April 27, 1937. W. E. SACKNER ET AL 2,078,414

OPEN MESH BAG

Filed Oct. 21, 1936

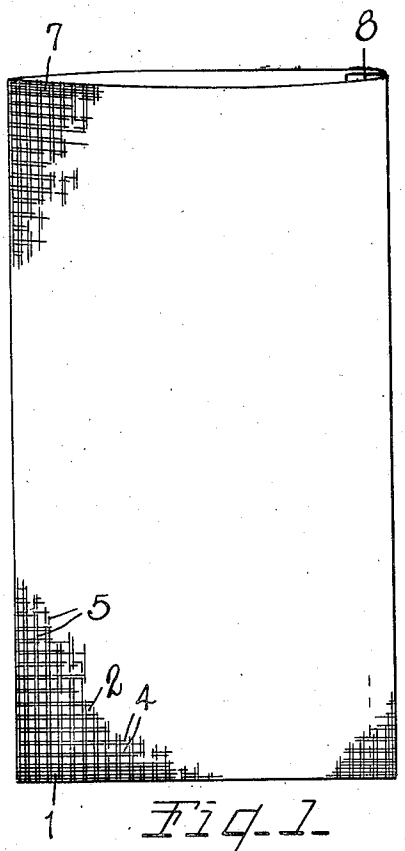


Fig. 1

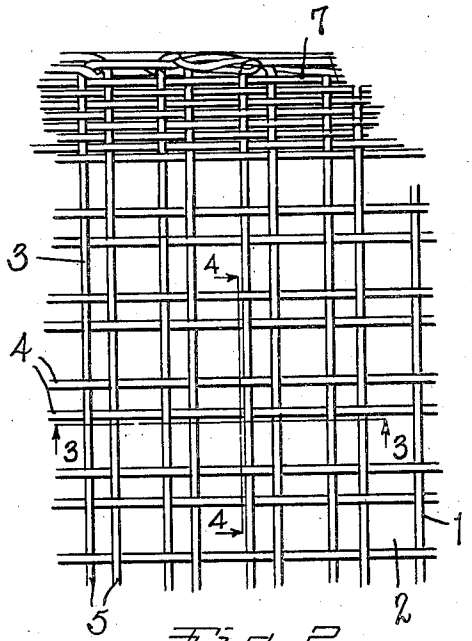


Fig. 2

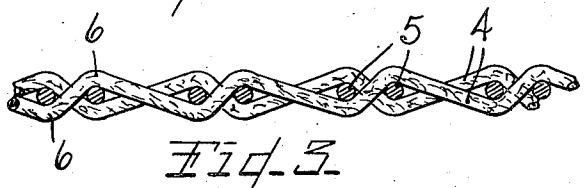


Fig. 3

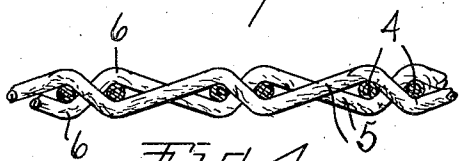


Fig. 4

INVENTORS

Wade E. Sackner

John E. Millett

BY Earl & Chappell

ATTORNEYS.

Patented Apr. 27, 1937 2,078,414

UNITED STATES PATENT OFFICE

2,078,414

OPEN MESH BAG

Wade E. Sackner and John E. Millett,
Grand Rapids, Mich.

Application October 21, 1936, Serial No. 106,744

2 Claims. (Cl. 139—389)

This invention relates to open mesh bags for produce such as onions, potatoes or the like and particularly to such bags made from twisted paper cords or strands interwoven together. In making such bags, it is essential to have sufficient strength to withstand strains imposed by shipping and handling and it is likewise desirable to have large enough openings between meshes so that the produce in the bag can be viewed with ease. Such bags have been made of single strands of interwoven twisted paper cord, but in order to obtain the desired strength it is necessary to have the meshes closed up so as to interfere with the viewing of the product. Leno weave bags have been made, but such bags are not satisfactory because the spacing between the single strands cannot be wide enough while maintaining the desired strength. In the bags made from single strands woven as a mesh, considerable difficulty is experienced in use because the strands tend to move along one another and become displaced.

The objects of this invention are:

First, to produce a new and improved bag of the type referred to in which the difficulties above mentioned are overcome and in which a sufficiently wide mesh may be had for viewing the produce in the bag.

Second, to provide such a bag in which the strands of paper are so disposed as to provide relatively large meshes without sacrificing strength.

Third, to produce such a bag in which the strands are so arranged that the displacement or sliding thereof is effectively prevented.

Fourth, to provide a method for producing fabric for such bags which will simply, inexpensively and effectively produce a bag of the desired type.

Further objects and advantages pertaining to details and economies of construction and operation will definitely appear from the description to follow. A preferred embodiment of our invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view of a bag made in accordance with our invention.

Fig. 2 is a detailed view showing the arrangement of the warp and weft strands in the fabric of the bag.

Fig. 3 is a detail sectional view taken on line 3—3 of Fig. 2.

Fig. 4 is a detail sectional view taken on line 4—4 of Fig. 2.

In the drawing, the bag 1 is of an open mesh type having the openings 2 through which produce is to be viewed. The fabric of the bag is made up of a plurality of twisted paper strands. The paper employed is of such weight that these strands or cords are about twenty-eight thousandths of an inch in diameter and we have found that with such cord the bag can be made inexpensively and of sufficient strength. The strands 3 are arranged as shown in Fig. 2. Warp strands 4 are disposed in pairs. The pairs are spaced apart and the individual strands of each pair are spaced relatively close together. In a very satisfactory arrangement the pairs of strands are spaced apart about one-fourth of an inch and the individual strands of each pair are spaced apart slightly less than one-eighth of an inch.

In setting up a loom, the warp threads 4 are set up in pairs as shown and the individual strands of each pair are set up to fall in opposite sheds of the loom. The weft strands 5 in the material are arranged substantially identically with the warp strands. That is to say, they are in pairs, the pairs being spaced about one-fourth of an inch apart in a very satisfactory bag and the individual strands of each pair being spaced apart slightly less than one-eighth of an inch. The individual strands of each pair are on different sheds of fabric as will be noted from reference to Fig. 2.

In weaving the fabric, the weft strands 5 are woven into position and the loom is operated to change the shed and a second weft strand is woven in place. Both of the weft strands 5 of each pair are woven on a single take-up pick of the loom. In other words, the loom picks twice and then takes up or advances the warp ahead once, so that the take up pulls the warp ahead only after every other pick of the loom.

It will be observed that in carrying out this method of weaving two weft strands in a single take-up pick, the weft strands 5 will be relatively close together and that the changing of the shed with the two weft strands close together tends to kink or deform the warp strands 4 as is shown at 6 in Fig. 3. The paper strand or cord, while not entirely inelastic, is sufficiently moldable that the deformation due to the close spacing of the individual strands of the pair leaves the kink or deformation in the strand. Similarly, it will be noted by reference to Fig. 4 that the weft strands are deformed by the operation of changing the shed in weaving. This is extremely advantageous in that the kinking of each strand at its place of

crossing each other strand tends to prevent the cross strands sliding longitudinally on the other strands, so that the meshes remain open throughout the life of the bag. This could not be accomplished with ordinary burlap, and it is essential that a paper cord which is not completely elastic be used. The resultant fabric which has the individual strands of each pair of warp strands in different sheds and has the individual strands of each pair of weft strands in opposite sheds may be made simply and easily on a standard loom and it has not been considered necessary to here illustrate the loom.

The finished material which has at the top, as shown at 7, a series of substantially solid weaving, is cut in suitable lengths and the edges of the pieces are stitched together as at 8 to form the finished bag 1.

We have shown our improved bag in the embodiment preferred by us and wish to claim the same broadly and specifically, as pointed out in the appended claims.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. An open mesh bag for produce or the like composed of interwoven twisted paper warp and weft strands of substantially .028 inch diameter disposed in spaced apart pairs with the individual strands of each pair relatively close together with the individual strands of each pair of warp strands in opposite sheds and the individual strands of each pair of weft strands on opposite sheds, the strands each being kinked at its place of crossing of each other strand.

2. An open mesh bag for produce or the like composed of interwoven twisted paper warp and weft strands disposed in spaced apart pairs with the individual strands of each pair relatively close together with the individual strands of each pair of warp strands in opposite sheds and the individual strands of each pair of weft strands on opposite sheds, the strands each being kinked at its place of crossing of each other strand.

WADE E. SACKNER.
JOHN E. MILLETT.