An electric heating assembly for a sterilant package is disclosed including a back wall member formed of an electrically insulated material having heating elements or conductors embedded therein and a front wall member. The front wall member is generally secured at one edge to the back wall and removably fastened about the other edges thereof to form a chamber to receive a sterilant package. The heating elements or conductors are provided with suitable means for connection to a source of electrical energy.

1 Claim, 4 Drawing Figures
ELECTRIC HEATING ASSEMBLY FOR STERILANT PACKAGES

This invention relates to an electric heating or warming assembly, and more particularly to an electric heating or warming assembly for an implement package including a substrate having a thermally activated sterilizing gas bonded thereto.

In applicant's co-pending application U.S. Ser. No. 532,215, filed Feb. 13, 1973, and assigned to the same assignee, there is disclosed a novel sterilant package formed of thick plastic outer walls of a thickness impervious to bacterial contamination, in which package at least two separate and distinct compartments are defined by a thin inner semi-permeable wall of a thickness pervious to the passage of a sterilizing gas, but substantially impervious to the passage of water vapor. One compartment is adapted to receive an implement with the other compartment adapted to receive a substrate having a thermally-activated or releasable sterilizing gas bonded thereto.

Sterilization of the implement contained in the package is effected by applying heat to the package to effect the release of the sterilizing gas. The gas then diffuses into the compartment containing the implement effecting the sterilization thereof. The attendant advantage of such a package is the ability to package implements and subsequently sterilize the implement at a remote time and location. While many sources of heat may be used including lamps, ovens and the like, it is desirable to provide a heating or warming assembly for receiving the hereinabove described sterilant packet which is portable, safe and readily provides with minimal supervision the requisite heat energy to release the sterilizing gas.

OBJECTS OF THE INVENTION

An object of the present invention is to provide a novel electric heating assembly for a sterilant package.

Another object of the present invention is to provide a novel portable heating assembly for a sterilant package. Still another object of the present invention is to provide a novel heating assembly for a sterilant package which permits controlled heating of a sterilant package.

BRIEF SUMMARY OF THE INVENTION

These and other objects of the present invention are achieved by an electric heating assembly including a back wall member formed of an electrically insulated material having heating elements or conductors embedded therein and a front wall member. The front wall is generally secured at one edge to the back wall and removably fastened about the other edges thereof to form a chamber to receive a hereinabove described sterilant package. The heating elements or conductors are provided with suitable means for connection to a source of electrical energy.

Additional objects and advantages of the present invention will become apparent from the following detailed description of exemplary embodiments thereof when taken with the accompanying drawings with the novel features being particularly pointed out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be described with reference to the accompanying drawings wherein like reference numerals are used throughout, and wherein:

FIG. 1 is an elevational view of an electric heating assembly for a sterilant package partially broken away to illustrate heating elements of the present invention;

FIG. 2 is a side view of the heating assembly of FIG. 1 taken along the lines 2—2 of FIG. 1;

FIG. 3 is an elevational view of another embodiment of the present invention;

FIG. 4 is an elevational view of a further embodiment of the present invention.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring now to the FIGS. 1 and 2, there is shown an electric heating assembly, generally indicated as 10, having as major elements a back wall member 12, and a front wall member 14. The back wall member 12 includes a layer 16 preferably formed of a flexible, insulating material and having a plurality of conductors or heating element 18 mounted or embedded therein. The back wall 12 may include a layer 20 of a heat insulating material as well as an outer layer 22 of a material of an esthetic nature. The front wall member preferably includes a layer 24 of a heat insulating material similarly overlaid with an outer layer 26 of an esthetic nature. The side edges of the wall member are provided with fastening means, such as snap assemblies 28 to close the sides of the assembly thereby forming two compartments each for receiving a sterilant package.

The electrical heating elements are formed of any suitable material known to those skilled in the art and are embedded in the layer 16 in a conventional configuration. The electrical heating elements 18 are connected to conventional wire supply means 30. In operation, it is necessary to connect electrical supply means 30 to an available source of potential, either a.c. voltage (such as a standard room socket) or d.c. voltage (such as a battery pack) to thereby energize the heating elements 18. As a result of the insulting layers the heat will be directed towards the inside of the compartments. Thus, plastic sterilant bags, such as hereinabove disclosed in co-pending application Ser. No. 532,215 when inserted into the compartments will have the necessary heat applied to raise the temperature therein to thermally activate the sterilizing gas bonded to the substrate contained in the package. It will be understood that necessary temperature levels may be achieved by providing a suitable heating element configuration for a given source of electric potential and given substrate and that variations would be readily apparent to those skilled in the art. Additionally, only one wall member need be provided with heating elements.

Referring now to FIG. 3, there is illustrated another embodiment of the present invention including a back wall member 112, a front wall member 114 and an electrical supply means 130. The wall members are provided with a continuous interlocking fastening assembly, such as a zipper, generally indicated as 126 to form thereby a compartment to receive sterilant package(s) of diverse sizes and shapes.

In FIG. 4, illustrates still another embodiment of the present invention, the electric heating assembly, generally indicated as 210, is comprised of a back wall and a front wall 214 and is formed with a plurality of compartments or enclosures by suitable means, such as seaming, to provide the capabilities to heat one or more sterilant package. Additionally, an electric supply
means 230 is provided with a control panel means 240 including any well known thermostatic control (not shown) for controlling the amount of power passed to the heating elements and thus the heat generated thereby. A further feature of said control panel means 240 may be a timer which can regulate the necessary timing cycles for heating the sterilant bags.

Numerous modifications and variations of the present invention are possible in light of the above teachings and therefore the instant invention may be practiced otherwise than as particularly described.

What is claimed is:

1. A heater for sterilant packages, comprising:
   a heat insulating member having a generally U-shaped cross section defining first and second facing legs which are spaced from each other, the first leg defining a heat insulating front wall and the second leg defining a heat insulating back wall;
   a flexible insulating material covering the interior of the heat insulating back wall and spaced from the heat insulating front wall, said back wall, said flexible insulating material and said front wall being connected to each other at spaced intervals over the length thereof to define a plurality of adjacent separate spaced pockets in a single plane, having separate openings for receiving sterilant packages;
   an electrical heating element embedded and electrically insulated in the flexible insulating material to provide for heating of the sterilant packages in the pockets; and
   an exterior electrical supply means connected to the electrical heating element for supplying electrical potential to the electrical heating element, said electrical supply means including a thermostat for controlling the electrical potential.

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