

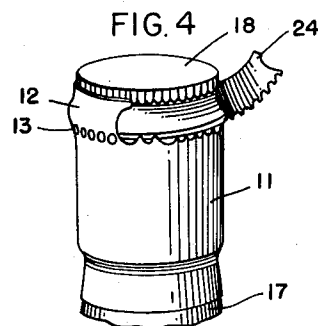
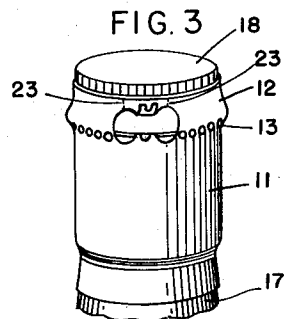
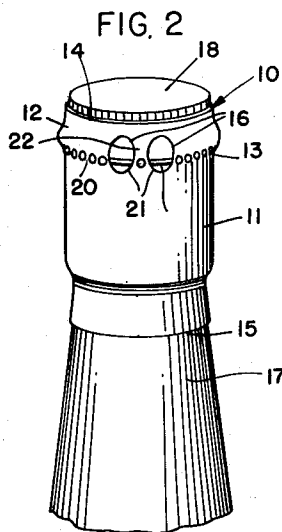
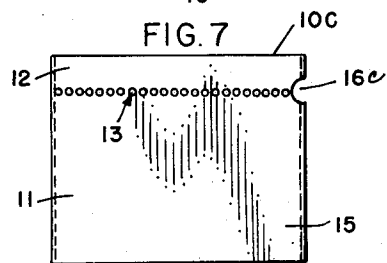
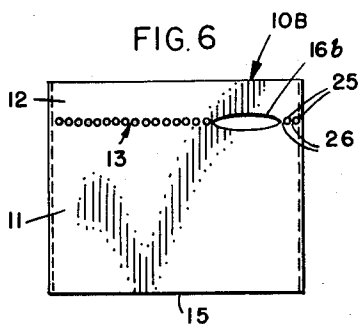
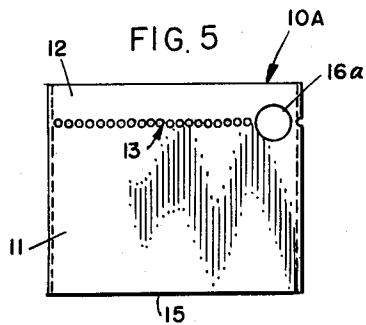
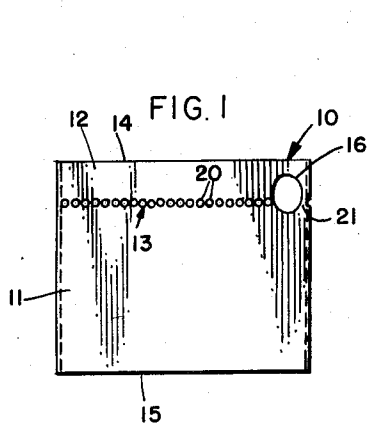
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2,954,139

TEAR STRIP FOR SEALS

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2,954,139

TEAR STRIP FOR SEALS

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3 Claims. (Cl. 215—38)

This invention relates to shrinkable closure seals for use on containers, such as bottles, which seals are constructed so that they may be easily removed from the bottles. More particularly, the seals of the present invention are of the so-called "viscose" or "cellulose" type, whereby the seal may be applied over the top of a container closure in wet form, and when dried forms a tight closure seal.

The present invention provides a shrinkable closure seal having a row of perforations arranged circumferentially therearound defining a lower main body portion and a removable upper body portion. The line of perforations is preferably arranged at the juncture of the bottle closure and the bottle neck, the line of perforations being interrupted by a pair of enlarged openings in circumferential spaced relationship defined by punched-out portions. The pair of enlarged openings is arranged so that at least one enlarged perforation is arranged between the smaller perforations, and thus define one or more bridges connecting the top removable portion with the bottom body portion. The enlarged openings may be of most any desirable shape, such as round, oval, and the like, and serve to define therebetween a tab or tear strip portion which may be broken loose at the line of perforations and pulled vertically upwardly to remove a portion of upper removable section. A free corner of the removable section may then be grasped and the entire upper removable section of the seal torn off along the line of perforation circumferentially of the seal. The line of perforations may comprise spaced apart circular holes, or they may be of any desired shape or configuration, except they should preferably have rounded edges as to avoid any sharp edges or notches, since sharp edges or corners would likely cause the seal to break or crack after the seal has been dried on the container. Also, the enlarged openings interrupting the line of smaller perforations are preferably constructed with rounded edges for the same reason, namely, to prevent tearing or cracking of the seal after it has been applied to the container top and dried. The line of perforations and the cut-outs which form the openings are each formed by punching through the flattened tube which is double thickness when punched and in its wet form. The seals are made from a continuous tube which becomes flat during processing, the flattened tube being cut to length preferably at the same time as the punching operation.

It has been the goal of manufacturers of seals to provide a seal which is permanent, reliable and attractive on containers, and still permits the seal to be quickly and easily removed without the use of any special tools. It has been necessary, in most instances, to use a sharp instrument such as a knife to cut the seal loose, which is undesirable since it is necessary to have an available tool when removing the seal and quite often the person removing the seal is injured by the use of such a sharp instrument. In those few instances where a tear strip

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or tab has been provided, difficulties have been encountered in constructing the seal so that it is substantially as strong as a seal without any perforations or lines of cut, and in maintaining the cost of the punching operation at a minimum. The present invention overcomes all of the inherent disadvantages of the conventional, shrinkable seals.

Accordingly, it is an object of this invention to provide an improved shrinkable closure seal for containers having a portion thereof which is easily removable without the use of special tools.

Another object of this invention resides in the provision of a shrinkable closure seal having an upper section which may be easily removed therefrom, wherein all parts of the closure seal are dried under tension in order to provide a more rigid and stronger seal.

Still another object of this invention is in the provision of a shrinkable closure seal having a line of perforations circumferentially therearound, wherein the line of perforations is aligned along the juncture of the closures and the container and a pair of circumferentially spaced cut-outs are provided along the line of perforations in order to define a tab for permitting easy and quick removal of the seal and access to the bottle closure without the use of any special tools.

Still another object of this invention is to provide a shrinkable seal for containers having a tab for removing a portion of the seal from the container for access thereto, wherein nearly all parts of the seal are allowed to dry under tension thereby giving a stronger and more durable seal and eliminating the possibility of cracking which leads to future deterioration thereof.

A further object of the invention consists in the provision of a new and novel method for forming a seal whereby one or more enlarged holes or cutouts are provided within a line of perforations, the holes preferably being formed simultaneously with the punching out of the line of perforations.

Other objects, features and advantages of the invention will be apparent from the following detailed disclosure, taken in conjunction with the accompanying sheet of drawings, wherein like reference numerals refer to like parts, in which:

Fig. 1 is a plan view of a cellulose or viscose type of seal in its wet state and embodying the invention;

Fig. 2 is a perspective view of the seal of Fig. 1 applied to a bottle after dehydration;

Fig. 3 is a view similar to Fig. 2 showing the tab as being partially removed during the process of removing a portion of the seal from the bottle;

Fig. 4 is a view similar to Fig. 3 showing the tear tab during removal and showing the manner in which the circumferential tear strip is then torn along the line of perforations on the seal;

Fig. 5 is a plan view of a cellulose or a viscose type of seal, in its wet state, similar to Fig. 1, but illustrating a modification of the invention;

Fig. 6 is a plan view similar to Figs. 1 and 5, illustrating still another modification of the invention; and

Fig. 7 is a view similar to Figs. 1, 5 and 6, but showing a further modified arrangement.

The particular seal, generally designated by the numeral 10, herein shown for the purpose of illustrating the invention, may be formed of any suitable colloidal material, such as "viscose," or "cellulose," which will shrink upon loss of moisture, and/or solvent or a swelling agent. The colloidal material, in the seals, is extruded by a continuous method in the form of a seamless tubing which assumes a flattened state during regeneration or other processing. The tubing is soft and wet, and in its flattened state is in two plies, wherein it is then subjected to cutting, punching, and perforating op-

erations through both the thicknesses simultaneously, thereby permitting a flattened cut and punched seal, as seen in Fig. 1.

The seal may be made totally clear and transparent, or it may be made opaque, or it may be treated to render it opaque. This depends upon the wants and needs of the user. Where the seal may be employed on bottles needing a government tax stamp, a portion of the seal will be transparent in order to make the tax stamp visible and another portion of the seal may be opaque or provided with printing thereon.

Referring now particularly to Figs. 1, 2, 3, and 4, the seal 10 includes a main lower body portion 11 and an upper removable portion 12 separated by a line of perforations 13. The line of perforations 13 may comprise circumferentially arranged perforations spaced below the top edge 14 of the seal at a distance so that it aligns with the juncture of the closure or cap and bottle. This line of perforations may be positioned at any desirable place between the top edge 14 and the bottom edge 15 of the seal depending upon the manner in which it is to be employed. Cut-outs are provided along the lines of perforations to define oval-shaped holes 16 which may be offset slightly from the line of perforations in a direction towards the top edge 14 of the seal. As seen in Fig. 1, only a single hole or cut-out 16 is shown, but the seal in this figure is in its flattened wet state with double ply thickness so that when it is expanded as seen in Fig. 2, a pair of spaced holes or cut-outs 16 are shown. The seal is shown in Fig. 2 in its dried state on the neck 17 of a bottle having a closure cap 18 arranged over the upper open end, and which forms, with the bottle, a line of juncture 19. It will be noted that the line of juncture 19 is preferably aligned with the line of perforations 13 of the seal 10.

The circumferentially arranged perforations in the line of perforations 13 define a plurality of bridges 20 which connect the main body portion 11 of the seal with the removable portion 12. Similarly, a pair of bridges 21 are defined by a single perforation in spaced relationship between the oval cut-outs 16. The spaced oval cut-outs 16 define therebetween, and above the line of perforation, a tear tab or tongue 22 which is employed for removing the removable portion 12 of the seal from the bottle neck 17 and cap 18.

Since the material of which the seal 10 is made of is much stronger and durable when dried under tension, as opposed to being dried by laying the seal on any flat surface where it would not be under tension, the bridges 21 connecting the tab 22 to the body portion 11 of the seal enable this area of the seal to be much stronger in its dried state than if the tab was cut so that it was already separated from the body portion 11. When a seal of the type herein disclosed is dried on a bottle neck and cap as illustrated in Fig. 2, it is dried under tension, since it would shrink even more if it were not restrained by the contours of the bottle neck and cap.

The removable portion 12 of the seal 10 is removed by first grasping the tab 22 and breaking it away from the main body portion 11 at the bridges 21, as seen in Fig. 3. A better hold of the tab may then be had in order to pull it vertically upwardly and tear the seal along the dotted lines 23, Fig. 3. Then, a corner of the removable portion may be grasped, such as indicated at 24 in Fig. 4 and the removable portion may be circumferentially torn along the bridges 20 until the entire removable portion has been removed from the lower body portion 11. The cap 18 may then be removed from the neck of the bottle 17 by unscrewing, or by whatever other operation is necessary.

Since the shape of the cut-outs 16 need not be exactly oval as seen in Fig. 1, another embodiment is disclosed in Fig. 5, wherein the holes or cut-outs 16a, circular in shape, are shown on the seal 10A. Otherwise, this modified seal is the same as that disclosed in Fig.

1; and the removable portion 12 is removed from the body portion 11 in the same manner as above described in connection with the embodiment of Fig. 1.

Still another embodiment of the invention is shown in Fig. 6, wherein the seal is designated by the numeral 10B, and wherein the cut-outs are oval in shape with a longitudinal axis coincident with the line of perforations, these cut-outs being indicated by the numeral 16b. Another difference between this embodiment and the other shown is that a pair of perforations 25 are shown to be in spaced relationship between the adjacent flattened edge of the seal and the adjacent end of the cut-out 16b. This will give five bridges 26 connecting the tab with the main body portion 11 of the seal rather than the pair of bridges as seen in Figs. 1 and 5. It will be appreciated that any number of perforations may be employed between the spaced cut-outs which define the tabs.

In Fig. 7 there is shown a modified form of seal 10C provided with a semicircular hole or cutout 16c, whereupon there will be provided a single circular cut-out or hole, inasmuch as the semicircular hole or cut-out 16c is formed through the two plies of the flattened tube. Dehydration of the seal leaves a somewhat irregular formation about the periphery of the hole 16c, thus providing an edge or ledge which may be grasped and pulled outwardly to permit the tear-off part of the seal arranged above the line of perforations to be easily torn off. Also, during dehydration a perforation adjacent the hole 16c may become merged with the hole to provide a tab to tear off the upper part of the seal.

While the present invention has been described in connection with locking a cap on the neck of a bottle, it will be understood that it may be applied to any other type of container in a similar fashion.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention but it is understood that this application is to be limited only by the scope of the appended claims.

The invention is claimed as follows:

1. A tubular shrinkable seal adapted to be applied over the neck of a container having a closure thereon for securing the closure to the container, said seal comprising a main body portion, an upper removable portion, a line of perforations circumferentially arranged and separating said portions, said line of perforations defining a plurality of circumferentially arranged bridges interconnecting said portions, and a pair of cut-outs substantially larger than said perforations along the line of perforations spaced so that at least one perforation is therebetween, each cut-out being circular in shape with the center thereof being generally coincident with the line of perforations, said cut-outs defining a tab therebetween which is connected at its bottom end to said main body portion by at least two bridges, said entire tab portion intimately engaging the neck of said container when the seal is dehydrated, whereby the entire seal may be dried under tension on a container and yet provide a portion easily removable for access to the container.

2. A tubular shrinkable seal adapted to be applied over the neck of a container having a closure thereon for securing the closure to the container, said seal comprising a main body portion, an upper removable portion, a line of perforations circumferentially arranged and separating said portions, said line of perforations defining a plurality of circumferentially arranged bridges interconnecting said portions, and a pair of cut-outs substantially larger than said perforations along the line of perforations spaced so that at least one perforation is therebetween, each cut-out being oval in shape and having its major axis generally coincident with the line of perforations, said cut-outs defining a tab therebetween which is connected at its bottom end to said main body portion by at least two bridges, said entire tab portion intimately

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engaging the neck of said container when the seal is dehydrated, whereby the entire seal may be dried under tension on a container and yet provide a portion easily removable for access to the container.

3. In combination, a bottle having a neck and a closure thereon wherein said neck and closure define a line of juncture, and a dehydrated cellulose tubular seal over said neck and closure sealing said closure to said bottle, said seal comprising a main body portion on said neck below said line of juncture, a removable portion 10 above said line of juncture, a line of perforations circumferentially arranged between said portions defining bridges for connecting the portions together, a pair of cut-outs substantially larger than said perforations along said line of perforations spaced so that at least one 15 perforation is therebetween and defining a tab portion therebetween which is connected at its bottom end to

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said main body portion by at least two bridges, said cut-outs being substantially larger than said perforations, and said entire tab portion intimately engaging said container neck, whereby removal of said tab portion and said removable portion allows removal of said closure.

References Cited in the file of this patent

UNITED STATES PATENTS

2,261,875	Dunn -----	Nov. 4, 1941
2,361,449	Benzinger -----	Oct. 31, 1944
2,361,499	Ritchie -----	Oct. 31, 1944
2,666,542	Price -----	Jan. 19, 1954

FOREIGN PATENTS

974,709	France -----	Oct. 4, 1950
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