June 14, 1966 B. F. BRIESKE 3,256,127

METHOD FOR MAKING GROMMET BAGS

Original Filed Sept. 12, 1962

FIG. 1

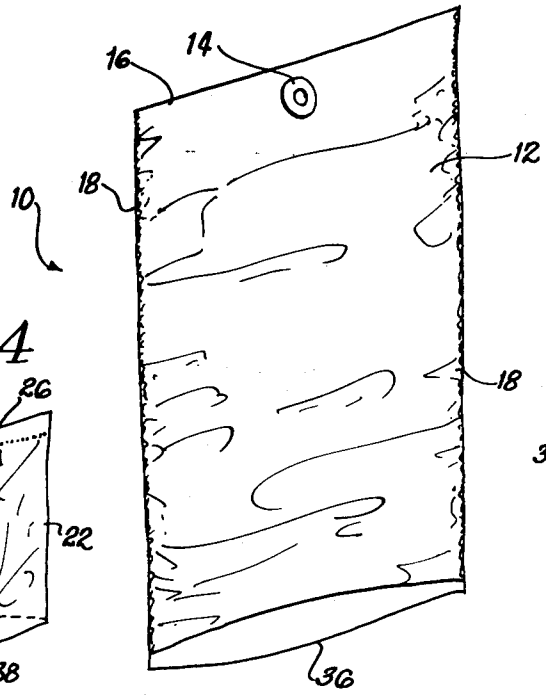
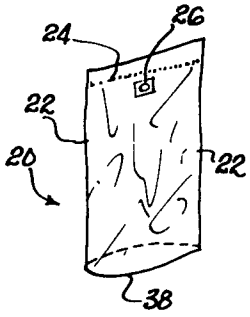


FIG. 4



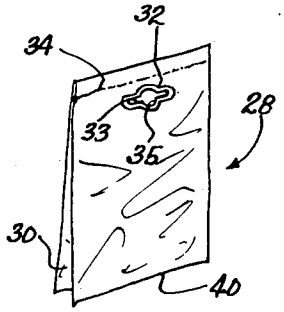


FIG. 5

FIG. 2

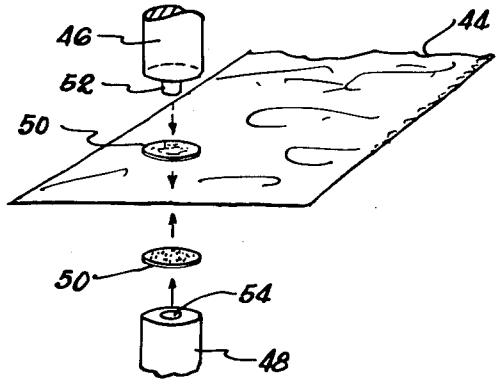
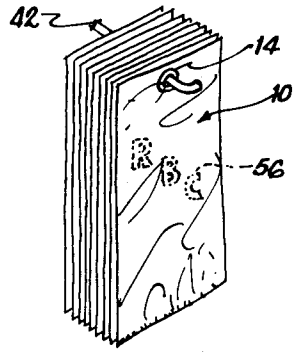


FIG. 3



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METHOD FOR MAKING GROMMET BAGS

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3 Claims. (Cl. 156—253)

This invention relates to containers adapted to hold various materials under a variety of conditions. The invention is particularly directed to bags or similar containers which are formed of polyethylene and which are provided with grommets whereby the bags can be effectively employed for rack merchandising and for similar uses.

This application is a division of applicant's copending application Serial No. 223,218, filed September 12, 1962, now Patent No. 3,208,660, issued September 28, 1965.

It is an established fact that the cost of packaging must be taken into consideration in determining profit which can be made in the merchandising of bags. It is, therefore, highly important in the packaging industry to provide bags and other containers which are economical in their manufacture. It is also important to provide bags which are capable of retaining the items therein over indefinite periods without danger of breaking or tearing of the bags. Finally, it is an important consideration in the packaging industry to provide bags which do not detract from or which increase the sales appeal of articles contained therein.

In the packaging industry, use has been made of polyethylene bags due to the fact that these bags are possessed of many desirable characteristics. Specifically, polyethylene is a relatively inexpensive material, and in most instances, has the necessary physical characteristics whereby most articles can be safely stored therein. Furthermore, the transparent nature of the polyethylene enables purchasers to view the contents, and, therefore, such bags are desirable from a sales appeal standpoint.

In many instances, it is desirable to provide bags which are suitable for rack merchandising. Specifically, merchants are interested in displaying goods on racks in order to make maximum utilization of available space and in order to locate the goods where they can be easily reached by the public. Where polyethylene bags have been employed for such rack merchandising, difficulties have been encountered due to the fact that the polyethylene tends to tear once holes are punched therein or when any metal members are attached thereto. These tears are generally caused by gauge variations in the polyethylene or when non-concentric metal grommets of the type which are deformed during application are encountered.

It is an object of this invention to provide a unique bag construction which overcomes the difficulties previously encountered in the preparation of bags for rack merchandising.

It is a more particular object of this invention to provide a unique grommet construction in combination with a polyethylene bag whereby a means is provided for employing polyethylene bags for rack merchandising.

It is a further object of this invention to provide a novel grommet bag construction which is extremely economical in its manufacture, and it is a related object of this invention to provide a method for economically manufacturing polyethylene grommet bags.

These and other objects of this invention will appear hereinafter and for purposes of illustration but not of limitation, specific embodiments of this invention are shown in the accompanying drawings in which:

FIGURE 1 is a perspective view of a grommet bag manufactured in accordance with this invention;

FIGURE 2 is an exploded perspective view illustrating one manner for producing the novel grommet bags;

FIGURE 3 is a perspective view of a group of grommet bags as they would appear when suspended on a merchandising rack; and,

FIGURES 4 and 5 illustrate alternative forms of bag constructions and grommet designs suitable for use in accordance with this invention.

The bag construction of this invention generally comprises a body portion formed of polyethylene and a grommet disposed at one end thereof. The grommet is formed of a pair of planar members which are located on opposite sides of the bag and which define an opening through the bag. The grommets are of a nature such that they can be heat sealed onto the bag.

The grommet bags of this invention can be formed of various commercially available types of polyethylene, including linear polyethylene and low, medium and high density polyethylene. In certain instances, the polyethylene can comprise elongated, seamless, tubular sections. Where such sections are employed, a heat seal is provided along the end of the bag which has the grommet adjacent thereto. In the normal course, the package manufacturer will market a bag of this type with an open end whereby the persons interested in using the bags can heat seal or otherwise close off this end when the goods are inserted in the bag. For display purposes, the grommet end of the bag would then become the top of the bag.

Polyethylene is also commercially available in continuous sheets, and, in such instances, the polyethylene enclosures can be formed by folding sheet sections to form one closed end then heat sealing the folded section along its lateral edges. Again, an open end is provided for insertion of goods and the grommet end of the bag will form the top of the bag after the goods have been inserted and the open end closed off.

In accordance with the procedure of this invention, a method for producing the grommet bags includes the steps of providing polyethylene material and heat sealing the material while leaving at least one end open as described. The grommet forming members are disposed on opposite sides of the bags, dies are brought into contact with these members, and the sealing of the members to the bags is effected while heat and pressure are applied. An opening may be formed in the grommets during the heat sealing operation or at any stage before or after this operation. It will be understood that in the appended claims, the steps referred to therein need not necessarily be carried out in the order presented. Thus, sealing along the edges of the polyethylene material could take place before, during or after attaching of the grommet.

In a preferred form of this invention, the grommet members are formed of bleached kraft paper having a layer of polyethylene thereon. It has been found that laminated or extruded coats of polyethylene on the bleached kraft paper provides a construction characterized by many advantages. Grommets formed of this combination are quite inexpensive and simple to manufacture. Handling of the grommets in the application to the bags is also quite simple and the layer of polyethylene thereon provides an extremely effective heat seal. Furthermore,

the bleached kraft paper grommets provide a very presentable package.

The accompanying drawings illustrate various forms which the instant invention may assume. FIGURE 1 illustrates a grommet bag **10** which comprises a body portion **12** of polyethylene and which includes a grommet **14** disposed at one end. In this instance, the bag **10** has been formed from a single ply sheet of polyethylene which has been folded over at the edge **16** and heat sealed at the lateral edges **18**.

FIGURE 4 illustrates a grommet bag **20** formed from a tubular section of polyethylene. In this bag construction, the lateral edges **22** are seamless edges while a heat seal is applied at **24** to close off one end of the bag. The grommet **26** is located adjacent this heat sealed end although it will be understood that it is also contemplated that grommets can be employed adjacent the seamless edges of the bag. In this connection, there may be instances where more than one grommet can advantageously be utilized. It will be noted that the outer periphery of the grommet **26** is non-circular and all such configurations are contemplated since they may be desirable for practical or esthetic reasons.

FIGURE 5 illustrates a grommet bag **28** which also is formed from a tubular section of polyethylene. In this instance, however, the seamless edges are provided with a pleat **30** in order to increase the capacity of the bag without increasing the lateral dimensions thereof. As in the previous instance, the grommet **32** is applied adjacent the heat seal **34** at the closed end of the bag. The grommet **32** defines an elongated opening **33** whereby it can be utilized in combination with similarly shaped rack members. The center portion **35** of the grommet **32** permits use in combination with the more conventional rod-like rack members. It will be appreciated that a large variety of designs for the planar grommets can be employed in accordance with this invention.

It will be noted that in the respective bags described, the ends **36**, **38** and **40** have been left open. The package manufacturer will ordinarily market the bags in this condition so that goods may be inserted therein prior to closing off the open ends. As shown in FIGURE 3 which illustrates the bag **10**, the grommeted end of the bag becomes the top of the bag when they are hung from a rack member **42**.

FIGURE 2 illustrates one possible method for manufacturing grommeted bags of the type described. In this schematic illustration, a double ply sheet **44** of polyethylene is deposited between upper and lower dies **46** and **48**. Grommet forming members **50** are located on each side of the sheets. The dies are adapted to be heated whereby the grommet forming members can be applied to the bag under heat and pressure.

The upper die **46** is provided with a male member **52** which is adapted to press through the grommet forming members **50** through the sheets **44** into female cavity **54** in a die member **48**. With this arrangement, the openings defined by the grommet members and through the bag are formed simultaneously with the heat sealing operation. As previously noted, heat sealing of the edges of the sheets **44** can be carried out before, after or during the heat sealing of the grommet members.

In the practice of this invention, grommet bags have been formed from tubular and single ply sheets of polyethylene. 40-pound bleached kraft paper provided with a layer of polyethylene has been used for the grommet forming members and as previously noted, this combination provides highly satisfactory results.

The present invention also contemplates the use of various other materials which can be employed alone as the grommet forming materials or in various combinations. Thus, it has been found that polyethylene coated metal foil or other laminated combinations having heat sealing characteristics and including foil, are highly suitable as grommets for polyethylene bags. Furthermore,

it is contemplated that combinations of various papers, metal foils or the like selected from the following list could be provided with extrusion coatings or laminations to provide heat sealing characteristics. It is also contemplated that materials in the following list possessed of heat sealing characteristics could be employed alone for the intended purposes.

Cellulose acetate	Natural kraft
Cryovac	Waxed paper
Pliofilm	Glassine
Polyester	Greaseproof paper
Polypropylene	Aluminum foil
Polystyrene	Cellophane
Saran	Mylar
Vinyl	Tissue
Nylon	Pouch stock
Fluorohalocarbon	Heat seal paper
Vegetable parchment	

As indicated above, the grommet bags of this invention and, in particular, the kraft paper-polyethylene grommet bag described, are characterized by many advantageous features. Lower cost in the acquisition of materials, in the manufacturing stages, and in equipment investment are among these features. The manufacturing has been found to be extremely trouble-free, and labor costs are accordingly materially reduced.

In addition to the many advantages in the production of the bags, these bags are considered highly desirable from a merchandising standpoint. The grommet bags of this invention are entirely adequate insofar as strength is concerned for use on display racks. Furthermore, the manufacturing procedures in no way damage the polyethylene body of the bags and in no way detract from the other advantageous features of polyethylene bags. The use of polyethylene bags presents a further advantage since written material can be disposed thereon, for example as shown at **56** in FIGURE 3. The use of this material further adds to the attractive nature of these bags.

It will be understood that various modifications may be made in the above described grommet bag and the methods for its manufacture which modifications provide the characteristics of this invention without departing from the spirit thereof particularly as defined in the following claims.

That which is claimed is:

1. A method for the manufacture of bags comprising the steps of providing separate thicknesses of a heat sealable material, heat sealing together open edges of said material to form a bag configuration, providing a pair of grommet forming members, positioning said members adjacent an edge of said bag, with one of said members being positioned on one exterior surface of the bag and the other member being positioned on the opposite exterior surface of the bag in opposed relationship to said one member, providing a pair of dies, one of said dies including a male element for forming an opening in said grommet forming members with the other die comprising a female die, heating at least one of said dies, bringing said dies together whereby said male element will form an opening through each of said grommet forming members and through the bag material, and whereby heat is applied simultaneously to heat seal each of said grommet forming members to said bag and to heat seal together the bag portions overyling the grommet forming members.

2. A method in accordance with claim **1** wherein said heat sealable materials comprise polyethylene and wherein said grommet forming members are formed of paper.

3. A method in accordance with claim **1** wherein one end of said bag is left open until after attachment of the grommet forming members whereby articles can be inserted into the bag and the bag can thereafter be closed by sealing said one end.

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