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Finger Weaving versus Loom Weaving

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Abstract:

The process of cloth production entails the enmeshing of lengthwise and widthwise threads. The movement of the threads within the cloth will be consistent with the technique used in the weaving of the cloth. Various aspects of the Assumption sash are identified and examined. Sketches and photographs assist the reader in the process of comparing and contrasting the finger woven sashes with a loom woven version of the Assumption sash.

Friday 20th 1801: I sent five & a half Fms Tobacco by the young men to the Great ones at the Pound, one of them stole a ceinture of Cadottes, which he missed not until they had been off near two hours. He took his gun & snow shoes with an intention of pursuing them all day, but he overtook them before noon, & threatened to shoot one of them if they did not tell him which of them had stolen the belt. They restored the sash & proceeded quietly on their journey. ¹

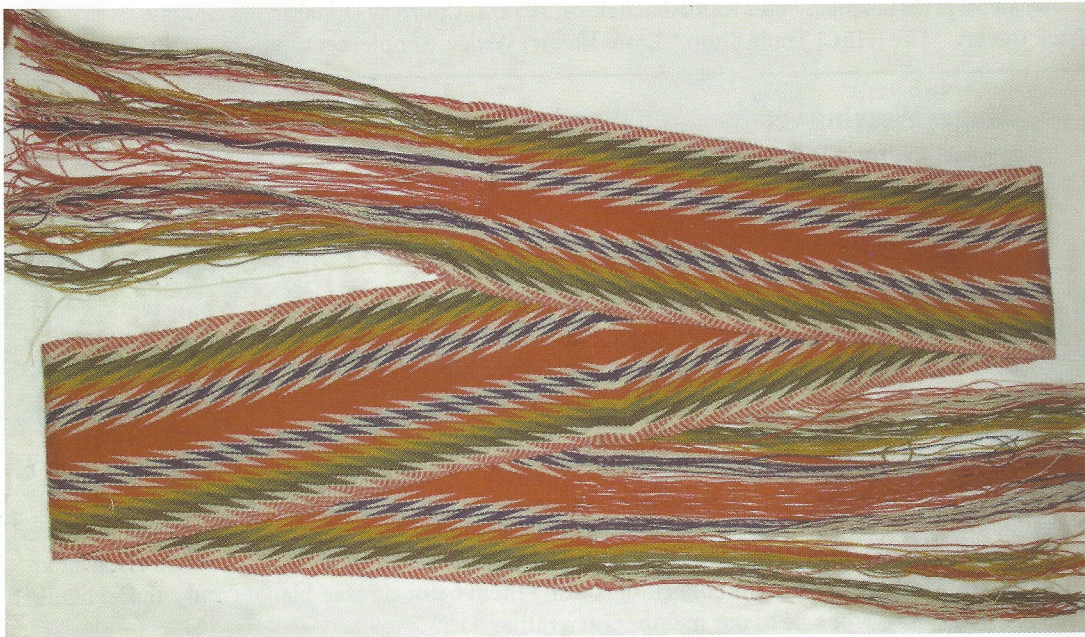


Image A: Assumption pattern finger woven sash

The sash was a valued article of clothing in the 1700s and 1800s for many people of North America. The Assumption sash, developed around 1800, has a distinct pattern that was originally created by the “finger weaving” technique in and around the town of Joliette, in the village of Assumption, in Québec, Canada. In the late 1800s loom woven varieties appeared, produced in the woolen mills near Coventry in England, mimicking the Assumption pattern. Finger weaving easily requires 300 hours of skilled labor to reproduce an average sized sash of the period. Factories can produce thousands of sashes per day.

However the products of the two sources are not identical. How to distinguish between these two types of arrowhead pattern sash is the subject of this article.

The movement of the threads within the cloth will be consistent with the technique used in the weaving of the cloth. To verify the technique, various features can be examined and compared with commentary in this article. Identified in this paper are eight different aspects:

- Lightning shape
- Direction of warp threads
- Selvedge
- Colors of weft
- Central arrow
- Pore Rows
- Direction of rib
- Fringe edge

Some definitions:

Rib: texture in cloth, raised ridges noticeable to the touch ²

Selvedge: finished edges that run the length of the cloth ³

Shed: interstice between the different parts of the warp of a loom, through which the shuttle passes ²

Warp: lengthwise threads in the cloth, in a sash running from fringe edge to fringe edge ³

Weft: widthwise threads in the cloth, running from selvedge to selvedge ³

Weaving Basics

In finger weaving, all threads are lengthwise (warp), and each thread takes a turn at being the sideways thread (weft). The change of status of the threads causes each thread to move from side to side within the cloth. An overall impression of the cloth is that it lies on its own bias (Figure 1).

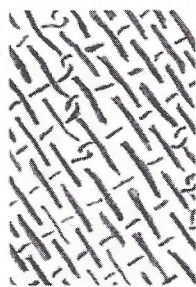


Figure 1. The grain of the fabric is at a non-90° angle to the selvedge.

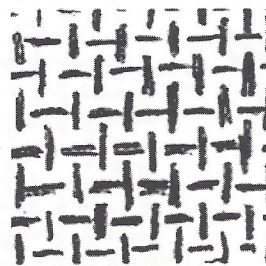


Figure 2. Detail of loom weaving. Right angle grid.

The classic method of cloth production dictates that threads are stretched across a frame, forming the lengthwise threads in the cloth. Another thread is interlaced through these lengthwise threads, back and forth, forming the cloth. The frame is called a loom, the lengthwise threads are “warp” and the sideways threads are “weft.” A loom woven sash will have certain characteristics belying this origin (Figure 2). The thread that runs along the left hand edge or selvedge will remain within the left hand selvedge for the entirety of the cloth. The thread that is seen to be dead center will be dead center throughout the full length of

the cloth. A loom woven sash will reveal weft threads that pass directly from selvedge to selvedge. The overall impression of the cloth has an even right-angle grid.

Shape of Lightnings and Direction of Threads

Perhaps the most telling design feature to examine when discerning weaving technique is the shape of the "lightnings." This design feature consists of two parts. The first part is a diamond, the second part is a long skinny line or leg. The design may be thought of as diamonds that are connected by legs, one reaching upwards, the other reaching downwards (see Figure 3). Note the direction of the threads in the lightning pattern (see Figure 4). The leg part of the lightning in finger weaving is most commonly comprised of three threads in warp position. These "leg" threads run along the outside of the upper diamond through to the inside of the lower diamond. The warp threads will appear as a dotted line, as the threads go up and down, over and under the weft. The direction of the threads is from point to point of the diamond.

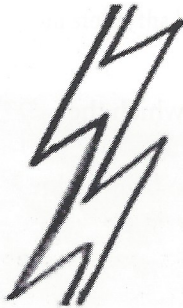


Figure 3. Design in finger woven sash.

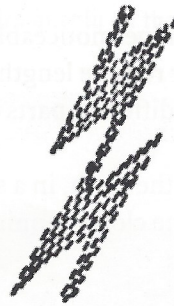


Figure 4. Detail of thread in finger woven sash.

The shape of the lightnings is different in loom weaving (Figure 5). Absence of the long thin legs connecting the lightnings is a certain sign of loom weaving. The direction of the warp is parallel to the selvedge. Examination of the threads within the lightnings reveals that, they are set at an angle to the point of the diamond or lightning (see Figure 6).

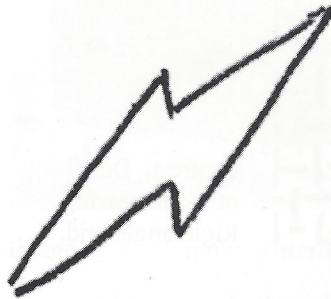


Figure 5. Design in the loom woven Coventry sash.



Figure 6. Detail of thread in the loom woven Coventry sash.

Note as well, the loom woven sashes will have a clear right side and wrong side. Differences in design will be noted between the upper and reverse faces of the sash. Image B reveals the two faces of the same sash.

Note the difference in pattern in the blue and white section adjacent to the central arrow. On the upper face it appears white-blue-white. On the lower face it is blue-white-blue.

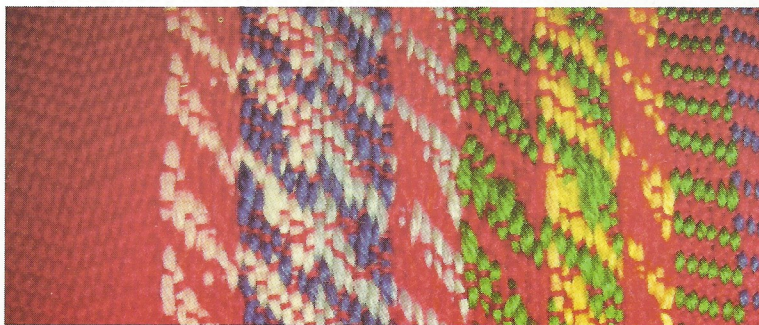


Image B. Two sides of the loom woven Coventry sash. Parks Canada Collection 4679

Selvedge

Very characteristic of finger weaving is the selvedge edge. Here the weft, having nowhere else to go, must change back to warp position (Figure 7). The weft will make an almost 90° turn. Look along the edge of the cloth for this characteristic movement from lengthwise to widthwise.

In loom weaving warp and weft are distinct, that is to say they are two separate groups of threads. The selvedge edge of a loom woven sash (Figure 8) reveals a 180° turn in the weft thread. The weft leaves one shed in the warp and returns again into the cloth in the succeeding shed. This feature can be seen as tiny loops all along the edge of the sash.

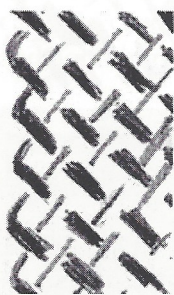


Figure 7. Finger woven selvedge.

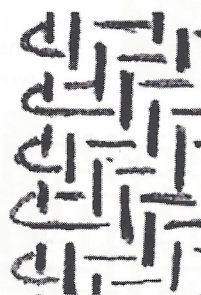


Figure 8. Loom woven selvedge.

Color of Weft

In a finger woven sash the weft will be of a different color in different sections of the sash. This is a classic hallmark of Assumption pattern finger weaving: changes of weft across the width of the cloth. The legs of the lightning will always be crossed by a weft of the same color. The upper portion of the diamond will be crossed by a weft of the color of the diamonds to the

outside (neighbor towards the selvedge), the lower portion of the diamond will be crossed by the weft the color of the diamond to the inside (neighbor towards the center). For example, the upper portion of the navy blue diamond will always have a pale blue weft, while the lower portion of the navy blue diamond will show a white weft. This characteristic can be difficult to determine in a good quality tightly woven sash. Finger weaving is a "warp faced" weave. Only the warp threads should be visible. The weft should be completely covered.

In a loom woven sash, the weft will be the same color across the full width of the sash. In the Coventry pattern the weft will be red, and seen in all color zones running from selvedge to selvedge. In some loom woven examples, the warp may be of thicker yarn and the weft of a finer yarn (see Image B). This is a dead giveaway to loom weaving. Different qualities of thread in warp and weft completely exclude the possibility that the cloth could be produced by finger weaving.

Central arrow

In a finger woven sash the arrowhead may be wide or thin, but the outer points are long, thin, and distinct (Image C). The arrow is the same on both sides of the cloth. An important distinguishing mark can be seen in the very center of the arrowhead. The changeover of status from warp to weft will happen down the very center of each and every arrowhead in a finger woven sash (Figure 9).

A loom woven sash will reveal weft threads that pass directly from selvedge to selvedge (Figure 10). Note the central arrow is different on upper face and reverse face of the Coventry sash (Image D and E).



Image C. Detail of finger woven arrowhead.

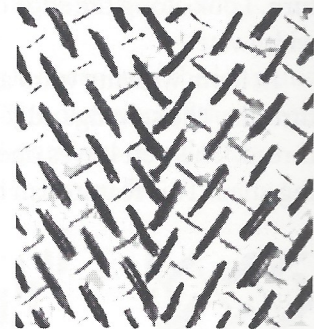


Figure 9. Schematic of finger woven arrowhead.

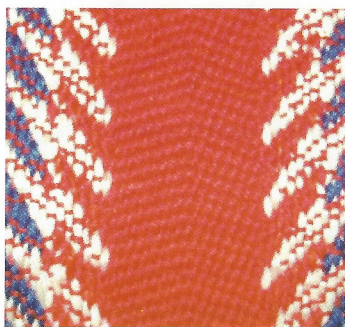


Image D. Detail of loom woven arrow. Coventry sash upper face.

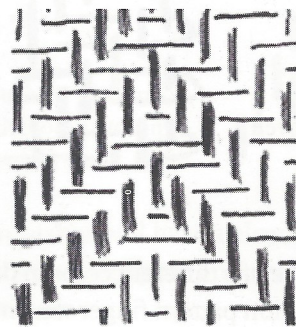


Figure 10. Schematic of loom woven arrow.

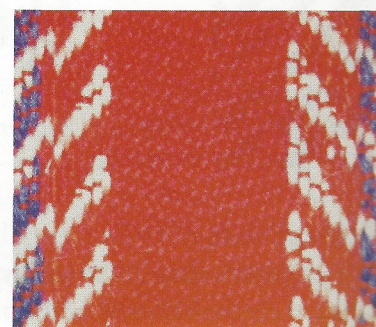


Image E. Detail of loom woven arrow. Coventry sash reverse face.

Pore Rows

In a finger woven Assumption sash no weft thread will traverse the cloth completely from selvedge to selvedge. Each weft traverses only the adjacent color zone, and then returns to the warp. Where the thread changes from warp to weft, the tension in the cloth is different. This movement of thread provides yet another test of weaving technique: a true finger woven sash will reveal a series of small holes along the lines shown in bold in Figure 11.

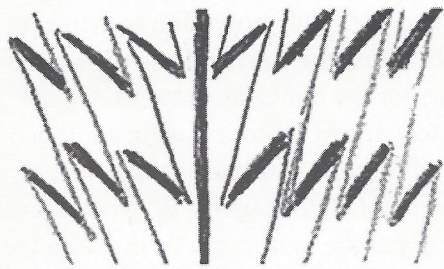


Figure 11. Schematic of pore rows.



Image F: Finger woven cloth stretched laterally.

These holes can also be seen in Image F. I call these holes “pores.” As pores are a normal feature of skin, these holes are a normal feature of a finger woven cloth. The change in direction from warp to weft will always result in a change in tension. This change will always be revealed as rows of pores when the cloth is held up to the light. A good quality sash will demonstrate very little or no lateral give. The pores will be very small, but the most distinct pattern of light coming through the cloth.

Pore rows will be completely absent in a loom woven sash. The warp moves very regularly lengthwise (from fringe to fringe) and the weft moves very regularly from selvedge to selvedge. Held up to the light, a loom woven sash will display a fine and even grid formed by the right-angle intersection of vertical and horizontal threads.

Direction of Rib

Another distinguishing feature of the finger woven sash is the diagonal grain or rib of the cloth. To check this feature draw a line from the center out, aligning the points of the arrow and lightnings.



Image G. Finger woven sash rib.

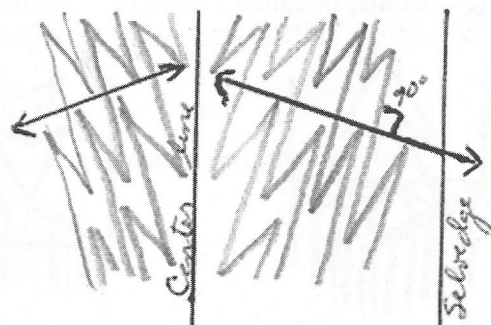


Figure 12. Finger woven sash rib.

This line follows the path of a weft thread in a finger woven article, as it travels through the shed in the warp from the center out, towards the selvedge, creating a rib in the cloth. These lines are at right angles to the arrows and lightnings as indicated in the Figure 12. Rib lines will be at a 30° or 60° angle to the centerline and to the selvedge. The direction of rib, starting at the lower right of Image G, goes uphill towards the center, or downhill towards the selvedge.

Coventry sashes feature a twill weave, (two up, two down) in the central arrow as well as in the stripes at the selvages. The warp-faced twill weave gives the impression of a nice rib. The central down pointing arrow features a texture in the cloth that resembles arrows pointing upwards. A different weaving technique is necessary for the lightning patterns. On the jacquard loom there is a method that allows one color to come to the top, leaving another color on the lower or reverse side. Where the central body of the arrow meets the points of the arrow the twill rib seems to become interrupted or muddled. (See Image B). No longer warp faced, the fine red weft threads are obvious throughout the lightnings. At the selvedge edge the rib becomes once again apparent. A schematic of this feature is seen in Figure 13.

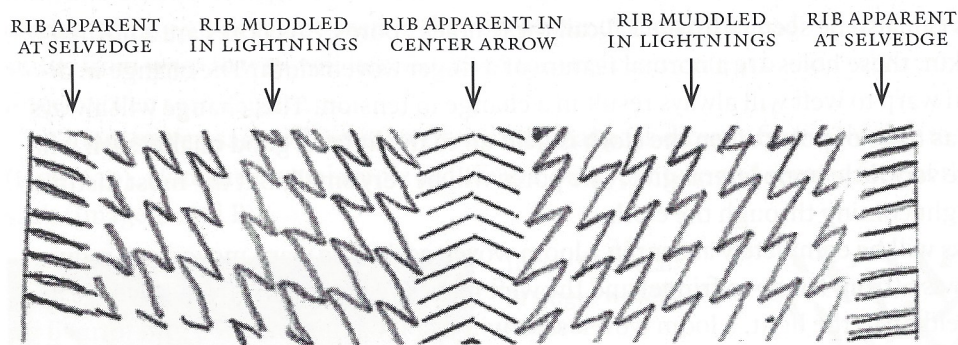


Figure 13: Presence of absence of ribs in the loom woven Coventry sash.

Fringe Edge

Consistent with the lie of the ribs discussed above, the weft is not perpendicular to the selvages. The extreme edges of the sash will likewise demonstrate a non-90° character. The fringe edge should follow the line of the rib of the fabric, the slight downward angle forming what may be called a "fishtail". This distinctive feature of the edge may be seen as a

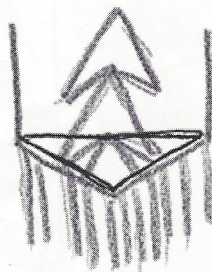


Figure 14. Finger woven. Up-pointed arrows.

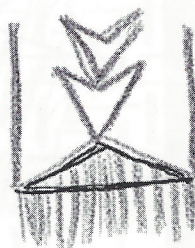


Figure 15. Finger woven. Down-pointing arrows.

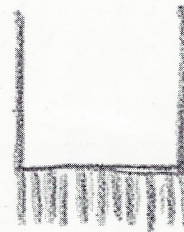


Figure 16. Loom woven

triangle, the height of which can be as much as two inches (Figures 14 and 15). Depending on whether the arrows are “up pointing” or “down pointing” the triangle will point down or up, opposite the direction of the arrow. The fringe edge of a loom woven sash (Figure 16) will be perpendicular to the selvedge. This is consistent with the 90° lie of the weft throughout the length of the cloth.



Image H. Parks Canada collection

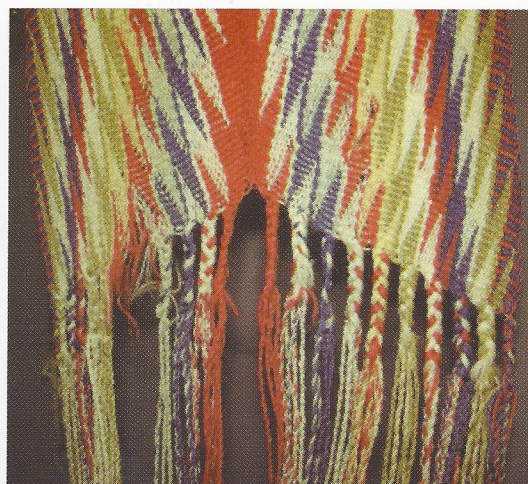


Image I. Parks Canada collection.

In summary, there are many sashes that fall into the category “Arrow Sash” or “Ceinture Fléchée.” Some were produced on a loom, and some were produced using the finger weaving technique. Loom woven cloth can be replicated using mass-production technology. Finger weaving is only accomplished by an extremely labor-intensive method. While the value of an article is complex, encompassing factors such as the price buyers are willing to spend, some consideration must also be given to the difficulty of replacing the article in question. A quick examination of the elements of design in the sash, the movement of the threads, and the shape of the fringe edge will reveal the method of construction to the knowledgeable collector or researcher.

Endnotes

1. Norman McLeod, *Journal, Alexandria, 1800-1801*. An electronic transcription. MFTP #0028.
2. *Webster's New Universal Unabridged Dictionary*, 1979.
3. Robert Leclerc, *Weaving*, 1992.

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