May 27, 1969 R. S. MICHEL 3,446,342

PACKAGE FOR MAILING BIOLOGICAL SAMPLES TO LABORATORIES FOR SPECIAL TESTS

Filed March 6, 1967

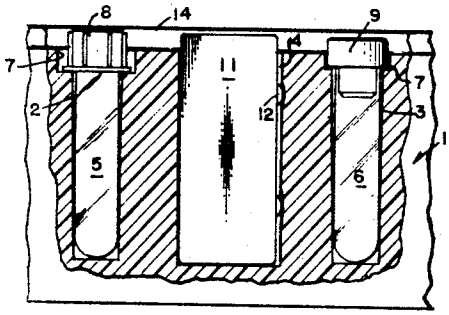

Fig. 2

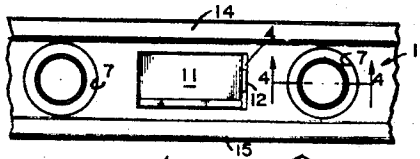

Fig. 3

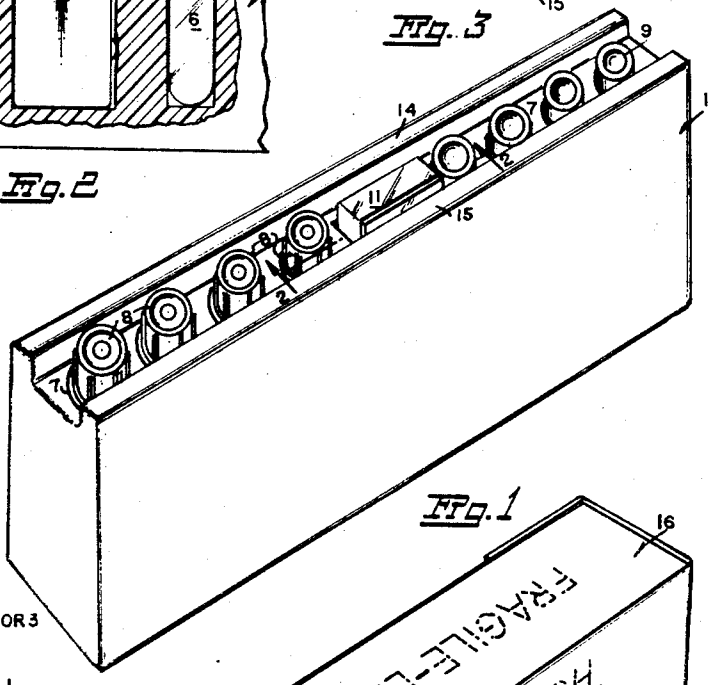

Fig. 1

Fig. 5

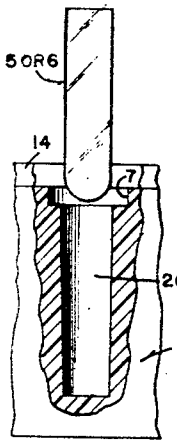

Fig. 4

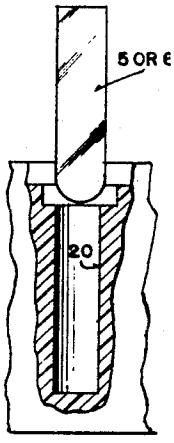

Fig. 5A

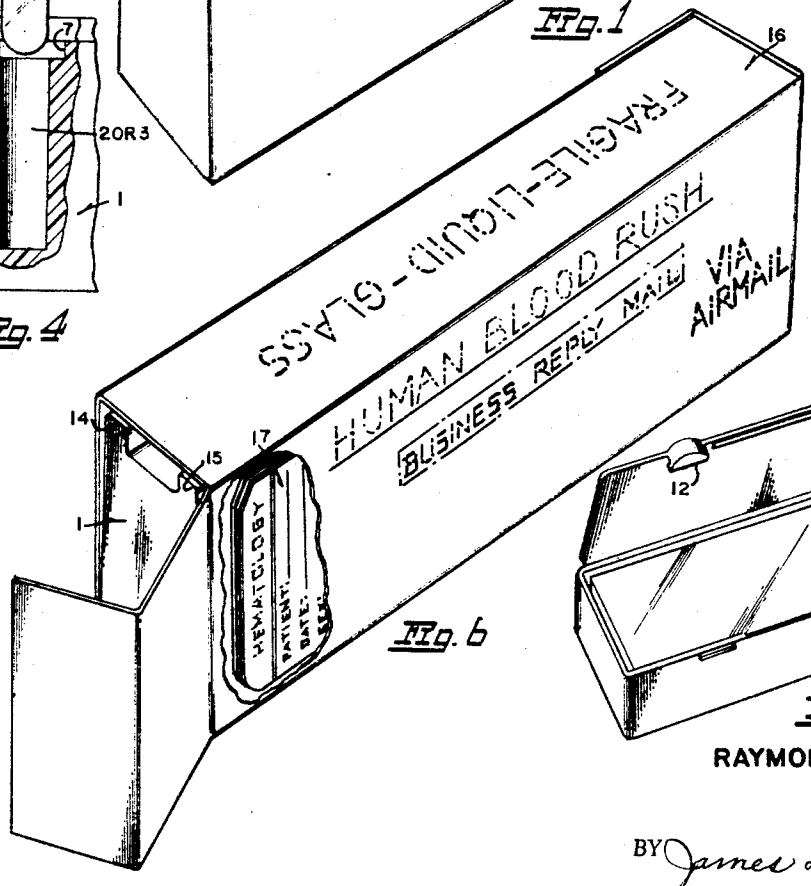

Fig. 6

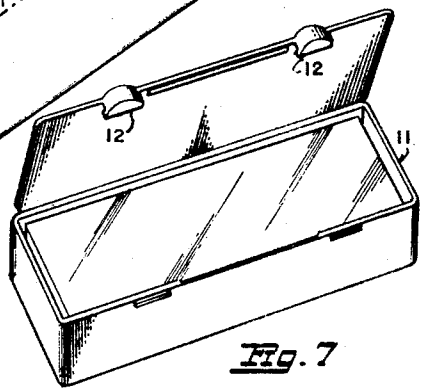

Fig. 7

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United States Patent Office 3,446,342
Patented May 27, 1969

3,446,342

PACKAGE FOR MAILING BIOLOGICAL SAMPLES TO LABORATORIES FOR SPECIAL TESTS

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Filed Mar. 6, 1967, Ser. No. 620,800
Int. Cl. B65d 79/00, 85/02, 25/12, 1/00
U.S. Cl. 206—47 2 Claims

ABSTRACT OF THE DISCLOSURE

A package comprising a holder for stoppered glass tubes and related articles within a mailing carton or wrapper having printed indicia on its exterior identifying contents of the holder, mailing instructions for the package, and instruction cards related to the contents of the holder for use by a laboratory addressee.

Summary

This invention relates to a combination holder and mailing envelope or wrapper for safely dispatching blood samples and other biological specimens in vacuum tubes, transfer tubes, on glass slides within a container, and other articles of a similar fragile nature from doctor's offices, medical clinics and the like to a medical laboratory for diagnostic testing and related purposes.

One of the principal objects of the invention is to provide a holder of the class described made of light weight, molded material such as "Styrofoam" or the like adapted to frictionally hold various articles of the character described in protective concealment with only the color coded plugged or capped ends of the tubes visible for expeditious sorting when removed from the wrapper.

Another object is the inclusion within the wrapper of patient identification cards color coded to the closure caps for the tubes and containing test information related thereto.

Another object of the invention resides in the transverse sectional design of the mailer which permits of its easy removal from a mold when finished. The non-friable and somewhat flexible nature of the molded material is such that it will yield without fracturing into frictional engagement with tubes and other articles inserted into their respective sockets.

The foregoing and other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof and in which:

FIGURE 1 is a perspective view of the holder made in accordance with my invention.

FIGURE 2 is a fragmentary, sectional, elevational view taken approximately along the line 2—2 of FIGURE 1.

FIGURE 3 is a top plan view of FIGURE 2 with some parts removed for convenience of illustration.

FIGURE 4 is a sectional view taken approximately along the line 4—4 of FIGURE 3 illustrating the relation of the uniform diameter of the tubes to the tapering diameter of their respective sockets.

FIGURE 5 is a top plan view of a modified form of socket.

FIGURE 5A is a sectional view taken approximately along the line 5A—5A of FIGURE 5 illustrating the relation of the uniform diameter of the tubes to the unlike diameter of their respective sockets.

FIGURE 6 is a perspective view of the mailing wrapper with one end open and a fragment of its front wall broken away to illustrate the holder and patient identification cards contained within the wrapper, and

FIGURE 7 is a perspective view of a glass slide container and glass slides disposed therewithin.

With continuing reference to the drawing wherein like reference numerals designate like parts and particularly FIGURES 1–4 thereof, reference numeral **1** indicates the holder preferably, though not restrictively, made of molded "Styrofoam" manufactured by Dow Chemical Company, Midland, Mich., and characterized as a cellular or multi-cellular "foam." This light weight plastic material, molded at relatively low cost in accordance with my invention, provides important structural strength with cushioning properties, good insulating properties and is moisture resistant, odorless, durable, non-friable and of low thermal conductivity. As best shown in FIGURE 1, the holder is tapered from top to bottom throughout its length and provided with two series of upwardly opening sockets **2** and **3** and a socket **4** of rectangular cross section therebetween. All of the sockets extend to the approximate depth shown in FIGURE 2 and are tapered throughout their depth to wedgingly receive and hold inserted tubes **5** and **6**, as illustrated in FIGURE 2.

The top end of each socket is enlarged as at **7** to accommodate the base of the caps **8** of the tubes **5** and the plug-type stoppers **9** or the tubes **6**.

The socket **4** of rectangular section extends to the same depth as the sockets **2** and **3** to accommodate a glass slide container (FIG. 7) indicated generally at **11** held within the socket by frictional engagement of its lid-locking elements **12** with one side wall of the socket as shown.

The side walls of the holder **1** are extended upwardly as best shown in FIGURE 1, into two parallel rim portions **14–15** of a height at least equal to or slightly greater than the height of both series of caps **8–9** and the top end of the slide container **11**. By this arrangement, all of the tubes and the slide holder are protectively concealed within the holder when standing alone, as in FIGURE 1, or when carried within the box-like mailing container or envelope indicated generally at **16**. The front face of the container or envelope has printed thereon mailing instructions and other indicia identifying the nature of the contents of the holder.

Also held within the container **16** by a sliding fit between one wall thereof and an adjacent wall of the holder **1** are a number of colored cards **17** containing printed patient identification and instructions for the laboratory to follow in dealing with the contens of the tubes **5–6** or the slide holder in accordance with the color coding of the stoppers for the tubes.

The modified form of socket **2A** or **3A** (FIGS. 5–5A) differs from those of the first form in that it is of uniform cross section throughout its depth with the truncation or flattened side wall **20** being relied upon to provide frictional holding engagement with the peripheral wall of the inserted tube.

What I claim is:

1. A package including in combination a holder for transporting a number of tubes of biological samples for special laboratory tests and a mailing container for the holder,

said tubes having stoppered ends,

said mailing container having front, rear, top, bottom and end walls,

said holder made of molded plastic having cushioning properties and a series of sockets therein of uniform cross-sectional configuration throughout their depth to frictionally hold said tubes inserted therein with said stoppered ends of the tubes extending above the top of said sockets,

said holder having integral side walls extending above said sockets to a height at least equal to the height of said stoppered ends of said tubes to thereby provide in combination with the walls o fsaid container

protective concealment for said stoppered ends of the tubes.

2. A package as claimed in claim 1 including cards identifying donors of said biological samples and test information relating to said samples, and wherein said holder has upwardly tapering walls to provide space between one of said walls and an adjacent wall of said mailing container for holding said identification cards.

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MARTHA L. RICE, *Primary Examiner.*

U.S. Cl. X.R.

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