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M. ORENICK ET AL
CLOSURE MEANS FOR BAGS

3,086,265

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FIG. 1

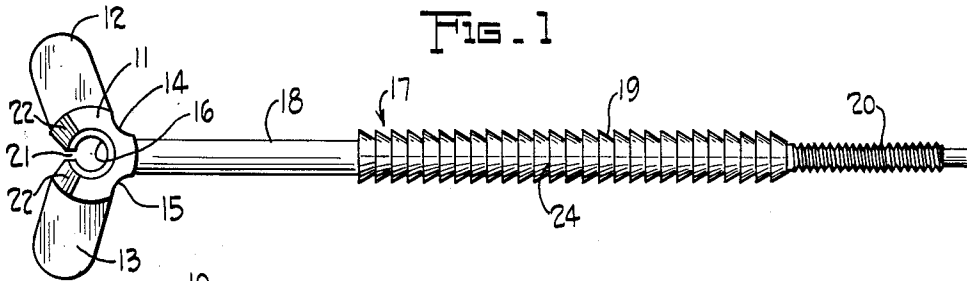


FIG. 2

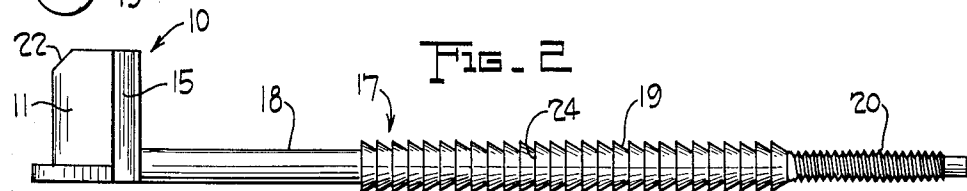


FIG. 3

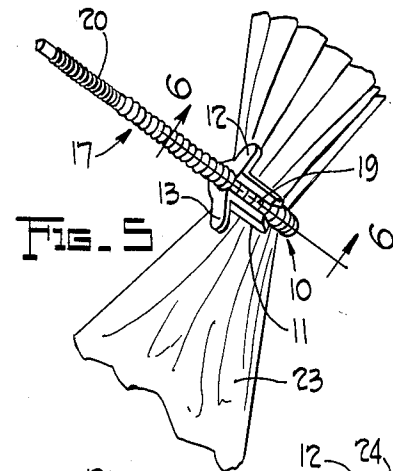
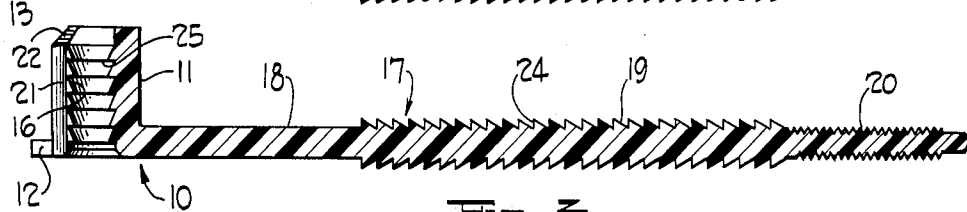


FIG. 5

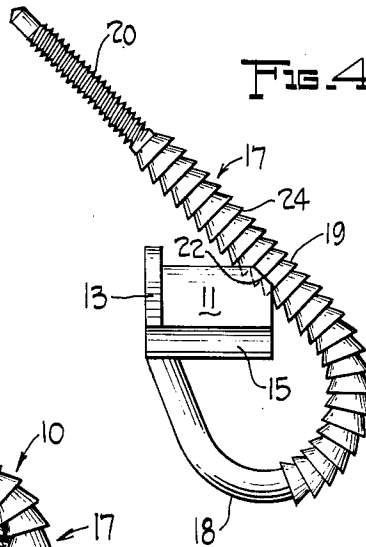
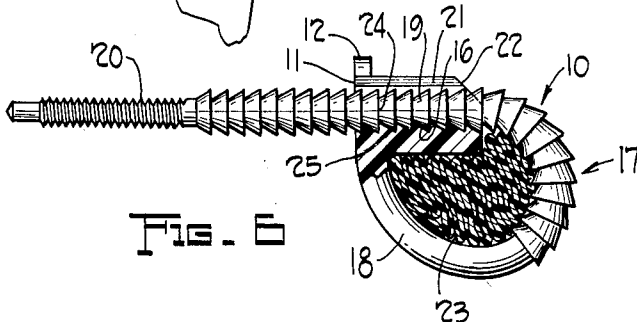


FIG. 6



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CLOSURE MEANS FOR BAGS

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3 Claims. (Cl. 24—30.5)

This invention relates to closure means for bags, and more particularly for plastic bags.

Conducive to a better understanding of the invention it may be well to point out that many foods such as fruits, vegetables, cereals, etc., are packed in plastic bags. The usual means for closing such bags is to tie their mouths with string, metal clips, wire, or rubber bands. These devices are troublesome to remove and in many instances are destroyed in the process. Furthermore, since the contents of the bag is not usually used at one time, the problem of re-closing the open bag mouth arises.

The primary object of this invention, therefore, is to provide a bag closure means that may be secured to or removed from a bag, without tools, and with single, straight-line motion of the hand.

Another object is to provide a closure-means that can be used repeatedly over a long period of time.

Still another object is to provide a unitary closure having no moving parts.

A further object is to provide a bag closure of the type stated that can be economically molded as a complete unit, requiring no subsequent assembly or finishing operation.

These and other objects of the invention will become apparent from a reading of the following specification and claims together with the accompanying drawing wherein like parts are referred to and indicated by like reference numerals and wherein:

FIGURE 1 is a top plan view of the closure means for bags that is the subject of this invention;

FIGURE 2 is a side elevation of the same;

FIGURE 3 is a longitudinal sectional view of the same taken along the medial line thereof;

FIGURE 4 is a side elevation showing the closure means strap looped upon itself and positioned against the clamp head immediately prior to being pressed into locked engagement therewith;

FIGURE 5 is a perspective view showing a bag closed with the closure means, according to the invention; and

FIGURE 6 is a view, partly in section, taken along the line and in the direction of the arrows 6—6 of FIGURE 5.

Referring more particularly to the drawing, there is seen in FIGURE 5 the closure means for bags that is the subject of this invention, broadly indicated by reference numeral 10, secured around the neck of a bag 23.

The closure 10 is unitary in structure and may be molded from any one of a number of flexible materials such as rubber or other plastic.

In the preferred form illustrated, the closure 10 is made from poly-ethylene which combines the proper characteristics of flexibility and rigidity without elasticity.

The closure 10 comprises a cylindrical clamping head 11 having the closure strap 17 formed integral therewith and extending laterally of the base end thereof, as seen in FIGURES 1, 2 and 3.

Reference numerals 12 and 13 indicate divergent finger grip ears formed integral with the head 11.

An axial bore 16 extends through the head and has a series of annular teeth 25 formed in the wall thereof. Each tooth 25 abuts the next one through a shoulder perpendicular to the bore wall, faced away from the top end of the bore and defining a series of frusto-conical cavities, as is seen most clearly in FIGURE 3.

A V-shaped slot 21 extends the length of the head 11

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between the circumferential wall of the head and the bore 16 dividing the head into two halves which may be flexed toward or away from each other along under-cuts 14 and 15 which form two lines of reduced wall thickness which act as hinges.

The top end of the slot 21 is cut back at a 45° angle to the longitudinal axis of the head to define two entrance lips 22 at the top end of the slot, as seen in FIGURES 1 and 3.

The strap 17 is circular in cross-section and has a series of annular teeth 19 cut at an angle of 30° to the strap axis and abutting each other through shoulders 24 faced away from the free end of the strap. The so formed teeth 19 are frusto-conical in shape and of a size to nest into the frusto-conical cavities of the clamp head, described hereinabove. The free end of the strap is threaded, as at 20, to provide a non-slip handle. Any other surface friction creating pattern may be used such as knurling, if desired. Reference numeral 18 indicates an area adjoining the head 11 which is free of teeth. The length of the strap 17 is such that it may be looped around the bag neck to be closed and then brought into locked engagement with the head 11.

To use the device to close a bag, the bag material is gathered together at its mouth to form a neck, as seen in FIGURE 5. The head 11 is laid against the top side of the neck while the strap is looped around the underside and laid against the tapered mouth 22 of the slot 21, as seen in FIGURE 4. The strap 17 is then aligned with the slot 21 and pressed therethrough into the bore 16. This is possible because the sides of the head 11 are free to flex apart to permit the strap teeth 19 to nest in contact with the teeth 25 of the clamp head 11, as is seen most clearly in FIGURE 6.

It will be noted that the strap 17 is free to be drawn through the clamp head bore in the direction which makes the strap loop smaller, but is locked against movement in the opposite direction by the shoulder abutments of the teeth 25 and 19. Thus the closure means 10 easily and securely closes the bag. To open the bag, the head 11 is held by the ears 12 and 13 and the strap 17 pulled up by its end 20 and out of the slot 21.

The inherent flexibility of the head 11 permits the strap 17 to be securely held in clamped engagement therewith while at the same time assuring its instant release when desired.

It will now be clear that there has been provided a device which accomplishes the objectives heretofore set forth.

While the invention has been disclosed in a preferred and alternate form, it is to be understood that the specific embodiments thereof as described and illustrated herein are not to be considered in a limited sense as there may be other forms and modifications of the invention which should also be construed to come within the scope of the appended claims.

We claim:

1. A closure means for bags, comprising, a cylindrical clamp head of flexible material having an axial bore therethrough and a radial slot in the wall thereof extending the length thereof, intersecting the bore and dividing the head into two halves which may be flexed away from or toward each other, at the slot; a plurality of annular teeth in the bore defining spaced cavities; a flexible strap formed integral with the head, extending laterally thereof and having a plurality of annular teeth of a cross-section matching that of the head cavities; the strap being adapted to be looped upon itself around the neck of a bag and pressed through the head slot, by flexing the two halves apart, and into the bore thereof, with its teeth nested in

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the head cavities in clamped interlocked engagement with the head teeth.

2. A closure means for bags, comprising, a cylindrical clamp head of flexible material having an axial bore there-through and a radial slot in the wall thereof extending the length thereof, intersecting the bore and dividing the head into two halves which may be flexed away from or toward each other, at the slot; a plurality of tapered annular teeth in the bore defining abutting frusto-conical cavities; a flexible strap formed integral with the head extending laterally thereof and having a plurality of abutting annular teeth of frusto-conical cross-section, matching that of the head cavities; the strap being adapted to be looped upon itself around the neck of a bag and pressed through the head slot, by flexing the two halves apart, and into the bore thereof with its teeth nested in the head cavities in clamped interlocked engagement with the head teeth.

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3. A device of the type defined in claim 2 and further distinguished by the head having two divergent finger grip ears extending laterally of the body slot thereof.

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