



revil ronzière
PASSEMENTERIE



Elementary Notes

HISTORY OF BRAIDS AND LACES

— INTRODUCTION

In Saint-Chamond (a town in the Loire département, Auvergne-Rhône-Alpes region, historically one of the main centres of French passementerie and lace manufacturing), braiding and lace looms have been running since the 19th century. Spindles (fuseaux), carriers (poupées), goose-foot guides (pattes d'oie), braiding point (bec de tressage), each component has its name, each gesture its protocol.

This document brings together notes that underpin our practice: history of the lace, anatomy of the loom, territory of origin, connection to fashion.



BRAIDS AND LACES

If we are to define braids and laces, we must go back in time to discover a reality quite different from the one we know today:

Around 1744, the Dictionnaire Universel du Commerce (Universal Dictionary of Commerce) written by Savary des Bruslons defines the lace as a round cord or flat braid made of silk foil (fleuret) and/or silk thread:

LACE. *A piece of round cord or flat braid, made of silk, foll, or thread, tipped at both ends with metal aglets (ferrets), used to fasten bodices, corsets, chemisettes and other garments for men or women; also used for threading papers.*

The cord or braid from which laces are made is produced on a braiding plate with spindle by the Master Passementiers-Buttonmakers; or on a loom with a shuttle by the Weavers-Ribbon makers. The cord made on the loom is called Gordon à la ratière. Laces are part of the trade of Merchant Haberdashers and Stationers.

The Laces which the Tariff of 1664 writes Laffets, pay export duties in France, if made of silk, 12 sous per pound; and if made of wool or thread, as haberdashery, 3 livres or even only 2 livres per hundred, if declared for export, following the Order of 3 July 1692.



Cover of the Manuel de Rubanerie, Passementerie et lacet (Manual of Ribbon-making, Passementerie and Lace) by M. Barret, St Chamond.

M. Barret (author of several technical manuals on passementerie and ribbon-making), in his Manuel de passementerie, rubanerie et lacet (Manual of Passementerie, Ribbon-making and Lace) published in 1924, informs us about foil silk: «a narrow taffeta ribbon, very tightly twisted», adding that «narrow ribbons bearing the seal of a chancellery» also carried the name of lace, in the late 18th century.

There follows a distinction of ancient types which is of considerable interest in enriching this definition:

- + **Silk laces** whose ends were tipped with metal aglets took the name of aiguillettes (tagged laces: decorative tipped cords used in military and civilian dress)
- + **Cords** (cordons) were used for hairdressing; the inventory of Mary Stuart (Mary Queen of Scots, 1542–1587) mentions a bonnet cord adorned with twelve gold collets (chatons)
- + The **cord** (cordonnet) made from silk floss had its use in passementerie, or in embroidery. The same applied to cannetilles (fine wire, gold or brass, coiled into spirals, used in embroidery and passementerie). The **padou** (a lace originally manufactured in Padua, Italy), was used to embroider garments, tie hair, or as purse strings.
- + **Bodices** were laced at the front. This fashion, brought by a queen of Italian origin, made the lacet à la reine (queen's lace) a success.
- + **Braids** (tresses) and **soutaches** were passementerie.



À la plieuse, carte d'échantillonnage de l'entreprise Voyant. St Chamond 1910

Braids and laces disappeared from our language as we progressively lost their use at the dawn of the 20th century.

Yet it is not so long ago that these two terms still appeared commonly in literature, in the press aimed at women of the household... and in other practical sewing manuals...



Line engraving, black on white. Taken from the illustrated review *La mode de style, les élégances parisiennes* (Style Fashion, Parisian Elegance), 15th year, no. 36, September 1890 (source: Bibliothèque Forney, Paris).

«Indoor dress, very elegant, reminiscent of Louis XV frock coats. The back consists of a princess-cut bodice forming large tubes from the waist. The front is cut away to chest height over a long waistcoat adorned with pockets and buttoned to the hem of the skirt. **Laces arranged as brandebourgs** (Brandenburg loops, decorative frogging of military origin, consisting of looped braid fastenings) **and buttons trim the upper fronts of the frock coat. Wide pocket lapels beneath which braids and buttons are placed ornament the sides; sleeves edged with lapels likewise adorned with laces and buttons.**»



Fashion sketch from the journal-album by Louise Latham (French fashion journalist and illustrator), *La dernière mode* (The Latest Fashion), 1884 (source: Bibliothèque Forney (Forney Library, a specialist library dedicated to decorative arts, fashion and trades, located in Paris), Paris).

«**Richmond coat, for driving. Coat in slate vicuña** (fine woollen fabric imitating vicuña fibre), **gathered at the yoke. The yoke is covered with three rows of narrow ruffled frills, edged with silver laces. Narrow collar, Medici style, edged with silver lace.**»

— RIBBON-MAKING, PASSEMENTERIE & LACES

With the definition of lace that Barret attempts to establish, we realise how difficult it is to draw a clear line between the different types. Today, there continues to be great confusion between these various terms when one attempts to define them.

To clarify this point, one must look to the guild systems for a common origin shared by laces, passementerie and ribbons.

In 1268, a guild was established by Estienne Boileau (provost of Paris) for workers in gold and silk lace (laceurs de fil d'or et de soie)

Later, these workers joined the dorelotiers (makers of small gold or silver trimmings and ornaments), frangiers (fringe makers), laceurs and lacetiers (lace makers), while another guild appeared: that of passementiers, buttonmakers and embellishers.

In the mid-17th century, these various trades were absorbed into this last guild, whose statutes recognised the exclusive right to produce passements on spindle, on pins, by hand, in gold and silver, in silk, in white and coloured threads: tassels (houppes), braids (tresses), loops (ganses), alb or cassock belts, tassels (glands), buttons, garnished laces, cords (cordelières), garlands, and bed-post finials (pommes de lits)», thus encompassing a great diversity of skills and techniques.

In a *Manuel théorique et pratique du tailleur* (Theoretical and Practical Manual for Tailors) of 1833, one can read that passementerie encompasses the manufacture and trade of ribbons, woven stripes (galons), braids (tresses), laces and padous [...]

At the end of the 18th century in St Chamond, manufacturers of silk woven trip, padous, loops and laces were all grouped under the common status of passementiers rybandiers (ribbon passementerie makers, a local term specific to the Saint-Chamond region combining «passementier» and «rubanier», ribbon maker).



Period Engraving. Extract from the (Menu of the Trade Union Chamber of the Lace Manufacturing Arts of St Chamond), 11 December 1897..



Painted portrait of Richard Chambovet (industrialist, founder of the first braiding mills in Saint-Chamond).

In 1810, Richard Chambovet is credited with creating a textile niche for the town of St Chamond and the Dorlay valley. He opened the way to industrialisation, producing more common passementerie articles in large runs.

It was in 1807 that this industrialist, who came from the silk-throwing trade, heard about the patent filed by Perrault (inventor of a mechanical braiding loom). Through M. Mongolfier (then director of the Conservatory of Arts and Trades, Paris), he learned of 3 looms with 12 spindles, built to keep the children of a charity house occupied, and subsequently sold to a second-hand dealer. He managed to acquire them.





Photograph is published under the Creative Commons CC BY-NC-SA 2.0 license – vintage postcard.

The story begins here. In 1812, M. Chambovet counted 80 looms built on the Perrault loom principle. By 1818, the workshop held approximately 220 new looms.

Thus, the lace industry is just over two centuries old; it became established in the Saint-Chamond region, replacing the pre-existing silk industries.

In 1862, there were 25 lace mills in St Chamond.

By 1889, nearly 120,000 spindles were in operation, employing 6,500 female workers and 650 male workers. Every kind of lace and cord was produced there: braids, organzines, mohair, alpaca, soutaches, passementerie and even needle lace.

A classification established by Baret in 1924 distinguishes within the braiding loom family (métiers à tresses):

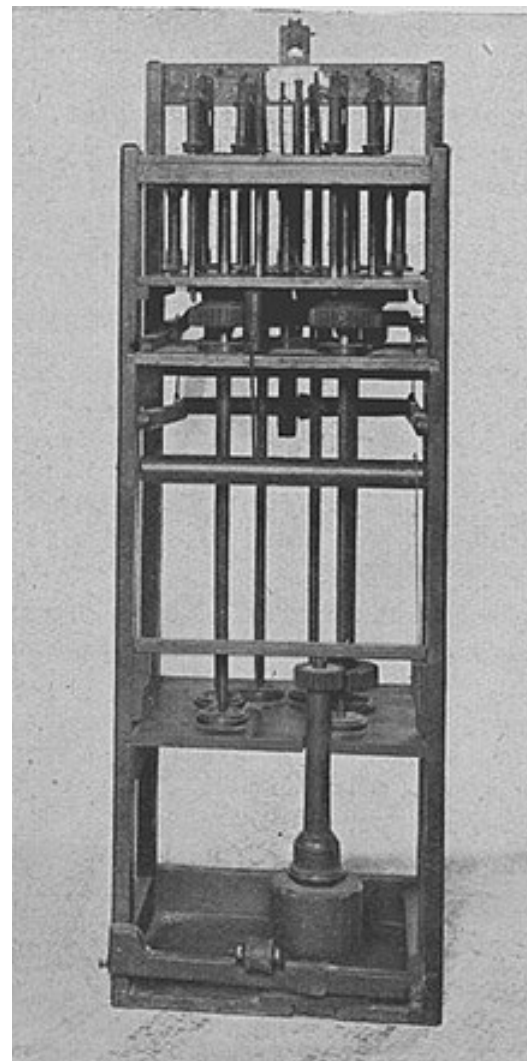
1/ **Open looms or return looms** for flat braids, woven stripes and other banded braids

2/ **Round or closed looms** (métiers ronds ou fermés) for tubular braid

3/ **Radium looms** with adaptation of the Jacquard principle for patterned braid (tresse façonnée)

4/ **Lace looms** (métier dentelle)

We will detail here the operation and characteristics of the open-type lace looms for flat braids, and the closed-type looms for tubular braid.



photograph of the Perrault loom, 1783
© Conservatory of Arts and Trades, Paris



GENERAL INSTRUCTIONS ON THE OPERATION OF THE LACE LOOM

Braids and laces result from the oblique interlacing of threads. All threads run diagonally, in a zig-zag from one selvage to the other. Each thread crosses alternately over and under one or several other threads (the most common crossing corresponds to passing one thread over every two).

+ ORIGIN AND EVOLUTION OF THE LACE LOOM:

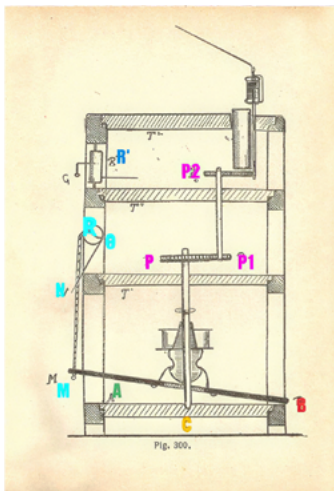
The original concept of the braiding loom is attributed to M. Thomas Walford (British inventor, 1748). The operation of his machine was still basic, with manual movement.

In 1783, Perrault (French inventor) presented to the Conservatoire des Arts et Métiers a model of a wooden braiding loom for which he filed a patent. The changing of spindles was made automatic through a wooden switching system.

These switches, in the shape of goose feet, are a distinctive feature of the French loom. This characteristic gives it exceptional modularity and enabled, in the Gier (a river passing through Saint-Chamond) and Dorlay valleys at the end of the 19th century, a production of haute nouveauté braids.

+ PRINCIPLE OF THE ST CHAMOND PERRAULT-TYPE LOOM:

The main components of the braiding loom characteristic of the workshops of the town of St Chamond are designated by local names. Often coined by the female workers themselves, the vocabulary is at once poetic and evocative: poupée (carrier), patte d'oie (goose foot), rouleau (roller)... The path of the spindles across the loom is itself described as the «danse des dames» (dance of the ladies), a reference to certain traditional popular dances.



Disengaged position

Two technical diagrams from the Manuel de Rubanerie, Passementerie et lacet (Manual of Ribbon-making, Passementerie and Lace) by Baret, St Chamond 1906, Page 295: the loom in disengaged position (left) and engaged position (right).

— THE FRAME

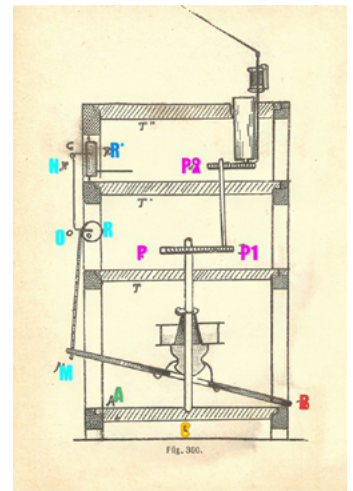
Composed of uprights and a table, as well as a low lateral crossbar AB (on the diagram) fitted at its centre C with a recess that receives the lower end of the loom's main shaft. The table, which forms the top of the loom, has recesses in which the carriers (poupées) are inserted. The table is positioned level with the upper part of the carriers so that its edge serves to hold the spindles (fuseau) in place within the notches (encoches).

— THE DRIVE SHAFT

This shaft is vertical, and the drive pinion P is keyed to its upper part above the table T. The motion of the central shaft is transmitted to the estelles (carrier gear wheels, term for the toothed wheel integral to each carrier) via pinions P, P1 and P2 and the secondary shaft P1, P2.

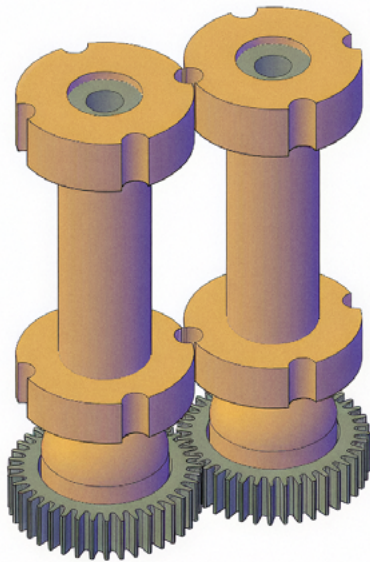
— THE TREADLE

This name designates the clutch system. The treadle is articulated at B on crossbar AB. At its end M, the treadle is connected via a Vaucanson chain (a type of roller chain invented by Jacques de Vaucanson) or cord to a roller R. The roller is horizontal. Its axis passes through the centre of the front uprights of the loom. Its rotational movement is enabled by an iron wire NOQ of 8 mm diameter driven into the roller. The loom is engaged when the end of rod NOQ is lifted to engage it in the disengagement catch.



Engaged position





3D AutoCAD conceptual drawing of the carriers and estelles, production of the Sara Revil workshop, 2019.



Photograph of spindles in action on a loom, showing threads fanned out and converging toward the braiding point.

— THE PUPPET

Catch G is riveted onto a vertical roller R. This roller R is positioned between two crossbars of the cage in which the estelles rotate. It is fitted with horizontal appendages called **disengagement horns**. These are positioned opposite the carriers but below the path of the spindle tails so as not to obstruct their movement.

— THE CARRIERS

Each **carrier** has the form of a large wooden spool integral with a toothed wheel called an **estelle**. The carriers are fitted with notches called **ouches** in which the spindles axles are housed. In general, carriers have 4 ouches. However, in the case of open looms, the return carriers have 5 ouches.

— THE SPINDLE

The spindle is the component that holds the **quill** (canette). It consists of a shaft (tige), a plunger or weight, a bracket (potence) and a **barbin** (the barbin is a small mobile finger that controls the release of the quill). The central shaft of the spindle is hollow. Inside it moves the plunger, fitted at its highest point with a ring. The bracket is perforated to allow the quill thread to pass through. At its top it carries a hinge (charnière) on which a moveable finger articulates, the barbin, which is also pierced with an eyelet.

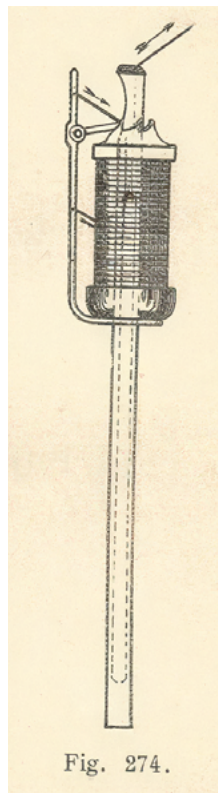


Fig. 274.

Plan of a spindle taken from the Manual of Ribbon-making, Passementerie and Lace by Baret, St Chamond 1906, Technical cross-section drawing with component detail.

— DISTRIBUTION OF THE SPINDLES

The simplest distribution is that of $1/2$, meaning one notch occupied by a spindle and the next one empty. In this way the spindles can never meet at the points of juxtaposition of the ouches.

— THE GOOSE-FOOT GUIDES COUNTER-HEART

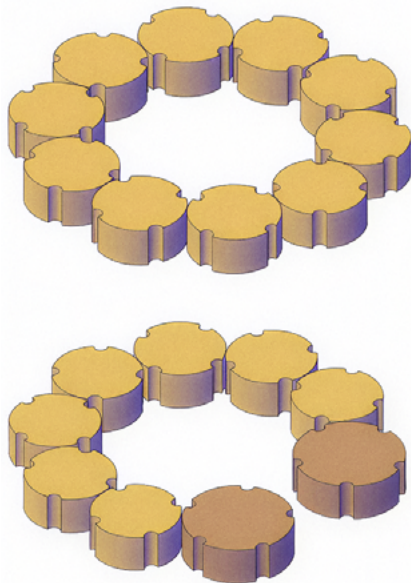
The trajectories of the spindles are only possible if those brought by one carrier are picked up by the next at the moment when the ouches are juxtaposed. The goose-foot guides switch the spindles during their transfers (mutations). The guides, mounted on vertical axes, oscillate between two stops in the empty space left between adjacent carriers. The needles and arms of the goose-foot guides oscillate to the right and left of the spindle shaft.

— THREAD PATH. FEEDING THE LOOM.

Starting from the quill on which it is wound, the thread passes through the five orifices of the spindle, up to the braiding point (bec) toward which it is drawn, where all threads converge.

Initially, the barbin is engaged in a tooth of the quill ratchet (rochet de la canette) and prevents it from turning. When the weight rises, it releases the barbin, which frees the quill. At this moment, the thread feeds abruptly. The plunger descends and lets the barbin fall back, stopping the quill again. The plunger, which controls the unwinding of the quill and ensures tension of the strand feeding toward the braiding point, also serves to achieve automatic stopping upon thread breakage. Indeed, when the thread breaks, the plunger drops to the bottom of the cylinder (piston). The guide index slides in a longitudinal slot in the shaft to a stop point positioned such that the end of the plunger can extend beyond the shaft and encounter a disengagement cam (came de débrayage), producing the stop.

+ THREAD CROSSING. SPINDLE CIRCULATION.



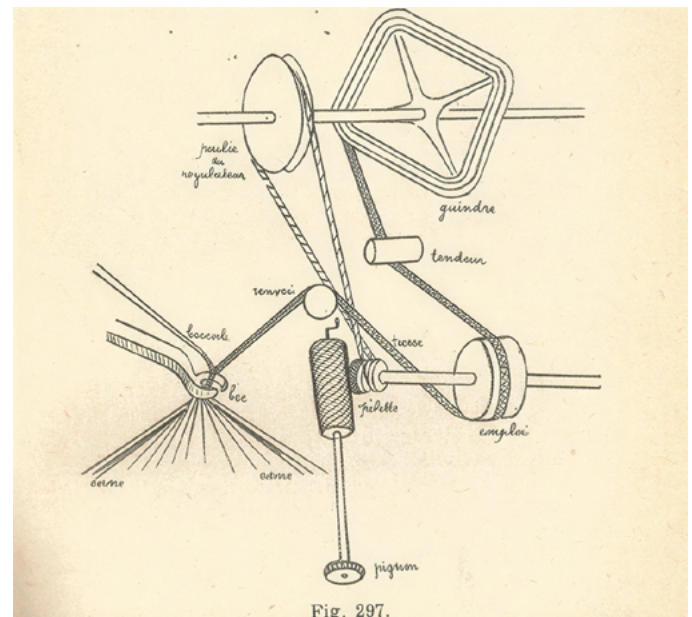
Two 3D AutoCAD conceptual drawings, Sara Revil workshop, 2019. Top: diagram of the closed loom (Spindles in closed circuit). Bottom: diagram of the open loom (spindles in open circuit).

Thread crossing results from the path of the spindles, which differs depending on whether the loom is **open or closed**.

In **round braid** (tresse ronde), a core is covered with tubular braiding; the threads wind helically around this core. Half the spindles circulate on the left-hand circuit while the other half moves on the right-hand circuit. They turn continuously in the same direction. This is a **closed circuit**.

In the case of the **open loom** (métier ouvert), the spindles follow the same path and return along their route after travelling around the end carriers with five ouches. This type of braiding produces a flat braid.

+ TAKE-UP AND SWIFT



Technical diagram «Braiding point and swift (Bec et guindre)», plan from the Manual of Ribbon-making, Passementerie and Lace by Baret, St Chamond 1906, Page 305. Line drawing showing the thread path from the braiding point to the swift, with labels.

The braid forms at a braiding point where it originates. It is drawn off as it forms, pulled by a drive cylinder covered with dogfish skin (peau de roussette skin was used industrially as an abrasive grip surface), called the «**emploi**». The tension maintains the threads taut.

The braid passes through a series of pulleys and redirects before winding into skeins on a swift.

On the take-up shaft a pinion is keyed, driven by a **worm screw** forming the end of a **vertical shaft** whose base carries a toothed wheel meshing with an estelle. The assembly of worm screw, vertical shaft and **toothed pinion** constitutes the **pilette**. It serves as a regulator to vary the draw-off speed through a set of toothed pinions.

The take-up pinion is doubled by a **grooved pulley** (poulie à gorge) which drives the swift (guindre) by means of a taut cord.



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+ SOURCES

Gallica, La dernière mode, 1884.

Gallica, Les élégances parisiennes, 1916-1924.

+ BIBLIOGRAPHICAL REFERENCES

L.J. Gras, Histoire de la rubanerie et des industries de la soie, suivi d'un historique de la fabrique de lacets à St Chamond, St Étienne, Société de l'Imprimerie Théolier, 1906.

M Baret, Manuel de Rubanerie, Passementerie et lacet, Bibliothèque professionnelle, 1924.

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