Sept. 19, 1944. J. A. HENDLEY 2,358,638

TEXTILE WEBBING

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Fig. 1.

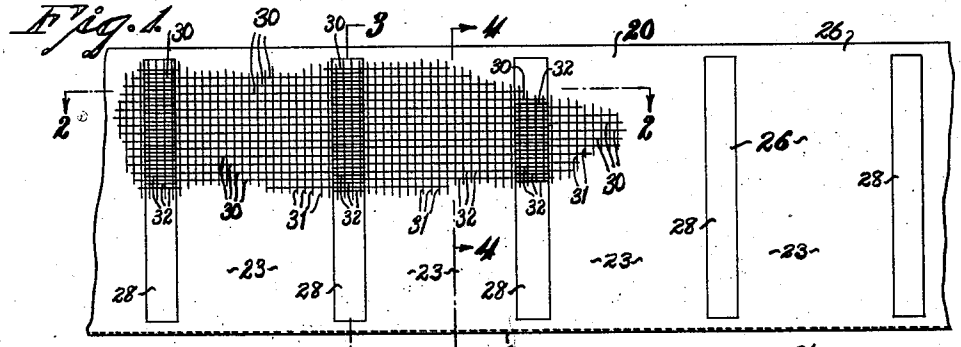


Fig. 2.

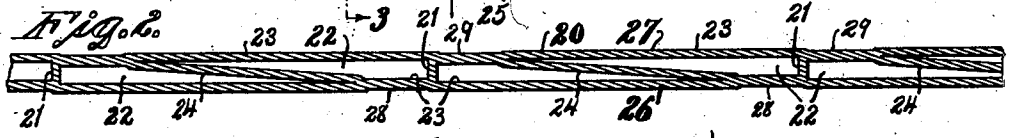


Fig. 3.

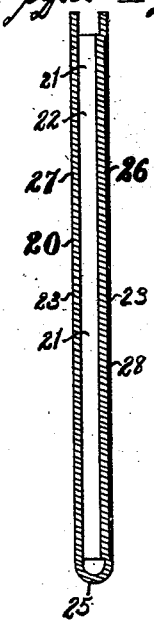


Fig. 4.

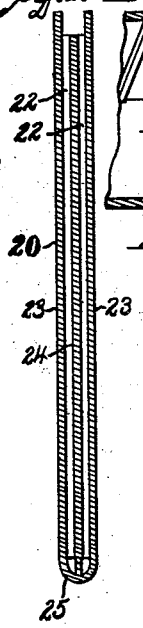


Fig. 5.

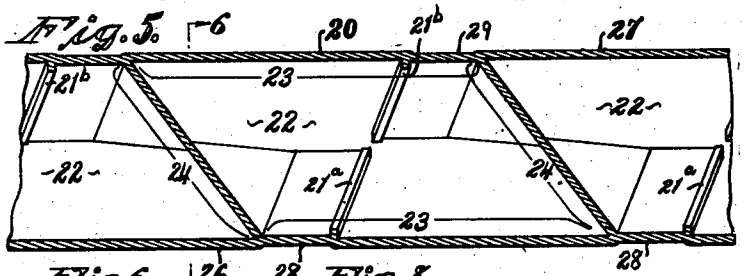


Fig. 6.

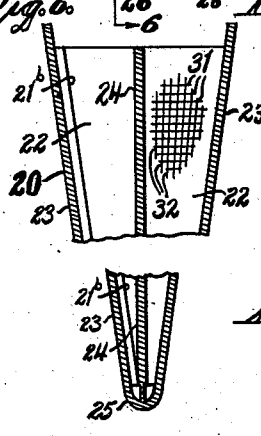


Fig. 8.

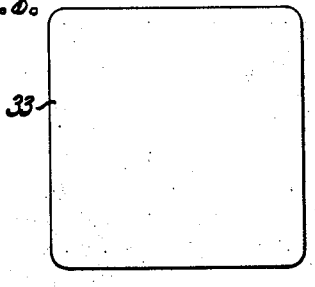


Fig. 9.

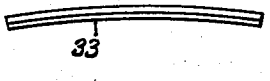
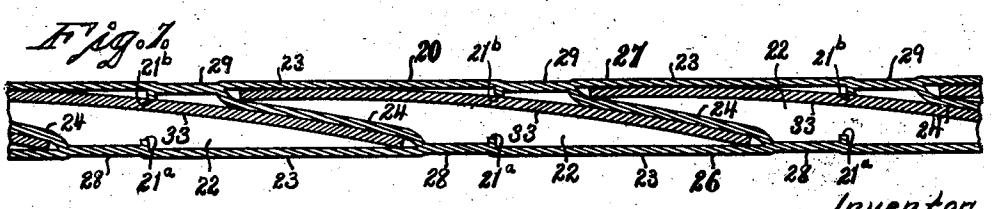


Fig. 7.



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Fig. 10.

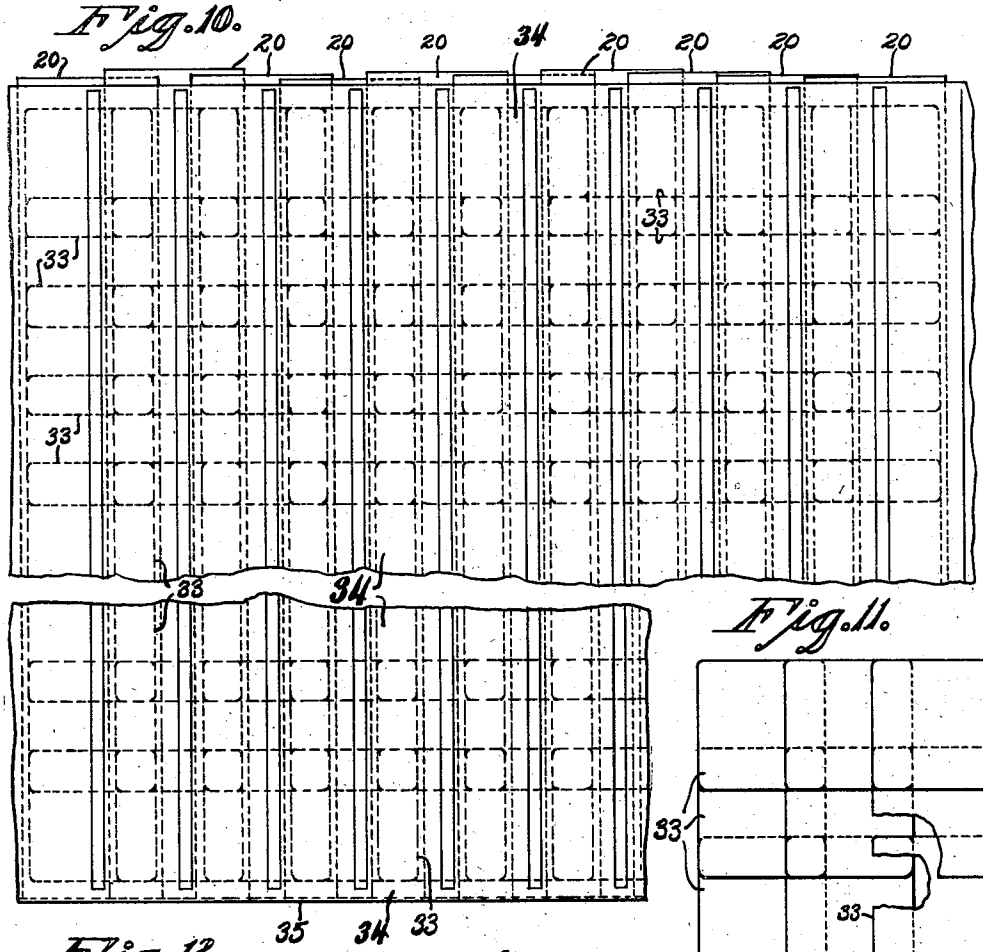


Fig. 11.

Fig. 12.

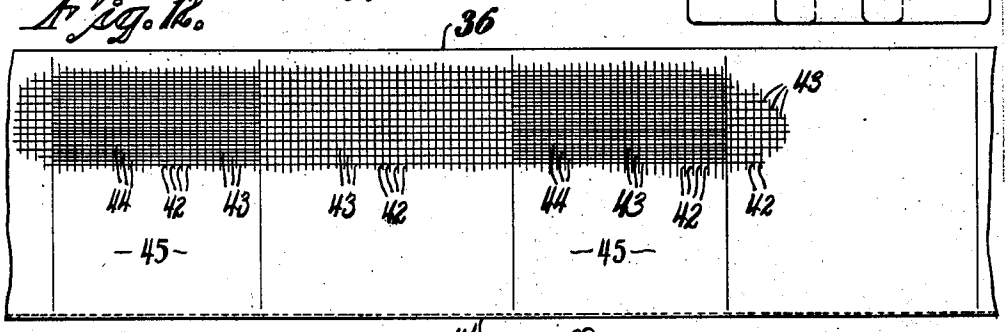
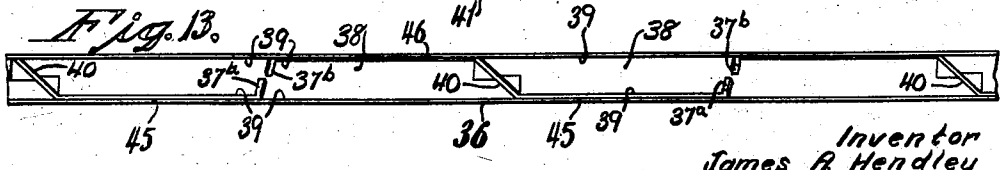


Fig. 13.



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UNITED STATES PATENT OFFICE

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TEXTILE WEBBING

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Application January 7, 1944, Serial No. 517,341

6 Claims. (Cl. 139—390)

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

An object of this invention is to provide an improved textile webbing provided with a longitudinally-successive series of pockets in longitudinally-overlapping relation.

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 drawings forming part of the present disclosure, in which certain ways of carrying out the invention are 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 on an enlarged scale;

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

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

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 transverse sectional view taken on line 6—6 of Fig. 5 with a portion of an end-wall of a pocket having the weave illustrated schematically, with Fig. 6 shown in a position corresponding to the position of the sectional view of Fig. 4;

Fig. 7 is a longitudinal sectional view similar to Fig. 2, but with the float threads cut and armor-plates inserted in the pockets of the webbing;

Fig. 8 is a face view of one of the armor-plates;

Fig. 9 is an edge view of Fig. 8;

Fig. 10 is a face view of a modified wide webbing made in accordance with the present invention, and which has inserted therein in vertical position in the parallel overlapping vertical pockets thereof, a plurality of webbings with armor-plates of the form shown in Figs. 1 to 9;

Fig. 11 is a face view of a plurality of armor-plates illustrating the overlapping relation they have in Fig. 10, but omitting all webbing for clearness;

Fig. 12 is a face view of a modified form of textile webbing in accordance with the present invention; and

Fig. 13 is an open-edge view of the textile webbing of Fig. 12 after the float threads have been cut.

Referring to Figs. 1 to 9 of the drawings, the textile webbing 20, after having had the float threads 21 cut, has a longitudinally-successive series of pockets 22 in longitudinally-overlapping relation. Each pocket 22 (Figs. 5 and 7) has two opposite side-walls 23—23, two opposite end-walls 24—24 and a bottom or bottom-edge 25. The respective opposite side-walls 23—23 of the pockets 22 constitute or form part of two continuous face-to-face side-strips 26 and 27. 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 25 of the pocket. The end-walls 24—24 of the pockets extend generally parallel to one another and each has one end 28 interwoven or woven in with the side-strip 26 and has the other end 29 interwoven or woven in with the side-strip 27 at a location longitudinally displaced from the interwoven location 28 of the first-mentioned end, to thus produce the overlapping relation of the pockets 22.

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 21 to produce the completed construction shown in Figs. 5, 6 and 7. In weaving the webbing as illustrated in Figs. 1 to 4, the warp strands or longitudinal strands include three sets of warp strands. The warp strands 30 form one set and extend along, and are interwoven with the weft strands or weft picks 31 throughout the width and length of the side-strip 26. A second similar set of warp strands (not illustrated) extends along throughout the width and length of the other side-strip 27 and is interwoven with the weft strands thereof. And warp strands 32 form a third set and are interwoven with the weft strands 31 of the side-strip 26 in a woven-in region 28 (Fig. 1), then extend along an end-wall 24 of a pocket 22 where they are interwoven with the weft strands 31 of the end-wall (Fig. 6), then are interwoven with weft strands (not illustrated) of the side-strip 27 in a woven-in region 29, then extend across at 21 as float threads to be again interwoven with weft strands 31 at a

woven-in region 28 of the side-strip 26, and so on.

In carrying out this weaving operation, a weft strand, commonly known as weft picks or weft strands, and designated as 31, is interwoven with the warp strands 30 and 32 to form the side-strips 26 and 27 and pocket-ends 24, in a way that will be understood by those skilled in the art of weaving. Thus the weft strand can be passed from the bottom location 25 (Fig. 4) up to the top of the pocket-end member 24, then back down to location 25, then up and down in the side-strip 26, then up and down in the side-strip 27, then up and down in the pocket-end member 24, and so on until a woven-in area 29 in the side-wall 27 is reached, when the weft strand passes alternately up and down one side-strip and then up and down the other side-strip until the next pocket-end member 24 is reached for weaving. When the cross-over or float-warp sections 21 are severed or cut in a way understood by those skilled in the art of weaving, short protruding ends 21*a* and 21*b* are left respectively attached to the side-strips 26 and 27. In weaving the weft strands or picks, at least some of the weft strands 31 will pass or extend directly across at the bottom-edge 25 from one to the other of strips 26 and 27 throughout the length of the webbing to join the two lower edges of the strips together to form the bottom or bottom-edge 25.

The textile webbing 20 just described can be employed for many different uses. Any of various different articles could be placed in the various pockets. One particular use is illustrated in Figs. 7 to 11, in which concave armor-plates 33 of tough metal are placed in the pockets 22 of the webbing 20, as illustrated in Fig. 7, in which the successive plates 33 will be seen to be in successive-overlapping relation. In the particular use of this construction illustrated in Fig. 10, another much wider textile webbing 34 is employed, having a closed woven bottom-edge 35, and a succession of overlapping pockets essentially identical with the overlapping pocket-construction illustrated in Figs. 1 to 7, except that the size of the pockets of the webbing 34 is somewhat larger so that a plurality of webbings 20, each containing armor-plates 33 as illustrated in Fig. 7, can be slid down into the pockets of the webbing 34 substantially the full length of the webbing, so that the successive webbings 20 with their armor-plates 33 will be in overlapping relation as illustrated by the overlapping plates 33 illustrated in Fig. 11. All the textile webbing is omitted from Fig. 11 for clearness.

The textile webbings 20 and 34 with the armor-plates 33 therein as illustrated in Fig. 10, may be employed in any of varied constructions such, for example, as clothing or parts of clothing such as vests preferably with protective padding inside, or in the form of a curtain which may be of flat form, or of circular form similar to a shower curtain, or as a portion of a floor or ceiling, particularly in aircraft. In any use in which the construction would be employed, the concave sides of the armor-plates 33 would be toward the person being protected.

Figs. 12 and 13 illustrate a modified form of textile webbing 36 which, after having the float threads cut to leave short protruding ends 37*a* and 37*b*, provides a longitudinally-successive series of pockets 38 in longitudinally-overlapping relationship. Each pocket 38 has two side-walls 39—39, two end-walls 40—40 and a bottom 41, of different proportions from, but generally similar to corresponding parts of, the textile webbing 20 previously fully described. One difference of proportion is that in the webbing 36, each pocket is about twice as long as it is wide or high, thus particularly adapting it for containing articles that are longer than they are high such, for example, as armor-plates which, instead of being square as are the armor-plates 36, could be twice as long as they are high. The mode of manufacture of the webbing 36 is the same as in the case of the webbing 20, but owing to the different proportions of the pockets of the webbing 36, the optical appearance of the weave is somewhat different. This difference of proportion, as will be seen from the schematically shown area on Fig. 12 illustrating the interweaving of the weft strands 42 and the sets of warp strands 43 and 44, results in much longer woven-in areas or locations 45 and 46 than is true of the respectively corresponding woven-in areas or locations 28 and 29 shown and described in connection with the webbing 20.

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-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 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 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.

2. 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 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 consisting substantially of woven fabric and extending generally parallel to one another and 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.

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 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 including warp strands which originally extended continuously substantially throughout the length of said webbing and which originally were alternately interwoven with first one and then the other of said side-strips, said end-walls extending generally parallel to one another and 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.

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 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 by weft strands of said side-strips extending across from one to the other of said side-strips; and the end-walls extending generally parallel to one another and 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.

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 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 by weft strands of said side-strips extending across from one to the other of said side-strips; and the end-walls including warp strands which originally extended continuously substantially throughout the length of said webbing and which originally were alternately interwoven with first one and then the other of said side-strips, said end-walls extending generally parallel to one another and 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.

6. A textile webbing including: a longitudinally-succesive 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 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 by weft strands of said side-strips extending across from one to the other of said side-strips; and the end-walls consisting substantially of woven fabric and including warp strands which originally extended continuously substantially throughout the length of said webbing and which originally were alternately interwoven with first one and then the other of said side-strips, said end-walls extending generally parallel to one another and 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.

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