

# T U R N E D T W I L L S .

## THE "D" CLASS: DIMITY, DIAPER, DORNICK, DAMASK.

When a twill forms a pattern of any number of blocks, but with only two kinds of blocks: one with vertical, and the other with horizontal floats, such a twill is called "turned". It may be woven on any number of shafts from 6 up; it may have a diagonal or not, but the blocks of pattern are rather large when compared for instance with diamond twill, and there is never any binder.

The twills are always of the type 1:N, for instance: 1:2, 1:3, 1:4, 1:5 etc. Theoretically any unbalanced twill could be used as well e.g.: 2:3, 2:4 etc., but there is no point in doing this, because the final effect depends on the ratio between warp and weft in each block and this is highest in a 1:N twill.

As a rule Turned Twills are woven as Broken i.e. without diagonal (this is by the way impossible with 1:2 twill), or with a simple diagonal which changes direction from block to block. Here again theoretically we could have a diagonal running in the same direction through all blocks, but the result would be far from being satisfactory. There is also a variation of Turned Twills with a small diamond pattern in the texture of each block; these should be called Turned Diamond Twills.

Thus even if we keep to the orthodox Turned Twills we have many variations quite independently from the pattern woven, and we shall start by classifying them:

Group A. Biased twills with a diagonal changing direction from block to block. Here we have the simplest twill of this class: Dimity, or 1:2 turned twill. Then comes 1:3 twill, or Diaper. But we must remember that the term "Diaper" may also mean any simple biased turned twill. Finally we have higher twills: 1:4, 1:5, 1:6, 1:7.

Group B. Either Broken Twills, or Satins. The simplest twill here is 1:3 and it is called Dornick Weave (not the same as Herringbone Dornick Twill), although sometimes the same term has been applied to biased 1:3 twill. The higher twills such as 1:4 to 1:15 are woven as Satins, and the weave is called Damask. As a courtesy title Damask may also be used to designate 1:3 broken turned twill.

In power weaving this "courtesy" becomes a habit, and nearly all cheap damasks are broken 1:3 twills.

Group C. Diamond Twills 1:2 or 1:3. Higher twills are seldom used, but there is no reason why they could not be. The whole problem evolves around the question whether it is advisable to have two patterns: one small, and one large in the same fabric. In so called "modern weaving" the answer would be: certainly not. Otherwise, since both patterns are rather faint, and since the small one does not interfere in any way with the main pattern (except for the difficulties in drafting), the combination is acceptable, and the general effect extremely professional.

We shall start with the first group:

A. Biased Turned Twills.

The simplest as stated before is 1:2 twill. It requires three shafts for each block of pattern, and the simplest patterns can be woven on 6 shafts as in fig.1. The diagonals in the two blocks are

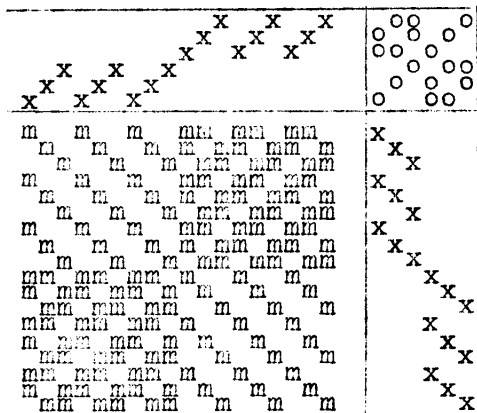


Fig.1

of an opposite direction. All floats are of 2. No float crosses the dividing line between the blocks. This last condition will be observed in all Turned Twills, and it requires a special attention in drafting.

For instance if we neglected it by adopting a different tie-up (fig.2), or tried to get the same direction of the diagonal

in both blocks (fig.3), we would get into trouble.

When a turned twill is properly designed, i.e. all floats are of the same length, and no floats cross the line between the blocks, such a twill is "cut", because "a cut" is the clear line which divides the blocks. The condition of its being clear is that all yarns in warp or weft cross from one side of the fabric to the other just at this line.

There may be cases particularly in multi-block patterns woven on a draw-loom, when we like better a blurred dividing line, and then

of course the principle of "cut" does not apply. But in any case it is not permitted to have floats longer than the standard float of the twill used: 2 for 1:2 twill, 3 for 1:3, 4 for 1:4 etc.

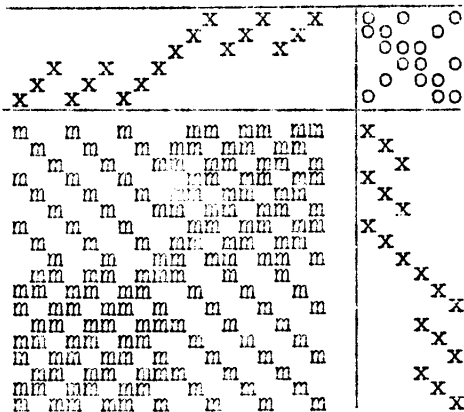


Fig.2

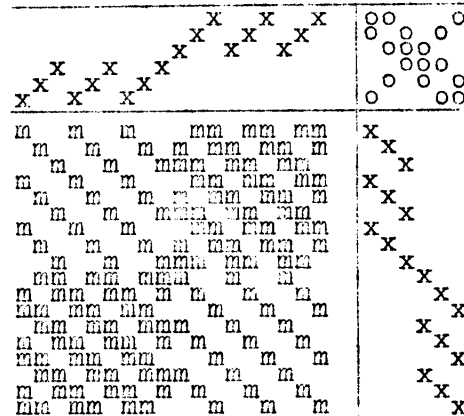


Fig.3

In the above examples we have been weaving either one block, or the other, but not two blocks at the same time. Combinations of blocks are quite easy provided that we have the proper tie-up and the required number of treadles. In the draft in fig.4 we shall weave all possible combinations i.e.: "no block"; 1-st block, 2-nd block, and both blocks.

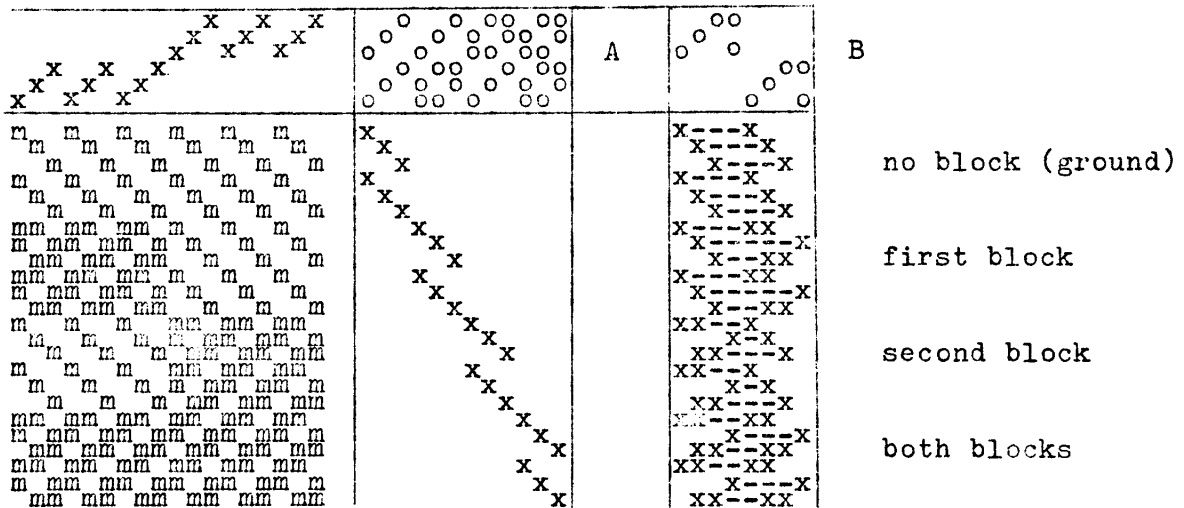


Fig.4

If we have 12 treadles all is well; then we use tie-up A. If not we must use a compound tie-up B, and press 2, 3, or even 4 treadles at the same time. However the treadles are arranged in such a way, that two of them can be pressed with one foot. This is very

inconvenient, but it is the only way, short of a Jacquard or dobbie. A direct tie-up won't be of any use because treadles 1, 3, and 5 for instance can not be operated at the same time with two feet only. A small sample can be made on a table loom, but it will take time.

Even at this stage it becomes obvious that the main difficulty is the tie-up, and not the threading draft which is very simple in all cases, except in turned diamond twills. How then do we go about designing a tie-up?

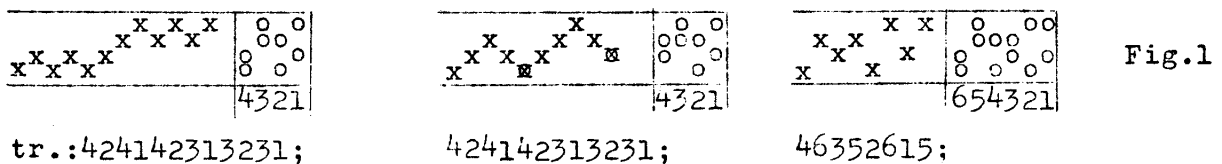
We shall answer this question in the next issue.

\*\*\*\*\*  
 \*\*\*\*\*



UNSYMMETRICAL HUCKABACK LACE

The number of small texture weaves even for four shafts is practically unlimited. Most of them can be easily recognised. Any classical pattern weave may be made into a texture weave simply by alternating two small blocks of the pattern. Overshot, crackle, summer-&-winter can be made in this way into texture (that is "no pattern" weave). Fig.1 gives examples of the three above weaves:



All three of them can be easily placed because of the threading tie-up and treadling, even if they do not produce any pattern.

But there are many cases when one hesitates how to call a particular draft. The threading may look like overshot, but the treadling is more like M's-&-O's, or the other way around. Of the tie-up usually associated with huckaback is used with an overshot draft. What then?

In many cases it does not matter too much what we call it. The weaves are not completely separated one from another. They often merge, and the "borderline" cases are difficult to diagnose.

Today we shall speak about such a case, where although the principle is simple, yet the fabric woven does not look too familiar.