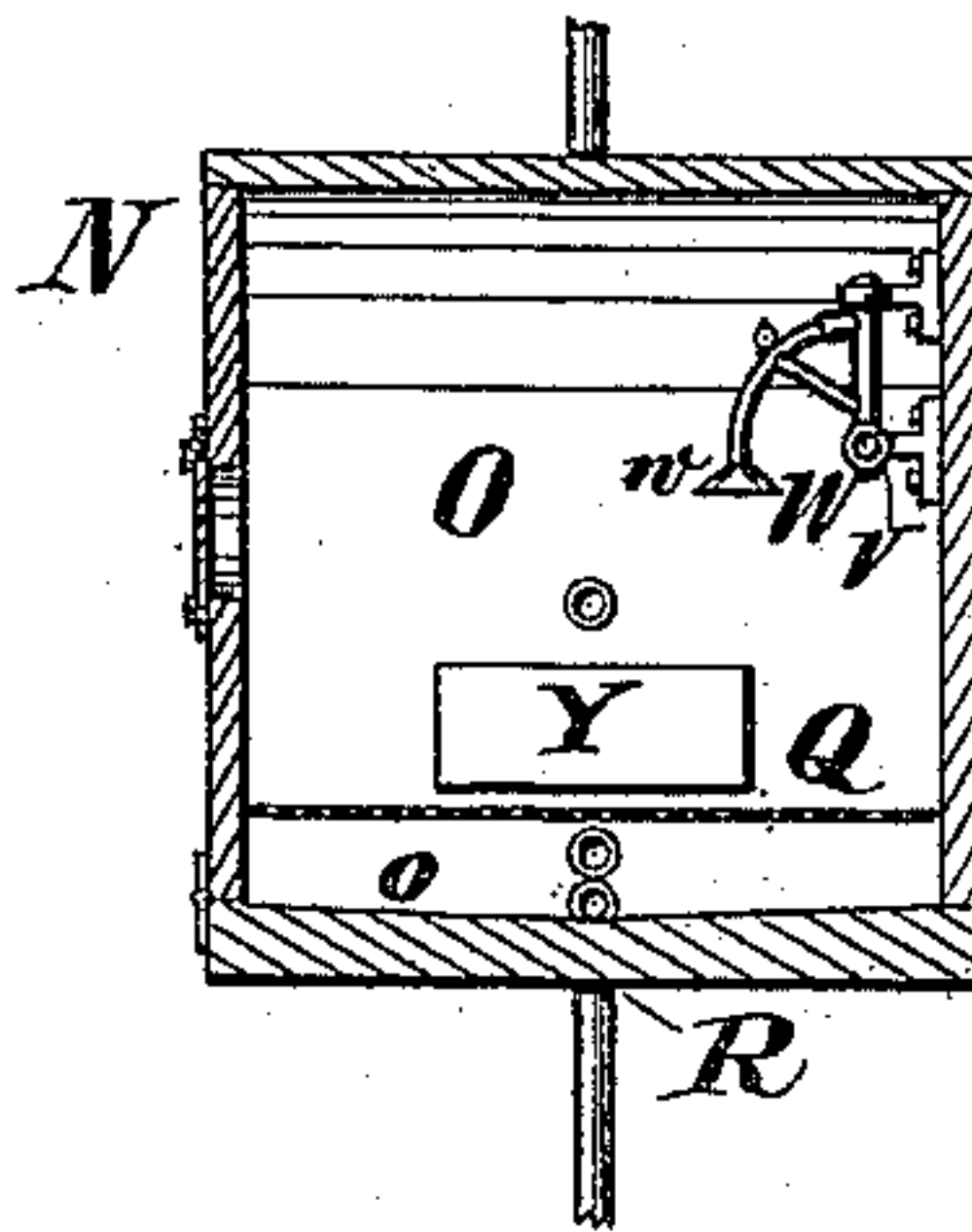
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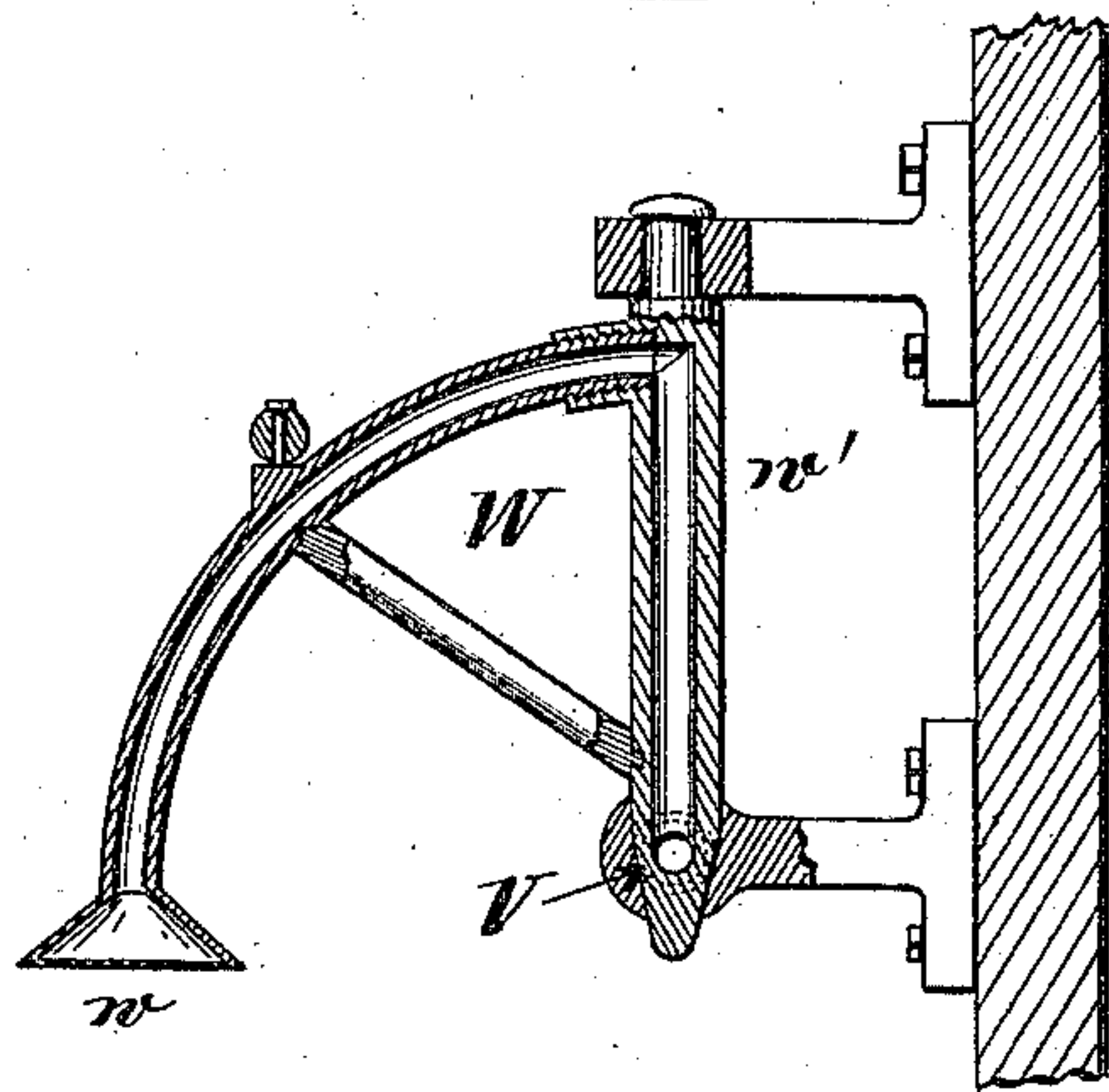
*Fig. 4.*



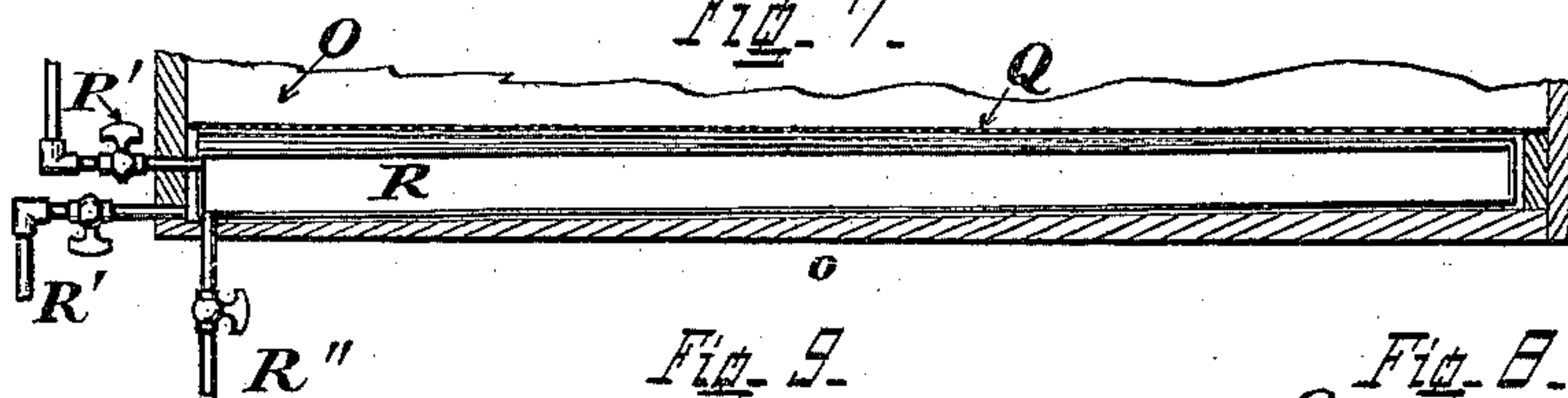
*Fig. 5.*



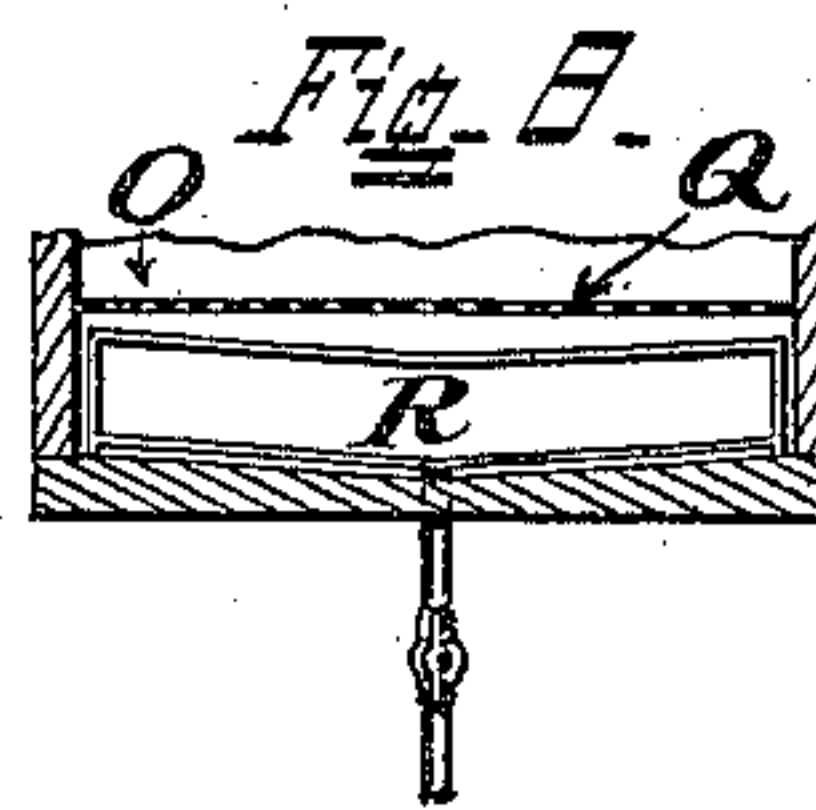
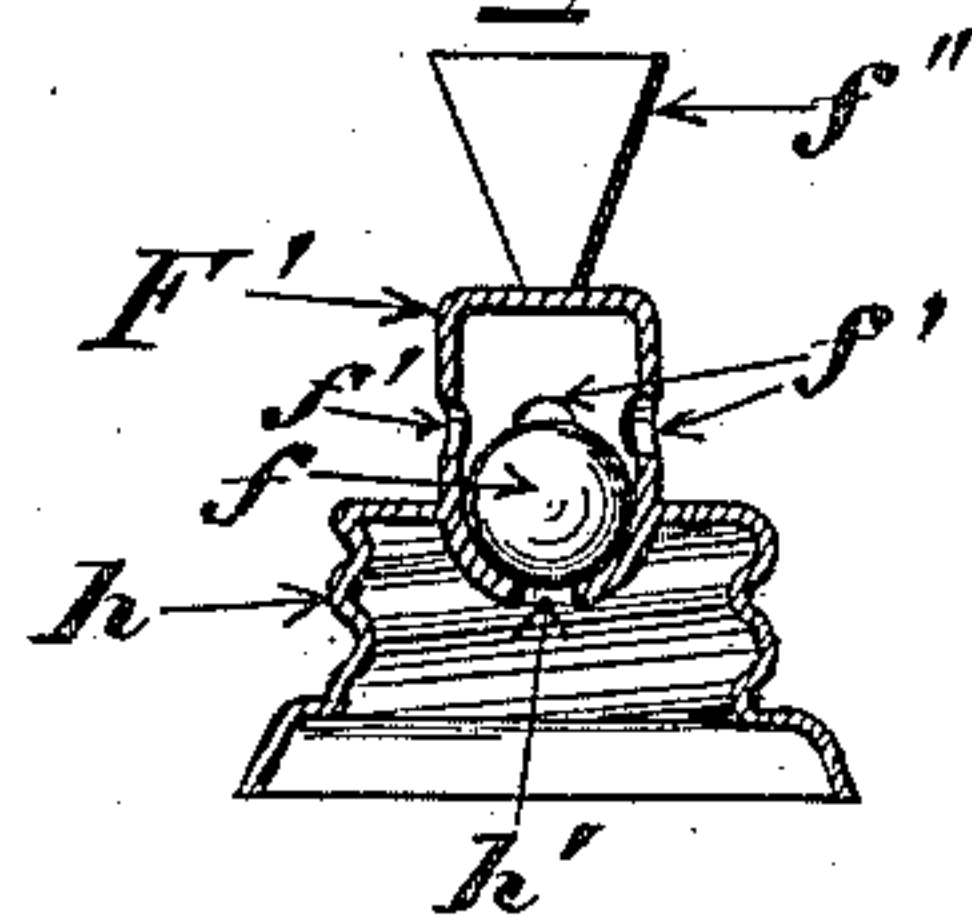
*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



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# UNITED STATES PATENT OFFICE.

LOWELL M. EMERY, OF LEAVENWORTH, INDIANA, ASSIGNOR OF ONE-HALF  
TO GERSHOM T. CRAVEN, OF CINCINNATI, OHIO.

## MEDICAL STILL OR VAPOR-GENERATOR.

SPECIFICATION forming part of Letters Patent No. 310,568, dated January 13, 1885.

Application filed June 13, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, LOWELL M. EMERY, of Leavenworth, Crawford county, Indiana, have invented a new and useful Medical Still or Vapor-Generator, of which the following is a specification.

The invention comprises new and useful devices for the production of one or more medicated sprays or vapors, and for atomizing the same at any desired temperature. Associated with these devices my invention in its preferred form contains means for commingling any two or more of such sprays or vapors in any desired proportions, together with means for applying them to a patient by simple inhalation.

In the accompanying drawings, Figure 1 is a vertical section of an apparatus embodying my invention. Fig. 2 is a side elevation, and Fig. 3 is a top view, of the preferred form of my medicated-vapor generator or still. Fig. 4 is an end view, and Fig. 5 is a transverse section, of the couch or vapor bath. Fig. 6 is a vertical section to a larger scale of my preferred form of spraying-bracket. Fig. 7 represents by longitudinal section, and Fig. 8 by transverse section, that form of my vapor bath which is provided with a chambered pan. Fig. 9 is an enlarged sectional view of my combined safety-valve and screw-cap.

A is a boiler or steam-generator, preferably having a corrugated bottom, *a*, for the double object of strength and ample heating-surface. Said boiler has rising from its center a dome, *a'*, around which the boiler extends horizontally, so as to form a ledge or water-table, *a''*, below the water-line. The generator may be upheld on feet B, and is placed over any suitable burner or heater, C, to which air may be admitted by open space *a'''* or by orifices *a''''*, or both. The dome *a'* is surmounted by a chamber, D, (preferably of the represented concavo-convex form, and called the "mixing-chamber,") which has a safety-valve, *d*. The mixing-chamber communicates by pipes having cocks *L'''* and *L''''* with the service-pipe M, one cock, *L'''*, in front, and the other cock, *L''''*, in rear, of cocks *m* *m'* in said service-pipe.

*E'''*, Fig. 2, is a draw-off cock to the mixing-chamber.

The boiler A has a draw-off cock, E, a series of try-cocks, *E'*, and a safety-valve, F. A steam-discharge pipe, G, leads from the upper part of the steam-space of dome *a'* into that part of the service-pipe M which is situated between the cocks *m* and *m'*.

Partly sunk within the water-table *a''* are vessels H, which I call the "stills" or "stills proper." Each still has a screw-cap, *h*, a draw-off cock, *E''*, a safety-valve, *f*, and a pipe having vapor-discharge cock *G'*, that communicates with the mixing-chamber D. The safety-valve which I prefer to employ for my stills consists of a heavy ball, *f*, which, by its gravity, closes an orifice, *h'*, in the depressed crown of screw-cap *h*. The said valve occupies a housing, *F'*, that rises from the top of the screw-cap *h*, and which has orifices *f'* for escape of any vapor that passes the valve *f*. A handle, *f''*, enables the ready attachment or removal of the screw-cap *h*. Stand-pipes I, having cocks *i*, extend upward from the water-table *a''* to support vessels J, which I designate "jars" or "digesters." The said stand-pipes I when their cocks *i* are open supply hot water from the water-table *a''* to the said jars. Each jar has a screw-cap, *j*, and contains a cup, K, between whose sides and the jar-walls is an annular space or jacket, *j'*, that communicates below with stand-pipe I, and above through orifice *k* in the cup side with the interior of the cup. This arrangement, while permitting the entrance of hot water from the generator, at the same time prevents the escape into the generator of the decoction or extract within the cup, and also retains within said cup whatever condensed vapors may enter it from the service-pipes. The substance undergoing solution or distillation within the cup K, being located below the currents of hot water which enter through the orifices *k*, is not disturbed or driven by them violently into the service-pipes. A pipe having cock *G''* leads from the upper part of each jar into the mixing-chamber D, or from said chamber into the service-pipe M. Other



pipes, having cocks L L', lead from the upper parts of the stills and jars into the said service-pipes. The cocks *m m'* in the service-pipe M enable the vapor to be directed either toward a mouth-piece, *m''* or *m'''*, for inhaling purposes, by a standing or sitting patient, or toward a couch or vapor bath, N, for a bedridden or reclining patient. One jar has special communication by pipe having cock L'' with that part of the service-pipe next the inhalers *m'' m'''*.

From the service-pipe M two cocks, P P', conduct medicated or other vapor into the inclosed chamber O of the couch N. One cock, P, discharges above, and the other cock, P', below, the wire-gauze paillasse Q, which, stretching athwart the chamber O somewhat above its floor, serves to support the person undergoing treatment, while allowing free access of vapor to every part, and at the same time permitting escape of all water of condensation to floor o, or onto a chambered water-pan, R, which may occupy the said floor. A cock, R', enables the discharge of water and effete matter from the chamber O, and a cock, R'', enables the emptying of pan R. The lower cock, P', may discharge directly into the pan R. The chamber O is lined throughout with zinc or with galvanized iron.

S is an elevated rest for the patient's head and shoulders, connected with a slidable lower shutter, T. The rest and shutter are capable of being adjusted vertically, and of being retained to any desired height by means of set-screw U. A depression, *t*, in the upper edge of shutter T receives the patient's neck. A slide or upper shutter, T', with a similar indentation, *t'*, in its bottom edge, being slid down upon shutter T, operates to close the chamber O without inconvenience to the patient. A pipe, V, that conveys, at discretion of the attendant, water of any desired temperature and medicated or otherwise, and provided with one or more suitable cocks, *v*, being conducted into the chamber O, is carried along near its ceiling and communicates with a series of hollow or tubular swinging brackets, W, that terminate in spraying-adjutages *w*. The arrangement is such that any bracket that is brought to a position transverse of chamber O has its post *w'* thereby brought into communication with the water-service pipe V, and discharges a spray of medicated or other water of any desired temperature upon the part of the patient's person situated beneath it. The construction of the parts is preferably such as to permit such discharge, even when the bracket is placed somewhat obliquely to the transverse position, and inasmuch as either one may be used singly or any two or more simultaneously, the patient or his attendant is enabled to concentrate spray in any quantity on any part of the patient's body. A handle, X, that may extend

to the outside, enables the opening or closure of all the sprays at once, when desired. A slidable rod, Y, capable of being fixed by means of a screw, *y*, may be provided in the foot end of chamber O. This rod communicates by wire *y'* with a voltaic battery, Z, or other source of electricity, and thence, by another wire, *y''*, with another part of the patient's person. This attachment permits the use of electricity either separately or in conjunction with the other remedial agencies above described.

The represented concavo-convex mixing-chamber D, having its bottom formed by the top of the steam-generator dome *a'*, serves several purposes of high utility. For example, it conserves the heat of the generator and utilizes it for the warming up and atomizing of the chemical emanations from the stills and jars. It also, in association with described pipes and cocks, enables either pure steam or any mixture of two or more medicated vapors that have been evolved in the vessels appropriated thereto to be thoroughly blended and atomized, and by opening certain cocks and closing others driven toward one or more of the open mouth-pieces *m'' m'''* or toward the vapor-bath or couch N. It will thus be seen that while medicated vapor is passing one way plain steam can be passing the other way. It is further apparent that by a simple duplication of the above passages and vapor-bath several patients may be subjected to different treatments by emanations from one distilling apparatus.

I claim as new and of my invention—

1. In a medical still or vapor-generator, the boiler A, having the central elevated dome, *a'*, above and surrounding water-table *a''* below the water-line, substantially as set forth.

2. In a medical vapor-generator, the combination, with water-table *a''*, of the distilling-vessels H, partly immersed in said water-table, substantially as set forth.

3. In a medical vapor-generator, the combination, with water-table *a''*, of the stand-pipes I from said table surmounted by the jars or digesters J, as and for the purposes set forth.

4. In a medical vapor-generator, the mixing-chamber D, surmounting the boiler-dome *a'*, communicating with the stills proper, H, by pipes having cocks G, with the digesters J by pipes having cocks G'', and with the vapor-service pipe M by pipes having cocks L''' L'', substantially as set forth.

5. In a medical vapor-generator, the combination of the vapor-service pipe M, having cocks *m m'*, the dome *a'*, having a mixing-chamber, pipe G, connecting boiler-dome to the service-pipe between the cocks, and pipes having cocks L'' L''', connecting mixing-chamber to service-pipe, the service-pipe adapted to connect in one direction with an in-

haler and in the other direction with a bath, as set forth.

5 6. In a medical vapor-generator, the combination of jar J and cup K, fixed concentrically within the jar forming an enveloping interstice or jacket between the jar and cup, said cup having orifices *k* near its top, as set forth.

In testimony of which invention I hereunto set my hand.

LOWELL M. EMERY.

Attest:

SAML. S. CARPENTER,  
CARL SPENGEL.