

## SELVEDGES.

There are few points on which most weavers are so touchy as on this particular one. And very justly so. Because fairly good selvedge maintained for yards of weaving is the best proof that the weaver has achieved a certain skill not only in throwing the shuttle, but in warping, beaming, setting the loom, winding the quills or bobbins, beating, maintaining a constant tension of warp, and incidentally in the speed of weaving as well.

It may be argued that an even beating is much more important than good selvedges, but it is a fact that one can not be achieved without the other. Uneven beating will nearly always result in wavy edges, and notches in the edges always leave marks in the beating.

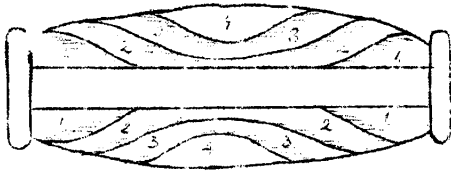
A good edge is not the same as a straight one. The straightness is only one factor. There is another even more important - the count of cloth should be the same at the edges as anywhere else in the woven fabric. If we set the warp, let us say at 30 ends per inch, and the shrinkage in weaving is 10%, we should have 33 ends per inch in the fabric, but not 31 in the middle and 40 at the edges. It is rather obvious why. If the weft is of a different colour than the warp, the cloth will have a different shade in the "bosom" than at the edges, and the texture will be different too. Not only that, but the edges will start "climbing" on the warp, and the fell (the last pick of weft) will be curved on both ends instead of being straight. Unfortunately such a phenomenon is often the result of the weaver's efforts to get straight edges at any cost by increasing the tension of the warp beyond reasonable limits, and without any regard to other factors.

What are these other factors? Bad edges can be often discovered even before the weaver started the warping. If the warp is planned too economically, with too few ends per inch, there is quite a chance that the edges are already doomed. An open warp means plenty of take-up on the weft, which pulls-in the edges. If we do not compensate for this the warp ends will lie much closer at the edges than elsewhere. If we do compensate - i.e. leave enough weft in each shed to overcome the pulling action, we must weave much slower, and the edges will be uneven. Thus when planning let us not be too stingy about the number of warp ends. A little more time spent on threading will pay dividends once the weaving started.

Then when warping and beaming, care should be taken to have an even tension of the warp all across its width. If anything - it can be a shade tighter at the edges, just the last few ends. The same applies to the tying-in: make the first and the last bight (strand of warp) smaller and tighter. This is because there is always less take-up on the warp at the edges, and unless we are careful the edges will become flabby, or we shall have to resort to the objectionable remedy of pulling in the edges.

The next step is winding of bobbins or quills. If they are much shorter than the spindle of the shuttle ( $\frac{2}{3}$  of its length) they will work all right with any kind of winding but they will hold comparatively little weft, and the re-winding will have to be done more often. But if we decide on full size bobbins, we must wind them so that there is always free space in the center (fig.1), a depression

which gives a clearance to the unwinding weft, which otherwise would rub against the weft still on the bobbin. The winding starts on



one side where the weft forms a cone, then it moves rapidly to the other side to make a similar cone. Afterwards the space between the two cones must be filled gradually so that until the very last stage of winding there is a depression in the center.

Fig.1

The bobbin itself should be smooth and slightly thinner in the center than at the ends. When the bobbin is nearly empty the weft usually starts catching. The cones at the ends should be then slid towards the center, which would be impossible if the bobbin were not smooth and slightly tapered.

When the weft catches it produces notches in the edges. When it unwinds too freely, it makes loops. Loops are just as bad as notches. Not only that they are unsightly but if allowed to form for any length of time, they will produce flabby, and uneven edges. With proper weft they are seldom a problem, but with springy linen or metallics they may become one. Then some sort of a brake must be used. The spindle of the shuttle may be wound with soft yarn, or a piece of fur glued inside the shuttle so that the weft or the bobbin will rub against it.

The tension of the warp should be as low as possible, i.e. just sufficient to get a clear shed. If it is much higher, the warp ends at the edges will be pulled together too much, although the edges will be straight. In any case the tension must be always the same. Since the tension increases during weaving, the best remedy is to move the warp forward very often - every 2 inches or so.

The sequence of movements in throwing the shuttle, beating, and changing the shed is of smaller importance, on the condition however that this sequence is always the same. Probably the best method is to beat only once in the very moment of changing the shed i.e. of shifting from one treadle to the other, if there are small loops at the edges - beat a little earlier, if the edges are pulled in - a little later.

The coordination between the movement of the shuttle, and the beating is very important too. If we change and beat when the shuttle is still moving away from the shed the edges will be pulled in more than if we do it after the shuttle stops. The reason of this is very simple: when the shuttle stops the tension on the weft is greatly released.

In any case the weaving should be as fast as possible, because the speed warrants a certain rhythm in all movements, and identical movements must result in identical, even selvages. Getting good selvages by pulling at them with fingers, or by braking the weft in the same way is a hopeless task - it means slow weaving, lack of rhythm, and poor work.

A very illuminating experiment which will show how good your edges really are may be made as follows. Make a wide warp of white rayon or other slippery yarn, and weave plain tabby with black equally slippery weft trying to get 50:50 weave. This will show not only the slightest notch or loop at the edges, but the evenness (or otherwise) of the count of cloth near the selvages, and the evenness of beating

