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Patented Apr. 17, 1900.

T. Y. KINNE.

STERILIZER FOR SURGICAL DRESSING.

(Application filed July 30, 1898.)

(No Model.)

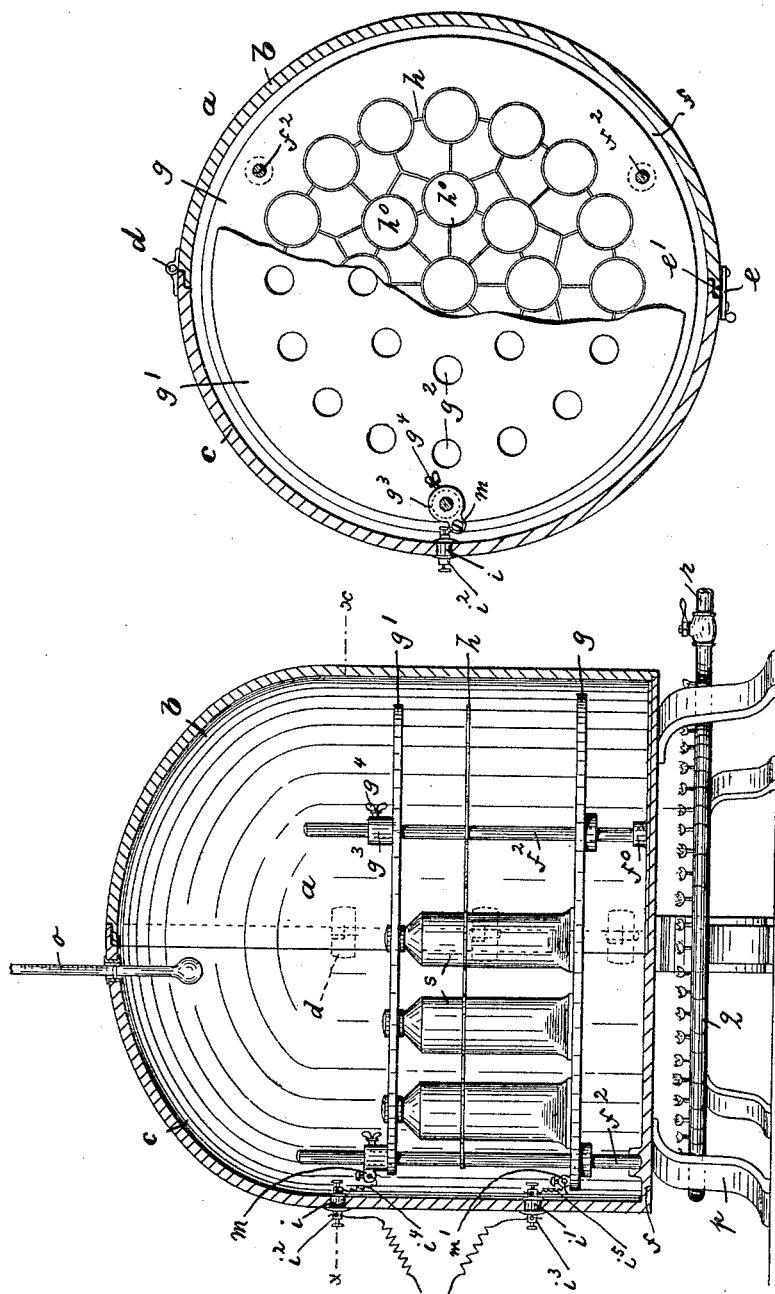


Fig. 2.

Fig. 1.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## STERILIZER FOR SURGICAL DRESSING.

SPECIFICATION forming part of Letters Patent No. 647,603, dated April 17, 1900.

Application filed July 30, 1898. Serial No. 687,271. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE Y. KINNE, a citizen of the United States, residing in Paterson, county of Passaic, and State of New Jersey, have invented certain new and useful Improvements in Sterilizing Surgical Dressing, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to the apparatus for asepticizing surgical dressing, and has for its object to provide means of simple construction which shall be efficient and reliable in operation, easily handled, and shall insure such uniform distribution of heat that all parts of the dressing shall be subjected to its action.

The invention consists of the parts and combinations, as will be hereinafter more fully described, and definitely pointed out in the claims.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in the two views, Figure 1 is a central vertical sectional view of my improved apparatus, only those parts being shown which are necessary to fully illustrate the nature of my said invention; and Fig. 2, a central horizontal sectional view in a plane  $x-x$  of Fig. 1, the compressible tubes shown in Fig. 1 being removed.

In said drawings,  $a$  indicates a metallic dome, preferably of copper, substantially circular in cross-section and divided vertically into two halves  $b$  and  $c$ , hinged together, as at  $d$ , on one side and secured at their meeting edges on the opposite side by suitable clasps  $e$ . The edge of the section  $b$  is provided with a flange  $e'$ , which slightly overlaps the edge of the section  $c$ . The joint between the two sections may be tightly sealed by means of any suitable packing, as of felt, arranged on the one or the other of said sections, as desired.

Mounted upon the bottom  $f$  of the dome  $a$  in suitable brackets  $f^0$  are a series of vertical glass rods  $f^2$ , carrying near their lower por-

tions a metallic plate  $g$ , while a parallel metallic plate  $g'$  is adjustably arranged on the upper portions of said rods. The metallic plate  $g'$  is provided with sleeves  $g^3$ , slidingly arranged on their respective glass rods  $f^2$  and penetrated by set-screws  $g^4$ , by means of which latter said sleeves are adjusted and secured, as will be manifest. The upper plate  $g'$  is provided with a series of circular holes or perforations  $g^2$  in vertical alinement with the circular wire rings  $h^0$  of a skeleton frame  $h$ , supported by and secured to the glass rods  $f^2$  in any desired manner and about midway between the plates  $g$  and  $g'$ .

The section  $c$  of the dome  $a$  is penetrated at suitable places by insulating-bushings  $i$ , in which are secured metallic rods or conductors  $i^2$  and  $i^3$ , having their inner ends connected by wires (preferably flexible)  $i^4$  and  $i^5$  with the metallic plates  $g'$  and  $g$ , respectively. Said plates for that purpose carry binding-posts  $m$  and  $m'$ , as clearly illustrated in Fig. 1 of the drawings.

At a suitable place in the top portion of the dome  $a$  is arranged a thermometer  $o$ , extending into but registering above said dome.

The bottom or bed plate  $f$  of the dome  $a$  is suitably supported by legs or standards  $p$ , thus furnishing sufficient space for the insertion of a pipe-coil  $q$ , provided in its top portion with a series of orifices and having its free end detachably connected with the gas-supply pipe  $r$ , substantially as illustrated. Said pipe-coil, with its orifices and gas-supply connection, constitutes a burner or heater; but it may be well to remark that other suitable heating means may be used in connection with my improved apparatus without deviating from the spirit of my invention.

The surgical dressing is first placed into the compressible ductile and impervious metal tubes  $s$ , and after the latter have been hermetically closed and the air completely expelled therefrom in any suitable manner they are inserted into the skeleton frame  $h$ , which latter supports said tubes, while their lower ends rest upon and are in metallic contact with the metallic plate  $g$ . The metallic plate  $g'$  is now placed upon the standards or supports  $f^2$  and is moved downward until its holes or perforations  $g^2$  engage and bear upon the top or neck portions of said compressible

metal tubes. The sections *c* and *b* of the dome are then closed and heat is applied to the bottom thereof. The temperature is allowed to rise to about 100° to 120° Fahrenheit, and when it has reached said degree the heat is turned off and an electrical current from a suitable source of electricity is sent through the wires *v*<sup>2</sup> and *v*<sup>3</sup>. The current passes through the metallic plates *g* and *g'* and (as the latter are in metallic contact with the compressible tubes *s s*) through the said tubes and the surgical dressing contained therein. The asepticizing of the surgical dressing is thus quickly and thoroughly completed, (it will require from five to ten minutes, according to the strength of the current,) and after the current is turned off the compressible tubes are removed, as will be manifest.

Experiments have proved that if a very strong electric current is used the preliminary heating or sterilizing in hot air can be dispensed with, and this is especially the case when the dressings in the compressible tubes contain metal salts, such as salts of mercury, zinc, copper, &c. In that case about ten to fifteen minutes are necessary for the current to be applied.

By my improved apparatus the great objections to the ordinary asepticizing of surgical dressings contained in compressible tubes are overcome—viz., the high temperature necessary for a complete and perfect state of asepticism, the danger of bursting the compressible tubes during the process of asepticizing, and finally the length of time needed for the compressible tubes to cool off after having been subjected to a temperature of from 200° to 250° Fahrenheit.

I do not intend to limit myself to the precise construction of the apparatus, as various alterations can be made without changing the scope of my invention. Neither do I intend

to be limited to the procedure and rotation of steps constituting my improved process; but What I claim as new, and desire to secure by Letters Patent, is—

1. In an asepticizing apparatus, a chamber or casing adapted to receive and inclose the electrical conducting holders for surgical dressing to be treated, and provided in its inner portion with suitable supporting-plates between which the holder is adapted to be supported, insulating-supports for said plates, and electrical connections between the supporting-plates and exterior of the chamber or casing adapted to connect with a suitable electrical supply.

2. In an asepticizing apparatus, a chamber or casing adapted to receive and inclose the containers for the article to be treated, and provided on its interior with two electrically-separated supports between which the containers are adapted to be held, electrical connections leading from each of said supports to the exterior of the casing, and additional means for heating the said chamber and its contents.

3. In an asepticizing apparatus the combination of a chamber, insulating-supports fixed therein, separated supporting-plates carried thereby and between which the articles to be treated are adapted to be held, and a skeleton frame also carried by said supports, and electrical connections between the supporting-plates and the exterior of the chamber adapted to connect with a suitable electrical supply.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of July, 1898.

THEODORE Y. KINNE.

Witnesses:

ALFRED GARTNER,  
LOUISE SNYDER.