

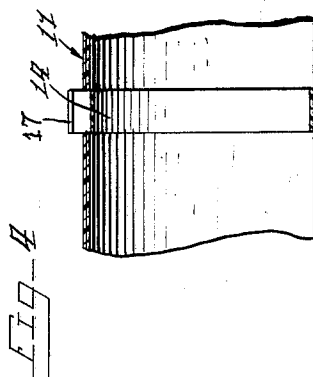
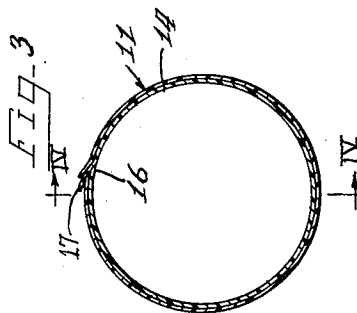
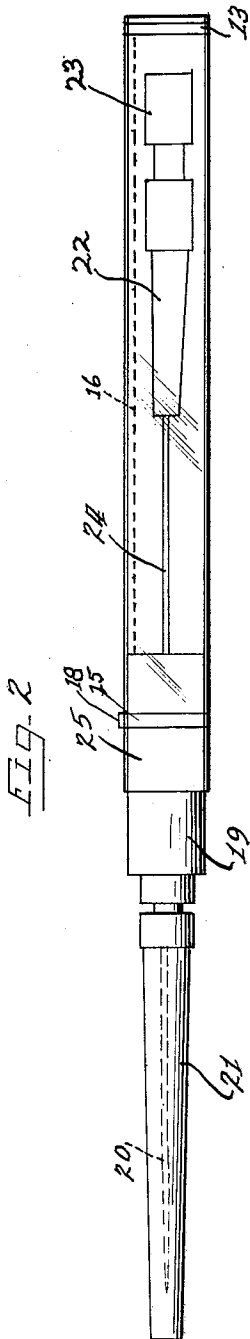
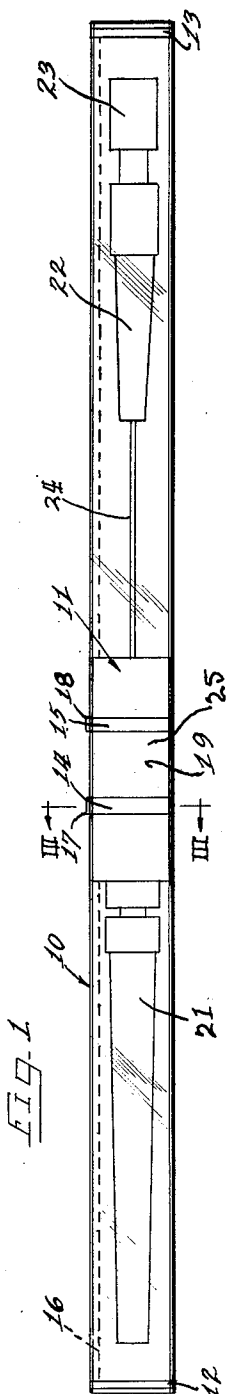
Nov. 17, 1964

J. L. SORENSON

3,157,277

STERILE PACKAGING

Filed Aug. 7, 1961



INVENTOR.

James L. Sorenson

BY

Hill, Sherman, Myroni, & Simpson

ATTORNEYS

1

3,157,277
STERILE PACKAGING
James L. Sorenson, 2341 Logan Circle,
Salt Lake City, Utah
Filed Aug. 7, 1961, Ser. No. 129,832
1 Claim. (Cl. 206—63.2)

This invention relates to a sterile packaging structure, and more particularly to a packaging construction effective to store equipment such as surgical equipment or the like in sterile condition or otherwise protected relationship and which permits removal of the packaging from one part or another part of the equipment during medical or other procedures while maintaining a sterile or protected condition for the part still covered.

Heretofore, a variety of packages for surgical equipment or the like have been available, but in general these have not afforded selective protection of one part or another part of the packaged apparatus and have required an undesirable number of manipulations on the part of the user.

The present invention meets a need for a package which can be selectively opened for purposes such as permitting a doctor or medical technician to maneuver a tube into a body cavity or tissue wall, or the like while maintaining a protected relationship or a sterile condition for a part of the equipment still covered by the package. Thus the packaging construction of the invention includes an envelope such as a polyethylene cylinder heat-sealed at opposite ends to store in protected, sterile condition therein apparatus of any desired type, such as surgical equipment having parts which are operable at different times in a particular procedure. The envelope or sac is provided with circumferential, axially spaced plastic tear strips intermediate the ends thereof and the tear strip cylinder can be part of the sterile apparatus disposed therein or may be formed independently thereof, as desired. One of such tear strip is provided for the front part of the envelope to be removed and one tear strip is provided for the back part of the envelope to be removed. Thereby, the usual scrubbing and gloving and cumbersome operating precautions required by the surgeon or other operating technicians are obviated and the instrument is maintained in hermetically sealed, sterile condition until such time as an individual portion thereof is to be used in the operating procedure. And while a part of the instrument may then be exposed, the remainder may, as stated, be kept sterile until access thereto is required, whereupon a second tear strip may be removed for this purpose.

Accordingly, it is an object of the present invention to provide a packaging for surgical instruments or other apparatus which maintains the apparatus in sterile condition or protected relation until it is to be used, and which permits a portion of the apparatus to be exposed for use while maintaining the protected relation with respect to the remainder of the apparatus.

Another object of the invention is to provide a simple, economical and compact surgical package or a package for other items to be protected, wherein a selective separability of the package is afforded by spaced tear strips extending circumferentially of the package.

Another object of the invention is to provide a package as described which may be manufactured by low cost techniques and which requires no particular skills or training for its effective use.

Another object of the invention is to provide a package formed of a plastic cylinder such as a polyethylene cylinder, wherein the opposite ends of the cylinder are heat-sealed and two tear strips are applied intermediately of the ends enabling the package to be opened first from

2

one end and then later from the other end so that sterile conditions may be maintained within the other end of the apparatus while affording manipulation of the open end as desired.

5 Another object of the invention is to provide a package as described which maintains a portion of the equipment shielded in sterile condition after removal of a first package portion, and permits the remaining shielded portion to be uncovered at a time convenient to the operator.

10 Another object of the invention is to provide a packaging construction as described having a broad range of application for a wide variety of medical apparatus, and a particular advantage with respect to apparatus wherein a doctor or technician is required to maneuver a tube into a body cavity or tissue wall.

15 Other objects and advantages of the invention will become apparent as the description proceeds in accordance with the drawings, in which:

FIGURE 1 is a side elevational view of a sterile package according to the present invention in operative relation to an instrument to be protected thereby;

FIGURE 2 is a view according to the view of FIGURE 1 and showing a portion of the package removed with a portion thereof maintained in position on the equipment and in protective relation thereto;

FIGURE 3 is a vertical sectional view, partly broken away and taken along the line III—III of FIGURE 1, with the equipment protected removed in the illustration; and

FIGURE 4 is a vertical sectional view, partly broken away, and taken along the line IV—IV of FIGURE 3.

Referring now to the drawings, a packaging construction is shown according to the present invention which includes an envelope, package or sac 10 surrounding a piece of equipment 11, as hereinafter further described.

The package 10 may be formed in various configurations in accordance with the characteristics of the apparatus to be stored therein, but in a preferred form is a cylindrical structure of plastic, such as polyethylene, or other suitable material, which is preferably flexible and transparent or translucent for ready visual access.

In accordance with the invention, the cylinder or package 10 is heat-sealed at its opposite ends 12 and 13 by suitable heat sealing techniques as understood by those skilled in the art to form end seams or closures therefor. Thereby, the axial dimensions of the package may be conformed to the article to be packaged.

Further in accordance with the invention, a pair of plastic tear strips 14 and 15 are applied to the cylinder intermediate the ends thereof and in preferably mutually proximately axially spaced relationship. The cylinder or package 10 may have an axial seam 16 heat-sealed or otherwise secured for the length of the package, or an extruded tubular construction may be provided as desired. Correspondingly, the tear strips 14 and 15 may be applied by heat-sealing them circumferentially and externally of the cylinder, or, in the embodiment shown, and as seen in particular in FIGURES 3 and 4, the tear strips may be heat-sealed internally of the cylinder prior to the formation of the axial seam 16 and may have tab portions 17 and 18 respectively extending outwardly of the seam to a slight extent to afford manual grasping of the tear strips for ready removal thereof.

It will thus be seen that the tear strips 14 and 15 enable the package to be opened first from one end and then later from another end as desired, to allow sterile conditions to be maintained within the end of the apparatus still covered and to expose the equipment in the other end for use.

It will also be appreciated that the invention has particular application wherever a doctor or medical tech-

3

nician has to maneuver a tube into a body cavity or tissue wall, although in no sense being limited to such use. For example, the equipment 11 may have a body portion 19 connected at one end to a catheter tube or the like 20 which may be protected by a cover 21, and may be constructed to releasably receive a container portion 22 having a stopper 23 with an elongate feeding element 24 extending into the tube 20 as understood by those skilled in the art. The package 10 with the instrument 11 therein may be kept in an entirely sterile condition until ready for use, and thereupon the tear strip 14, in the example shown, may be removed to expose the portion of the instrument 20 to be inserted into a body cavity or the like, upon removal of the cover 21 thereof. The other or right hand end of the instrument may be kept in the sterile condition even during manipulation of the portion 22 through the package, and the strip 15 may be removed at a later time when such removal is needed.

The package 10 thus eliminates the usual scrubbing, cleansing and other cumbersome operating precautions required for the surgeon or other operational technicians with previously available packages, since the package itself performs the protective function with respect to the unopened side of the device when the tube or needle portion or the like is being inserted in a body cavity or the like.

The tear strip cylinder or package 10 may be formed as a part of the internal sterile apparatus 11 or may be an independent housing for such apparatus, as desired. In the present embodiment, the cylinder 10 is closely engaged around the body portion 19 and in essence forms a part of the apparatus, it being understood that the central cylinder portion 25 may be adhered to the body portion 19 if desired. Again, the cylinder may be formed as an integral part of the body portion 19 along the area thereof between the tear strip members, and the cylinder may also have a two part construction with the parts independently secured to opposite ends of a body portion or other equipment section; and in general it is desirable that the tear strips such as the tear strips 14 and 15 closely engage the body portion of the equipment 11, or other portions of an apparatus to be opened in two stages.

It will also be appreciated that where a slight amount of adhesive is utilized in connecting the page 10 to the equipment centrally thereof, a single tear strip could be employed. Also, in such a construction, other means of separating parts of the package may be utilized within the scope of the invention.

There has thus been provided a package for surgical instruments or other apparatus, which permits opening one part of the package to present the apparatus for use while maintaining the other part of the apparatus in a protective or sterile condition. The package of the in-

4

vention is readily manufactured in accordance with simple techniques and procedures and at minimal expense, and permits a marked reduction in the complexity of operating procedures in the surgical room so that the equipment need only be opened so the extent necessary at a given stage in an operation or similar procedure.

And although the device has been exemplified with respect to the medical arts, a broad variety of uses is encompassed within the scope of the invention.

Although I have herein set forth and described my invention with respect to specific principles and details thereof, therefore, it will be understood by those skilled in the art that these may be varied without departing from the spirit and scope of the invention as set forth in the hereunto appended claim.

I claim as my invention:

In combination with sterile surgical equipment having a substantially cylindrical enlarged central body portion,

and diametrically reduced elongated portions extending axially outwardly from the body portion on each end thereof,

an envelope enclosing said equipment secured to said body portion and including an extended envelope portion enclosing each of said axially elongated portions of said equipment,

each of said envelope portions being hermetically sealed at the respective ends thereof opposite the body portion of said equipment,

and a tear strip on each of said envelope portions contiguous to and encircling said body portion and parallel to each other releasably sealing the respective envelope portions hermetically with respect to ambient atmosphere and each having an exposed pull tab,

each of said extended envelope portions being sealed with respect to the central body portion of the equipment and separately releasable by the respective tear strips thereon so that one of said extended envelope portions can be separated to expose the elongated equipment portion enclosed thereby while the other of said elongated equipment portions remains enclosed in sterile condition in its enclosing envelope portion.

References Cited in the file of this patent

UNITED STATES PATENTS

1,560,681	Fisher	Nov. 10, 1925
2,179,504	Hasbrook	Nov. 14, 1939
2,587,717	Fourness	Mar. 4, 1952
2,699,779	Lustig	Jan. 18, 1955
2,750,033	Pickens	June 12, 1956
2,902,146	Doherty	Sept. 1, 1959
2,915,063	Cutter	Dec. 1, 1959