
MASTER WEAVER

BI-MONTHLY BULLETIN FOR HANDWEAVERS

Z-HANDICRAFTS - FULFORD - P.Q. - CANADA

March - April, 1963

Vol.23 No.68

P A T T E R N S I N T W I S T

When we speak about the twist of yarn we usually associate it with texture rather than with pattern. Thus we know that identical twist of warp and weft particularly in single wool tabby fabrics will produce crepe; that this effect may be enhanced by using opposite twist in alternating groups in each direction; that a smooth fabric must have the warp and weft of opposite twists, etc. But this has nothing to do with pattern.

Patterns in twist are made by combinations of two or more colours twisted together either in warp, or in weft, or in both.

The twist itself can have different pitch, and different direction. Thus we may have "zero-twist", or nearly parallel yarns; slow twist; and fast twist. Then we have left-hand (LH or S) twist, and right-hand (RH, or Z) twist. In all 5 variations. Yes, only five because zero twist cannot be RH or LH.

The equipment necessary for this type of weaving must include a spinning wheel; any kind will do. On the other hand no actual knowledge of spinning is necessary. We must have also a Doubling stand (see MW 31/11), which can be easily made at home. If we have no spinning wheel, we can either borrow one, or have the yarn prepared by a spinner. Buying a wheel specially for this project is hardly justifiable at this stage.

The fast twist is made on the wheel, the slow twist on the doubling stand, and the zero twist on any bobbin winder.

As usual when learning a new technique we start with a sampler. The warp should be of a neutral colour and rather open as for weft-face fabrics, for instance cotton 10/2 or 8/2 set 12 ends per inch.

For weft we should use heavy yarn, for instance cotton candle wick to start with, in two contrasting colours; e.g. white and black (warp grey), or cream and brown (warp beige).

Preparing of the fast twist takes time, particularly when it is done by a weaver without experience in spinning. The finer are the two yarns, the longer takes this operation, and the less spectacular are the results.

We wind two bobbins, one of each colour, and place them on a bobbin rack close to the spinning wheel. After passing both yarns through the end of the spindle and around a hook of the flyer we attach them to the bobbin. Now we start the wheel and keep both yarns in the fingers of the left hand. This will twist the yarns together. Now we must let the yarns slide through the fingers, so that the twisted yarn will be wound on the bobbin. The rate of twist depends on how tight we hold the yarn, and the direction of the twist - on the direction of rotation.

We should try to get a twist of at least 4 turns per inch. We prepare one bobbin (that is the bobbin on the wheel) with one direction, and another with the opposite direction. Every time we finish one bobbin the yarn must be removed from the wheel either on a skein winder, or on a plain warp bobbin, or finally on a number of shuttle bobbins.

The slow-twist yarn could be prepared also on the spinning wheel. The only reason we use a doubling stand is that the latter works much faster. The slow twist has one turn per several inches of yarn: from 3 to 10". Here we also prepare one bobbin of LH and one of RH twist.

Finally we must make one bobbin of zero twist. Strangely enough this operation is far from being an easy one, because if we simply wind a shuttle bobbin from two tubes, cones or skeins, the two yarns will not advance at the same rate, and in weaving we shall have loops at the edges.

The right way to prepare parallel yarns is to use either a warping frame or a warping reel (or mill). We wind the two yarns first on the frame, reel, or mill, but we do not bother to make any crosses. After the required amount is on the frame, we rewind it on bobbins.

Now we have 5 twists. We shall later on designate them by letters:

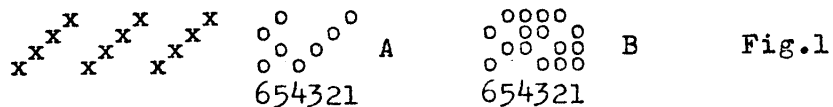
Z - zero twist, or parallel,
 SR - slow, right-hand twist,
 SL - slow, left-hand twist,
 FR - fast, right-hand twist,
 FL - fast, left-hand twist.

One may ask at this stage, why 5? Why not 7, or 9, or any odd number? - For a sampler 5 will be enough. Then the slow twist is beyond our control, because it depends only on the diameter of the tube used. The fast twist made on a spinning wheel may have at least in theory any number of turns per inch, provided that we have mastered the operation of the wheel. Thus in later projects we may find it advisable to use several pitches of the fast twist, Right now it would be an unnecessary complication.

Here is a technical remark: the harder the twist, the more difficult is the yarn in handling. It has a tendency to form small, tight loops when used as weft. When very hard twist is required it would help to prepare the required amount beforehand, stretch it very tight on a warping reel, and leave it for several days, or even longer. This should take out the kinks.

Now we have our 5 twists in 5 shuttles. It will help to mark the shuttles with appropriate letters: Z, SR, SL, FR, and FL. When the yarn is wound on shuttle bobbins it is very hard to tell at a glance which twist is which.

We have already made and threaded the warp (fig.1).



Tie-up "A" is for jack-type looms, and "B" for counterbalanced, or inverted jack-type looms. With these tie-ups samples can be made in tabby (5,6), biased 3:1 twill (1,2,3,4), and in broken twill (1,4,2,3). Make all samples about 3" wide. Here is the list:

1. Z - a) tabby; b) biased twill; c) broken twill;
2. SR - a) tabby; b) biased twill; c) broken twill;
3. FR - a) tabby; b) biased twill; c) broken twill.

This is an introduction. One should decide now which of the three weaves is the best, and use this particular weave for the next samples. The numbers mean the number of shots, not the treadle.

4. 1-SR, 1-SL. Repeat to make 3".
5. 1-FR, 1-FL. Repeat.
6. 1-Z, 1-SR, 1-FR, 1-FL, 1-SL. Repeat.
7. 1-Z, 1-SR, 1-FR, 1-FL, 1-SL, 1-Z, 1-SL, 1-FL, 1-FR, 1-SR. Repeat.
8. 4-Z, 2-SR, 1-FR, 1-FL, 2-SL, 4-Z, 2-SL, 1-FL, 1-FR, 2-SR. Repeat.
9. 6-Z, 1-FL, 1-FR, 6-Z, 1-FR, 1-FL. Repeat.

These samples should give a general idea of how the twist can be used in building up patterns. The next step is to introduce single colours: loosely twisted two yarns of the same colour. Then we can weave the traditional "tree" effect. For instance: white, white-&-green (FR), green, white-&-green (FL); repeat.

There is no reason why we should stick to two colours only. But with a larger number of colours it is advisable to plan the pattern first and make only the twists necessary for this particular pattern; otherwise we would run into an awkward number of shuttles; it would take 18 shuttles for all possible combinations of 3 colours.

What we have done in weft can be less easily done in warp. The only problem is to prepare a sufficient quantity of yarn, particularly in hard twist. The warping will take time, but the number of ends will be small, because the heavy yarn will have to be set very open, not more than 8 ends per inch. With a closer sett we would have a warp-face fabric, and the general effect would be the same as in our sampler, only turned by 90°.

The real purpose of twist effects in warp is to combine them with the twist in weft. There is here a possibility of using finer yarns than in our sampler and producing very interesting yardage for coats. Yes, but how about the amount of the hard twist required? The answer is a special twisting mill. We shall describe it some day.
