Jan. 8, 1952 A. SCHIAPPA 2,582,169

SELVAGE EDGE CONSTRUCTION IN WOVEN ELASTIC FABRIC

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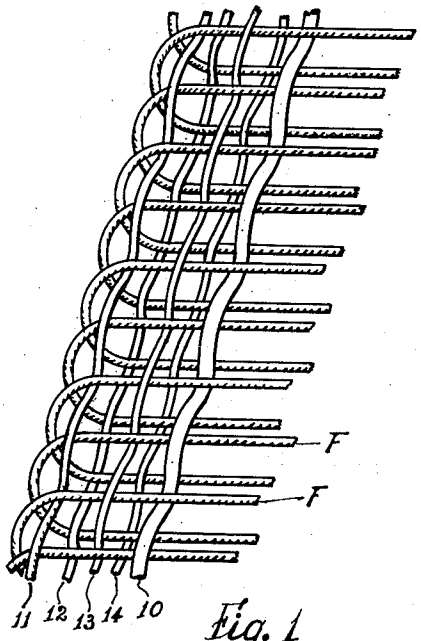


Fig. 1

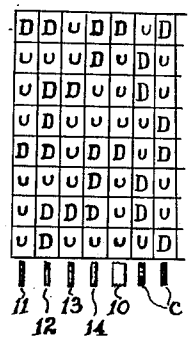


Fig. 2

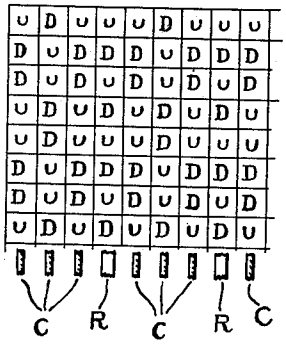


Fig. 3

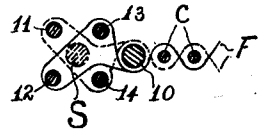


Fig. 4

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SELVAGE EDGE CONSTRUCTION IN WOVEN ELASTIC FABRIC

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3 Claims. (Cl. 139—421)

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This invention relates to woven elastic fabrics comprising elastic and non-elastic warps, and filling which is commonly non-elastic. Such fabrics frequently receive lines of stitching in assembling with other pieces of fabric, and the stitching operation inevitably needle-cuts an occasional rubber thread. The cut thread then contracts and commonly produces an irregular or ruffled edge on the fabric, if the cut thread is in or near the selvage.

It is the general object of the present invention to provide a selvage edge for a woven elastic fabric which is so constructed that each elastic selvage thread will be firmly gripped and will be securely held from contraction if cut.

A further object is to provide a woven elastic fabric in which the selvage portions contain covered-rubber warp threads only, and in which each rubber warp thread is under substantial tension in the finished fabric.

I also provide a woven elastic fabric in which any one of a plurality of associated rubber selvage warp threads, if severed, will be held from slipping by the filling and by the remaining rubber selvage warp threads.

I also provide an elastic fabric in which the selvage edge portions are preferably woven double or tubular and thus provide a thickened and more pleasing appearance at the edges of the fabric.

My invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly pointed out in the appended claims.

A preferred form of the invention is shown in the drawings, in which

Fig. 1 is a partial perspective view of my improved selvage edge weave construction;

Fig. 2 is a weave diagram thereof;

Fig. 3 is a weave diagram of a portion of a body fabric; and

Fig. 4 is a detail sectional view nad also showing a slight modification.

Referring to Fig. 1, I have shown the edge portion of the fabric as comprising a covered-rubber warp thread 10 and a plurality of covered-rubber selvage warp threads 11, 12, 13 and 14. I have also shown filling threads F which are commonly inelastic but which may be elastic where two-way stretch is desired.

In the preferred construction, each selvage portion is woven double or tubular, the threads being woven in associated pairs, with certain warp threads in the upper fabric layer and with the remaining warp threads in the lower fabric layer. The selvage warp threads 11 to 14, form a relatively soft tubular edge alongside but outside of the warp thread 10, as shown in Fig. 4.

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The weave as shown is three-and-one, with each covered-rubber selvage warp thread passing under one filling thread and over three, or else passing over one filling thread and under three. All of the rubber selvage warp threads are woven under tension, and they partially contract when the fabric is released from the take-up roll but they all remain under substantial tension in the finished fabric.

This partial contraction of the covered-rubber selvage warp threads on release of the fabric causes them to expand as they shorten, and such expansion causes each rubber selvage warp thread to be firmly gripped by the commonly non-elastic filling F and by the associated rubber selvage warp threads.

If any one of the threads 11 to 14 is accidentally cut, it will tend to contract further, and such additional contraction will immediately produce a still further increase in diameter. The cut thread is thus even more firmly gripped by the interwoven non-elastic filling and the associated rubber selvage warp threads and is held from any substantial further contraction in the fabric.

This gripping action is substantially increased by the fact that the rubber selvage warp threads are all closely bound together in tubular form by the filling threads as shown in Fig. 4. With this construction, transverse expansion of a rubber warp thread (as 11) after severance is strongly resisted by the remaining rubber warp threads (as 12, 13 and 14) in the tubular assembly, and the increased lateral pressure of the tubularly confined threads against each other retards and restricts longitudinal slip of the cut thread portions away from the point of severance.

The increase in diameter on decrease in tension is substantial. A covered-rubber thread which has a certain diameter at weaving tension may increase one-half in diameter at 50% tension and may be substantially twice as thick when fully relaxed.

The body weave, as indicated in Fig. 3, may be a single fabric weave, with filling shots F, small cotton warp threads C and rubber warp threads R. The rubber threads R are commonly substantially larger than the selvage rubber warp threads 11, 12, 13 and 14 but the rubber selvage warp threads commonly have greater stretch. The cotton warps C may be woven two-up and two-down, and the interposed rubber

warps R may be woven one-up and one-down. Other common weaves may be substituted.

The weaving of the covered-rubber selvage warp threads as a double or tubular fabric provides a thickened but softer selvage edge portion for the fabric and substantially improves the appearance of the fabric over a single fabric, which latter fabric might tend to appear thin at the edge on release from weaving tension.

Where a heavier selvage or one with greater pull is desired, one or more rubber strands S may be laid in the double or tubular selvage, as shown in Figure 4.

My improved selvage edge has been found satisfactory in actual use and effectively prevents runs and loose tension in the selvage, in the event that one or more rubber selvage warp threads are accidentally cut.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A woven elastic fabric having a selvage portion comprising filling threads and a plurality of covered-rubber selvage warp threads only, each rubber selvage warp thread being gripped by the filling threads and by the associated rubber selvage warp threads and being under substantial tension in the finished fabric, and said selvage portion being tubular and with upper and lower fabric layers.

2. A woven elastic fabric having a body portion comprising relatively heavy covered-rubber warp threads and non-elastic warp threads and having a selvage portion comprising only filling threads and a plurality of covered-rubber selvage warp threads under substantial tension in the finished fabric, and said covered-rubber selvage warp threads each having a longer stretch and a smaller cross section than said first-named covered-rubber body warp thread and being disposed in tubular form and in upper and lower fabric layers.

3. A woven elastic fabric having a selvage portion comprising filling threads and a plurality of covered-rubber selvage warp threads only, each rubber selvage warp thread being gripped by the filling threads and by the associated rubber selvage warp threads and being under substantial tension in the finished fabric, said selvage edge being tubular, and relatively heavy contraction means being disposed within said tubular edge portion and extending lengthwise thereof.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
283,100	Green et al.	Aug. 14, 1883
817,019	Sykes	Apr. 3, 1906
1,267,954	Achtmeyer	May 28, 1918
1,601,484	Taylor	Sept. 28, 1926
2,325,215	Amyot	July 27, 1943
2,418,187	Moore	Apr. 1, 1947