Dec. 19, 1961 H. MORAN 3,013,597

DRAW-STRING BAG

Filed March 15, 1959

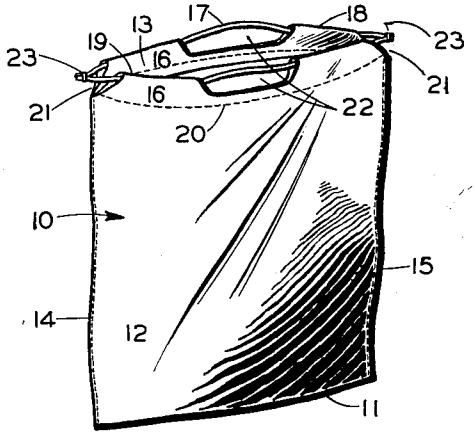


FIG. 1

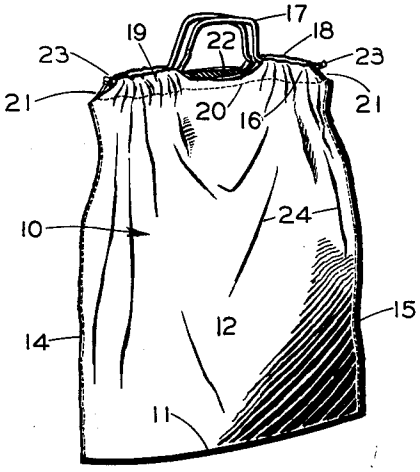


FIG. 2

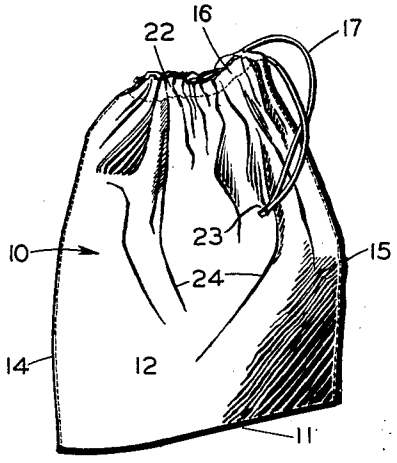


FIG. 3

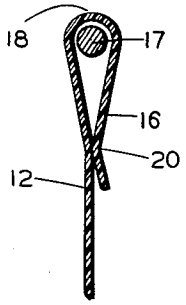


FIG. 4

INVENTOR
HAMILTON MORAN

BY Vernon A. Gronstad
ATTORNEY

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DRAW-STRING BAG

Hamilton Moran, Minneapolis, Minn., assignor, by mesne assignments, to Standard Packaging Corporation, New York, N.Y.

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This invention relates to a new and useful draw string bag in which the draw cord is operable from a position above the mid-point of the top edge of the bag or from either side.

Prior art draw string bags utilize a draw cord which is strung through grommets along the sides of the bag or through a continuous hem at the top. The bag is closed by pulling the cord to one side of the top or mouth so that the material gathers to closed position at the side from which the cord is pulled. As such the cord protrudes from one side and the bag tends to maintain an oblique position when hung from an object or carried by hand. Furthermore, when the bag is open the draw cord cannot conveniently be used to carry or suspend it.

In the instant invention however, the bag is provided with a hand-hole approximately at the mid-point of the top or open end with the draw cord strung across this area so that one's fingers or a supporting protuberance may be inserted under the cord to support or carry the bag. The bag being centrally supported will, of course, hang in balanced symmetry. When it is desired to close the bag the draw cord is pulled upwards thereby increasing the size of the loop and gathering both sides of the bag to the center. The cord may also be pulled from either side so that the bag will close in conventional manner by gathering the bag material to one side. The draw cord is thus utilizable as a looped supporting member irrespective of whether the bag is open, closed from the center or closed by pulling the cord to one side.

It is therefore an object of this invention to provide a new and useful draw string bag that has a centrally disposed hand-hole or opening to facilitate handling.

It is a further object of this invention to provide a new and useful draw string bag in which the draw cord may be raised centrally or pulled to one side to close the bag.

It is still a further object of this invention to provide a draw string bag which may be closed by a draw cord which draws the bag inwardly toward the center thereof.

Other and further objects of the invention are thus inherent and apparent in the apparatus as described, pictured and claimed. In the accomplishment of the foregoing and related ends, this invention comprises the features hereinafter fully described and pointed out in the claims.

This invention will be described with reference to the figures of the drawings in which corresponding numerals correspond to the same parts and in which:

FIG. 1 is a perspective view of the draw string bag in opened position;

FIG. 2 is a perspective view of the draw string bag when partially closed by centrally raising the draw string;

FIG. 3 is a perspective view of the draw string bag when partially closed by drawing the string out to one side thereof; and

FIG. 4 is a cross sectional view of the hem at the top of the bag enclosing the draw string.

With reference now to the drawings, the numeral **10** generally designates the draw string bag which may be made of paper, fibrous materials, textile fabrics or thermoplastics. Because of strength, ease of manufacture and handling it was found preferable to produce the instant bag from heat sealable thermoplastic material. In this invention it was found that the preferred means of manufacturing consists of folding a web of polyethylene

upon itself along a center line **11** to form two superimposed sheets **12** and **13** of equal size. To form the bag, sheets **12** and **13** are heat sealed together along edges **14** and **15** and cut from the web. In the event a material other than thermoplastic is used, the folded line **11** and sides of the superimposed sheets **14** and **15** may be stitched or otherwise suitably joined together to form bag **10**.

A hem or tubular raceway **16** is formed at the top of the bag in which the draw cord **17** is disposed for slidable movement within the raceway. The hem is formed by looping the top portion of the sheets **12** and **13** down along creases or folds **18** and **19** and sealing the respective hem to the inner surface of sheets **12** and **13** along a transverse seal line **20** as best shown in FIGURE 4. In the event material other than plastic is used the same procedure would be followed except that the hem would be stitched or otherwise secured to the sheets along line **20**.

Both ends of the hem or tubular raceway **16** have a quarter round cutout **21** which provides an area in which to position the outer ends of the draw cord **17**. As the draw cord is tightened the outer ends gather the hem inwardly to close the bag as hereinafter explained. The quarter rounds **21** are cut out from the upper edges of each of the sheets **12** and **13**. In addition to cut-out **21** a pair of hand-hole sections **22** in the form of an elongated semi-circle are also cut out of the hem **16** at the approximate center thereof. Hand holes **22** form a convenient central handling area by providing an opening below the draw cord **17** through which one's hand or other supporting object may be extended.

The draw cord **17** is composed of two cords of approximately equal length. In the event thermoplastic material is used a centerfolded web of the material is fed through a bag making machine. The sheets at the open ends of the centerfolded web are looped over along their edges to form hem **16** as hereinabove explained and the cut outs **21** and hand hole **22** are cut from the web. Draw cords **17** are then strung through the hem and the hem is sealed to enclose the draw cords. The leading edge **14** of the bag, as it passes through the machine, is then sealed simultaneously with the cutting and stapling of the cords **17**. The cords are stapled together by staples **23** within the leading quarter round cut out section **21**. The web is then moved forward a distance equivalent to the desired width of the bag and the trailing edge **13** is sealed, the cords cut and stapled in the same manner as in the case of the leading edge. Before the trailing edge of the cords **17** are cut and stapled the cords **17** are clamped at a point near the center of hand hole **22** to prevent rearward movement of the leading end of the cords. A portion of the machine behind the clamp is moved downward a predetermined distance pulling the trailing portion of the cord with it to insure that the cord **17** will be strung out and cut at the proper length. The downward movement of the clamp allows cord **17** to be strung to a length equal to or greater than the width of sheets **12** and **13** so that the bag mouth will not be restricted by the cord. Thus, when in open position, the mouth of the bag is unhampered by the draw cord **17** and bag **10** can be opened to its full width.

If it is desired a single cord may be substituted for the stapled draw string. This may be threaded along the entire length of hem **16** and the ends tied together at the side of the bag.

When it is desired to close the bag the fingers are inserted below draw cord **17** in the hand hole **22** so that the cord may be grasped and pulled upward. As the cord is pulled upward, the outer ends thereof move inwardly toward hand hole **22** gathering the bag along the folds such as **24** and pulling it inwardly to the closed position where the cord may be tied to insure that the bag remains

closed. The bag also may be closed by grasping either end of the cord 17 and pulling it to one side of the bag so that it draws closed as shown in FIGURE 3. It is to be noted that the cord 17 forms a convenient loop to suspend the bag irrespective of whether the bag is center closed or closed by drawing the cord to one side.

It is to be understood that specific embodiments described above are given by way of example only and the invention is to be construed in accordance with the appended claims.

I claim:

1. A bag having a tubular raceway around the periphery of the open end thereof, said raceway having a quarter round cut out at each edge and a pair of oppositely disposed recessed sections positioned midway along the length thereof, and a draw cord strung over said recessed sections for forming a handle therewith and through said raceway and quarter round cut outs for drawing the bag to closed position.

2. A bag having superimposed sheets joined together along three sides and open at the top, a tubular raceway along the top of each sheet having a cut out portion at each end and a centrally positioned recessed section, and a draw cord disposed within the raceway extending through the recessed section, the ends of said cord positioned in the cut out portions for gathering the raceway centrally inward to closed position upon actuation of the draw cord.

3. A draw string bag comprised of a sheet of centerfolded thermoplastic material joined along two edges and open at the top edge; a hem formed by looping the top edge of said sheet downward and joining the same to the inner surface of said sheet, said hem having a quarter round cut out portion at each end thereof and a pair of centrally disposed recessed portions; a draw cord strung through said hem and joined together in the quarter round sections to form a continuous loop, said cord being strung over the centrally disposed recessed portion forming a handle therewith for carrying said bag and for gathering said hem inward to closed position upon manual actuation of said cord.

4. A draw string bag comprised of two superimposed sheets of material joined together along their lower edges, the side of said sheets joined together to leave an open top, a tubular raceway formed by looping the top edge of the sheets downwardly and attaching the same to the inner surface of the unlooped portions of the sheets, said raceway having a cut out portion at each end thereof, said raceway further having oppositely disposed hand holes, a draw cord disposed within said raceway forming a continuous loop around the top of said bag, said cord extending across the oppositely disposed hand holes to form a carrying handle by gathering said raceway and a portion of said bag inwardly to closed position.

5. A draw string bag comprising two sheets of material superimposed one upon the other, said sheets being joined along all but one of their edges to provide one open end, a raceway formed around the mouth of said bag, said raceway having oppositely disposed hand holes formed therein, and a continuous draw string positioned within said raceway extending across the hand holes therein to provide a carrying handle.

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