Jan. 12, 1954 R. J. SCHAEFER 2,665,805

SUTURE PACKAGE

Filed April 1, 1949

Fig. 1.

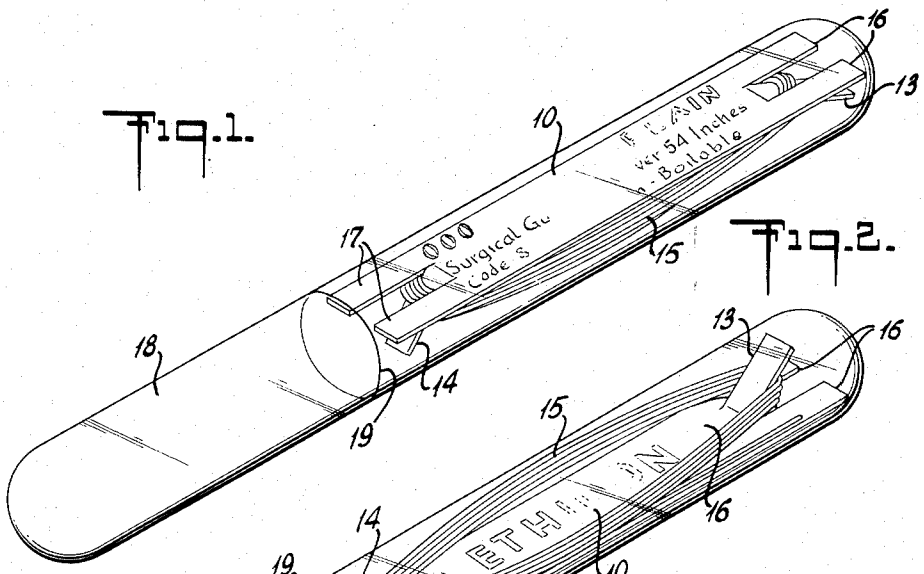


Fig. 2.

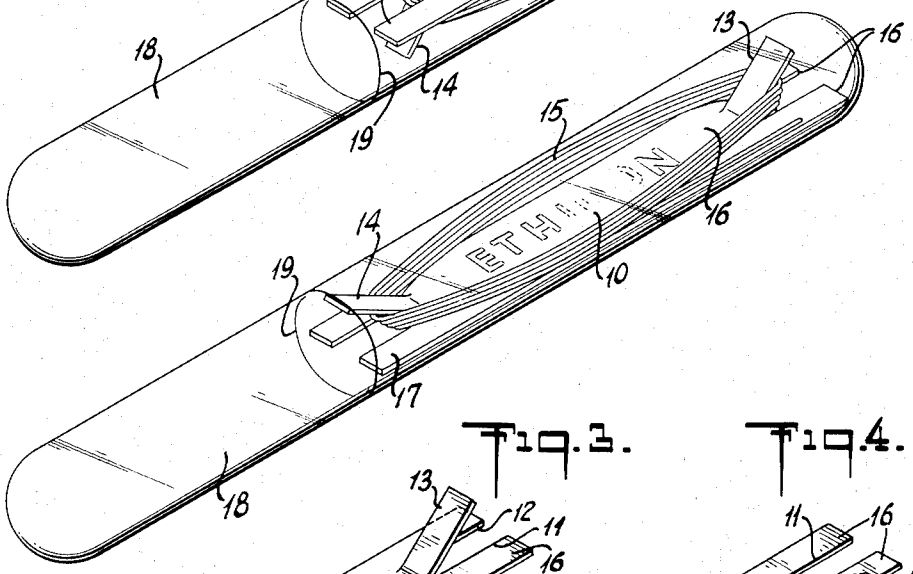


Fig. 3.

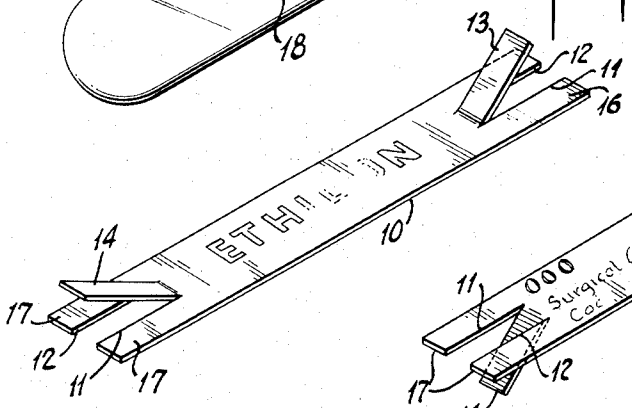


Fig. 4.

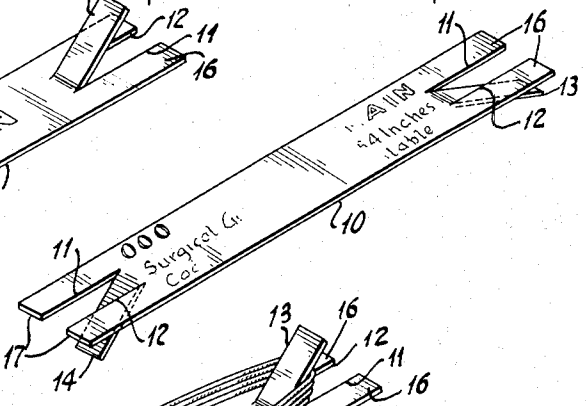
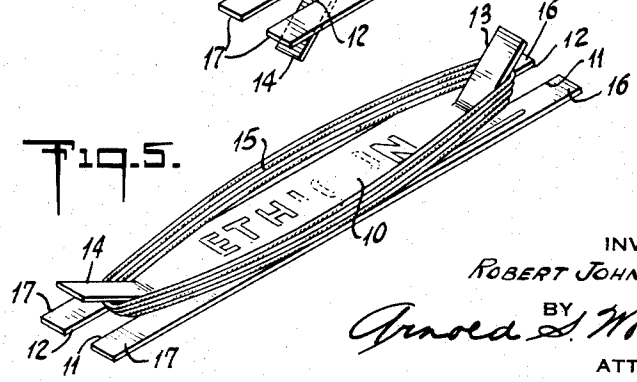


Fig. 5.



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SUTURE PACKAGE

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1 Claim. (Cl. 206—63.3)

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This invention relates to a suture package of the type wherein a suture is wound on a reel and the reeled suture unit hermetically sealed in a tube to insure sterility.

The invention contemplates forming a suture reel, made from relatively thin flat strip stock, with bent up tabs adjacent its ends, and winding a suture in a series of loops around the bent up tabs in a way to leave one side of the strip entirely free and unencumbered and therefore usable as a surface on which there may be imprinted all the label information customarily found or required respecting a suture of this type. The reeled suture unit after sterilization is hermetically sealed in a rigid tube with a sterilizing liquid. The tube, because of its rigidity, acts to maintain the suture reel in a substantially flat condition despite the presence of forces acting on the tabs tending to bend the reel. Typical of such forces are those resulting from the shrinkage of the suture during sterilization.

A better understanding of the invention may be had from the following description read in conjunction with the accompanying drawing wherein:

Fig. 1 is a perspective view of a tubed suture unit equipped with the present improvements and showing the suture reel disposed so as to render clearly visible the free face thereof;

Fig. 2 is a perspective view similar to Fig. 1 but showing the suture reel reversed face for face;

Fig. 3 is a perspective view of a suture reel showing tabs at the ends bent up to receive the suture;

Fig. 4 is a perspective view of the suture reel shown in Fig. 3 reversed face for face; and

Fig. 5 is a perspective view of the suture reel shown in Fig. 3 with a suture wound thereon.

The improved suture reel consists essentially of a flat strip of stock 10, about 2¼ inches long, $\frac{5}{16}$ inches wide and approximately $\frac{1}{32}$ inches thick, and preferably made of a material such as vulcanized fiber (Figs. 3 and 4). A pair of parallel slits 11 and 12 cut inwardly from each end of the strip define intermediate portions which, when bent in the same direction out of the plane of the strip, present a pair of tabs 13 and 14 on which a suture 15 may be wound (Fig. 5).

The suture 15 is wound around the bent up tabs 13 and 14 and the loops thereof are held in position on the reel by and between the tabs on the one hand and the spaced extensions 16 and 17 of the strip material proper on the other hand. The arrangement is such that the suture is disposed entirely on one side of the reel leaving the other side of the reel clear and unencumbered.

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Both sides of the reel may be imprinted with necessary or desired information. Preferably, however, that side of the reel which is free and unencumbered when the suture is wrapped around the tabs, is used for displaying information that is required by the technicians who use the suture. The other side of the reel which, incidentally, also presents considerably free area, because of the way in which the tabs hold the suture, may be used for additional information, as for example, trade-mark indicia and the like. The reel with the suture wound thereon is inserted in a tube 18, sterilized, the tubing fluid added and the tube sealed (Figs. 1 and 2). Standard tubes for this purpose are made of glass and are scored at 19, to facilitate breaking the tube clean when the suture is to be used.

During sterilization there is always a certain amount of shrinkage that occurs in a suture, and if it is looped around sharp edges under such circumstances, there is a tendency for it to kink. However, in the improved reel, the tabs are relatively wide and self-adjusting—i. e., they yield as the suture loops become shortened—and will compensate for the shrinkage and thereby eliminate kinking, or at least reduce it to a negligible amount.

The suture reel is held flat at all times by cooperation with the side walls of the tube. Furthermore, when the tabs have been bent inwardly to the point where they engage against the inside concave surface of the tube, there is a cooperation between the strip and the tube which serves to lock the suture reel against movement within the tube. The improved reel structure further acts to reduce the tendency of the suture to form a figure 8 after sterilization.

Other advantages flowing from the use of the improved suture reel include the clear view of the label that is presented to the user, the impossibility of the label being lost since it is imprinted directly on the reel and the suture losing its identity, and the saving in cost which results from having the label integral with the reel instead of separate as heretofore.

The invention has been described in connection with a preferred embodiment thereof but many modifications are included within the spirit of the invention. The invention is to be limited, therefore, only by the scope of the appended claim.

What is claimed is:

In a suture package comprising a suture tube of small diameter as compared to its length and a reel with suture wound thereon enclosed in the tube, a suture reel including a relatively thin rectangular strip of flat stock of rigidity commensurate with vulcanized fiber, with tabs located one near each end and protruding from one side of the strip and supporting, entirely on one side of the strip, a suture wound around the tabs in a series of substantially flat elongated loops whose major axes extend lengthwise of the strip and whose minor axes extend widthwise of the strip and which engage the tabs over a substantial portion of their outer opposed surfaces, the lateral opposed portions of the loops being disposed sufficiently near each other so as to enable the reel with suture thereon readily to be inserted in the tube and such that shrinkage forces generated in such portions of the loops as a result of sterilization act substantially longitudinally of the strip and on the tabs in a manner tending to bend the tabs toward each other, and said tabs being yieldably adjustable toward each other to accommodate such shrinkage in the suture loops and being of a size such that when the reel is packaged in the suture tube and sterilization has been accomplished, the free ends of the tabs and the lateral edges of the thin strip of flat stock conjointly engage the inner wall of the tube to prevent buckling of the flat reel stock under the action of the shrinkage forces and to restrain longitudinal movement of the reel in the tube.

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