

No. 675,089.

Patented May 28, 1901.

C. B. DOLGE.
FLUID HEATING APPARATUS.

(Application filed Nov. 19, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

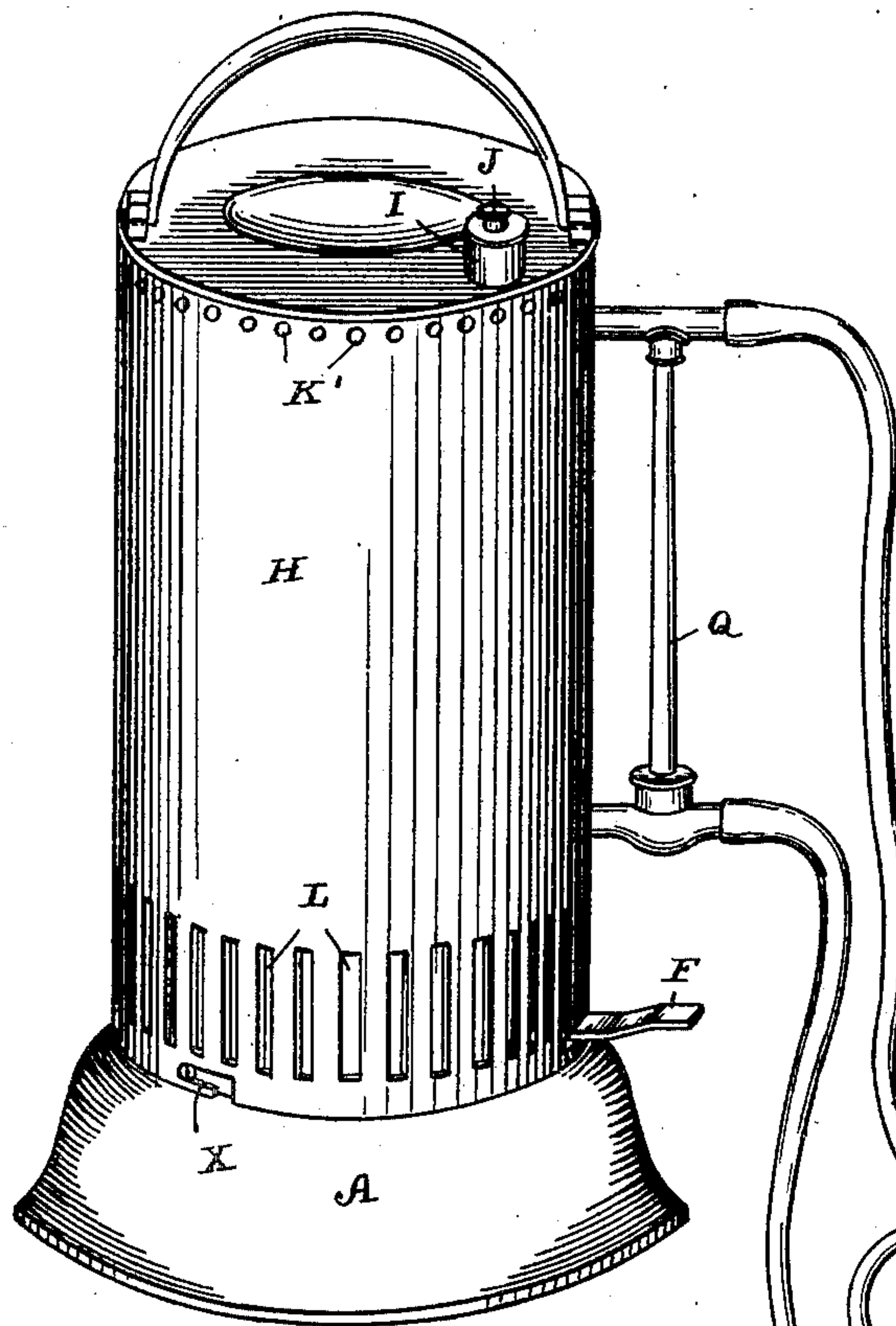


Fig. 2.

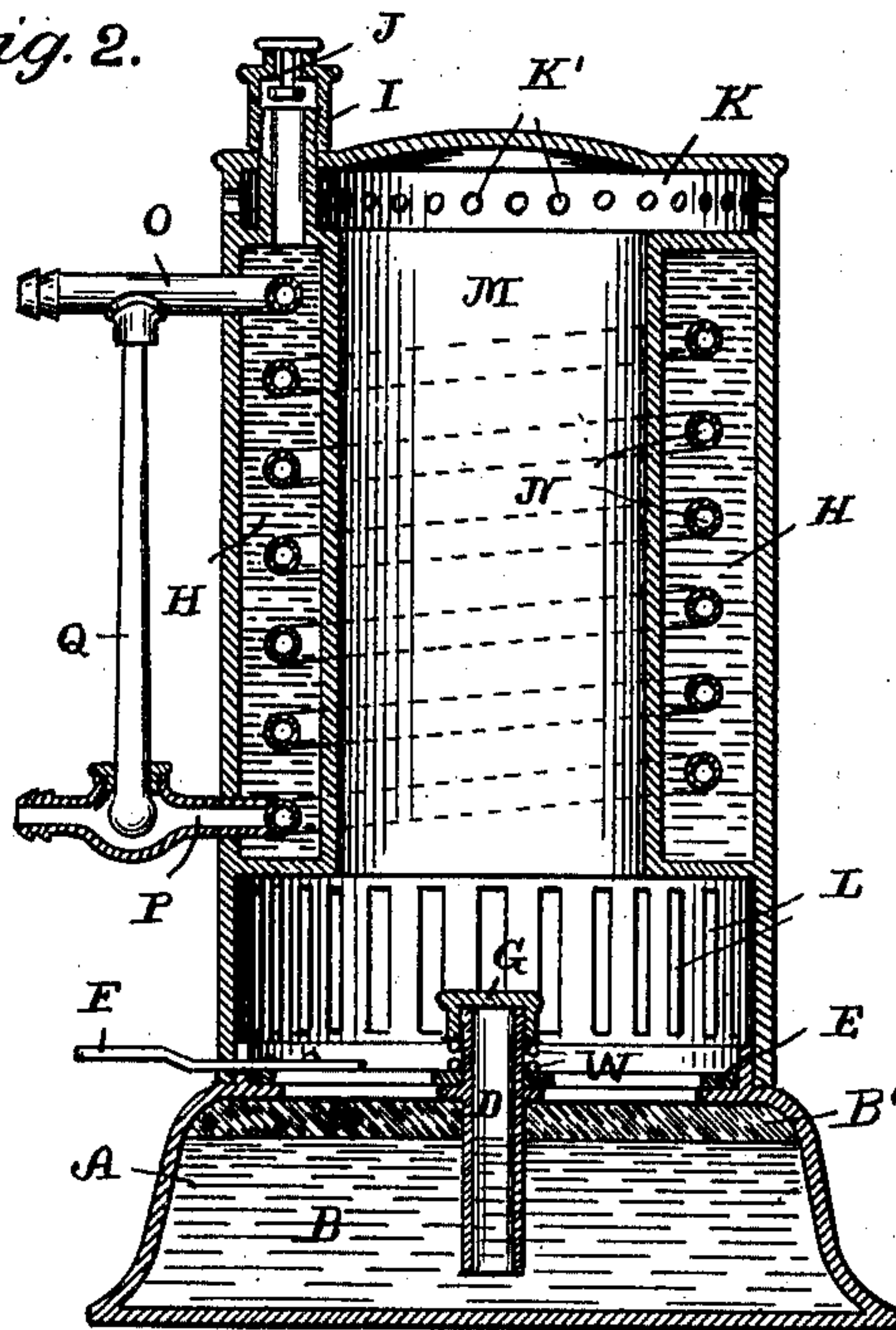
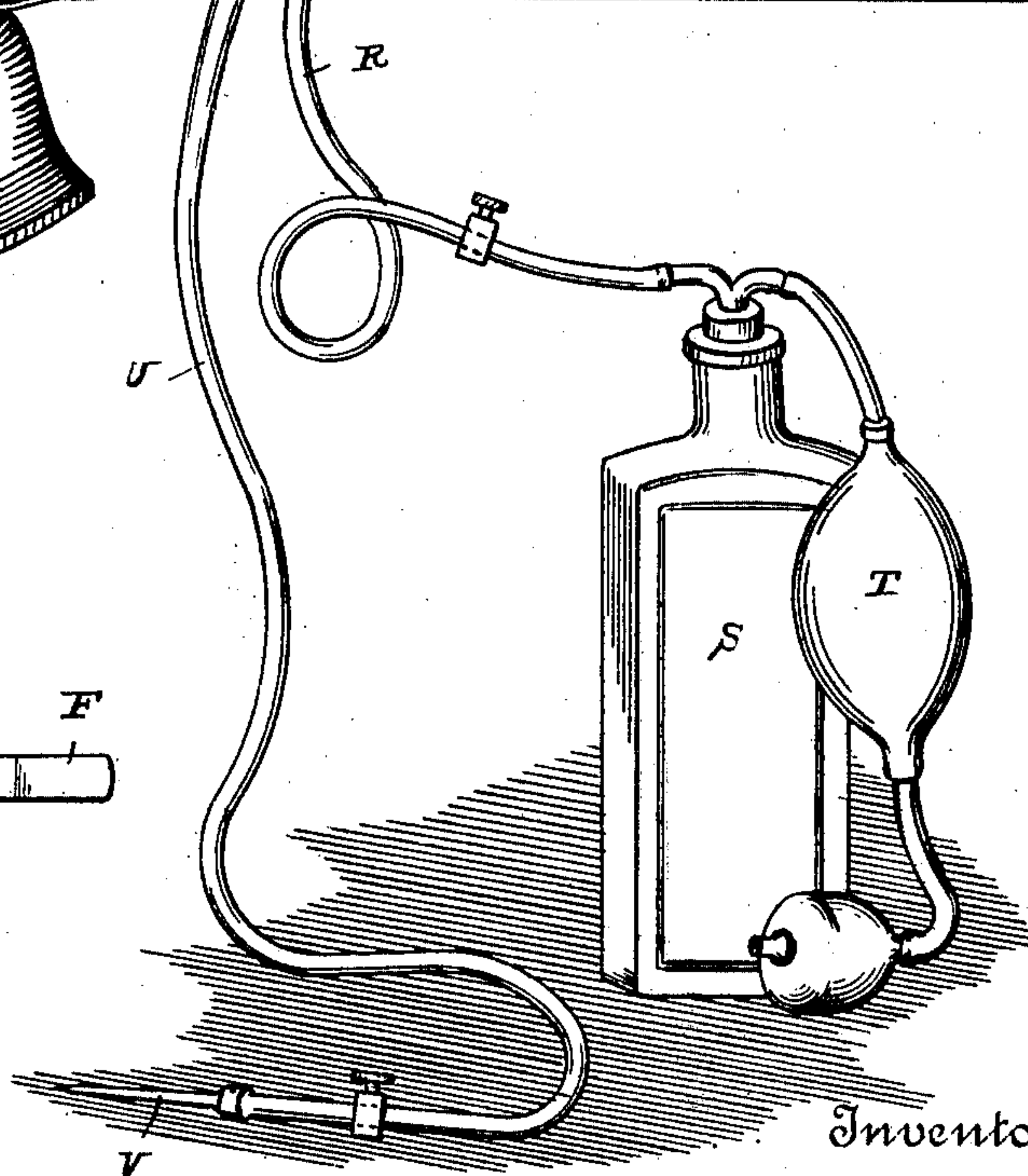
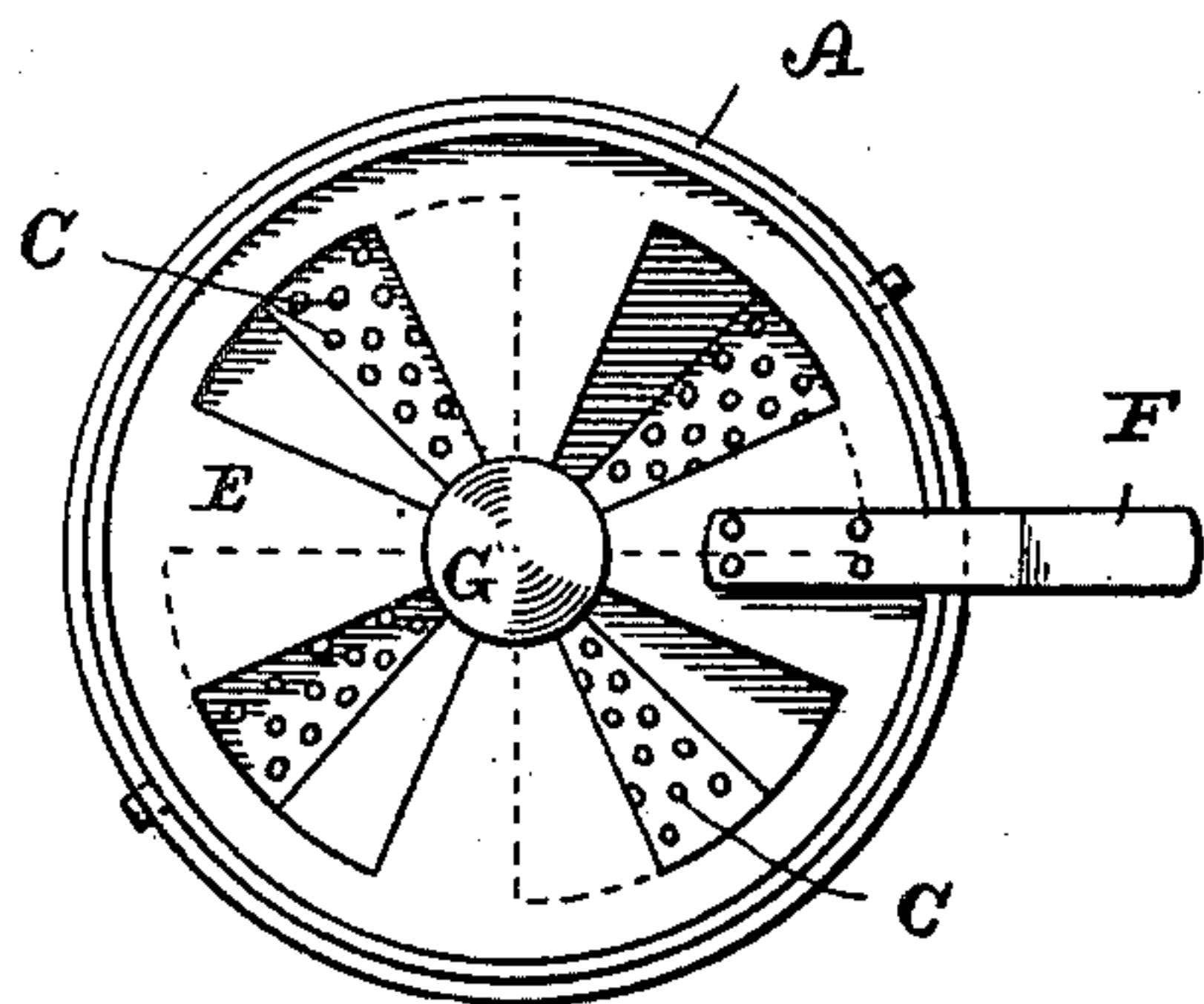


Fig. 3.



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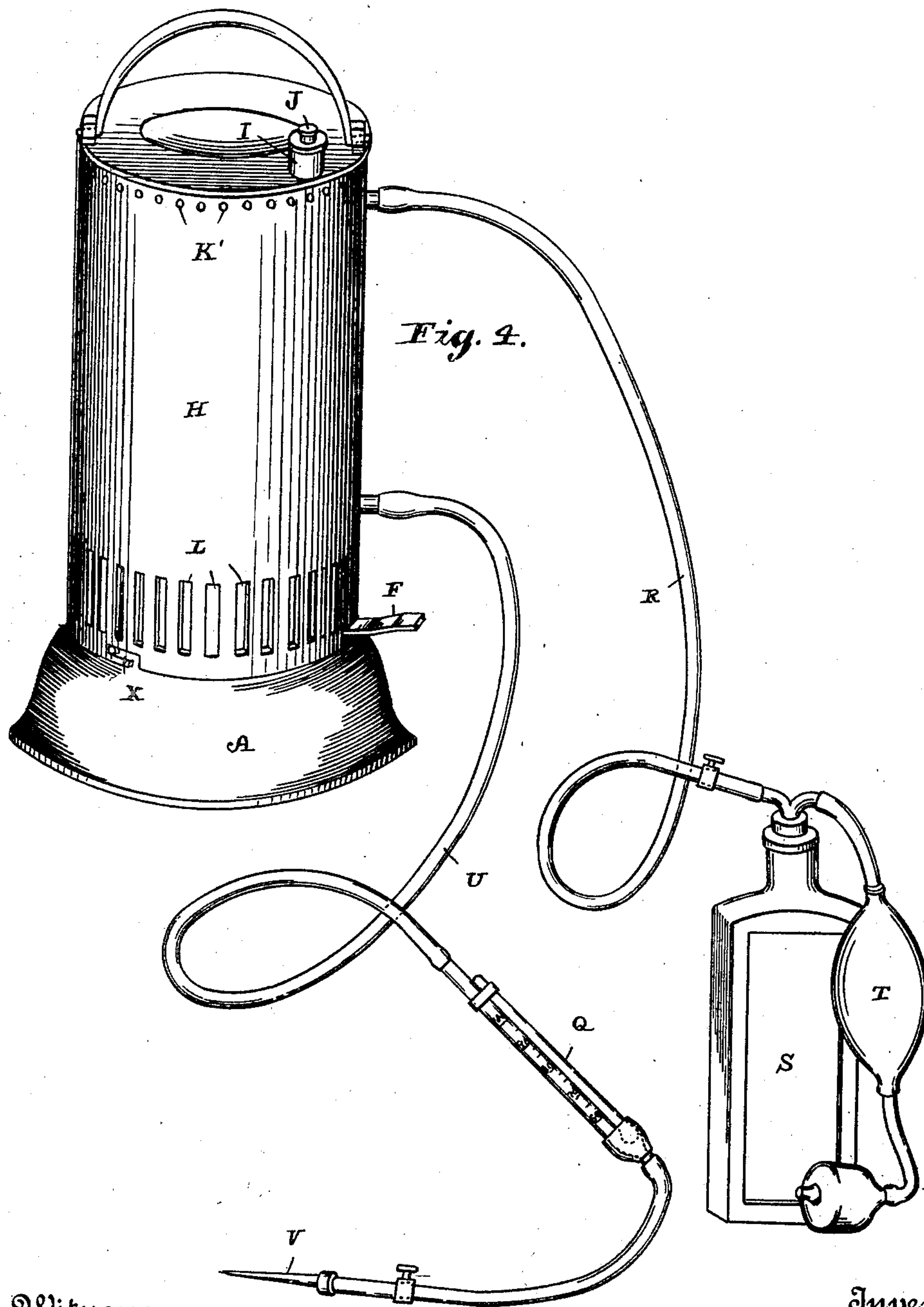
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UNITED STATES PATENT OFFICE.

CARL B. DOLGE, OF WESTPORT, CONNECTICUT.

FLUID-HEATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 675,089, dated May 28, 1901.

Application filed November 19, 1900. Serial No. 36,939. (No model.)

To all whom it may concern:

Be it known that I, CARL B. DOLGE, a citizen of the United States, and a resident of Westport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Fluid-Heating Apparatuses, of which the following is a specification.

My invention relates to new and useful improvements in heating apparatuses for use by undertakers, embalmers, and others, whereby embalming, disinfectant, and similar fluids may be passed therethrough and warmed, heated, or vaporized prior to introduction or use.

Heretofore undertakers have used their embalming fluids "cold," so to speak—that is, taking it direct from the bottle in which it comes and injecting it into the body by means of pumps or various forms of syringe-bulbs. This method of introduction does not give the most satisfactory results, particularly if the body is cold, therefore requiring considerable time for the fluid to penetrate to all parts of the body, which by my improved apparatus can be done in a more thorough and satisfactory manner. In practice I find that by warming the fluid slightly it will more freely distribute itself throughout the arteries and capillary vessels, as will be obvious to those skilled in the art. Another important point is that the blood will become more liquefied and is easier to extract than when cold fluid is injected.

It is therefore an object of my invention to provide a device which may be interposed between the fluid-receptacle, its injector, and the body whereby the fluid may be continuously passed from the former to the latter and warmed during transit; to provide in connection therewith means for determining the temperature of the fluid as it passes from the heater, and, further, to provide a device whereby the temperature of the fluid may be varied at will, according to the work desired, and finally to produce a heater in a simple, practical, durable, and inexpensive manner, so as to bring it within the reach of all users.

Upon the accompanying sheet of drawings, forming a part of this specification, similar characters of reference denote like or corresponding parts throughout the several figures, and of which—

Figure 1 shows a perspective view of my improved heater complete, the same being interposed between an injecting-needle and a fluid-bottle, the latter comprising the means by which the fluid is fed to the heater and thence through the needle to the body. (Not shown.) Fig. 2 is a central vertical cross-section of the heater shown in Fig. 1. Fig. 3 is a disconnected plan view of the burner used in my apparatus for generating the heat.

Referring in detail to the characters of reference marked upon the drawings, A indicates a lamp, which comprises the base of my apparatus and which is adapted to contain alcohol, kerosene, or other fluid from which to secure a flame. This lamp, as shown in Figs. 2 and 3, consists of a fluid-reservoir B, having several series of perforated openings C through its top and a central filling-tube D, as shown in Fig. 2. Immediately beneath the perforated top I arrange a sheet of asbestos or wicking B' to form a conductor for the fluid, which latter is consumed through the perforations before mentioned. A slidable flame-regulating cap E is pivoted upon the tube before mentioned and is provided with a handle F, whereby it is adjusted on said pivot to partially or wholly cover the perforations before mentioned to regulate the amount of flame desired. An adjustable cap G is fitted over the top of the fluid-tube in a manner to inclose the same, and beneath the edge of said cap I arrange a tension-spring W, which engages the flame-regulating cap in a manner to form a resistance against its movement.

Upon the lamp is situated the heater proper, which is preferably of a cylindrical construction (but can be made in other shapes) and secured to the lamp by a bayonet-joint X. (See Fig. 1.) Said heater comprises an annular water-jacket H, with a filling-tube I, containing a steam-escapement J. The top end of the cylinder is inclosed, and the jacket referred to does not extend thereagainst, but is situated intermediate of the two ends, thus forming an annular recess K above the jacket, which is provided with a series of perforations K' to allow the smoke and gases to escape from the burner. Beneath the jacket and within the side walls of the cylinder I arrange a series of slots L to form an inlet to the burner, thus insuring free combustion. The flame

is deflected against and under the inner wall of the jacket, and its heat and gases pass up through the central opening M and out through the perforated annular recesses K' before mentioned, thus affording a continuous, even, and unobstructed flame within the water-jacket for heating the latter. Within this water-jacket I arrange a coiled pipe N, which encircles the inner wall of the jacket and is provided with an inlet O at the top and an outlet P at the bottom. Within the outlet I secure a thermometer Q, the bulb of which is exposed to the interior of the fluid-outlet and its upper end is held in a suitable socket of the inlet-pipe. If preferred, this thermometer can be situated in the rubber tube leading from the outlet. It will thus be apparent that the fluid is designed to pass in at the top and down through the coiled pipe, which latter, as will be obvious, is surrounded by the heated water, thus heating the temperature of the fluid to the degree desired, whereupon it is forced out through the outlet-pipe, coming in contact with the thermometer, causing its mercury to rise in accordance with the degree of heat of the fluid.

U is a pipe connected to the outlet, with an injecting-needle or nozzle V attached thereto, which conducts the fluid from the heater to the body. R represents the hose connecting the heater and the fluid-bottle S. T indicates the injecting-bulb, by means of which the fluid is forced from the bottle through the heater and into the body. These connections are of the usual construction, such as the average embalmer would have in stock, and do not necessarily form a part of my invention, since other connections and methods of passing the fluid through the heater can be used in connection therewith; but for clearness of illustration and to insure a proper understanding of my invention I have shown these particular connections.

My invention may also be used as a means of disinfecting as well as an embalming-fluid heater with but slight alterations, it being obvious, of course, that the two uses come within the requirements of an undertaker, and therefore their use is synonymous. The coil of pipe may be longer or shorter, consisting of a greater or less number of coils, as desired. It may likewise be located directly against the inner wall of the jacket, if desired, or, in fact, said wall could be omitted entirely and the flame exposed directly to the coils; but the construction shown is found to be preferable in practice.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. An embalming-fluid heater comprising a cylindrical body forming a water-jacket, and having a central opening therethrough, a circular recess above and below said jacket, a series of perforations in said recess above and below the jacket communicating with the central opening referred to, a lamp beneath the body, a coil of pipe within the water-jacket having an outlet and inlet and means to force the liquid to pass therethrough.

2. The combination in a fluid-heater, of a lamp, a cylindrical water-jacket thereon, circular recesses above and below the jacket, air-openings into said recesses, a combined filling-tube and steam-escape for said jacket, a coil of pipe in said jacket, a fluid inlet and outlet to connect with the coil, a thermometer situated in said outlet, and means for forcing fluid therethrough for heating, substantially as described.

3. In a fluid-heater, the combination with a lamp comprising a tank, a central filling-tube therefor, series of perforations in the top of said tank, a slidable cut-off for said perforations pivoted on said tube, an adjustable screw-cap for the filling-tube before mentioned and a spring interposed between said adjustable cap and the cut-off whereby a tension is afforded for the latter, of a water-jacket arranged above said lamp with an automatic steam-escape therein, a circular recess above and below said jacket, a fluid-pipe arranged in said water-jacket, and means for determining the degree of heat as it passes from said fluid-pipe, substantially as described.

4. In a fluid-heating apparatus, the combination with a lamp, of a cylindrical casing detachably connected thereon, an inner wall within said casing with closed ends forming an annular cylindrical jacket intermediate with its length, a central cavity through the jacket, circular enlargements at top and bottom, perforations through the casing in said enlargement to permit a passage of air therethrough, an automatic steam-escape for the jacket and means for forcing a flow of fluid therethrough, means to register the degree of heat of the fluid as it passes from the heater, substantially as described.

Signed at Bridgeport, in the county of Fairfield and State of Connecticut, this 13th day of November, A. D. 1900.

CARL B. DOLGE.

Witnesses:

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