July 3, 1951 S. BRIERLEY 2,559,341

DOUBLE-PLY LENO FABRIC

Filed July 31, 1948

Fig. 1.

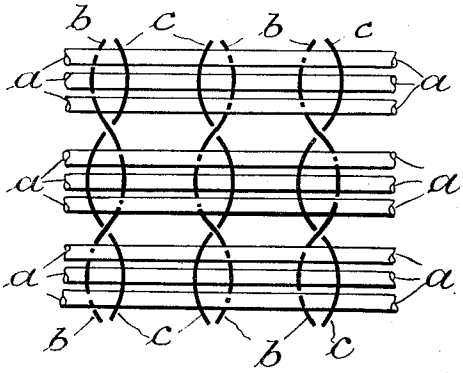
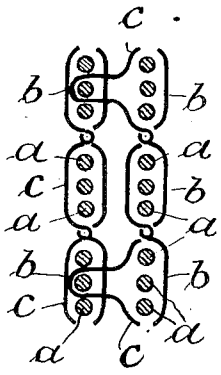


Fig. 2.



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DOUBLE-PLY LENO FABRIC

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2 Claims. (Cl. 139—419)

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My invention in or relating to woven fabrics has for its object to provide a novel form of construction of a fabric made of wool which will have for a given weight of material a maximum bulk and consequently a maximum air space or content within its boundaries, thus rendering it particularly suitable for use in the manufacture of blankets, wraps, rugs, shawls, or scarves, or indeed for any other purpose where maximum bulk is desired with minimum weight.

It is well known in the textile industry that in the same fabric structure as regards counts of yarn and threads per inch, double or multi-ply weaves give greater bulk, and fuller or loftier handle than single weaves.

In all woven fabrics a mesh structure is formed by the interlacing of the threads, which is more visible in loosely woven fabrics and it is known that by employing a leno or doup weave, the meshes of the fabric structure can be enlarged, particularly in the more loosely-woven fabrics, and further that by the crossing of the warp threads in such a weave a stronger and firmer fabric is obtainable than is possible by normal interlacing.

A fabric according to the present invention is characterised by the combination of a double-ply leno structure to give bulk and, with suitable setting and counts of yarn, the desired openness or cellular structure.

The accompanying drawing shows in

Fig. 1 a diagrammatic plan view of a portion of a double ply fabric embodying the invention,

Fig. 2 being a cross-sectional view of the fabric taken as on the line 2—2 in Fig. 1.

In the drawing, *a* represents weft threads, *b* ground warp threads and *c* doup warp threads crossing with the ground warps as shown in Fig. 1, the two plies being tied together as shown in Fig. 2.

The setting of a fabric according to the invention is of primary importance, since unless certain conditions are fulfilled the desired results will not be obtained, or will not at any rate be achieved in full measure. These conditions are, substantially, that the fabric shall be so set as to contain a weight of yarn equal, approximately, to five per cent of the maximum density of wool, within the cubic contents of any portion of the fabric, and that the weight of warp yarn is approximately the same as the weight of weft yarn in the same size of fabric. This structure gives a fabric having approximately three to four times the bulk of a plain-weave cloth made with the same quantity of yarn of the same counts and using the same number of threads per inch. Using the same double-ply weave, the structure

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may be varied by reducing or increasing the density of the fabric to an extent not exceeding approximately 33 per cent without altering materially the appearance of the fabric. If the density is reduced, the size of the meshes in the fabric will be increased and the fabric will be looser in structure and lighter in weight, whilst if the density is increased the size of the meshes will be reduced and the fabric will be firmer in structure and heavier in weight. In both cases the bulk or thickness of the fabric will not vary materially from what I may term the standard of 5% of the maximum density of wool in the cubic contents of the fabric, and vary within the limits of 3⅓% and 6⅔%. It will thus be apparent that anybody skilled in the art of fabric construction can produce, within limits, a fabric according to the invention of substantially any weight desired.

By employing a double-ply structure as set forth, coupled with observance of the conditions I have described a fabric of the nature or possessing the characteristics desired is obtainable by weaving alone, without dependence upon any finishing processes such as raising or the like to provide the requisite bulk or fullness.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A woven woolen fabric of double-ply leno structure presenting a leno weave on each of two opposite surfaces thereof; and containing a weight of yarn equal to about 5% of the maximum density of wool, with the weights of the warp and weft yarn in said woven woolen fabric being approximately equal.

2. A woven woolen fabric of double-ply leno structure presenting a leno weave on each of two opposite surfaces thereof; and containing a weight of yarn equal to between 3⅓% and 6⅔% of the maximum density of wool, with the weights of the warp and weft yarn in said woven woolen fabric being approximately equal.

SAM BRIERLEY.

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