Jan. 6, 1931. W. HARGREAVES 1,788,104

STERILIZING TEST DEVICE

Filed May 31, 1930

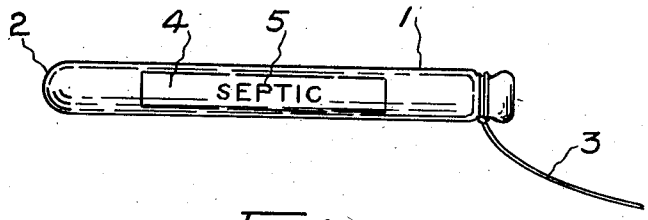


Fig. 1

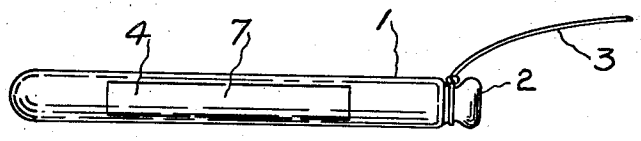


Fig. 2

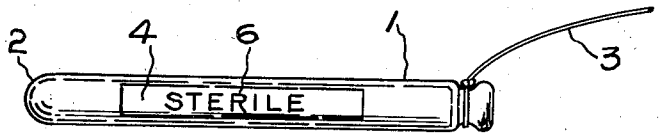


Fig. 3

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Patented Jan. 6, 1931 1,788,104

UNITED STATES PATENT OFFICE

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STERILIZING TEST DEVICE

Application filed May 31, 1930. Serial No. 458,495.

My invention relates to improvements in sterilizing test devices which are particularly adapted for insertion in garments and dressings which are to be treated in pressure sterilizers. The object of the invention is to provide a sterilizing test device which will react to a desired temperature in such a manner that no doubt can exist in the mind of the sterilizer operative as to the condition of the articles treated, and to provide a test device which when once used is so changed that it cannot be used again, as experience has definitely shown that devices of this nature when reused are misleading and dangerous. A further object is to provide in such a device a written or printed word indicative of the condition of the articles in which it is placed, such indication showing the articles to be septic prior to sterilizing treatment and to be sterile after.

The invention consists essentially of a sealed tube in which is enclosed a label bearing such words as septic and sterile, the latter being excluded from view until the tube has been subject to a suitable sterilizing temperature and period, when the former word becomes illegible and the latter exposed to view, as will be more fully described in the following specification and shown in the accompanying drawings, in which:—

Fig. 1 is a general view showing the obverse side of the enclosed label.

Fig. 2 is a view showing the reverse side of the label covered.

Fig. 3 is a view showing the reverse side of the enclosed label after subjection to sterilizing heat.

In the drawings like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates generally a transparent glass tube sealed at its ends as at 2 and having attached thereto a thread 3 by which the tube can be readily located in the articles treated in the sterilizer. Inserted in the tube 1 is a label 4 preferably made of absorbent paper, upon the observe side of which is a word 5 such as "septic." The ink used in printing the obverse side is of a readily soluble nature or capable of being blurred when subjected to a suitably high temperature. On the reverse side of the label a word 6 such as "sterile" is printed in an ink which is not soluble or subject to becoming illegible through being subjected to a sterilizing heat. Affixed to the reverse side of the label to exclude the word sterile from view is any suitable covering material 7 which is capable of being rendered substantially transparent by subjecting it to suitable heat, and I have found that acid benzoic is eminently suited to this purpose since it is insoluble at a temperature of less than 240 degrees Fahrenheit, but readily melts at this or higher temperatures and is so absorbed by the label that the word originally covered thereby is rendered quite clear and legible.

The device is inserted between the articles placed in the sterilizer. When sterilization is thought to be completed the device is withdrawn and if proper sterilization has been attained throughout the articles the device will have been subjected to the proper temperature also, the result of such temperature being that the acid benzoic is changed from an opaque powder to a colorless solution which, when absorbent paper is used for the label, is absorbed by the label and serves to increase the illegibility of the word septic by dissolving the ink used in printing it, and causing said ink to spread.

If a non-absorbent paper is used the acid benzoic on setting subsequent to cooling crystallizes on the paper and over the word sterile, but does not prevent the word from being clearly readable and proper indication of the condition of the articles sterilized being displayed.

It will be obvious that while an indication of the possible septic condition of articles is desirable in the tube 1, it is by no means essential as such condition is naturally assumed, it serves, however, to show that the device is new and has not been subjected to sterilizing temperatures. It also follows that any material which is opaque and is capable of undergoing such change as to disclose the printing on the obverse side of the label when subjected to sterilizing heat

will form a suitable substitute for the acid benzoic herein mentioned.

What I claim as my invention is:

1. A sterilizing control device comprising a transparent body, an absorbent printed label within the body, an opaque covering for the printed matter on the label, said covering being capable of being absorbed by the label at sterilizing temperatures.

2. A sterilizing control device comprising a transparent body enclosing a label bearing a printed word indicative of a septic condition and of a sterile condition, means normally excluding the indication of sterility from view capable of change to expose such indication when the tube is subjected to sterilizing temperature and to render the word indicative of a septic condition permanently illegible.

3. A sterilizing control device comprising a transparent body enclosing a label bearing a printed word indicative of a septic condition and of a sterile condition, means normally excluding the indication of sterility from view capable of change to expose such indication when the tube is subjected to sterilizing temperature and to render the word indicative of a septic condition permanently illegible, said word indicative of a septic condition being printed with a medium capable of being dissolved at a sterilizing temperature.

4. A sterilizing control device comprising a sealed transparent body enclosing an absorbent label printed on one side with a word indicative of sterility and on the other side with a word indicative of a septic condition, said label having affixed to the side bearing the indication of sterility a material soluble at about 250 degrees Fahrenheit and capable of being absorbed by the label whereby the printed matter on that side of the label is permanently exposed to view.

5. A sterilizing control device comprising a sealed transparent body enclosing an absorbent label printed on one side with water insoluble ink and on the other side with soluble ink, said label being covered on the insoluble ink side with an opaque substance to obscure said printed matter and capable of being dissolved at a temperature of about 250 degrees Fahrenheit and of being absorbed by the label, said substance when dissolved serving to dissolve the soluble ink and render the matter printed therewith illegible.

Dated at Vancouver, B. C., this 14th day of May, 1930.

WILFRID HARGREAVES.