Technology of Velvet Construction

By ERNEST H. DOUTE

One of the most outstanding advances in the art of velvet weaving has been the introduction of the chiffon transparent velvet, having the merit of a light weight cloth suitable either for street dresses or exquisite evening gowns and wraps, likewise as lining or ornamental adornment for an evening ensemble.

Little is known by the casual observer of textile fabrics and even by those who are manipulating and transforming the woven velvet fabric into wearing ensembles, about the technic and the painstaking process that confronts the producer of such fabrics. It is the purpose of this article to describe the method pointedly and review in technical terms the procedure of how to create and obtain a serviceable transparent chiffon velvet.

Construction

The method of operation in its most modern form is the construction of a cloth adapted for double velvet weaving.

In the operation of double cloth weaving a knife attachment is provided for, that cuts and separates the pile to form a top and a bottom velvet cloth. The ground in both cases represents a plain weave, the pile represents a stitching thread being cut and separated by the knife as it traverses in between the top and bottom cloth, see Fig. I.

Figure I shows clearly the principle of construction to weave the double velvet fabric and how the knife (c) cuts the interlacing pile (b).

![Fig. I](image)

a. represents the binder of the ground weft.  
b. represents the pile as a stitching thread being cut by  
c. representing the knife traversing in center between top and bottom cloth.

Great care must be taken in the adjustment of the top and bottom cloth, a positive height of the tuft must be maintained throughout the length of the piece which in this particular case consists of 13/64ths of an inch. Any deviation from that rule will cause what is known as a high and low pile. The lay-out of one of the most prominent constructions of the transparent chiffon velvets is as follows:

Warping disposition:
Ground: 7140/1 ends of 3 thd. 13/15 den. Japan crepe 65 turns.  
Pile: 3570/1 ends of 100 den. 40 fil. viscose rayon 5 turns.  
Edges outside 102/1 ends 60/2 spun silk on each side of cloth.  
Binders in center 6/1 ends 60/2 spun silk on each side of cloth.  
Edges inside 138/1 ends 60/2 spun silk on each side of cloth.  
Warped as follows:

<table>
<thead>
<tr>
<th>102/1</th>
<th>60/2 spun</th>
<th>Edge outside</th>
</tr>
</thead>
<tbody>
<tr>
<td>6/1</td>
<td>60/2 spun</td>
<td>Binder center</td>
</tr>
<tr>
<td>138/1</td>
<td>60/2 spun</td>
<td>Edge inside</td>
</tr>
</tbody>
</table>
Doute, E. H. "Principles of Velvet Construction"

1/1 3 th. crepe left
1/1 3 th. crepe left
1/1 3 th. crepe right
2/1 3 th. crepe right
1/1 3 th. crepe right
1/1 3 th. crepe left
1/1 3 th. crepe left
1/1 3 th. crepe left
1/1 3 th. crepe left
1/1 100 den. rayon
1/1 100 den. rayon
1/1 100 den. rayon
1/1 100 den. rayon
1/1 100 den. rayon
1/1 100 den. rayon
1/1 100 den. rayon
1/1 100 den. rayon
8/1 crepe X 892 = 7136/1
+ 4/1
7140/1
4/1 pile X 892 = 3568/1
+ 2/1
3570/1

Left inside edge enter as follows:
1st end on 5 shaft
2nd end on 3 shaft
3rd end on 6 shaft
4th end on 4 shaft repeat 34 times
+ 2 ends left over
= 138 ends

Right inside edge enter as follows:
1st end on 6 shaft
2nd end on 4 shaft
3rd end on 5 shaft
4th end on 3 shaft repeat 34 times
+ 2 ends left over
= 138 ends

Right outside edge enter as follows:
1st end on 10 shaft
2nd end on 8 shaft
3rd end on 9 shaft
4th end on 7 shaft repeat 25 times
+ 2 ends left over
= 102 ends

The body and pile enter as follows:
1st end on 6 shaft body top repeat 1784 times
2nd end on 2 shaft pile + 4 body
3rd end on 4 shaft body bottom + 2 pile
4th end on 5 shaft body top left over
5th end on 1 shaft pile = 7140 body
6th end on 3 shaft body bottom = 3570 pile ends.

Fig. III represents the corresponding weave pattern as applied to the harness draft shown in Fig. II.

The position of the pile as shown in harness draft of Fig. II, prevents the pile ends from rolling into the wrong binding position, holding the tuft in its proper binding relation in between the ground ends. In entering the ends into the healds of the harness, special note has to be taken that the succeeding ends on both edges, outside and inside edges, follow the repeat of the 4 shafts in each set and not the repeat of the 6 ends per dent.

Left outside edge enter as follows:
1st end on 10 shaft
2nd end on 8 shaft
3rd end on 9 shaft
4th end on 7 shaft repeat 25 times
+ 2 ends left over
= 102 ends

Fig. III

A is the weave pattern used for the set-up of the cams that manipulate the rise and fall of the shafts to weave the cloth.

B shows the position of the warp threads as they lay side by side drawn in the healds of the harness.

C shows the weft of the single, top and bottom cloth, after separation by the knife that cuts the pile in the center, delivering two pieces off the loom.

*(To be continued)*

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