

## Double, Two Unpaired Ties, 1:1 Ratio

### “Double Summer and Winter”

#### Emery Classification

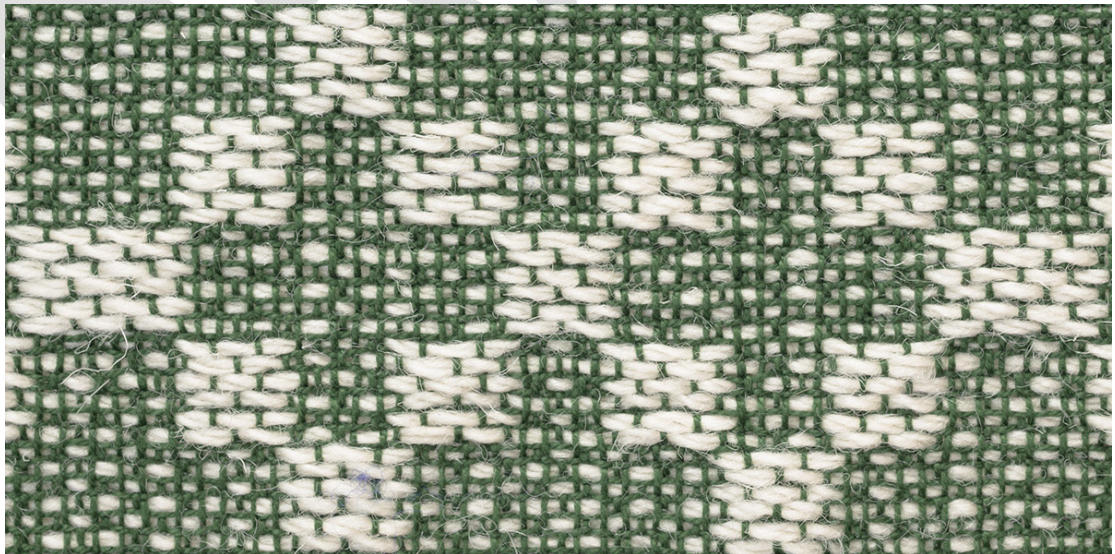
**Weave Compounded by Adding Sets of Elements, Supplementary:** one warp, two wefts, one of which is *not* needed for the integrity of the cloth.

#### Weaving Category

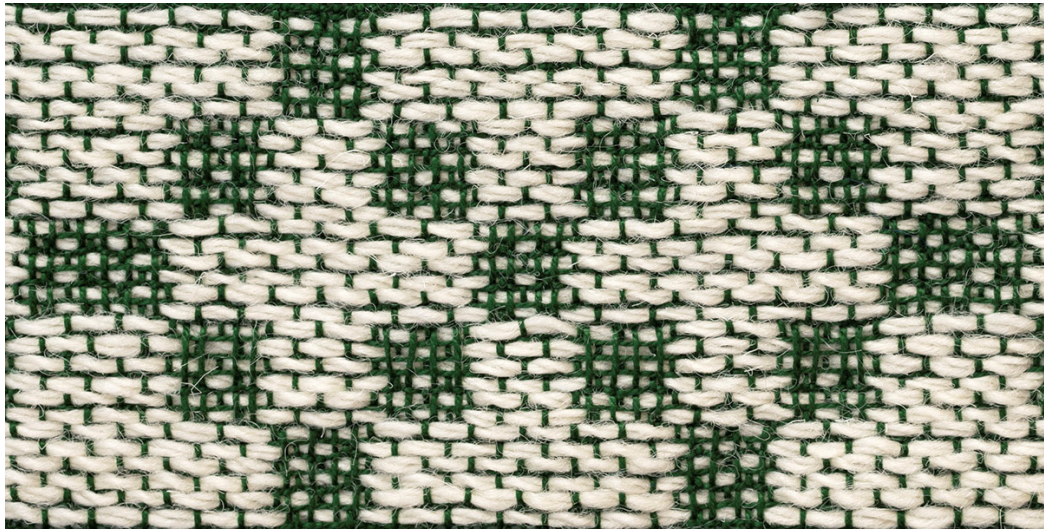
**Tied Unit Weave;** the supplementary element is an *additional weft* which forms blocks of patterning and is not needed for the integrity of the cloth. This structure is classified as a Double, Two Unpaired Ties with 1:1 Ratio. It is called “Double Summer and Winter” because its blocks are similar to summer and winter, but with an additional pattern shaft.

#### Fabric Characteristics

A sample of a fabric showing the weft float blocks is below.



The back of the sample with warp float blocks is below.



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 and the background are not solid but have patterning as can be seen from the fabric.

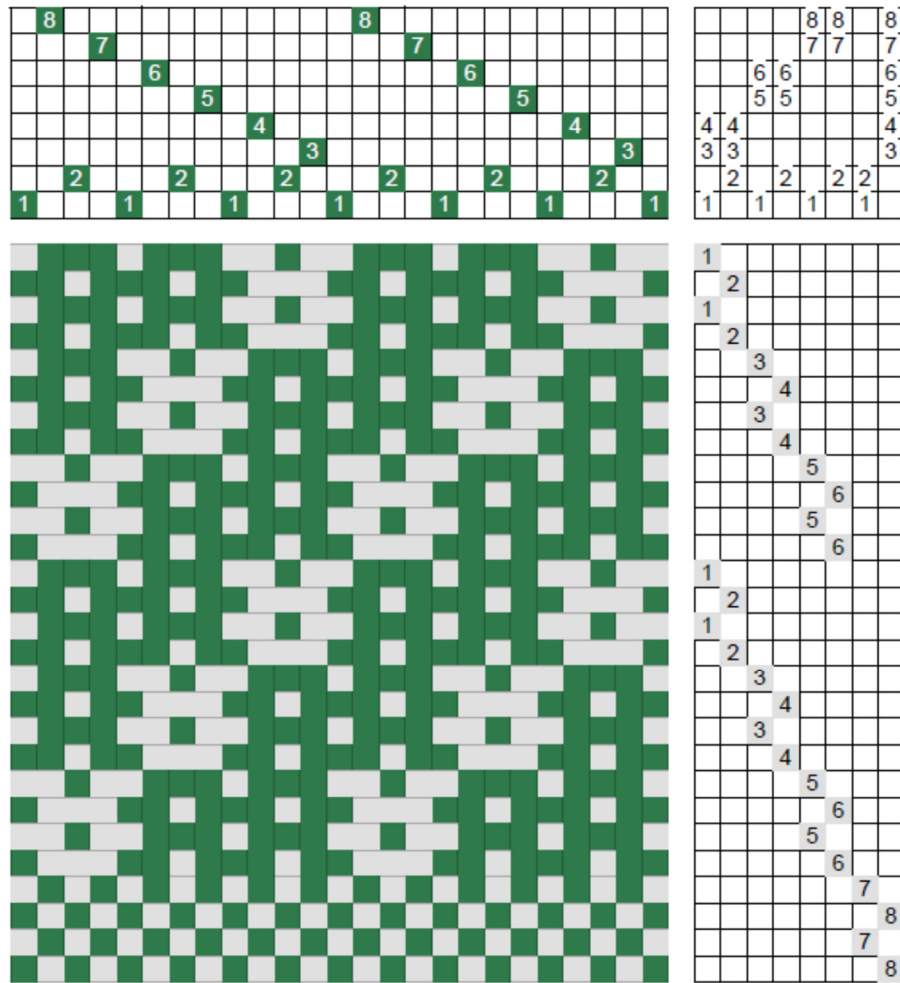
### **Drawdown**

The *sinking shed drawdown* below explains the nomenclature of the structure: double, two unpaired ties, 1:1 ratio. The example shows three blocks on eight shafts.

**Double** refers to the *two* shafts per block. There are *two* ties, shafts 1 and 2. The ties are *unpaired* because they are separated by a pattern shaft. The ratio is 1:1 because there are two *pattern threads* (*not* referring to pattern shafts) and two ties per block.

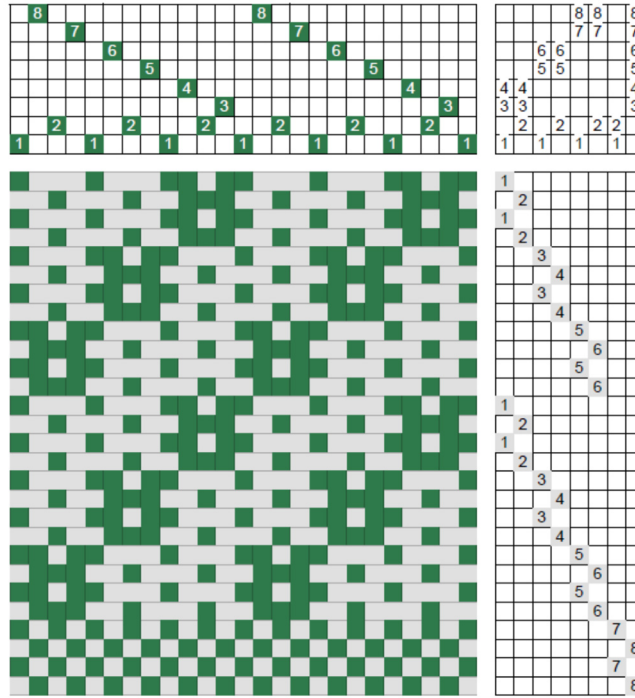
Not shown in the drawdown is that *each pattern pick* used in treadling order *is followed by one of the tabbies*; they intersect with the warp to form the ground cloth.

The tabbies are both ties vs. all six pattern shafts; alternating the two picks results in plain weave.

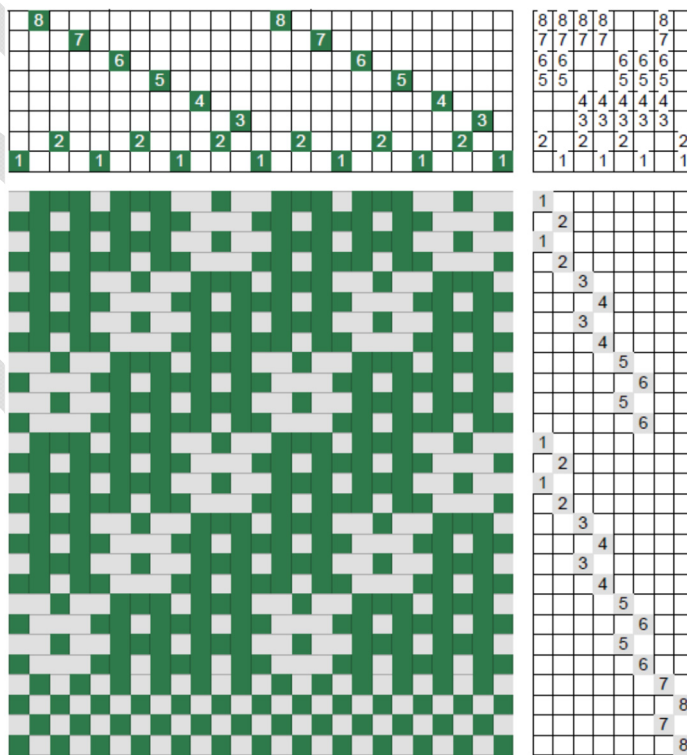


The treadling of the blocks shown here is “singles” as it is called in summer and winter. There are two picks per block, each tabby with the two pattern shafts. The single unit of two picks is repeated to square the block.

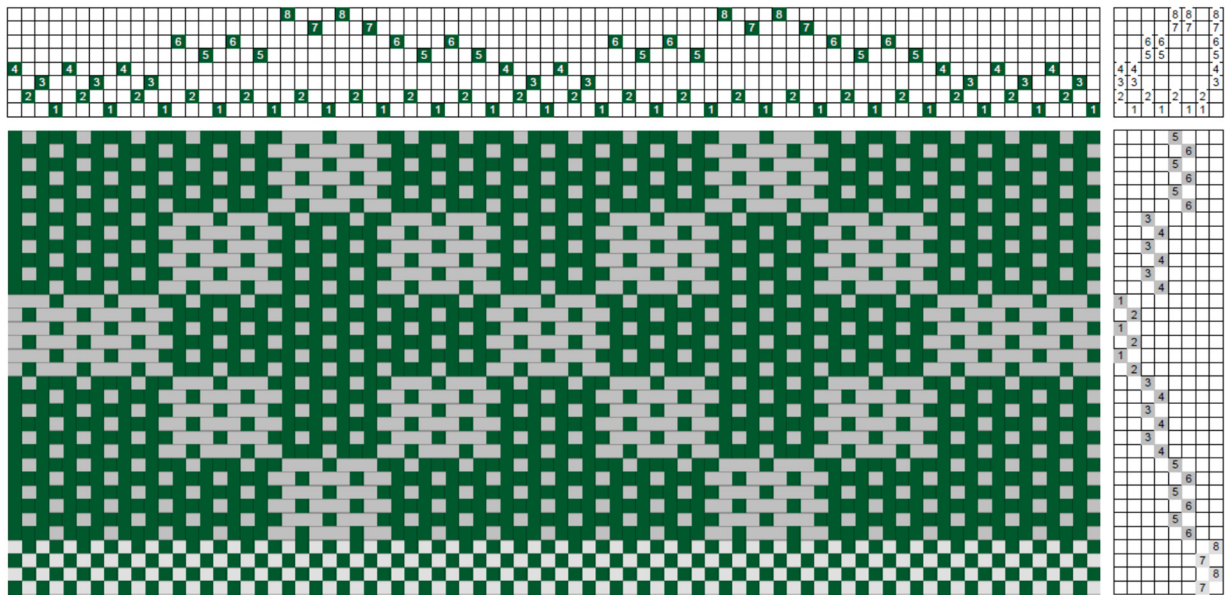
The reverse side of the fabric, warp float blocks, is shown next; this is the *rising shed* treadling using the same tie-up as above.



To weave weft float blocks on top of the fabric (as the weaver sees it at the loom) on a rising shed loom, we use the *rising shed* drawdown shown next.



Below is the sinking shed drawdown used to weave the fabric sample on page 1.



## Function

Tied unit weave fabrics are hefty since they have two wefts. Traditional uses are household textiles like bed coverings.

## 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 than the 24 epi I may use for plain weave.

## Width of Blocks

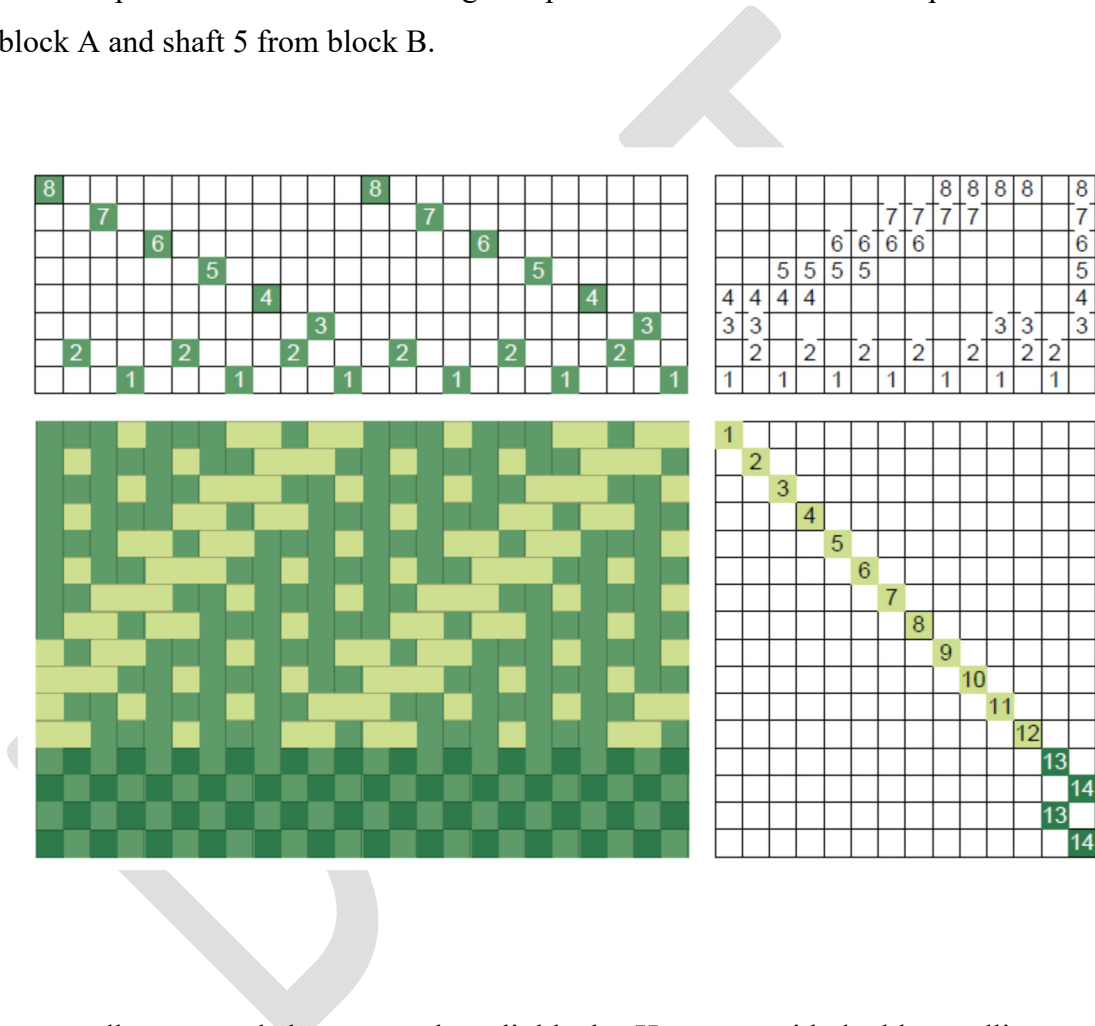
Each block is four threads wide; the float is never longer than three threads.

## Number of Blocks Available

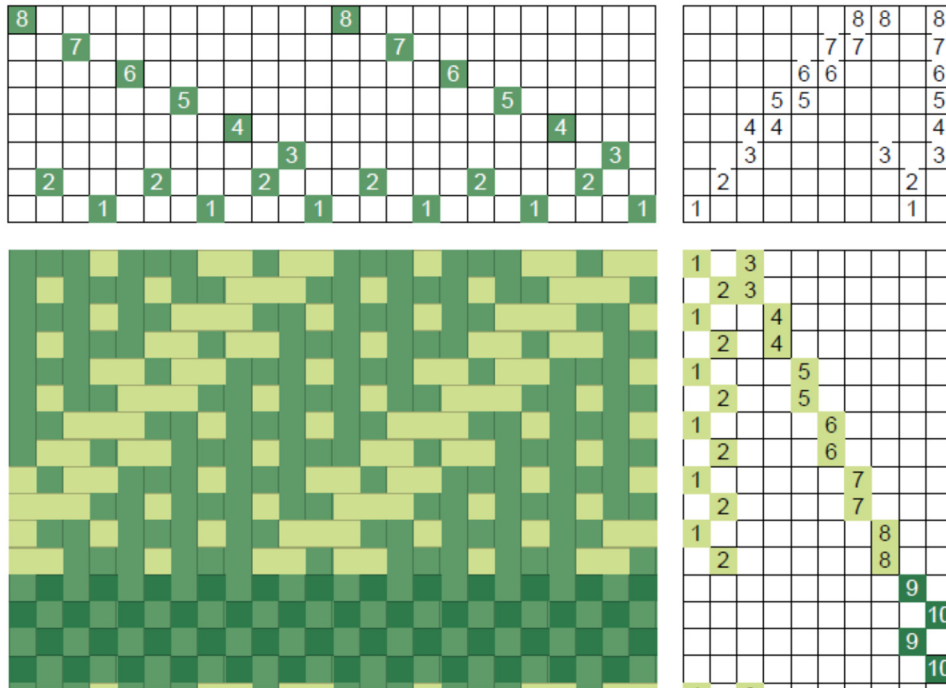
Two shafts are used for ties and are shared. Since each block uses two pattern shafts, any additional block requires two shafts. On eight shafts there are three blocks.

## Treadling Variations

This structure has been called “double summer and winter” because the blocks have the same arrangement as summer and winter with an extra pattern shaft per block. Why sacrifice shafts and thus blocks for double summer and winter? Donna Sullivan says that the structure is more versatile in designing. For example, blocks can be split in the treadling. Below is a *sinking shed* drawdown adapted from her book showing the split blocks. The second set of picks uses shaft 4 from block A and shaft 5 from block B.



Fourteen treadles are needed to weave the split blocks. However, with double treadling, we can reduce them to 10. This is in the *sinking shed* drawdown shown next.



Combining blocks in treadling as can be done with any tied unit weave and splitting blocks in this structure offers many design possibilities.

## References

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

Sullivan, Donna. *Summer & Winter A Weave for All Seasons*. Loveland, CO: Interweave Press, 1991.