March 9, 1926. 1,576,191

W. O. JELLEME

BAG, WOVEN FABRIC, AND METHOD OF MAKING THEM

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Fig 6



Fig 5

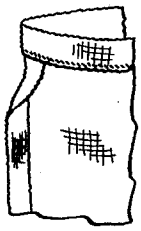


Fig 1

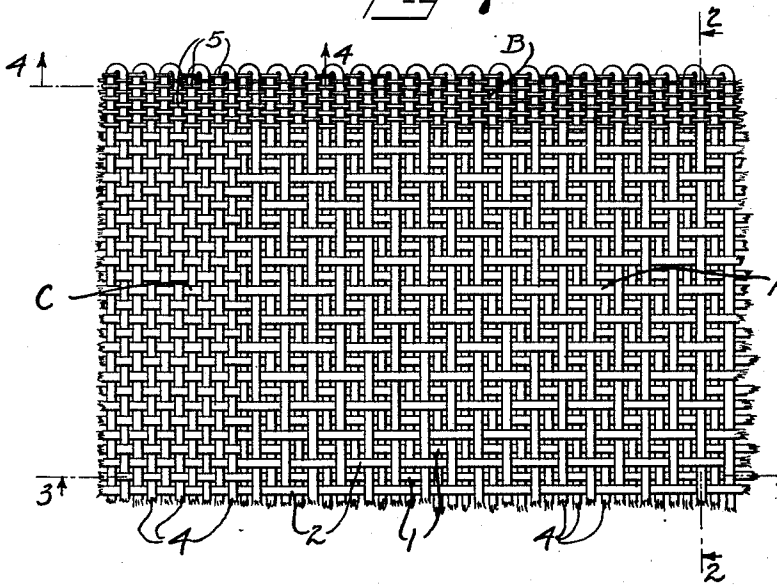


Fig 2

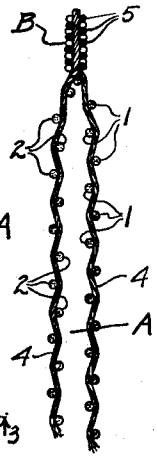


Fig 3

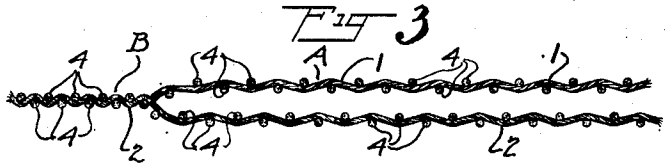
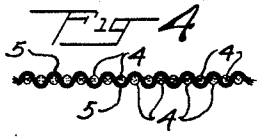


Fig 4



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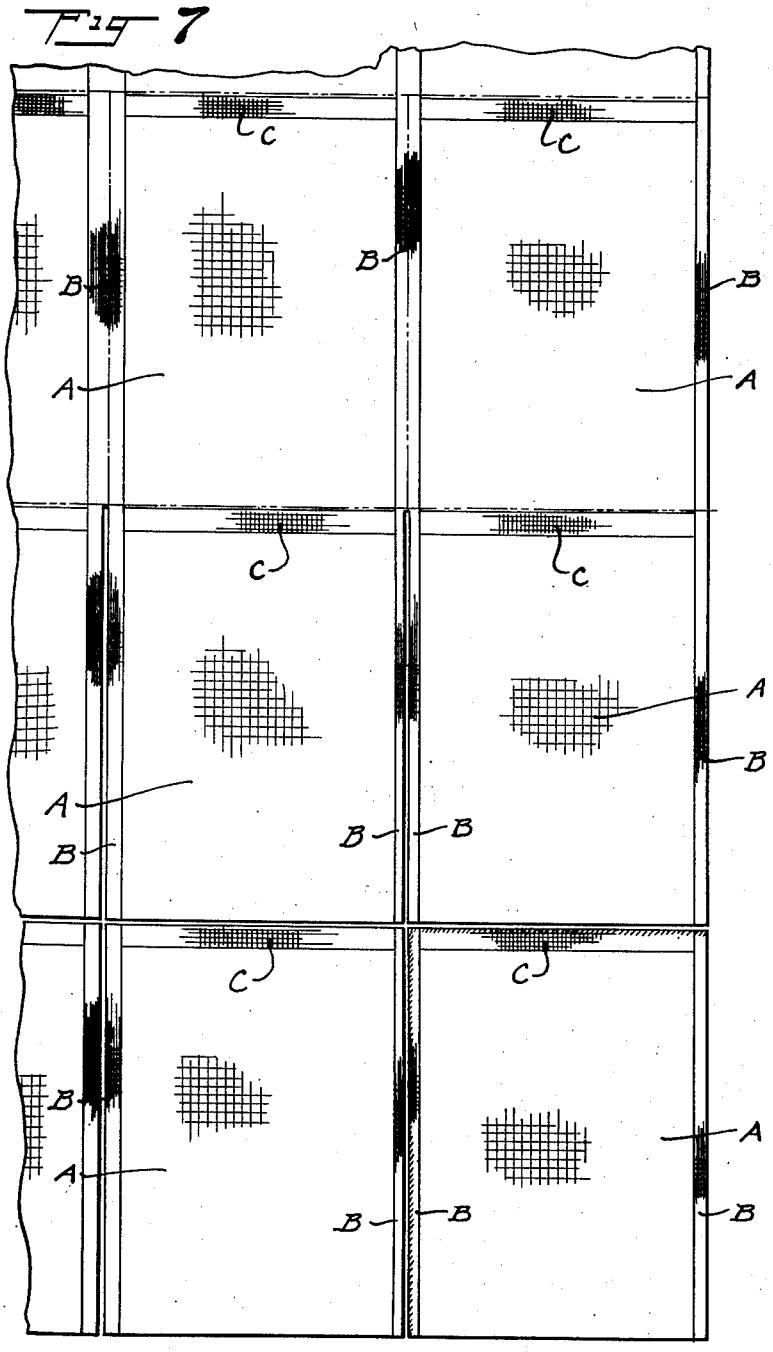
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W. O. JELLEME

BAG, WOVEN FABRIC, AND METHOD OF MAKING THEM

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Fig 7



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Patented Mar. 9, 1926. 1,576,191

UNITED STATES PATENT OFFICE.

WILLIAM O. JELLEME, OF PASSAIC, NEW JERSEY, ASSIGNOR TO BRIGHTON MILLS, A CORPORATION OF NEW JERSEY.

BAG, WOVEN FABRIC, AND METHOD OF MAKING THEM.

Application filed July 24, 1923. Serial No. 653,539.

To all whom it may concern:

Be it known that I, WILLIAM O. JELLEME, a citizen of the United States, residing at Passaic, in the county of Passaic and State of New Jersey, have made certain new and useful Improvements in Bags, Woven Fabrics, and Methods of Making Them, of which the following is a specification.

The invention relates to a fabric and more especially to a woven fabric bag and to the method of making same.

Objects and advantages of the invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice with the invention, the same being realized and attained by means of the instrumentalities and combinations pointed out in the appended claims.

The invention consists in the novel articles, constructions, arrangements, steps, methods, combinations and improvements herein shown and described.

The accompanying drawings herein referred to and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

Of the drawings:—

Fig. 1 is a plan of a fabric embodying the invention;

Fig. 2 is a section taken on the line 2—2 of Fig. 1;

Fig. 3 is a section taken on line 3—3 of Fig. 1;

Fig. 4 is a section taken on line 4—4 of Fig. 1;

Fig. 5 is a fragmentary elevation of the open end of the bag;

Fig. 6 is a diagrammatic section through Fig. 5; and

Fig. 7 is a diagrammatic plan of the fabric as it comes from the loom with certain parts cut apart.

The present invention is directed to producing a fabric, which may be conveniently styled tubular, or two-fold, with intervening single portions woven integrally and simultaneously therewith, and uniting these two-fold portions of the integral fabric, and at the same time constituting side-edge portions which are dense, strong, durable, flexible, but non-yielding. In addition thereto, the fabric at predetermined places longitudinally thereof, is woven transversely in an integral, transversely disposed portion to unite the two-fold or double portion into a single fabric across the loom, which portion is likewise strong, compact and dense, and which may serve as the bottom of one or a plurality of bags woven across the width of the fabric.

Referring by way of example to the accompanying drawings, illustrating one embodiment of the invention, the warp or the portion of the warp which is woven into the tubular or two-fold fabric comprises two series or groups 1 and 2 of yarns, cords, etc., at different levels in the loom, which are preferably relatively large or coarse. These all may be conveniently styled warp A.

At either side of these warp yarns 1 and 2, just described, are the warp yarns 5 for the side-edge portions, and these are in a single series, that is, at a single level in the loom, preferably close together, and also preferably of relatively small yarn. These may all be conveniently styled warp B. These may be termed "fin" or "border" yarns or warp, in their relation to the bags or tubular fabric produced. Where it is desired to have several articles or units produced transversely of the fabric as it comes from the loom, there may be one or more series of warp B arranged centrally or otherwise medianly between zones of warp A.

The filler yarn 4 is interwoven with all of the B or fin or border warp yarns, but each filler yarn is interwoven with only half of the main or A relatively coarse warp yarns; that is, say the first, third, fifth and so on warp yarns. The filler yarn at the opposite side edge of the fabric is again interwoven with all of the B or fin or border, relatively fine warp yarns, and this is likewise true where these warp yarns occur elsewhere across the fabric.

The fine filler yarn is likewise interwoven with all of the B or fin or border, relatively fine, warp yarns, and in turning makes a selvage. This filler yarn is then interwoven with the second series of A, that is, relatively coarse warped yarns, constituting the main body of the fabric, which would preferably be second, fourth, sixth and so on.

This filling yarn on again approaching the other side edge of the fabric is interwoven with all of the fin or border warped yarns in the manner previously described, and on turning again makes a selvage edge as before. Where there are fin, or border

yarns arranged in the body of the fabric, the filler yarn would, as usual, be interwoven with all said thin or border warp yarns.

Referring more in detail to the method of making this fabric, six harnesses are used, and may be designated from *a* to *f*. The warp B is drawn on the first and second harnesses for as many threads as are required to form the width of the fin or border in the following manner:

The first thread in harness *a*, the second in harness *b*, the third yarn in harness *a*, the fourth yarn in harness *b* and so on. That is, every other yarn of warp B is above and below any particular strand of the filling.

Warp A is then drawn through the third, fourth, fifth and six harnesses, the threads being drawn on the successive harnesses in numerical rotation. As the first thread on to harness *c*, the second thread onto harness *d*; the third thread on to harness *e*; and the fourth thread on to harness *f*; the fifth thread on to harness *g*; and so on for the width of the tube or two-fold fabric. The adjacent zone of warp B is then drawn on harnesses *a* and *b* in like manner to the first portion of warp B already described.

The body of the tube or bag is formed by weaving as follows:—

Pick 1, raise harnesses *a* and *c*; pick 2, raise harnesses *b* and *e*; pick 3, raise harnesses *a* and *d*; pick 4, raise harnesses *b* and *f*. This will be repeated in the same manner for the predetermined length of the bag to be formed.

To constitute the integral woven bottom fin or border of the bag, where all the filler yarns are interwoven with all the warp A yarns (designated by C), the manner of the weaving is changed, as follows:—

Pick 1, raise harnesses *a*, *c* and *f*; pick 2, raise harnesses *b*, *d* and *f*; and repeat these operations for the length of this integral interwoven section required.

While this exemplifies one weave of the tubular body, this weave may be changed to any other weave desired, and it will be understood that the particular kind of weave, relative coarseness and fineness and size of yarns is merely exemplary.

In Fig. 7 of the drawings, which is more or less diagrammatic, the different forms or stages of the fabric, to the separated units of product, are shown. At the top of Fig. 7, the fabric is shown woven to produce two bags across the width of the loom, there being a fin or border section B at either side, and in the middle, longitudinally of the fabric coming from the loom. The transverse border or bottom forming section C of the bag extends across the entire width of the fabric.

It is preferable that in the central section B a very few of the relatively fine warp threads are omitted, and the fabric may be slitted along this line to separate the two bags. This is shown in the central part of Fig. 7.

At the bottom part of Fig. 7, two of the bag units are shown cut off transversely as well as slit apart longitudinally. Thus, the bags are finished in the loom with three woven edges, these edges also presenting fin or border protecting and strengthening portions. Only one edge of the bag is left open, which constitutes the top thereof, and this may be folded over and sewn as shown in Figs. 5 and 6. Thus the only finishing required of the bag is by hemming at the top, and preferably overcasting the inner or non-selvage edge B. It is also preferable to overcast the outer edge of the fin or border portion after they have been pulled apart.

While the process is adaptable to different products it produces a bag, such as a laundry bag for washing and drying clothes which is woven shut at the bottom and both sides, requiring hemming at the top only. The bag is reenforced by the dense flexible fin at the bottom and sides and a plurality of such units can be produced across the loom. The body of the bag may be of a strong open mesh to especially adapt it for laundry work. The side fins being of fine yarn make a tight binder which will shrink in water and thus become tighter. The yarns of the finished bag may be dipped or otherwise impregnated with chemical resisting material to lengthen the life of the bag by increasing its resistance to the action of chemicals used in laundrying.

The invention in its border aspects is not limited to the specific mechanisms shown and described but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What I claim is:—

1. A tubular fabric comprising a portion having two sets of warp yarns, a part of the filler yarns being interwoven with one set of warp yarns and another part of the filler yarns being interwoven with the other set of warp yarns to form a tubular part, and a portion at the side thereof wherein the warp yarns are relatively fine, and all said filler yarns are interwoven with said relatively fine warp yarns to constitute a hard and dense fin.

2. A tubular fabric comprising a portion having two sets of warp yarns, a part of the filler yarns being interwoven with one set of warp yarns and another part of the filler yarns being interwoven with the other set of warp yarns to form a tubular part, and portions at either side thereof wherein the warp yarns are relatively fine, and all said filler yarns are interwoven with said relatively fine warp yarns to constitute a hard and dense fin.

3. A tubular fabric comprising a portion having two sets of warp yarns, a part of the filler yarns being interwoven with one set of warp yarns and another part of the filler yarns being interwoven with the other set of warp yarns to form a tubular part, and a portion at the side thereof, and at the edge of the fabric, wherein the warp yarns are relatively fine, and all said filler yarns are interwoven with said relatively fine warp yarns to constitute a hard and dense selvaged fin.

4. A tubular fabric comprising a portion having two sets of warp yarns, a part of the filler yarns being interwoven with one set of warp yarns and another part of the filler yarns being interwoven with the other set of warp yarns to form a tubular part, and portions at either side thereof, and at the edge of the fabric, wherein the warp yarns are relatively fine, and all said filler yarns are interwoven with said relatively fine warp yarns to constitute hard and dense selvaged fins.

5. A woven fabric bag comprising a body part having two sets of warp yarns, a part of the filler yarns being interwoven with one set of warp yarns and another part of the filler yarns being interwoven with the other set of warp yarns and side portions wherein the warp yarns are relatively very fine, and all the warp yarns are interwoven with all the filler yarns to form dense and hard woven fins at the side edges of the bag, and an end portion wherein all the yarns of the body portion and the side portions are interwoven with all the filler yarns to form a woven fin at the bottom edge of the bag.

6. A woven fabric having central warp yarns in two sets, and side warp yarns which are relatively fine, the filler being interwoven with all said side warp yarns, but a part only of the filler yarns being interwoven with one set of the central warp yarns and the other part of the filler being interwoven with the other set of warp yarns, said fabric having portions along its length wherein all the filler yarns are interwoven with all the warp yarns across the fabric.

In testimony whereof, I have signed my name to this specification.

WILLIAM O. JELLEME.