

THE MANUFACTURE OF ELASTIC FABRICS

BY SAMUEL BROWN

(Continued from October.)

Last month I referred more particularly to a simple suspender web, with a plain weave on both face and back. It will be in order now to consider a web in which the face and back have distinctly different

weaves. so that each pick floats two picks above the cloth. Thus when contraction of the web takes place, these threads pearl up, and mass together in a velvet-like pile, which not only produces a smooth handling web, but also increases the thickness.

To prevent any prominence of the diagonal effect liable to appear on the twill weave, it is advisable to arrange the chain

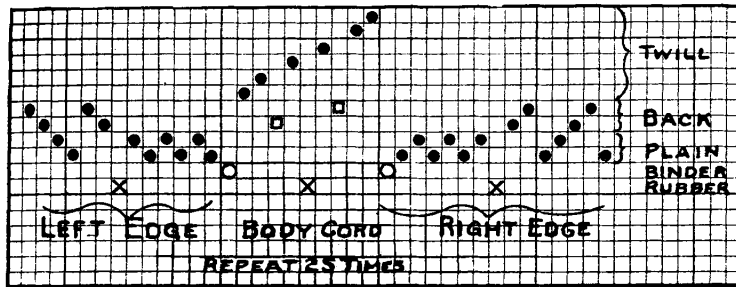


FIG. 47

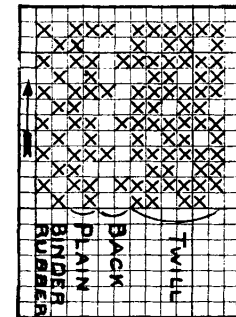


FIG. 48

weaves. The most common of these weaves is the 3-leaf twill, which is popularly known as a satin face. This is used not only for suspenders, but also extensively for heavy corset trimming. A web of this character

draft so that the twill weave will be made the reverse to the twist of the yarn. This arrangement results in filling up the twill canal. Six threads of face to each rubber thread is generally used, with only one

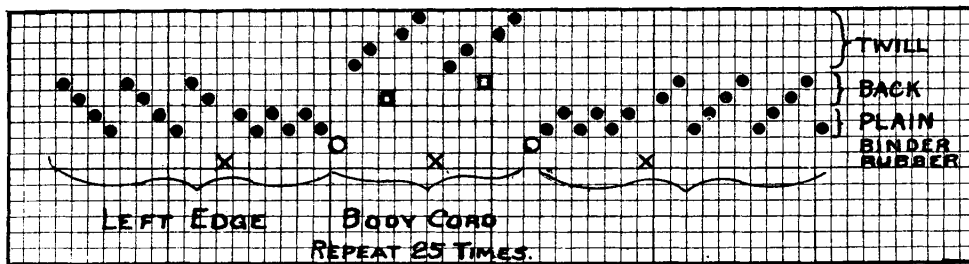


FIG. 49

has a very smooth velvet-like feel, and if properly constructed, is free from that "rowy" effect which is so much in evidence in a plain web; and which is caused by the binder warp cutting down into the face. In the satin face the threads are bound only in the upper cloth on one pick in every three,

binder thread, in order that the binder row may be small and easily hid with the velvet like face. For this type of web, a round or plain edge is desirable. This makes a contrast with the face and shows up both weaves to advantage.

Fig. 47 shows the harness draft of such

a web, with a 6 thread face and 4 thread back, the back being drawn double in the harness. Fig. 48 is the chain draft for this weave. Following is the construction of a properly balanced web for standard goods, 1 1/8 inches wide:

Edge, 25 threads	2 60s
Binder, 26 threads	2/50s
Back, 50 threads	2/28s
Gut, 25 threads	2/20s
2 Face, 75 threads	2/50s
Rubber, 29 threads	34s
Reed	23 dents per inch
Filling	2/26s
Picks	66 per inch

In this web there are 150 threads on the face. It would not be practicable to run



FIG. 50

this on one warp and weight them so that they would clear in the harness, not yet in the front shed. It becomes, therefore, necessary to put these warp threads on two warps of 75 threads each. A twill weave of

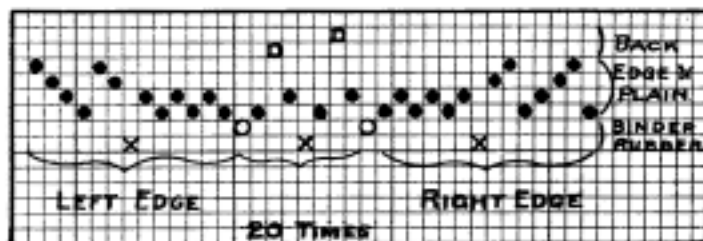


FIG. 52

this character could of course be made on three harness, but for the reason that it would be too crowded to clear, and for convenience in handling, it is advisable to use 6 harness. This arrangement will allow one face warp on the first, third and fifth harness, and another on the second, fourth and sixth. It will be noticed in this construction that there are four more rubber threads than there are body cords, which allows for two in each selvage. This becomes neces-

sary, inasmuch as in a web of this character, one rubber would not have enough to contract the edge and the result would be frilled goods.

In making a web using the four-leaf twill, the harness draft of which is shown in Fig.

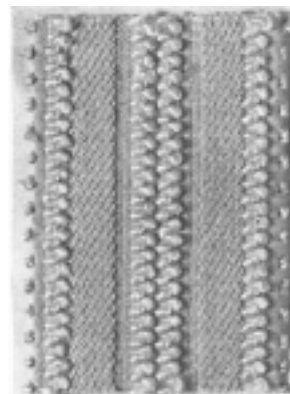


FIG. 51

49, and chain draft in Fig. 50, we have about the extreme length of warp float which it is practicable to use in an elastic fabric. The float over 3 picks of the face piles up so high that in anything but a finely picked web, the effect is ragged and spongy. Following is the construction of a fine web of this char-

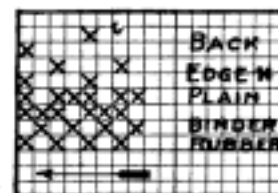


FIG. 53

acted, extending over 25 cords, standard 1 1/8 inches wide:

Edge, 33 threads	2/60s
Binder, 26 threads	2/60s
Back, 50 threads	2/28s
Gut, 25 threads	2/20s
2 Face, 100 threads	2/80s
Reed	23 dents per inch
Filling	2/26s
Picks, 66 per inch ..	1 1/8 in. wide

The contraction causes the floating threads to pile up higher than those which are stitched tighter. This affords an opportunity for a combination of simple weaves, which may be so arranged as to produce figured effects by contrast.

Fig. 51 shows a web of this character, a combination of plain and twill, interspersed with heavy cord effects. For further elab-

20 body cord and covering $1 \frac{3}{4}$ inches in width, is as follows:

Edge, 25 threads	2/28s
Binder, 42 threads	2/20s
Back, 80 threads	2/10s
Gut, 20 threads	2/16s
Face, 80 threads	2/20s
Ribber, 22 threads	30s

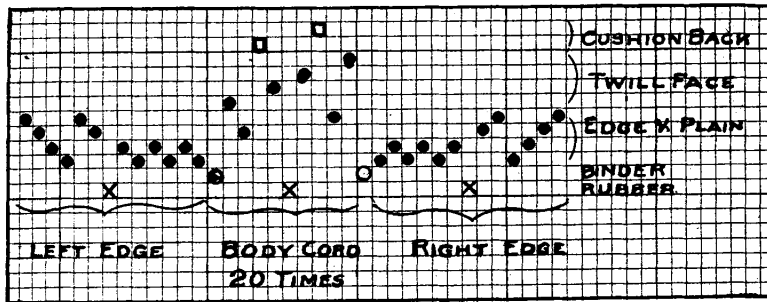


FIG. 54

oration it has raised cords and what is known as a picot edge made by the insertion of a single heavy thread at the extreme edge of the selvage, which floats outside at regular intervals. When the goods contract this thread pearls up in a bead-like form. In this arrangement the plain weave shown at the center and sides is bound down flat, while the twill stands up full and thick, and the cords and picot edge are even more prominent.

Another type of web which calls for special mention, and which is within the possible limits of a cam loom is designed to meet the requirements of what is known as the police and fireman brace. It is designed to withstand hard usage, and is usually made from $1 \frac{3}{4}$ inch to 2 inches wide, and exceptionally heavy. The excessive weight is produced by the introduction of a very loose weave for the back of the goods, and the use of heavy yarn for the back warp, generally with four ends of 2/10s in the cord. The face is invariably a plain weave. While a heavy yarn is also necessary here, it will, of course, not have to be as heavy as the back inasmuch as the tightly bound face tends to restore the balance. Fig. 52 shows a weave of this kind. Fig. 53 is the chain draft. A construction of such a web, having

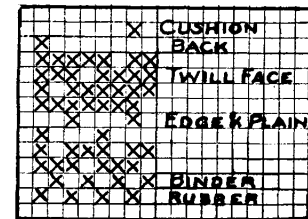


FIG. 55

Reed	12 dents per inch
Filling	2/10s
Picks, 40 per inch	$1 \frac{3}{4}$ in. wide

Another web of the same type is known as farmers' web. This is also made extra wide and has the same element of weight in its heavy, loosely woven back as the police web. Instead of a plain face, the four-leaf twill is generally used, which still further increases the weight. The use of this soft weave on the back and face deprives the web of much of its desirable firmness. This is offset by the introduction of an auxiliary back warp, which is made in the plain weave and knits the filling more tightly together, thus increasing the firmness of the web. Fig. 54 shows the harness draft of this web, introducing the auxiliary back warp. Fig. 55 is the chain draft. A construction of this kind is as follows:

Edge, 25 threads	2/28s
Binder, 40 threads	2/20s
Twill face, 80 threads	2/16s
Gut, 20 threads	2/20s
Back, 40 threads	2/10s
Inside back, 40 threads	2/20s
Rubber, 22 threads	30s
Reed	11 $\frac{1}{2}$ dents per inch
Filling	2/10s
Picks, 44 per inch	$1 \frac{3}{4}$ in. wide