

NOVELTIES IN SILK DRESS GOODS

Silk Waisting. (*Harness Work.*)

Fig. 1 is a photographic reproduction of a neat sample of figured taffeta intended for shirt-waisting. A well developed extra warp figure, stripe effect, is brought up on a plain white ground, the space between said figure stripes being toned up by a color effect in six small stripes, interlacing the same as the white warp on taffeta. The complete design forms a style which may be developed in various colors. In connection with a white ground, the colors shown in the range of samples comprise purple, pink, black, sage green and fawn.

Besides using one color for the figure and the plain stripe effect, the design is well adapted for a development in broken colorings, using one color for the extra warp figure effect and a harmonizing color for the taffeta stripes.

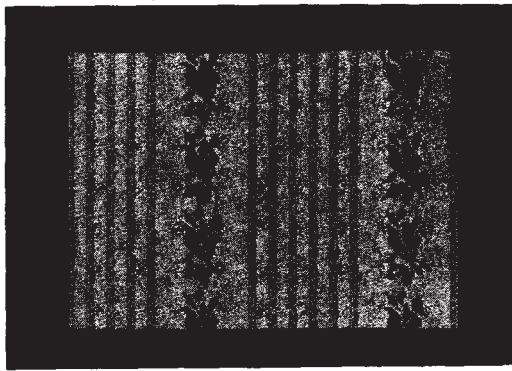


Fig. 1

Warp: Fabric 20 inches wide, exclusive selvage.
Repeat of pattern $1\frac{1}{16}$ inches.
 $20 \div \frac{17}{16} = 18\frac{2}{3}$ repeats of pattern in width of fabric =
2945 ends white ground warp (taffeta)
1008 " purple ground warp (taffeta)
684 " purple figure warp (floating)
—
4637 ends in complete warp

White and purple ground warp 2-thread organzine with 7 cocoon fibres in each ply, *i. e.*, 14 cocoon fibres to the thread.

Purple figure warp 4-thread no-throw with 7 cocoon fibres in each ply, *i. e.*, 28 cocoon fibres to the thread.

Dress:

30 ends white ground	=	30 ends
1 end purple figure	}	× 36 = 72 ends
1 end white ground		
30 ends white ground	=	30 ends
9 ends purple ground	}	× 5 = 105 ends
12 ends white ground		
9 ends purple ground	=	9 ends
Repeat of pattern:		246 ends

Of these 210 ends are ground warp
36 ends are figure warp
—
246 ends in pattern.

Reed: No. 63, threaded thus:
10 dents @ 3 ends (ground only)
12 dents @ 6 ends (ground and figure)
48 dents @ 3 ends (ground only)
—
70 dents for one repeat of design, *i. e.*, 246 ends.



Fig. 2

Selvage: 48 ends 2-thread organzine (100,000 yards to the lb.) on each side, to interlace with the (2 threads, 4 picks) common warp rib weave.

Filling: 132 picks per inch in finished sample, 3-

thread tram, with 8 cocoon fibres in each ply, *i. e.*, 24 cocoon fibres to the thread.

Point Paper. Most designers on account of harness work may use the common 8 by 8 design paper for their work. However, it will be found of advantage to use the proper ruled paper, *i. e.*, a paper corresponding to the proportion of warp and filling texture as is used in the fabric structure under consideration,

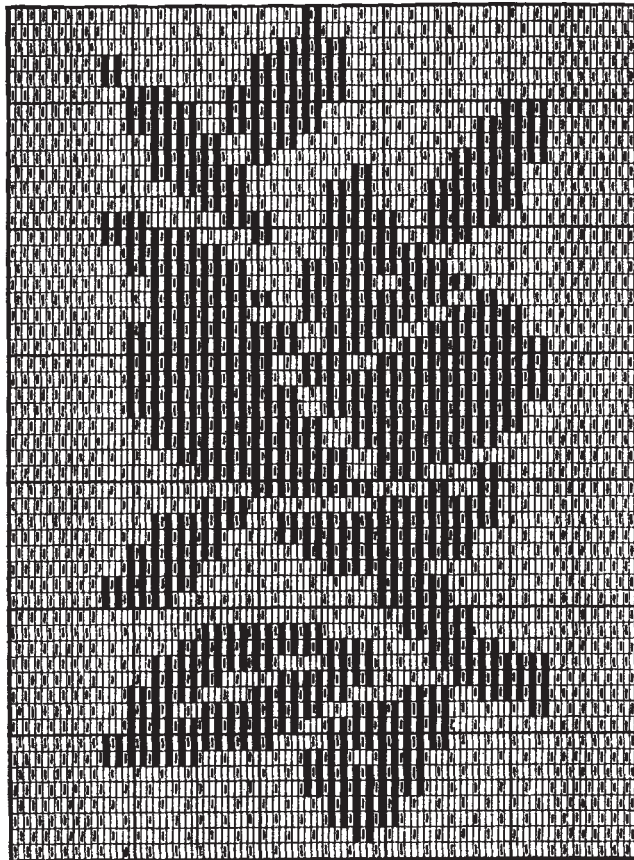


Fig. 3

hence in our example, considering figure warp threads and picks per inch, taking 12 as ruled for warp, we find:

$$198 : 132 :: 12 : x$$

$$132 \times 12 = 1584 \div 198 = 8$$

Answer: 12 by 8 is the point paper to use when preparing the sketch for the figure (floating) stripe, and which is the paper used in our design Fig. 2. Only reference is taken of the figure effect, *i. e.*, figure warp, in connection with the filling. Two repeats of the figure are given.

Fig. 3 shows the analysis of this figure warp, ground warp and the filling. The arrangement of the warp for the design is

$$\left. \begin{array}{l} 1 \text{ end ground warp} \\ 1 \text{ end figure warp} \end{array} \right\} 36 \text{ times over.}$$

Ground warp is indicated by *dash* type, figure warp by *full* type.

On each side of the stripe 14 ends ground warp are shown. Only one repeat of the analysis is given, shown up on 20 by 8 point paper, the nearest point

paper at our disposal; 24 by 8 would have been the exact paper to use to bring analysis exactly to shape of design Fig. 2, and fabric sketch Fig. 1.

Number of Harnesses Required.

Figure stripe, *i. e.*, design Fig. 2 calls for 18-harness straight draw with 2 heddles to each harness. The ground weave calls for 4 or 6-harness. The latter is the number most advisable to use, both on account of texture as well as drawing 3 ends in one dent, *i. e.*, 3 being a multiple of 6, the number harness used for drafting-on the taffeta, as well of 36 the unit of the figured stripe. This will then give us 24-harness to use to reproduce silk waistie shown in Fig. 1.

Satin Linings.

The same appear in the market under various trade names, and as the name indicates, are used for lining coats, cloaks, capes, etc. They come in the market either 27 inches or 1 yard wide. The better grades are made with a fine count of silk warp, the filling being single cotton. Imitations of it, in cheaper grades are made of all cotton.

SILK WARP-COTTON FILLING.

In the construction of these fabrics the silk forms the face of the fabric, the cotton filling forming the back and at the same time the bulk of the fabric structure, hence the name *cotton backs* frequently given to these fabrics.

The amount of silk and cotton used in the construction of the bulk of these fabrics varies in from $\frac{1}{6}$ silk and $\frac{5}{6}$ cotton to $\frac{1}{3}$ silk and $\frac{4}{5}$ cotton.

The construction of these satin linings is best explained by giving the analysis of a few standard makes.

$\frac{1}{5}$ SILK $\frac{4}{5}$ COTTON. (Light shade silver gray.)

Weave: 8-leaf satin, warp effect $\frac{7}{1}$ for face.

Texture: Finished, 326 warp threads and 85 picks per inch.

Finished width: 36 inches.

Weight of one Yard: 1423.442 grains (exclusive of selvage).

Warp: 11,736 ends exclusive of selvage. Of same 150 ends $4\frac{1}{2}$ " long, *i. e.*, 675 weigh 0.4505 grains. Hence $675 : 0.4505 : x : 7000$ (grains in 1 lb.)

$\frac{36 \text{ (inches in 1 yd)}}{7000}$
 Answer: 291,343 yards of (boiled-off) silk required to balance 1 lb. Allowing per cent for loss in boiling-off gives 218,507 yards or, practically consider 220,000 yards to 1 lb. is the count of the thrown silk required. Take-up warp in weaving is about 2 per cent. Using Reed 80 with 4 ends per dent will bring the fabric $(11,736 \div 320)$ $36\frac{1}{2}$ inches wide in loom. Reed 7 with 4 ends per dent, will make $(11736 \div 312)$ $37\frac{1}{2}$ inches wide in loom.

Filling: 85 picks per inch. Of the same 100 ends, each $4\frac{1}{2}$ " long, *i. e.*, 450". weigh 4.664 grains. Hence

$$\frac{450 : 4.664 :: x : 7000}{36} = 18,760 \text{ yards}$$

of this single cotton filling weigh 1 lb., and $18,760 \div 840$ (cotton standard) = 22.33, or 22's single cotton (on the light side) is the filling used in the construction of this fabric.

A SIMILAR FABRIC STRUCTURE BUT USING LESS SILK.

The analysis of this fabric gives us more warp threads used, but this of a finer count. The fabric is also slightly heavier.

Weave: 8-leaf satin, warp effect for face.

Texture: Finished, 386 warp threads and 85 picks per inch.

Finished width: 36 inches.

Weight of one Yard: 1432.51 grains (exclusive selvage)

Warp: 13,896 ends exclusive of selvage. Of the same 150 ends $7\frac{1}{4}$ " long, *i. e.*, 1087.5" weigh 0.57805 grains. Hence

$$\frac{1087.5 : 0.57805 :: x : 7000}{36}$$

Answer: 365,530 yards of (boiled-off) silk required to balance 1 lb. Allowing 25 per cent for the boil-off gives us 274,147, or practical 275,000 yards to the lb., thrown. Take-up of warp in weaving $2\frac{1}{2}$ per cent. Reed 94 with 4 ends will bring fabric 37" wide in reed. Reed 62 with 6 ends = $37\frac{1}{3}$ " wide in loom.

Filling: 85 picks per inch. Of the same 100 ends, each 6" long, *i. e.*, 600" weigh 6.3578 grains. Hence

$$\frac{600 : 6.3578 :: x : 7000}{36} = 18,350 \text{ yards}$$

of this single cotton filling, weigh 1 lb., and $18,350 \div 840 = 21.84$, or 22's single cotton (on the heavy side) is the filling used in the construction of this fabric.

IMPROVEMENTS IN THE METHOD OF FINISHING ARTIFICIAL SILK.

To avoid the necessity of drying artificial silk under tension in its manufacture, J. Hübner treats the same with some hygroscopic substance before drying. Glucose and glycerine are two of the bodies suggested.

Example.—The fibre is formed as usual and washed, and finally treated in a luke-warm bath of Marseilles soap or Turkey Red oil, and then treated for a few minutes with a 1 per cent solution of glycerine or glucose, with the addition of a small quantity of a weak acid, such as acetic or tartaric acid. The fibre is then wrung out (but not washed), and dried at a low temperature. The glycerine bath may be neutral, in which case a treatment with a dilute acid bath follows.

This process produces on the fibre a soft characteristic *scroop* of natural silk.

DESIGNING AND FABRIC STRUCTURE.

POINTED TWILLS.

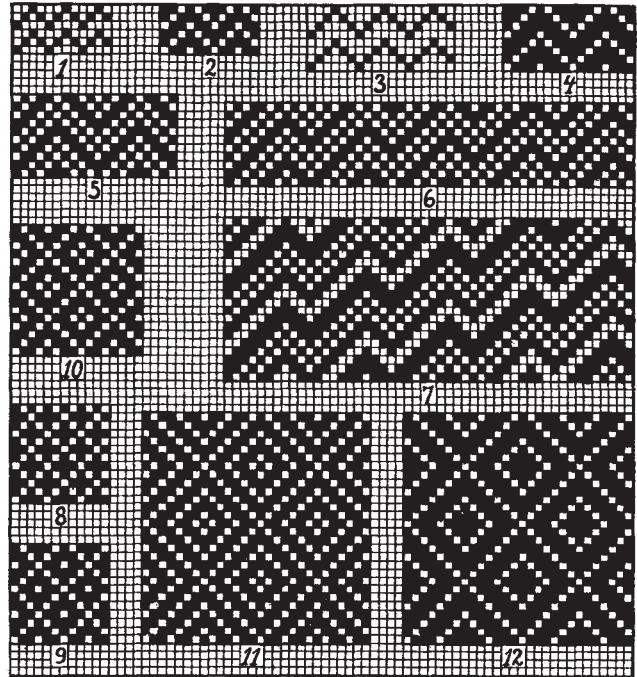
This subdivision of twill weaves finds extensive use in the manufacture of all kinds of figured cotton fabrics, also for union as well as all-worsted dress goods, and various silk fabrics. A few of the smaller weaves, like for instance the $2-1$ 3-harness pointed twill, find use in the manufacture of woollen and worsted fabrics for men's wear, chiefly on account of their adaptability for producing special color effects, such as hair lines, etc.

This system of weaves is subdivided into:

- such as point warp ways and
- such as point warp and filling ways.

Pointed Warp Ways.

Rule: Run foundation twill for a certain number of warp threads from left to right, and reverse direction of drafting for a certain number of warp threads, using the last warp thread of the one direction of



drafting as the first warp thread of the reverse direction of drafting. Continue this alternate drafting, one way and then the other, until repeat of weave is obtained. Warp threads thus claimed by either direction of drafting are known as the *point threads*.

This feature indicates that in calculating the repeat of a pointed twill, said point threads are to be considered only once.

For instance: Drafting 8 ends from left to right, to alternate with 8 ends drafted from right to left, and which drafting on account of being balanced will result in a repeat of the weave, we then find

$$8 + 8 = 16 - 2 \text{ (points)} = 14$$

Answer: The weave will repeat on 14 warp threads.

With reference to the repeat of the pointed twill