May 29, 1956 E. SZANTAY 2,747,935

END CLOSURE FOR FLEXIBLE COLLAPSIBLE TUBE

Filed April 14, 1955

Fig. 1.

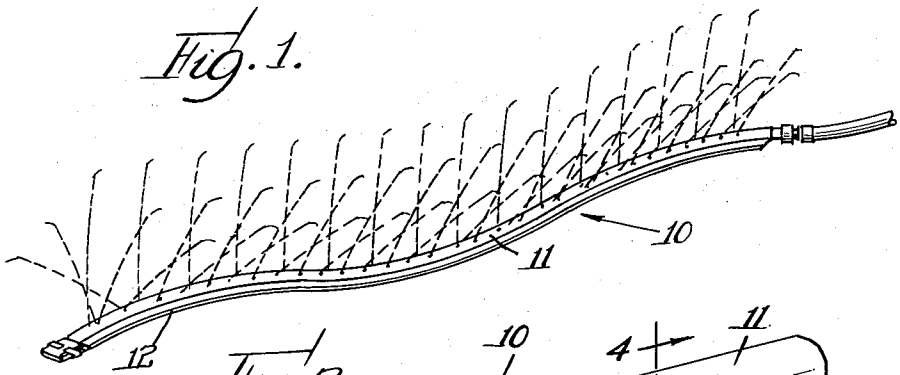


Fig. 2.

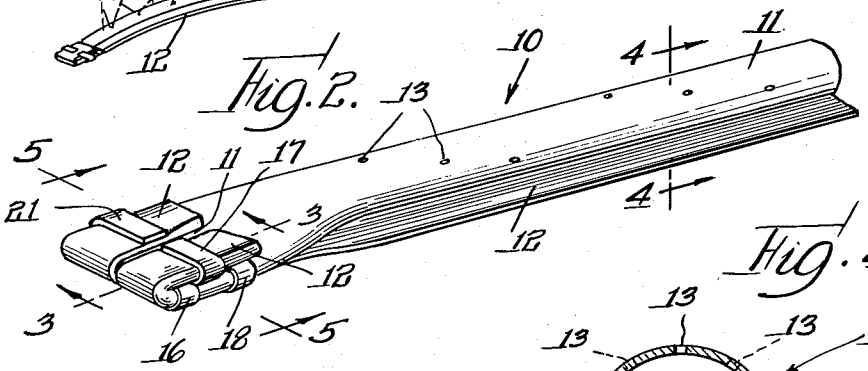


Fig. 4.

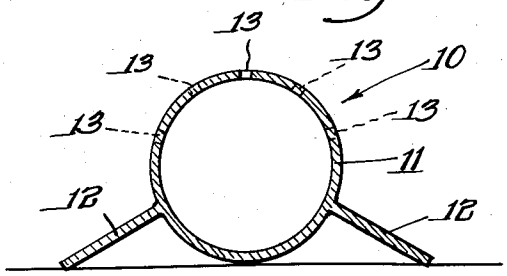


Fig. 3.

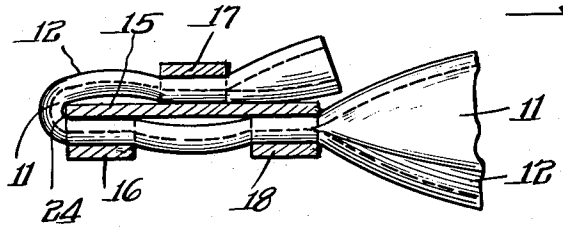


Fig. 5.

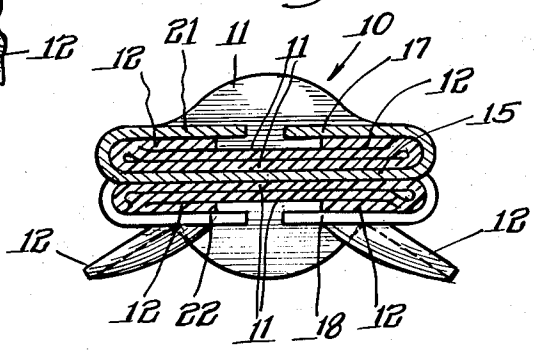
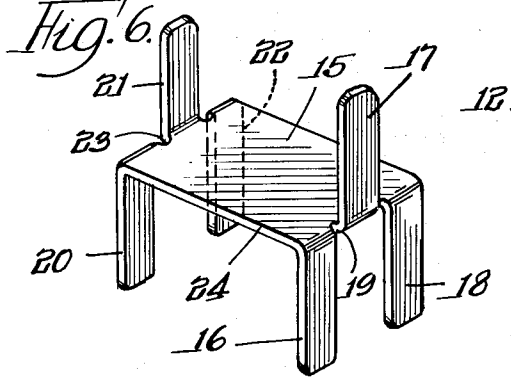


Fig. 6.



INVENTOR.
Elmer Szantay
BY
Wallenstein & Spangenberg
attys.

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END CLOSURE FOR FLEXIBLE COLLAPSIBLE TUBE

Elmer Szantay, Chicago, Ill., assignor to Sandee Manufacturing Company, Chicago, Ill., a corporation of Illinois

Application April 14, 1955, Serial No. 501,351

4 Claims. (Cl. 299—104)

The principal object of this invention is to provide an improved closure for the end of a flexible collapsible tube which is capable of quickly and effectively closing and sealing the same without the need for screws, bolts, nuts or the like and without the use of tools, which is readily removable and also adjustable to different positions along the tube, which is inexpensive to manufacture and install, which is simple and foolproof in construction and operation, and which may also effectively close and seal the end of a lawn soaker of the type comprising a flexible collapsible tube having integral flexible stabilizing fins.

Further objects of this invention reside in the details of construction of the end closure for the flexible collapsible tube and in the co-operative relationships between the component parts thereof.

Other objects and advantages of this invention will become apparent to those skilled in the art upon reference to the accompanying specification, claims and drawing in which:

Fig. 1 is a perspective view of a flexible collapsible tube, such as a lawn soaker of the type comprising a flexible collapsible tube having integral flexible stabilizing fins, with the end thereof closed in accordance with this invention.

Fig. 2 is an enlarged perspective view of a portion of the lawn soaker illustrated in Fig. 1 and showing in more detail the end closure therefor.

Fig. 3 is a sectional view taken substantially along the line 3—3 of Fig. 2.

Fig. 4 is a sectional view taken substantially along the line 4—4 of Fig. 2.

Fig. 5 is a sectional view taken substantially along the line 5—5 of Fig. 2.

Fig. 6 is a perspective view of a metallic plate having fingers which is utilized in the end closure.

This invention is directed to an end closure for flexible collapsible tubes and is applicable to all types of such tubes and for purposes of illustration herein it is shown for use with a lawn soaker generally designated at **10**, it having particular utility in this respect. The lawn soaker **10** may be of the type shown and described in co-pending application Serial No. 382,248 filed September 25, 1953 by Elmer Szantay and Gibron M. Baccash. For purposes of illustration herein, the lawn soaker **10** comprises a flexible collapsible tube **11** provided with integral flexible stabilizing fins **12**. When water pressure is exerted within the tube **11** it is extended to a circular shape, as illustrated, and the stabilizing fins **12** extend downwardly and outwardly for maintaining the tube **11** in an upright position. The top portion of the tube **11** is provided with a plurality of perforations **13** for spraying water from within the tube **11** in a desired pattern. When the water pressure within the tube **11** is relieved, the tube **11** may be readily collapsed and the fins **12** may be folded against the tube, as for example toward each other along the bottom of the tube. The tube and fins may be formed of any suitable flexible collapsible material as, for example, a synthetic plastic material, such as vinyl chloride or the like.

The closure for the end of the lawn soaker or tube **10** includes a single piece metallic plate **15** having a plurality of fingers as, for example, three fingers **16**, **17** and **18** extending from one end edge **19** of the plate and also a plurality of fingers as, for example, three fingers **20**, **21** and **22** extending from the opposite end edge **23** of the plate. The fingers **20**, **21** and **22** are preferably in alignment with the fingers **16**, **17** and **18**, respectively, and they are substantially one-half of the length of the plate **15**. The plate **15** and its fingers may be formed from any suitable bendable metal such as brass, steel or the like and in the latter case it is preferably surface treated so that it will not rust during use. The plate **15** and its fingers may be readily and inexpensively stamped from sheet stock.

In closing the end of the tube or lawn soaker **11**, the end portion thereof is collapsed and the fins **12** thereat are folded toward each other and against the collapsed tube **11**. The collapsed tube is sharply folded over a side edge **24** of the plate **15** with the continuing portion of the tube **11** overlying one face, as for example, the bottom face, of the plate **15** and with the terminating portion of the tube **11** overlying the other or top face of the plate **15**. The folded fins **12** are outwardly disposed. The outer fingers **16**, **18**, **20** and **22** are then bent over from the opposed end edges **19** and **23** of the plate **15** in one direction against the fins **12** and the continuing portion of the tube overlying the lower face of the plate **15**, and the inner fingers **17** and **21** are bent over from the opposed end edges **19** and **23** of the plate **15** in the opposite direction against the fins **12** and the terminating portion of the tube overlying the other or upper face of the plate **15**. In this way the end portion of the tube or lawn soaker is sharply folded over the side edge **24** of the plate **15** and is securely clamped between the plate and fingers so as to close off and seal the open end of the tube whereby leakage through the open end of the tube is effectively prevented. This may all be done without the use of screws, bolts, nuts or the like and without the use of any tools, thus providing for simple and quick installation. The end closure of this invention is inexpensive to manufacture and it is simple and foolproof in construction and operation. Further, it may be readily removed and placed at different desired positions along the length of the tube or lawn soaker for regulating the effective length thereof. It may also be applied to other types of flexible collapsible tubes such as those not provided with flexible stabilizing fins.

While for purposes of illustration one form of this invention has been disclosed, other forms thereof may become apparent to those skilled in the art upon reference to this disclosure and, accordingly, this invention is to be limited only by the scope of the appended claims.

I claim as my invention:

1. In a closure for the end of a flexible collapsible tube, a single piece metallic plate having a plurality of fingers extending from one end edge of the plate and a plurality of fingers extending from the opposite end edge of the plate, said tube being collapsed adjacent its end and being folded over a side edge of the plate and overlying both faces of the plate, some of the fingers being bent over from the opposed end edges of the plate in one direction against that portion of the tube overlying one face of the plate and the other fingers being bent over from the opposed edges of the plate in the opposite direction against that portion of the tube overlying the other face of the plate, whereby the end portion of the tube is secured in folded condition and clamped between the plate and the fingers.

2. In a closure for the end of a lawn soaker comprising a flexible collapsible tube having integral flexible stabilizing fins, a single piece metallic plate having a plurality

of fingers extending from one edge of the plate and a plurality of fingers extending from the opposite end edge of the plate, said tube being collapsed adjacent its end and the fins thereat being folded toward each other against the collapsed tube and the collapsed tube being folded over a side edge of the plate and overlying both faces of the plate with the fins outwardly disposed, some of the fingers being bent over from the opposed end edges of the plate in one direction against the fins and that portion of the tube overlying one face of the plate and the other fingers being bent over from the opposed edges of the plate in the opposite direction against the fins and that portion of the tube overlying the other face of the plate, whereby the end portion of the lawn soaker is secured in folded condition and clamped between the plate and the fingers.

3. In a closure for the end of a flexible collapsible tube, a single piece metallic plate being at least three fingers extending from one end edge of the plate and at least three fingers extending from the opposite end edge of the plate and in substantial alignment with the other fingers, said tube being collapsed adjacent its end and being folded over a side edge of the plate with the continuing portions overlying one face of the plate and with the terminating portion overlying the other face of the plate, the outer fingers being bent over from the opposed end edges of the plate in one direction against the continuing portion of the tube overlying said one plate face and the inner fingers being bent over from the opposed end edges of the plate in the opposite direction against the terminating portion of the tube overlying said other plate face, whereby the end portion of the tube is secured in folded condition and clamped between the plate and the fingers.

4. In a closure for the end of a lawn soaker comprising a flexible collapsible tube having integral flexible stabilizing fins, a single piece metallic plate having at least three fingers extending from one end edge of the plate and at least three fingers extending from the opposite end edge of the plate and in substantial alignment with the other fingers, said tube being collapsed adjacent its end and the fins thereat being folded toward each other against the collapsed tube and the collapsed tube being folded over a side edge of the plate with the continuing portion overlying one face of the plate, with the terminating portion overlying the other face of the plate and with the fins outwardly disposed, the outer fingers being bent over from the opposed end edges of the plate in one direction against the fins and the continuing portion of the tube overlying said one plate face and the inner fingers being bent over from the opposed end edges of the plate in the opposite direction against the fins and the terminating portion of the tube overlying said other plate face, whereby the end portion of the lawn soaker is secured in folded condition and clamped between the plate and the fingers.

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