Single, Three Unpaired Ties, 1:1 Ratio, Ties in a Twill "Bergman"

Emery Classification

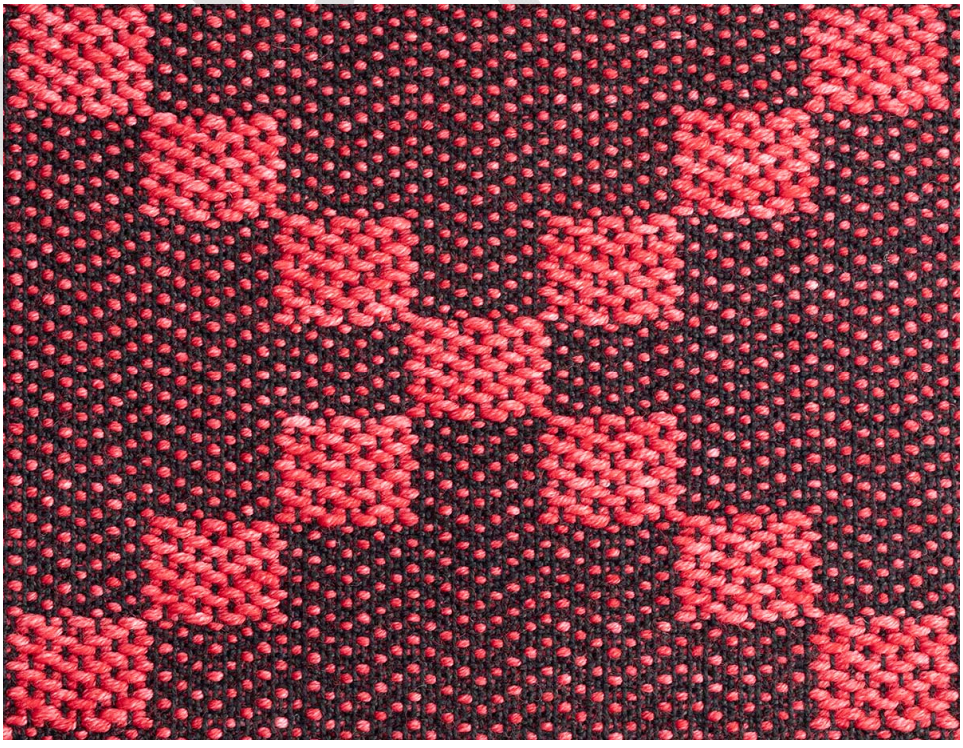
Weave Compounded by Adding Sets of Elements, Supplementary: one warp, two wefts, one of which is ***not*** needed for the integrity of the cloth.

Weaving Category

Tied Unit Weave; the supplementary element is an ***additional weft*** which forms blocks of patterning and is not needed for the integrity of the cloth. This structure is classified as Single, Three Unpaired Ties, 1:1 Ratio, Ties in a Twill. We have to specify that the ties are organized in a twill because Half Satin (see entry) is also a single, three unpaired ties, with a 1:1 ratio. The classification is explained below with the drawdown. The structure is named "Bergman" from its originator.

Fabric Characteristics

Below is a photograph of the front of a fabric sample.

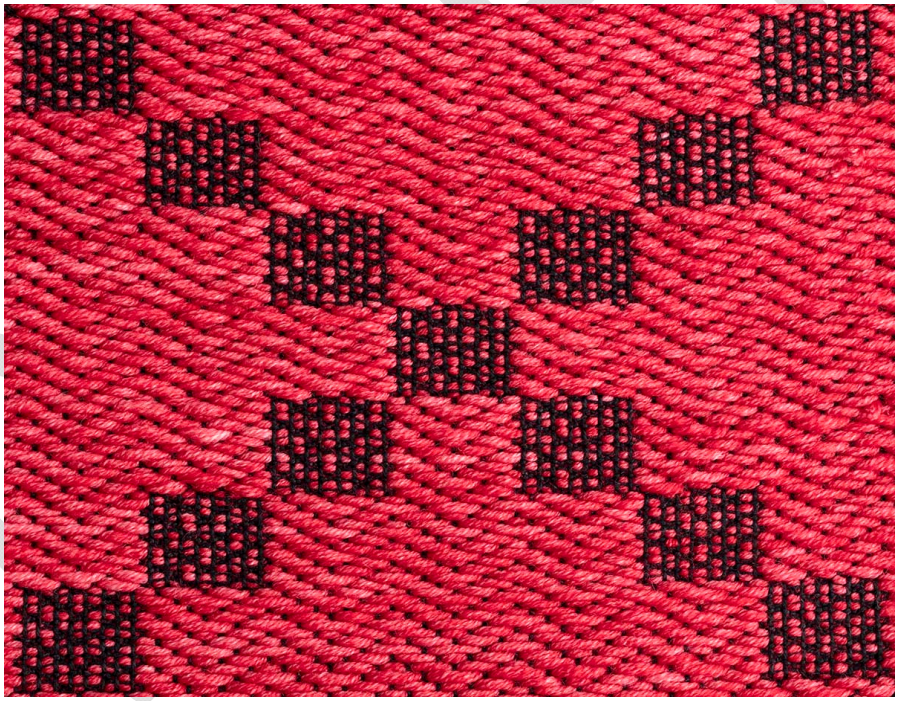


1 Bergman

As we all supplementary weaves, the fabric is formed by a warp, a ground weft and a supplementary weft. The warp and the ground weft form the ground cloth that gives the fabric its integrity. They are usually the same size, but sometimes the ground weft is smaller. The supplementary weft is usually larger to show the pattern and loftier to pack in the web.

In this weave, as is usually the case with tied unit weaves, the blocks are not solid but have patterning as can be seen from the fabric of the weft float blocks. The background is also patterned. Both blocks and background show the characteristic undulation of this particular structure, resulting from the interesting organization of the ties in a twill.

Below is the back of the fabric with blocks with warp floats. The background shows the twill undulation.



Margaret Olofsson Bergman was a weaver of Norwegian heritage, thus it is not surprising that she used twills derived from rosepath for ties. There are other possible twills, but this one with the undulation stands out.

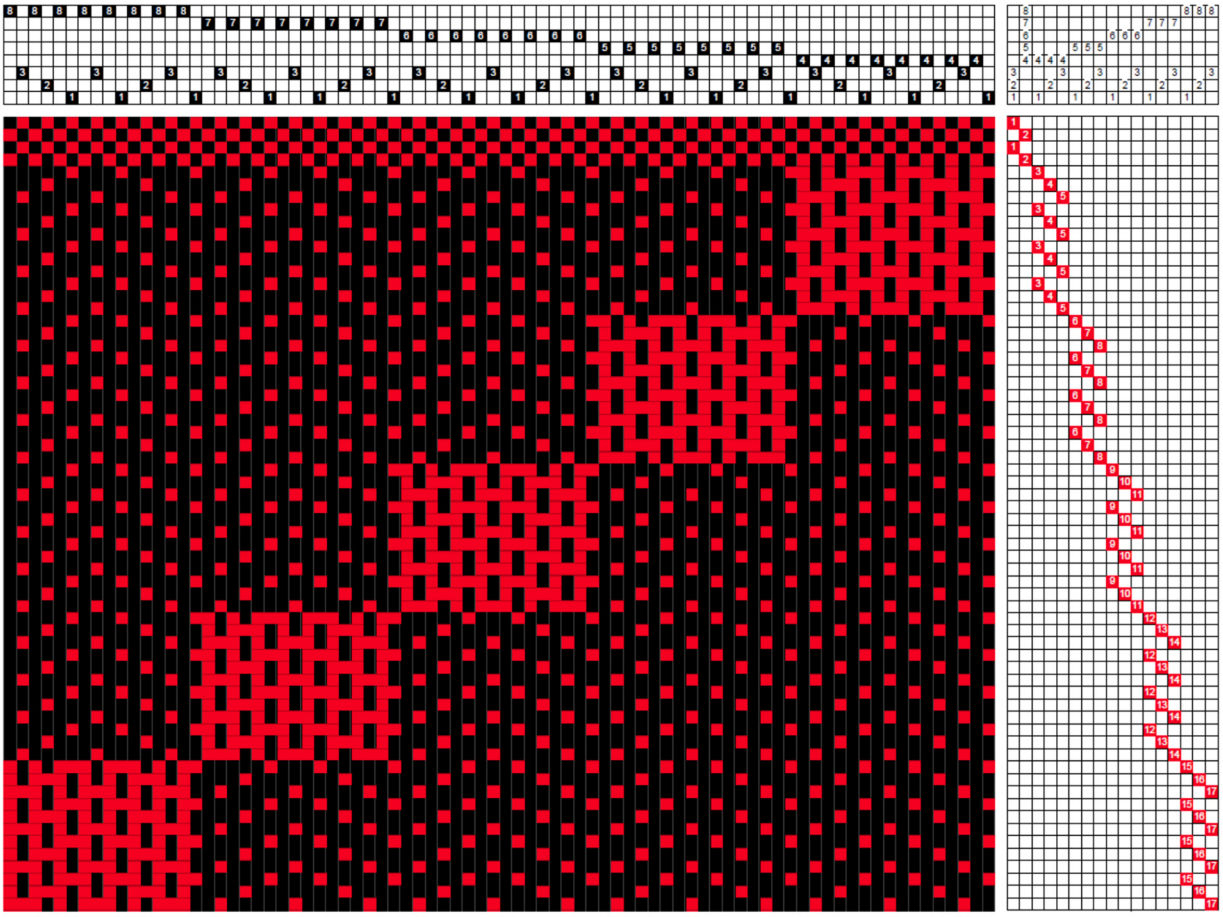
Drawdown

The ***sinking shed drawdown*** below explains the nomenclature of the structure: single, three unpaired ties, 1:1 ratio, ties in twill order. The example shows five blocks on eight shafts.

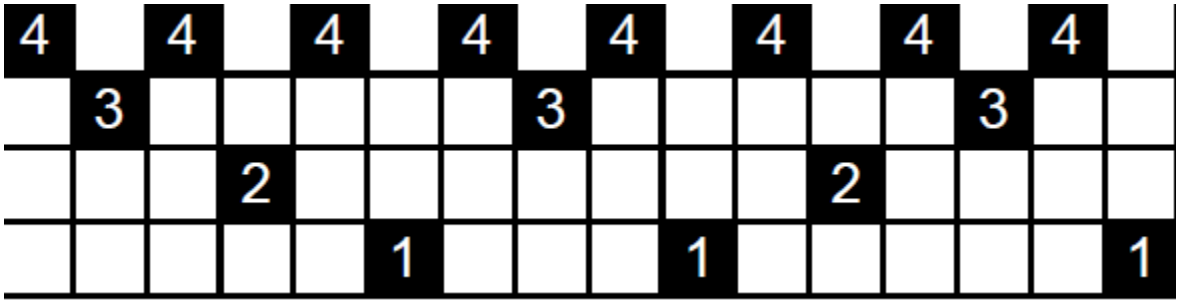
Single refers to the ***single*** shaft per block. There are ***three*** ties, shafts 1 through 3 The ties are ***unpaired*** because they are separated by a pattern shaft. The ratio is 1:1 because there are eight ***pattern threads*** (***not*** pattern shafts) and eight ties per block. Specifying that the ties are organized in a twill separates this structure from half satin.

Not shown in the drawdown is that ***each pattern pick*** used in treadling order ***is followed by one of the tabbies***; they intersect with the warp to form the ground cloth.

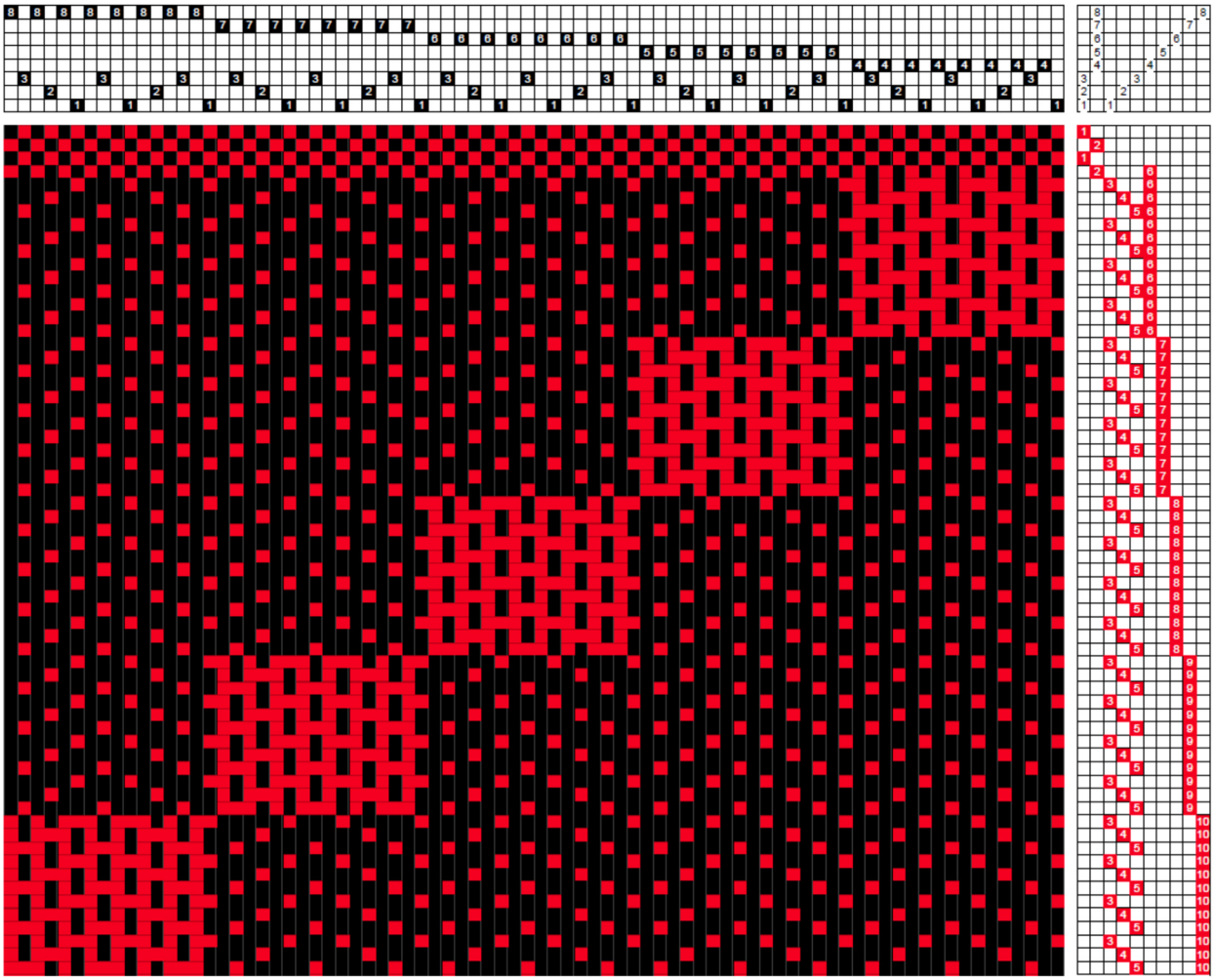
The tabbies are all three ties *vs.* all five pattern shafts.



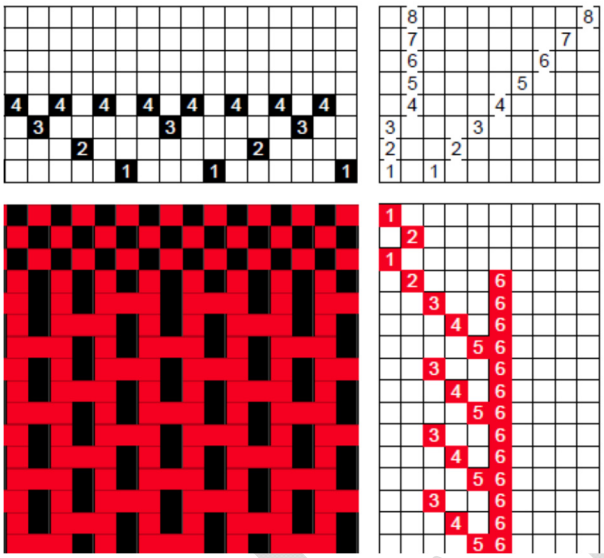
Because the blocks are so long the threading is hard to read. Below is the threading for block A, using shaft 4 for the pattern shaft.



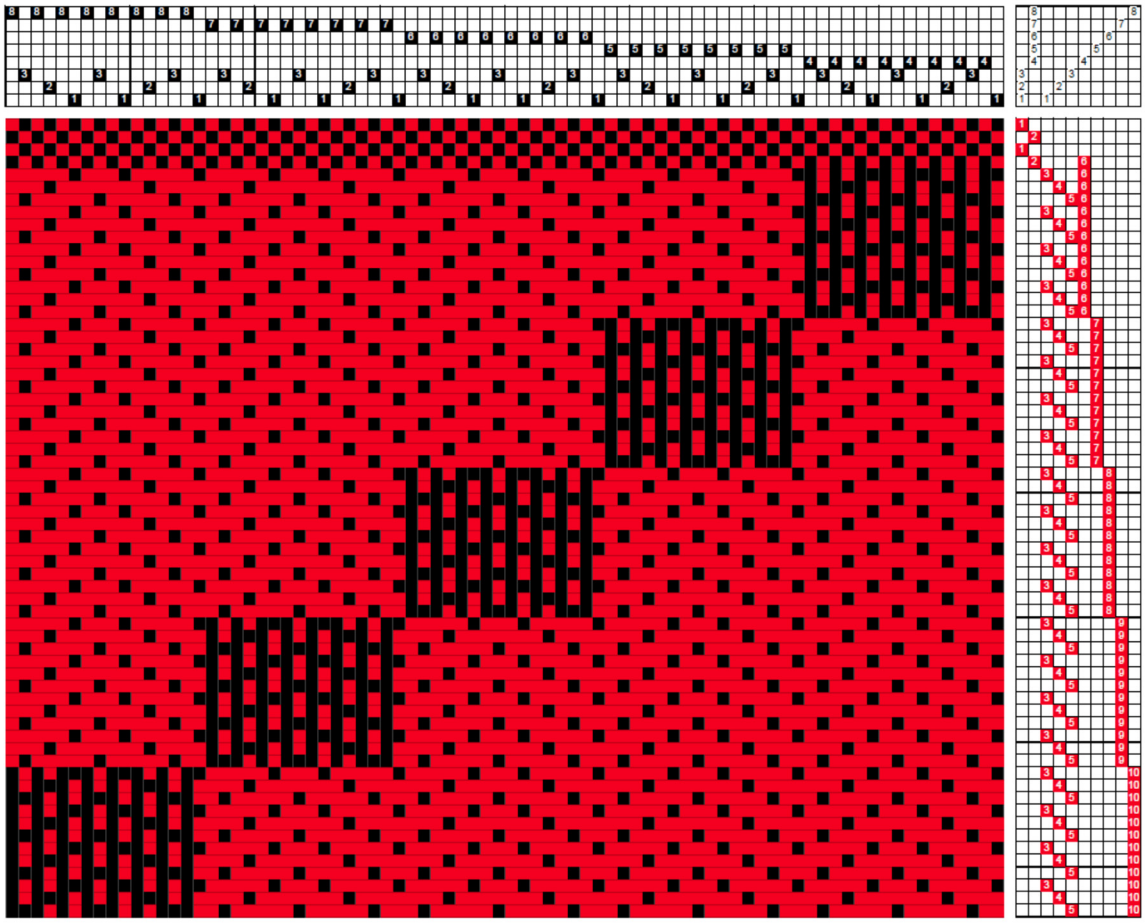
To weave all five blocks individually, seventeen treadles would be needed. Blocks can be treadled together, as it is always the case with tied unit weaves, but they can be woven individually with multiple treadling, as shown next.



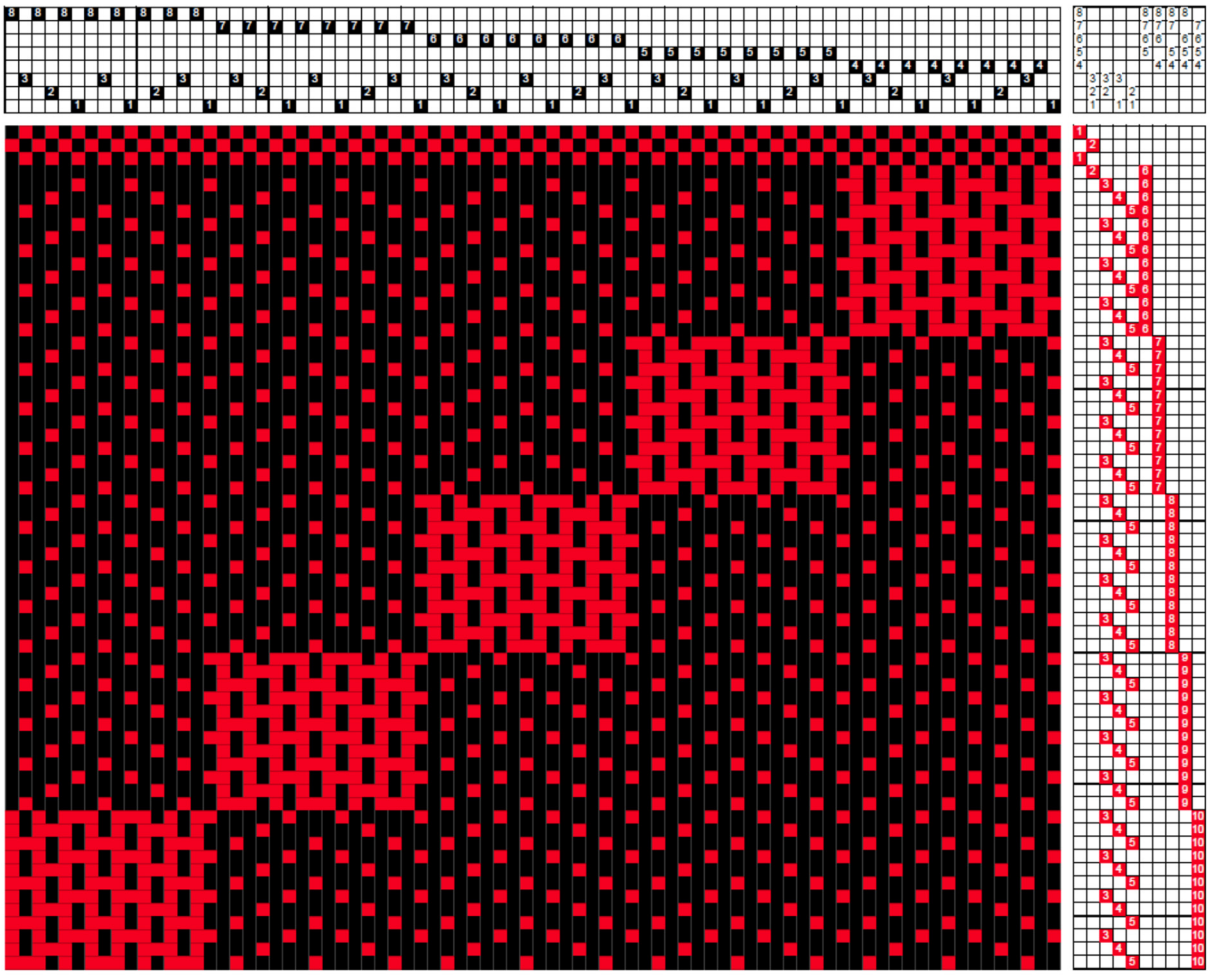
Below is a close up of the sinking shed drawdown, showing block A and its treadling.



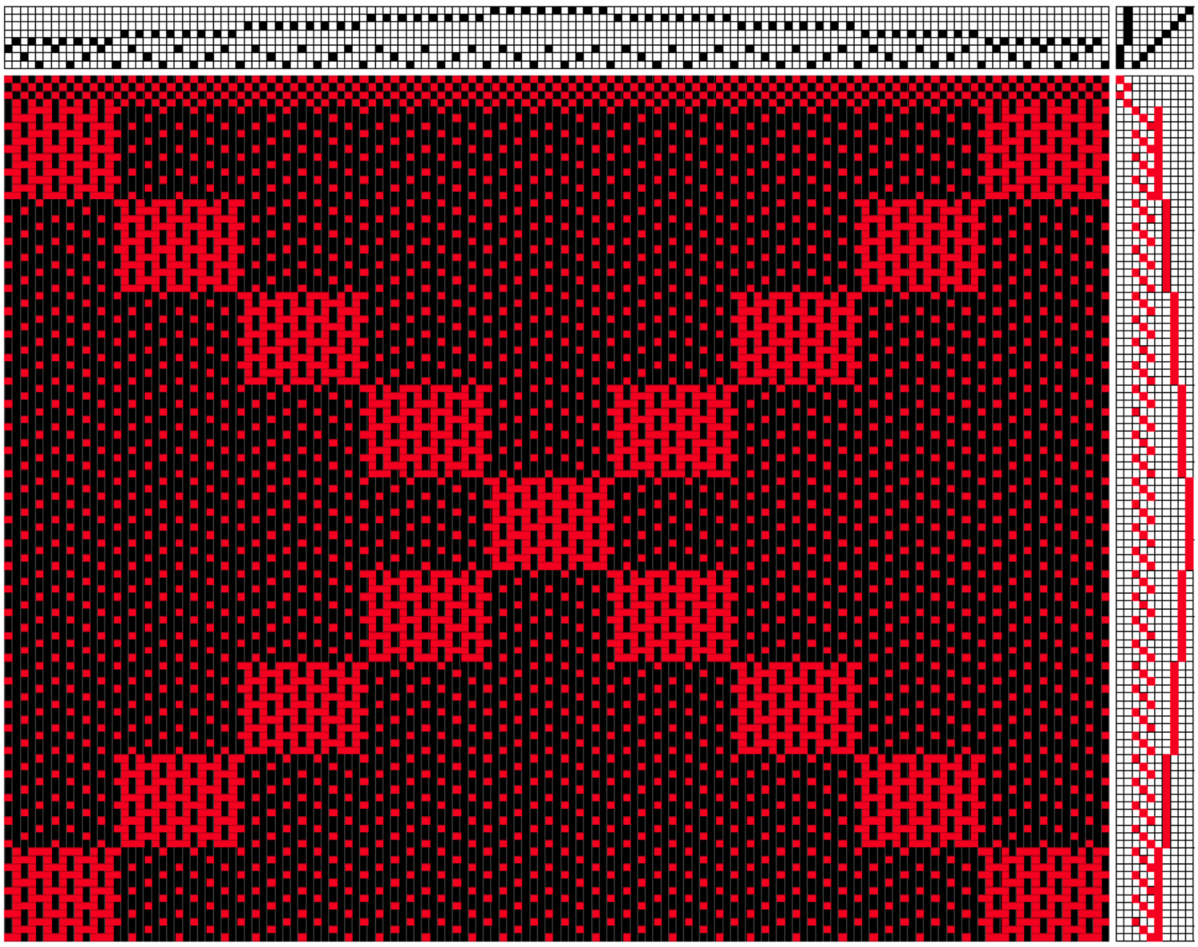
Below is the drawdown for the warp float block side of the fabric.



It is also the ***rising shed*** drawdown. To weave weft float blocks on the front side of the fabric (what the weaver sees at the loom), we can use the following ***rising shed*** drawdown.



Next is the ***sinking shed*** drawdown for the motif used to weave the fabric sample.



Function

Fabrics with two layers of weft tends to be hefty, ideal for household textiles like blankets and pillows.

Sett

To allow room for the supplementary weft, the sett should be more open than the one for plain weave. The sample was woven using 10/2 mercerized cotton sett at 18 epi, more open that the 24 epi I may use for plain weave.

Width of Blocks

The width of the block of this example is sixteen threads, but it could be more or less depending

on the organization of the ties which always alternate with a pattern shaft. All the blocks are the same width.

In this example, the float is never longer than over three threads.

Number of Blocks Available

Three shafts are used for the ties; each additional shaft provides a block. On eight shafts there are five. Bergman on four shafts would not be a block weave.

Treadling Variations

Like Quigley and Half Satin, the twill organization of the ties can change in the threading as well as the treadling. See Quigley for some options.

References

Emery, Irene. *The Primary Structure of Fabrics*. Washington, D.C.: The Textile Museum, 1980.

Petrini, Marcy. "Right from the Start", *Shuttle Spindle & Dyepot*, #212, Winter 2022.

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