No. 612,355. Patented Oct. 11, 1898.

# J. E. LEE.

## CONTAINER FOR LIGATURES, &c.

(Application filed June 23, 1898.)

(No Model.)

FIG. 1.

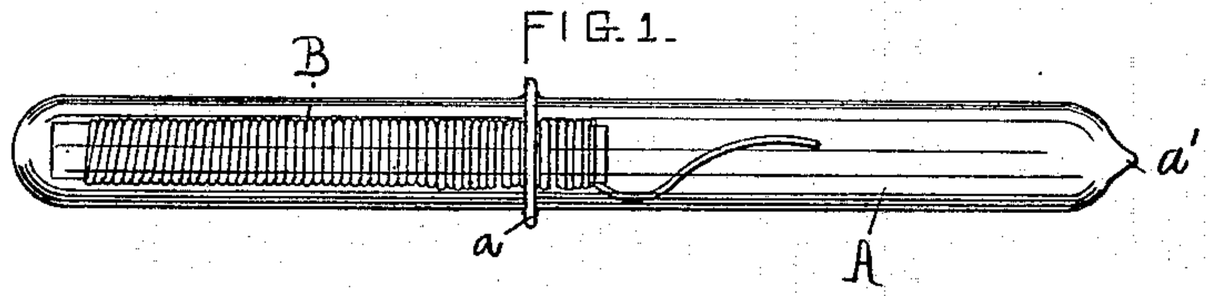



FIG. 2.

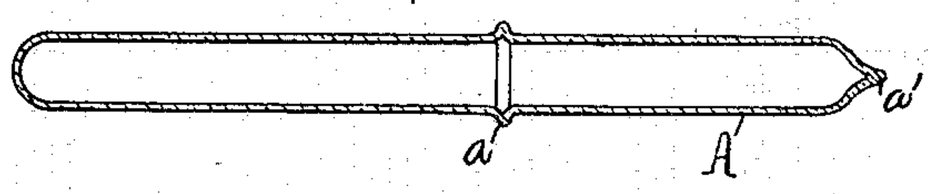



FIG. 3.

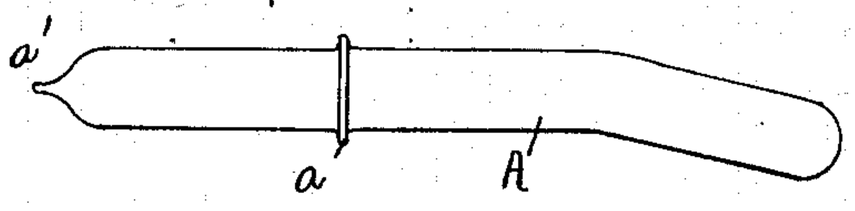



FIG. 4.

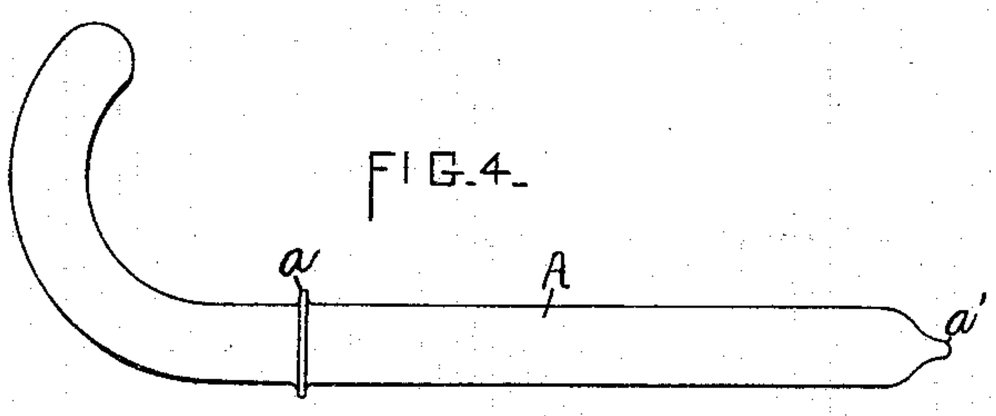



FIG. 5.

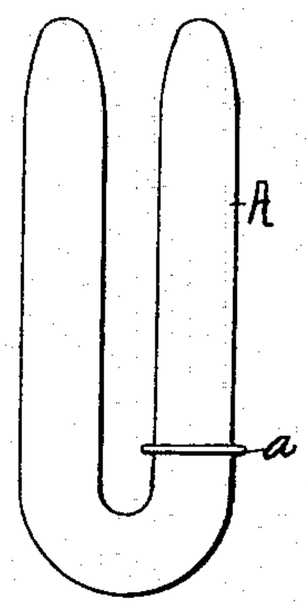



FIG. 6.

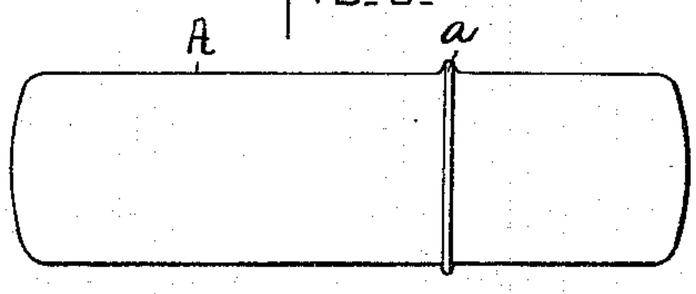
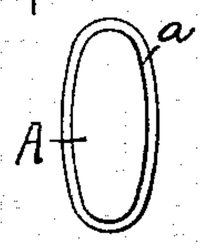



FIG. 7.




WITNESSES:

F. W. Wright

S. C. Connor

INVENTOR

JOHN ELLWOOD LEE

BY

Howson and Howson

HIS ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOHN ELLWOOD LEE, OF CONSHOHOCKEN, PENNSYLVANIA.

## CONTAINER FOR LIGATURES, &c.

SPECIFICATION forming part of Letters Patent No. 612,355, dated October 11, 1898.

Application filed June 23, 1898. Serial No. 684,301. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ELLWOOD LEE, a citizen of the United States of America, residing in Conshohocken, Montgomery county, State of Pennsylvania, have invented Improved Containers for Ligatures, &c., of which the following is a specification.

My invention relates to tubes, bottles, or like containers of glass or similar material, especially such as are adapted to contain ligatures, sutures, vaccine-points, needles, and like surgical appliances which have to be aseptically sealed up.

The object of my invention is to so construct such a container that it will not be more liable to be accidentally broken than any other glass tube or bottle, while, on the other hand, it can be designedly broken open whenever required in a definite and predetermined manner.

It is a common practice to put up ligatures, sutures, surgical needles, &c., aseptically in hermetically-sealed tubes or bottles of glass, which have to be broken open when the contents have to be used. With the view of facilitating such breakage a groove is sometimes ground around the outside of the tube at a certain point; but in practice this is not effective to determine the line or point of breakage. In fact, such a tube breaks up into troublesome fragments the same as one without the groove. It has also been proposed to apply a file-mark on such tubes for the breaking-point; but such file-marks are apt to cause leakage and to render them liable to break in transportation, since the file-mark cracks the glass as a diamond would. To meet these difficulties and produce an article which will not be liable to get broken, except when required and then to break only on a predetermined line, I spin upon my tube or container a breaking ring or flange, as hereinafter described.

In the accompanying drawings, Figure 1 is a side view of a sealed suture-tube constructed in accordance with my invention. Fig. 2 is sectional view of such tube, but of smaller size. Figs. 3, 4, 5, and 6 are side views of different shapes of such containers, and Fig. 7 is an end view of the tube shown in Fig. 6.

Referring to Fig. 1, A is a tube of glass or other suitable material hermetically sealed at both ends and shown in this instance as containing a suture or ligature B, wound on a core and aseptically prepared in any ordinary well-known manner. The end $a'$ of the tube is sealed up by fusing the glass in the ordinary way after the contents have been put in. Previously I spin upon the glass tube with the aid of heat an annular ring or flange $a$ at any suitable point, as illustrated in Fig. 1 and more fully in sectional view, Fig. 2. In producing this flange I heat that portion of the tube where the same is desired to be broken to a temperature of the melting-point until this part of the tube is plastic and exert pressure lengthwise of the tube by suitable means, so as to squeeze the flange or ring up out of the melting or plastic part. When the sealed aseptic package thus produced has to be opened to use the contents of the tube, the opposite ends of the tube are taken in the hands, and with the aid of the thumb or thumbs to bear against the edge of the ring or flange the tube will make a clean break without splinters on the line of the said flange.

In Figs. 3 to 7 I have shown different suitable forms of glass-sealed containers embodying my invention, each having the breaking-ring $a$, heretofore described. The construction shown in Fig. 3 is adapted to contain aseptically-prepared coils of sutures with a curved needle. Fig. 4 is a similar container adapted to contain the coil of suture and a needle of greater curvature than the one shown in Fig. 3. In Fig. 5 I have shown a glass-sealed container somewhat in U form.

The container illustrated in Figs. 6 and 7 is of flat or oval section and adapted to contain ligatures or other suitable articles for surgical or other purposes.

I claim as my invention—

As a new article of manufacture, a glass-sealed tube having an annular breaking flange or ring formed of a portion of the glass heated to the melting-point and squeezed or spun up by pressure exerted lengthwise of the tube, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN ELLWOOD LEE.

Witnesses:
FRANK R. JONES,
J. CARL DE LA COEN.