

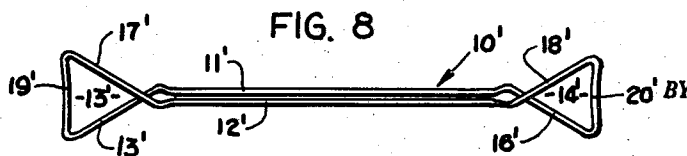
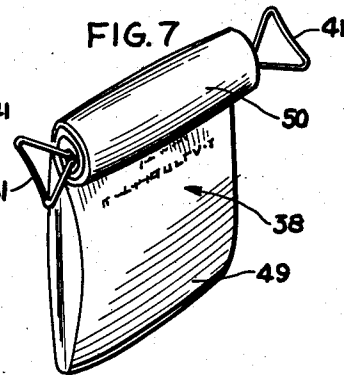
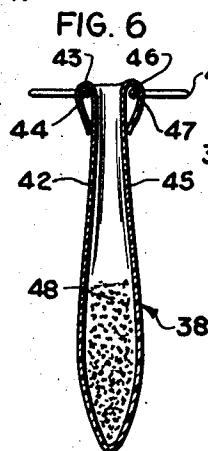
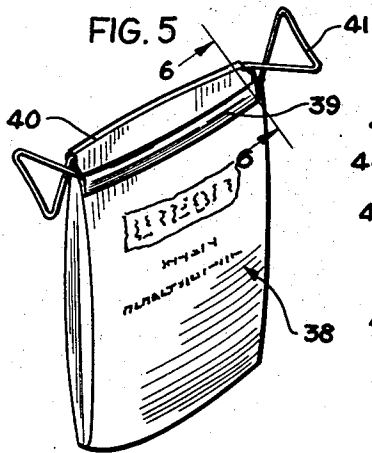
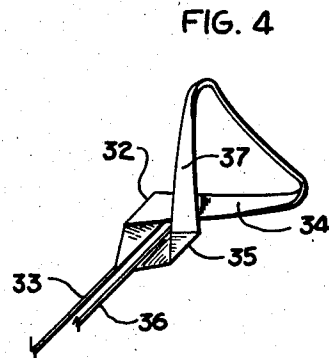
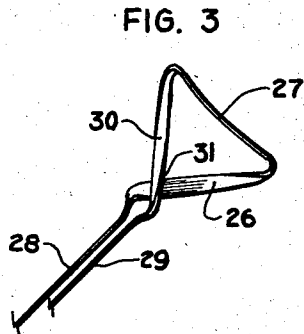
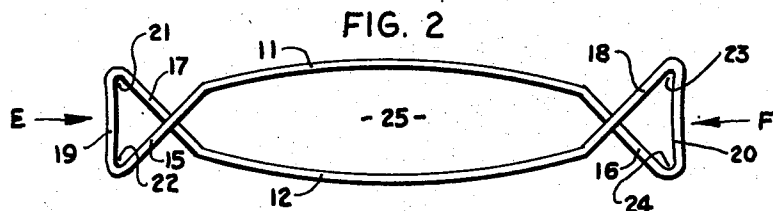
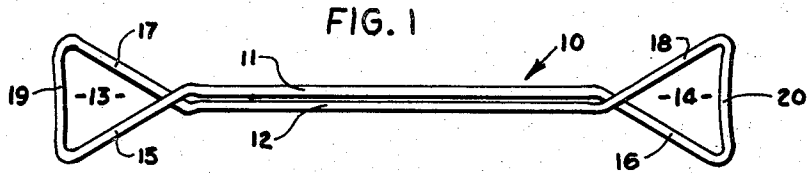
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2,854,717

SPRING TENSIONED BAG CLOSURE

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2,854,717

SPRING TENSIONED BAG CLOSURE

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6 Claims. (Cl. 24—30.5)

This invention relates to closures for bags and similar containers, and more particularly to a spring-tensioned closure disposed in the hem around the mouth of a bag and having generally triangular looped ends at each side of the bag which, when pressed together, are effective to force the sides of the bag apart providing an aperture through which the contents may be poured.

Many articles and products such as candy, peanuts, tobacco, etc., which were formerly sold in bulk are now sold in small quantities packaged in small paper or plastic bags. Most of these bags are heat sealed, and because of the overlapping layers of material adjacent the sealed opening of the bag it is practically impossible to open the bags without mutilating them to a degree which makes it impossible for them to be reclosed. As a consequence the contents remaining within the bags are constantly subject to being spilled, and the bags lose their utility as containers and as protection against exposure to air and moisture.

A main object of our invention, therefore, is the provision of a simple closure device which may be incorporated into the mouth of a bag and which, when squeezed between the thumb and finger, is effective to spread the sides of the bag apart.

Another important object of the present invention is the provision of a device of the character described which is adapted for manipulation by only one hand of the user.

A further important object of our invention is the provision of a device of the character described which is adapted to close tightly when the tension on the ends thereof is relaxed, and is effective to hold the contents of the bag tightly therein.

An additional important object of our invention is the provision of a device of the character described which is adapted dimensionally so that when partially empty the vacant portion of the bag may be rolled up around the device to further protect the contents remaining in the bag and to minimize its size when carried or stored.

In brief, the device of our invention includes a continuous band of resilient, springy material which is formed in a generally flat loop having straight and parallel central sections disposed in hems along opposite sides of the top of the bag. The parallel central sections of the closure device are terminated at each of their ends in arm sections, which, in one specific illustrative form, may comprise diagonally disposed crossed arms sections, and the two arms at each end, in turn, are terminated in end portions perpendicular to the central sections and which, when squeezed together between the thumb and a finger of one hand, are effective by means of their diagonally opposite arms to press the central sections away from each other, thus opening the bag.

Our invention also encompasses a bag made for the particular purpose with hem portions adjacent the open top thereof and equipped with a spring tensioned closure device as previously described.

Certain variations in the embodiment set forth herein

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and further important objects of our invention will become apparent in the following detailed specification when examined together with references cited therein to the accompanying drawings, in which:

Figure 1 is a plan view of a closure device constructed according to our invention, showing the device in the normally closed position;

Figure 2 is a diagrammatic plan view similar to Figure 1 showing the closure device in the partially open position;

Figure 3 is a fragmentary view showing one end of a closure device conformed of strip material bent into shape;

Figure 4 is fragmentary plan view showing one end of a closure device conformed of a band of material which is folded and bent into the desired conformation;

Figure 5 is a perspective diagrammatic view of a bag having a closure therein according to this invention;

Figure 6 is a vertical sectional view taken along the line and in the direction indicated by the arrows 6—6 in Fig. 5;

Figure 7 is a perspective view similar to Figure 5 showing a bag and closure constructed according to the invention, with the vacant portion of the bag rolled up on the closure device; and

Figure 8 is a view illustrating a slight modification of the invention wherein the central sections and/or arm sections are not in angularly crossed relationship, as in the first form of the present invention illustrated.

Reference is again made to Figure 1 which shows in the closed position a closure device constructed according to our invention as it would appear in plan view when conformed of round spring wire. The closure device, which is designated generally by the numeral 10, is seen to be a continuous loop of wire having closely juxtaposed parallel elongated side sections 11 and 12 which are terminated in what might be best described as crossed loops 13 and 14 at opposite ends thereof. As can be seen in the figure, the side section 11 is bent at each end to provide the diagonal arms 15 and 16, and the side 12 is similarly and oppositely bent at each end to provide the diagonal arms 17 and 18. The arms, in turn, are terminated outwardly in the end sections 19 and 20 respectively.

It should also be observed that the arm 15 extending from the side 11 is disposed upwardly of or over the arm 17 extending from the side 12 in the loop 13 terminating in the end section 19, whereas the arm 16 extending from the side 11 is disposed downwardly of or under the arm 18 extending from the side 12 at the loop 14 terminating in the end section 20.

The construction of the irregular loop 10 is such that spring tension inherent within the variously disposed sections of the loop is effective to hold the sides 11 and 12 in tight juxtaposition between the end loops 13 and 14. However, when the device is held between a thumb and finger and pressure is applied inwardly in the direction indicated by the arrows E and F in Figure 2, the end sections 19 and 20 are forced inwardly toward each other and because of the longitudinal rigidity of the arms 11 and 12 the pressure applied results in increasing the acuteness of the angles at 21 and 22 at which the arms 17 and 15 are respectively disposed from the end 19 and, similarly the angles at 23 and 24 at which the arms 18 and 16 are disposed from the end 20, thereby forcing the sides 11 and 12 apart and forming the aperture therebetween designated by the numeral 25 in Figure 2.

When the squeezing pressure indicated by the arrows E and F is relaxed, the arms resume their original angular positions relative to their respective end sections 19 and

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20, and the sides 11 and 12 again become tightly juxtaposed as shown in Figure 1.

In the fragmentary view of Figure 3, one end of a similar closure device is shown as being conformed of strip material considerably greater in width as indicated at 26 than in thickness as shown at 27. So that the two side sections 28 and 29 will align in facing juxtaposition, rather than being offset one above the other, the diagonal arm sections 26 and 30 are twisted into the horizontal plane at the point 31 at which they pass each other, and similarly in Figure 4 at a closure device conformed of band material is seen to be substantially greater in width than in thickness and consequently is provided with a plurality of sharp folds at the corner 32 between the side 33 and the arm section 34, and at the corner 35 between the side 36 and the arm section 37 so that the arm 34 is disposed below the arm 37 and the faces of the longitudinal side sections 33 and 36, which of course are the same width as the band material as seen at 37 and 34, will be tightly juxtaposed and in horizontal edgewise alignment.

In Figure 5 a bag type of container is designated by the numeral 38 and is seen to be conformed in the manner of a pouch having edgewise hem sections 39 and 40 turned downwardly along its upper edge and enclosing the parallel side sections of the closure device 41 as is more clearly shown in the sectional view of Figure 6 taken along the line and in the direction indicated by the arrows 6—6 in Figure 5, in which the side 42 is turned outwardly at 43 around the side section 44 of the closure device, the end 41 of which is also seen in the figure, and the side 45 is seen to turn oppositely at 46 around the side member 47 of the closure device 41.

As shown in the sectional view of Figure 6, the parallel side sections 44 and 47 of the closure device 41 are slightly separated to reveal the construction of the bag 38 and to show the contents 48 disposed in the lower part thereof.

In Figure 7 a typical bag-type container such as 38 in the previous figures, is shown as it would appear when only a portion of the contents remain in the bottom area 49, and the empty upper portion of the bag 38 is rolled as shown at 50 around the side sections such as 44 and 47 in Figure 6 of the closure device between the end loops 41 and 51.

As will be readily understood, the advantages of this procedure reside in reducing the size of the partially filled carton and in protecting the contents remaining therein from exposure to the air or moisture.

Although not illustrated in the drawings, it is anticipated that bags containing certain type of products would be provided with airtight sealing strips secured over the jointure line along which the upper edges of the bags align, and the invention further anticipates a suitable tearing strip disposed interiorly of the closure strip with which the latter would be torn apart upon the initial opening of the sealed package, thus providing a completely sealed, sanitary package together with the advantages of the finger pressure opening and automatic closing features during the period of time required to use or remove the contents of the packet.

It is furthermore anticipated that closures of this type and containers of the character described be adapted for use with relatively bulky substances such as breakfast foods and large packages of granular foods such as salt, sugar, flour, etc.

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Figure 8 is a view illustrating a slight modification of the present invention wherein the central sections and/or arm sections are not in angularly crossed relationship as in the earlier form of the present invention described hereinabove. In this figure similar reference numerals will be used, primed, however, to indicate parts corresponding to those illustrated in the earlier figures and described hereinabove. It is thought that no further description of this modification is necessary.

Numerous modifications and variations of the present invention will occur to those skilled in the art after a careful study hereof. All such, properly within the basic spirit and scope of the present invention are intended to be included and comprehended herein as fully as if specifically described, illustrated and claimed herein.

The exact compositions, configurations, constructions, relative positionings, and cooperative relationships of the various component parts of the present invention are not critical, and can be modified substantially within the spirit of the present invention.

The embodiments of the present invention specifically described and illustrated herein are exemplary only, and are not intended to limit the scope of the present invention, which is to be interpreted in the light of the prior art and the appended claims only, with due consideration for the doctrine of equivalents.

We claim:

1. A spring tensioned closure device, comprising: a continuous irregularly conformed loop of resilient material, said elongated loop including a pair of parallel side sections longitudinally disposed in tight juxtaposition, the ends of said side sections being crossed diagonally over each other and terminated in oppositely disposed generally triangular end loops.
2. The invention in accordance with claim 1 being further characterized by the first of said side sections being crossed over the second side section at one end, and under said second side section at the other end.
3. The invention in accordance with claim 2 and further characterized by said end loops being provided with end sections disposed substantially parallel to each other and perpendicular to said side sections.
4. The invention in accordance with claim 3 in which said end sections are arcuately conformed, the convex sides thereof being disposed inwardly toward said side sections.
5. The invention in accordance with claim 4 in which said closure device is conformed of spring tensioned round wire.
6. The invention in accordance with claim 4 in which said closure device is conformed of strip material having the ends thereof integrally connected to provide a continuous band, the width of said strip being disposed in the vertical plane and said ends of said longitudinal side sections being twisted into the relatively horizontal plane at the points at which they cross each other.

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