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TEST TUBE SHIPPING CONTAINER

Sherman S. Fishman, P.O. Box 321,
San Francisco, Calif. 94101

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1 Claim. (Cl. 229—15)

This invention relates to shipping containers, particularly to shipping containers that are suited for technical glassware such as test tubes. Frequently research activities require shipping test tubes great distances to obtain specimens of bacteria, viruses and the like. These materials are often pathogenic to man and animal. When these specimens are returned to the laboratory any breakage will result in a lost specimen and possibly a hazardous contamination. There is a need for a rugged shipping container, a package that is so versatile that it can contain a few or many test tubes without additional excelsior to fill any vacant space.

With the advent of honeycomb packaging materials it became apparent that such a compact shipping container was feasible. Accordingly, it is an objective of this invention to provide a test tube shipping container that will be rugged, compact, contain few or many tubes, be easily opened and closed and have slight risk of damage to its contents during shipment.

Additionally, it is a further objective of this invention to provide a shipping container wherein the honeycomb portion is removable and becomes a test tube holder which can be placed directly on the shelf of a freezer.

The above and still further objects and advantages of the present invention will become apparent upon consideration of the following detailed description of a specific embodiment thereof, especially when taken in conjunction with the accompanying drawing wherein:

FIG. 1 is a perspective view of the container and its interior.

FIG. 2 is a cross-section of a portion of the container taken generally along lines 2—2 of FIG. 1.

FIG. 3 is a cross-sectional view similar to FIG. 2 but with the interior packing material expanded.

FIG. 4 is a plan view of the expanded packaging material taken generally along the lines 4—4 of FIG. 3.

Referring in detail to the drawing in which like characters are like parts, FIG. 1 illustrates in perspective the container assembly **10** which is composed of a bottom **17**, side walls **12**, **13**, **14** and **16** and tops **18***a*, **18***b*, **18***c*, **18***d*, which taken together constitute the carton **11**, generally made of corrugated cardboard, styrenes and the like. The interior has a shock resistant false bottom **19** being made of a resilient material selected from rubberized felts, urethane foams, loose wads of pellon and the like. A section of honeycomb **20** to fit between the walls **13** and **14**, and being fixedly attached on the surface **22** of the wall **12** and having a rigid outer wall **35**; the honeycomb **20** has attached on its bottom fixed edge a pleated accordion-like bottom **21** which is made of an expandable material such as honeycomb cardboard, latex coated paper, and the like. An adhesive backed tab **21***a* is attached to the outer end of the honeycomb section **20**; another adhesive strip tab **23** is attached along the vertical edge of the honeycomb **20** and adjacent to the side walls **13** and **14**; the adhesive strip **23** has a wax paper **26** which covers the adhesive surface and will be stripped away to expose the adhesive when the honeycomb is expanded, thereby when applied to the side walls **13** and **14** the tab **23** will serve to anchor the honeycomb to whatever extent it has been expanded. The amount of expansion will depend upon the number of test tubes to be inserted in it. The honeycomb **20** may be expanded to expose only a few cells or many. In FIG. 2 the attachment site **21***b* of the pleated bottom **21** against the surface of the wall **12** is seen more clearly. The honeycomb **20** is shown in its contracted state with no test tubes stored in it and the tab **23** is unattached and its adhesive surface is protected by a wax paper **26**. In FIG. 3 we see the honeycomb **20** partially expanded and storing test tubes **30**, the tab **23** is affixed to the wall **13**, the bottom **21** has partially expanded with the honeycomb **20**. In FIG. 4 we see the honeycomb **20** and its attachment **22** to the wall **12**; several test tubes **30** are stored in the honeycomb cells; the tab **23** is attached to the wall **13** by the adhesive surface area **24**.

This invention is not limited to the specific embodiments disclosed here but is intended to encompass other modifications apparent to those skilled in the art and in keeping within the scope of the following claim.

I claim:

A shipping container composed of a bottom, four upright walls, a top, a false bottom, a honeycomb section, a pleated bottom for the honeycomb with adhesive on each end, adhesive strips partially covered with wax paper; said bottom being attached to said upright walls, said upright walls having tops attached forming an enclosure; said false bottom loosely applied onto said enclosure bottom; said pleated bottom being attached at one end to an upright wall of said enclosure, its other end being attached to the outer bottom edge of said honeycomb; said honeycomb being attached to the same said upright wall; said adhesive strips being attached in part onto the outer surface of said honeycomb and adjacent to each upright wall which is 90° in relation to the said wall to which said honeycomb is attached; said bottom, walls and tops being made from a material selected from corrugated cardboard, styrenes and the like; said false bottom being made of a resilient material selected from rubberized felts, urethane foams, pellon and the like; said honeycomb being made of cardboard, chemically coated paper, metallic foils and the like; said pleated bottom being made from a selection of materials such as cardboard, latex coated paper and the like.

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JOSEPH R. LECLAIR, *Primary Examiner.*

R. PESHOCK, *Assistant Examiner.*

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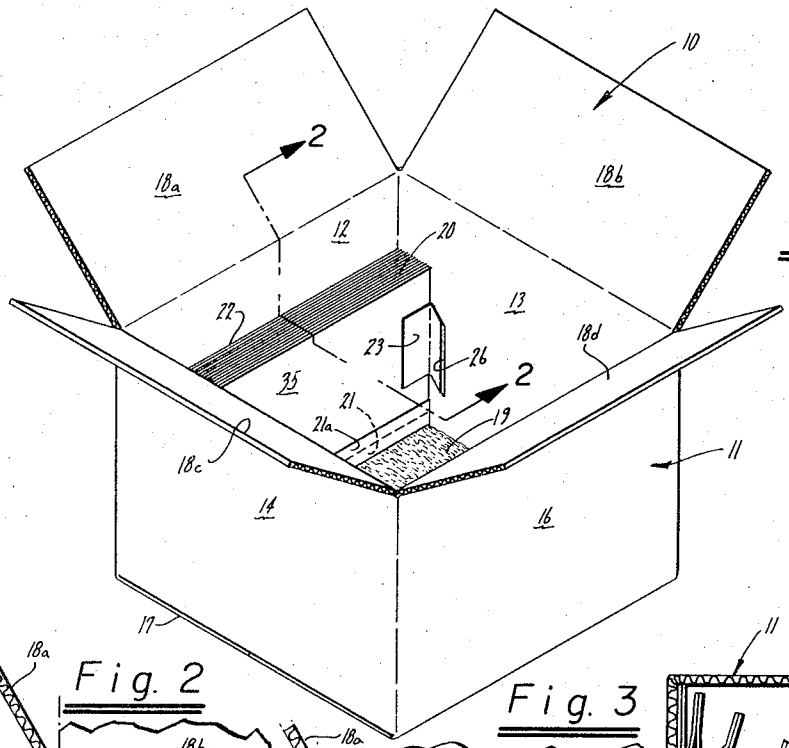


Fig. 1

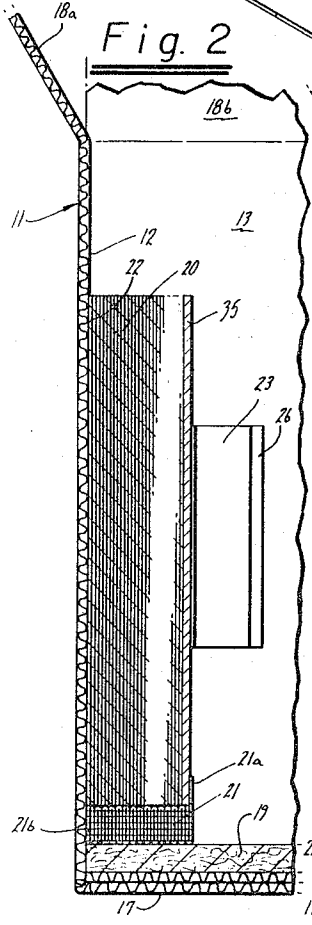


Fig. 2

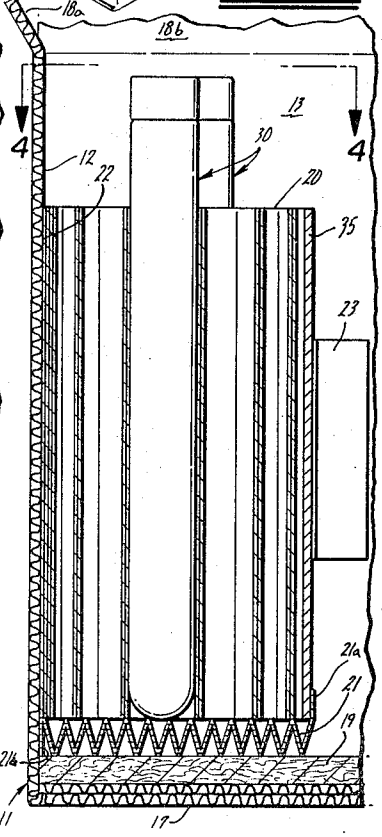


Fig. 3

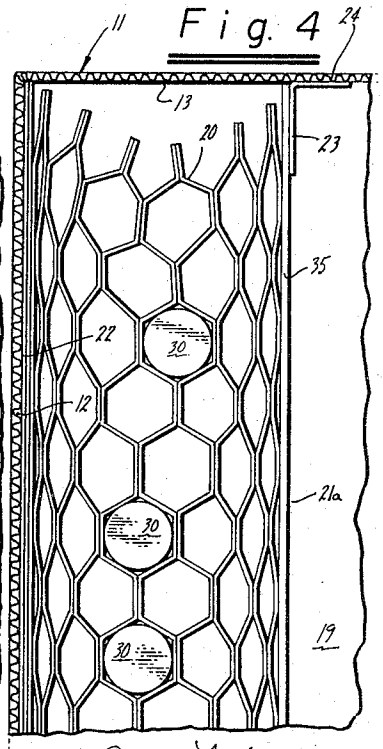


Fig. 4

S. S. Fishman
INVENTOR.