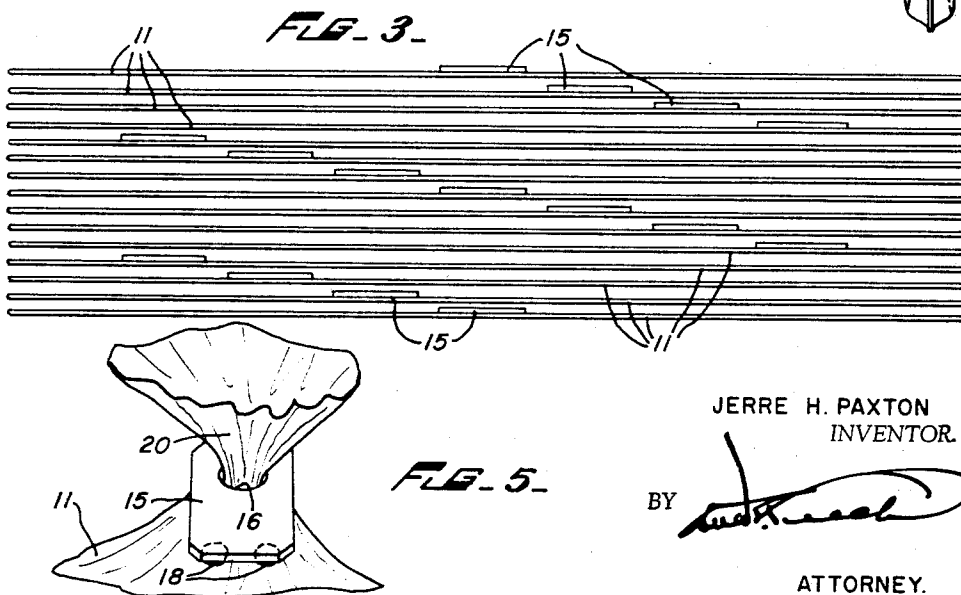
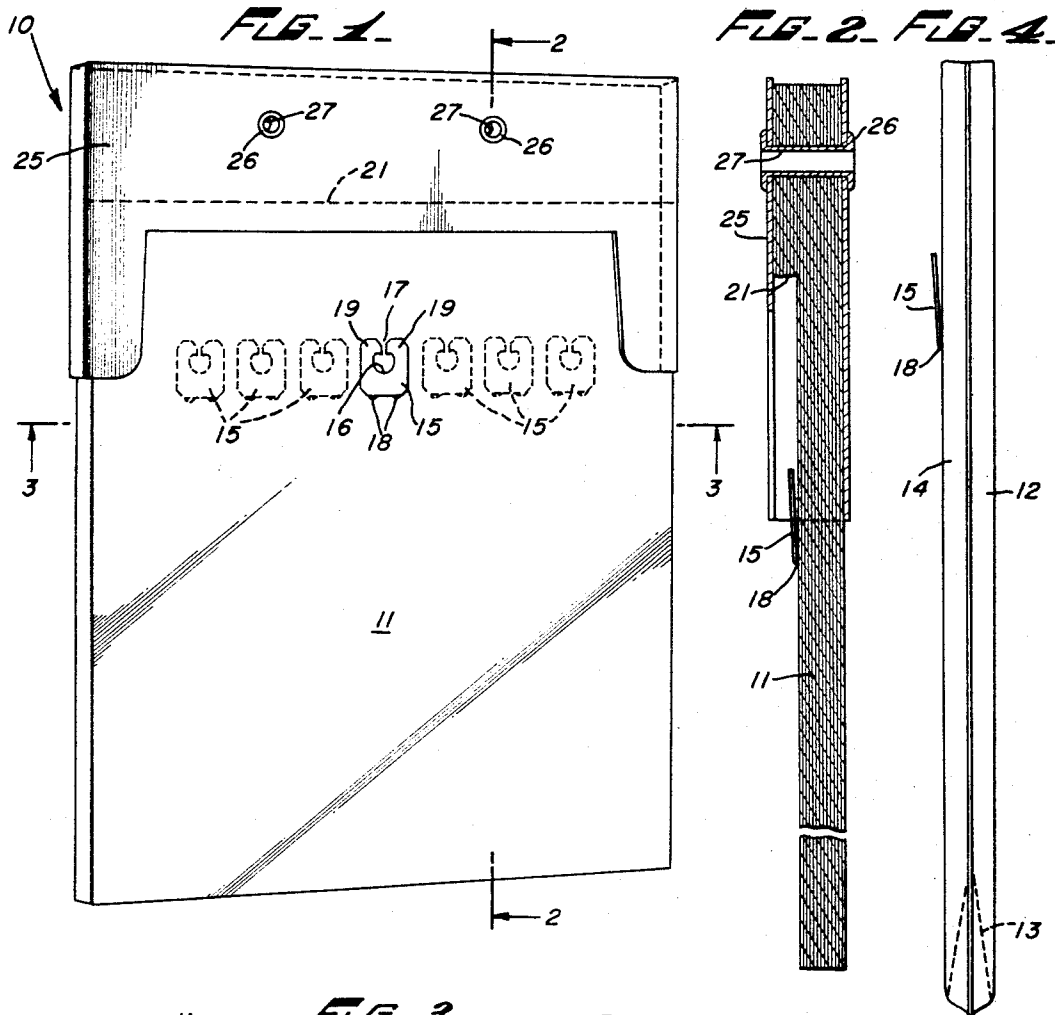


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J. H. PAXTON

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FLEXIBLE PLASTIC BAG STACK, INDIVIDUAL BAGS OF WHICH ARE  
PROVIDED WITH RESPECTIVELY ECHELONED  
SHEET PLASTIC CLOSURE FACILITIES  
Filed Aug. 24, 1967



JERRE H. PAXTON  
INVENTOR.

BY

*[Signature]*

ATTORNEY.

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## FLEXIBLE PLASTIC BAG STACK, INDIVIDUAL BAGS OF WHICH ARE PROVIDED WITH RESPECTIVELY ECHELONED SHEET PLASTIC CLOSURE FACILITIES

Jerre H. Paxton, P.O. Box 2098,

Yakima, Wash. 98902

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### ABSTRACT OF THE DISCLOSURE

A stack of flexible plastic bags in which said bags are bound together along one edge so that each bag is readily tearable from its binding, each of said bags having integrated therewith a suitable distance below the open mouth thereof a Kwik Lok type bag closure for uniting the bunched neck of the bag after the latter has been detached from said stack, said closures being applied to the bags of the stack in relatively echeloned positions to minimize the thickening of said stack by the application of said closures to said bags.

### CROSS-REFERENCE TO RELATED APPLICATION

Reference is made to my co-pending application Ser. No. 629,441 filed Apr. 10, 1967 on a Plastic Bag With Integral Closing Facility. That application discloses a flexible plastic bag which has integrated therewith, a suitable distance below the open mouth of the bag, a Kwik Lok type bag closure which is thus made available to the customer after he has approximately filled the bag with merchandise, and leaving only a neck portion free for closing the same, for bunching the neck together and closing this by the application thereto of said Kwik Lok closure. The preferred embodiment of the invention disclosed in said co-pending application has said bag closure secured to the front face of the bag approximately on the vertical middle line thereof.

A difficulty met with in the use of the invention disclosed in said co-pending application is that it does not bundle well owing to the fact that the closures are in sheet form and are of a material which is considerably thicker than the film of which the bag is made so that with a bundle of a hundred bags the thickness of the bundle at the point where said closures are applied is excessive.

### BACKGROUND OF THE INVENTION

#### 1. Field of the invention

The provision of facilities for use by customers in self-service markets in bagging articles picked up by them in the market which they desire to purchase so that these can be readily identified, priced and the entire transaction recorded on a cash register strip by a checker representing the merchant.

#### 2. Description of the prior art

Until recently kraft bags made of relatively heavy paper have been universally used in self-service markets to facilitate the customers collecting merchandise and delivering it to the checker for identification and pricing and the rendering of an account to the customer of the prices of the individual articles and the total due the merchant for the entire lot of merchandise purchased.

The stiffness of these kraft bags has made them very serviceable in this field for this characteristic tends to give the merchandise collected therein a flat base at the bottom causing the bag to stand upright when set on the counter. Thus the checker could readily look down into the mouth of the bag and inspect and identify the merchandise contained therein. This characteristic also facilitated

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the handling of the bags of merchandise in packing them into larger bags or cardboard boxes for delivery to the customer.

The advantages in using kraft bags for the collecting of merchandise in a self-service market has been discounted, however, by the discovery by many merchants that they are losing considerable quantities of merchandise through shoplifting which is facilitated by the use of the kraft bag. For instance, the practice has been found to be not too uncommon of putting a piece of expensive merchandise, such as a T-bone steak, in the bottom of a kraft bag and then covering it up with potatoes or other merchandise sold by weight at a much lower price than the steak. The checker, being generally in a hurry, does not detect a deception of this kind with the result that merchants are suffering substantial losses of merchandise.

Efforts to use transparent flexible plastic bags for the collection of merchandise by customers in self-service has heretofore been defeated by the fact that such bags do not support the merchandise in a column as in the case in using kraft so that the plastic bag filled with merchandise must generally always be laid on the counter and when this is done the merchandise tends to escape from the open end of the bag.

### SUMMARY OF THE INVENTION

The primary object of the invention is to provide a flexible bag stack in which the individual bags are equipped with Kwik Lok type bag closures as set forth in the aforesaid co-pending application, with the exception that the closure applied to each bag in the stack is applied in a position in which said closure is uncovered by or what is known as in echeloned relation with the closure on the bag next thereabove. As illustrated in the preferred embodiment disclosed herein, in which the present invention is embodied with a stack of a hundred bags, the amount which said stack is thickened by the application of said closures to the individual bags is reduced by the present invention to 1/7th of the thickness which would be added to a stack by closures located as shown in the aforesaid co-pending application.

### BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a perspective view of a preferred embodiment of the present invention illustrating in full lines the Kwik Lok type closure applied to the front face of the top bag of the stack, and in broken lines, the closures applied successively and in echeloned relationship to the six bags next below the uppermost bag.

FIGURE 2 is an enlarged vertical sectional view taken on the line 2—2 of FIGURE 1, with the stack depleted by a number of bags being torn therefrom.

FIGURE 3 is a diagrammatic enlarged sectional view taken on the line 3—3 of FIGURE 1 and showing the bags of the stack separated from each other to better illustrate the locations of the Kwik Lok type bag closures applied to the respective bags of the stack.

FIGURE 4 is a diagrammatic side elevational view of a bag separated from the stack of the invention and illustrating the preferred manner of applying the closure to the bag.

FIGURE 5 is a fragmentary perspective view illustrating the neck of a bag after it has been closed by the closure provided on said bag in the present invention.

### DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring specifically to the drawings, the invention is there shown as embodied in a packaged stack 10 of bags 11 made of thin polyethylene film or similar flexible plastic material. The bags 11 are preferably made by folding a

web of film as it travels linearly to form the back 12, bottom 13 and front 14 of the bag 11, and transversely heat severing and sealing the severed edges of said web at intervals to divide the same into the bags 11 and seal together opposite side edges of the back, bottom and front of each bag.

Coordinately with the heat severing of said web in the manufacture of the bags 11, a Kwik Lok type closure 15 is secured adhesively to the front of each bag in a selected one of a plurality of spaced positions across the front of the bag 11. Each of the closures 15 has a bag neck confining aperture spaced inwardly from one end thereof and connected with that end by a narrow edge opening 17. The closures 15 are applied to the bags 11 by spots of adhesive 18 or any other suitable means, the area of connection between each closure and the bag to which it is attached being preferably adjacent the opposite end of the closure from the opening 17 thereof. The opening 17 divides the material at that end of the closure 15 to form jaws 19 which may be readily spread apart to admit the bunched neck 20 of a bag 11 between said jaws and into the aperture 16 after which said jaws snap together to trap the bag neck in said aperture and close said bag.

The present invention includes the novel method of forming the stack 10 of bags 11 in which the bags are formed as above described and in which a closure 15 is applied as above described to each of the bags 11 in one of the aforesaid several positions across the front of the bag as indicated in FIGURE 1. The location on each bag 11 at which a closure 15 is applied thereto is advanced from right to left or from left to right, as elected, but in one of these directions from the position in which a closure was applied to the last previous bag formed in said web of material. The closures may be applied to the web before the same is divided into bags or while it is being divided into bags, or after it has been divided into bags but this step is preferably performed before the web is divided into bags as better control is at that time had of the material to which the closure is applied.

There is, of course, a limited number of side-by-side stations across the front of a bag 11 in one of which the closure may be applied. After a corresponding number of shifts in the location at which the closure is applied to the advancing web, the next following application of a closure to said web starts at the original or most advanced position and then skips from one position to the next through said series of positions until another restart is necessary. In this way a hundred bags may be formed from the end of a continuous web of film on which closures have been applied in accordance with the above described method and be received from the end of the web and stacked in producing the preferred embodiment of the stack 10 of the invention illustrated in the drawings. There are preferably seven positions across the stack 10 for receiving one of the closures 15 and for each group of seven superimposed bags in the stack 10 the closure 15 on each bag is located in a different one of these positions. This is clearly shown in FIGURE 3 in which the bags are spaced apart to show how in successive bags the closure 15 is applied so as to not underlie or overlie either of the closures on the bags immediately above and below that particular bag.

In the invention disclosed in said co-pending application, the Kwik Lok type closure applied to the bag was preferably secured thereto by spots of adhesive applied to the opposite end of the closure from the bag neck receiving opening thereof and the closure was disposed upwardly from the end of the closure which was thus secured to the bag. This was to place the bag neck receiving opening of the closure in a ready position to be applied to the neck of the bag upon the latter being bunched together for this purpose.

In the present invention, each bag has a binding strip 19 formed integral therewith in the bag making method above described by leaving a marginal portion of the web

from which the bags are made integral with the back 12 of the bag but only weakly connected thereto through a line of perforations 21. Each stack 10 is formed by assembling a suitable number such as one hundred bags 11 as these come off the production line with said bags exactly superimposed which means that the binding strips 19 of course are also superimposed. To bind the binding strips 19 of this group of one hundred bags together immediately, these binding strips are preferably penetrated at spaced points near the opposite ends thereof by hot pointed rods which melt together the material of the binding strips adjacent to said rods and thus unite the hundred bags 11 comprised in said stack against separation of any of the bags from the stacks except by a tearing of the material holding the binding strip of any of the bags from the bag itself which material is located at the line of perforations 21.

The stack of one hundred bags 11 thus heat welded together by the heat welding of the binding strips 19 thereof at spaced points, is now passed through a machine which applies a cardboard strip 25 to the upper end portion of the stack and entirely covering the binding strips 19, after which the cardboard binder 25 and the binding strips 19 are punched at spaced points and a pair of hollow rivets 26 are driven therethrough and riveted in place as shown in FIGURES 1 and 2. The hollow rivets 26 provide holes 27 which may be used to hang the stack 10 on any suitable pair of prongs provided at a location where it is desired to use the bags 11. With the stack 10 thus supported, it is available for dispensing a bag 11 at a time to any customer who desires to avail himself of this means of gathering merchandise in the store providing this facility. To remove one of the bags 11 from the stack 10 with the latter supported as above described, the customer merely needs to take hold of the topmost bag near the lower end thereof and give it a jerk which separates it from the binding strip 19 which unites said bag with the rest of the stack.

I claim:

1. A bound flexible plastic bag stack, for providing individual bags one at a time, each of which bags is provided with a sheet plastic closure for use in closing said bag, said stack comprising:

a stack of bags made of thin flexible plastic material such as polyethylene film, the bags in said stack being in superimposed relation, each of said bags having binding means along one edge thereof by which the bags are bound together and which permits each bag to be readily separated from the stack;

means for supporting said stack by said binding means whereby an individual bag may be pulled from said stack by grasping the bag and jerking on this, each bag thus removed from the stack being open along one edge thereof to allow placing merchandise in said bag, the portion of said bag adjacent said opening being referred to hereinafter as the "neck" thereof; and

a series of flat sheet bag closures, one for each of the bags in said stack which are secured respectively to the outer faces of said bags, each of said closures having a bag neck confining aperture formed inwardly from an edge thereof and connected with said edge by a narrow opening thereby producing a pair of jaws in said closure located on opposite sides of said opening, said closure being of stiff but springy material so that said jaws may be sprung apart by pressing the same against the twisted neck of a bag on which it is provided so as to cause the jaws to pass around said neck and trap said neck in the aperture of said closure,

said closures being applied to the respective bags of said stacks with adjacent closures echeloned in depth in relation to each other so as to greatly minimize the thickness added to the thickness of said stack of bags by the provision of said bags with said closures.

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2. A bound flexible plastic bag stack as defined in claim 1, wherein

said flat sheet bag closures are secured respectively to outer faces of the bags of said stack at points adjacent the opposite ends of the closures from the ends having bag neck receiving openings, and with said closures facing toward the open ends of said bags.

3. A bound flexible plastic bag stack as defined in claim 1, wherein

said closures are secured to outer faces respectively of the bags in said stack with the points of attachment between the closures and said bags spaced approximately a uniform distance from the edges of said bags at the open ends of the latter.

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References Cited

UNITED STATES PATENTS

1,692,777	11/1928	Jewell	229—63
3,107,842	10/1963	Guilfoyle	229—62
3,285,407	11/1966	Abramson	206—57
3,334,805	8/1967	Halbach	229—62

WILLIAM T. DIXON, JR., *Primary Examiner.*

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