

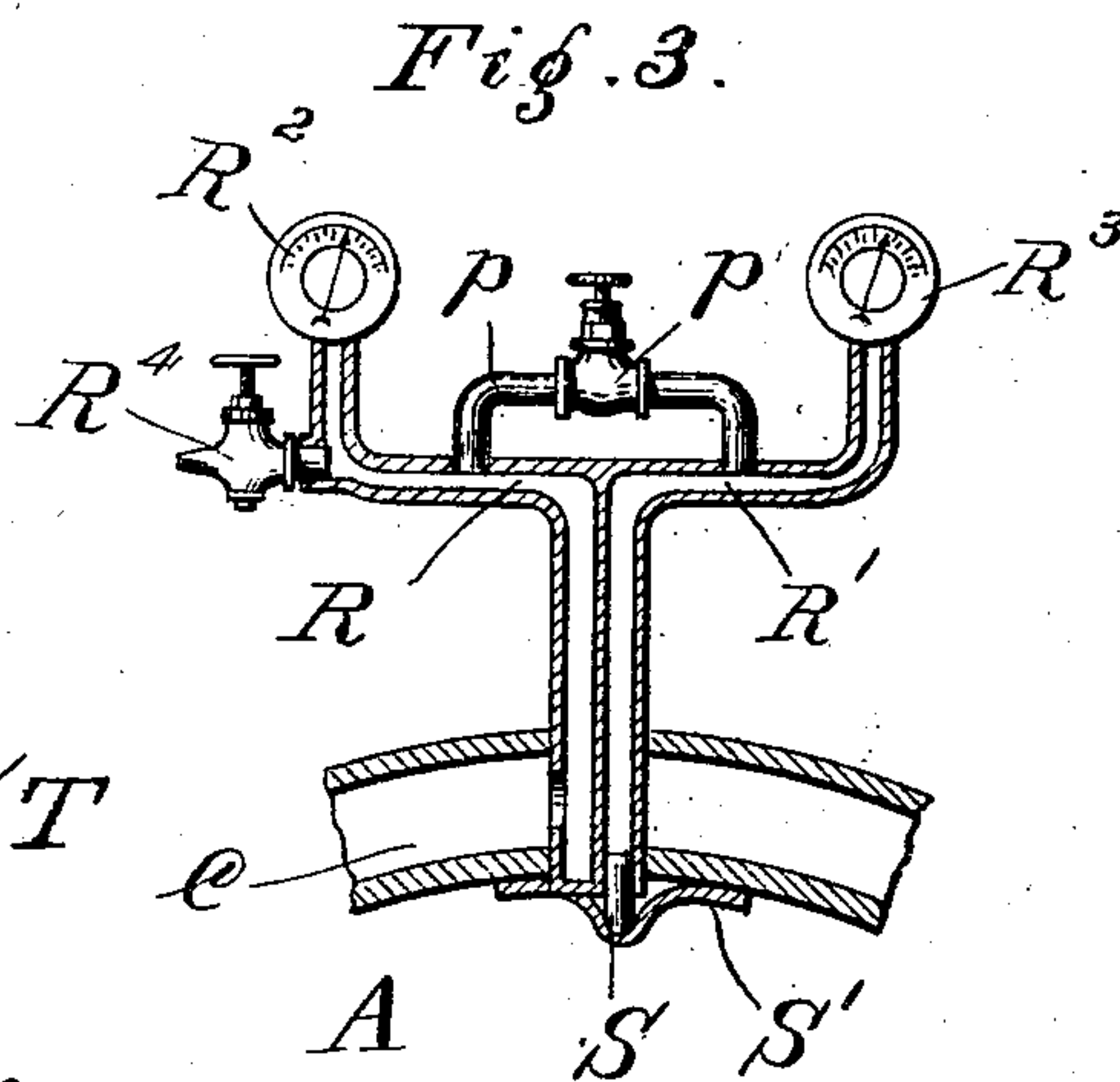
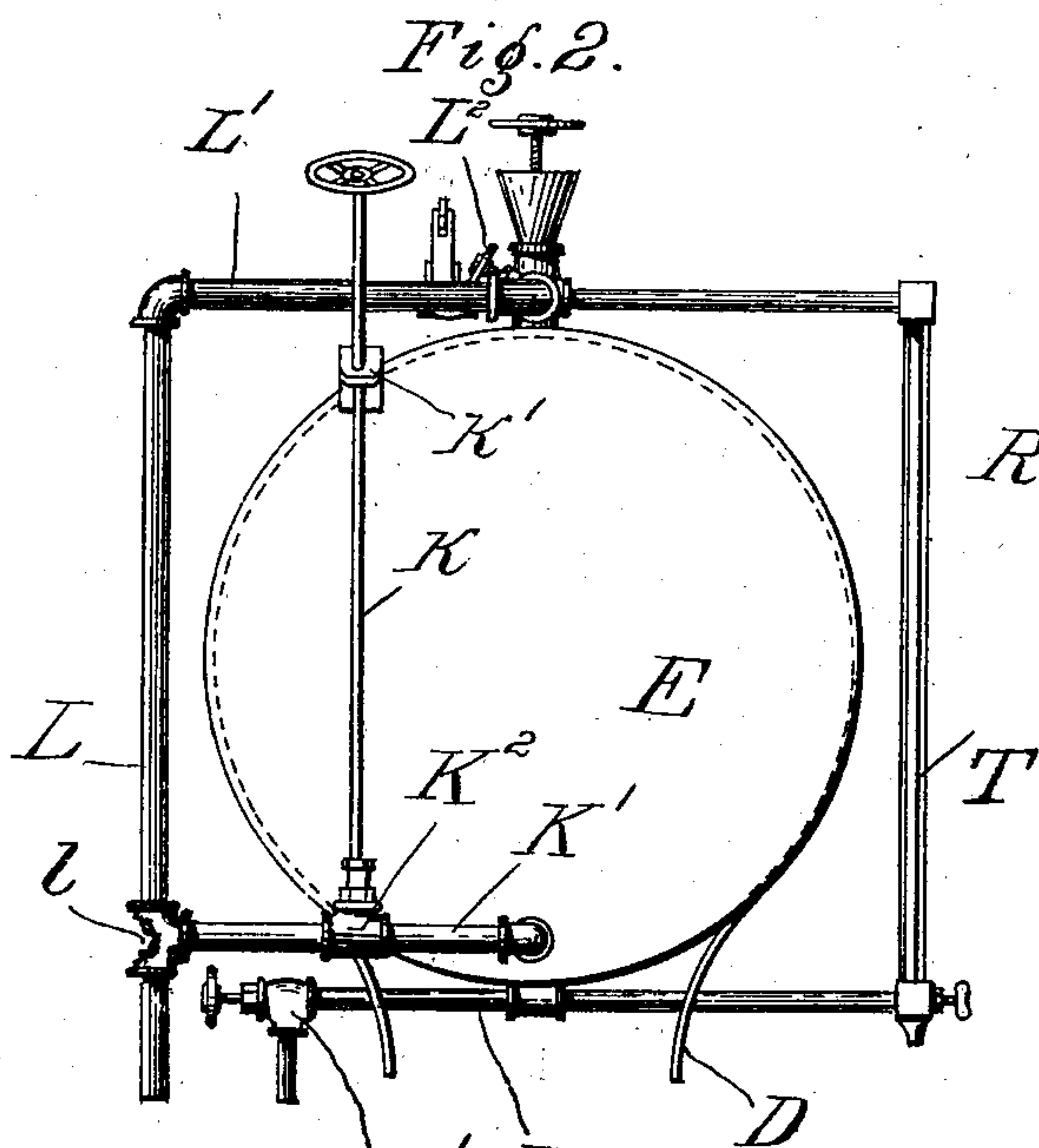
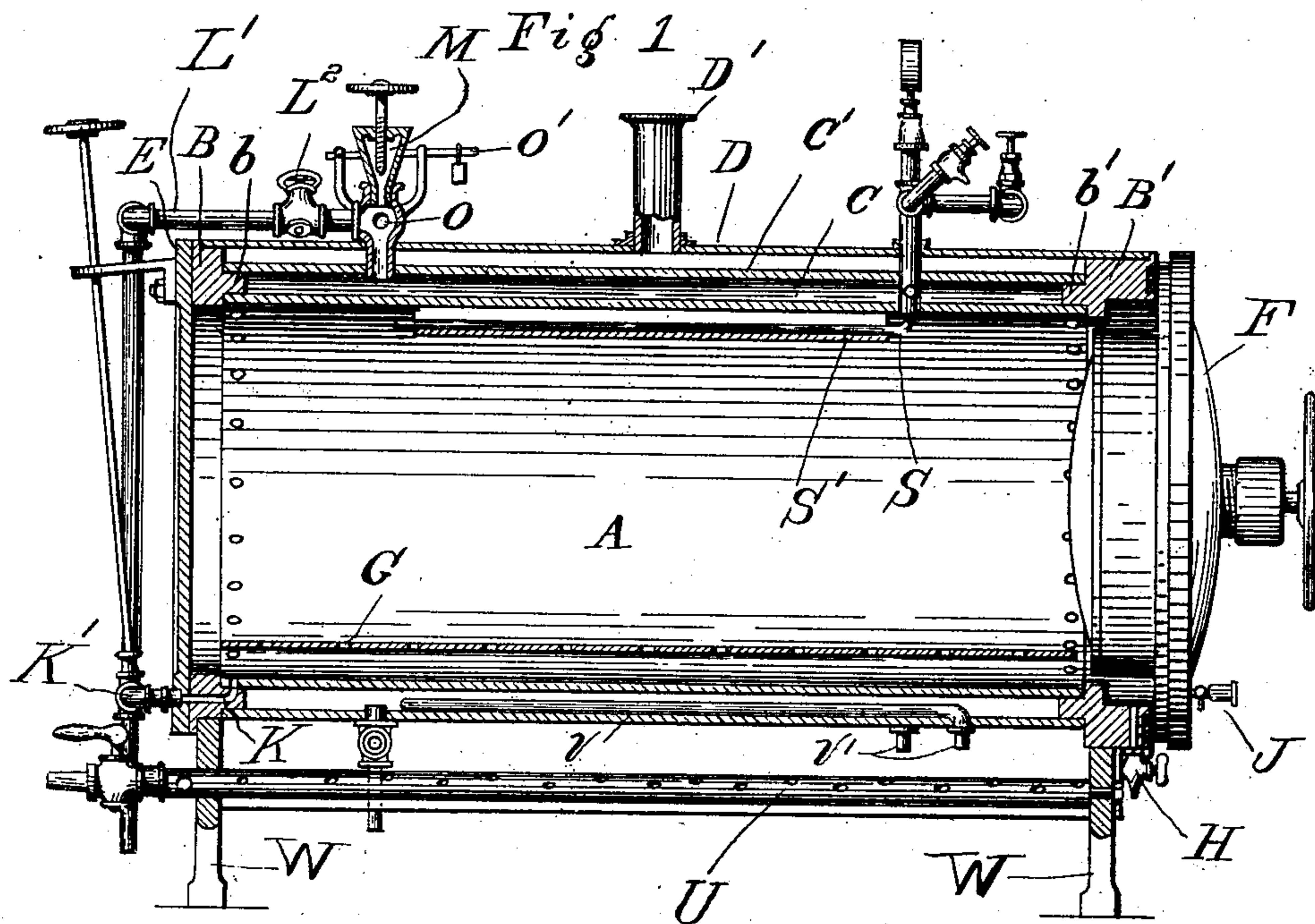
No. 720,159.

PATENTED FEB. 10, 1903.

R. KNY.  
STERILIZER.

APPLICATION FILED JUNE 24, 1902.

NO MODEL.



Witnesses *N' N*  
*S. J. Cop.*  
*M. Hyndman*

*Richard Kny* Inventor  
By His Attorney *William R. Baird*



# UNITED STATES PATENT OFFICE.

RICHARD KNY, OF BROOKLYN, NEW YORK.

## STERILIZER.

SPECIFICATION forming part of Letters Patent No. 720,159, dated February 10, 1903.

Application filed June 24, 1902. Serial No. 112,962. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD KNY, a citizen of the United States, and a resident of the borough of Brooklyn, in the county of Kings and city and State of New York, have invented certain new and useful Improvements in Sterilizers, of which the following is a specification.

My invention relates to apparatus for sterilizing dressings, surgical instruments, and other articles, and its objects are, among others, to provide an apparatus of this character by means of which such articles may be quickly and effectively sterilized by means of heated air and steam, the said apparatus being so constructed as to be safe, accurate, and easily operated. It is illustrated in the accompanying drawings, forming a part hereof, and in which—

Figure 1 is a longitudinal medial section of an apparatus, showing my improvements with the door in full. Fig. 2 is a view of certain portions of the apparatus located at the rear end thereof. Fig. 3 is a vertical cross-section of the connection between the steam and sterilizing chambers and the pressure-indicators.

The inner oven or sterilizing-chamber A is formed of a metallic cylinder A', secured at its edges to the rings B and B' by being riveted to the annular flanges b and b'. These flanges afford also a means for the attachment of the cylinder C' and separate it a short distance from the cylinder A', so that a space C is left between the two, which space constitutes the boiler or steam-chamber of the apparatus. An outer cover or jacket D is also secured at its edges to the rings B and B', a space being left between it and the cylinder C, which forms a chamber for the reception of heated air rising from the heating apparatus at the lower part of the sterilizer, at which point the jacket is preferably opened. A small chimney D' is located at the upper central part of the jacket D, through which smoke or air may escape.

The rear of the sterilizing-chamber is closed by the back plate or cover E, which is bolted or otherwise secured to the ring B, and the front of the same is provided with a door F, through which the articles to be sterilized may be passed into the sterilizing-chamber.

A removable grate G is located near the bottom of the sterilizing-chamber, upon which the articles to be sterilized may be placed and which will prevent them from coming in contact with any water which may accumulate at the bottom of said chamber through the condensation of vapor therein. A small outlet-valve H is provided at the lowest point of the said chamber, through which such condensed vapor may be withdrawn. The door is also provided with a valve-controlled inlet J, through which air, either medicated or otherwise, may be admitted to the sterilizing-chamber.

At the rear and lowest part of the sterilizing-chamber is an outlet-channel K, leading to the tube K', which has a valve K<sup>2</sup> thereon, the rod k of said valve extending upwardly to a point above the sterilizing-chamber and being held in position by a bracket k', secured to the back plate or cover. This pipe K' communicates in turn with the pipe L, which is provided with a nozzle l at the junction for the purpose of producing a jet of steam, which will cause a draft from the sterilizing-chamber through the channel K and pipe K'. The pipe L communicates with the steam-chamber through the right-angled pipe L', which has a valve L<sup>2</sup> thereon.

At the point where the pipe L' enters the steam-chamber a pin-valve M, with a funnel-shaped orifice, is located, through which water may be supplied to the steam-chamber either to fill the same before pressure has been generated therein or to cleanse it. An inlet or outlet pipe N also communicates with the steam-chamber at its lower part and has a valve N' thereon. This pipe may be employed either to inject water into the steam-chamber or withdraw it therefrom, and when it is desired to cleanse the said steam-chamber the water or other cleansing liquid may be poured in through the valve M and withdrawn through this pipe N. A small branch pipe O, having a safety-valve O' thereon, of the ordinary construction, is connected to the pipe L' at the point where it enters the sterilizer.

Communication between the steam-chamber C and sterilizing-chamber A is had through the tubes R and R', which are connected by the tube p, having a valve p' thereon. Each



one of these tubes R and R' is provided with a pressure-indicator R<sup>2</sup> and R<sup>3</sup>, and the former has also a valve-controlled outlet R<sup>4</sup>. At the point where the tube R' enters the sterilizing-chamber it is connected to a pipe S, which extends along the top of said chamber to a point near the rear thereof and is surrounded by a shield S'. It will be observed that by this arrangement the pressure in both steam and sterilizing chambers may be read independently, and by the indicator R<sup>3</sup> may also be determined the extent of the vacuum produced in the latter by means of the jet L, by means of which the air is withdrawn therefrom through the channel K.

A water-gage T is located at one side of the sterilizing apparatus and communicates with the steam-chamber through the same connection as the pipe N.

I have provided a double means for heating the apparatus and generating steam in the steam-chamber. One is a gas-burner U, consisting of a perforated pipe running lengthwise of the sterilizer, at the bottom thereof, and supported upon the frame W at either end. The other is a coil V, located in the lower part of the steam-chamber and having its ends V' extending through the bottom thereof to afford a convenient means for connecting with steam-supply and outlet pipes.

What I claim is—

1. The combination with the inner sterilizing-chamber and the surrounding steam-chamber of a sterilizing apparatus, said sterilizing-chamber having an outlet leading from the lower part thereof, of vacuum-producing means for producing a draft through said outlet consisting of a valved pipe leading from said outlet, a valved pipe communicating with said steam-chamber, said pipes having communication with each other, and a nozzle at the junction of said pipes.

2. A sterilizing apparatus, comprehending an inner sterilizing-chamber having an outlet; a steam-chamber surrounding the same; a valved means through which the sterilizing-chamber has communication with said steam-chamber; a pressure-indicator on one side of the valve of said means; valved vacuum-producing means, consisting of a pipe leading from said steam-chamber, a pipe leading from said outlet of the sterilizing-chamber, said pipes communicating with each other, and a nozzle at the place of communication thereof; and an indicator so related to the apparatus as to indicate both pressure and vacuum in the sterilizing-chamber.

3. The combination with a sterilizing-chamber, a steam-chamber surrounding the same, and means through which steam is conducted from said steam-chamber to within said sterilizing-chamber, of means for supplying liquid to said steam-chamber and means for converting said liquid into steam, said converting means embracing a burner below the steam-chamber and a heating-coil within said chamber.

4. The combination, in a sterilizing apparatus, with the inner sterilizing-chamber, the outer steam-chamber, and valved means through which said chambers have communication with each other, of a burner contiguous to said steam-chamber, a steam-coil in said chamber and near said burner, a cover to said steam-chamber for confining the heated air radiated therefrom and rising from said burner, and valved means for supplying liquid to said steam-chamber.

5. In a sterilizing apparatus, the combination of an inner sterilizing-chamber, a door of corresponding diameter, a rim at one end of said sterilizing-chamber of greater diameter than said chamber, an opening in said rim below the bottom of the sterilizing-chamber, a valve on said opening, an outlet in the lower part of said sterilizing-chamber, a steam-chamber surrounding the sterilizing-chamber, a pipe connected to the upper part of said steam-chamber and to the said outlet, a valve on the outlet-pipe and a valve on the said steam-pipe, a pipe connection between the steam-chamber and sterilizing-chamber and a valve thereon.

6. In a sterilizing apparatus, the combination of an inner sterilizing-chamber, a door of corresponding diameter, a rim at one end of said sterilizing-chamber of greater diameter than said chamber, an opening in said rim below the bottom of the sterilizing-chamber, a valve on said opening, an outlet in the lower part of said sterilizing-chamber, a steam-chamber surrounding the sterilizing-chamber, a pipe connected to the upper part of said steam-chamber and to the said outlet, a valve on the outlet-pipe and a valve on the said steam-pipe, a pipe connection between the steam-chamber and sterilizing-chamber, a valve thereon, and a pressure-indicator on the said pipe.

7. In a sterilizing apparatus, the combination of an inner sterilizing-chamber, a door of corresponding diameter, a rim at one end of said sterilizing-chamber of greater diameter than said chamber, an opening in said rim below the bottom of the sterilizing-chamber, a valve on said opening, an outlet in the lower part of said sterilizing-chamber, a steam-chamber surrounding the sterilizing-chamber, a pipe connected to the upper part of said steam-chamber and to the said outlet, a valve on the outlet-pipe and a valve on the said steam-pipe, a pipe connection between the steam-chamber and sterilizing-chamber, a valve thereon, and a pressure-indicator between said valve and steam-chamber.

8. In a sterilizing apparatus, the combination of an inner sterilizing-chamber, a door of corresponding diameter, a rim at one end of said sterilizing-chamber of greater diameter than said chamber, an opening in said rim below the bottom of the sterilizing-chamber, a valve on said opening, an outlet in the lower part of said sterilizing-chamber, a steam-chamber surrounding the sterilizing-chamber



ber, a pipe connected to the upper part of  
said steam-chamber and to the said outlet, a  
valve on the outlet-pipe and a valve on the  
said steam-pipe, a pipe connection between  
5 the steam-chamber and sterilizing-chamber,  
a valve thereon, and a pressure-indicator be-  
tween said valve and sterilizing-chamber.

9. In a sterilizing apparatus, the combina-  
tion of an inner sterilizing-chamber, a door of  
10 corresponding diameter, a rim at one end of  
said sterilizing-chamber of greater diameter  
than said chamber, an opening in said rim be-  
low the bottom of the sterilizing-chamber, a  
valve on said opening, an outlet in the lower  
15 part of said sterilizing-chamber, a steam-  
chamber surrounding the sterilizing-cham-

ber, a pipe connected to the upper part of  
said steam-chamber and to the said outlet, a  
valve on the outlet-pipe and a valve on the  
said steam-pipe, a pipe connection between 20  
the steam-chamber and sterilizing-chamber,  
a valve thereon, and pressure-indicators be-  
tween said valve and steam-chamber and be-  
tween said valve and sterilizing-chamber.

Witness my hand this 14th day of June, 25  
1902, in the presence of two subscribing wit-  
nesses.

RICHARD KNY.

Witnesses:

HERMAN MEYER,  
STEPHEN J. COX.