May 30, 1944. R. W. BERGMAN 2,350,091

SANITIZING DEVICE

Filed May 21, 1942

Fig. 1.

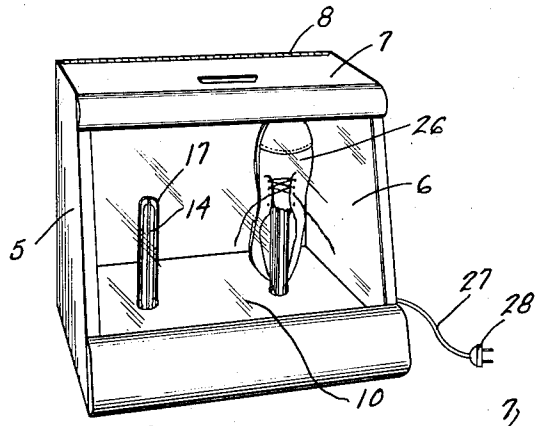
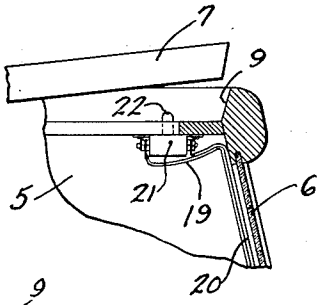


Fig. 3.



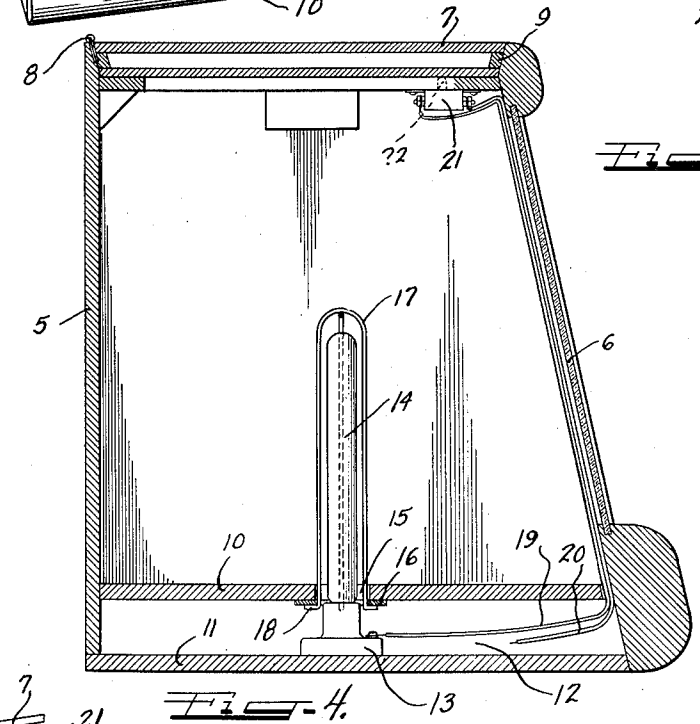
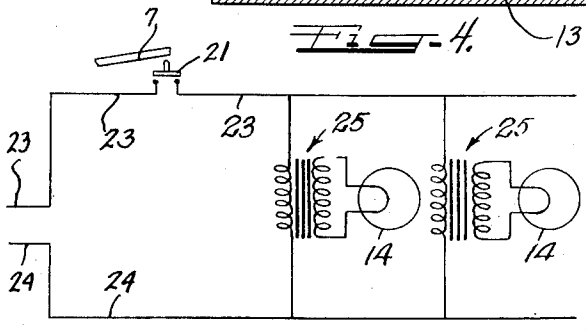


Fig. 2.

Fig. 4.



Inventor

Raymond W. Bergman.

Charles W. Hills

by

Attys.

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UNITED STATES PATENT OFFICE

2,350,091

SANITIZING DEVICE

Raymond W. Bergman, Lockport, Ill., assignor to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York

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5 Claims. (Cl. 21—54)

This invention relates to improvements in a sanitizing device and a method of sanitizing, the invention being highly desirable for use in connection with the sanitizing or sterilizing of articles of wearing apparel such, for example, as shoes, gloves, hats, etc.

Frequently, in stores or other places where articles of clothing are sold or otherwise dispensed, it is necessary for a customer to actually try on the particular article desired before a proper fit is obtained. This is especially true in stores where shoes are sold. Ofttimes a customer will try on several pair before deciding which pair to purchase, and if that customer is a victim of some infectious ailment or disease, the shoes tried on but not purchased are quite probably infected. Thus, there is the danger of a subsequent customer acquiring, innocently enough, some such affliction as epidermophytosis, pompholyx, scabies, or some other serious or distinctly uncomfortable affliction. The sale of gloves, hats, and similar items of apparel may also result in the transmission of infectious skin diseases and eruptions.

With the foregoing in mind, it is an important object of the present invention to provide a device which will easily and quickly sanitize or sterilize an article of apparel.

Another object of this invention is the provision of a device wherein the sanitizing or sterilizing medium may be disposed within the article to be treated, so as to insure adequate sanitization or sterilization.

Still another object of this invention is the provision of a device which utilizes a radiation lamp so arranged as to project inside the article to be treated to insure an adequate emanation of sterilizing rays to the article.

It is also a feature of this invention to provide a sanitizing device in which a sterilizing lamp is used, and which device is provided with means to both support the article of apparel to be treated and also act as a guard for the sterilizing lamp.

Still another feature of the invention resides in the provision of a sanitizing device for articles of apparel which is in the form of a cabinet with an electrical sterilizing device in the cabinet, and in which cabinet the article to be treated may be placed, the energization of the electrical sterilizing device being controlled automatically by the door of the cabinet.

While some of the more salient features, characteristics and advantages of the instant invention have been above pointed out, others will become apparent from the following disclosures, taken in conjunction with the accompanying drawing, in which:

Figure 1 is a view in projection of a sanitizing device embodying features of the present invention, illustrating its use with an article of apparel;

Figure 2 is an enlarged vertical sectional view through the device of Figure 1;

Figure 3 is a fragmentary sectional view, with parts in elevation, of the upper right-hand portion of Figure 2, illustrating the cabinet door in partially open position to denote how the sterilizing medium may be controlled automatically by the action of the door;

Figure 4 is a simplified wiring diagram of the elecrical connections associated with the invention.

As shown on the drawing:

For the purpose of clarity and convenience, the instant invention will be described in connection with the sanitizing or sterilizing of shoes, an article of apparel for which the invention is highly desirable.

The illustrated embodiment of the invention includes a cabinet 5, preferably provided with a transparent panel 6 in a wall thereof. To afford ready access to the interior of the cabinet 5, a door or lid 7 may be provided, hinged or otherwise secured to the body of the cabinet as indicated at 8, this door preferably seating in a mortised seat as indicated at 9.

One wall 10, in the illustrated instance the bottom of the cabinet, is false with the true wall or bottom 11 disposed therebelow thus providing a space 12 therebetween. Secured to the true wall or bottom 11 and occupying the space 12 is a pair of sockets 13 for the reception of a radiation lamp preferably energized by electricity and preferably of a character to provide ultra-violet radiation of a character to destroy germs, bacteria, mold, and other micro-organisms.

Above each socket 13 the false wall or bottom 10 is provided with an opening 15 through which the lamp extends into the interior of the cabinet 5. It will be noted that the lamp is thus spaced away from all walls of the cabinet except that through which it extends. Immediately below the opening 15 in the false wall or bottom 10 a metallic washer or flange 16 is preferably secured to the underside of this wall. A guard 17, preferably of such a character as to provide space for unobstructed passage of the major part of rays emanated by the lamp 14, extends through the opening 15 and is secured to the flange 16. In the illustrated instance, this guard is in the

form of a wire shield made up of a plurality of pieces of bent wire, each leg of the shi d extending through the opening 15 and being turned over as indicated at 18 to provide a foot which is spot-welded or otherwise secured to the flange 16. The lamp 14 extends inside of the guard 17 as clearly seen in Figure 2.

All electrical apparatus that might be deemed necessary, such as transformers, and all electrical wiring, with the exception of a pair of leads 19 and 20 and a switch 21 located near the top of the cabinet, preferably occupy the space 12 and are secured for stability to the true wall or bottom 11. The energization of the lamps 14 is controlled by the switch 21, and such control of the electrical circuit is entirely automatic resulting from the mere opening and closing of the door 7. The switch 21 is provided with an actuating pin or plunger 22 which projects up into the mortised seat 9 for the door 7, as seen in Figure 3, when the door is opened. In this position, namely when the door is opened, the switch 21 breaks the circuit and de-energizes the radiation lamps. When the door is closed, as seen in Figure 2, the plunger 22 is depressed by the door and closes the circuit, thus energizing the lamps.

In Figure 4 I have illustrated a schematic diagram which is satisfactory for the operation of one or more radiation lamps in a device of the character illustrated. In this diagram, conductors 23 and 24 may extend to any suitable source of electrical energy. The switch 21 is preferably in one of these wires, in the illustrated instance wire or conductor 23, between the source of energy and the first lamp connection, so that this switch automatically controls all of the lamps simultaneously. Each lamp 14 is preferably connected across the secondary of a transformer 25, and the primary of the transformer is preferably connected across the line 23—24. All such lamp and transformer arrangements are preferably paralleled across the line 23—24 on the opposite side of the switch 21 from the source of energy.

While I have illustrated a cabinet containing two radiation lamps, it will be appreciated that only one lamp or as many more as might be desired may be used in the cabinet.

In operation, the present invention is extremely simple and very highly effective. It is only necessary, in connection with shoes for example, for the clerk or sales person to assemble shoes tried on but not purchased by a customer. The clerk may then take these shoes, a pair at a time, simply open the door 7 of the cabinet, and place a shoe 26 over each guard 14 so that both the guard and the lamp extend within the shoe, as seen clearly in Figure 1. With the shoes so placed, the clerk merely closes the door 7 and by way of the switch 21, both lamps are simultaneously energized and emanate their bacteria-destroying rays directly into the interior of the shoes being treated. After a short interval of time, the door is again opened, thus de-energizing the lamps, and the sanitized or sterilized pair of shoes removed, a new pair substituted, and the process repeated. It should be especially noted that the guard 17 not only protects its respective radiation lamp, but also functions as a support for the article being sanitized. If any question should arise as to thorough sanitization or sterilization in view of the use of the guard 17, it is a simple expedient to turn the shoe slightly on the guard from its original position to insure direct emanation of rays to every part of the shoe.

The cabinet 5 may have its electrical arrangement so that the wires 23 and 24 extend through a wall of the cabinet inside a cable 27 equipped with the usual wall plug 28 to permit the cabinet to be placed in a desired position adjacent any wall plug, and transported from place to place as may be deemed most expedient.

It is believed that my novel method of sanitizing or sterilizing articles of apparel is sufficiently apparent from the foregoing as to render further description herein unnecessary.

From the above description, it will be noted that I have provided a novel sanitizing or sterilizing device, conveniently handled, highly effective in operation, substantially foolproof and simple in its operation, and which is highly durable and may be economically manufactured and used. It is also apparent that I have provided a new and novel method of sanitizing or sterilizing an article of apparel.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention and it is, therefore, not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. In a device of the character described for sanitizing an article of apparel, a cabinet, an article support in said cabinet, and a gaseous discharge lamp extending inside said support, said article support having large openings therein and functioning both as a support for the article undergoing sanitization and as a guard for said lamp.

2. In a sanitizing device, a gaseous discharge lamp, mounting means for said lamp, and a guard disposed over said lamp and shaped to allow unimpeded radiation from the major portion of said lamp, said guard also being arranged to support an article of apparel to be sanitized by radiations from said lamp.

3. In a sanitizing device for articles of apparel, a cabinet, a false bottom in said cabinet having an opening therein, a wire guard extending inwardly from said opening in position to support an article of apparel, a true bottom in said cabinet, and a radiation lamp carried by said true bottom and projecting through said opening inside said guard.

4. In a sanitizing device for articles of apparel, a cabinet, a false bottom in said cabinet having an opening therein, a wire guard extending inwardly from said opening in position to support an article of apparel, a true bottom in said cabinet, a radiation lamp carried by said true bottom and projecting through said opening inside said guard, a door on said cabinet, an electric circuit including said lamp, and switch means automatically operated by movements of said door to control the energization of said circuit.

5. In a shoe sanitizing device, a cabinet, a wire guard projecting inwardly from a wall of said cabinet and sized to extend inside a shoe drawn over the guard, a radiation lamp of a type to destroy micro-organisms extending inside said guard, and means for energizing said lamp.

RAYMOND W. BERGMAN.