Feb. 22, 1966 G. TOMOSY ETAL 3,236,005

BALLOON HAVING INFLATION AND SEALING SLEEVE

Filed July 6, 1964

FIG. 1.

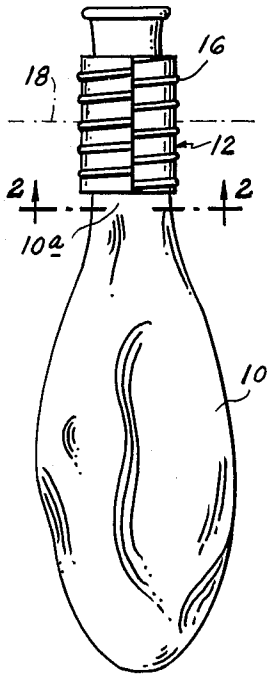


FIG. 2.

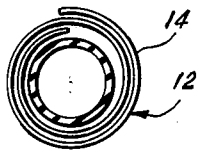
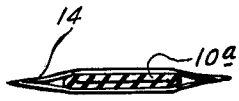


FIG. 4.



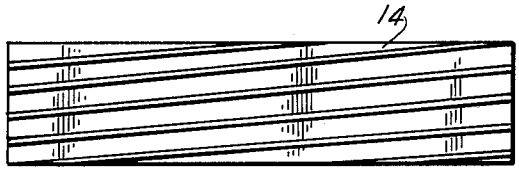
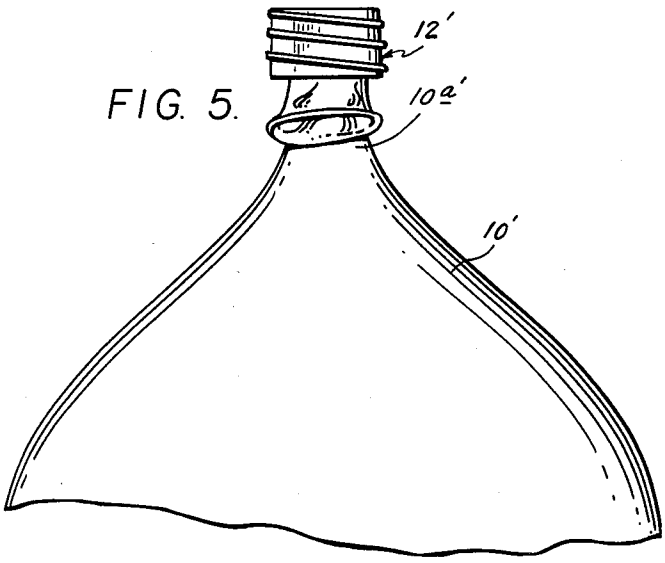


FIG. 3.

FIG. 5.



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BALLOON HAVING INFLATION AND SEALING SLEEVE

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6 Claims. (Cl. 46—90)

The present application is a continuation-in-part of application Serial No. 33,013, now abandoned, filed by the inventors of the present case on May 31, 1960.

This invention relates in general to ballon construction and to devices for sealing toy balloons, and in particular to a new and useful toy balloon having a foil sleeve of metal, candy, gum or similar semi-rigid material positioned around the neck portion and which permits inflation of the balloon by blowing through the neck but which may be flattened or folded for completely sealing the balloon in a simple and easy manner.

A principal disadvantage in the use of toy balloons is that they are difficult to seal and usually require either the knotting of the neck portion of the balloon itself or the application of separate securing devices, such as rubber bands, strings and the like. Knotting of the balloon has the disadvantage that it is difficult to effect, and the known securing devices are not easy to apply. They both form a permanent construction at the end of the balloon which prevents the deflation and the subsequent use thereof.

While fastening devices of various natures have been suggested for association with a balloon or bag-like enclosure, each has the disadvantage that it is either a permanently deformable device preventing re-use of the balloon, or it is expensive to manufacture and difficult to use.

In accordance with the present invention there is provided a simple foil sleeve construction which is adapted to be positioned over the neck portion of a ballon and which is made of a metal foil or similar semi-rigid material of a thickness and character which permits the flattening of the foil and the retention of the flattened condition for the sealing of the balloon thereby.

It has been found that not every kind of foil will be suitable for the purpose of the invention, and thus it is essential that a foil is selected which is rigid enough to support itself against collapse during manufacture, shipment and handling, while still pliable enough to be crushed or flattened for sealing the balloon by the application of pressure by the fingers of a child. It thus has been found that an aluminum or metal foil which displays properties of this nature up to a total thickness of from 3 to 4 thousandths of an inch in either single or multiple wound layers may advantageously be used. An aluminum foil is safe to use orally and may be made soft enough to avoid undesirable piercing of the balloon by controlling the thickness thereof.

In accordance with another aspect of the invention, it has been found advisable to form the foil into a tube by winding it over a mandrel when a metal such as aluminum is used. While winding over a smooth mandrel will normally suffice for the tubing, it has been found preferable to form the sleeve or tube of metal foil with ribs or projections to add rigidity to the structure so that it will not collapse during handling of the balloon with which it will be associated. The rings or embossing which is formed in the foil walls insures that the wound foil will remain in a tubular configuration and have very high rigidity for relatively small thickness of metal foil walls.

While sealing tubes for balloons may be made out of thicker foil, that is, over two thousandths of an inch without more than one layer, it has been found that the edges must be turned or blended smooth not only because of

probable piercing but for safety reasons when the balloon is inserted in the mouth. This additional manufacturing requirement would of course make the tube more expensive.

A further aspect of the invention is the formation of a tube which may be made of an edible substance such as candy or gum and it has been found that the required rigidity as well as pliability for sealing can be effected using ordinary chewing gum or candy for the sealing sleeve.

Accordingly, it is an object of this invention to provide an improved balloon construction with a sealing sleeve thereon.

A further object of the invention is to provide a balloon with a sealing sleeve made out of a relatively thin-walled material or foil with sufficient rigidity to maintain a tubular shape for inflation purposes when associated with the balloon but being compressible after compression of the balloon for sealing the balloon.

A further object of the invention is to provide a sealing foil for sealing the neck of a balloon which advantageously includes a strip of metal foil which is wound into a tubular configuration with embossments or corrugations formed thereon for increasing the rigidity with the tube being of a total thickness preferably in the range from .003 to .004 of an inch and having characteristics of remaining rigid for filling the balloon with air but being capable of being crimped, pressed flat or folded one or more times, for completely sealing the balloon.

A further object of the invention is to provide a balloon having sealing means associated therewith which is simple in design, rugged in construction and economical to manufacture.

The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this specification. For a better understanding of the invention, its operating advantages and specific objects attained by its use, reference should be had to the accompanying drawings and descriptive matter in which there are illustrated and described preferred embodiments of the invention.

In the drawings:

FIG. 1 is a side elevational view of a balloon having a sealing device constructed in accordance with the invention;

FIG. 2 is a section taken on the line 2—2 of FIG. 1;

FIG. 3 is a plan view of a foil for forming a tubular sealing device;

FIG. 4 is a section similar to FIG. 2 but indicating the sealing device in a collapsed condition for sealing the balloon; and

FIG. 5 is a side elevational view indicating a sealing device in a collapsed and folded over condition for sealing.

Referring to the drawings in particular, the invention embodied therein comprises a balloon **10** having a sealing device generally designated **12** positioned around a neck portion **10***a* thereof and which will normally be permanently secured thereto or carried thereby after it is initially applied. As indicated in FIGS. 1 and 2, the balloon **10**, when it is not inflated, carries the sealing device **12** therearound.

In the embodiment illustrated, the sealing device comprises a metal foil strip which is advantageously one inch wide and .001 inch thick aluminum foil strip which is rolled into two or three layers around the periphery of a mandrel. As indicated in FIG. 1, the strip **14** is advantageously formed with corrugations or embossings on the surface at **16** during the rolling in order to add rigidity to the resultant tubular configuration and to

maintain the foil in an erected tubular shape when it is applied over the neck of the balloon **10***a*. By adding the embossings or corrugations **16**, it is possible to use a very thin aluminum foil which, when wound in several layers, as indicated, will permit the inflation of the balloon **10** by blowing through the neck portion and will permit the easy sealing of the balloon by flattening of the metal foil, as indicated in FIG. 4. The foil **14** may be applied to the balloon either before it is rolled into a tube or after.

In most cases flattening of the foil into the configuration of FIG. 4 will suffice for sealing the balloon. However, there is a tendency for the pressure inside the balloon to cause the expansion of the metal foil **14** and in such a case it may also be desirable to fold the tube along a central fold line indicated **18** in FIG. 1 after it is flattened. With a fold of this nature the neck of the balloon will be bent over as indicated in FIG. 5.

The foil **14** has been described as being a metal foil, but, of course, the foil may also be made of a material other than metal and having the same rigidity and bending properties. For example, the material may be a candy or a gum as indicated by the device **12'** on balloon **10'** of FIG. 5. Any material or food made to a consistency which will permit the formation of the sleeve into a somewhat rigid tubular configuration to permit easy inflation of the balloon but will still be sufficiently bendable to permit flattening and sealing of the balloon will be satisfactory. After the candy or gum is bent, it should also be of a consistency which will cause it to have a tendency to remain in the bent or flattened condition.

While specific embodiments of the invention have been shown and described in detail to illustrate the application of the inventive principles, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A balloon comprising an inflatable resilient body portion and neck portion connected to said body portion, and a sealing device surrounding the neck portion and permanently carried thereby comprising a sleeve completely encircling the exterior of said neck portion and being of a semi-rigid material of relatively good strength sufficiently rigid to permit retention of the tubular configuration during handling forming a tube permitting expansion of the neck and inflation of said balloon through said neck portion but being of a wall thickness and flexibility to permit flattening of said sleeve with said neck portion by one's fingers and to be self sustained in said flattened condition to prevent the escape of air through said neck poriton.

2. A sealing device according to claim **1** wherein said sleeve is candy.

3. A sealing device according to claim **1** wherein said sleeve is gum.

4. A sealing device for a balloon comprising a thin metal foil element formed by convolutions thereof into a tube of an overall wall thickness of approximately 0.004", said foil element having sufficient rigidity to maintain its tubular shape during inflation of a balloon but being of a thickness and material to permit compression thereof into a flattened shape and having the tendency to retain the flattened shape for sealing the balloon.

5. A sealing device for a balloon comprising a thin strip of material formed into a tube and adapted to be placed on the neck of a balloon, said strip of material having sufficient rigidity to maintain its tubular shape during inflation of the balloon but being of a thickness and material to permit compression thereof into a flattened shape and the retention of said flattened shape for sealing the balloon, said strip of material comprising an aluminum foil of a thickness less than .001 of an inch and wound into a plurality of layers to form a tube.

6. A sealing device for a balloon comprising a thin foil element formed into a tube, said foil element having sufficient rigidity to maintain its tubular shape during inflation of a balloon but being of a thickness and material to permit compression thereof into a flattened shape and the retention of said flattened shape for sealing the balloon, said strip material comprising an aluminum foil of a thickness of around .001 of an inch and wound into a plurality of layers to form a tube, said foil having embossings thereon to insure that the tubular configuration is retained and to add rigidity.

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