The World Wide Woven Links
by Augusta Uhlenbeck

In "Het Digtenboekje"Haarlem (NL)1, dated from the year 1752, four of the 135 samples are called "Franse drogetjes" (French small drogets). The use of the word "French" droget for this technique can suggest that the technique came from France, or that the production was made for France or, who knows, the word "French" might have given a higher value to the fabric. As known from the internet names can be dangerous traps.

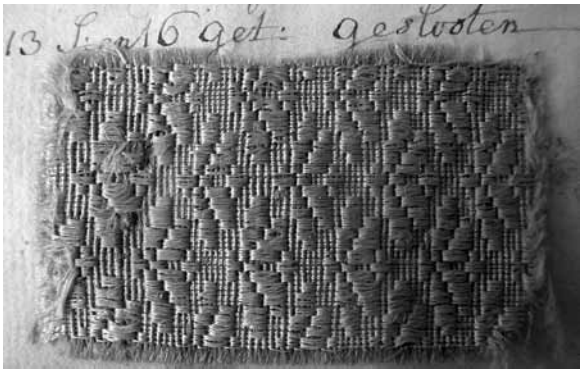


Fig. 1: N° 17 Digtenboekje Frans drogetje *(Courtesy: Frans Hals Museum, Haarlem, NL)*

In the early 1900s the French train company Société Nationale de Chemin de Fer (SNCF) used curtains in their luxury trains inspired by the Vienna2 designs *(Figure 2a)*. The world famous firm for interior textiles, Backhausen 2, Vienna, Austria, during the years of 1902/1920 produced beautiful fabrics designed by Josef Hoffman, Koloman Moser and Otto Prutscher using a similar technique as for the SNCF curtains *(Figure 2b)*. In 2001 Monsieur Backhausen informed me that there were no dobby looms used for this production in the early 1900's[2]. That is understandable considering the huge tie-up. Every weft cycle (weft unit/decoupure) contains four wefts, thus four treadles *(see Figure 6)*.

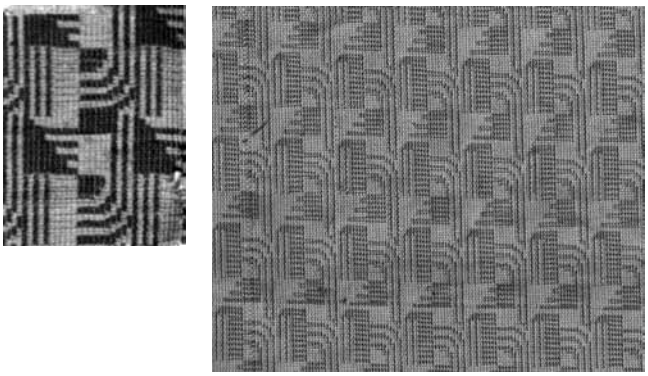


Fig. 2a, original and 2b, copy made of the train curtains woven in 1995, Roubaix (FR). Private collections.

Recipe of18th century French droget, *Figure 1*

In the French droget probably a cotton ground warp is used. Silk is used in the binding warp. The pattern is made with the silk weft floats jumping over a minimum of two ground warps and is locked by one tiny binding warp. The colours are blue and pale blue. The choice between using silk or a cheaper yarn depended upon the visibility of the thread. A low cost material was used when the yarn was barely visible.

The proportion between the ground and the binding warp is 2 black squares to 1 grey square *(see Profile in Figure 3)*. The warp density is 80 threads/cm, and the weft density is 40 threads/cm. This big difference between the warp and weft density elongates the pattern; the flowers in *Figure 1* are increased in width.

The fabric shows a weft effect. The ground warps are thicker then the binding warp. Two wefts are used. A tiny (silk) one is for the binding *(black square, Figure 3 top)* and a thicker (silk) and supple one for the pattern floats and the ground *(grey square, Figure 3 top)*.

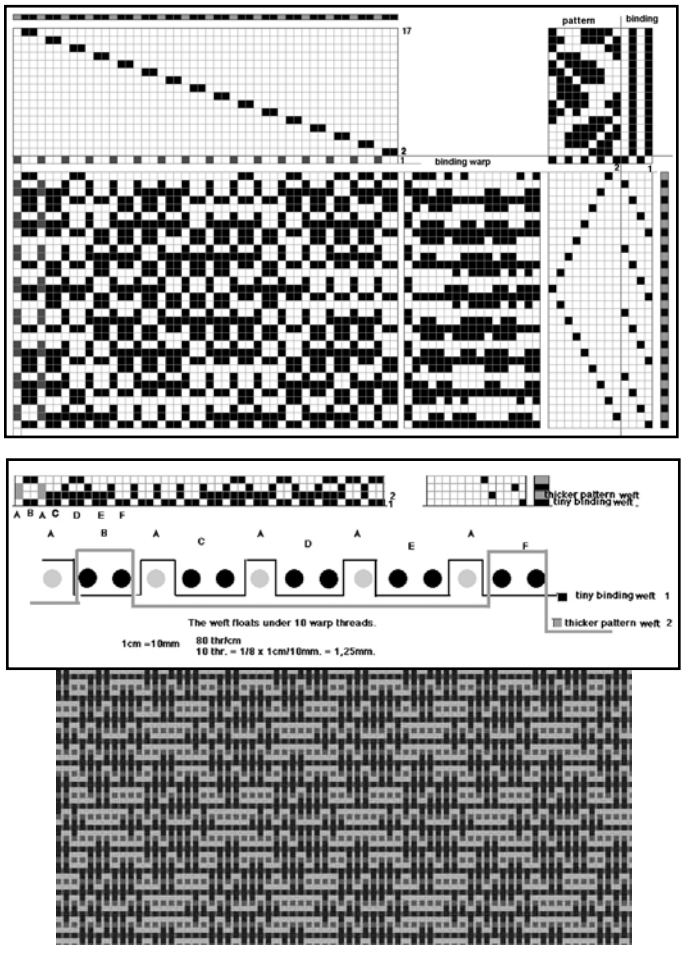


Fig. 3: Draft *(top);* Profile *(middle);* Fabric simulation of original "Frans Drogetje" *(last)*

17 shafts are used in the following subdivision: 16 for the pattern warp and one shaft for the binding warp. 13 treadles are used, devised in two units, four for the ground and nine for the pattern. If the warp density is lower, you can reduce the number of treadles for the ground to two. To have a better look and understanding about the working of the warps and the wefts, a profile design is helpful *(Figure 3, middle)*.

Figure 3, bottom shows the simulation of the fabric N° 1, with the warp density twice as high as the weft density. If weaving the same fabric with a more equal density, the flowers will be more visible.

Technique behind the Vienna fabrics and the SNCF curtains *(Figures 2a and 2b)*

The original fabric *(Figure 2a)* dates from the first quarter of the twentieth century and is based on the same idea. There are also two warps: a binding warp and a ground warp. The proportion is different; there are two binding warps and two or more ground warps. But the real important difference between the French droget and the samples of SNCF curtains *(Figure 2b)* is that the two binding warps work in a warp rib 2/2. In the French droget half of the warp rib is used and in the SNCF curtains the whole rib warp of 2/2 is used. The two wefts work both for the pattern, to obtain the two colours in the fabric, the ground and the motif. That is the reason for the far more complex and huge tie-up.

How to handle it?

First of all, design all the technical possibilities on one sheet of paper. The design, the weave gamut, tells you what the warp(s) is/are doing with the weft(s), the profile and the bindings. That is a real help and is shown in *Figure 4*.

The original SNCF curtains *(see the design under Footnote 3)* is woven on a mechanical Jacquard loom. The copy of the SNCF curtains is woven on an industrial dobby loom equipped with 19 shafts, 17 shafts for the pattern and 2 shafts for the binding warp *(Figure 7a in Footnote 3)*. The original design has 24 weft blocks x 4 wefts = 96 picks/treadles for the whole design. The warp density/cm is: 24 ground threads + 18 tiny binding warps = 42 threads/cm. The weft density/cm is 44 wefts/cm, 22 in colour X and 22 in colour Y.

Do you have fewer shafts? Make a smaller design. Not so many treadles and no computerized loom? Designing geometric patterns, such as squares, stripes, rectangles etc. was high fashion during the Vienna period in the beginning of the twentieth century Because the tie-up of the Vienna fabrics has a different conception than the French droget you can repeat each treadling block with the weft unit X times.

How to read the new design *(Figure 4)* for the tie-up?

The easiest way to fill up the huge tie-up is the following:

1. Take the technical page with the design called "a part of the design," shown in *Figure 4*. The black squares in the "part of the design" need the binding called "black surface-colour." The white squares in the "part of the design" need the binding called "white surface-colour."
2. Keep in mind that a binding is not a tie-up. To have a tie-up of the binding you turn it 90 degrees.
3. Start reading to transform the design in a tie-up by reading from the left to the right in the first row.
4. The blocks 2, 3,8,9,10,11 and 12 are black in the design.
5. If working on a computer with a textile program, take the black tie-up copy and paste it in the top of the tie-up *(Figure 5)*. If working on paper you have to do it by hand.
6. The second row: block 1, 2, 9, 10, 11 are black in the design; copy and paste the black tie-up in the top of the tie-up etc, etc.
7. When the tie-up for the black pattern is finished the only thing to do is to fill up the grey tie-up with the tie-up of the white surface. Don't forget to insert the warp rib 2/2.

Looking at this tie-up it can be interesting to take a fresh look at the Cruzaad article, the same idea with a different threading. The result gives another structure *(see Figure 5)*. For only six treadling blocks (6 x 4 wefts), 24 treadles are needed. For the whole design there are 40 treadling blocks (40 x 4wefts) needs 360 treadles. That's why Monsieur Backhausen says with a smile that these productions were made on Jacquard loom.

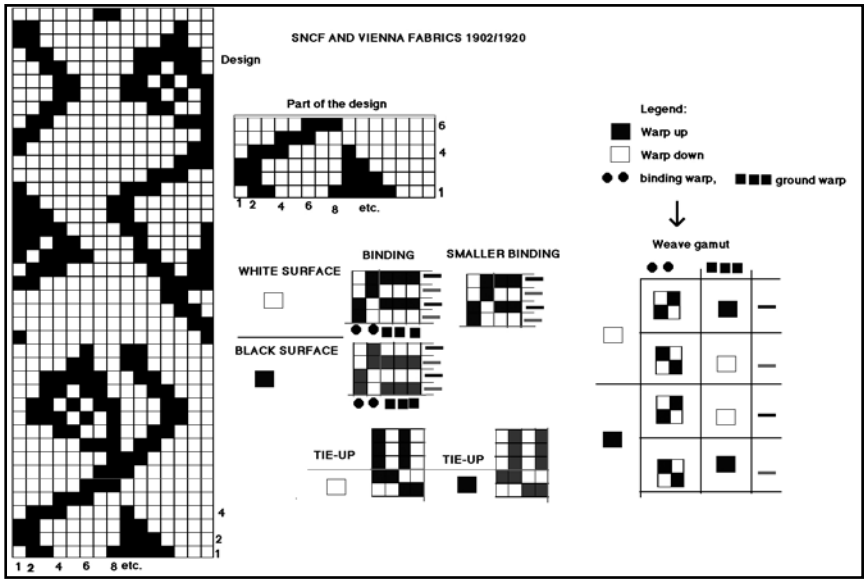


Fig. 4: SNCF and Vienna Fabrics 1902-1920

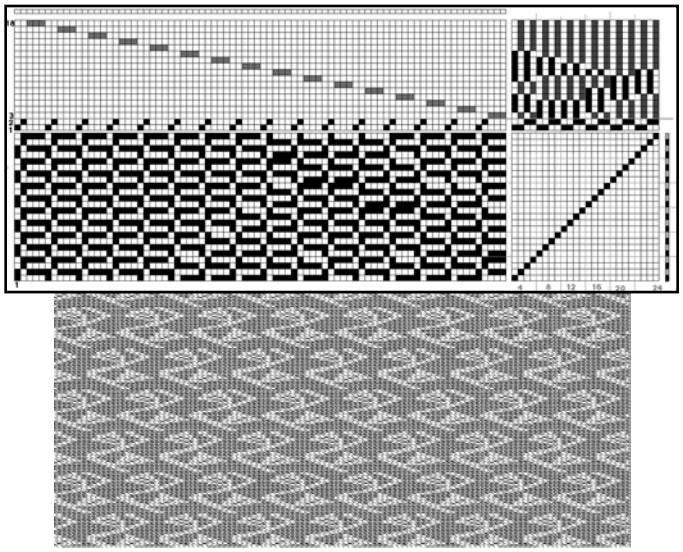


Fig. 5: Part of the design draft and fabric simulation

What's happening when a unit of two binding warps is used in the old French droget?

A new technique has been created, especially for Complex Weavers: the French droget now has two binding warps, working in warp rib 2/2. There are no more long pattern weft floats; the warp rep 2/2 binding warp stops them. This supplementary binding thread gives the possibility of using a lower warp density. If the floats are not very visible, take three or four threads for the ground warp *(see Footnote 3, Figure 7b)*. Take a tiny, tiny thread for the binding warp, otherwise you will see them in the fabric. These two binding threads must be sleyed together in one dent. The threading has one shaft more than the ancient fabric. The treadling is the same as the one used in the French droget created in 1752.

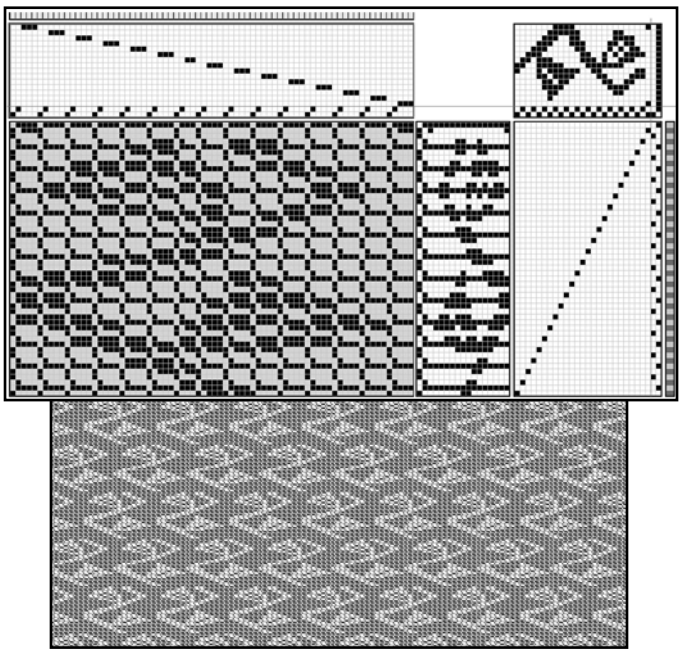


Fig. 6: Draft and fabric simulation of half of the flower *(Figure 4)* in the new technique with two binding warps

Conclusion:

The two techniques made with a timespan of 160 years are based on the same idea:

- The fabric has a weft effect.
- Both have a ground warp and a binding warp, but the proportion is different.
- The working of the wefts is also different.

In the French droget the pattern weft is working in the ground and in the pattern; in the SNCF/Vienna fabrics the two wefts work in the ground and in the pattern. That is the reason the weft unit needs four different picks and thus four different treadles (for three colours the weft unit will have six treadles) with the consequence of a more than huge tie-up.

Footnotes

[1] "Cruzaden and Quadriljes. An Eighteenth Century Dutch Woven Poem" by Augusta Uhlenbeck, *Complex Weavers Journal*, June 2007.

[2] Nobody knows if the original one was made in Vienna or not. The following resources may be useful: The article on "Fabrics Backhausen Vienna" from the Complex Weavers Jacquard Study Group May 2005, the website *http://www.backhausen.com*, and the free databank, *http://tissutheque.roubaix-lapiscine.com*.

[3] The original design in two forms: two colors *(Figure 7a, left)* and three colors *(Figure 7a, right)*. For the three colours *(Figure 7b)* do not use thick wefts.

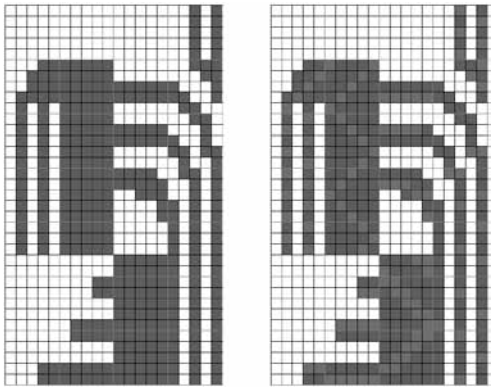


Fig. 7a: Original design - in two colors *(left)* and in three colors *(right)*

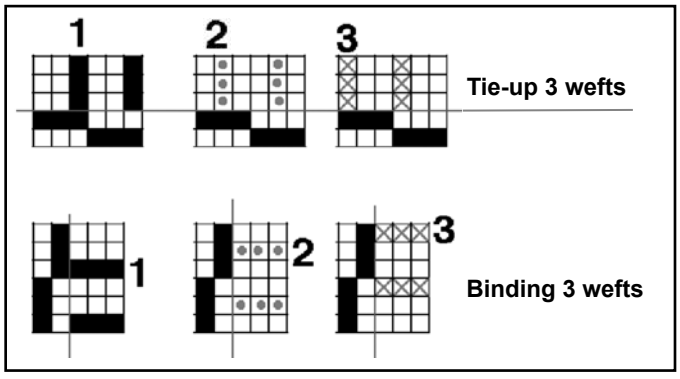
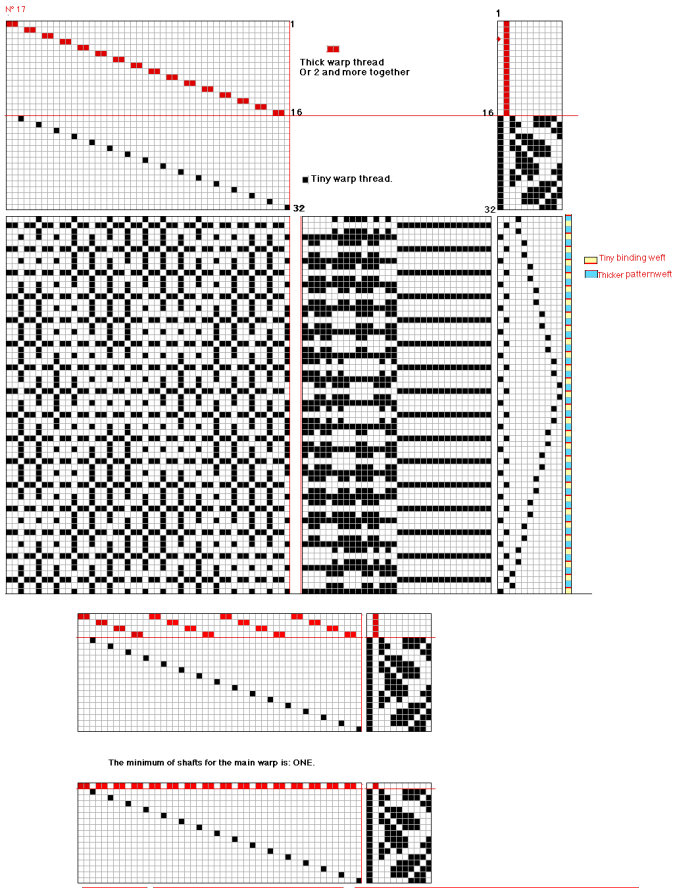


Fig. 7b: Tie-up and binding if using three ground warps (black, gray 1 and gray 2)

Correction to World Wide Woven Links
by Augusta Uhlenbeck

An active and attentive weaver weaved the " French Drogetje " as mentioned in the article of Complex Weaver, October 2011, figure N° 2,
She discovered by following the weaving scheme that the woven fabric on her loom was not equal to the fabric called "French drogetje"(fig 1) woven around 1750/1752
The author of the manuscript (middle of the 18th century) apparently mixed up some weaving schemes and titles - a "voetdrogetje"- instead of a "Frans drogetje". I didn't notice the mistake, neither during the research in 2005 and nor preparing the article..
The anonymous weaver and I ; both we are deeply sorry for this error. The weaving development in the article is correct.

The weave scheme for the “Frans drogetje”/



If weaving the same pattern with less shafts - then 36 - the shafts used for the main warp can be reduced to minimum one (1)shaft (red) or for higher density to ,2,3,4 etc.