MESH BAG AND METHOD OF MAKING THE SAME

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The present invention relates to improvements in open mesh bags and a method of making the same; it relates, more particularly, to an open mesh bag having reinforced seams and a method of forming such seams.

An object of the present invention is to provide an open mesh bag having seams of increased strength and a method of forming such seams. It has been found that open mesh bags incorporating seams made in accordance with the present invention have sufficient strength to carry loads of 50 lbs. or more safely and thus, can be used for bulk packaging. Previously, overstitched open mesh bags were seldom used for loads greater than 15 lbs. because of the weakness of the seams.

Other objects and advantages of the present invention will be apparent and best understood from the following description and the accompanying drawings, in which:

Fig. 1 is a perspective view of apparatus suitable for carrying out the present invention;

Fig. 2 is a perspective view of an open mesh bag embodying the present invention;

Fig. 3 is a perspective view of a portion of an open mesh bag and the seam embodying the invention and is on an enlarged scale;

Fig. 4 is a plan view, on an enlarged scale, illustrating a portion of a seam embodying the present invention; and

Fig. 5 is a section view taken along the line 5-5 of Fig. 4.

Referring to the drawings in detail, there is a bag 10 of an open mesh material. The open mesh material from which the bag 10 is formed consists of strands or cords 11 which may be made of twisted paper, cotton or other suitable material. In such an open mesh bag, the interstices, as shown in Figs. 3 and 4 of the drawings, have a greater area than the woven strands or cords.

Ordinarily, in weaving the open mesh material, selvages extend along the sides of the material and the selvage edges of the material are not subject to ravelling. However, in forming a bag, a length of appropriate size is cut from the open mesh material and the cutting leaves two raw edges extending across the width of the material at which points the cords are free and may unravel. The bag is formed by overlapping or folding the cut length of material so that the two cut edges are superimposed in relation to each other along one side of the bag. If the bag is formed from the full width of the material, the selvage edges will be located at the mouth and the bottom of the bag. However, if the width of the material is greater than required for forming the bag, the material may also be slit or trimmed so that when the material is folded, cut edges will extend along the bottom of the bag as well as the side.

The next step in forming the bag is to secure the superimposed edges of the open mesh material along the side and bottom of the bag together in such a way that the cords 11 cannot unravel and so that the free ends of the cords will not protrude. This is accomplished by securing the superimposed edges of the material along the side and bottom of the bag together by a seam 12.

As shown in Fig. 1, the seam 12 is formed by feeding the superimposed edges of the material through a guide 13 in the form of a cone which rolls the edges of the material tightly around a filler cord 14 which passes through the guide. It is preferable to coat the filler cord with a quick drying adhesive prior to feeding the filler cord into the guide 13. Upon emerging from the guide 13, the edges of the open mesh material are tightly rolled around the filler cord which may be coated with an adhesive as previously mentioned. The rolled edges of the open mesh material are then sewn by an overstitch sewing machine 15 which binds the rolled edges to the filler cord with a thread 16. As is shown best in Fig. 4, the thread 16 encircles the outside of the rolled edges of the open mesh material and effectively holds the ends of the cords against unraveling. This also produces a smooth seam from which the free ends of the cords do not protrude.

The strength and appearance of the seam is improved by treatment of the filler cord with a quick setting adhesive which will bind the material to the filler cord and prevent the free ends of the cords from protruding. To coat or treat the filler cord with an adhesive, the filler cord may be passed through a bath 17 of a quick setting adhesive such as liquid latex or other suitable adhesive immediately before the filler cord enters the guide 13. As shown in Fig. 1, this may be accomplished by passing the filler cord beneath a roller 18 which is mounted in a container 19 containing the adhesive 17. The treated filler cord then passes through guides 20 and 21 and into the guide 13 before the adhesive has set. When the treated filler cord passes through the guides, the ends of the cords forming the open mesh material are pressed into contact with the adhesive and bound to the filler cord thereby.

The finished seam, as shown best in Figs. 4 and 5, consists of the filler cord around which the edges of the open mesh material are tightly rolled and held firmly in place by the overstitching thread. When an adhesive is applied to the filler cord, the adhesive also serves to bind the edges of the open mesh material to the filler cord.

Due to the manner in which the edges of the cloth are held in place, particularly where the cut edges of the open mesh material are joined, the tendency of the open mesh material to unravel is eliminated and the strength of the seam is greatly increased. In addition, the cut ends of the cords do not protrude from the seam and a smooth strong seam is obtained.

It will be understood that various changes and modifications may be made in the embodiment of the invention illustrated and described herein without departing from the scope of the invention as defined by the following claims.

1 claim:

1. In a bag formed from a woven strand open mesh material having interstices of greater area than the strands, a seam extending along one side and one end of the bag, said seam comprising a filler cord, two edges of a woven strand open mesh material superimposed on each other and rolled around said filler cord and overstitching encircling the rolled edges of the open mesh material and the filler cord, said overstitching holding the strands forming said rolled edges in close contact with the filler cord.

2. In a bag formed from a woven strand open mesh material having interstices of greater area than the strands, a seam extending along one side and one end of the bag, said seam comprising a filler cord, a coating of adhesive on said filler cord, two edges of an open strand open mesh material superimposed on each other and rolled around said filler cord, said rolled edges being in contact with the adhesive coating on said filler cord,
3. An open mesh draw string bag comprising a bag body formed from a folded piece of a woven strand open mesh material having interstices of greater area than the strands, said body having superimposed edges of said material extending along each end and one side thereof and a seam securing said superimposed edges together along said one side and one end of the bag body, said seam comprising a filler cord with the superimposed edges of the bag body being rolled therearound, a coating of adhesive on said filler cord and binding the strands forming the open mesh material to the filler cord and overstitching encircling the filler cord and the rolled edges of the open strand material, said overstitching holding the strands forming the open mesh material in close contact with the filler cord and the adhesive coating thereon.

References Cited in the file of this patent

UNITED STATES PATENTS

<table>
<thead>
<tr>
<th>Patent No.</th>
<th>Inventor(s)</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,824,534</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,705,517</td>
<td>Elsas</td>
<td>Apr. 5, 1955</td>
</tr>
<tr>
<td>1,109,515</td>
<td>Dahl</td>
<td>Sept. 1, 1914</td>
</tr>
<tr>
<td>2,144,154</td>
<td>Hockman</td>
<td>Jan. 17, 1939</td>
</tr>
<tr>
<td>2,255,845</td>
<td>Goldwyn</td>
<td>Sept. 16, 1941</td>
</tr>
<tr>
<td>2,416,747</td>
<td>Geimer</td>
<td>Mar. 4, 1947</td>
</tr>
<tr>
<td>255,993</td>
<td>Hosmer et al.</td>
<td>Apr. 4, 1882</td>
</tr>
</tbody>
</table>