

DOUBLE WEAVES

DOUBLE FACE FABRICS

Not all double face fabrics belong to the Double Weaves family. We may safely say that most of them do not. But since they are difficult to classify, and since double weaving is the surest method of producing such fabrics, we shall speak here about all of them, with a particular attention given to the double fabrics proper as well as to the borderline cases where for instance two wefts are used on one warp, or two warps with one weft - the latter weaves being obviously derivate of double weaving.

Nearly every weaving technique can produce a fabric which will have two different sides, or two "faces". Exceptions are: tabby, plain basket, and balanced twills (2:2, 3:3 and so on), as well as certain pattern weaves based on the above ones - e.g. Swivel. Even overshot, crackle, or Summer-and-Winter have different patterns on both sides.

Nevertheless we apply the name "double face" only to the fabrics which have either different colours, different textures, or two completely different patterns - not just one being the reverse of the other.

The simplest weave which may produce such a fabric is 1:2 twill. If the warp is of one colour and the weft of another, then on each side a different colour will prevail. For instance if the black and white were used, we shall have one side light grey (mostly white) and the other - dark grey (mostly black). The higher the twill (1:3, 1:4, etc) the more pronounced the difference between the two faces. In satins particularly of a very high order (1:15) we get practically pure colours on both sides. Although we might expect even here 6% of the black to show on the white, in practice the floats hid the "ties".

Still this kind of double face fabrics have nothing to do with double weaving. In double weaving proper we should have two layers of fabric, each of a different colour (both warp and weft), and both stitched together. We shall discuss this particular weave in the next issue of MW. It is the best method of producing double-face fabrics, but it requires rather a large number of heddle-frames.

However if all we want are two colours on the two sides, and not necessarily two layers of fabric, we have simpler means of getting this effect. For instance we can have both sides "weft-face", i.e. the warp may be on both sides covered with the weft. If the warp is covered there is no more reason to use two warps for a double fabric - both sides may be woven on the same warp of a neutral colour, but we shall use two wefts of two colours, one for each side. This is an example of what we called before "a borderline case" of double weaving.

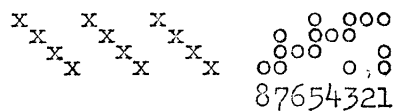


Fig.1

In the draft on fig.1 the warp is set rather far apart. In the treadling one colour is used on treadles: 1,3,5,7, and another on 2,4,6,8. The treadling for biased twill will be 1,2,3,4,5,6,7,8. and for a broken one: 1,2,3,4,7,8,5,6.

On the same threading and tie-up several other variations can be woven. For instance: Biased twill on one side and broken twill on the other: 1,2,3,4,5,8,7,6 or 1,2,3,4,7,6,5,8. Then one side may be woven in twill and the other in Summer-and-Winter (texture): 1,2,3,6,5,2,7,6. Or one side in twill and the other in crackle: 1,2,3,2,5,2,7,2 - but then the warp will be partly visible on one side. When we speak here about Summer-and-Winter or Crackle we mean only the similarity of texture. There is no pattern of course.

So far we have assumed that each side of the fabric will have one, more or less solid colour. More or less, because some of the colour of one side will show on the other. To minimize this effect the warp must be spaced so, that it will be just covered with weft, but it should not be too open. The weft should be rather soft and heavier than warp. More than one colour can be introduced on one or both faces, but in stripes only. This is because the weft is visible in its entire length, and if it is covered by warp it appears on the other side thus spoiling the whole effect. A "spotty" appearance may be obtained by using a different colour for each treadle. Then of course a different set of colours will be used on each side.

With a higher number of frames the results will be similar, but the warp may be set closer - even so the difference between the two sides will be more complete.

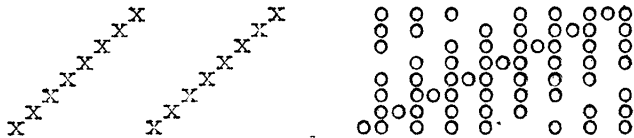


Fig. 2

In fig. 2 we have a draft for a 1:7 double face twill. One colour of weft for all odd numbered treadles, and another for the remaining ones. Treadling it straight from 1 to 16, or from 16

to 1, we shall have biased twills on both sides. Or by breaking up the order we may get two satins, or one biased twill and one satin.

If we change the tie-up (fig. 3) one side may be woven as 1:3 twill, and the other as 1:7 one. Either of them may be broken or biased.

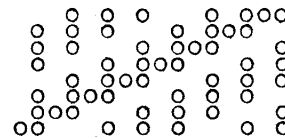


Fig. 3

Theoretically, instead of plain threading as in fig. 1 and 2, we can have diamond twill threadings as for instance in fig. 4. But the pattern will hardly show, except in relief. The reason for this is that each side shows mostly one colour and there is no contrast between the pattern weft, and the warp.

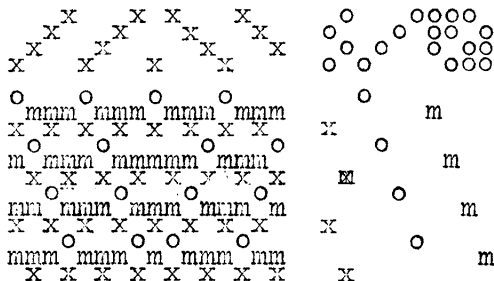


Fig. 4

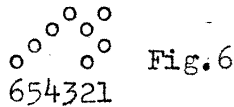
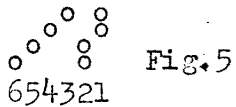
If we want to have the pattern more visible, we can use binder. The same binder will serve for both sides. One shot of binder should always follow two shots of pattern: one on each side. Then of course the warp will show much more than without binder, and it is important to have it in a neutral colour - so to speak, half-way between the two colour used for the two faces.

When making drafts for such patterns we must take into consideration that at the turning point in threading we shall have rather long

floats, when compared with a biased twill, or with a balanced one of the same order. For instance in the above example (fig.4) we would have a float of 3 in a 2:2 twill, but in a double face twill there will be floats of 5 on both sides. This is the reason why for instance overshoot cannot be used at all in this technique. The floats would be much too long for practical use.

A problem in case of nearly every double face twill is the tie-up. It always requires more treadles than the loom is equipped with. For instance a 4 frame double face twill is woven on either 8 or 10 treadles, and 8 frame one - on 16 treadles and so on.

In such a case we have to use either direct, or partly direct tie-up. For instance instead of the tie-up on fig.1 we have the one



on fig.5. The treadles no.1,3, 5, and 7 on fig.1 are here replaced with a combination of two treadles used simultaneously, so that the treadling for biased twill will be:

2+3, 3, 1+6, 4, 1+5, 5, 2+4, 6. If binder is used, or any amount of tabby woven on the same tie-up, fig.6 gives a still better solution. Here the treadling for plain twill is: 1+6, 3, 2+3, 4, 1+4, 5, 2+5, 6. In a similar way most problems of treadling can be solved, although with a higher number of heddle-frames three treadles must be often used at the same time.

WEAVING TERMINOLOGY

Lash, Leash, Lease.

There is a little confusion as to the proper use of these three terms, particularly in such expression as "Leash-Sticks". The last two have the same etymology, and were at a time used in the same meaning.

Lash comes from old English "lashe" (whip) and designates two picks of weft; probably the movement of the shuttle there and back suggested an analogy with the action of a whip.

Leash (possibly from Latin "laxus") is the same as Heddle in U.S. Therefore "leash-stick" in England means the same as Heddle-stick here, and never the same as Lease-Rods.

Lease is a corruption from Leash. Originally then both meant the same, but they do not any more. Now "lease" means the same as cross in the warp. Etymologically then it would not be a great mistake to speak about "leash-rods", or leash-sticks, but it certainly would be very confusing.
