

March 4, 1947.

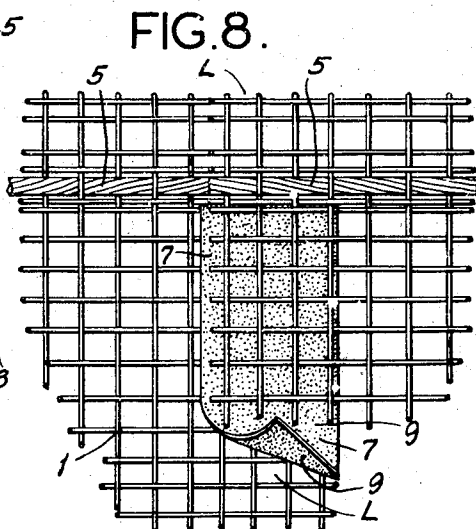
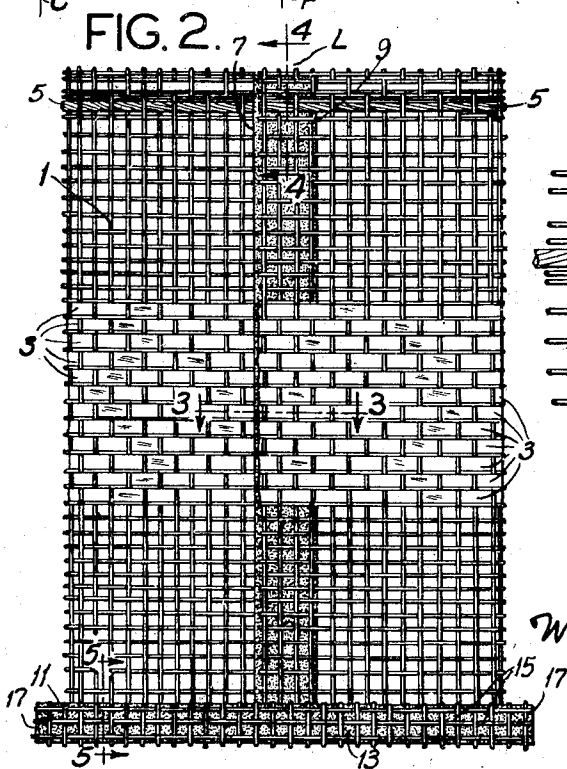
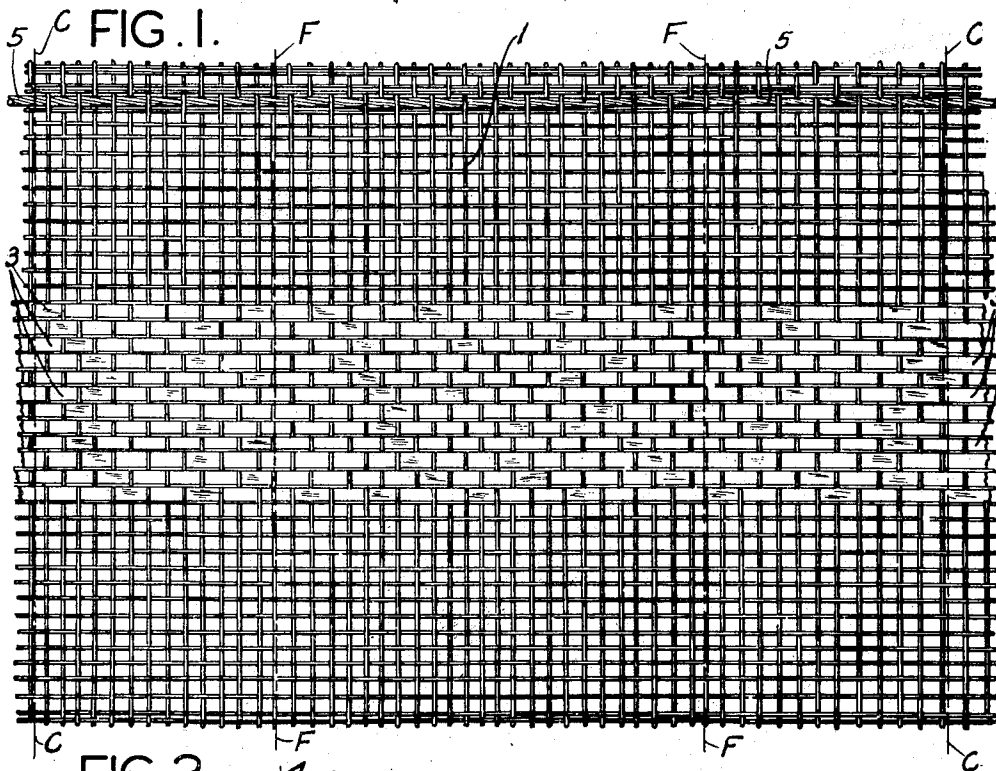
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2,416,747

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2 Sheets-Sheet 1



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FIG. 6.

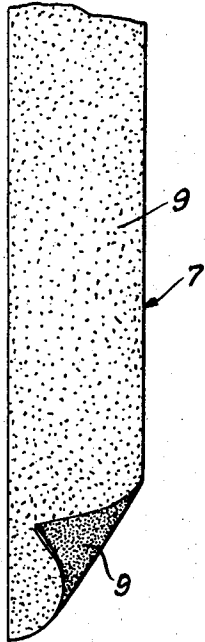


FIG. 3.

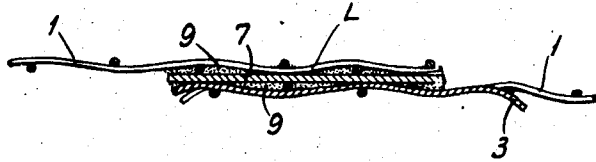


FIG. 4.

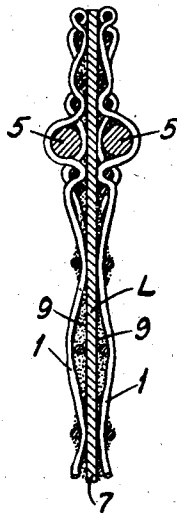


FIG. 5.

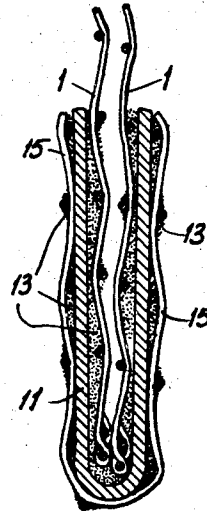
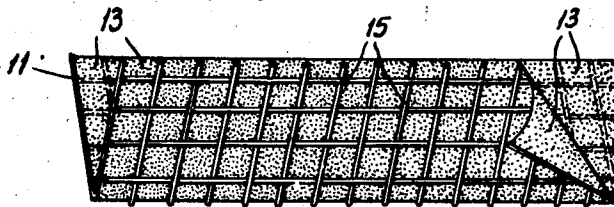


FIG. 7.



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UNITED STATES PATENT OFFICE

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BAG

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4 Claims. (Cl. 150—1)

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This invention relates to bags, and with regard to certain more specific features to pasted-seam bags of the open-mesh variety.

Among the several objects of the invention may be noted the provision of a low-cost, open-mesh bag in which the full-strength, and more, of the open-mesh fabric may be developed in pasted seams; and the provision of a bag of the class described in which the seams are substantially guarded against damaging abrasion. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which are illustrated several of various possible embodiments of the invention,

Fig. 1 is a plan view of a web of open-mesh fabric from which the new bags are constructed;

Fig. 2 is a view similar to Fig. 1 but showing a bag made from the web, including its two seams;

Fig. 3 is an enlarged diagrammatic section taken on line 3—3 of Fig. 2;

Fig. 4 is an enlarged diagrammatic section taken on line 4—4 of Fig. 2;

Fig. 5 is an enlarged diagrammatic section taken on line 5—5 of Fig. 2;

Fig. 6 is a detail view of a section of a splicing strip used in the new seam;

Fig. 7 is an enlarged detail view of a new form of cover strip used in another part of the seam of the bag; and

Fig. 8 is a fragmentary detail view showing an alternative form of the invention.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Open-mesh fabric is desirable for use as a bag-forming material. Heretofore it has ordinarily been made up into bags by using sewn seams. Pasted seams for this material have not been satisfactory because of the large interstices in the fabric. In these most of the adhesive was ineffective to make a juncture between the layers of fabric. The interstices, as shown in the drawings, having a greater area than the woven elements of the fabric, present special difficulties in providing a satisfactory seam for bags. The present invention overcomes the above difficulties.

Referring now more particularly to Fig. 1, there

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is shown a web of material 1 consisting of the open-mesh fabric. By open-mesh fabric is meant, as suggested above, fabric made of strands woven with interstices larger than the fabric strands, for example of a quarter of an inch or so across. A central belt of this fabric has ribbons of paper 3 woven in with the open-mesh portion. The band in which the ribbons of paper are woven forms a decorative and printing surface, besides having the functions hereinafter described. Near the upper selvage of the web is an interwoven draw string 5.

The web of Fig. 1 may be cut at lines such as indicated at C and folded at lines such as indicated at F. The lines C and F are so arranged that a lapped region occurs at the margins, as indicated at L in Fig. 2. In order to join this lapped region adhesively I provide a narrow splicing strip such as shown at 7 in Fig. 6, preferably made of paper like cardboard. By narrow is meant that the strip is very much longer than wide. The drawings show an optimum number (four) longitudinal strands adhered to one side of the splicing strip 7. This relatively low number provides sufficient strength for the average produce bag and six would seldom be necessary. On both surfaces of this strip is provided an adhesive 9, which is preferably of the thermo-plastic variety, although it may be of the water-soluble variety. Prior to lapping the marginal portions at L, a length of this prepared splicing strip is inserted between the overlapped portions of fabric. Then heat and pressure are applied, whereupon the marginal portions of the open-weave material attach themselves to the splicing strip. Upon cooling, the adhesive solidifies to make a joint whose strength is in a proportion to the amount of marginal overlap employed. The strength may be made equal to 100 per cent or more of the strength of the remainder of the open-mesh fabric.

If water-soluble adhesive is used on the splicing strip, then moistening is required in making application to the seam.

It will be seen from Fig. 3 that in the region of the band of interwoven paper strips 3, that these, as well as the weave of the fabric per se become attached to the splicing strip 7. This considerably increases the girthwise strength of the bag because the paper strips provide a large area of attachment to the seam. It is of course possible to increase strength due to this feature by increasing the extent of use of the interwoven paper strips along the seam.

As is clear from Fig. 4, in addition to the open-

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mesh fabric being joined to the splicing strip, the draw cord 5 likewise becomes attached. Hence the ends of the draw cord are anchored without the use of a knot.

In addition to the side seam above described, it is necessary to form a bottom closure. This is accomplished by means of the specially prepared cover strip, as shown in Figs. 2, 5 and 7. This cover strip comprises a folded sheet of paper, cardboard or the like 11, also covered with adhesive 13 on both sides. This adhesive may be of the same variety as adhesive 9. The adhesive on the outside of the strip 11 is used for attaching a covering of open-mesh fabric 15 which is of the same outline and folded like the paper strip 11. The adhesive on the inside of this strip is used for attaching it as a cover strip over the end of the bag, as indicated in Fig. 2. The composite cover strip 11, 13, 15 is preferably longer than the width of the bag so that beyond the bag edges opposite sides will attach themselves to one another (see 17 in Fig. 2).

An advantage of the form of the particular cover strip described is that the over-lying open-mesh fabric 15 prevents abrasion of the paper or other material of which the cover strip 11 is formed. This is likewise true of the outer layer of open-mesh fabric on the splicing strip 7 (see Fig. 2).

In Fig. 8 is shown a modification in which the splicing strip 7 falls short of the end of the bag by an extent that attachment therewith is avoided by the end of the draw cord 5. This leaves the ends of the draw cord loose for pulling up and closing the mouth of the bag and thereafter tying them.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. In woven strand open-mesh fabric bags having interstices of greater area than the strands, lapped margins of said type of fabric, a paper-type splicing strip between said lapped margins, adhesive on both sides of the splicing strip and attaching the fabric strands thereto,

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and paper ribbons interwoven with at least a portion of the margin of said open-mesh fabric and attached to said splicing strip by means of said adhesive.

2. A woven strand bag comprising open-mesh fabric having lapped marginal portions forming a side seam, the interstices between the woven strands being of greater area than the strands, a paper-type splicing strip sandwiched between said lapped margins, an adhesive connecting said splicing strip on opposite sides thereof with the marginal portions of the fabric, a folded paper-type cover strip forming an end seam covering the end of the bag, and adhesive on both sides of said cover strip, the adhesive on its inside attaching it to the end of the bag, and a folded strip of open-mesh fabric attached by the adhesive on the outside of the cover strip.

3. An end seam for woven strand open-mesh fabric bags the interstices between the woven strands being of greater area than the strands, comprising a folded paper cover strip enclosing a bag end, adhesive attaching the inside of said paper cover strip with said bag end, open-mesh fabric covering said cover strip, and adhesive on the outside of the cover strip attaching thereto said last-named open-mesh fabric.

4. A bag comprising a body portion of woven strand open-mesh material, the interstices of said material being of greater area than the strands, the margins of said body portion being lapped with a splicing strip sandwiched therebetween to provide a side seam, said strip extending substantially the full length of said seam and comprising a narrow paper-type strip having adhesive on both sides thereof securing the strands of the lapped margins of the body portion to the opposite sides of the strip.

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