G. F. HALL.

STERILIZER.

APPLICATION FILED NOV. 30, 1908.

1,114,880.

Patented Oct. 27, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

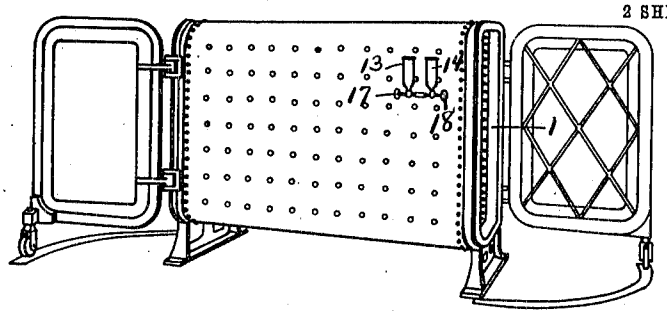

Fig. 2.

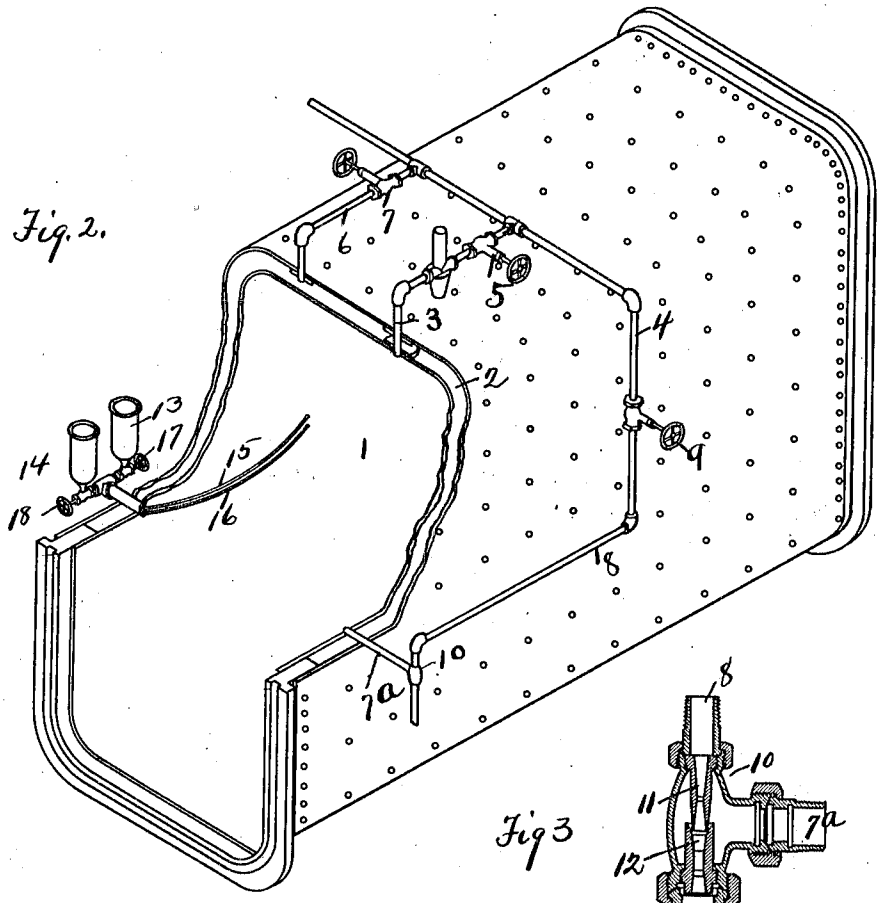

Fig 3

WITNESSES:

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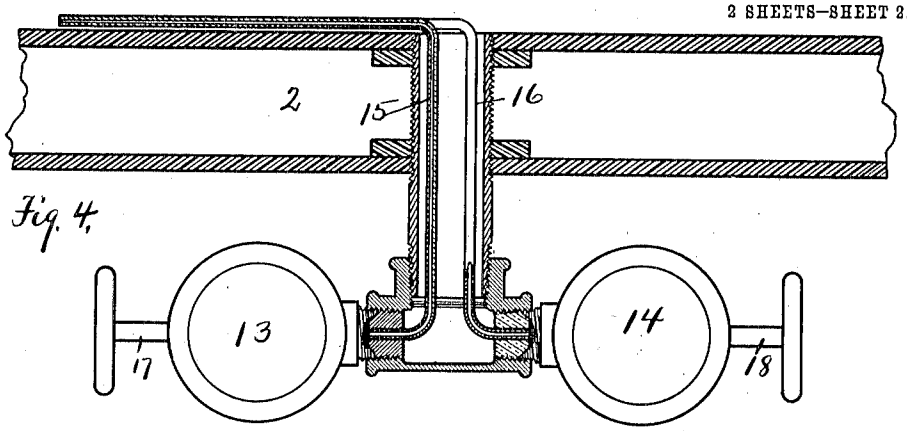

Fig. 4.

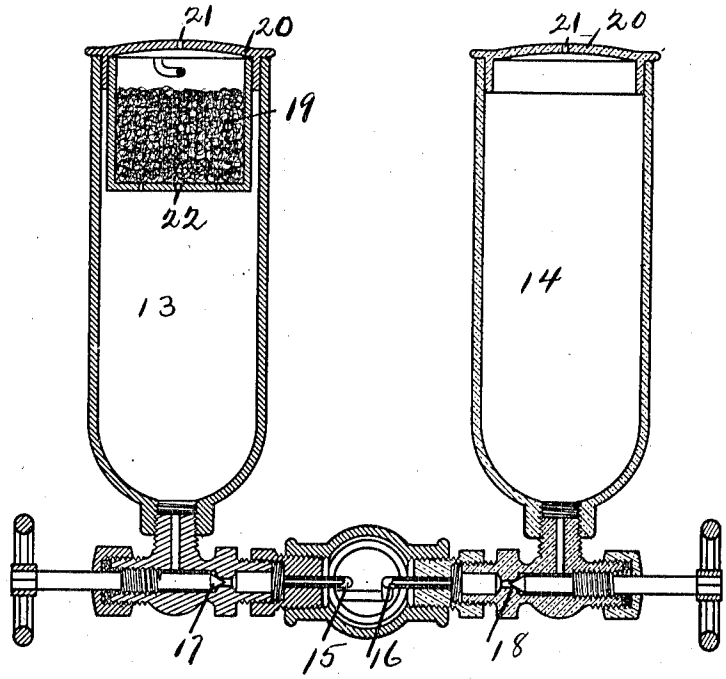

Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE F. HALL, OF ERIE, PENNSYLVANIA.

STERILIZER.

1,114,880. Specification of Letters Patent. Patented Oct. 27, 1914.

Application filed November 30, 1908. Serial No. 465,057.

To all whom it may concern:

Be it known that I, GEORGE F. HALL, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Sterilizers, of which the following is a specification.

This invention relates to sterilizers, and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claim.

More particularly the invention relates to devices for supplying to the sterilizer a disinfecting material which is delivered to the sterilizer in the form of vapor or gas.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 shows a perspective view of a sterilizer. Fig. 2 a perspective view, a part being broken away to better show the construction. Fig. 3 a section of the ejector. Fig. 4 a section of the valves controlling the formaldehyde and ammonia passages. Fig. 5 a section through the formaldehyde and ammonia receptacles, and the valves controlling the same.

1 marks the sterilizer chamber and 2 the steam jacket surrounding the chamber. These are of the ordinary construction. A steam pipe 3 leads through the jacket to the chamber 1. It is connected to the main steam pipe 4 and controlled by the valve 5. A steam pipe 6 leads to the space 2, and is connected with the main pipe 4 and controlled by a valve 7. A pipe 7^a leads from the chamber 1 to a point without the sterilizer where it is connected with an ejector 10. A steam pipe 8 controlled by the valve 9 leads to the nozzle 11 of the ejector (see Fig. 3). The nozzle 11 is directed to the suction nozzle 12 of the ejector in the ordinary manner. It will readily be observed by these connections, that live steam may be turned into the chamber 1 or cut off from the same as desired. Live steam may be turned into the jacket or space 2 and controlled as desired, and steam and air may be exhausted from the chamber 1 by means of the ejector 10, and the action of the ejector may be carried to such an extent as to reduce the pressure of the chamber below atmospheric pressure.

The formaldehyde receptacle 14 and the ammonia receptacle 13 are arranged outside of the jacket. These are connected by the pipes 16 and 15 respectively with the interior of the chamber. These pipes extend through the jacket and then preferably along the jacketed wall within the chamber. The pipes are also preferably higher at the point of opening in the chamber than at some intermediate point, for purposes hereafter described. These pipes 15 and 16 are controlled by the valves 17 and 18 respectively.

Covers 20 are arranged on the receptacles 13 and 14, and under the cover of the ammonia receptacle a filter 19 is secured. The covers 20 have the openings 21 and the filter 19 has the openings 22 which lead to the receptacle.

The operation of the device is as follows: Liquid ammonia and formaldehyde are placed in the receptacles 13 and 14 respectively, the pressure in the chamber 1 is reduced by the ejector to a point below atmospheric pressure, and the ammonia or formaldehyde forced into the chamber through atmospheric pressure on the liquid in the receptacle. As the liquid is forced into the pipe 15 or 16 it is heated through the proximity of the pipes with the steam heated jacket, and thus vaporized. By making the point of delivery of the pipes somewhat higher than some intermediate point any drip of liquid is prevented. This apparatus therefore operates in a manner distinguished from ordinary vaporizers used on sterilizers, in that the liquid is forced into the pipes before being vaporized, but is delivered to the chamber in the form of vapor. By introducing the filter any air that may follow the liquid into the sterilizer chamber may be filtered.

It will be noted that in this apparatus the vaporizing device is just as efficient when the receptacle is nearly empty as when the receptacle is filled and vice versa; so that a uniform feed may be had.

While I have preferred to create the differences in pressure necessary to forcing the liquid into the pipes by reducing the pressure in the chamber I do not wish to be limited to this method.

What I claim as new is:

In a sterilizer, the combination of a

sterilizing chamber; a receptacle for a sterilizing medium; a conduit connecting said receptacle with the chamber; a cover for the receptacle; a filter secured to the cover and having an air connection through it to the receptacle; and means for creating an excess of pressure on the liquid in the receptacle.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE F. HALL.

Witnesses:
C. B. HAYES,
H. C. LORD.