Aug. 9, 1966 C. E. WRIGHT 3,264,698

BAG CLOSURE

Filed Oct. 12, 1964

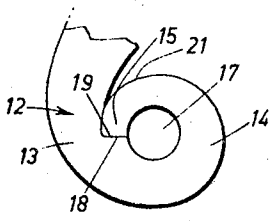


FIG. 4

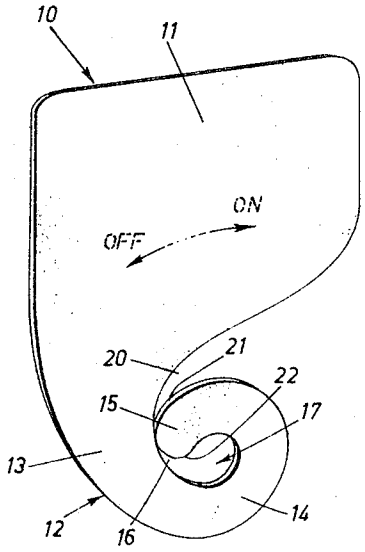


FIG. 1

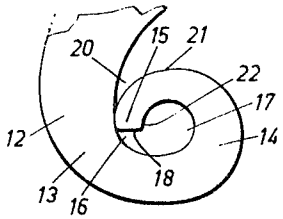


FIG. 5

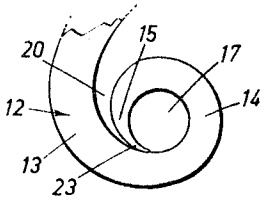


FIG. 6

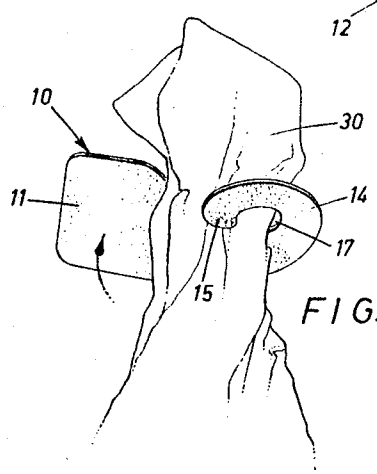


FIG. 2

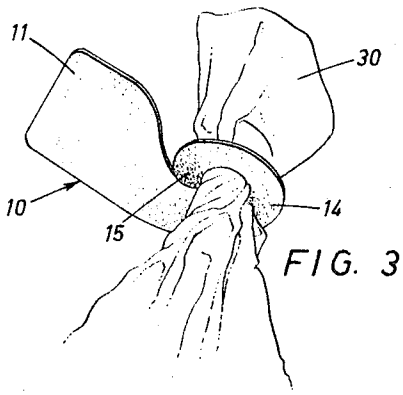


FIG. 3

FIG. 7

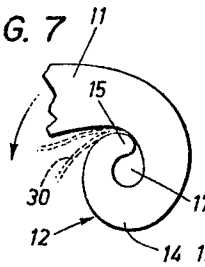
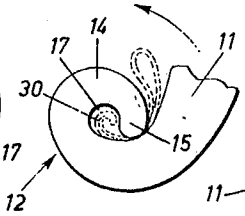


FIG. 8



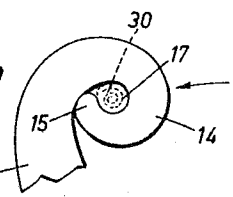


FIG. 9

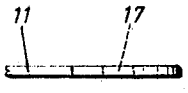


FIG. 10

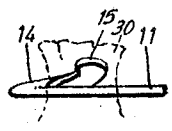


FIG. 11

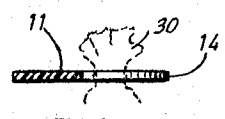


FIG. 12

INVENTOR.
CHARLES E. WRIGHT

BY

Douglas S. Johnson

Attorney

United States Patent Office 3,264,698 Patented August 9, 1966

3,264,698

BAG CLOSURE

Charles E. Wright, 107 Alexandra Blvd., Toronto, Ontario, Canada

Filed Oct. 12, 1964, Ser. No. 403,277
Claims priority, application Canada, Apr. 29, 1964, 901,548
8 Claims. (Cl. 24—30.5)

This invention relates to bag closures and more particularly to closures for plastic bags and the like.

There has always been a continuing problem with respect to closure of bags and more particularly since the innovation of plastic bags of polyethylene or the like, and their widespread acceptance the problem has increased.

With respect to polyethylene bags, two main expedients have been employed: heat sealing and tying. Of these methods heat sealing has generally proved more acceptable since it provides an air or watertight package. However, the advantages have been limited due to the equipment necessary and the awkward methods employed.

In many food packaging applications, it has proved harmful to the product. Tying does not prove satisfactory because the equipment there is also awkward and the bag provided has to be of a larger size.

In both instances above the closure methods have been referred to in the context of a permanent closure. Obviously, heat-sealing suffices for a package until it reaches the consumer, but once opened a second closure method or means is required. Tying does not have such a disadvantage but the tie, be it string or wire, depends for its effectiveness upon the individual who effects the closure.

With this present invention, the inventor provides means for effecting a closure of bags and the like, particularly plastic bags which may be employed both as a temporary and a permanent closure. In both situations, it has been found that the closure also effects a substantially air and watertight seal which enables the product to be kept packaged for long periods and yet will be removed and replaced with facility even by a less well coordinated individual.

It is also important in bag closures that the cost be at a minimum and the structure of the closures which embodies the present invention be simple in structure and may be manufactured at a minimal cost as compared to the more complex molded closures now in favor.

In accordance with the present invention, the inventor provides a closure for flexible containers comprising; a normally planar member including a terminally curled portion defining a container wall receiving chamber, said curled portion having an end portion providing with an adjacent edge of said member a chamber entry throat of reducing width, said member being of resilient material whereby upon application of said closure to a container and relative rotation therebetween at least said end portion flexes out of the member plane, against a tendency to revert to said plane, to permit entry of said container wall and close said container.

In accordance with an alternative embodiment of the present invention, there is provided a closure for flexible containers comprsing; a normally planar member including a terminally curled portion defining a container wall receiving chamber, said curled portion having an end portion providing with a first part of an adjacent edge of said member a chamber entry throat of reducing width and with a second part of an adjacent edge a chamber egress throat of reducing width, said member being of resilient material whereby upon rotation of said closure about a container in first and second directions, said container is respectively closed and opened, with a least said end portion flexing out of the member plane against a tendency to revert to said plane, to permit entry and egress, respectively of said container wall.

It is accordingly the main object of this present invention to provide an improved closure for flexible containers or bags.

It is another object of the present invention to provide a closure for flexible containers or bags which may be employed either as a permanent or a temporary closure.

It is another object of the present invention to provide a closure for flexible containers or bags which will provide a substantially air and watertight seal.

These and other features and objects of the present invention will be more apparent from the following description in which specific embodiments are described with reference to the drawings in which:

FIGURE 1 is a three-quarter perspective view of a bag closure in accordance with the present invention;

FIGURE 2 is a perspective view of a closure in accordance with the present invention and the top of a flexible container and serves to illustrate a method of opening or closing a flexible container with a closure in accordance with the present invention;

FIGURE 3 is a perspective view of a flexible container closed by means of a closure in accordance with the present invention;

FIGURES 4, 5 and 6 are fragmentary enlarged plan views of alternative embodiments of closures in accordance with the present invention;

FIGURES 7, 8 and 9 are plane views which illustrate a method of closing a flexible container employing one embodiment of the present invention; and FIGURES 10, 11 and 12 are side elevations of FIGURES 7, 8 and 9, respectively.

Referring now to the drawings, in FIGURE 1 there is illustrated a general perspective view of a closure member in accordance with the present invention, which closure member is generally indicated by the numeral **10**. As illustrated, the closure member **10** comprises a substantially flat body of a flexible or resilient material such as suitable synthetic plastic or an equivalent material. It may be said in this embodiment, that the body of the closure member **10** has a width of greater dimensions at all points than the corresponding depth or height. Closure member **10** includes a handle **11** which has a terminally curled portion **12** having portions **13** and **14** as illustrated in FIGURE 1 so that normally, portions **13** and **14** extend in substantially the same plane as the main body of the closure member **10** and define a container wall receiving chamber **17**. Portion **14** terminates in an end section **15** which is disposed closely adjacent to the adjacent edge wall of the portion **13** in the manner illustrated in FIGURE 1. For convenience, the adjacent side walls of end section **15** and portion **13** may be spaced apart a short distance to permit easy access of the bag wall. However, it will be noticed that the outer wall **21** of end section **15** defines, in this embodiment, with the adjacent side of portion B, an external substantially V-shaped opening **20**, a chamber entry throat of reducing width, and the inner wall **22** defines with the adjacent side of portion B, a second substantially V-shaped opening **16** a chamber egress throat of reducing width which connects or communicates with the container wall receiving chamber **17** defined by the portion **14** and **13** with the V-shaped opening **20**.

It will, of course, be understood that the handle portion **11** may not be considered as constituting a separate portion but the terminally curled portion arm **12** may be considered as having an extended portion which would constitute means for the operator to obtain a purchase on the closure member.

In FIGURES 4, 5 and 6, enlarged fragmentary sec-

tions of alternate embodiments of the closing end of the closure member illustrated in FIGURE 1 are illustrated.

The embodiment illustrated in FIGURE 4 again comprises a portion **12** which includes further portions **13** and **14** which extends in the same plane and define a container wall receiving chamber **17**. The portion **14** has an end section **15** which is terminated in a flattened end surface **18**. The corresponding adjacent side wall of portion **13** is provided with a step such as **19** and the two adjacent surfaces **18** and **19** are disposed in an abutting relationship. It will, of course, be appreciated that a small gap may be left between these two last-mentioned surfaces. However, it will be noticed that the external side surface **21** of end section **15** will define a substantially V-shaped opening **20**, a chamber entry throat of reducing width, with the adjacent side wall of portion **12**.

In FIGURE 5, the fragmentary view of the end closing portion of this embodiment also comprises a portion **12** having further portions **13** and **14** which extend in the same plane and define a container wall receiving chamber **17**. As with the embodiment illustrated in FIGURE 4, portion **14** of this embodiment has an end section **15** with a straight end edge **18** which defines a generally V-shaped passage, a chamber egress throat of reducing width, with the adjacent side wall of portion **13** communicating with the container wall receiving compartment **17**. Again external side wall **21** of end section **15** defines a substantially V-shaped opening **20**, a chamber entry throat of reducing width, with the adjacent side wall of portion **12**.

In the embodiment illustrated in FIGURE 6, the closure member comprises a portion **12** including further portions **13** and **14** which extend in substantially the same plane to define a container wall receiving chamber **17**. As in the previous embodiments, portion **14** is provided with an end section **15** which is pointed as at **23**. In this present embodiment, again the external side section surface **21** of end wall **15** defines a substantially V-shaped opening **20**, a chamber entry throat of reducing width, with the adjacent side wall.

The operation

The operator when he or she wishes to close a bag such as **30** of FIGURE 2, places a portion or all of the bag wall in the gap or throat **20** and rotates the closure member **10** in the direction illustrated by the ON arrow in FIGURE 1. As the closure member **10** is rotated the bag wall is either pulled between the adjacent or abutting side walls of portion **13** and the end section **15**, or the closure member **10** is moved relative to the bag wall so that the container wall finds its way into the container wall receiving chamber **17**. To remove the closure member **10**, the operation is reversed and the container may either be considered to be expelled from the chamber **17** or the closure member **10** is removed from the container.

The reversing feature just described is characteristic of the embodiment illustrated in FIGURES 1, 2, 3 and 5. In all of the embodiments illustrated the closure mounting is as described and will now be described in detail with respect to FIGURES 7 through 12 inclusive which are schematic plan views from the bottom and corresponding side elevations of a closure member such as **10** being mounted on a bag or container such as **30**.

Initially, a portion of bag wall **30** is placed in opening **20** in the manner illustrated in FIGURE 7 and member **10** is rotated in the direction of the arrow. By the time the position illustrated in FIGURE 8 is achieved, portion **14** is in the position illustrated and by virtue of the resilient flexibility of member **10**, the end section **15** has assumed the attitude shown, that is bent out of its plane. The rotation of closure member **10** is continued and as it reaches the position illustrated in FIGURE 9, the end section **15** and portion **12** have the relative positions illustrated. It will thus be seen that the closure member is virtually screwed on to the bag. Since the closure member **10** is resilient, it tends to revert to the original formation of FIGURE 1, the bag wall **30** will be securely held in the position in FIGURE 3. The closure is substantially air and water tight.

To remove the closure member **10**, the procedure is reversed with a consequent reversal of the motion of the relative parts.

With the embodiments illustrated in FIGURES 4 and 6, the mounting as mentioned previously is substantially the same. However, these embodiments of the closure member **10** are not reversible.

To remove the closure member **10** of the embodiments in FIGURES 4 and 6, the free portion of the bag should, as in FIGURE 3, be moved to the other side of the handle portion **11** as indicated by the arrow and the closure member **10** twisted off.

In the embodiment of FIGURE 6, the point **23** does not permit removal of the bag without tearing it.

From the above, it will be seen that a closure in accordance with the present invention is simple in structure and economical to produce and may be used with facility.

While the present invention has been described with reference to specific embodiments, it will be understood that other forms and modifications may be made thereto without departing from the spirit of the appended claims.

What I claim is:

1. A closure for flexible containers comprising; a normally planar member of resilient material, said member comprising; a first handle portion; a second intermediate portion; and a third container engaging portion, said third portion being curled with an end having an edge thereof normally adjacent a side edge of said intermediate portion to provide, within said third portion, a container constricting receiving chamber, and a chamber entry throat of reducing width defined by side edges of said third portion and said second portion, whereby, upon application of said member about a container and relative rotation therebetween, said third portion flexes out of plane to permit entry of such container into said container constricting receiving chamber to cause closure of said container.

2. A closure for flexible containers as claimed in claim **1** wherein said end is pointed.

3. A closure for flexible containers as claimed in claim **1** wherein said end is rounded.

4. A closure for flexible containers as claimed in claim **1** wherein said end is substantially straight and is disposed in an abutting relationship with a stepped side edge of said member.

5. A closure as claimed in claim **1** wherein said material is a synthetic plastic.

6. A closure as claimed in claim **1** wherein said side edges of said second and third portions further provide a chamber egress throat of reducing width.

7. A closure for flexible containers as claimed in claim **6** wherein said end is pointed.

8. A closure for flexible containers as claimed in claim **6** wherein said end is rounded.

References Cited by the Examiner

UNITED STATES PATENTS

2,246,229	6/1941	Wohlmuth	24—30.5 X

FOREIGN PATENTS

571,439	3/1959	Canada.
863,245	1/1953	Germany.

WILLIAM FELDMAN, *Primary Examiner.*

MILTON S. MEHR, *Examiner.*