Oct. 29, 1946. J. A. HENDLEY 2,410,028

TEXTILE WEBBING

Filed Aug. 22, 1945

FIG. 1.

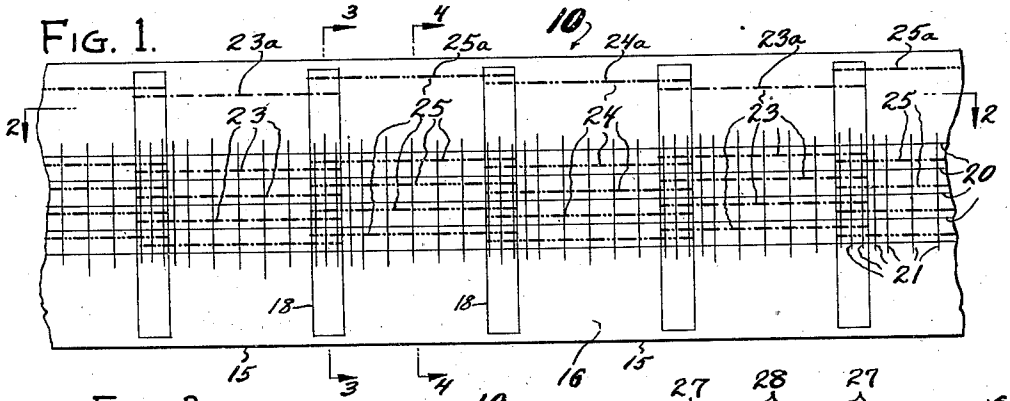


FIG. 2.

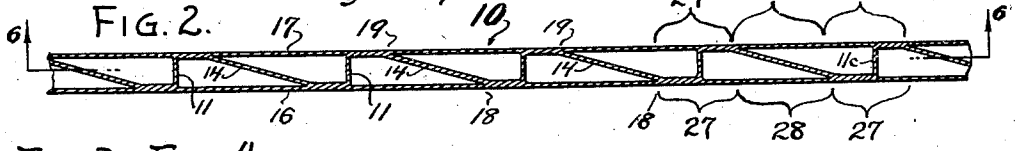


FIG. 3.

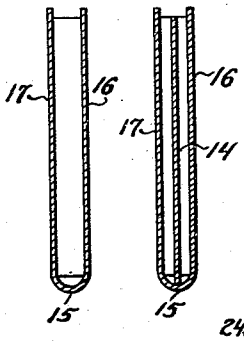


FIG. 4.

FIG. 5.

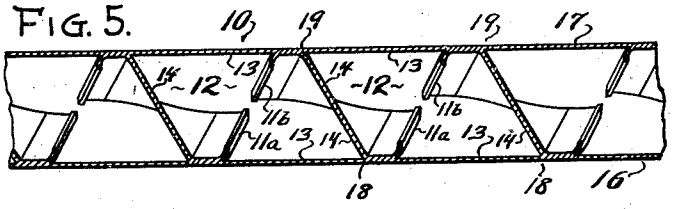


FIG. 6.

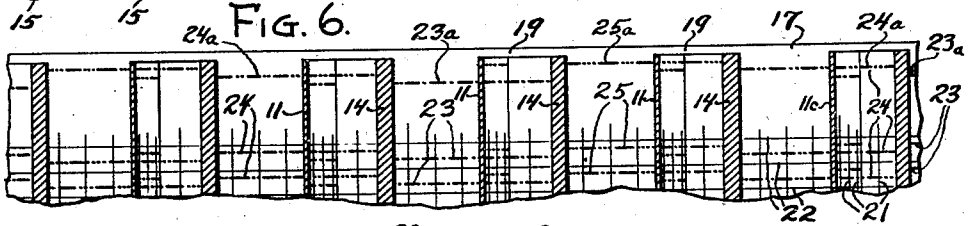
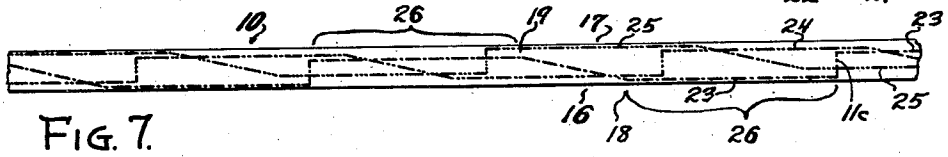


FIG. 7.



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TEXTILE WEBBING

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5 Claims. (Cl. 139—390)

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This invention relates to an improved textile webbing having a longitudinally-successive series of pockets in longitudinally-overlapping relation.

One object of this invention is to provide an improved textile webbing of the type set forth in my Patent No. 2,358,638, granted September 19, 1944.

Another object of this invention is to provide an improved textile webbing of the above-mentioned type in which the end walls are more securely connected to the side walls of the pockets.

Another object of this invention is to provide an improved textile webbing of the above-mentioned type which can be manufactured at a higher rate of output per loom, and at lower cost per unit of length of webbing.

With the above and other objects in view, as will appear to those skilled in the art from the present disclosure, this invention includes all features in the said disclosure which are novel over the prior art.

In the description and claims, the various parts and steps are identified by specific terms for convenience, but they are intended to be as generic in their application as the prior art will permit.

In the accompanying drawing forming part of the present disclosure, in which one way of carrying out the invention is shown for illustrative purposes:

Fig. 1 is a face view of a fragment of textile webbing made in accordance with the present invention, with a portion of the front face thereof having the weave illustrated schematically;

Fig. 2 is a longitudinal sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a transverse sectional view taken on line 3—3 of Fig. 1;

Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 1;

Fig. 5 is a longitudinal sectional view similar to Fig. 2 but with the float-threads cut and with the webbing opened out to more clearly show the pockets;

Fig. 6 is a longitudinal sectional view taken on line 6—6 of Fig. 2; and

Fig. 7 is a schematic view corresponding to Fig. 2, and illustrating the manner in which certain of the warp strands extend along the webbing.

Referring to the drawing, the textile webbing 10, after having had the float-threads 11 cut in a way understood by those skilled in the art of weaving, to leave short protruding ends 11*a* and 11*b* respectively attached to the side-strips 16 and 17 (Fig. 5), has a longitudinally-successive

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series of pockets 12 in longitudinally-overlapping relation. Each pocket 12 has two opposite side walls 13, two opposite end walls 14 and a bottom or bottom-edge 15. The respective opposite side walls 13, 13 of the pockets 12 form part of two continuous face-to-face side-strips 16 and 17. One edge of each side-strip is secured substantially throughout its length to the adjacent edge of the other side-strip so as to form the bottom or bottom-edge 15 of each of the pockets 12. The end-walls 14 of the pockets extend generally parallel to one another and each has one end connected at location 18 to the side-strip 16 by being interwoven therewith, and has the other end similarly connected at location 19 to the side-strip 17, which location 19 is longitudinally displaced from the location 18 of the first-mentioned end, to thus produce the overlapping relation of the pockets 12.

Fig. 2 illustrates the stage of manufacture of the textile webbing after it has been completely woven, but prior to the performing of the cutting or severing of the float-threads or strands 11 to produce the completed construction shown in Fig. 5. In Fig. 2, the side-strips 16 and 17 are shown much further apart, and hence with the float-threads 11 shown much longer, than is the actual case, in order to more clearly illustrate the fabric at this stage of its manufacture. Ordinarily, the float-threads are so short that the two side-strips touch or almost touch.

In weaving the webbing 10, the warp-strands or longitudinal strands include five sets of warp-strands. The warp-strands 20 form one set of warp-strands and extend throughout the width and length of the side-strip 16 and are interwoven with the weft-strands or picks 21 throughout the width and length of the side-strip 16. A second similar set of warp-strands 22 extends throughout the width and length of the other side-strip 17 and is interwoven with the weft-strands or picks 21 throughout the width and length of the side-strip 17. Then there are three other sets of warp-strands respectively numbered 23, 24 and 25, and respectively schematically illustrated in the drawing, by a dot-and-dash line of one dot, a dot-and-dash line of two dots, and a dot-and-dash line of three dots, in order to make it easy to follow the complicated courses that these strands occupy along the length of the webbing. These three sets of warp-strands 23, 24 and 25 are also interwoven with the weft-strands or picks 21. By reference to Fig. 7, it will be noted that the set of warp-strands 23 represented schematically by the single-dot dot-and-dash line,

extends from the extreme right of Fig. 7 as an interwoven part of the side-strip 17 until it reaches the float-thread crossed-over location 11c, whereupon it crosses over and is interwoven with the side-strip 16 along a length thereof until it reaches a location 18, whereupon it extends across at an angle in an end wall 14 until it reaches a location 19 in the side-strip 17 with which it is again interwoven along a length thereof until it reaches the next float-thread crossed-over location 11c. In a similar manner, it will be observed that the set of warp strands 24, represented schematically by the two-dot dot-and-dash line, extends throughout the length of the webbing, with similar crossing over back and forth from one to the other of the side-strips 16 and 17. And, similarly, the set of warp strands 25, represented schematically by the three-dot dot-and-dash line, similarly extends throughout the length of the webbing with similar crossing over back and forth from one to the other of the side-strips 16 and 17, all as is clearly seen in Fig. 7, with which Fig. 7, the schematic illustration of these three sets of warp strands in Figs. 1 and 6 will be seen to be in agreement.

In Fig. 7, any portions of the lines which represent warp-strands 23, 24 and 25, which are parallel to the side-strip 16 and are nearer to the side-strip 16 than to the side-strip 17, are interwoven in the side-strip 16, and similarly, portions of such lines which are parallel to the side-strip 17 and are nearer to the side-strip 17 than to the side-strip 16, are interwoven in the side-strip 17.

In carrying out this weaving operation, the weft-strand, commonly known as "weft-picks" or "weft-strands" or "filling-strands" and designated as 21, is interwoven with the five sets of warp strands 20, 22, 23, 24 and 25 previously described, to form the side-strips 16 and 17 and pocket-ends 14, in a way that will be understood by those skilled in the art of weaving. Thus, the weft-strand 21 can be passed from the bottom location 15 (Fig. 4) up to the top of the pocket-end member 14, then back down to location 15, then up and down in the side-strip 16, then up and down in the side-strip 17, then up and down in the pocket-end 14, and so on, until a location 18 (or 19) in one of the side-strips 16 (or 17) is reached, when the weft-strand passes up and down in one side-strip and then up and down in the other side-strip until the next pocket-end member 14 is reached for weaving. In weaving the weft-strands or picks, as the weft-strands 21 pass from one to another of the parts 14, 16 and 17 at the bottom-edge 15 throughout the length of the webbing, as hereinbefore described, the effect is to join the two lower edges of the strips 16 and 17 together to form the bottom or bottom-edge 15.

The extent or length of the woven-in length with each of the side-strips 16 and 17, of the three sets of warp strands 23, 24 and 25 which extend along the pocket-ends 14 from one side-strip to the other, will be at least equal to the distance between the anchor or connection locations of any two successive pocket-ends with a given side-strip. In the particular webbing illustrated in the drawing, this woven-in length 26 is greater than the distance between the locations 18 (or 19) of two successive pocket-ends 14 with the side-strip 16 (or 17), and will be even greater in such instances as the pocket-ends 14 are longer. These long woven-in areas 26 of the warp-strands 23, 24 and 25 provide such adequate anchorage for each of the opposite ends of each pocket-end 14, that it permits of employing less picks per unit of length, which results in less cost per unit of length of the webbing and higher length-of-webbing output per loom employed.

Inasmuch as the weft-picks 21 will be formed during the weaving operation at a constant number of picks per minute and as the rate of feed to the take-up roll, of the fabric being woven, is constant, when the portions 27 of the webbing 10 are being woven, more weft picks will be laid in or woven-in in these portions 27, than will be woven-in in the portions 28 of the webbing where a pocket-end 14 is located between the side-strips 16 and 17, and this is schematically indicated in Figs. 1 and 6 by the fact that the weft picks are shown closer together in the portions or regions 27 than in the portions or regions 28. It will be understood, of course, that the weft-picks and the warps are not at all located as far apart as is indicated by the schematic showing in the drawing but that ordinarily these weft and warp strands will be woven relatively close together, they being illustrated far apart in the drawing merely for clearness of the schematic illustration.

At the upper parts of Figs. 1 and 6, the three warp-strands 23*a*, 24*a* and 25*a*, respectively each form one of the three said sets 23, 24 and 25 of warp-strands which cross along the pocket-ends 14 as hereinbefore described. Each of these three warp strands 23*a*, 24*a*, and 25*a* is of optically-distinctive appearance both from the remainder of its said set of warp-strands and from each of the other two of such optically-distinctive-appearing warp-strands. In one form of construction according to the present invention, each of the warp-strands 23*a*, 24*a* and 25*a* is formed of a strand of a color which is different from the other warp-strands of its group, these three strands being black, for example, whereas the remainder of the warp-strands are white. And although the warp-strands 23*a*, 24*a* and 25*a* are all of the same color, namely, black, inasmuch as they are at different locations transversely and in the general plane of the webbing, from each of the other two, they serve to optically indicate the general location of the crossover or float-thread locations 11, thus aiding in the ready cutting of the float-threads 11 when this is to be done to complete the formation of the webbing. It will be appreciated that instead of having the strands 23*a*, 24*a* and 25*a* all of the same color, such as black, each could be of a different color from the other, and in such instance, it would not be necessary to have them at different locations transversely of the webbing in order to optically indicate the location of the float-thread crossovers 11. It will also be apreciated that instead of relying on different colors to produce the distinctive appearance, such distinctive appearance could be obtained either by having each one of an optically-distinctive weave or of an optically-distinctive different material.

Although the warp-strands 23*a*, 24*a* and 25*a* extend along the webbing 10 at actual different locations transversely of the webbing, as previously stated, the showing of the other warp-strands 23, 24 and 25 at locations displaced transversely of the webbing is purely schematic to enable the eye to easily trace the lines on the drawing which schematically represent these warp-strands, and the particular location transversely of the fabric, of any one of these lines relatively to any other one of these lines has no significance whatever.

The invention may be carried out in other specific ways than those herein set forth without

departing from the spirit and essential characteristics of the invention, and the present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

I claim:

1. A textile webbing including: a longitudinally successive series of pockets in longitudinally-over-lapping relation; each pocket having two side-walls, two end-walls, and a bottom; the respective opposite side-walls of said pockets forming parts of two continuous side-strips of woven fabric formed of interwoven warp strands and weft strands and said side-strips being arranged in face-to-face relation with one edge of one side-strip secured substantially throughout its length to the adjacent edge of the other side-strip to form the bottom for each of said pockets; the end-walls each having one end interwoven with one side-strip, and having the other end interwoven with the other side-strip at a location longitudinally displaced from the interwoven location of its first-mentioned end, to thus produce said overlapping relation; the warp strands of said side-strips including three sets of warp strands, each of which said three sets of warp strands is interwoven with weft strands of one of said side-strips, then extends along one of said end-walls from one to the other of said side-strips, then is interwoven with weft strands of the other of said side-strips, then originally crossed over back to said one side-strip, and so on, said three sets of warp strands respectively successively extending along each three successive end-walls.

2. A textile webbing including: a longitudinally-successive series of pockets in longitudinally-over-lapping relation; each pocket having two side-walls, two end-walls, and a bottom; the respective opposite side-walls of said pockets forming parts of two continuous side-strips of woven fabric formed of interwoven warp strands and weft strands and said side-strips being arranged in face-to-face relation with one edge of one side-strip secured substantially throughout its length to the adjacent edge of the other side-strip to form the bottom for each of said pockets; and the end-walls being formed of interwoven warp strands and weft strands each having one end interwoven with one side-strip, and having the other end interwoven with the other side-strip at a location longitudinally displaced from the interwoven location of its first-mentioned end, to thus produce said overlapping relation; the warp strands of said side-strips including three sets of warp strands, each of which said three sets of warp strands is interwoven with weft strands of one of said side-strips, then extends along one of said end-walls from one to the other of said side-strips, then is interwoven with weft strands of the other of said side-strips, then originally crossed over back to said one side-strip, and so one, said three sets of warp strands respectively successively extending along each three successive end-walls.

3. A textile webbing including: a longitudinally-successive series of pockets in longitudinally-overlapping relation; each pocket having two side-walls, two end-walls, and a bottom; the respective opposite side-walls of said pockets forming parts of two continuous side-strips of woven fabric formed of interwoven warp strands and weft strands and said side-strips being arranged in face-to-face relation with one edge of one side-strip secured substantially throughout its length to the adjacent edge of the other side-strip to form the bottom for each of said pockets; the end-walls each having one end interwoven with one side-strip, and having the other end interwoven with the other side-strip at a location longitudinally displaced from the interwoven location of its first-mentioned end, to thus produce said overlapping relation; the warp strands of each of said side-strips including a set of warp strands extending continuously throughout its length, and three sets of warp strands, each of which said three sets of warp strands is interwoven with weft strands of one of said side-strips, then extends along one of said end-walls from one to the other of said side-strips, then is interwoven with weft strands of the other of said side-strips, then originally crossed over back to said one side-strip, and so on, said three sets of warp strands respectively successively extending along each three successive end-walls.

4. A textile webbing including: a longitudinally-successive series of pockets in longitudinally-overlapping relation; each pocket having two side-walls, two end-walls, and a bottom; the respective opposite side-walls of said pockets forming parts of two continuous side-strips of woven fabric formed of interwoven warp strands and weft strands and said side-strips being arranged in face-to-face relation with one edge of one side-strip secured substantially throughout its length to the adjacent edge of the other side-strip to form the bottom for each of said pockets; the end-walls each having one end interwoven with one side-strip, and having the other end interwoven with the other side-strip at a location longitudinally displaced from the interwoven location of its first-mentioned end, to thus produce said overlapping relation; the warp strands of said side-strips including three sets of warp strands, each of which said three sets of warp strands is interwoven with weft strands of one of said side-strips, then extends along one of said end-walls from one to the other of said side-strips, then is interwoven with weft strands of the other of said side-strips, then originally crossed over back to said one side-strip, and so on, said three sets of warp strands respectively successively extending along each three successive end-walls; at least one warp strand of each of said three sets of warp strands being optically distinctive from the adjacent warp strands of its said set of warp strands, and optically distinctive from each of the other two of said optically-distinctive warp strands.

5. A textile webbing including: a longitudinally-successive series of pockets in longitudinally-overlapping relation; each pocket having two side-walls, two end-walls, and a bottom; the respective opposite side-walls of said pockets forming parts of two continuous side-strips of woven fabric formed of interwoven warp strands and weft strands and said side-strips being arranged in face-to-face relation with one edge of one side-strip secured substantially throughout its length to the adjacent edge of the other side-strip to form the bottom for each of said pockets; the end-walls each having one end interwoven with one side-strip, and having the other end interwoven with the other side-strip at a location longitudinally displaced from the interwoven location of its first-mentioned end, to thus pro-

duce said overlapping relation; the warp strands of said side-strips including three sets of warp strands, each of which said three sets of warp strands is interwoven with weft strands of one of said side-strips, then extends along one of said end-walls from one to the other of said side-strips, then is interwoven with weft strands of the other of said side-strips, then originally crossed over back to said one side-strip, and so on, said three sets of warp strands respectively

successively extending along each three successive end-walls; at least one warp strand of each of said three sets of warp strands being of optically-distinctive appearance from the adjacent warp strands of its said set of warp strands, and being at a different location transversely and in the general plane of said webbing, from each of the other two of said optically-distinctive-appearing warp strands.

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