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THE MANUFACTURE OF TURKISH TOWELING FABRICS.

Fancy Effects.

(Continued from October issue.)

Weave Fig. 29 shows us another check-effect, produced in this instance with two series of pile warp, arranging each pile warp-thread to interlace part the time on the face and part the time on the back of the structure, dressing every alternate pile warp-thread one color and the other pile warp-thread another color.

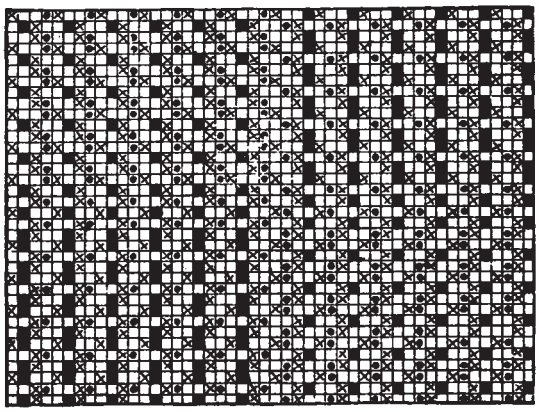

Fig. 29

With reference to weave given, the following dressing is used:

1 end	ground (see *cross* type)	× 6	=24 ends
1 "	pile—color #1 (see *full* type)		
1 "	ground		
1 "	pile—color #2 (see *dot* type)		
1 "	ground	× 6	=24 ends
1 "	pile—color #2		
1 "	ground		
1 "	pile—color #1		

Repeat of arrangement: 48 ends

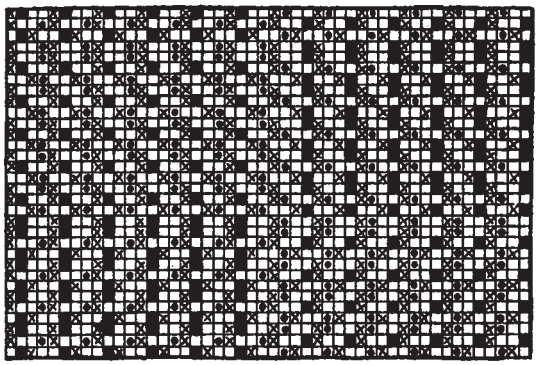

Fig. 30

Considering our weave more in detail and dividing it into the four squares necessary to form one repeat of a simple checkerboard effect, we find that every alternate square is formed with loops of color #1 for its face, and with the same number of loops of color #2 for its back; the other two squares show loops of color #2 for face with loops of color #1 for its back.

The change for the pile warp from face to back in every instance is arranged for 1 *up* 1 *down* 1 *up* 1 *down, i. e.,* extends over four picks, and what we will consider as a tight exchange, apt to show in said picks a slight line effect, *i. e.,* open space, filling ways in the fabric.

This tight exchange between the checks has been reduced in weave Fig. 30 to what we may consider as two picks only, and which has no chance to show any cross stripes in the fabric. Selection of type indicating ground and pile warps in weave Fig. 30 corresponds to that used in weave Fig. 29, hence no special explanation as to dressing (the same) etc., is required.

Diagram Fig. 31 shows us the interlacing of two pile warp-threads throughout the entire repeat of weave Fig. 30. In said diagram the pile thread shown in *black* refers to the interlacing of warp-thread 2 (or 6, 10, 14, 18 or 22) in weave Fig. 30, and as shown there in *full* type (considering pick 1 as the bottom pick in the diagram) whereas the pile thread shown

Fig. 31

shaded in diagram Fig. 31 refers to the interlacing of warp-thread 4 (or 8, 12, 16, 20 or 24) in weave Fig. 30, shown then by means of *dot* type.

JACQUARD TERRY PILE FABRICS.

In their principle of fabric structure these Jacquard effects correspond to the harness effect previously explained. The same as with the latter system of weaves, two methods of forming the design are met with, *viz:* using one system of pile warp, or using two systems of pile warp in the construction of the fabric.

Using One System of Pile Warp.

In these fabrics, either the figure or the ground only is produced by the pile warp on one side of the fabric, in either instance showing the reverse effect on the other side of the fabric; for instance, when the figure is formed by the loop pile on one side, said figure effect is shown in regular weaving on the other side of the fabric, and vice versa where the regular weaving shows on one side, pile loops are formed on the other side of the fabric.

With reference to preparing the design for these fabrics, they are of most simple construction, the figure design being painted with vermilion on the point paper. No weave is required to be introduced in the design, the loom doing this interlacing automatically.

The object aimed at in the construction of the point paper design, is to indicate boldly figure from ground, taking into consideration that the figure on one side of the fabric structure is produced by loops, *i. e.*, raised effect, whereas the reverse is the case on the other side of the fabric, and where the ground then shows loop pile, *i. e.*, raised effect, compared to the depressed effect of the regular woven figure.

With reference to the Jacquard harness, the same can be tied up in three different ways, using either a two section tie-up, a regular one section tie-up, or using a regular one section tie-up in connection with front harnesses.

USING A TWO SECTION TIE-UP.

In this instance the Jacquard harness is tied up for two sections, the machine being in the same way divided into two sections, the leasing of the Jacquard harness being done, one thread ground (or section #1) to alternate with one thread figure warp (or section #2) throughout the complete tie-up. The two sections in which the machine is divided, are kept separate and known to the designer.

After the point paper design for the proper number of warp-threads and picks for one repeat of the pattern has been made, the design is then stamped in the Jacquard cards for that part of the Jacquard machine which carries the figure warp-threads, independent by itself, the same as if a separate Jacquard machine was used for figure warp and one for the ground warp. The weave for the ground warp is then cut for that section of the Jacquard machine carrying the needles and harnesses for operating the ground warp.

It will thus be seen that if for instance it refers to a three pick ground weave, the fourth card with reference to the ground section will be the same as card No. 1, and so forth, for which reason the ground section in each card can be stamped previously on a Repeater and when all the card stamper then has to do is to stamp the design in the respective portion of the card, pick for pick in the regular way.

USING A REGULAR ONE-SECTION TIE-UP.

This will make somewhat more complicated work for the card stamper as well as the weaver. The design is prepared in the same way as previously explained, distinguishing by means of vermilion paint, the figure effect in the design from that of the ground, which was left empty, *i. e.*, not painted. In connection with this straight through tie-up, for instance every uneven numbered warp-thread, *i. e.*, leash, hook or harness cord may be used for operating either figure or ground warp, all the even numbered needles, leashes and heddles then being used for the pile warp. If by accident you have to deal with such a tie-up, possibly for the reason that this is the only loom at your disposal, then cut your ground weave, for example, for that part of the card controlled by all the uneven numbered needles, and the figure part, *i. e.*, the pile warp, according to the design considering then all the uneven numbered needles etc., only.

This, as you will readily understand, will make a somewhat complicated card stamping, made use of only if no other tie-up is at your disposal.

USING FRONT HARNESSES.

In this instance, 2, 4, or 6 harnesses are used in front of the comberboard of the Jacquard harness for operating the ground warp, using then the Jacquard harness tie-up in one section for operating the pile warp-threads.

Ground warp-threads and pile warp-threads are drawn 1:1, *i. e.*, one ground thread to alternate with one pile thread throughout the width of the fabric in the loom.

Using these front harnesses in connection with a Jacquard machine, as will be readily understood, doubles the capacity of the latter; the front harnesses are operated either from the reserved rows of the Jacquard Machine, or by means of a suitable cam arrangement, direct from the loom.

(To be continued.)

CONSTRUCTING GRANITES HAVING A SATIN BASIS.

Designing granite weaves having satins for their basis has been dealt with in the May and July 1914 issues of the Journal, using then single spot satin weaves for the basis of construction, whereas in the present instance we use enlarged satin-forms as a basis upon which to work, using the 5 or more harness satin for foundation.

Dealing for instance with the 5 leaf satin as a basis, we can use the same either doubled, trebled, or quadrupled, depending upon the repeat of the final granite desired. To explain the subject, Figs. 1, 2, 3, and 4 are given, and which we will deal with in detail to show the construction of these new granite weaves.

The same has for its basis the 5 leaf satin, *doubled*, as shown in Fig. 1 by *cross* type, using 2 warp-threads and 2 picks for each riser of the single 5 leaf satin filling effect, resulting in a repeat of the weave plan of ($2 \times 5 =$) 10 warp-threads and 10 picks, *i. e.*, the original 5 leaf satin being doubled in size in each direction. Provided we remove every other warp-thread and every other pick, the result will be again our simple 5-harness satin weave, the original foundation.

Fig. 2 shows a reproduction of weave Fig. 1, shown correspondingly in *cross* type, and to which we added the new effect (6 additional risers) as required for constructing the granite, placing the same as shown by means of special Diagram Fig. 3, showing the original 5 leaf satin spot doubled by *cross* type, and the additional spots added to the satin foundation, in order to produce a perfect granite weave, by means of *dot* type.

Weave Fig. 4 shows one repeat of the new granite in one kind of type, being a duplicate of construction weave Fig. 2, in order to show more plainly the general effect of the weave in the fabric.

Fig. 5 shows the construction-plan using the 7-harness satin filling effect doubled both warp and filling ways as the basis for the new granite which then will repeat on ($7 \times 2 =$) 14 warp-threads and 14 picks.

Fig. 6 shows the same satin planning as explained in connection with weave Fig. 5, using similar type, showing the additional spots used for the construction of the new granite weave by adding 12 spots (shown in diagram 7) added to the original doubled satin spot by means of *dot* type.

Fig. 8 is again weave Fig. 6, shown in this instance in one style of type in order to represent the weave effect of the fabric on the point paper.

Fig. 9 shows again the doubled 5 leaf satin planning, similar to the one shown in Fig. 1, but using in this instance a different placing of the additional spots so as to produce a different granite compared to the one given in Figs. 2 and 4, using as shown in Fig. 10