

BORDERS ON ALL SIDES

Every weaver is confronted from time to time with a problem: how to make in a simple way and without going into too many frames, four identical borders on a square piece of weaving. The problem in theory is not difficult, and it can be worked out in any weave and pattern, provided that one is not limited by his weaving equipment. But what if one is? If one has only 4 frames, and only one warp beam?

Then of course not every weave and pattern can be used, but even so we have quite a few possibilities. We shall describe here three of them: lace, swivel, and overshot - or rather a very simplified version of overshot.

Both lace and swivel will have the same kind of two-block patterns suitable for borders on all sides. For instance:

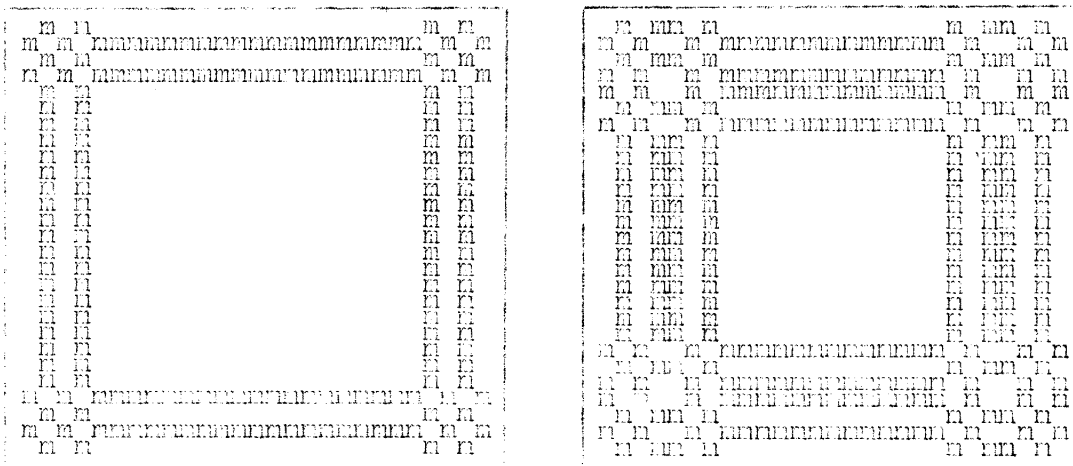


Fig.1

These patterns have profiles (fig.2) which can be developed into full drafts by replacing each "m" with a unit of corresponding weave.

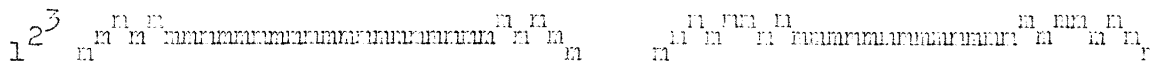


Fig.2

In case of Lace Weave, block 3 should be turned, i.e. have the floats in opposite direction than block 2. This will make the borders identical on all sides. Thus the units will be:

1-st (ground) 2-nd 3-rd

x x x	x x	x x
x x x	x x x	x x x

the tie up consequently should be:

4321

and the treadling: 1-st bl.(ground) - 434343, 2-nd: 232343, 3-rd: 414143.

The same profiles developed into Swivel weave will have units:

1-st (ground): $\begin{matrix} x & x & x & x \\ x & x & x & x \end{matrix}$ 2-nd: $\begin{matrix} x & x & x & x \\ x & x & x & x \end{matrix}$ 3-rd: $\begin{matrix} x & x & x & x \\ x & x & x & x \end{matrix}$

with the usual tie-up: $\begin{matrix} \circ & \circ & \circ \\ \circ & \circ & \circ \\ \circ & & \end{matrix}$ or $\begin{matrix} \circ & \circ \\ \circ & \circ \\ \circ & \circ \\ \circ & \circ \end{matrix}$
 4321 4321

and the treadling: 1-st bl. - 43434343, 2-nd - 243243243243, and 3-rd - 143143143143. Pattern weft: 1, 2. Binder or ground: 3, 4.

When replacing "bl's of the profile with units of weave, at least two units of lace should be taken for one "bl", to get the proper lace effect.

The case of overshoot used for all around borders is not so simple and requires a certain amount of theoretical considerations to understand the problem. Four block overshoot requires 4 frames for horizontal borders, and 8 for both horizontal and vertical borders, which would give us borders on all sides. Two-block overshoot on opposites needs only 6 frames for four borders. The question arises now, whether such a thing as a single-block overshoot exists at all, because if it does it probably requires less than 6 frames to be woven in both directions. Well, it certainly does exist, but whether it should be still called overshoot, is a question. In any case we do not know any other name for it. Whatever it is, it can be woven on 3 frames and fig.3 gives an example of threading draft:

$\begin{matrix} x & x & x & x & x & x & x & x & x & x \\ x & x & x & x & x & x & x & x & x & x \end{matrix}$ $\begin{matrix} \circ & \circ & \circ \\ \circ & \circ & \circ \\ \circ & & \end{matrix}$
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Fig.3

$\begin{matrix} x & x & x & x & x & x & x & x & x & x \\ x & x & x & x & x & x & x & x & x & x \end{matrix}$ $\begin{matrix} \circ & \circ \\ \circ & \circ \\ \circ & \circ \end{matrix}$
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Fig.4

Treadle 1 gives the floats for the "pattern", treadles 2, and 3 - tabby. But we can write the same draft in a slightly different way (fig.4) and what we have now is a spot-weave. But this is something which happens in weaving very often - that two different weaves when very much simplified become the same thing. And this is why we are in doubt whether to call the new weave a "single-block" overshoot, or something else.

If we would rather stitch the floats to the ground tighter than in fig.3, we can do so by putting more heddles on frame 3 (fig.5).

$\begin{matrix} x & x & x & x & x & x & x & x & x & x \\ x & x & x & x & x & x & x & x & x & x \end{matrix}$ $\begin{matrix} \circ & \circ & \circ \\ \circ & \circ & \circ \\ \circ & & \end{matrix}$

Fig.5

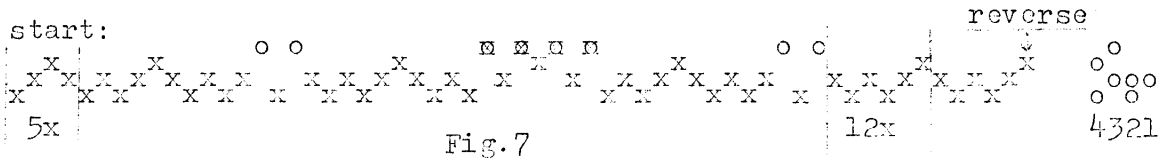
Whichever draft we shall use (3 or 5) we can weave a horizontal border composed of floats of different colours on a tabby background. And still we have one frame left, and this can be

used for weaving vertical borders. Since we have only one frame, the vertical border will give us only one block of pattern, just as the horizontal one. The frame 4 will carry only colours in warp, corresponding to the colours used in weft for horizontal borders. Fig.6 shows

$\begin{matrix} \boxtimes & \boxtimes & & \boxtimes & \boxtimes & & & & & & \\ x & x & x & x & x & x & x & x & x & x & \\ x & x & x & x & x & x & x & x & x & x & \end{matrix}$ x - ground warp
 x - pattern warp Fig.6

an example of how these colours in warp are arranged. It is immaterial where they are inserted as long as the order of the former draft (5)

is preserved. As an example of a complete project we can take the following draft (fig.7):



Let us make the warp grey, except for "o" which is blue, and "x" which is navy. When sleying one should not consider the ends in the frame 4 as belonging to the warp at all. I e. if the sleying calls for two ends per dent, then sley all grey (x) 2 per dent, and the other colours wherever convenient, except that two ends threaded through frame 4 should not go into the same dent.

The treadling should start with 4,1,4,3 - 5 times, then 4,1,4, 1,4,3 - twice, then comes the crossing of the two borders which is always tricky. The crossing cannot be completely symmetrical since we have to have one set of colours or the other on top. One of many ways of crossing is as follows:

242341414342124212434141432423

where "1" is blue, "2" navy, and all other treadles - grey. Then we continue with 414143 up to the next border.

It would seem that for a good job we need two warp beams: one for the grey ground, and the other for the blue and navy floats, because there is much less take-up in weaving on the vertical floats than on the tabby ground. In practice however we do not want the floats to be stretched as tightly as the tabby ends. The difference in the take-up just compensates for the desired effect of the pattern standing out on a flat ground. For that matter it is advisable to start a new warp of this kind by weaving for a while on treadles 1 and 4 which leave the pattern warp alone and produce the desired slack.

The frame 4 in counterbalanced looms has a tendency to rise too high because there are so few ends which it operates. It is a good idea then to tie it with two cords to the loom frame so that it could not rise any higher than the other frames. Thus an unnecessary strain on the pattern warp will be avoided.

The basis for the above project is the draft on fig.3. A similar project can be made with draft on fig.5. The treadling must be changed accordingly.

WEAVING TERMINOLOGY

We have received the following remarks from Mrs. Mary M. Atwater, and we have her permission for their publication:

"Yes, the vague way our technical terms are used is very annoying. People cannot say what they mean when the words they have to use mean a dozen different things. To have to define as one goes along takes so much space. I particularly dislike "semi-damask" for overshot. Nothing could be much less like damask than the overshot weave. And I also dislike "lace weave" for the Spanish openwork or cyclet weave