

Posselt's Textile Journal

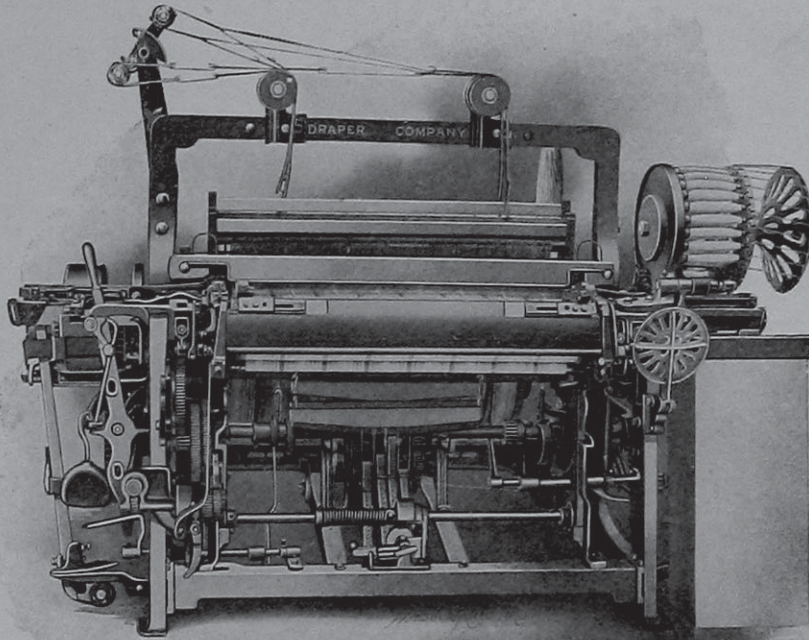
A Monthly Journal of the Textile Industries

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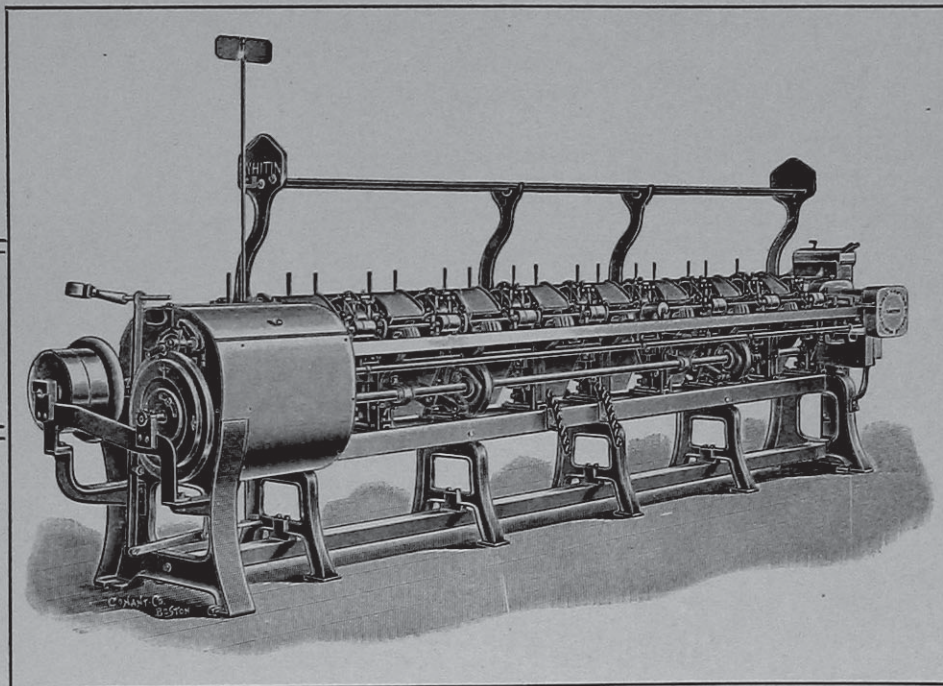
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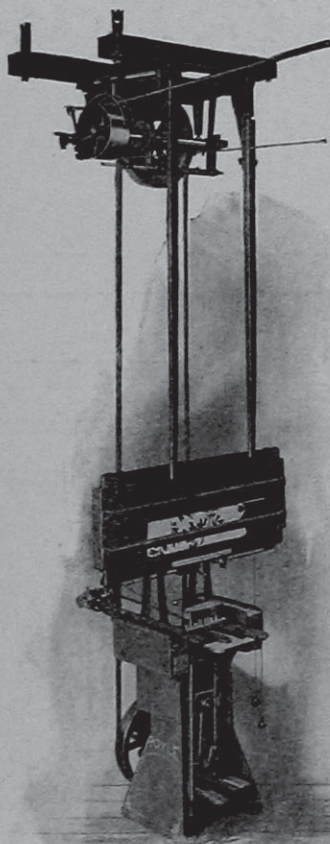
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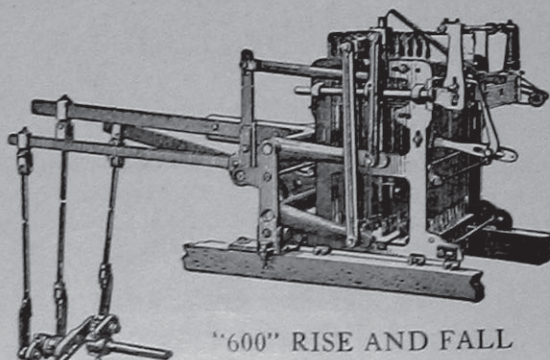
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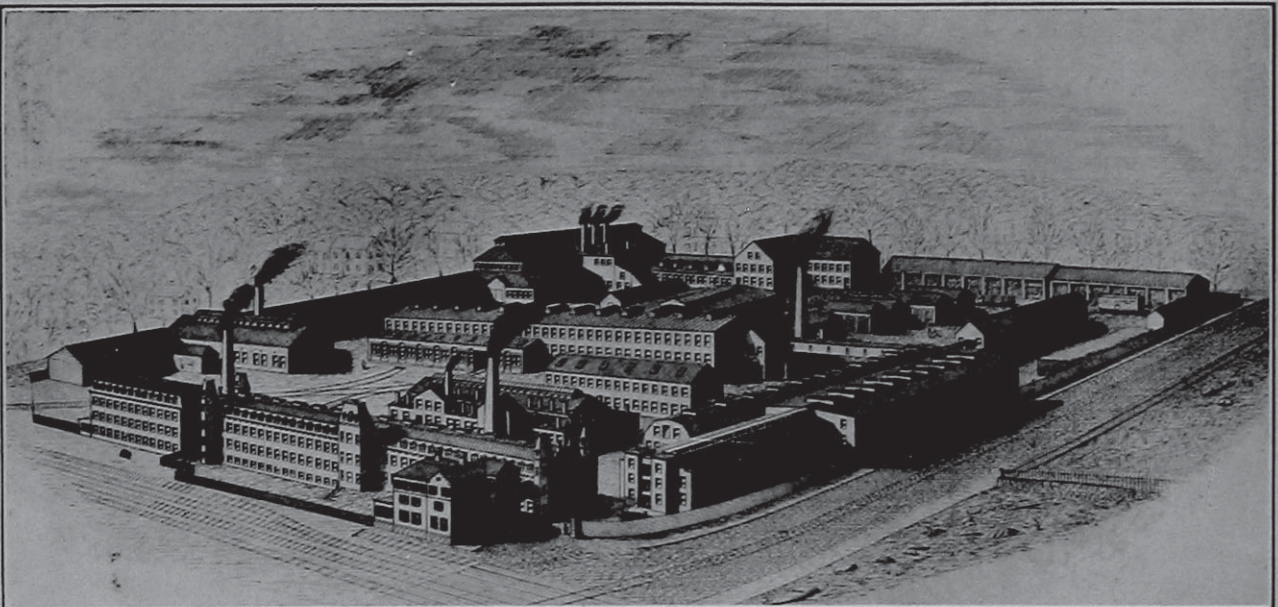
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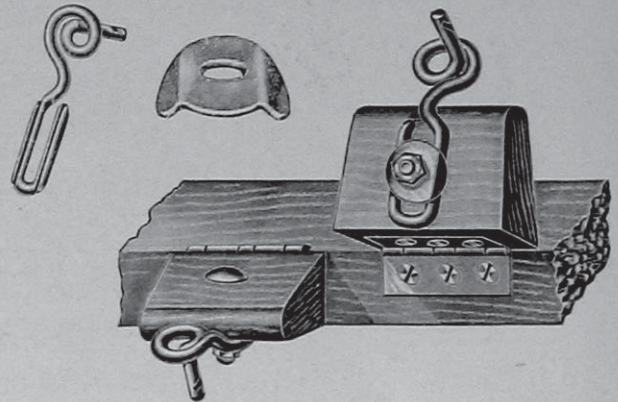
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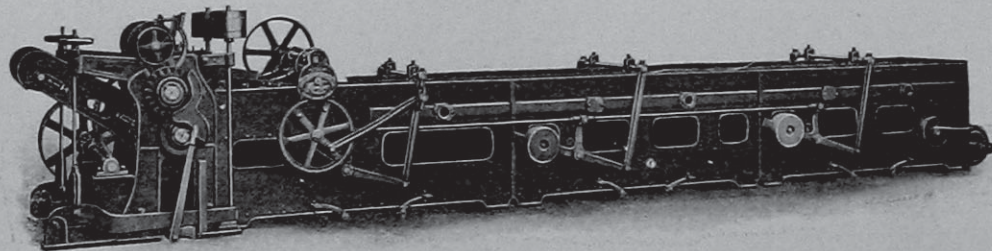
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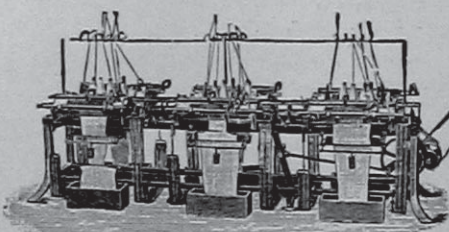
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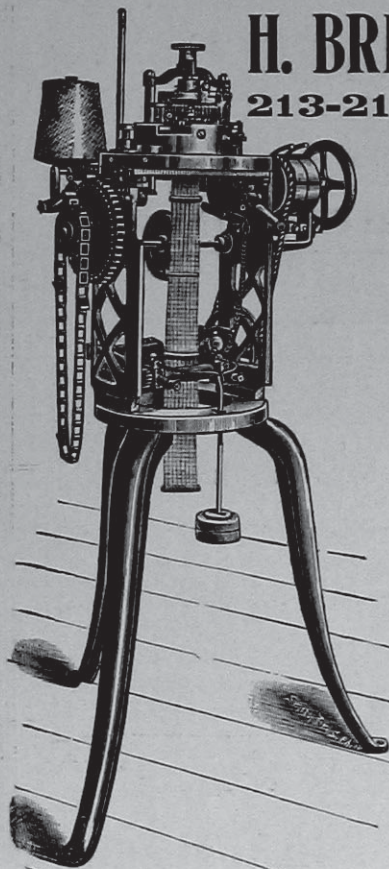
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Posselt's Textile Journal

Vol. III.

October, 1908.

No. 4.

JACQUARD DESIGNING.

(Continued from page 79.)

COLOR EFFECTS IN SINGLE CLOTH.

Produced by Filling Combinations.

This system of designing finds extensive use in the manufacture of Figured Silks, Dress goods, Tiesilks,

The same as done in connection with previously explained systems of Jacquard fabric structures, we will explain the present method of Jacquard designing by means of a practical example, Fig. 46, a silk fabric,

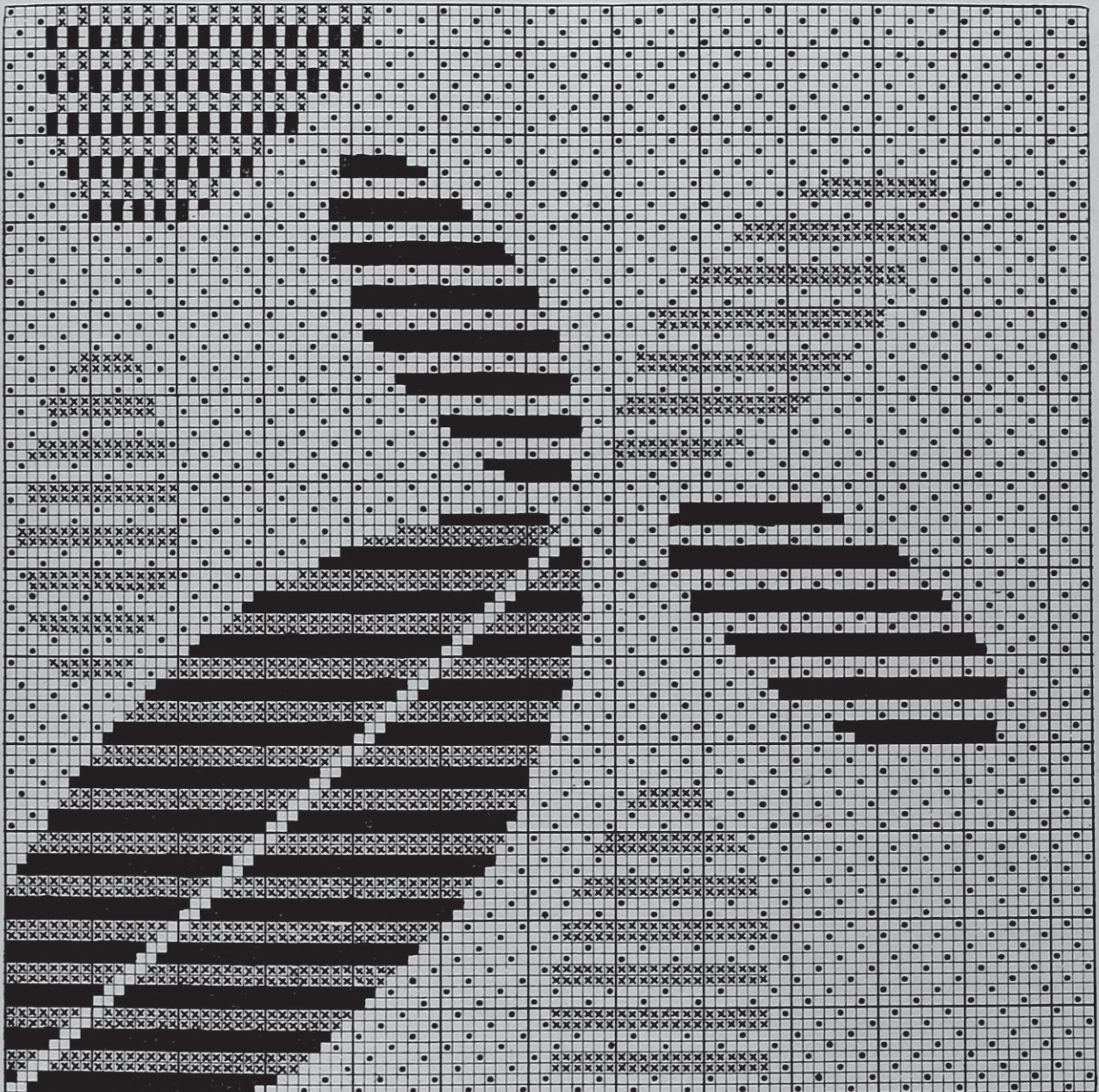


FIG. 47.

Draperies, etc., and has for its object to show up the colors of the different fillings in certain portions of the figure either by itself or in combination with the other color, or colors used; the warp forming the ground portion of the design.

suitable for dress goods as well as tie-silks, showing in connection with single cloth, five distinct colorings, as the result of using only one color in warp and two colors in filling.

Fig. 46 is a fabric sketch, actual size, showing

four repeats of the design (2 repeats each way), and calls for $1\frac{1}{2}'' \times 1\frac{1}{2}''$ for one of its repeats.

Texture used to be: 133 \times 133, thus:

Jacquard Machine required (133 warp threads per one inch \times $1\frac{1}{2}$ inches, repeat of pattern =) 200 needles of a 200, 400 or 600 Machine.

Using the same number of warp threads and picks per inch, directs the use of an even point paper; either 8×8 , 10×10 or 12×12 .

Fig. 47 shows us one quarter of the actual design, executed on point paper, being that part as outlined by square *a, b, c, d* on fabric sketch Fig. 46.

In our point paper design *empty* type indicates warp up; and consequently *full, cross, and dot* type, filling up.

The weave used for the ground structure is the 5-leaf satin, warp effect; see *dot* type, which, as previously mentioned, indicates or stands for the reverse effect of the satin weave, *i. e.*, filling up.



FIG. 46

We next will consider the four different figure effects shown in our fabric sketch Fig. 46, viz:

- 1st effect shown black,
- 2nd effect shown shaded,
- 3rd effect shown cross hatched, and the
- 4th effect shown dotted.

Of these four effects, the first three are to be produced by means of floating the filling, whereas the fourth effect is to be produced by the weave.

We will next describe the execution of each effect on the point paper and its result on the fabric, by using the following arrangement of colors:

Warp: all white,

Filling: 2 pick old rose, to alternate with 2 picks pea green.

These two different colors are indicated in the point paper design Fig. 47 thus:

Old rose by *black* type,

Pea green by *cross* type.

1st effect, shown in *black* in sketch, is produced by floating all the filling (see the corresponding figure in

the point paper design executed prominently, *i. e.*, entirely by *black* and *cross* type). Care must be exercised not to have the figure portions where such effects are used too large, since no actual interlacing of warp and filling takes place, the warp simply floating on back of fabric structure and the filling on its face. This feature, *i. e.*, not to produce too loose a figure effect in the design, has been the reason why the warp twill line was run through the centre of our figure, thus cutting-off an otherwise too excessive float. The color effect to this figure, in the fabric, is the combination of old rose and pea green.

2nd effect, shown by shading in sketch, is produced by floating all the pea green filling (see the corresponding figures in design executed by *cross* type) on the face of the fabric, all the old rose filling forming 5-leaf satin ground structure (not visible on face of fabric) with the warp, for the pea green filling to rest upon. This effect leaves more of the strength to the fabric compared to the first effect, again if on account of position of figure, one or the other or all the floats should get too long, we have a ground structure present, to which we then can stitch such excessive filling floats wherever required. The color effect to these figures in the fabric structure is—all pea green.

3rd effect, shown by cross hatching in sketch, is produced by floating all the old rose filling (see the corresponding figures in point paper design executed by *black* type) on the face of the fabric, all the pea green filling forming 5-leaf satin ground structure (not visible on the face of the fabric) with the warp, for the old rose filling, as then floating, to lay upon. This is the mate effect to effect #2, thus points, as to strength and stitching previously mentioned, also refer to this effect. An all over old rose color is the result to any figure or part of figure executed according to effect #3.

4th effect, shown dotted in sketch, is produced by weave and color, interlacing warp and filling with 2 up 2 down, 2 by 4 warp effect rib weave, arranging the latter so that the 2 picks of one color always fall into one shed. On account of the low warp-texture (for a silk fabric of this kind) warp and filling will be about equally distributed as to color on the face of the fabric by means of this rib weave, thus neither of the three colors (white, old rose and pea green) is prominently in evidence (although the white warp will have somewhat the preference), with the result of a faint figure in the ground portion of the fabric, distinguished in the woven fabric only when seen under a certain angle, or on closer inspection. It will be readily understood that by means of the immense amount of different weaves at our disposal, an endless variety of the latter kind of effects can be produced.

With reference to prominently floating color combinations, using 2 colors in filling, arranged 2 : 2, the three effects quoted first are all that is possible to be shown in the fabric, leaving however a minor important color combination effect, yet to be mentioned, *viz.*: floating 1 pick old rose and 1 pick pea green, using the next two picks (1 pea green, 1 old rose in the repeat of color arrangement) for interlacing with

the warp, *i. e.*, forming ground structure. The effect, however, will only imitate effect #1, but would not produce such a full face (since only one half the number of picks are used) and in fact, as mentioned before will be inferior in result.

Using Three Colors in Filling.

With this number of colors at our disposal, four good figure effects, by means of filling floating, can be produced. However, all four effects, will be combinations of either 2 or 3 colors, no single color effect being advisable on account of the general construction of the fabric, which for such an effect would receive a bare, thready appearance, since twice the number of picks would have to work on structure weave, compared to those floating for producing figure on face of fabric.

To explain the subject, let us represent the different colors of filling used by numerals 1, 2 and 3.

1st effect: produced by floating all the filling, or colors 1, 2, 3; no interlacing of warp and filling to take place, *i. e.*, the full, covered figure the result.

2nd effect: float colors 1 and 2, and interlace color 3 for ground structure.

3rd effect: float colors 1 and 3, and interlace color 2 for ground structure.

4th effect: float colors 2 and 3, and interlace color 1 for ground structure.

The arrangement of these three colors can be either one pick of each, or two picks of each, either combination resulting in satisfactory effects. If we extend the color arrangement to *Four colors used in filling*, we will then find that there are eleven different practical combinations possible, thus eleven different color effects can be shown on the face of the cloth, in addition to the color for the ground; without question a feature of interest and value. This variety of different color combinations possible, *i. e.*, at the disposal of the designer for this class of fabrics will be best explained by means of an example.

Fig. 48 shows a Sketch specially prepared to explain this subject. It is a polka dot effect arranged after the 11-harness irregular satin setting to be woven:

- 1 pick green or color #1
- 1 " brown or color #2
- 1 " blue or color #3
- 1 " cream or color #4

4 picks in repeat of color arrangement for figure effects.

Warp, for ground of fabric, to be all one color.

Three different fabric structures are practicable, viz:

1st construction: Use all the filling (floating) for producing a figure (or certain portion of a figure).

2nd construction: Use any three picks of the four picks in repeat of the color arrangement (floating) for producing a figure (or certain portion of a figure); the fourth pick to interlace as ground or body pick, not visible on face of fabric.

3rd construction: Use any two picks of the four

picks in repeat of the color arrangement (floating) for producing a figure (or certain portion of a figure); the remaining two picks to interlace as ground or body picks, not visible on face of fabric.

No one color effects for figures or parts of a figure are possible, since this would result in one pick face or figure or float to alternate with three picks for ground or body; an arrangement producing an effect to open the figure or floating picks, not being able to cover the face of the figure.

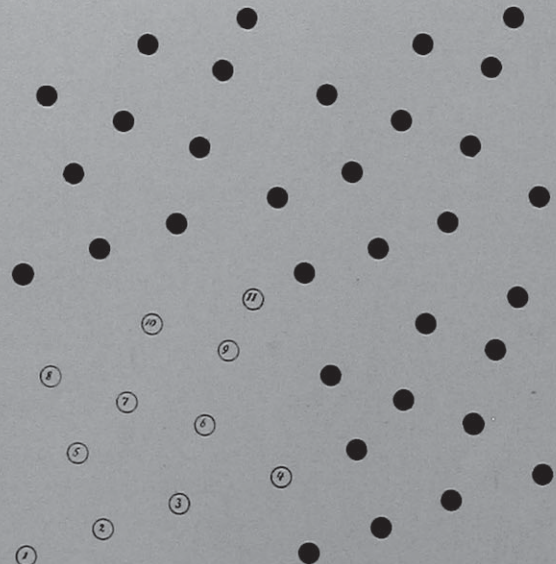


FIG. 48

These three constructions quoted will result in the following (11) color combinations, or effects for figures (or a portion of a figure) possible:

- 1st effect—green-brown-blue-cream=4 color combination effect.
- 2nd " green-brown-blue. } 3 color combination effects.
- 3rd " brown-blue-cream. }
- 4th " blue-cream-green. }
- 5th " cream-green-brown. }
- 6th " green-brown. } six 2-color combinations.
- 7th " brown-blue. }
- 8th " blue-cream. }
- 9th " green-blue. }
- 10th " green-cream. }
- 11th " brown-cream. }

In order to simplify the matter, we have numbered the first repeat of pattern in sketch 48 with numerals 1 to 11, *i. e.*, to indicate the eleven different color combinations possible, each spot in one repeat of the pattern to show in a different color combination.

Examples thus quoted, will readily explain the immense variety of color combinations at the disposal of the designer for this system of single cloth, Jacquard designing.

Consolidated Raw Silk.

Raw silk can be consolidated by hardening its coating of sericin, which envelops the fibroin, by means of formaldehyde. This treatment, however, leaves the silk not sufficiently supple, besides being the cause of the silk remaining dull, after dyeing. These dis-

advantages, a late Swiss process claims, are overcome by freeing the thus treated silk from the exterior strata of sericin, the remaining hardened sericin as then enveloping the fibroin becoming thus thinner and when consequently the fibre will remain more supple.

DESCRIPTION OF THE PROCESS. The raw natural silk, is according to the new process, placed in the form of thread, fabric or waste, in a formaldehyde solution containing 2 to 5% pure formaldehyde of the weight of the silk material to be treated, the latter being allowed to remain in this solution for about one to three days, at ordinary temperature, so as to entirely harden the sericin, which occurs when the sericin coating of the raw silk has become insoluble in water. The silk thus treated, is then dried and in turn subjected to the action of a soap lather, produced by heating soap water to boiling in the presence of air, up to about 45 minutes, more or less, if so required, according to the nature of the silk or the more or less energetic action of the formaldehyde or whether the hardened sericin coating shall be softened or made soluble more or less deeply. This treatment with soap lather is stopped when a sample of the treated raw silk loses by its washing 3 to 5% of the original weight of fibroin less than when the same silk is entirely ungummed in the usual way. Then the silk is washed in water, whereby the softened exterior layers of the sericin coating are removed from the fibroin, while the inner, more dense layers of the said hardened sericin coating, which have not been made soluble by the soap lather, remain on the fibroin, assuming, the same as the latter, a bright glossy appearance on dyeing.

The sericin thus adhering to the thread, increases the volume of the latter.

Silk, thus treated, it is claimed, has a greater affinity for weighting substances, and when silk thus treated, can be weighted more.

The thus hardened sericin, remaining on the fibroin, protects the latter so that the physical structure of the silk is saved, the dyed silk, it is claimed, becoming less downy.

An Improved Wind and Stop Motion for Silk Quillers.

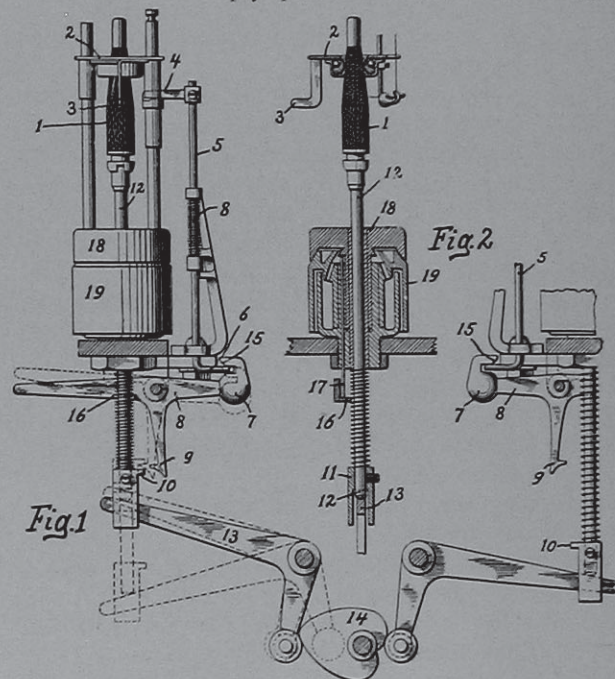
The object aimed at in this motion is to provide for a rapid crossing of the thread on the quill, at the same time providing for stopping the reciprocating movement of any individual spindle of the winder without interfering with the movements of neighboring spindles.

Of the accompanying illustrations, Fig. 1 is a transverse section of those portions of the quiller to which the improvement refers to; one of the spindles and its driving and winding mechanism is shown in elevation.

Fig. 2 is a transverse section of some of the parts shown in Fig. 1 in elevation, others being again shown in elevation, but in a different view.

In operation, as the quill 1 is wound, the guide carrier 2 is gradually forced upwardly, by the engagement of the wound portion of the quill with it, until it reaches a height where projection 3 strikes the arm 4

and rocks the stop rod 5 in a direction to release its lower end 6 from the weighted end 7 of the arm 8, and when the latter will rock in a direction to bring its latch 9 under the shoulder 10 on the collar 11 on the lower end of the spindle 12; thereby retaining the latter in its raised position and preventing it from further reciprocation. In this raised position, the spindle 12 will remain, while the wound quill is being removed and an empty quill substituted. The traverse



lever 13 for this particular spindle so held in elevated position may continue its rocking movements without having any effect upon the spindle so held raised. Furthermore, the neighboring spindles, whether the rocking levers 13 be simultaneously rocked from one cam 14 or rocked independently from individual cams, may go on performing their work without in any manner interfering with the spindle 12 so held raised.

When the new quill is placed in position and thread attached, the winding may be started by either depressing the free end of the lever 8 and thereby releasing the latch 9 from the shoulder 10; or the stop rod 5 may be utilized to raise the weighted end of the lever 8, by the operator taking hold of the arm 4 and rocking the rod against the beveled nose 15 of the weighted end of the lever, thereby forcing the lower end 6 of the stop rod 5 in position as shown in Fig. 1, to hold the weighted end of the lever 8 elevated and the latch 9 out of engagement with the shoulder 10.

The stop lever 8 carries an off-set 16, for operating rod 17, to lift the guide carrier support 18 out of driving engagement with the pulley 19 whenever the lever 8 is rocked in position to engage and hold the spindle 12 elevated, thereby stopping the rotary movement of the guide carrier, while permitting the pulley 19 to continue in rotation.

When the stop lever 8 is rocked in the opposite direction, the guide carrier support 18 will be allowed to fall by gravity into frictional contact with the driving pulley 19, and the winding will proceed.

DESIGNING AND FABRIC STRUCTURE FOR HARNESS WORK.

DOUBLE SATINS.

The same have for their foundation any one of our satin weaves, the construction of which was given in the December 1907 issue of the Journal.

Double satins in turn are again divided into such as obtained from its mate foundation satin weaves by:

(a) Adding a riser, either on top or bottom of each riser of the filling effect satin, or a sinker to each sinker of its mate warp effect satin.

(b) Adding said riser or sinker in an oblique direction respectively to each riser or sinker, (as the case may be), of its mate effect foundation satin weave.

Adding the Riser or Sinker on Top or Bottom of the Foundation Satin.

The main object aimed at in designing this system of double satins consists, in preserving to the fabric its characteristic satin face by means of as little as possible disturbing the floating of the warp threads, imparting at the same time additional strength to the fabric by interlacing the filling twice in one repeat of the weave, compared to the one interlacing as is the case in its foundation satin. The lowest number of harnesses for which double satin can be designed for is 5-harness; after that they can be made for in any number of harnesses, the 5, 8 and 10-harness double satin being the ones most frequently used.

Weaves Figs. 1 to 8 of our accompanying plate of double satins, are given to show the construction of the present system of double satins. Although the warp effect double satin, in most instances will be the one desired, it will greatly simplify matters to construct the filling effect double satin and then consider the *empty* squares for risers when building the harness chain, or transfer weave in this way on point paper for the weave room.

A description of the 8 weaves previously referred to, will readily explain their construction, giving at the same time, all the points necessary for constructing any double satin weave for any number of harnesses, as the case may require.

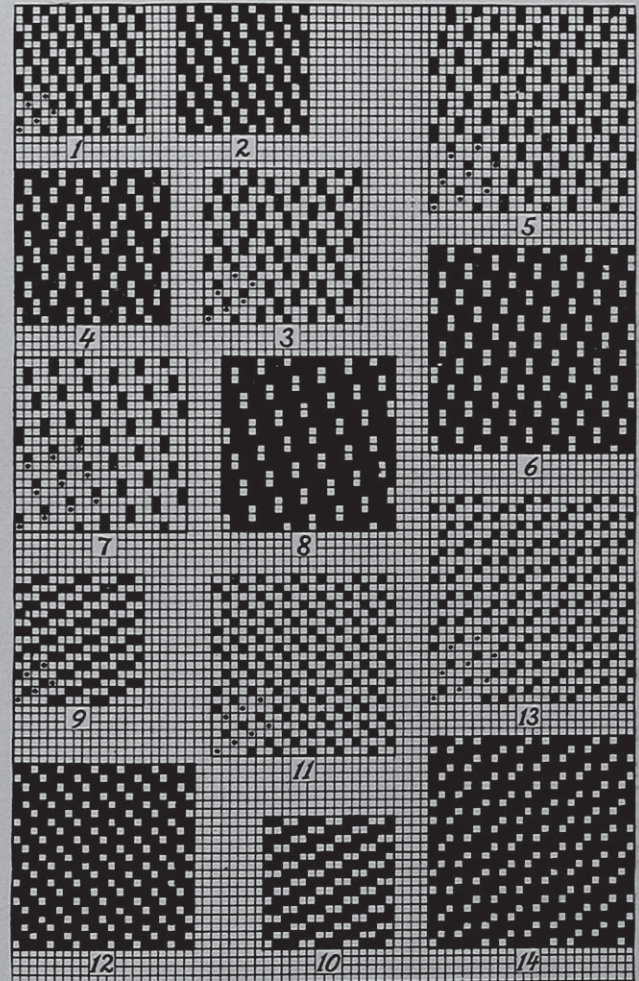
Weave Fig. 1, shows us by *dot* type one repeat of the 5-harness satin weave. Considering this one repeat (5 warp threads and 5 picks only), we then have shown by means of *black* type, the additional spot as placed on top of the original spot of the foundation satin; in this way transferring the latter in a double satin.

As will be readily understood, the repeat of the weave, between the regular or foundation satin and the double satin, does not change it remains the same. Three repeats each way of the double satin have been given in our example, of them, as explained, shown in two kinds of type the other repeats being shown in black type in order to more clearly show the weave formation. We have observed this same plan (of showing one repeat only in two kinds of type) in connection with all the other filling effect double satins as given in this lesson.

Fig. 2 shows us warp effect 5-harness double satin,

i. e., the mate weave of Fig. 1, obtained by adding an additional sinker on top of every sinker of the 5-harness regular satin, or copying weave Fig. 1 risers for sinkers.

Weave Fig. 3 shows us by means of *dot* type, the 6-harness satin, showing by *black* type an additional riser placed on top of said risers of the foundation satin.



Weave Fig. 4 is the mate of weave Fig. 3, *i. e.*, the warp effect 6-harness double satin.

In the same manner, weave Fig. 5 shows us the 8-harness double satin, filling effect and weave Fig. 6 its mate or the 8-harness double satin, warp effect.

Weaves Figs. 7 and 8 treat in a similar manner the 10-harness satin; the first is its filling effect, and the latter its warp effect.

Adding the Riser or Sinker in an Oblique Direction to the Foundation Satin.

Designing double satins in this way changes, to a certain extent, the face of the fabric, since in this instance, besides interlacing the filling twice in one repeat, as compared to the foundation satin, we do the same also with the warp, *i. e.*, break up the characteristic satin or long floating of the warp, which floats in turn were one of the means which impart the characteristic satin face to the fabric.

This interlacing of warp and filling twice in one repeat, as will be readily understood, will make the new fabric structure stronger, both warp and filling ways, as compared to its mate, foundation satin structure. The same as with all our satin weaves, 5-harness, is the lowest number for which the present sub-division of double satins can be designed for, after which they can be constructed for any number of harnesses with the exception of six.

Weave Fig. 9, shows us by means of *dot* type, the 5-harness foundation satin, and by means of *black* type the additional riser, added oblique, to the right of said *dot*, in this repeat of the weave; *dot* type being given to show the construction of this double satin, the remaining repeats of the complete weave, being all shown in black type in order to show the formation of the weave. The same affair is also observed in connection with the other two filling effect double satins later on quoted.

Fig. 10 is the mate double satin to weave Fig. 9, *i. e.*, the warp effect.

Weave Fig. 11 shows us the 7-harness double satin, filling face, obtained by adding oblique to the left, one additional riser to each riser of the foundation satin.

Weave Fig. 12 is the warp effect to weave Fig. 11.

Weave Fig. 13 is the 8-harness double satin, obtained by means of adding an additional riser to the right of either riser of the 8-harness foundation satin, and weave Fig. 14, the mate effect to it, *i. e.*, the warp effect.

Questions.

(1) Construct the 7-harness double satin, filling effect, obtained by means of adding one additional riser on top of every riser of its foundation satin.

(2) Construct the 9-harness double satin, warp effect, obtained by adding one sinker on top of every sinker on the 9-harness, warp effect, foundation satin.

(3) Construct the 9-harness double satin, filling effect, having the additional spot added oblique—to the left and upwards—to the original satin spot.

(4) Produce the 12-harness double satin, warp effect, having the additional sinker added in an oblique and upward position, to the sinker in the foundation satin.

RIBBONS, TRIMMINGS, EDGINGS, ETC.

A Treatise on Narrow Ware Fabrics.

(Continued from page 72.)

Hollow-cord Weaves.

In connection with fabrics interlaced with these weaves, the filling intersects alternately in the lower and then in the upper fabric structure. The filling, in passing at the edges from one structure into the other, is the only connection made in uniting the two structures into one fabric.

The weave for the warp threads must be carefully planned to correspond to the insertion of the filling, *i. e.*, the back pick must connect perfectly onto the preceding face pick on one edge of the fabric, and vice versa, the face pick onto the back pick on the other edge of the fabric; for which reason, as mentioned before, the side from which the shuttle is to be

entered, must be taken into consideration by the designer when planning a new weave and be correspondingly marked on the weave plan, *i. e.*, design, for reference by the weaver. For instance, in connection with satin cords, the filling must interlace with the face and back warp so that in the woven fabric it is impossible to distinguish face from back structure.

This feature makes it not possible for the designer to use any number of warp threads, but, he must according to weave to be used and the entering of the shuttle (whether this is done from the left or the right) first ascertain the *foundation number* for the respective weave, adding to the latter any number of repeats of the weave, to suit texture and width of fabric to be made.

This *foundation number* is the lowest number of warp threads possible to be used in the formation of a hollow-cord, in which the weave runs out perfectly in the filling.

If severing such a hollow-cord fabric in the direction of the warp, *i. e.*, cutting the filling, such a structure, if then opened out flat, must present a perfect single cloth structure. Treating the fabric in this way, every pick then consists of one face and one back pick of the original double cloth structure—appearing in the single cloth structure as if inserted all in one direction, *i. e.*, either from left to right or from right to left. This characteristic position of the filling in turn serves for the ascertaining of our *foundation number* previously referred to.

To obtain the latter by theory, paint one repeat of the single weave you intend to use and indicate on the point paper from which side the first pick is to be entered. This single weave consider now as the fabric obtained by cutting the hollow-cord structure as before referred to, *i. e.*, that the picks are all entered from one side. If considering the entering of the filling by the first edge from the left, the interlacing of the next pick must then connect from the left onto the right hand side of the preceding pick. If, however, considering the entering of the pick from the right hand side, then the interlacing of the next pick must connect from right onto the left hand side of the preceding pick. Add to the repeat, or take away from it, as many warp threads as necessary, until a proper connection is obtained, the number of warp threads of one repeat thus required, being the *foundation number* previously referred to.

Fig. 68^a illustrates one repeat of the single weave, the 8-harness satin, warp effect, interlacing 7 up 1 down; *i. e.*, after one end down, seven warp threads are raised. Considering pick 1 (entering the pick from the left) shows us warp thread 1 down, and warp threads 2 to and inclusive to 8, raised. In the second pick, warp thread 1 is up and warp thread 2 is down. Considering then the down of both picks (see Fig. 68^b) shows us 8 warp threads up (7 on pick 1 and 1 on pick 2—both shown in black circles) in place of the required standard 7, or one too many. To remedy this trouble, strike off one warp thread from the single weave (see Fig. 68^c), and when the *foundation number* then is $(8 - 1 = 7)$ seven.