

HIGH TWILLS

2.

(Compare "Master Weaver" 34/10)

When it comes to the "turned" treading, or rose-fashion weaving, any twill will give a number of symmetrical variations, even a 4-frame twill, as in fig.1.

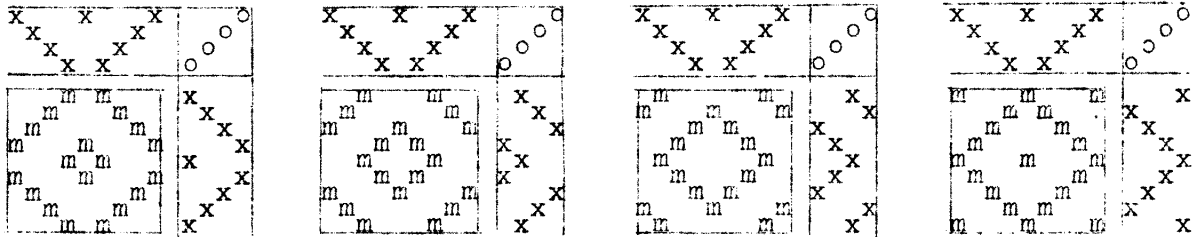


Fig.1

To find the treading we take the basic (woven-as-drawn-in) treading and reverse it; for instance instead 123456165432 we shall have 654321612345 etc. Fig.2 shows what happens when we use this method of treading with 6-frame twills: 3,1,1,1; and 2,2,1,1.

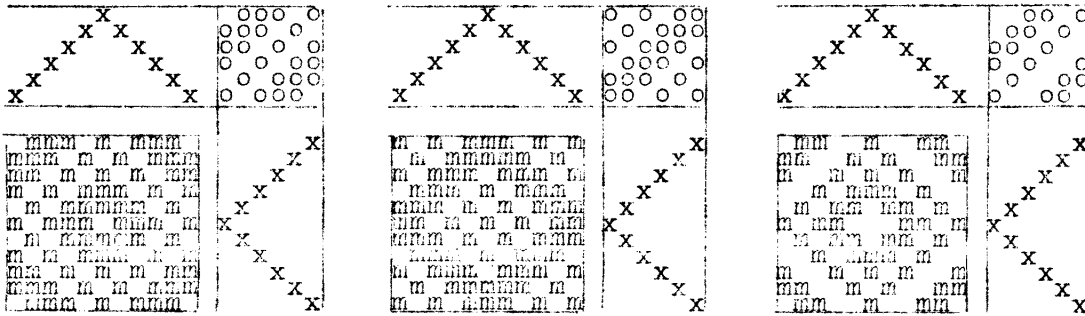


Fig.2

Here even the last twill (2:2:1:1) which did not want to become symmetrical in basic treading gives a perfectly symmetrical pattern.

The next question is how many of those "rose-fashion" variations can be woven? In most cases, as many as treads in the tie-up. The exception are "balanced" twills of the type: 2:2, 3:3, 4:4 etc. Here the number of variations is only half as many as treads.

Let us take as an example the last (2:2:1:1) twill. We keep always the same direction of treading but in each case we start with a different treadle: 1234565432(1); 2345616543(2); 3456121654(3); 4561232165(4); 5612343216(5); 6123454321(6). Fig.5 shows

three of these variations: the 2-nd, the 4-th, and the 6-th.

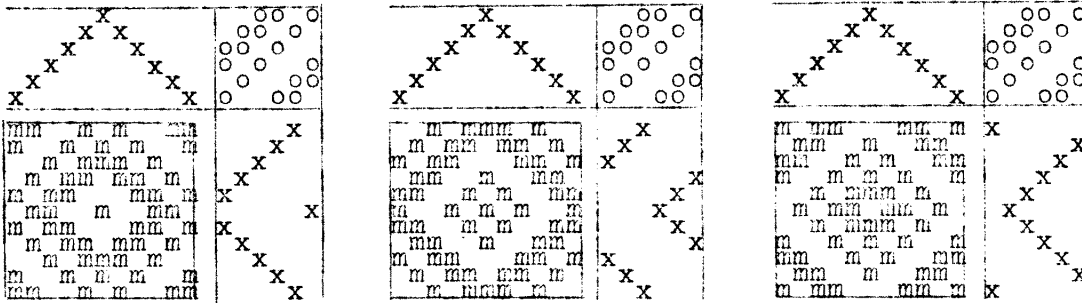


Fig.3

Eight frame twills will have also one or two basic patterns and 8 rose-fashion patterns. For instance the twill in fig.4

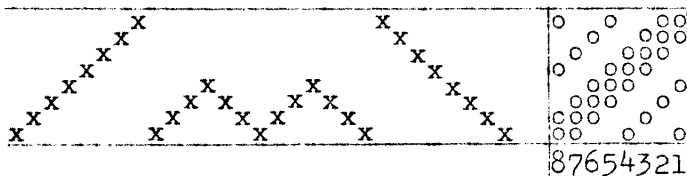


Fig.4

The basic treadingling which follows the heavy diagonal will be:

87654321876567876567812345678, and the treadingling which follows the fine diagonal: 43218765432123432123456781234, and the eight rose-fashion treadingling are:

- 1) 12345678123432123432187654321,
- 2) 23456781234543234543218765432,
- 3) 34567812345654345654321876543,
- 4) 45678123456765456765432187654,
- 5) 56781234567876567876543218765,
- 6) 67812345678187678187654321876,
- 7) 78123456781218781218765432187,
- 8) 81234567812321812321876543218.

With 12-frame twills we shall have also from 0 to 2 basic variations, and 12 turned ones, or from 12 to 14 variations in all. A 16-frame twill will give from 16 to 18 symmetrical variations.

One more question: how many twills in each case? We have already answered this question for 6-frame twills. It was 5. An 8-frame twill can be either 2:2:1:1:1:1, 2:1:2:1:1:1, 3:1:1:1:1:1, 3:2:2:1, 3:2:1:2, 3:3:1:1, 4:4, 4:2:1:1, 4:1:2:1, 5:1:1:1, 6:2, and 7:1. A dozen in all.

We can imagine what will happen with 12 or 16 frames. To get the total number of variations with one threading we must multiply the number of different twills by the number of variations. The totals run into hundreds.

We realise that this article is far from giving all the answers. But should we try to exhaust the subject of higher twills, we would have to write a book and not an article. The reader who is interested in this class of weaving should spend a lot of time with a soft pencil and fine graph-paper (20 divisions per inch). He will soon discover that there are "symmetrical" twills (this has nothing to do with symmetrical patterns) which give at least one woven-as-drawn-in pattern, and sometimes two, and that there are also un-symmetrical twills which must be woven in rose-fashion to produce symmetry in design. Here are examples of symmetrical twills with one diagonal: 2:2, 1:3, 2:3, 1:2, 3:5 etc.

The following twills will produce two basic patterns:

2:1:1:1, 3:1:2:1, 3:2:1:2, etc.

Finally twills which can give only rose-fashion symmetry:

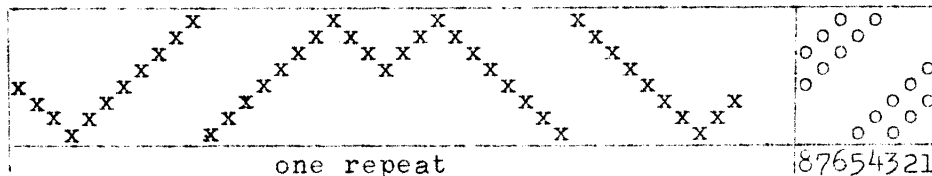
2:2:1:1, 2:3:1:2, 3:3:1:1, etc.

When making projects for such twills one starts with the tie-up. This establishes the kind of twill we are going to work with, and incidentally the texture of the fabric, because the length of floats depends here mostly on the tie-up. Then comes the threading. This must be on the conservative side i.e. not too fancy - at least in the beginning. When changing the direction of threading very often, leaving gaps, etc., we may run into unexpected long floats. The treadling is usually a replica of the threading draft, but it may run from the right to the left or vice versa, and it can start on any treadle. Finally we make a draw-down, and see whether we like it or not.

In the next article on this subject we shall take up the problem of fancy tie-ups, i.e. containing more than just one straight twill.

PRACTICAL PROJECT.

A table cloth in linen, woven in 5:1:1:1 twill. Size as required. Warp: 50/2 linen. Sett: 48 ends per inch. Reed 16, 3 ends per dent, or 12 - 4 ends per dent.



treadling: 432123456781234567876567876543218765432123; (one repeat).
 weft: single No.20 linen.
