Improvements in and relating to apparatus for sterilising buildings, containers, casks, vessels and the like / [Frederick Boehm].

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PROVISIONAL SPECIFICATION.

"Improvements in and relating to Apparatus for Sterilising Buildings, Containers, Casks, Vessels and the like".

We, FREDERICK BOEHM, Merchant, and JOHN HENRY HEAP, Chemist, both of 16 Jewry Street, in the City of London, do hereby declare the nature of this invention to be as follows:—

This invention relates to apparatus for sterilising buildings, containers, casks and other vessels and the like and has for its object the construction and arrangement of such a device in a simple and inexpensive form which is easy to manipulate and is capable of dispensing uniform charges of sterilising agent of predetermined amount, such charges being capable of regulation as to quantity in order to meet variation in conditions.

Our invention consists in the provision of a container preferably of the form of a cylindrical receptacle having a winged screw stopper or other device which can be removed from the receptacle in order to insert a liquid sterilising agent such as formaldehyde.

In order to give a visible indication of the contents of the said receptacle, we arrange a gauge glass external thereto, through which the level of liquid in the receptacle can be observed. At the lower end of the receptacle, we provide a cock or valve which has two branches, one of which is connected to hot water, cold water, and (or) steam supplies, while the other branch is connected to a pipe and jet of ordinary pattern used for the purpose of spraying the surfaces of walls, containers, casks and other vessels with the sterilising agent. Within the plug of this cock or valve, we provide a measuring chamber adapted to be filled with the sterilising agent and delivered from bulk contained in the cylindrical receptacle. The measuring chamber can be varied in its capacity by means of an adjustable device which is adapted to slide or work within the said measuring chamber, means being provided on the outside of the plug such as a graduated screwed stem for definitely regulating the capacity of the chamber according to requirements. We also provide a passage and a pipe connected therewith for carrying away condensation water which may have collected in the passages.

When the apparatus is in use the plug of the cock is turned into such a position that its measuring chamber becomes charged with the desired quantity of sterilising agent. If now steam is turned on so as to communicate with the device, immediately the plug is turned so as to deliver the sterilising agent to the jet, the steam is also allowed to pass and in so doing carries the sterilising agent with it to the jet. After two or three seconds, the sterilising agent has all been distributed over the surfaces aforementioned, the heat of the steam having volatilized it and the pressure having forced the sterilising vapour into the pores and crevices of the walls and other surfaces. The steam supply is now shut off ready for the next operation and the measuring plug is moved back to its original position.

We may combine with this device three service pipes *viz*: hot water, cold

water and steam connected to a single five-way cock by which either one or the other can be utilised in conjunction with the apparatus to carry out the necessary functions of cleansing casks and the like.

We would have it understood however, that it is not absolutely essential to the proper working of the apparatus that such a device should be employed as the same result can be achieved by having three independent cocks on the three said independent services but we find it very convenient for the general manipulation of the device if this five-way cock is combined with the receptacle having a measuring valve controlling the distribution of the sterilising agent in predetermined quantities.

Dated this 1st day of June 1904.

FELL & JAMES,
1 Queen Victoria Street, London, E.C.
Agents for the Applicants.

COMPLETE SPECIFICATION.

"Improvements in and relating to Apparatus for Sterilising Buildings, Containers, Casks, Vessels and the like".

We, FREDERICK BOEHM, Merchant, and JOHN HENRY HEAP, Chemist, both of 16 Jewry Street, in the City of London, 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:—

This invention relates to apparatus for sterilising buildings, containers, casks and other vessels and the like and has for its object the construction and arrangement of such a device in a simple and inexpensive form which is easy to manipulate and is capable of dispensing uniform charges of sterilising agent of predetermined amount, such charges being capable of regulation as to quantity in order to meet variation in conditions.

In order that the invention may be the better understood, we will now proceed to describe the same in relation to the accompanying drawing, reference being had to the letters and figures marked thereon. Like letters refer to like parts in the various figures.

Figure 1 is a part sectional elevation of an apparatus made in accordance with our invention.

Figure 2 is a part sectional plan on the line A B in Figure 1.

Our invention consists in the provision of a container *a* preferably in the form of a cylindrical receptacle having a winged screw stopper *b* or other device which can be removed from the receptacle *a* in order to insert a liquid sterilising agent such as formaldehyde, a hole being provided in the stopper to admit air during the withdrawal of the sterilizing agent.

In order to give a visible indication of the contents of the said receptacle, we arrange a gauge glass *c* external thereto, through which the level of liquid in the receptacle can be observed. At the lower end of the receptacle *a*, we provide a cock or valve *d* which has two main branches *e f*, one of which, *e*, is connected to hot water, cold water, and steam supplies *g h j* respectively, while the other branch *f* is connected to a pipe *k* and jet *l* of ordinary pattern used for the purpose of spraying the surfaces of walls of containers, casks and other vessels with the sterilising agent. Within the plug *m*, of this cock *d*, we provide a measuring chamber *n* adapted to be filled with the sterilising agent delivered from bulk contained in the container *a*. The measuring

chamber can be varied in its capacity by means of an adjustable plug *o* which is adapted to slide, or to be screwed to and fro within the said measuring chamber *n*, means being provided on the outside of the plug such as a graduated handle or knob *p* working in conjunction with an index finger *q* carried by the cock handle *r* so as to definitely regulate the capacity of the chamber according to requirements. We also provide a passage *s* and a pipe *t* connected therewith for accelerating the filling of the measuring chamber *n* with the sterilizing agent.

When the apparatus is in use the plug of the cock *d* is turned into such a position that its measuring chamber *n* becomes charged with the desired quantity of sterilising agent from the container *a*. If now steam is turned on from the supply pipe *j* so as to communicate with the cock *d* immediately the plug *m* is turned so as to deliver the sterilising agent to the jet *l*, the steam is also allowed to pass and in so doing carries the sterilising agent with it to the jet *l*. After two or three seconds, the sterilising agent has all been distributed over the surfaces aforementioned, the heat of the steam having volatilized it and the pressure having forced the sterilising vapour into the pores and crevices of the walls and other surfaces. The steam supply is now shut off ready for the next operation and the plug *d* is moved back to its original position.

We prefer to combine with this device the three service pipes *g h* and *j viz*: hot water, cold water and steam which are connected to a single five-way cock *u* by which either one or the other can be utilised in conjunction with the apparatus to carry out the necessary functions of cleansing casks and the like, for example, the steam can not only be turned through the cock *d*, but the hot and cold water and the steam can each be delivered direct to the cask or other receptacle by passing through the bypass pipe *v* so as to short circuit the cock *d*.

We would have it understood however, that it is not absolutely essential to the proper working of the apparatus that such a five-way cock *u* should be employed as the same result can be achieved by having three independent cocks on the three said independent services, but we find it very convenient for the general manipulation of the device if this five-way cock is combined with the receptacle having a measuring valve controlling the distribution of the sterilising agent in predetermined quantities.

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

1st. In a sterilising apparatus, a fillable receptacle for containing a liquid sterilising agent in bulk, an adjustable measuring cock adapted to receive the sterilising agent from the said receptacle in predetermined quantities and means for supplying steam to the measuring cock so as to carry the mixture of steam and sterilising agent to the delivery jet, substantially as described.

2nd. In a sterilising apparatus, in combination a fillable receptacle, means for indicating the level of liquid in said receptacle, a measuring delivery cock on said receptacle for delivering predetermined quantities of sterilising liquid from the said receptacle and means for supplying steam to the said measuring cock so as to carry the mixture of steam and sterilising agent to the delivery jet, substantially as described.

3rd. The arrangement and construction of a sterilising apparatus, substantially as described and illustrated in the accompanying drawing.

Dated this 1st day of March 1905.

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BOEHM & *another's* COMPLETE SPECIFICATION.

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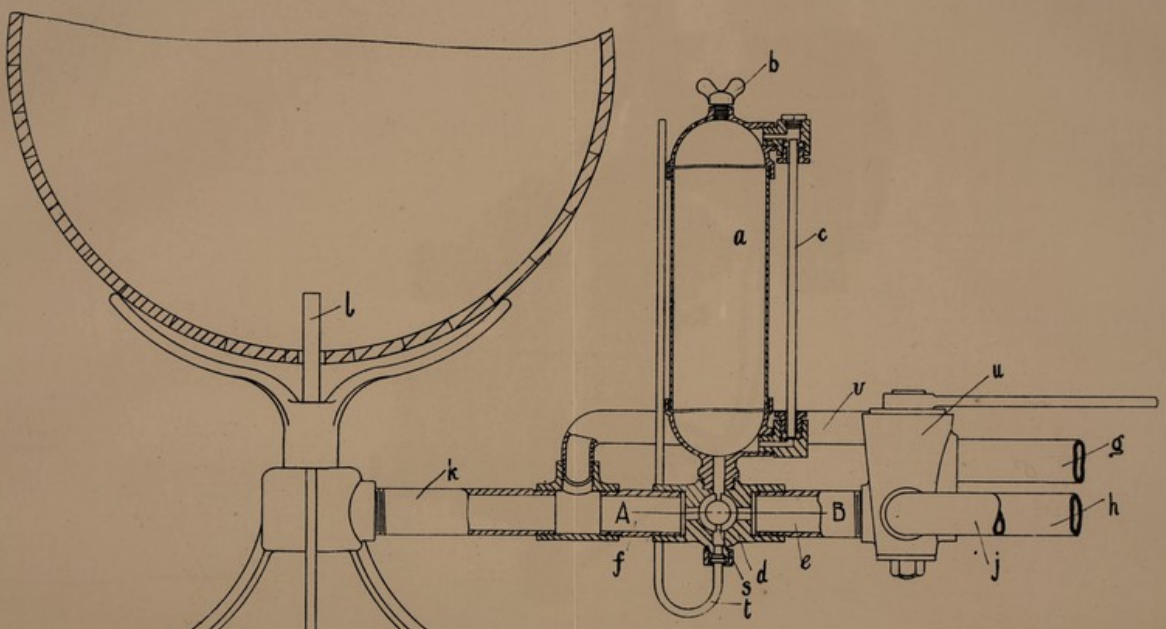

Fig 1.

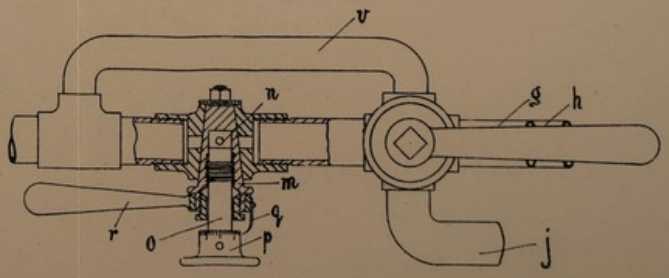

Fig 2.