E. EY.

APPARATUS FOR STERILIZING LIQUIDS.

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Fig. 1

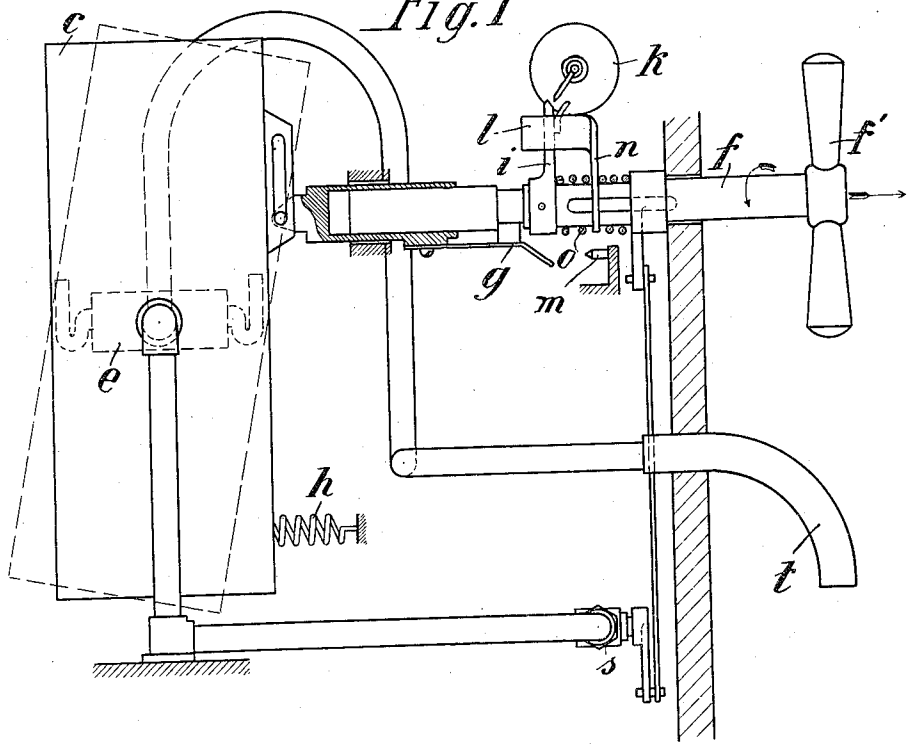
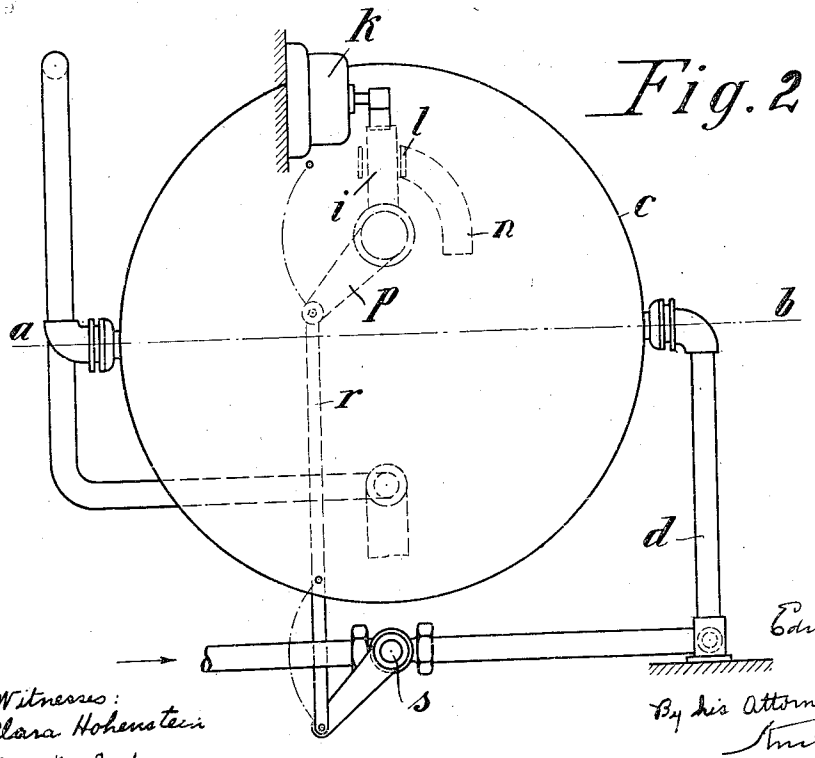


Fig. 2



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APPARATUS FOR STERILIZING LIQUIDS.

1,046,061. Specification of Letters Patent. Patented Dec. 3, 1912.

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To all whom it may concern:

Be it known that I, EDUARD EY, a citizen of the Empire of Germany, and residing at Charlottenburg, near Berlin, Germany, have invented certain new and useful Improvements in Apparatus for Sterilizing Liquids, of which the following is a specification.

My invention relates to apparatus for sterilizing liquids by means of the ultraviolet rays of a mercury quartz lamp.

A primary object of my invention is to simplify as much as possible the manipulations requisite for operating such apparatus. To this end, I arrange the switching, regulating and like devices of the sterilizer in such manner that by manipulating one single handle or the like not only is the circuit of the lamp closed or opened and the liquid caused to flow or stop in known manner, a predetermined order being observed, but the mercury lamp is also ignited.

One illustrative embodiment of my invention is represented by way of example in the accompanying drawing, wherein:—

Figure 1 is a side elevation, partly in section, and Fig. 2 is a rear elevation showing my apparatus.

Referring to the drawing, the liquid, *e. g.* water, is sterilized in the vessel *c*, rotatable about the axis *a*—*b* (Fig. 2), the liquid being supplied through a pipe *d* controlled by a cock *s*. A quartz lamp *e* constructed in known manner is provided in the vessel.

The apparatus is operated by means of a shaft *f* which can be displaced axially by means of a handle *f'* and rotated into a predetermined position after being so displaced. When the sterilizer is to be started working the shaft *f* is first axially displaced by means of the handle in the direction of the right-hand, straight arrow shown in Fig. 1. The vessel *c* is driven by means of a clutch *g*, it being tilted about the axle *a*—*b*, a spring *h* being simultaneously tensioned. An arm *i* fast on the shaft actuates a quick-brake switch *k* which closes the circuit for the lamp *e*. During this axial displacement of the shaft the arm *i* is guided by a bar *l* and prevents the shaft rotating. Immediately after the quick-brake switch *k* has been operated by the arm *i*, when the shaft is shifted longitudinally still farther the clutch connecting the shaft *f* and the vessel *c* is disconnected by the stop *m*, and the spring *h* returns the vessel *c* into its normal position. The mercury lamp is ignited when the vessel rocks back. The arm *i* has now left the bar *l* and the shaft *f* can rotate in the direction of the left-hand, curved arrow shown in Fig. 1. The arm *i* first bears against a guide *n* which prevents a spring *o*, tensioned when the shaft was displaced, returning the shaft into its normal position. Owing to the shaft being rotated, the cock *s* is gradually opened by means of the arm *p* and the rod *r*, and the more liquid is supplied to the vessel *c* and also to the discharge pipe *t* until the cock is fully opened, the farther the shaft is rotated. The sterilizing action of the quartz lamp is sufficient for the greatest possible quantity of liquid which passes at any time. As soon as the discharge of liquid is finished it is solely necessary to turn the shaft *f* back so far that the cock *s* is completely closed. If the handle is then released the spring *o* returns the shaft *f* into its initial position, the arm *i* again acts on the quick-brake switch and breaks the lamp circuit, and the clutch *g* between the shaft and vessel is again engaged.

As will be readily understood the shaft *f* cannot be returned into its normal position nor can the lamp be cut out of circuit as long as the cock *s* is open.

I claim:—

1. In apparatus for sterilizing liquids, the combination with a spring-influenced vessel, a pipe, having a cock, connected therewith, a mercury lamp in the vessel, and a switch for controlling the lamp, of means comprising a handle operatively connected with the vessel, and with the cock, and adapted to actuate the switch, for driving the vessel against the action of the spring, closing the switch, automatically allowing the vessel to return into its normal position, and opening and closing the cock when said handle is actuated.

2. In apparatus for sterilizing liquids, the combination with a spring-influenced vessel, a pipe, having a cock, connected therewith, a mercury lamp in the vessel, and a switch for controlling the lamp, of means comprising a handle operatively connected with the vessel, and with the cock, and adapted to actuate the switch, for driving the vessel against the action of the spring, closing the switch, automatically allowing the vessel to return into its normal position, opening and

closing the cock, and automatically opening the switch when said handle is actuated and released.

3. In apparatus for sterilizing liquids, the combination with a spring-influenced vessel mounted to rock, a pipe having a cock, connected therewith, a mercury lamp in the vessel, and a switch for controlling the lamp, of an axially displaceable and rotatable shaft, a clutch normally connecting the vessel with one end of the shaft, a handle fast on the other end of the shaft, an arm fast on the shaft adapted to actuate the switch, a horizontal guide for coacting with said arm and preventing the shaft rotating during a predetermined part of its axial displacement, a stop for disconnecting said clutch at the end of the said predetermined part of the axial displacement of the shaft, and a second arm on the shaft operatively connected with cock.

4. In apparatus for sterilizing liquids, the combination with a spring-influenced vessel mounted to rock, a pipe, having a cock, connected therewith, a mercury lamp in the vessel, and a switch for controlling the lamp, of an axially displaceable and rotatable shaft, a spring tending to hold the shaft in its normal position, a clutch normally connecting the vessel with one end of the shaft, a handle fast on the other end of the shaft, an arm fast on the shaft adapted to actuate the switch, a horizontal guide for coacting with said arm and preventing the shaft rotating during a predetermined part of its axial displacement, a stop for disconnecting said clutch at the end of the said predetermined part of the axial displacement of the shaft, and a second arm on the shaft operatively connected with cock.

In testimony whereof, I have signed my name to this specification in the presence of two witnesses.

EDUARD EY.

Witnesses:
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WOLDEMAR HAUPT.