ENTWINING TWILLS.

The same refer to a system of weaves finding extensive use in the manufacture of dress goods, in connection with cotton, wool, worsted and silk fabrics. The smaller effects are used with worsted men’s wear, either by itself, or in combination with other weaves. They are also used for interlacing the ground in connection with Jacquard work, and considered all around, form one of the most interesting system of weaves for the designer.

Entwining twills are obtainable from any one of our regular twills by using one or more pieces of the twill selected, running in one direction, against one or more pieces of the same twill running in the opposite direction, the one twill-set meeting its mate twill-set balanced, in turn imparting the characteristic entwining effect to the weave and thus to the face of the fabric. This, in connection with some of the weaves, will result in open spaces, which then have to be interlaced either with broken twills, baskets, or other fancy weave effects, whereas in some instances, more particularly when using two or more twill-lines running against each other, none of these open spaces will appear in the final weave.

Entwining twills are always designed with an even number of harness for their repeat, the smallest repeat practically to use being 8, after which they can be made for any higher number of harnesses, 10, 12, 16, etc. No reduction of harnesses by means of a fancy drawing-in draft is permissible with entwining twills, on account of the double direction of the foundation twill-lines, forming the basis of the weave.

Rule for Constructing these Weaves.

Indicate the repeat of the weave wanted on your point paper, after which run one, or as many twill-lines as desired of your foundation weave for a certain number of threads from left to right on your point paper, after which paint three joining repeats of these twill-lines (one to the right, one above, and
one in oblique direction) in the proper places on your point paper. Next run a similar twill-line, or twill-lines, as the case may be, in opposite directions to the ones planned, being careful to properly connect these two sets of a twill-line, or twill-lines, where they meet their mate lines. You may have to extend the length or both sets of twill-lines, or you may have to shorten them, in order that a properly balanced effect is produced; this however, refers more particularly to fancy combinations.

When planning for the repeat of the new weave, knowing what foundation twill to use, the following details will assist:

To ascertain the lowest repeat possible for a certain entwining twill, provided the foundation weave, as well as the number of its twill-lines to be used are given, multiply the two together, the result being the lowest possible repeat for the entwining twill. If then less pieces of twills are used, the result will be the two open spaces in the repeat of the weave plan, a feature previously alluded to, and which spaces have to be filled up with a suitable interlacing.

In this manner, taking the 4-harness even sided twill in connection with two pieces of twill-lines to be used in consideration, we then will find that $4 \times 2 = 8$. i.e. 8-harness and 8 picks are the lowest repeat for its entwining twill. Weave Fig. 2 illustrates the subject.

If we would use only one twill-line in place of the two used, the two open spaces previously referred to would occur if planting for an 8-harness entwining twill, since $4 \times 1 = 4$ and not 8. Weave Fig. 1 illustrates the subject, showing the two open spaces referred to filled up with broken twill effects, using two ends twill running from left to right, to fill up one of the spaces, and two ends twill running in the reverse direction, to fill up the other space.

To quote another example: Plan for an entwining twill, using a 4-harness even sided twill for foundation weave, in connection with six pieces of twill-lines used. This will call for $(4 \times 6 = 24)$ warp threads and 24 picks for the repeat of the entwining twill. No open spaces will be met with, since we use the result of the multiplication complete for the repeat of the weave.

The explanations thus far given will indicate to the designer the chance to calculate for the number of twill-lines of the given foundation twill he can use in connection with a given repeat of the new entwining twill.

Provided the repeat of the weave and the number of twill-lines to be used are given, the designer then can also obtain the repeat of the foundation weave he can use.

Example: Ascertain number of twill-lines possible to be used in connection with the 6-harness even sided twill for foundation, the repeat of the entwining twill to be 24-harness.

$24 \div 6 = 4$ lines of a twill must be used for each set of twill-lines, no open spaces resulting. Weave Fig. 22 explains the subject.

Example: Repeat of weave 16-harness and 16 picks. Number of twill-lines to use for each set of twills to be 4; ascertain repeat of foundation twill permissible to use.

$16 \div 4 = 4$-harness and 4 picks, permissible repeat of foundation twill to be used. Weave Fig. 19 illustrates the subject.

Having given a thorough explanation of the construction of these entwining twills, we will now briefly refer to the construction of the various 22 specimens of weaves of this system, accompanying this article.

Weave Fig. 1: Foundation weave $\frac{2}{3}$-8-harness twill; one twill-line used in each set; repeat of weave 8 by 8. The open spaces resulting on account of the 5 end filling-float, have been interlaced with the $\frac{2}{3}-4$-harness broken twill.

Fig. 2: Foundation weave $\frac{2}{3}$-4-harness twill, using two twill-lines in each set; a perfect connection, no open space where sets of twills meet; repeat of weave 8 by 8.

Fig. 3: Foundation weave $\frac{4}{3}$-$\frac{3}{2}$-3-8-harness twill; two twill-line in each set; repeat of weave 8 by 8. No open space where twill-lines join.

Fig. 4: Foundation weave $\frac{4}{3}$-8-harness twill; one twill-line in each set; open spaces produced on account of prominence of the filling-float (over 5 warp-threads) in the foundation twill are interlaced with broken twill effects $\frac{2}{3}$-$\frac{2}{3}$; repeat of weave 8 by 8.

Fig. 5: Foundation weave and its arrangement is the same as for weave Fig. 3, showing however a different joining of the two sets of twillines. The same refers also to weaves Figs. 6 and 4 compared respectively.

Fig. 7: Foundation weave $\frac{1}{2}$-$\frac{1}{2}$-4-harness twill; 2 twills to each set; repeat 10 by 10; open spaces of $(10 - (4 \times 2 = ) 8 = )$ 2 ends are suitably interlaced.
THE IMPORTANCE OF WOOL-SORTING.

The early stages in which manufacturing materials are dealt with are always of vital importance, not only to those immediately concerned, but also to those who handle them afterwards. Every operation is influenced by the one which has preceded it, and also affects the one which follows, consequently, sorting, though not actually the first handling which the wool receives, is well worth special consideration with a view to finding out why it is done, the best way to do it, and noting any important matters which may crop up in relation thereto.

A, Port Philip, cross-bred, scales very bold; B, New Zealand, half-bred, scales of various widths; C, Var-Tasmanian, cross-bred, clear and well scaled; D, Cheviot, scales numerous and mosaic-like, surface rough.

It may be said at the outset that though classing and sorting are similar in many respects, and have one ultimate object in view, they are not identical. The work of classing, when done at the right time and place, is complete before the clip leaves the growers' premises.