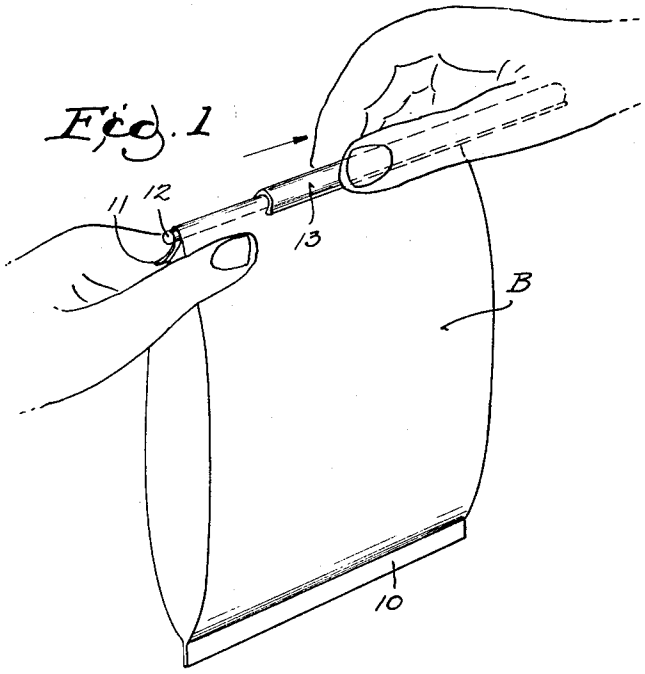
July 21, 1964 E. S. FAULLS, JR 3,141,221

CLOSURE FOR FLEXIBLE BAGS

Filed Nov. 13, 1962

Fig. 1



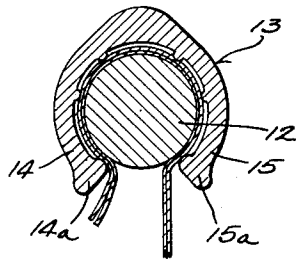


Fig. 2

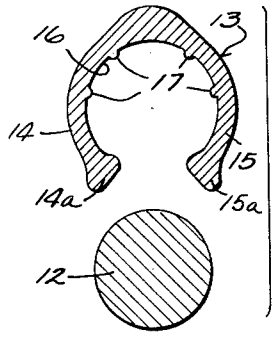


Fig. 3

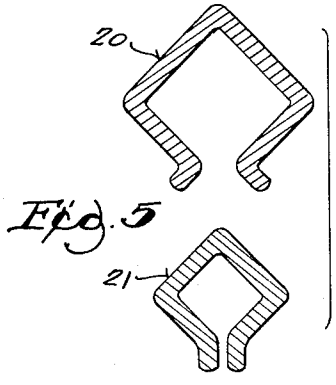


Fig. 5

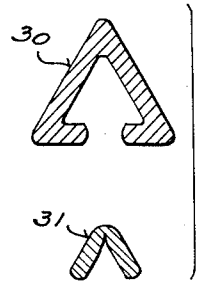


Fig. 7

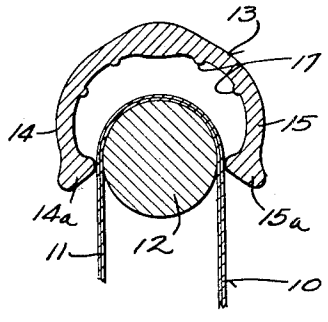


Fig. 4

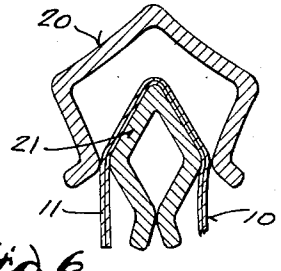


Fig. 6

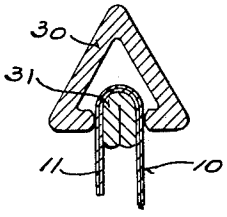


Fig. 8

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CLOSURE FOR FLEXIBLE BAGS

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1 Claim. (Cl. 24—30.5)

This invention relates to closure devices for closing the open end of a bag, pouch, tube, or similar containers.

Many prior art devices have heretofore been proposed for closing the end of flexible bags and have been used with some degree of success. The prior devices have certain shortcomings, however; for example, some mutilate the container, cannot be reused, are expensive to manufacture, are incapable of securely closing the container, and are difficult to apply or remove.

Accordingly, the present invention provides a bag closure device which overcomes the above shortcomings of the prior art.

More specifically, the present invention provides a closure device comprising two separate, interengaging, and complementary members, either one or both of which are resilient so as to firmly grip and resiliently hold the end of the bag therebetween; these members may be easily applied to the end of the bag or any intermediate portion thereof with a simple snap action; to again open the bag it is simply necessary to remove one member from the other, preferably by axially sliding one of the members off the other; the container which has been closed by these members is not damaged in any way and can be reused or closed at a different location along its length.

The closure made in accordance with the present invent is economical to produce, simple to use, and can be reused indefinitely.

These and other objects and advantages of the invention will appear hereinafter as this disclosure progresses, reference being had to the accompanying drawings in which:

FIGURE 1 is a perspective view of a closure made in accordance with the present invention being removed from a bag that it has previously closed;

FIGURE 2 is a cross-sectional view of two members constituting the closure as shown in FIGURE 1, but on an enlarged scale;

FIGURE 3 is a view similar to FIGURE 2 but showing the closure members separated and the bag removed therefrom;

FIGURE 4 is a view similar to FIGURE 3 but showing the members as they are about to be snapped together to hold a bag end captive therebetween;

FIGURES 5 and 6 are views similar to FIGURES 3 and 4 respectively, but showing a modified form of the invention; and

FIGURES 7 and 8 show another modified form of the invention.

Referring more particularly to the drawings, the bag B shown for purposes of illustrating the invention is of the flexible type having a sealed or otherwise closure bottom **10** and an open top **11**. Only a portion of the commodity in the bag may be used at one time, and it is often desirable to reclose the partially emptied bag for subsequent reopening and use of the remaining commodity.

The closure shown in FIGURES 1 to 4 illustrates one form of the invention and includes an inner member or core **12** of round cross-section and an outed member **13** of generally U-shape cross-section having a pair of legs **14** and **15** which each terminate in a reinforcing or stiffening bead **14***a* and **15***a*, respectively, along the outer edge thereof.

The inner surface **16** of member **13** is of complementary shape to the cross-section of core **12** and generally of the same diametrical dimension. The core thereby fits snugly

within the outer member **13**. Ribs **17** may extend along inner surface **16** in circumferentially spaced relationship and function to provide good bag gripping contact between the assembled members, and prevent rotation of the inner core member and transverse withdrawal of the bag.

The outer member **13** may be made of any suitable material, such as, for example, plastic, metal, paper, wood, or combinations and laminations thereof, providing that the legs **14** and **15** have sufficient flexibility and memory or snap back to spread apart (as shown in FIGURE 4) when the core and the bag end are forced between the legs and into the outer member; the legs then snap around and embrace the core and bag trapped therebetween, that is, they return to their normal position, as shown in FIGURE 2. In this assembled position, the members are in general coaxial alignment.

Although the core and bag are firmly gripped by the outer member, the bag may be easily reopened without damage thereto by grasping the bag at one side and adjacent the closure, and then sliding the outer member **13** lengthwise off the core and bag, as shown in FIGURE 1.

The closure may be applied to the bag repeatedly without damage thereto and at any location along the length of the bag.

Furthermore, although the closure normally extends entirely across the bag, the closure can close only a portion of the open bag end to facilitate pouring, for example, by applying the closure only partially across the width of the bag.

The closure may also be used for compartmenting or separating different sections of the bag, several closures being applied to the same bag. The closures can be repeatedly adjusted or removed as needed without damage to the bag.

Various cross-sectional shapes may be utilized for the complementary members, and either one or both of the members may be resilient. For example, FIGURES 5 and 6 show a closure having a generally rectangular cross-section, and both the outer member **20** and core **21** are tubular and both are of flexible and resilient material. When this closure is being assembled as shown in FIGURE 6, the outer member spreads apart while the inner core contracts. When assembled, these members tend to return to their normal position to hold the bag firmly therebetween.

The FIGURES 7 and 8 closure is of generally triangular cross-section, and either or both of these members **30** and **31** may be flexible or resilient. For purposes of illustrating one form, FIGURE 8 shows the inner member only as being resilient and compressed or contracted as it is being pressed into bag holding engagement with the outer, rigid member **30**. When assembled, this inner core springs apart or to the position shown in FIGURE 7 to press the bag against the inner surface of the outer, generally channel or U-shaped member.

As in the device of FIGURES 1–4, the other modifications operate in the same manner in removal from the bag, that is, one of the members, preferably the outer one, is slidable lengthwise relative to the other and in particular, relative to the bag.

Alternatively, the outer member may be lifted off the inner member by causing its resilient portion to yield. In any event, the members form a yieldable gripping engagement with the bag for their entire length.

Various modes of carrying out the invention are contemplated as being within the scope of the following claim particularly pointing out and distinctly claiming the subject matter which is regarded as the invention:

I claim:

A bag closure device comprising, a pair of elongated members of complementary cross-sectional shape and in-

cluding an outer, generally U-shaped member and an inner core member, said core member interengagingly insertable together with a portion of a bag transversely into said U-shaped member for general co-axial alignment therewith and to hold said bag portion therebetween, said U-shaped member having a pair of resilient legs which flex to permit said core member to be tranversely inserted therebetween and embraced thereby, said U-shaped member having a plurality of circumferentially spaced ribs extending longitudinally along its inner surface to thereby provide gripping contact of the bag between said members, said ribs facilitating lengthwise slidable movement of said U-shaped member from the core member and bag when in an assembled bag gripping position to thereby release the latter said ribs preventing rotation of said inner

core member and consequent transverse withdrawal of said bag.

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