LENO IN DOUBLE WEAVE

ON FOUR SHAFTS

Fabrics made entirely in Cross Weaves, particularly Gauze, or Leno, have always a tendency to pull in the edges. In case of Net-Weaves this pulling-in may reach such proportions that the fabric practically collapses when taken off the loom. The usual remedy is a very stiff and heavy weft; in case of certain Net Weaves the weft, or at least occasional shots must be made of rigid weft (wire, bamboo, wood strips).

It would help a lot if we could stitch the Leno fabric to a backing or ground made of a solid, stiff tabby which would prevent the pulling-in of the top layer. This can be done by adding three or four shafts: two for the tabby ground and one or two for stitching. But more spectacular results can be achieved with only four shafts, and the Cross Comb (MW 38/10), or even plain picking stick.

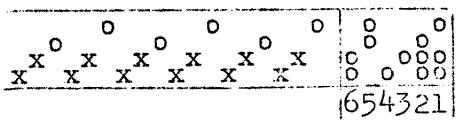
We shall have two layers of completely different fabrics: the top layer with a soft warp, and such weft as may be necessary for cross weaving; and the back layer of stiff warp and equally stiff weft.

It looks at first that we shall have to have two warps on two warp beams. This is true if we want a complete freedom of designing the top layer, because the take-up in the ground is always the same, when the top may have any take-up at all depending on how often we cross the warp ends, and in how large groups.

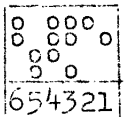
On the other hand a lot of projects can be made on a single warp, as long as we are not too extravagant in designing. Let us start then with a simple project where the crossing will be done at regular intervals, just often enough to compensate for the take-up in the tabby ground.

We shall use mercerized cotton 8/2 for the top layer and 25/2 linen for the backing; single linen #12 or 14 will do as well. In the threading linen is marked "x", and cotton "o". The sett of linen warp should be 28 to 30 per inch, and the sett of cotton just one half of the linen, that is 14 or 15. For a project 14" wide we shall need 588 or 630 ends in all.

Tie-up "A" is for sinking shed, and "B" for rising shed. In most cases this distinction is not important, but here it is vital.



A



B Fig.1

Treadles 1 & 2 weave the upper layer; 3 & 4 the ground; and 5 & 6 are stitching treadles.

When warping such widely different yarns as linen and mercerized cotton we must be careful to use as little tension as possible, because if both are held tight, the cotton will stretch and linen will not, which means that in weaving there will be simply not enough slack on cotton for the cross weave. If possible use a warping mill. Place two tubes of linen and one tube of cotton on the warping rack, and make crosses 3 by 3.

There is nothing special about threading except that the two yarns when left hanging at the back of the loom may tangle or twist. Do not try to straighten them out. Divide them in bunches of two or three inches, and let them twist. When threading, select the right end at the cross, catch it with the threading hook, hold gently the whole bunch in your left hand and pull the hook.

We start weaving on treadles 5 and 6. They do not give tabby, but a fairly firm fabric. This later on may be hemmed or fringed. The pattern part starts on treadles 3 & 4. We can weave for instance two inches of the linen ground on 3 & 4 beating quite hard to get a firm ground. The weft should be also linen #10 or even heavier.

Then we press treadle #6, which sinks the ground and leaves the upper layer (not woven so far) on top. Now we can use the Cross Comb, or a picking stick to get the leno effect. We can also combine Leno with tabby on treadles 1 and 2. The weft must be heavy and stiff, such as #1½ linen for the cross shed, but anything will do for tabby on treadles 1 & 2.

This must be followed by at least one shot on treadle 5; better: 5,6,5. The same weft as for the ground. It will stitch both layers and then we can repeat the whole operation.

This type of work takes a lot of experimenting before we can settle down to real weaving. It means incidentally making the warp

at least a yard or so longer than required for the project. It may be also necessary to cut off a sample of the woven fabric at the start to see what it looks like when taken off the loom.

The draft in fig.1 is not the only one we can use. The backing may be much finer or much coarser than the face, and the drafts must be adjusted accordingly. Examples are shown in fig.2.

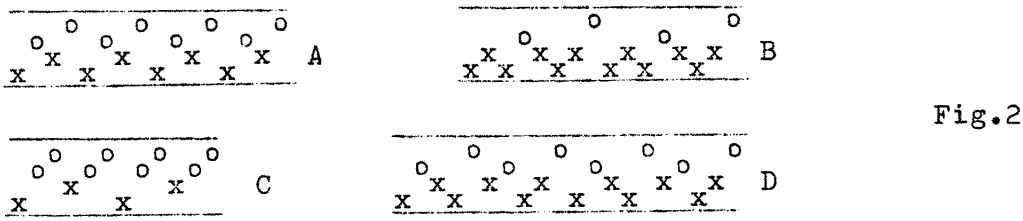


Fig.2

The ratio between the sett of the face and of the back was 1:2 in fig.1. It is 1:1 in fig.2A; 1:3 in fig.2B; 2:1 in fig.2C, and 2:3 in fig.2D. If both layers are woven in tabby or partly in tabby, then the ratios of the count of warp yarn should be: 1:4; 1:1; 1:9; 4:1, and 4:9 (or 1:2) respectively. Very often however the top layer is woven only in cross weave, and then it does not matter very much what its sett is. However the bottom layer must have the right sett for firm tabby. The tie-up is always the same for all drafts.

There is a very tempting possibility of stitching the two layers when the cross shed is open. We start with the shed #6, pick up the cross shed with or without a cross comb; then open the shed #3, or #4, and with a second picking stick stitch the upper layer of the ground to the lower layer of the top. Remove the first picking stick, turn the second one on edge, and throw the shuttle. Then keep on weaving the ground for a while, and stitch both layers as before with treadle #5. This is an idea worth trying.

On a six-shaft loom we could have doup leno stitched to a tabby ground. Plain gauze or leno can be woven on 3 shafts if no standards are used. Two more shafts for the tabby ground and one more for the stitching. Six in all. Of course the general effect will be rather different because of a much finer texture, but the weaving will be much faster, since no picking up is involved. We shall come back to this subject.

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