United States Patent [19]

Pates et al.

[11] **3,799,426**

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[54] **CONTAINER**

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[52] **U.S. Cl.** ..... **229/44 R**, 150/.5, 220/38.5, 220/54, 229/51 TS

[51] **Int. Cl.** **B65d 5/66**

[58] **Field of Search** ..... 229/44 R, 51 R, 51 TS, 229/18, 22; 220/27, 38.5, 53, 54; 150/.5; 249/61, 117, 121, 134, 204

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[57] **ABSTRACT**

A tubular container, preferably of a plastic material has an end portion of reduced diameter terminating in a flat, rounded or pointed tip. The container is provided with a tear strip which is defined by a pair of spaced weakening lines within the material of the container extending for example lengthwise along the tubular body or around the tubular body either in a plane at right angles to the long axis of the container or at any angle so as to form a regular or irregular spiral or helix which may be either continuous or discontinous. Preferably the container has a cap attached to the tear strip.

5 Claims, 3 Drawing Figures

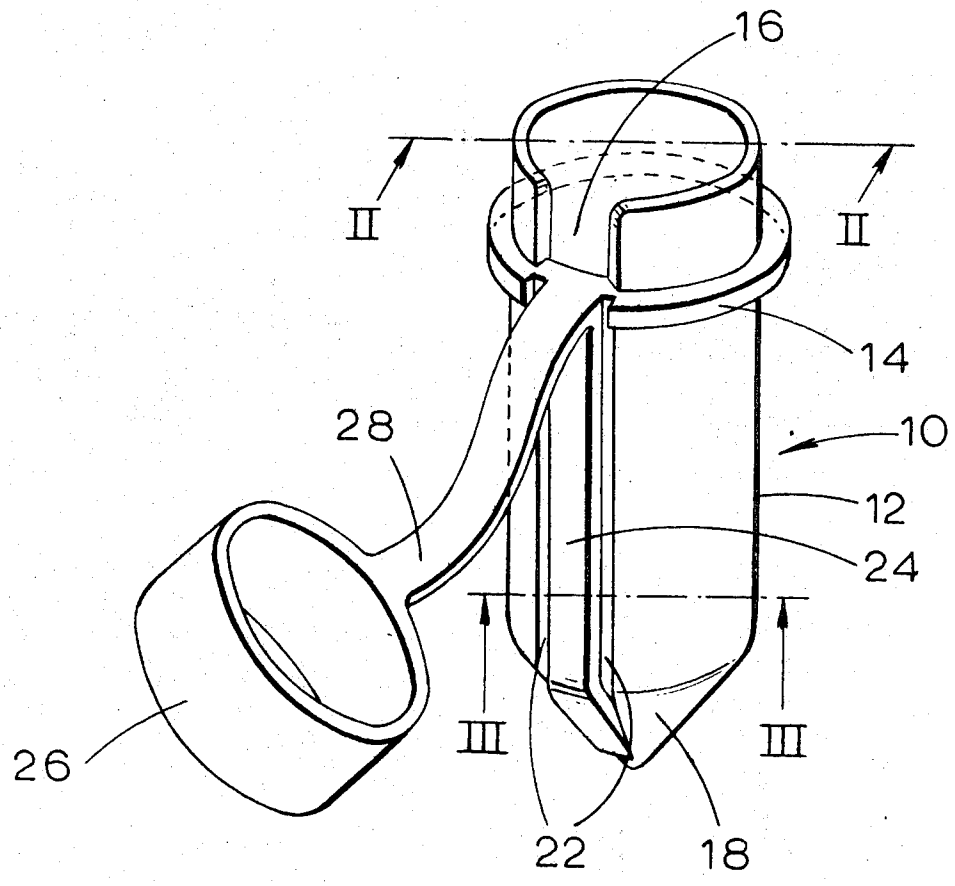
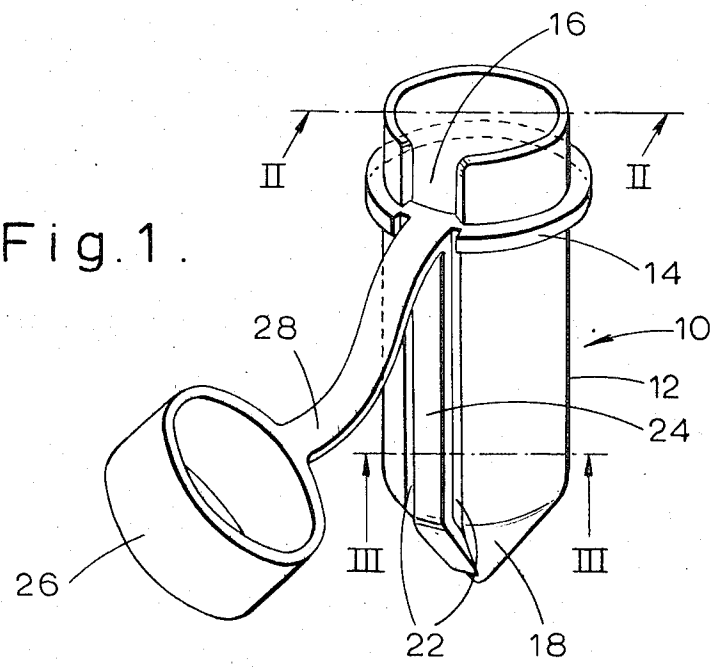


Fig. 1.



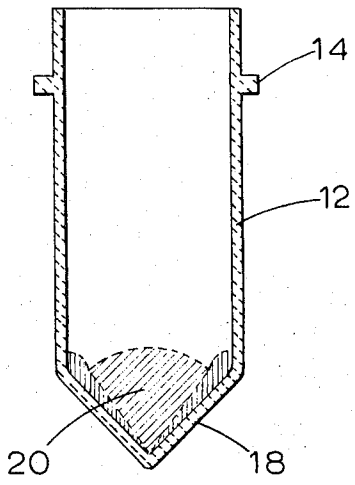


Fig. 2.

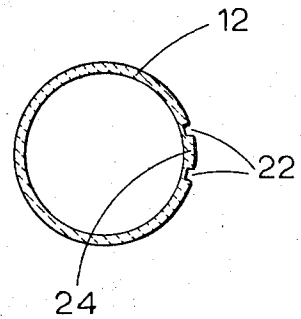


Fig. 3.

CONTAINER

FIELD OF THE INVENTION

The present invention relates to a container designed in such a way as to facilitate the removal of its contents, whether solid, semi-solid, or liquid. The container is particularly though not exclusively, useful as a mould for the embedding of specimens for electron microscopy which can be easily extracted, or as a centrifuge tube in which one or more stratified layers or pellets of biological material can be easily extracted.

SUMMARY OF THE INVENTION

According to the invention there is provided a container comprising a tubular main body portion, an end portion of reduced diameter integral with the main body portion and terminating in a tip, and a tear strip defined in the container by a pair of spaced weakening lines within the material of the container.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of an embodiment of the invention.

FIG. 2 is a longitudinal section of the container of FIG. 1, taken along line II—II in FIG. 1.

FIG. 3 is a cross section taken along line III—III in FIG. 1.

DETAILED DESCRIPTION WITH REFERENCE TO THE DRAWINGS

FIG. 1 shows a container **10** having a main tubular body portion **12.** An annular bead **14** surrounds the container near its upper end almost completely, but breaks off on either side of an opening **16** in the part of the body portion **12** above the bead. The lower end **18** of the container is tapered and has four internal planar facets **20,** of which all of one and part of two others are visible in FIG. **2.**

A pair of weakening lines **22** extend along substantially the whole length of the container from bead **14,** adjacent the edges of the opening **16,** to near the tip at the lower end of the container. Each of these weakening lines is formed by a groove in the exterior face of the body of the material of the container. A tear strip **24** is thus defined between the lines **22.**

A cap **26** adapted to be received over the upper end of the container so as to reach as far as the bead **14** is attached to the container by a connecting strip **28** which is integral both with the upper end of the tear strip and with the cap.

When it is desired to remove the contents from the container the user grips the cap and uses this as a tab to pull the tear strip from the rest of the container. The contents may then be easily removed.

The container is preferably made of a plastics material for example, polyethylene, though any material may be used which is inert to the contents to be placed in the container. When using the container as a mould for the embedding of specimens for electron microscopy, it is preferable to make the container of a material which is translucent or transparent, in order to observe the positioning of the specimen which is being embedded. It is also desirable that the container should be translucent or transparent when using it for the stratification of layers or pellets so that such layers or pellets can be seen as they are extracted.

The shape of the lower end of the container is designed to facilitate the functions for which it is to be used. When used as an embedding mould for specimens for electron microscopy the container may have an end which instead of being conically tapered as illustrated is extended into a tube with a smaller diameter than the upper part of the body and terminates in a cone or flat tip or a pyramid with either a pointed or rectangular end so as to allow easy access to the specimen during sectioning. When the container is used as a centrifuge tube the lower part may be tapering as illustrated or elongate so as to obtain more obvious stratification of the contents and hence aid in their removal.

Instead of a lengthwise tear strip, the tear strip, may be in a plane at right angles to the long axis of the container, or may be in the shape of a regular or irregular spiral or helix. Such a spiral or helix may be continuous or discontinuous. In the case of tear strips extending around the tubular body a plurality of such strips may be provided to make it possible to separate the container into sections.

If a cap is provided separately from the container itself a tab which can be grasped readily should be provided at the upper end of the tear strip to facilitate removal of the tear strip.

The bead provided on the exterior of the tubular body can assist in mounting the container in a holder for filling or storage.

We claim:

1. A container comprising an elongate tubular main body portion, a cap member for the upper open end thereof, an opposite end portion of reduced diameter integral with the main body portion and terminating in a tip, and a tear strip extending the full length of the main body and end portions defined in the wall of the container by a pair of spaced weakening lines within the material of the container and extending length-wise thereof, the tear strip being connected at the upper end thereof to the cap by a connecting strip, whereby removal of the cap permits removal of the tear strip to render accessible the entire interior of the body and end portions.

2. A container according to claim **1,** wherein the upper end of the tear strip terminates at a level below the upper end of the container, and the portion of the container above the said level extends only partly around the container and defines an opening immediately above the said upper end of the tear strip.

3. A container according to claim **2,** wherein a bead is located on the exterior of the container at the said level where the upper end of the tear strip terminates.

4. A container according to claim **3,** formed of a plastic material.

5. A container according to claim **1,** wherein the tip of the container if conical and internally faceted.

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