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PROTECTIVE SLEEVE FOR BAGGED PRODUCTS

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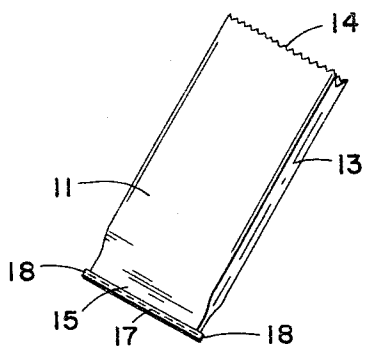


Fig. 1

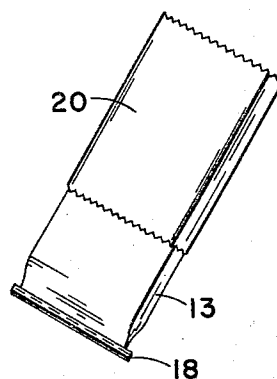


Fig. 2

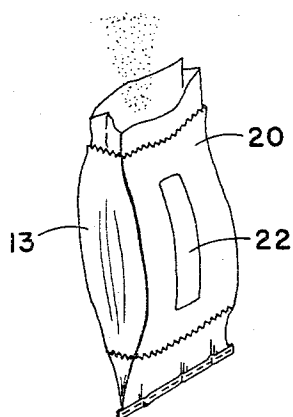


Fig. 3

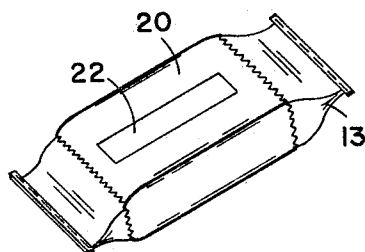


Fig. 4

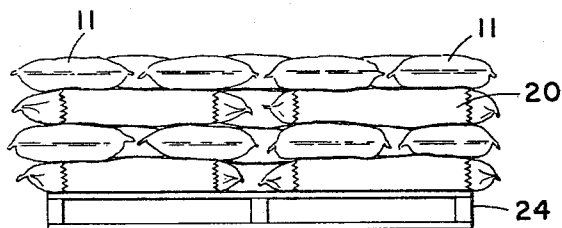


Fig. 5

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PROTECTIVE SLEEVE FOR BAGGED PRODUCTS
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This invention relates to a means for protecting the outer surface of bagged products and, in particular, to a sleeve that envelops a bagged product.

In a number of industries it is customary to market granular and powdered products in heavy paper bags. These bags have a tendency to collect a considerable amount of dirt during the time they travel from the manufacturer's establishment to their final destination at a retail store. Thus, the retailer is faced with either having to attempt to clean up the bagged products or place them on his counter in a soiled condition.

The sleeve of this invention overcomes the above-mentioned problems and further serves as an aid in transporting the bagged products to the retail store. One major function of this protective sleeve is to prevent unwanted dirt from soiling the encompassed bag. Any such dirt is instead lodged on the protective sleeve which is easily torn off by the merchandiser. The sleeve can also contain printed instructions aimed solely at the merchandiser and hence not suitable for application directly to the bag.

Of equal importance is a second function of the sleeve which comprises its use as a means to unitize a stack or pallet load of the bags. In most instances, a plurality of bags, each weighing between 10 to 100 pounds, are arranged in overlapping stacks and are lifted, transported, or handled as a unit. The sleeve of this invention is designed to permit an application of adhesive which interlocks a plurality of bags together without causing any of the adhesive to be applied directly to the bags themselves.

Thus, it is one object of this invention to provide a new and improved means for protecting the outer surface of bagged products.

Another object of this invention is to provide a new and improved means for providing printed instructions directed to the retailer which may be readily removed prior to placing the bagged products on the counter for sale.

Another object of this invention is to provide a new and improved method of unitizing a stack of bagged products into a more rigid pallet load.

Other objects and advantages of this invention will be apparent upon reading the following description in connection with the drawing in which:

FIG. 1 is a perspective view of an empty and flat bag;

FIG. 2 is a perspective view of a protective sleeve of this invention being placed on an empty bag;

FIG. 3 is a perspective view showing the filling of a bag with the sleeve of this invention enveloped thereabout;

FIG. 4 is a perspective view of a filled bag and sleeve in finished form; and

FIG. 5 is a perspective view of a unitized stack of bags embodying the sleeve of this invention arranged on a pallet and ready for shipping.

Referring to FIG. 1, an empty bag 11 is shown which is in a compressed flat shape. The bag has gussets 13 which are folded inwardly in accordion fashion. One end 14 of the bag is open, and the other end 15 is closed by a conventional V-shaped cover strip 17 which is stitched onto the bag. The ends 18 of the strip may extend slightly beyond the width of bag 11.

Quite frequently, the exterior surface of the bag is designed to perform specific and valuable functions but which adversely affect handling characteristics. This sur-

face may be proportionately less slip resistant depending on the degree of printing excellence required or type and extent of barrier properties required for the outer surface. A surface coating can be designed to offset the deleterious effect of humidity extremes on both bag strength and bagged contents. In particular, these requirements have been encountered in storage and shipment of consumer packages of lawn and garden products such as granular or powdered fertilizers, herbicides and combinations thereof. Bags having a polyethylene outer surface have been adapted for handling this problem. When used for these purposes the outer surface coating should be neither marred nor scuffed. However, these and similarly coated bags have a very slick surface which presents handling difficulties. Stacking is critical for the bags will slip and fall if arranged or permitted to move even slightly off-center. Invariably the bagged products are moved as individual units at one or more stages from the time the bags have been filled to the time they are placed on sale at the retail level. Even small bagged products weighing from 10-40 pounds may be accidentally dropped and broken open as a result of their slippery surfaces and flexibility of shape.

The protective sleeve 20 of FIGS. 2-5 may be formed from an embossed, extensible kraft paper which usually has a considerably rougher surface relative to that of the bag. Not only does this facilitate movement of the bagged products by hand, it also improves their stacking properties. The sleeve is formed from a rectangular sheet of paper which is folded to overlap two opposite edges. These edges are maintained in their overlapping relationship by a suitable adhesive.

The dimensions of sleeve 20 are critical with respect to its circumference. As the sleeve will normally first be formed and then slipped over an empty bag, the sleeve's width, when flat, should exceed the width of the bag when it is empty and flat. This is most readily accomplished by using bags which have gussets 13 that are folded inwardly. The sleeve, on the other hand, need not necessarily have gussets. Thus, the sleeve is wider than the empty flat bag by an amount approximately equaling that consumed by the inwardly folded gussets. Consequently, there is no difficulty in slipping sleeve 20 over an empty flat bag 11. However, as the ratio of the gusset to the width dimension of the flat bag is proportionately increased, the flat width of the sleeve must also become proportionately greater than the bag width when flat. A single gusset may be incorporated in the sleeve design which is calculated to provide a minimum inside sleeve width greater than the flat width of the bag but not to exceed the dimension of V-shaped strip 17 with extended ends 18. Otherwise, a non-gusseted sleeve might not be retained by strip ends 18 when the bag is empty.

Care is required to assure that the circumference of the sleeve is not so large that it will be loose when it is on a filled bag. Looseness will cause the sleeve to slip, permit foreign matter to enter between the sleeve and bag and the sleeve will be prone to tear when handled. Thus, sleeve 20 has a width which is greater than the width of a gusseted flat bag for a loose fit therewith, but is of such dimension as to closely envelop the bag when it is filled. The snugness of the fit between the sleeve and filled bag reduces the flexibility and lateral movement of the bagged product, thus aiding in the handling and shipping of the product.

The length of sleeve or the percentage of surface area of the bag which is covered by the sleeve is not critical. Ideally, the sleeve may envelop nearly all of the bag's surface area in order to obtain maximum benefits from the unique combination of the sleeve and bag. Thus, if the length of the sleeve is such that it covers nearly 95% of the filled bag's surface area, the bag's rigidity and load-

locking capacity will be near their peak. In addition, the sleeve will perform more effectively in preventing soiling and injury to the bag. However, the sleeve may cover as little as 40% of the filled bag's surface and still provide significant advantages over a like bag having no sleeve.

Once sleeve 20 is placed over an empty bag, the bag is ready to be filled with the product. Sleeve 20 will not accidentally slip off the empty bag 11 due to the extending ends 18 of the V-shaped strip 17. The bag is then filled with a product. After the bag is filled it is stitched shut and resembles the bag of FIG. 4. The gussets of the bag have expanded so that the filled bag is substantially oval in cross-section. Likewise, the sleeve has expanded and is now in snug contact about the bag.

If the filled bags are to be shipped in quantity they may be stacked in a manner similar to that of FIG. 5. Generally, stacks of this type are loaded on pallets and moved by hand carts or lift trucks to motor or rail carriers. Such movement will cause a stack to sway and break down if the bags are not carefully stacked and secured in some manner to each other. The protective sleeve of this invention provides an ideal means for utilizing the bags through the application of high shear, low tensile adhesive. The adhesive may be applied to a single surface of each sleeve when it is on a filled bag along a designated area such as strip 22. Placement of the adhesive along a substantial length of the sleeve will aid in unitizing the bags. In such a unit, many of the sleeves are in physical contact with four adjacent sleeves, two above and two below, and all of the sleeves are in contact with at least two adjacent sleeves. Very little of the slick surfaces of the bags are in contact with each other since the rough surfaces of sleeves 20 comprise most of the stacking surfaces. The result is a unitized stack of filled bags which has a minimum amount of sway or slippage.

Although the prior art has taught the direct application of adhesive to bags or on small paper inserts which lie between the bags, none of these devices also serves to protect the appearance of the bags' surfaces. Frequently, unprotected bags will become soiled from dirt and grease encountered during transit. Some of the adhesive will also remain on the bags and collect more dirt. In addition, the ink printing on the bags can be smeared from the bags rubbing against each other. Obviously, the retailer is not pleased about receiving soiled bagged products, an occurrence which is avoided by the sleeve of this invention, since he merely tears the sleeve off to display the unsoiled bagged products.

Special instructions for the retailer and not meaningful to the ultimate purchaser may also be printed on the removable sleeve. Storage and merchandising advice printed on the sleeve will receive more attention from the retailer than if printed on separate material. This feature can be particularly useful if the bagged product is to be exported under conditions where shipping instructions on the sleeve are in one language and purchaser instructions on the bag are in another language.

The use of an independent or non-integral sleeve also aids in the bagging of the product. If the sleeve were made in the form of a printed outer layer stitched on the bag, the combination could not be formed on conventional machinery. Normal multi-layer bag production uses tubular layers that are telescoped within each other, and fed in a continuous strip to a cutter for proper sizing. The result would merely be an extra layer on the bag stitched at both ends and not easily removable. Furthermore, the two printed layers in such a tubular arrangement would not maintain proper alignment and cuts

through some of the printing would occur. Likewise, an outer protective bag layer with one closed end and which is not stitched to the main bag would not have all of the advantages of the protective sleeve of this invention. Although such an outer independent bag would be held in place over the main filled bag, its closed end would always be in tight contact with the adjacent main bag's end and unwanted stress and tearing would result.

The paper used for forming sleeve 20 should be tough but yet readily torn by hand without exerting a great amount of effort. Thus, the retailer upon receiving a supply of protected bags simply tears off sleeves 20 by hand to display the unmarred bagged product.

Although only one embodiment of this invention has been illustrated and described, it will be apparent to those skilled in the art that modifications can be made without departing from the spirit of this invention and the scope of the appended claims.

I claim:

1. In combination with a flexible bagged product, a removable protective sleeve with a pair of unrestricted open ends and formed from a substantially rectangular sheet of tearable paper material, said sheet of paper material being overlapped only at two opposite edges with said two edges joined together, said protective sleeve closely enveloping an exterior surface area of said bagged product in an unbonded relationship therewith and covering said exterior surface within the range of 40-95% to a predetermined degree of tightness to reduce the flexibility of said bagged product.

2. A unitized pallet load of bagged products, each of said bagged products being in combination with a removable protective sleeve with a pair of unrestricted open ends and formed from a substantially rectangular sheet of tearable paper material, said sheet of paper material being overlapped only at two opposite edges with said two edges joined together, said protective sleeve closely enveloping an exterior surface area of said bagged product in an unbonded relationship therewith and covering said exterior surface within the range of 40-95% to a predetermined degree of tightness to reduce the flexibility of said bagged product, said bagged products being stacked in a plurality of layers with a portion of the sleeve of each bag being in adhesive contact with at least one sleeve in an adjacent layer.

3. The combination of claim 1 in which said protective sleeve has a visibly designated longitudinal area for application of an adhesive material.

4. The combination of claim 3 in which said protective sleeve is formed from a paper material having a relatively rough, slip-resistant surface.

5. The combination of claim 4 in which said paper material comprises an embossed extensible kraft paper.

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