

An improved steriliser / [Wolf Defries].

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PROVISIONAL SPECIFICATION.

An Improved Steriliser.

We, WOLF DEFRIES of 147 Houndsditch and VICTOR ISIDORE FEENY of 60 Queen Victoria Street, both in the City of London, Engineers, do hereby declare the nature of this invention to be as follows:—

The purpose of our invention is to provide a means of effectually sterilising
5 vessels and their contents, instruments, *etc* in a simple manner capable of continuous work.

We obtain our sterilisation by means of the action of heat, preferably in combination with a dissolved disinfectant. Our apparatus consists of a closed vessel for heating water or sterilising solution, above which is placed a chamber,
10 not necessarily of the same shape for holding the objects to be disinfected. The vessel and the chamber are connected by a tube extending from nearly the bottom of the vessel to some suitable point in the chamber, and fixed hermetically in the crown of the vessel which may be identical with the bottom of the chamber. This tube is surmounted by a cap sliding with an easy fit over holes
15 drilled a little way below the top of the tube. The vessel is furnished at a short distance from the bottom with a perforated diaphragm or false bottom, and a second tube making communication between the vessel and the chamber extends from a point below the false bottom up to the junction of the tube with the bottom of the chamber. This tube is furnished towards its upper extremity with
20 a valve, preferably of the sluice type, furnished with a handle extending to outside of the apparatus, and a few holes are preferably made in the tube below the valve. The vessel is furnished with a draw-off, let in to that part which is below the false bottom and preferably controlled by a sluice-valve. A water-gauge is provided on the chamber, and a pressure-gauge on the vessel. The cap
25 on the tube which extends into the chamber may be hollow and lead to arms, and these arms again may be so made as to revolve as a Barker's mill. The chamber may be fitted with any suitable racks for carrying utensils likely to be used in routine sterilisation, and may be provided with a loose cover. The vessel may be heated by gas, coal, or other suitable means. A connection may be provided on the chamber for the supply of water or disinfectant solution.
30

The best method which we at present know of operating this apparatus is as follows:—

Both valves are closed and water or disinfectant solution is let or poured into the chamber until it rises in the gauge-glass to a fixed point below the level
35 of the perforations in the communicating tube. The valve on the communicating pipe is then opened, and the liquid falls into the vessel. The valve is then closed, and the liquid heated. Steam formed on the upper surface of the liquid will force it up through the open pipe, whence it will be projected from the arms of the cap on to the objects in the chamber. When the steam pressure has risen
40 sufficiently to overcome the weight of the cap, the cap will be lifted, and the liquid will escape from the perforations in the pipe which will be uncovered by the rising of the cap. If the cap is made solid without arms the liquid will not escape until the cap is lifted. After sufficient of the liquid has been lifted into the chamber to uncover the lower end of the communication tube, steam
45 will follow, and condensing in the chamber, or escaping through its lid will

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allow the pressure in the vessel to fall. When it has fallen sufficiently, as indicated on the pressure-guage, the valve on the connecting tube is opened, and the liquid falls again into the vessel, carrying with it any solid matter which may have been put into the chamber, and then rises into the upper part of the vessel freed from such lumps as may be too large to pass through the perforated diaphragm. The level of the liquid is filled up from time to time according to the indications on the water-gauge, and the vessel is washed out through the draw-off valve; so that the process of filling and washing out may proceed continuously without letting down the fire. 5

Dated this 3rd day of September 1900. 10

For the Applicant

GEDGE & FEENY

Chartered Patent Agents

60 Queen Victoria Street London. E.C.

COMPLETE SPECIFICATION. 15

An Improved Steriliser.

We, WOLF DEFRIES, of 147 Houndsditch and VICTOR ISIDORE FEENY, of 60 Queen Victoria Street, both in the City of London, Engineers, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:— 20

The purpose of our invention is to provide a means of effectually sterilising vessels and their contents, instruments, *etc.*, in a simple manner capable of continuous work.

We obtain our sterilisation by means of the action of heat, preferably in combination with a dissolved disinfectant. 25

The invention is illustrated by way of example upon the accompanying drawings, upon which, Figure 1 represents a sectional elevation of our apparatus, Figure 2 being a plan of the same as seen from above.

Our apparatus consists of a closed vessel A for heating water or sterilising solution, above which is placed a chamber B not necessarily of the same shape for holding the objects to be disinfected. The vessel and the chamber are connected by a tube C extending from nearly the bottom of the vessel to some suitable point in the chamber, and fixed hermetically in the crown of the vessel which may be identical with the bottom of the chamber. This tube is surmounted by a cap D sliding with an easy fit over holes drilled a little way below the top of the tube. 30 35

The vessel A is furnished at a short distance from the bottom with a perforated diaphragm or false bottom *a*, and a second tube E making communication between the vessel and the chamber, extends from a point below the false bottom up to the bottom of the chamber to which it is joined. This tube is furnished towards its upper extremity with a valve F preferably of the sluice type, furnished with a handle extending to outside of the apparatus, and a few holes are preferably made in the tube below the valve. The vessel is furnished with a draw-off let into that part which is below the false bottom and preferably controlled by a sluice-valve G. A water-gauge *b* is provided on the chamber, and a pressure-gauge on the vessel, although this latter is not shown on the drawing. The cap D on the tube C which extends into the chamber may be hollow and lead to arms *c*, and these arms again may be so made as to revolve as a Barker's mill and this not only assists the even dis- 40 45

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tribution of the liquid, but also ensures the continued freedom of the joint of the cap on the tube and its efficiency as a safety valve.

The chamber may be fitted with any suitable racks H for carrying utensils I likely to be used in routine sterilisation, and may be provided with a loose cover K.

5 The vessel may be heated by gas, coal, or other suitable means. A connection may be provided on the chamber for the supply of water or disinfectant solution.

The best method which we at present know of operating this apparatus is as follows:—

Both valves E and G are closed and water or disinfectant solution is let or
10 poured into the chamber B until it rises in the gauge glass *b* to a fixed point below the level of the perforations in the open communicating tube C. The valve F on the second communicating pipe E is then opened and the liquid falls into the vessel A. The valve is then closed and the liquid heated. Steam formed on the upper surface of the liquid will force it up through the open pipe C
15 whence it will be projected from the arms *c* of the cap on to the objects I in the chamber B. When the steam pressure has risen sufficiently to overcome the weight of the cap D, the cap will be lifted, and the liquid will escape from the perforations in the pipe C which will be uncovered by the rising of the cap, the proportions of the respective outlets being preferably designed so that
20 the apparatus delivers normally through the arms and the cap is lifted only when the desired maximum in the working pressure is exceeded. If the cap is made solid without arms the liquid will not escape until the cap is lifted, but if desired smaller holes may be provided below the cap, through which the disinfectant will normally escape until the desired pressure is reached.

25 After sufficient of the liquid has been lifted into the chamber to uncover the lower end of the communication tube C, steam will follow, and condensing in the chamber or escaping through its lid, will allow the pressure in the vessel A to fall. When it has fallen sufficiently, as indicated on the pressure-gauge, the valve F on the connecting tube is opened, and the liquid falls again into the vessel, carrying with it any solid matter which may have been put into the chamber, and then
30 rises into the upper part of the vessel freed from such lumps as may be too large to pass through the perforated diaphragm *a*.

The level of the liquid is filled up from time to time according to the indications on the water-gauge, and the vessel is washed out through the draw-off valve G,
35 so that the process of filling and washing out may proceed continuously without letting down the fire.

We may alternatively provide two or more chambers fed from the same vessel, as for example for the purposes of slop sinks, and a deodorant may be added to the disinfectant if it has in itself no deodorising capacity.

40 Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. The improved steriliser, combined, constructed and arranged for the purposes and as described and illustrated.

45 2. In a steriliser operating by means of a hot liquid under low pressure introduced from a heating vessel into a disinfecting chamber, a communicating tube furnished with discharge orifices for the liquid surmounted by other orifices covered by a sliding cap for the purposes and substantially as described.

3. In a steriliser operating by means of hot liquid under low pressure introduced from a heating vessel into a disinfecting chamber, a communicating tube
50 with one or more orifices normally covered by a hollow cap fitting over the communicating tube and furnished with discharge orifices, for the purposes and substantially as described.

4. In a steriliser operating by means of hot liquid under low-pressure introduced
55 from a heating vessel into a disinfecting chamber, a hollow cap fitting over a

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communicating tube through which the liquid is introduced into the chamber and carrying reaction arms for discharge of the liquid, in combination with a safety device such as one or more orifices in the tube normally covered by the cap, substantially as above described.

Dated this 3rd day of June, 1901.

5

For the Applicants,

GEDGE & FEENY

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60 Queen Victoria Street, London E.C.

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[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

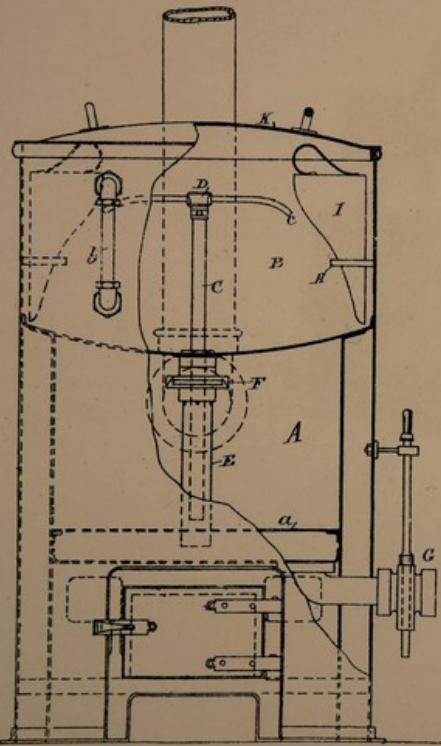


Fig. 2.

