No. 859,067. PATENTED JULY 2, 1907.

V. H. JENNINGS.

WOVEN FABRIC.

APPLICATION FILED MAR. 9, 1907.

2 SHEETS—SHEET 1.

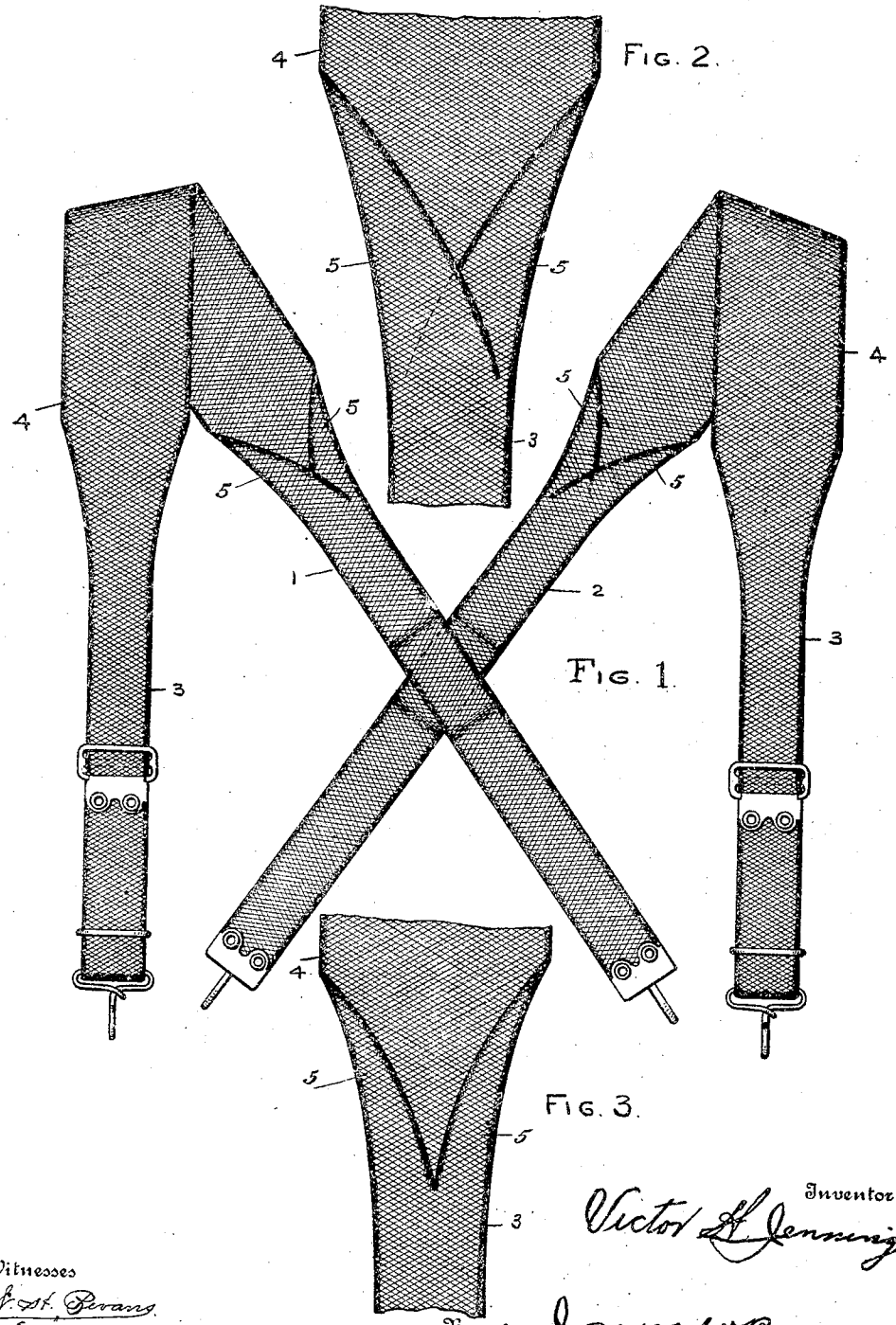



FIG. 2.

FIG. 1.

FIG. 3.

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2 SHEETS—SHEET 2.

FIG. 4.

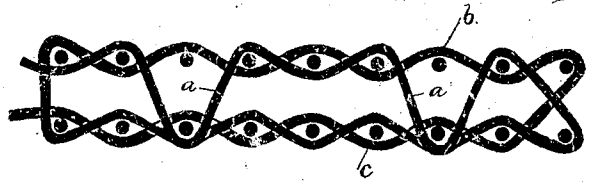



FIG. 5.

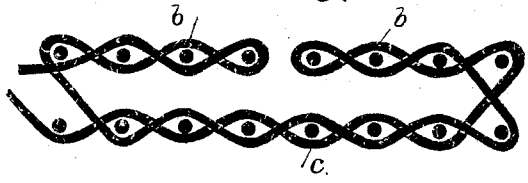



FIG. 6.

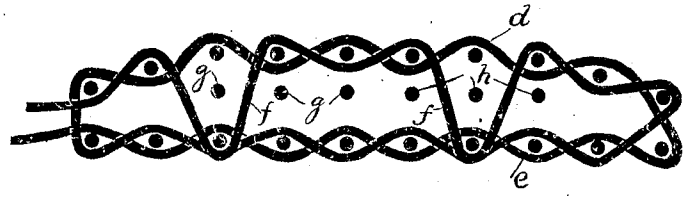
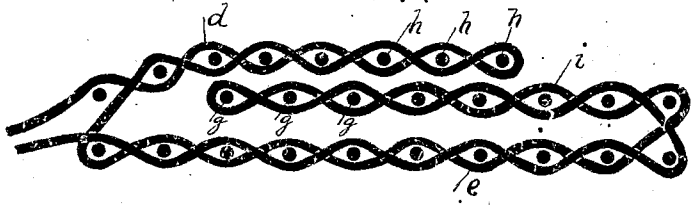



FIG. 7.




Inventor

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Witnesses

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# UNITED STATES PATENT OFFICE.

VICTOR H. JENNINGS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO MILLS WOVEN CARTRIDGE BELT COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

## WOVEN FABRIC.

No. 859,067. Specification of Letters Patent. Patented July 2, 1907.

Application filed March 9, 1907. Serial No. 361,507.

*To all whom it may concern:*

Be it known that I, VICTOR H. JENNINGS, a subject of His Majesty the King of the United Kingdom of Great Britain and Ireland, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Woven Fabrics, of which the following is a specification.

This invention relates to improvements in woven fabrics having wide and narrow portions, and the object is to produce a fabric of this character having great strength but at the same time being graceful in appearance, and in which all the warp threads are continued throughout the fabric, thus avoiding cutting or otherwise removing the dead threads.

While I have illustrated my invention in the present instance in connection with suspenders for ammunition-belts, I do not limit it to this use, as it may be employed in the production of many other articles, as for instance surcingles, abdominal belts, etc.

In the drawings;—Figure 1 is a view of suspenders constructed in accordance with my invention; Fig. 2, an enlarged detail view taken at the juncture between the wide and narrow portions of the fabric; Fig. 3, a similar view showing another method of weaving the fabric; Figs. 4, and 5, diagrammatic views of the fabric shown in Figs. 1 and 2, and Figs. 6 and 7, similar views of the fabrics shown in Fig. 3.

The suspenders shown in Fig. 1 consist of two strap-members 1 and 2 crossed and held together at the point of crossing so as to have a limited movement, one upon the other, said strap-members consisting each of narrow portions 3 and wide portions 4 to form pads for the shoulders.

To produce the fabric shown in Fig. 3, I begin by weaving a narrow fabric 3, which is, in effect, a flattened tube or hose, the flattened sides being securely bound, one to the other, by means of binder threads, so as to produce a solid fabric. When the desired length of narrow fabric has been woven, the weave is changed, so that one side of the said tubular portion is divided centrally, as if split through the center. In the further weaving of the fabric, the divided side or ply of the tube is not interwoven with the other ply thereof, until it is again desired to produce a narrow portion, the two portions of the divided ply being flattened out in the completed fabric in the same plane with the other ply, thus producing a wide portion 4, which is equal in width to the combined widths of the two interwoven or united plies of the narrow tubular portion 3. To accomplish this, when the point is reached in the weaving of the narrow portion 3, where it is desired to obtain the wider fabric 4, the harnesses carrying what may be termed the lower ply, and one-half of the upper ply of the tube, are dropped and the weft thread interwoven for two picks with one-half only of the top ply. Then the harnesses carrying all of the top ply are raised, and one pick is interwoven in the lower ply. Then the harnesses carrying the lower ply, and that half of the top ply which was first interwoven are dropped, and two picks are interwoven with the second half of the top ply. Then, once more, all the harnesses carrying the top ply are raised, and the weft thread returns again through the lower ply, but on the pick opposite to the pick last interwoven in the lower ply. The operation is then repeated. The effect of this is to join to the solid narrow web, a folded web whose selvages meet on a line which is the extension of the center line of the narrow web. The desired length of the fabric having thus been woven to form the wide portion, a succeeding narrow solid portion is then produced. When the fabric is removed from the loom the two halves of the divided side or ply are spread out, and by means of ironing made absolutely flat. If desired the triangular portions 5 of the divided ply where the narrow portion of the fabric merges into the wide portion, formed by flattening or ironing out the two halves of said divided ply may be fastened to the other ply by stitching or riveting, in order to prevent the tendency of the sides of the wide portion of the fabric to pull in by the strain on the narrow portion.

The two diagrammatic views illustrated in Figs. 4 and 5, show the manner of weaving above described. Fig. 4 representing a section through the flattened tube, showing the binder threads *a* which secure the two plies *b* and *c* together, and Fig. 5, a section taken through the wide portion of the fabric before the two halves of the divided ply are flattened out.

In the form illustrated in Fig. 2, the fabric is shown as having its wide portion more than twice the width of the narrow portion. As in the first form described, the narrow portion is woven as a flattened tube, consisting of two plies *d* and *e* (Fig. 6) interwoven or bound together to form a solid fabric by the binder threads *f*, but in addition it carries a number of longitudinal threads *g* and *h* disposed between the two plies, said threads being dead threads, that is, threads not interwoven with the fabric. These threads are the number of threads over and above the number of threads in the two plies of the narrow portion, which are required to produce the extra width of the wide portion over the combined widths of the two plies of the narrow portion.

The required length of the narrow portion having been produced, I begin the weaving of the triple cloth. The harnesses carrying the middle ply *i* and lower ply *e* are dropped, and two picks put in the upper ply, which now includes the extra or former dead threads *h*. Then the harnesses carrying the upper ply *d* and said middle ply *i* are raised and one pick is woven in the lower ply. The harnesses carrying the lower ply are then dropped, and the harnesses carrying the upper

ply are raised, and two picks woven in the middle ply, which now includes the former dead threads *g*. Then the upper and the middle harnesses are raised and one pick is woven in the lower ply. Fig. 7 shows clearly the manner of weaving the three plies, the middle ply lapping over and extending beyond the center of the lower ply and the upper ply lapping over the middle ply, and also extending beyond the line of the center of the lower ply.

From the above description, it will be seen that the wide portion of the fabric consists of the two plies forming the narrow portion with the additional width formed by interweaving the dead threads carried by said narrow portion. When taken from the loom the triple cloth is unfolded and flattened out in the same manner as has been described in connection with the first form.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is;—

1. A textile fabric comprising a narrow portion consisting of two or more interwoven plies, and a wide portion formed of a single ply.

2. A textile fabric comprising a narrow portion consisting of two or more interwoven plies, and a wide portion consisting of a single ply formed by dividing the interwoven plies and unfolding the divided portions in one plane.

3. A textile fabric comprising a narrow and a wide portion, the narrow portion consisting of two or more interwoven plies, and the wide portion consisting of a single ply which is formed of and includes in its transverse extent the plies forming the narrow portion.

4. A textile fabric comprising a narrow portion consisting of two or more interwoven plies and a number of threads not entering into the weave thereof, and a wide portion consisting of a single ply formed by dividing one of the plies and unfolding the divided portions in the same plane with the other ply, said divided ply being increased in width by means of the extra threads carried by the narrow portion.

In testimony whereof I affix my signature in presence of two witnesses.

VICTOR H. JENNINGS.

Witnesses:
HARRISON W. BOWKER,
BERTHA TAX.