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Paxton

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[54] **PLASTIC CLIP FOR CLOSING FLEXIBLE PLASTIC BAG**

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Related U.S. Application Data

[63] Continuation of Ser. No. 131,226, April 5, 1971, abandoned.

[52] **U.S. Cl.** ..... **24/30.5 S**

[51] **Int. Cl.** **B65d 77/10**

[58] **Field of Search**..... 24/30.5 S, 255 BS, DIG. 28, 24/DIG. 29; 150/3; 229/62

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Primary Examiner—Donald A. Griffin

[57] **ABSTRACT**

A clip about 1 inch square of flat springy plastic, such as 0.032 inch guage polystyrene, having an internal bag neck confining aperture, access to which is provided by a narrow opening in an edge of the clip dividing the clip on opposite sides of said opening into a pair of flexible jaws. The opening edges flare outwardly to guide the bunched bag neck into the inner narrow part of the opening. A pointed tongue formed integral with the clip extends into said aperture to engage the bag neck and resist slippage of said bag neck through said aperture. A multiple of said tongues may be provided, in which case a pair of tongues may extend into said aperture into a juxtaposed relationship on a transverse axis. A third tongue may be provided pointed toward and co-axially aligned with said narrow opening.

4 Claims, 3 Drawing Figures

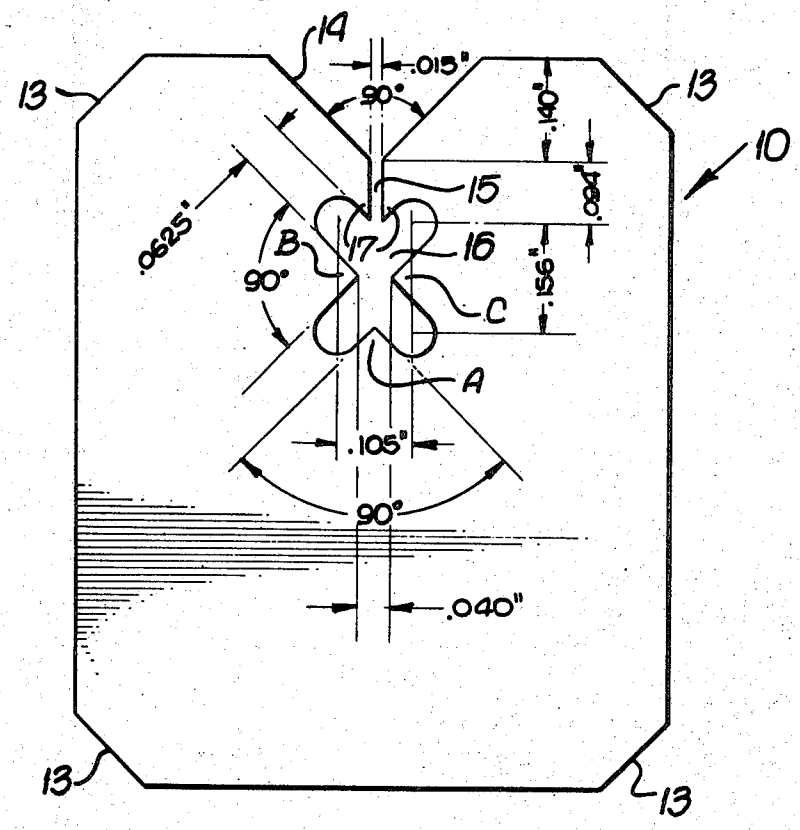


FIG. 1.

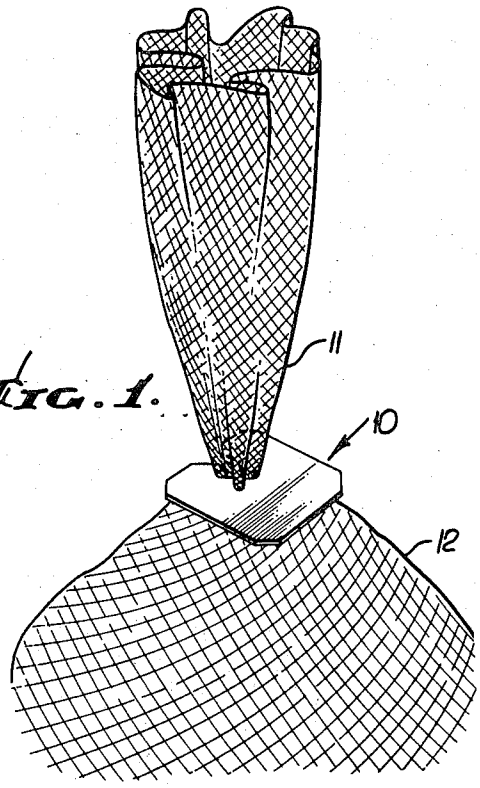


FIG. 2.

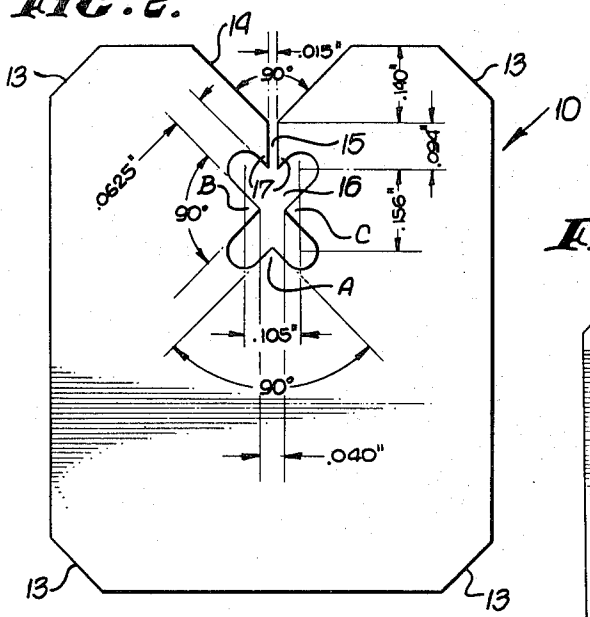
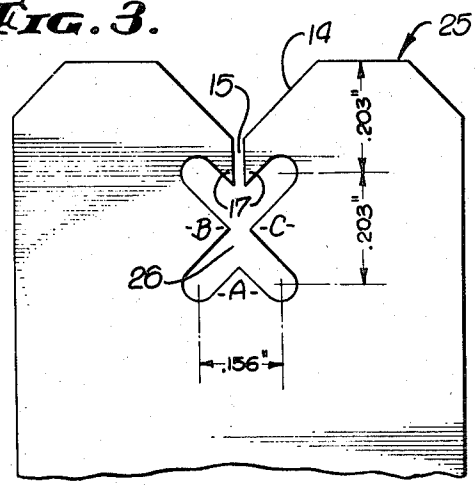


FIG. 3.



PLASTIC CLIP FOR CLOSING FLEXIBLE PLASTIC BAG

REFERENCE TO OTHER APPLICATIONS

This application is a continuation of Ser. No. 131,226 filed Apr. 5, 1971, and now abandoned.

SUMMARY OF THE INVENTION

Polyetheylene plastic bags are increasingly being closed commercially by flat polystyrene bag closures of the Kwik Lok type, thus bringing many advantages in product quality and merchandising control. It is important that slippage of the bag necks through the closures be prevented and this is particularly difficult to do with net plastic bags.

It is an object of the present invention to provide an improved Kwik Lok type bag closure which will offer a high resistance to slipping on a bag neck to which it has been applied.

It is another object to provide such a bag closure which will effectively resist its sliding on the neck of a plastic net bag to which it has been applied.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a full size fragmentary perspective view of a net bag closed by a preferred embodiment of the clip of the invention.

FIG. 2 is an enlarged plan view of said preferred embodiment which is adapted for closing small bags.

FIG. 3 is an enlarged fragmentary plan view of a modified form of the invention which is adapted for closing medium size bags.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The invention is preferably embodied in a clip **10** which is shown in full scale in the perspective view of FIG. 1 closing the neck **11** of a net plastic bag **12.** To facilitate illustration of the details of the invention FIGS. **2** and **3** inclusive represent enlargements of both preferred and modified forms of the invention by a factor of four.

The clip **10** is preferably about 1 inch square and, as shown, is 0.875 × 1.094 inch in size. The clip is beveled at the corners **13,** and comprises a sheet of stiff but springy polystyrene plastic with a thickness of 0.0325 inches.

Formed in one edge of the clip is a deep V notch **14** which terminates at its apex in a narrow opening **15,** the inner end of which communicates with a bag neck confining aperture **16,** upper portions of which are arched upwardly on opposite sides of the opening **15** to divide the material of the clip into two juxtaposed downwardly pointed jaws **17.**

The preferred dimensions of clip **10** are shown in FIG. 2 and will not be repeated here. The aperture **16** is cruciform in shape to provide jaws **17** pointed with angles of 45° and to provide three tongues A, B and C which are pointed with angles of 90° and extend into aperture **16** in converging juxtaposed relation about the middle of the aperture. Tongue A is at the bottom of aperture **16** in co-axial opposition to jaws **17.** Tongues B and C are at the sides of aperture **16** in opposing relation with each other along the transverse axis of the aperture.

In order to apply the clip **10** to the neck **11** of a net plastic bag **12,** the bag neck is twisted or bunched in the hand, or by a machine, and applied forcibly to the V notch **14** of the clip while moving the bag neck lengthwise of its axis so as to deflect the jaws **17** out of the plane of the clip, thereby widening the narrow opening **15** and displacing tongues B and C out of the plane of the clip and away from direct opposition to each other thereby enlarging the spaces between the jaws and between tongues B and C to admit the individual plastic strands of the bag neck **11** through the opening **15** and into the bag neck confining aperture **16.** The application of the clip **10** is completed by relaxing pressure on the clip thereby permitting the jaws **17** and the tongues B anc C to return into the plane of the clip, trapping the bag neck **11** in the aperture **16.**

In this process of forcing the strands of the bag neck **11** into the aperture **16,** a large number of individual net openings will be impaled upon the tongues A, B and C so that the bag neck will be anchored in place against endwise movement relative to the clip **10,** and will thus be permanently closed with the clip positioned on the neck as shown in FIG. **1.** Removal of the clip **10** in order to open the bag **12** may be readily accomplished, however, by seizing the clip in one hand and the bag neck in the other and twisting the clip to bend the same about a transverse line, thus flexing the jaws **17** and the tongues B and C out of the plane of the clip, thereby freeing the bag neck **11** so that it may be pulled from the clip.

A modified form of clip **25** is shown in FIG. **3** which is like clip **10** excepting that the aperture **26** thereof is larger than aperture **16** of clip **10** to adapt clip **25** for closing medium size bags.

An important factor in the tenacity with which a net bag neck **11** is gripped by one of the clips **10** or **25** is the surrounding of the aperture and access opening of the clip with substantial blank areas of the clip body which firmly resist widening of the access opening **15** or the gap between the pointed ends of tongues B and C while the jaws **17** and the tongues B and C remain in the plane of the clip which is their normal position of repose and which is the condition in which the clip **10** is shown in FIG. **1** after a bag neck **11** has been forced into aperture **16** by deflecting the jaws **17** and tongues B and C out of the plane of the clip to permit entrance of the bag neck **11** into said aperture. While the respective apertures **16** and **26** of the clips **10** and **25** are designedly made of different sizes to fit different categories of net bags because of variations in the bulk of material in different bag sizes which must be received by a clip, the aperture and access opening in each of these clips is located exclusively in the upper half of the clip and in the central one-third of said upper half.

I claim:

1. A clip for closing the neck of a net plastic bag, said clip comprising:

a body of flat, rigid but springy sheet plastic material, having a bag neck confining aperture formed internally therein, access to which is provided by an opening in an edge of said body, said opening dividing the body material on opposite sides thereof into a pair of inwardly pointed flexible jaws,

said aperture and access opening being co-axial lengthwise with said body and confined exclusively to an area at one end thereof which is about one-half the length of said body and about one-third the

width of said body, the blank lateral and end portions of said body firmly inhibiting expansion of said jaws while reposing in the plane of said body, said aperture providing room to accommodate the entire bulk of a section of the neck of a net plastic bag of a given size, and be approximately filled by said bulk, after said clip has been flexed out of said plane to enlarge the gap between the points of said jaws and to admit said neck through said opening and then is allowed to resume its flat condition of repose,

the outline of said aperture being shaped to provide two sharply pointed tongues each of which is formed symmetrically about a single transverse axis which is common to said tongues and normal to the lengthwise axis of said body, said tongues extending inwardly in direct, co-axial transverse opposition to each other thereby effectively biting into said bag neck and resisting its escape from said clip,

said tongues dividing said aperture into substantially equal upper and lower portions,

the edges of said tongues being straight, diverging from the tongue points at angles of approximately 90° and continuing straight approximately to the upper and lower lateral extremities of said aperture,

the outline of the lower portion of said aperture being shaped to provide a third sharply pointed tongue formed symmetrically with the axis of said entrance opening whereby said aperture has the shape of an X.

2. A clip as recited in claim **1** wherein

the portions of said aperture forming the configuration of an X comprise upper "arms" and lower "legs", and wherein

said aperture is attenuated lengthwise to offset said legs downwardly from alignment with said arms, thereby substantially decreasing the gap between the points of said lateral tongues without decreasing the area of said aperture.

3. A clip as recited in claim **1** wherein the space between the juxtaposed points of said side tongues is approximately four hundredths of an inch.

4. A clip for closing the neck of a net plastic bag, said clip comprising:

a body of flat, rigid but springy sheet plastic material, having a bag neck confining aperture formed internally therein, access to which is provided by an opening in an edge of said body, said opening dividing the body material on opposite sides thereof into a pair of inwardly pointed flexible jaws,

said aperture and access opening being co-axial lengthwise with said body and confined exclusively to an area at one end thereof which is about one-half the length of said body and about one-third the width of said body, the blank lateral and end portions of said body firmly inhibiting expansion of said jaws while reposing in the plane of said body, said aperture providing room to accommodate the entire bulk of a section of the neck of a net plastic bag of a given size, and be approximately filled by said bulk, after said clip has been flexed out of said plane to enlarge the gap between the points of said jaws and to admit said neck through said opening and then is allowed to resume its flat condition of repose,

the outline of said aperture being shaped to provide two sharply pointed tongues each of which is formed symmetrically about a single transverse axis of said body, said tongues extending inwardly in direct, co-axial transverse opposition to each other thereby effectively biting into said bag neck and resisting its escape from said clip,

the outline of the lower portion of said aperture being shaped to provide a third sharply pointed tongue formed symmetrically with the axis of said entrance opening whereby said aperture has the shape of an X.

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