

Dec. 4, 1934.

E. C. GWALTNEY

1,983,452

LAUNDRY BAG

Filed Nov. 9, 1931

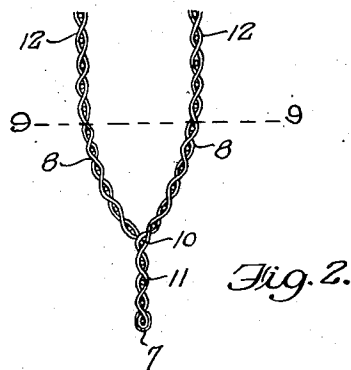
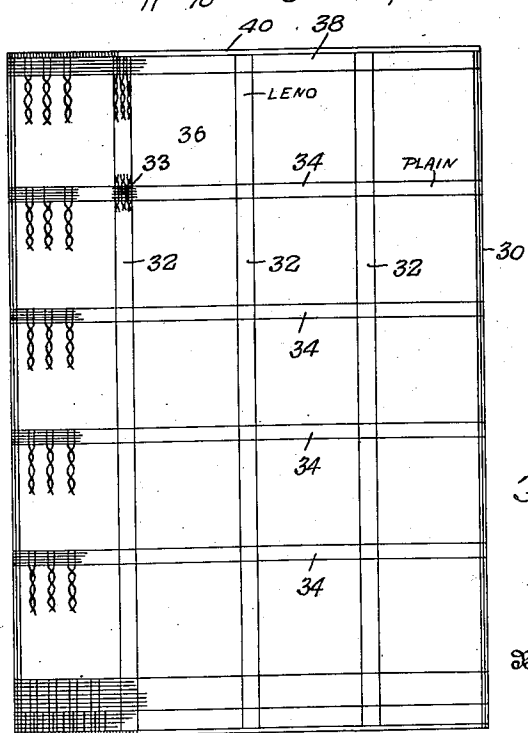
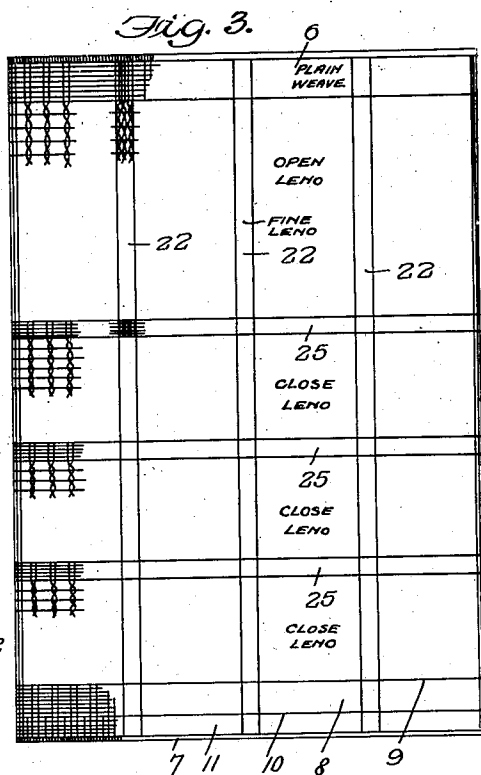
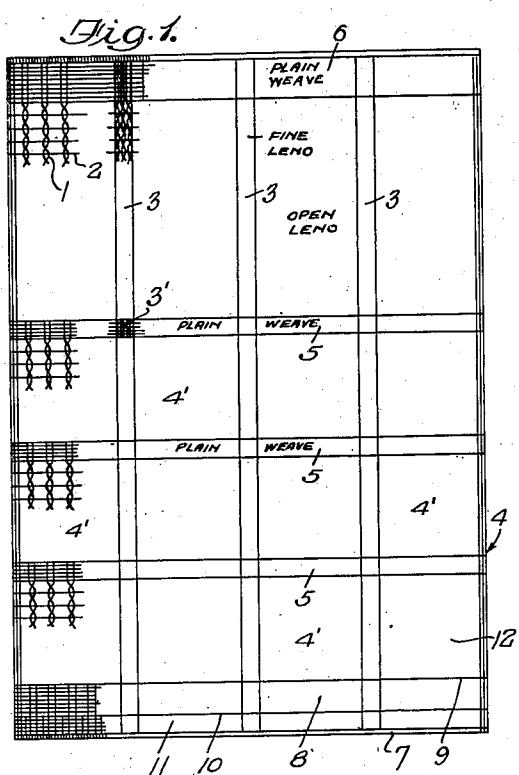


Fig. 4.

Inventor

Eugene C. Gwaltney

By

Fisher & Pedersen

Attorneys

UNITED STATES PATENT OFFICE

1,983,452

LAUNDRY BAG

Eugene C. Gwaltney, Laurinburg, N. C.

Application November 9, 1931, Serial No. 573,958

2 Claims. (Cl. 139—389)

This invention relates to laundry bags or laundry nets or bags or net for dyeing purposes. For convenience, the invention will be described as a laundry net. More particularly it relates to laundry bags or nets of the type wherein goods to be washed are placed in the bag, the bag pinned up, and the bag and contents subjected to vigorous tumbling in hot, soapy water.

This application has certain features in common with companion application Ser. No. 573,957, filed concurrently herewith.

An important object of this invention is to produce a laundry bag or net which is made to last longer than the usual nets of this type now on the market, by virtue of certain weaving which adds additional strength and resistance to wear without increasing the weight or cost of the bag.

The usual laundry bag or net tends to wear out in the lower half of the bag. This is due to the fact that the top of the bag is pinned to hold it in a restricted and closed position, and this pinning forces the clothes in the bag toward the bottom, causing the lower half of the bag to bulge. Since this type of bag is subjected to considerable friction in the washers, it is not uncommon for the lower half of these bags to wear out in a very short while, leaving the top portion worn very little. The bag in such condition is practically worthless and must be discarded, causing needless waste.

Many attempts have been made in this art to perfect a bag which can be produced at a minimum cost and withstand the harsh treatment of tumbling and rolling in washing machines. The life of the bag may, of course, be prolonged by making the bag of heavier yarn, or providing the bag with a closer mesh. These expedients, however, increase the weight and expense of the bag, and present just this much more weight of yarn which must be washed and handled and dried in each laundry operation.

In the patent to Howe 1,572,605, granted February 9, 1926, reinforcing bands are used, but their reinforcing value is nullified by the use of the large mesh, necessarily weak, between the reinforcing bands; these lines of large mesh, shown in Fig. 3 of the patent would quickly be ruptured. Moreover, the bag of the present invention is woven tubular and seamless and of leno weave, while the Howe bag is woven flat and sewed into tubular form and so provided with a seam; Howe does not use a leno weave.

In the patent to Elliott 928,642 of July 20, 1909, there is no teaching of any different construction in the upper and lower part of the bag, which is

an important feature of the present invention. The Elliott bag is not tubular and seamless and of leno weave as is applicant's invention, but is woven flat and sewed up to make a bag.

The bag of this invention is made of leno weave, which has the advantage of providing a coarse mesh, the large holes permitting inflow and outflow of the hot, soapy water, but which has the disadvantage of being not very resistant to wear; if a small hole should get started by a break in the yarn, there is a tendency to ravel and run, with consequent rapid spread of the hole.

According to this invention, these difficulties are remedied and the life of the laundry net very substantially increased without increasing either its weight or its cost.

The laundry bag of this invention is made seamless and tubular and of leno weave; the lower part of the bag, say about 60%, is provided with strengthening and reinforcing bands running lengthwise and crosswise of the bag, dividing this part of the bag into relatively small rectangular portions, which, in practice, may be squares about four inches on an edge; they could, however, be made larger or smaller, as desired. The longitudinally extending reinforcing bands are preferably of leno weave, of much closer mesh than that used throughout the bag, whereas the laterally extending reinforcing bands are preferably of plain weave. The longitudinally extending bands of closely woven leno weave may and preferably do, extend for the entire length of the bag and thus give the top of the bag some degree of reinforcement.

The lower half or lower 60% of the bag is thus reinforced longitudinally and laterally by the bands 3 and 5. These bands divide up the bag into small rectangles; any break, tear or run occurring in one of these small rectangles is restricted or localized to that rectangle by the reinforcing bands which define it.

The ratio between the lower part of the bag provided with the reinforcing rectangles and the top part of the bag may be approximately as one to one. However, this may be varied within a reasonable range and in the preferred embodiment of the invention about 40% of the bag may be made with only longitudinally extending bands, while the lower 60% may be made with both longitudinal and lateral bands. This ratio could be reversed, if desired.

In order further to prolong the life of the bag it may be provided near its upper or open end with a pinning band of substantial width made of plain weave. While the leno weave may be better

for the body of the bag, because of its large mesh, such leno weave is not as durable against pinning as the plain weave and so the provision of a pinning band of plain weave substantially increases the life of the bag.

Near the bottom of the bag the leno weave changes into a plain weave, thus forming a friction band; below the friction band there is a single-ply tightly-woven plain weave forming a tabby bottom, the lower edge of which is provided with a heavy overcast seam for preventing raveling. The overcast seam tends to fold back on the bag and rub against it, especially if the bag is turned inside out as is oftentimes done. This overcast seam, which is rather hard and heavy, rubs against the mesh of the bag. The coarse leno weave is of itself not strong enough to withstand such rubbing action from the overcast seam. In order to compensate for this wear, the friction band mentioned above is provided between the overcast seam and the leno weave, against which the overcast seam may bear if it is bent back against the bag.

In a modified form of the invention, in addition to the reenforcing bands above described, the strength of the lower part of the bag may be further enhanced by distribution and selection of weaves which are now to be described. The upper part of the bag, where the wear is relatively light, may be made of coarser mesh than usual in a bag of corresponding weight and the yarn thus saved may be utilized in making the lower part of the bag where the wear is relatively heavy, of a mesh of closer weave than usual in a bag of corresponding weight, thereby increasing the durability of the lower part of the bag. Coarseness of the mesh in the upper part of the bag and the finer mesh in the lower part of the bag are effected through control of the weft or filling. The resulting bag is no heavier and contains no more yarn than a bag of corresponding size and weight yet has a substantially greater life than a bag of corresponding size and weight which is provided with a uniform mesh throughout.

The ratio between the coarse weave in the upper part of the bag and the closer weave reenforced by the longitudinally and laterally extending bands, is approximately as one to one. This may be varied within a reasonable range and in the preferred embodiment of this modification about 40% of the bag is made of coarse mesh and the lower 60% of closer mesh and reenforcing bands. This could, however, be reversed, and the upper 60% of the bag made of coarse mesh and the lower 40% of closer mesh.

This modification may, of course, be provided with the pinning band, overcast seam, and friction band as hereinbefore described.

The warp yarns extend longitudinally of the bag, from one end to the other. That is, any section perpendicular to the longitudinal axis of the bag would show the same number of warp yarns. Different amounts of weft or filling, however, are used at different places lengthwise of the bag.

The invention will be further described in connection with the accompanying drawing showing in more detail the preferred embodiments thereof.

In the drawing,

Fig. 1 is a front view, partly broken away of a laundry bag made according to this invention;

Fig. 2 is an enlarged cross section of the bottom of the bag on the line 2-2 of Fig. 1;

Fig. 3 is a front view of a modification showing the several weaves in addition to the reenforcing bands; and

Fig. 4 is a view of a modification.

Referring now to the drawing, in which similar reference characters indicate similar parts, the laundry bag illustrated in Fig. 1 is of the leno weave type, made tubular and seamless, the warp extending longitudinally of the bag, that is from top to bottom or lengthwise thereof. The greater part of the bag is of leno weave of substantially the same texture throughout. The warp threads of this weave are indicated at 1 while the weft or filling threads are indicated at 2. Extending longitudinally of the bag is a series of closely woven reenforcing bands of leno weave, designated at 3. In the lower portion 4 of the bag 1 is a series of laterally extending reenforcing bands 5. These bands are of plain weave and are spaced from each other at approximately the same distance that the longitudinal bands are placed. The small squares or rectangles 3' where the bands cross are of tightly woven plain weave. The lower half of the bag is thus provided with a series of relatively small sections 4' of leno weave. It is thus readily seen, that in addition to generally reenforcing the lower part of the bag, these bands serve to localize any runs, tears, rips, etc. Any break occurring in the coarse leno weave forming the bottom portion of the bag may be repaired without affecting the rest of the bag.

The reenforcing bands may occupy approximately the lower half of the bag, or according to the present preferred embodiment of the invention approximately the lower 60% of the bag is reenforced by the two kinds of bands, while the rest or upper part of the bag is reenforced by the longitudinally extending bands of closely woven leno weave.

By making the entire body of the bag of a leno weave, not in itself rugged enough to withstand much harsh treatment, and reenforcing it by the longitudinal, lateral reenforcing bands, the strength, durability and life of the bag is substantially increased.

In order further to strengthen the bag, there is provided around its upper or open end a pinning band 6 made of plain weave, the plain weave being preferable because it is more resistant to pulling out than is leno weave.

As described in my copending application filed concurrently herewith, the extreme bottom edge of the bag is provided with a heavy overcast seam 7, for preventing raveling. This overcast seam tends, when the bag is in use, to bend around and rub against the body of the bag, especially if the bag is turned inside out as is oftentimes done. In order to prevent such wear, there is provided, near the bottom of the bag, a friction band 8 of plain weave. The leno weave 12 in the lower part of the bag at about the line 9, changes into a plain weave 8, forming this friction band. At about the line 10 the two lower edges of the friction band 8 are tightly woven together to make a thick relatively stiff one-ply tabby bottom 11, the lower edge of which terminates, as has been described, in the overcast seam 7 for preventing raveling. This tabby bottom is of about the texture of a very heavy duck. With such a tabby bottom, there is no need to turn up the bottom of the bag and close it by stitching, as in the patent to Sitton 1,682,198, of August 28, 1928.

In use, the tabby bottom 11 tends to swing around about the line 10 and will rub against the

friction band 8, which is strong enough to resist such friction. The seam 7 thus does not rub against the leno weave 12, which is not so strong and not so able to resist this friction.

5 Referring now to Fig. 3, the bag there illustrated is tubular and seamless and of leno weave, and has longitudinally extending reinforcing bands 22 of close leno weave extending for the entire length of the bag; the lower half or preferably the lower 60% of the bag is provided with laterally extending bands 25, dividing the lower part of the bag up into small squares or rectangles, as in Fig. 1. In addition, however, the upper half or upper 40% of the bag, is made of a coarser leno weave than usual in a bag of corresponding size and weight, and the yarn thereby saved is built into the lower half or lower 60% of the bag, thereby making this lower part of the bag stronger in that portion thereof where the strength is most needed, that is, where there is most friction.

10 This change of mesh is effected by the use of additional filling or weft in the lower part of the bag. The warp yarns extend for the entire length of the bag. This form of the invention may be provided with a pinning band 6, friction band 8, tabby bottom 11 and overcast seam 7, as in Fig. 1.

15 In the modification shown in Fig. 4, the bag or net 30 is, for the most part, of leno weave, and like the other forms, is tubular and seamless. The same mesh of leno could be used throughout, or, as described in connection with Fig. 3, the lower part could be of closer mesh than the upper part of the net. In this form, a plurality of reinforcing bands 32 of closely woven leno extend longitudinally of the bag, while a plurality of reinforcing bands of closely woven plain weave 34 extend laterally of the bag, forming small rectangles 36 bordered by reinforcing bands, thereby localizing any runs, breaks or tears that might occur in any rectangle. The intersections 33 of the bands are of very tightly woven plain weave.

20 The mouth of the net may be provided with a narrow band 38 of plain weave, the upper edge of which is provided with an overcast seam 40. This band 38 is particularly useful in preventing raveling, especially during manufacture. This band 38 may be made wide enough, as in Figs. 1 and 3, to provide a pinning band corresponding to the band 6.

25 The several bags illustrated, by the reason of construction and particular weaving of the yarns, as has been described, have a durability and life substantially greater than the ordinary type of

laundry bags yet with little increase in amount of material used and consequent cost. The bags may be used for dyeing and other uses and the claims are to be construed accordingly. While the preferred embodiments of the invention have been described in some detail, it should be understood that the invention is not to be limited to the exact details and proportions shown, but may be carried out in other ways as falling within the scope of the appended claims.

I claim as my invention:

1. A tubular, seamless leno weave laundry bag, wherein the warp extends longitudinally of the bag, the bag being provided with a plurality of spaced, narrow, longitudinally extending reinforcing bands of closely woven leno weave, and with a plurality of spaced, narrow, laterally extending reinforcing bands of plain weave, said longitudinal and lateral reinforcing bands intersecting and defining between them small areas of relatively open leno weave, the longitudinal and lateral bands serving to restrict and localize a break or run in one of the said small leno weave areas to that area in which it may have started, the bag being provided, near the bottom thereof, with a wear-resisting friction band of closely woven plain weave in both faces of the bag, the two faces of the bag uniting at the lower edge of the friction band and forming a relatively heavy one-ply tabby bottom.

2. A tubular, seamless leno weave laundry bag, wherein the warp extends longitudinally of the bag, the bag being provided with a plurality of spaced, narrow, longitudinally extending reinforcing bands of closely woven leno weave, and with a plurality of spaced, narrow, laterally extending reinforcing bands of plain weave, said longitudinal and lateral reinforcing bands intersecting and defining between them small areas of relatively open leno weave, the longitudinal and lateral bands serving to restrict and localize a break or run in one of the said small leno weave areas to that area in which it may have started, the bag being further strengthened by increasing the filling in approximately the lower half of the bag so as to give a finer leno weave in this part of the bag, whereby the lower part of the bag is stronger throughout than the upper part, the bag being provided, near the bottom thereof, with a wear-resisting friction band of closely woven plain weave in both faces of the bag, the two faces of the bag uniting at the lower edge of the friction band and forming a relatively heavy, one-ply tabby bottom.

EUGENE C. GWALTNEY.