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3,429,653

CONTAINER FOR USE WITH AUTOCLAVES

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FIG. 1

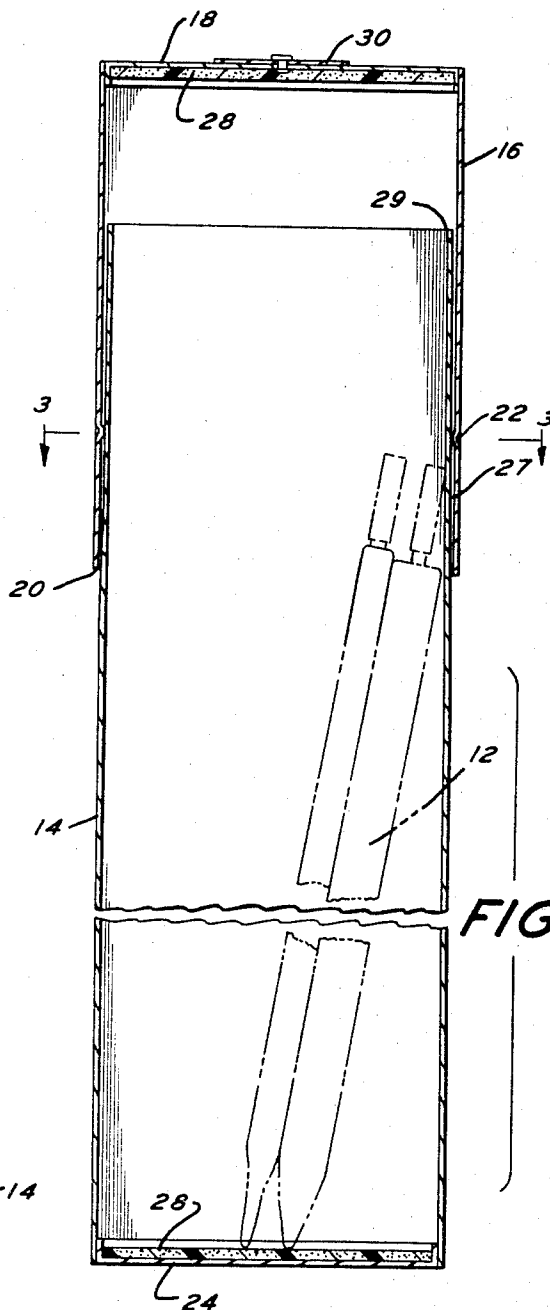
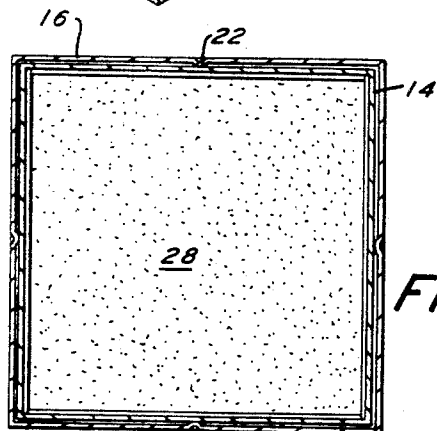
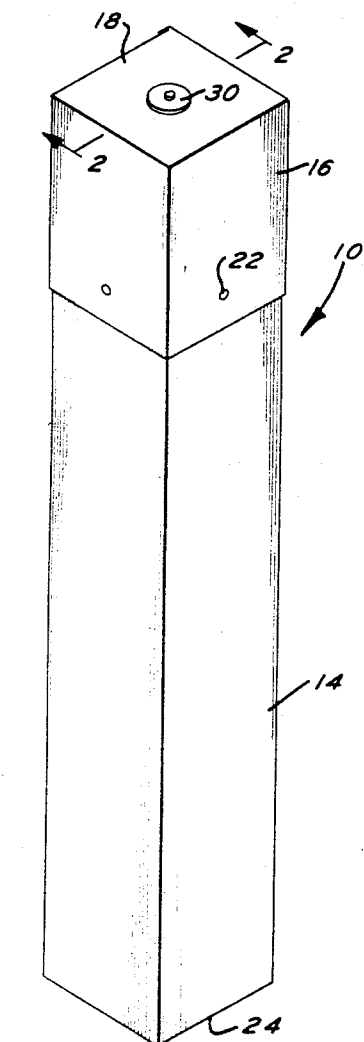


FIG. 2

FIG. 3

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## CONTAINER FOR USE WITH AUTOCLAVES

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4 Claims

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This invention relates to containers for use with wet heat sterilizers such as autoclaves. More particularly, this invention relates to containers whereby laboratory glassware may be placed in an autoclave with minimum risk of chipping or other breakage.

It is well known in the medical and biological field that laboratory apparatus may be readily sterilized by subjecting it to high heat, humidity and pressure in an autoclave. Such treatment is effective to remove large particles of dirt and other contaminants and to kill micro-organisms. Thus, the apparatus emerges from the autoclave in a sterile state, ready for further use in experimentation or analysis.

While it remains an indispensable part of proper laboratory technique, autoclaving or other types of wet heat sterilizing does create certain problems with glass apparatus. In conventional practice, the apparatus to be treated is supported in trays or racks of wire mesh construction, or in rigid sheet metal containers. It has been found that glass apparatus so supported is often damaged by shock or impact during handling. The problem is particularly acute with apparatus of the type known as pipettes. This is true because such apparatus has a finely tapered tip which presents a relatively small area for impact absorption. This invention presents a simple and effective solution to the breakage problem.

It is an object of this invention to provide a container for use with autoclaves which is effective in preventing chipping of glass apparatus.

It is another object of this invention to provide a container for use with autoclaves which is especially useful with pipettes.

It is still another object of this invention to provide a container for use with autoclaves which is easily constructed.

It is yet another object of this invention to provide a container for use with autoclaves which is both durable and convenient to use.

Other objects will appear hereinafter.

For the purpose of illustrating the invention, there is shown in the drawings a form which is presently preferred; it being understood, however, that this invention is not limited to the precise arrangement and instrumentality shown.

FIGURE 1 is a perspective view of the container.

FIGURE 2 is a section view, partly broken away, taken along the line 2-2 of FIGURE 1.

FIGURE 3 is a section view taken along the line 3-3 in FIGURE 2.

Referring to the drawings in detail, wherein like numerals indicate like elements, there is shown in FIGURE 1 an autoclavable container indicated generally by the numeral 10.

The container 10 comprises a body member 14 and a closure member 16. As is seen in FIGURES 1 and 2, the body member 14 is a hollow rectangular prism of approximately square cross section. The body member 14 may be constructed of any suitable corrosion resistant sheet metal of which stainless steel is one example. The body member 14 may be constructed of a single piece of such material, suitably bent to form four sides and joined along the seam by spot welds and sealer. Alternatively, the body member 14 may be constructed of more than one piece of sheet material, in such a manner as is known to those

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having skill in the art. The body member includes an end portion 24 at one end. The end portion 24 seals the end, and thus the body member is a receptacle with a single open end. The open end of body member 14 is defined by upper edge portions 29.

The closure 16 includes an end portion 18 at one end. The end portion 18 seals the end and thus, makes of the closure 16 a receptacle having a single open end. The open end of the closure 16 is defined by a lower edge portion 20. The closure 16 has a cross section slightly larger than that of the body member 14, and hence, the open end of the closure 16 may receive the open end of the body member in telescoping relation. Thus, the body member 14 and closure 16 may be assembled to form a closed container.

The closure 16 in the illustrated embodiment has an inwardly extending projection 22 in each of its side faces. The projection 22 prevents the side faces of the closure 16 from contacting the adjacent side faces of the body member 14. Thus, a clearance space 27 exists between the closure and the body member 14.

As is illustrated more clearly in FIGURES 2 and 3, the inner surfaces of end portions 18 and 24 are coated with a layer of elastomeric material 28. Ideally, this material may be of the type known as silicone rubber, which is stable when subjected to temperatures as high as 600° F.

As is seen in FIGURES 1 and 2, an identification tag 30 may be secured to the closure 16. The identification tag 30 may take the form of a color anodized disk of aluminum, sealed to the closure 16. It is evident that the identification tag 30 may be placed on the body member 14 if desired.

In operation the pipettes 12 or other apparatus to be autoclaved are placed in the body member 14. As shown in FIGURE 2, the tips of the pipettes 12 contact the elastomeric material 28, thus avoiding the risk of breakage. Next, the closure 16 is placed over the open end of the body member 14, and the entire container 10 placed in an autoclave. Steam or other high temperature gases may pass under pressure through the clearance space 27 and into the container. Thus, the atmosphere within the container 10 is substantially the same as that of the autoclave into which it is placed. After autoclaving, the container may be placed in a dry heat sterilizer to remove any condensate which may be present. It has been found that the container may then be stored for a considerable length of time without bacteriological contamination. Thus, although gas such as steam or air may travel through the clearance space and into the container, it has been found that airborne micro-organisms are deposited on the surfaces defining the clearance space, and therefore do not enter the container.

The identification tag 30 may be used to identify the contents of the container 10. Hence, the container need not be opened until just prior to use, and the apparatus remains sterile until used.

As was pointed out above, the elastomeric material on the respective end portions prevents damage to the apparatus due to the impact during insertion into the container and subsequent handling. For the purpose of manufacture, the elastomeric material may be placed in the end portions 18 and 24 in the form of a paste, solid or liquid and allowed to cure while in place. Thus, a uniform coating may be achieved.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof, and accordingly, reference should be made to the appended claims rather than to the foregoing specifications as indicating the scope of the invention.

I claim:

1. A container for use in a wet heat sterilizer com-

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prising a hollow elongated rigid body member having a closed end and an open end, a hollow elongated rigid closure having a closed end and an open end, said closure being slightly larger in cross section than said open end of said body member so that said closure may be placed over said open end of said body member in telescoping relation thereto to form a closed container, and an autoclavable elastomeric coating on the inside of each of said closed ends for cushioning impact between the container and apparatus therein.

2. A container for use in an autoclave comprising a hollow elongated rigid body member having a closed end and an open end, a hollow elongated rigid closure having a closed end and an open end, said closure being slightly larger in cross section than said open end of said body member so that said closure may be placed over said open end of said body member in telescoping relation therewith to form a closed container, an autoclavable elastomeric coating on the inside of each of said closed ends for cushioning impact between the container and the apparatus therein, and an identification tag on said closure whereby the apparatus within the container may be identified.

3. A container for use in an autoclave comprising a tubular body member, a rigid portion secured to one end of said body member and closing said end, the other end of said body member being open and having an upper edge portion, a hollow elongated closure, a rigid portion secured to one end of said closure and closing said end, the other end of said closure being open and having a lower edge portion, said closure having a cross section similar in shape to that of said open end of said body member and a slightly larger peripheral dimension than

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that of said open end so that said open end of said closure may be placed over said open end of said body member in telescoping relation thereto to form a closed container, an autoclavable elastomeric coating on the inside of each of said end portions for cushioning impact between the container and the apparatus therein, and an inwardly extending projection on said closure for engagement with said body member when said closure is placed over said open end of said body member, said projection separating said closure and said body member to form a clearance space therebetween.

4. A container in accordance with claim 3 wherein said autoclavable elastomeric coating is silicone rubber.

#### References Cited

##### UNITED STATES PATENTS

2,962,187 11/1960 Morris ----- 220—44 X

##### FOREIGN PATENTS

111,814 12/1917 Great Britain.

##### OTHER REFERENCES

Materials in Design Engineering, Materials Selector Issue, 56, p. 24, (Oct. 1962).

Fisher Scientific Company, Catalog, Modern Laboratory Appliances, p. 110, 1963.

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U.S. Cl. X.R.

21—78, 105; 23—292; 220—42