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2,479,581

CONTAINER FOR ASEPTIC MATERIAL

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FIG. 1

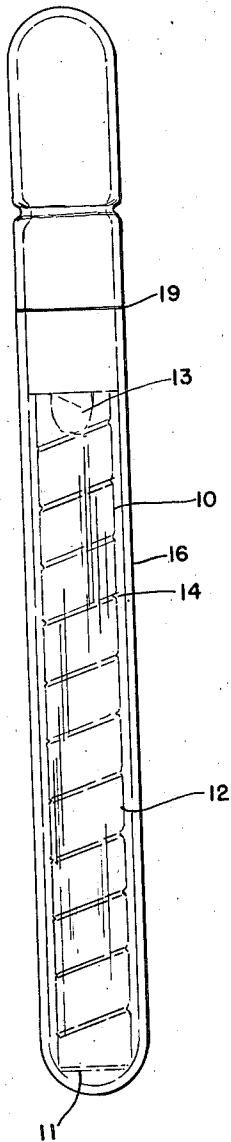


FIG. 2

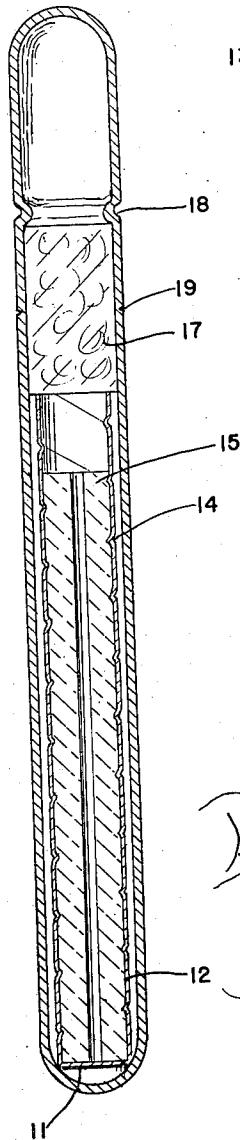


FIG. 3

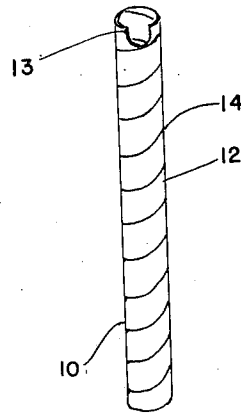
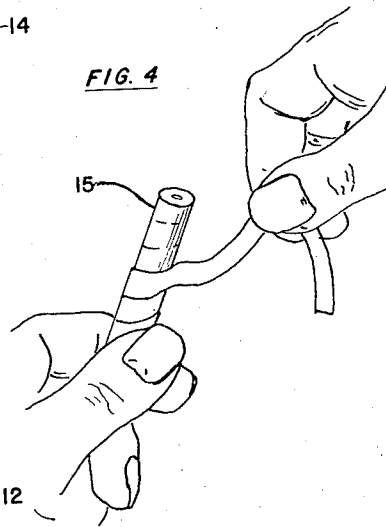


FIG. 4



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CONTAINER FOR ASEPTIC MATERIAL

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5 Claims. (Cl. 206—63.2)

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This invention relates to novel articles of manufacture. More particularly the invention is directed to a novel container for wax employed in the surgical field and a novel package combination.

The packaging of aseptic wax for bone surgery involves special care due to the nature of the material and the unique operating technic. Heretofore, it has been proposed to pack said wax in collapsible metal tubes. While this wax is sufficiently fluid at the sterilization temperature, it is of such consistency at normal temperature that it cannot be readily squeezed out of such a tube.

According to this invention I have provided a novel container or holder for the wax so that the wax at normal temperature may be readily separated from the container for use. In addition I have provided a novel package to maintain hermetically sealed therein wax in a container whose travel limits are extremely narrow within a hermetically sealed element. This invention provides a package which will retain the wax in a predetermined position in a container when it has become molten during sterilization and thereafter will maintain the wax sterile over an indefinite period of time while at the same time providing instantly available wax in an aseptic condition.

The foregoing as well as other objects and advantages of this invention will be readily apparent from the following description and appended drawings wherein.

Figure 1 represents a view in side elevation of a novel packaging unit embodying my invention.

Figure 2 represents a vertical cross-sectional view of the novel packaging unit shown in Figure 1.

Figure 3 is a view in perspective of a novel wax container.

Figure 4 is a view showing how the novel container may be stripped off of the bone wax in an easy manner while maintaining the wax in aseptic condition.

According to this invention, there may be provided a container 10 having therein a quantity of wax, such as bone wax, employed in a bone surgery. The container 10 may be of any desired shape, but is preferably of cylindrical design and has a bottom 11 integral with a hollow elongated cylinder 12. The container 10 may be composed of any desirable material and is preferably tin, aluminum or some other elements or alloy. The composition of the container is such that it is impervious to the molten wax at the sterilization temperature employed, it will resist the temperature of sterilization and has the desired tear char-

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acteristic at normal temperatures. The upper or free end of the cylinder 12 may terminate in a small tab or may have a cut out or recess 13 therein for ready grasping. The cylindrical portion 12 of the container has a helical indentation or scoring 14 along the length thereof. This spiral indentation 14 is of sufficient depth to provide an easy tear path.

This novel container 10 may be filled with molten wax 15 and allowed to cool. The upper level of the wax 15 is considerably below the limit of the upper free end of the container 10. The so loaded container 10 is inserted into a glass tube 16 whose configuration is similar to the ordinary chemical laboratory test tube. The diameter of tube 16 is just slightly greater than the outside diameter of container 10 so that container 10 may slide easily therein.

The length of the tube 16 is considerably greater than the length of container 10 and is at least 50% to 100% greater than the length of container 10. A plug 17 composed of cotton or other fibrous material is inserted through the open end of tube 16. This plug 17 rests on or is close to the upper or open end of container 10. The plug 17 preferably forms a rather tight fit in the tube 16 and acts to lock the container in position in said tube 16 and thus prevent the wax loaded container 10 from sliding from end to end of tube 16 and thus eliminates the possibility of tube fracture due to such sliding movement. In order to assure further the position of the plug 17, the tube 16 may have a plug locking boss 18 extending inwardly above the upper end of the plug. As shown, one embodiment of said boss 18 may be a collar formed by forcing the tube inwardly in the manner known to the glass art. The tube 16 is circumferentially scored at 19 approximately mid-way between the plug locking collar 18 and the upper edge of the container 10. Above the plug 17 and located in said tube 16 may be a label (not shown). This combination may then be placed in a machine and the tube 16 is flame sealed to provide the hermetically sealed units shown in Figures 1 and 2. This hermetically sealed package may be sterilized, with the only necessary precaution being that of keeping the package upright during sterilization and cooling.

These packages may be transported without danger of tube fracture due to the back and forward travel of the container 10 in tube 16 because wax loaded container 10 is now substantially locked in position. When the packages reach their destination there are provided sterile products in hermetically sealed packages which are

readily available at a moment's notice and require no special instruments or technique to obtain the wax ready for use.

When the surgeon requires this bone wax in the course of an operation, the attendant or nurse first breaks the glass tube at the scoring 19, and the upper part of the glass tube is discarded. In this breaking operation, the plug 17 serves to prevent any of the glass particles from reaching the container 10. Then the plug 17 is removed and the remainder of the tube 16 having the loaded container 10 therein is inverted so that the loaded container slides out of tube 16. Then taking the loaded container 10 in the left hand, the thumb and forefinger of the right hand grasp the upper end of container 10 and the container 10 is spirally torn along scored path 14 to expose the wax as shown in Figure 4. The surgeon now grasps the exposed end of the wax and can now work it with his fingers before application.

Thus there is provided for the surgeon aseptic bone wax which is ready for use and which is sterile and no one but him has touched before application. Because of its ease of availability and because no special preparation is required to obtain the same from the package, the wax may be maintained in the original package until ready for use and may be made available for use even by inexperienced nurses or attendants.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A package for aseptic materials and the like comprising in combination a tube, a frangible hermetically sealed container for the tube, the length of the sealed container being greater than the length of the tube, a shoulder on the inside of the container between the end of the tube and the end of the container, and an elongated plug substantially filling the space between the shoulder and the tube, the container having a weakened portion between the end of the tube and the shoulder to assure breaking the container between the ends of the plug.

2. A package for aseptic materials and the like comprising in combination a tube for aseptic material having an open end, a frangible hermetically sealed container for the tube, the length of the sealed container being greater than the length of the tube, a shoulder on the inside of the container between the open end of the tube and the adjacent end of the container, and an elongated plug substantially filling the space between the shoulder and the open end of the tube, the container having a weakened portion between the end of the tube and the shoulder to assure closing of the open end of the tube by the plug against entry of particles of the container when the container is broken.

3. A package for aseptic materials and the like comprising in combination an open-ended thin-walled tube containing aseptic material and being scored helically for the major portion of its length to facilitate tearing, the open end of the tube extending beyond the aseptic material and having a notch at its edge to facilitate starting of

the tearing, a frangible hermetically sealed container for the tube, the length of the container being greater than the length of the tube, a shoulder on the inside of the container between the open end of the tube and the adjacent end of the container, and an elongated plug substantially filling the space between the shoulder and the open end of the tube, the container having a weakened portion between the end of the tube and the shoulder whereby the plug prevents contact between the open end of the tube and the container and closes the open end of the tube against entry of particles of the container when the container is broken.

4. A package for aseptic materials and the like comprising: an open-ended, thin-walled tube containing aseptic material and being scored helically for the major portion of its length to facilitate tearing, the open end of said tube having an extension substantially beyond said aseptic material; a frangible hermetically sealed container for the tube, the length of the container being greater than the length of the tube; and an elongated plug frictionally fitting within said container, contacting the open end of said tube, and closing the same; the container having a peripheral weakened portion located between the ends of said plug; whereby the plug prevents contact between the open end of the tube and the container and whereby the plug and said extension part of the tube close the open end of the tube against entry of particles of the container when the container is broken.

5. A package for aseptic materials and the like comprising: an open-ended, thin-walled tube containing aseptic material and being scored helically for the major portion of its length to facilitate tearing, the open end of said tube having an extension substantially beyond said aseptic material and having a notch at its edge to facilitate starting of the tearing; a frangible hermetically sealed container for the tube, the length of the container being greater than the length of the tube; and an elongated plug frictionally fitting within said container, contacting the open end of said tube, and closing the same; the container having a peripheral weakened portion located between the outer end of said plug and said aseptic material; whereby the plug prevents contact between the open end of the tube and the container and whereby the plug and said extension part of the tube close the open end of the tube against entry of particles of the container when the container is broken.

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