

(3). Transfer figure effect (*full squares*) from design Fig. 9 upon weave-plan Fig. 10, taking in this instance only the figure warp-threads in the latter (every even number of warp-threads in the weave-plan) into consideration (see *full squares*). Draft in this way every horizontal row of squares in your design, successively taken, onto every other pick of your weave-plan not considered in rule 2 (see every even number pick).

Rules 2 and 3 can be reversed, *i. e.*, draft figure effect first and then ground effect, without changing result of weave-plan in the fabric.

Fig. 11 shows the weave-plan Fig. 10 in one kind (*full*) type; the repeat, 36 warp-threads and 36 picks, by means of "double point section draw" given below the weave, calling for 20 harnesses on the loom.

The same procedure can be used in planning to construct weave *d* in Fig. 7 previously given, as well as weave *d* in Fig. 13, illustrated next.

(To be continued.)

THE MANUFACTURE OF RIBBONS, TRIMMINGS, ETC.

(Continued from December issue.)

The Influence of the Twist in the Yarn upon the Fabric.

Threads in which you take out twist provided you twist them with your hand towards the left, and to which you add twist provided you twist them towards the right, are technically known as *right hand twist*, whereas such threads which untwist provided you twist them towards the right and to which twist is added provided they are twisted to the left are known as *left hand twist*.

Fig. 106^a shows right hand twist, warp yarn;

Fig. 106^b shows right hand twist, filling yarn;

Fig. 107^a is a left hand twist, warp yarn, and

Fig. 107^b is a left hand twist, filling yarn.

Provided we use in a fabric, warp and filling spun with a hard twist, it will then be advisable to use the



Fig. 106^a



Fig. 106^b



Fig. 107^a



Fig. 107^b

same direction of twist for both systems of threads, since in this way the spirals of the twist of warp and filling will cross, in turn slightly raising the warp threads in the fabric.

Provided we use for the warp a different twist than that used for the filling, the spirals of the twist of both will then more or less interlock with each other, giving in turn a flat appearance to the fabric.

Besides the twist in the yarn, you must also take into consideration the direction of the twill in the weave.

Fig. 108 shows us the 4-harness even sided twill, with its twill line running from left to right, *i. e.*, a right hand twill as we call it; used in connection with a right hand twist warp yarn. The twist of the yarn in this instance runs the proper way, *i. e.*, against the direction of the twill in the weave. Using the other direction of twist for the warp yarn, *i. e.*, a warp yarn twisted to the left, in connection with the same direction twill in the weave would then have the

direction of the twist in the warp yarn run in the same direction as the twill in the weave, a combination you will have to omit wherever possible.

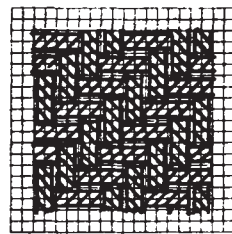


Fig. 108

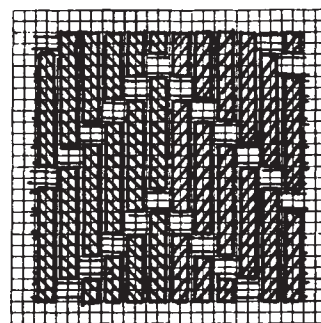


Fig. 109

For the filling we have used right hand twist yarn, so that the spirals of the twist in the filling run against the spirals of the twist in the warp yarn.

Fig. 109 shows us a pointed twill constructed with proper selection of twist for the warp yarn, *i. e.*, we changed the direction of the twist used for the warp yarn with the change in direction of the twill in the weave. This will explain that in order to properly bring up these pointed twill effects, *i. e.*, one direction of twill as prominent as the other, both kinds of twist (right and left hand twist yarn) must be used for the warp-threads, according to the direction of the twill.

Of the greatest of importance in the manufacture of ribbons having pearl edges (loop effects produced by floating the filling outside the edges of the ribbon) is the direction of the twist of the filling. These pearl edges, to suit the pattern desired, are produced either on one or on both sides of the ribbon by inserting horse hair threads, or steel or brass wires next to the warp-threads of the ribbon, in the reed. These wires or horse hair threads are secured at their rear ends to the rear framing of the loom, and are drawn into a heddle eye of the harness, and then passed through the reed, close to the side of the fabric, the wire extending close to the breast beam, after which it then pulls itself (during the progress of weaving) automatically out of the loops of the woven fabric. These wires or horse hairs are raised or lowered by the respective harnesses they are threaded to, to suit the desired shape, number and length of loops in the fabric, etc. The filling is caught during weaving by these horse hairs or wires. The take-up of the loom draws the fabric, as mentioned before, out of the respective horse hairs or wires, in turn forming the characteristic loops to the fabric.

Two kinds of these loops are produced: (*a*) such as form an open eye, and (*b*) such where the eye twists itself. As a rule, the first mentioned loops are those desired.

Using a right hand twist filling, and wanting to produce an open loop, have these the wires producing said loop, on both sides of the ribbon in the upper portion of the shed when the shuttle enters from the right hand side, since then the position of the filling around the wires equals untwisting of the latter. If you want to produce with right hand filling a twisted loop, have then your wires which form the loop, on both sides of the ribbon in the upper shed when the shuttle enters from the left hand side. Position of the filling around the wire then equals additional twist to

the filling while forming the loop, the latter then, as we call it, hitting themselves upon their heads.

With a left twist filling, in order to obtain an open loop, the wires on both sides of the ribbon must be in the upper shed when the shuttle enters from the left, the reverse entering of the shuttle having to take place when a twisted loop is required.

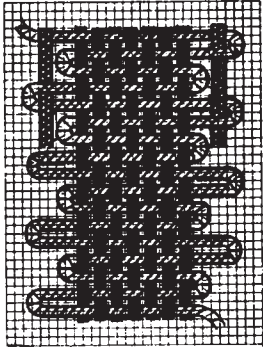


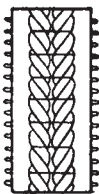
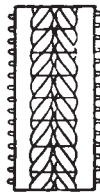
Fig. 110

Fig. 110 shows us a fabric sketch of a taffeta ribbon, with open loops, using a right hand twist for the filling. In the upper part of the illustration, the wire, as forming the loop is shown dotted white on a black background, so as to distinguish them from the warp-threads.

The warp-thread nearest the wire, in every instance, must be in the lower shed when the wire is raised, and vice versa, otherwise this warp-thread would interlace in the loop.

Fig. 111 shows us a fabric sketch of a taffeta ribbon, containing twisted loops, using a right hand twist yarn for the filling. The same as in the previously quoted example, the upper part of the illustration shows the wire as used for the forming of the loop dotted white on black background.

Fancy effects, produced in connection with heavy counts of yarns, containing pronounced curves of twist, are frequently used for the formation of special effects on the face of ribbons; for example, cotton threads twisted with spun silk threads or mercerized cotton, etc. Using two such effect threads, one twisted to the left, one twisted to the right, will produce the

Fig. 112^aFig. 112^b

pattern as shown in sketch Fig. 112^a. If we change the position of both threads, the result will be the effect shown in Fig. 112^b. The more lustrous the material used for these yarns, the more prominent the curves of the twist will appear to the eye, on account of the reflection of the light.

Using hard twisted warp or filling threads of one direction of twist, the count of which compared to the other threads of the ribbon is considerably heavier (for example, metal twists) the ribbon then will roll itself in the direction of the twist of said threads. To prevent this, have a right hand twisted thread alternate with a left hand twisted thread.

How to change German Counts of Spun (*Chappe*) Silk (which are calculated by the Metric System) into English Numbers.

GERMAN STANDARD.

1000 *m* to one skein. The number of skeins that weigh 1 *kilo* indicate the count of the yarn, whether dealing with single or ply yarn. This explains that the single number in connection with 2 or more ply yarn, is considered the same as is customary with the English system of cotton yarn counts, and not as done with the English spun silk counts. In other words, in the German system the custom is to consider the ply Spun Silk Yarn as many times as heavy compared to the single thread as the ply used indicates, whereas in the English system we consider the single thread equal to any of its corresponding number in ply yarns.

Hence in the German System:

120/2 spun silk = 60's single, or 2 ends of 120's are twisted together.

Whereas in the English System:

120/2 spun silk = 120's single, or 2 ends of 240's are twisted together.

Example: 120's Spun Silk (Metric system) thus has $120 \times 1000 = 120,000$ *m* per *kilo*.

Changing the same to the English count we find:

1 *kilo* = 2.2 lbs.

$120,000 \div 2.2 = 54,545$ *m* per lb.

1 *m* = 39.37 " hence

$$\frac{54,545 \times 39.37}{36} = 59,651$$
 yds. per lb., and

$59,651 \div 840 = 71$.

Answer: 120's Spun Silk, German, *i. e.*, Metric count = 71's in English count.

In connection with 2 or more ply yarn the number of yards required to balance 1 lb. is ascertained by dividing the single number by the ply number for the constant number to use.

Example: 3 ply 120's Spun Silk (Metric system) expressed 120/3, has $(120 \div 3 = 40) \times 1000 = 40,000$ *m* per *kilo*, or is, calculated the same as 40's single spun silk, metric system.

Example: Express 300/2 Spun Silk, German system, in the English system.

$300 \div 2 = 150 \times 1000 = 150,000$ *m* per *kilo*.

$150,000 \div 2.2 = 68,181$ *m* per lb. and

$$\frac{68,181 \times 39.37}{36} = 74,563$$
 yds. per lb.

$74,563 \div 840 = 88.76$ (practically 90)

Answer: 300/2 Spun Silk, German count = 90/2 in the English system.

Absence of Foreign Novelties.

A year ago, when the early retail spring displays were made of fine and fancy cottons, there were plenty of foreign novelties in the collections, particularly French cottons of the heavier kinds. This year the foreign novelties are conspicuous by their absence, and the sheer cloths have come forward to take the place of the heavier ratines and other cottons that were shown last year.