

F A B R I C S 6

T W I L L S 2

Twills do not need to have a continuous diagonal running at 45° all across the fabric. The pitch can change; the direction of the diagonal can change too, at regular or not so regular intervals (compare "Crazy Twills" in the same issue). Finally the diagonal can disappear entirely.

We shall start with twills which can still be called "biased", but which have "slow" or "fast" diagonals, that is of less or more than 45°. A diagonal which is less than 45° is supposed to be "slow", and one with more than 45° - "fast". It is hard to justify these expressions unless one thinks in terms of driving a car downhill; then the terminology becomes obvious. Fig.1 shows a slow diagonal and fig.2 - a fast one.

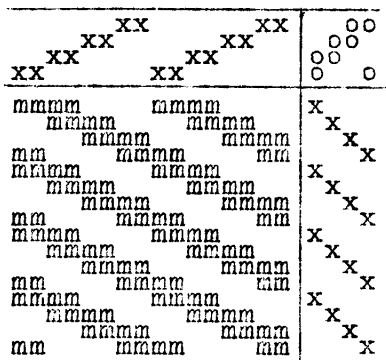


Fig.1

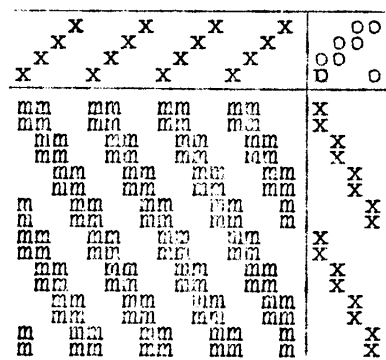


Fig.2

One does not need to go to the trouble of changing the threading or the treadling as in the above examples. A similar effect will be produced by using a warp yarn 4 times heavier than the weft in the first case, and 4 times lighter than the weft in the second case. The fabrics won't be the same, but the directions of the diagonals will. There is nothing particularly exciting in either of them. But if we combine both in the same draft, we have a wavy diagonal (if it can be still called a diagonal) as in fig.3. But in this case we must use about the same count of yarn both ways. Whenever we have two

parallel shots of weft, we weave them in the same way as basket weave (two shuttles, beat after changing the shed on the second shot).

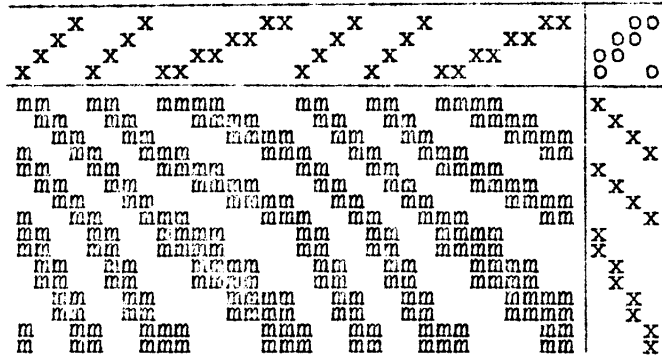


Fig.3

Fig.3 is only one example of this type of a twill. Many more can be woven on 4 shafts, and still more on a multi-shaft loom.

Since we are on this subject we might as well add that the same applies to all twills described here. The principle shown on four shafts, and in most cases on the 2:2 twill only is valid for other and higher twills.

With plain threading of a 4-shaft twill we have the following basic types of treading:

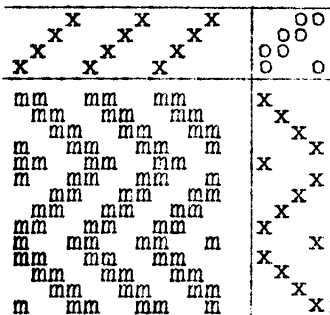


Fig.4

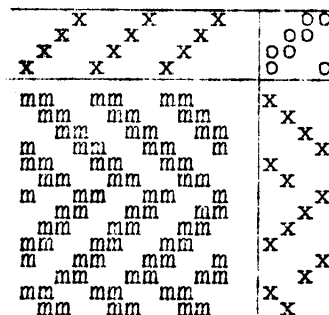


Fig.5

WAVE (fig.4). The diagonal changes direction, produces horizontal stripes, and also longer floats in warp (of 3) at every point of turning. These longer floats make the fabric less smooth, and also less resistant to friction. They can be eliminated in DORNICK twill (fig.5); this twill is sometimes called Dornick-in-Weft.

The direction of the diagonal in both Wave and Dornick can be changed as often as desired. But when we come to very short diagonals the situation changes. When the diagonal has only three "steps", the Wave becomes a STOCKINET (fig.6). In this case all floats in warp

are of 3, and there is a definite corded (ribbed) effect in warp. But the corresponding effect in Dornick is still Dornick (fig.7).

<pre> x x x x x x x x x x mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm </pre>	<pre> o o o o o o o o o o o o </pre>
---	--------------------------------------

Fig.6

<pre> x x x x x x x x x x mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm </pre>	<pre> o o o o o o o o o o o o </pre>
---	--------------------------------------

Fig.7

This is because a repeat in Dornick is always longer than the same in Wave. In old English we could say that Wave has a "point" repeat, when Dornick has a "drop-turnover" repeat. Paradoxically 3+3 is 4 in Wave but 6 in Dornick. When we cut down the repeat in Dornick to 4, we have a BROKEN twill (fig.8), that is a twill which does not show any diagonal at all. The same type but in 3:1 twill produces SATINET (or SATINETTE), the nearest approximation to Satin, which can be woven on 4 shafts (fig.9).

<pre> x x x x x x x x x x mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm mm </pre>	<pre> x x x x x x x x x x x x </pre>
---	--------------------------------------

Fig.8

<pre> x x x x x x x x x x mmm mmm mmm mm mmm mmm m mmm mmm mmm m mmm mmm mm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm mmm </pre>	<pre> x x x x x x x x x x x x </pre>
--	--------------------------------------

Fig.9

Satinet is important not only because up to a point it imitates satin, but also because it is the base for "damasks" which use only 4 shafts per block of pattern (that is practically all commercial damasks).

When woven as imitation satin it should have a soft, bulky warp very closely set; when it is supposed to look like Sateen (satin in weft) then the warp is fine and open, and the weft soft, glossy, and bulky.

In both cases the edges will have a tendency to roll, and there is nothing we can do about it if we have only 4 shafts. With a higher number the selvages are woven in tabby or a balanced twill.

