

THE JACQUARD LOOM

INV.50.144

FOCUS

ROOM 21: SOCIAL LABORATORY - 19TH C.



This loom stood out from the crowd by virtue of its height (at least 4 metres), which was due to the box in which the mechanics were housed. Consequently, premises were constructed at La Croix-Rousse where the staff worked and lived. These buildings had high ceilings and big windows to allow the entire loom to be bathed in daylight. These are specific and highly sought after architectural features in today's property market...



Maison Brunet (Brunet House), canuts' (silk workers') building, constructed in 1825 in the Croix-Rousse district, subsequently transformed into a citadel during the 2nd Canut revolt, photograph, 20th c.

What is?

What is it? ...a loom

The Jacquard mechanical loom known as the Jacquard Loom, was developed in 1801. It comprised two parts: the pivotal arm-operated loom used to produce decorative fabrics (referred to as "fashioned" fabrics) and the Jacquard mechanical loom per se located above it. In the local dialect, this machine was known as the "bistanclaque" – an onomatopoeic term – since it clearly conveys the sounds emitted by the machine whilst in operation.

How does it work? ...bistanclaque pan! – bang/clang!

The Jacquard mechanical loom was not an invention as such but rather a skilful combination of three techniques: that of the Vaucanson (1709-1782) loom, automated by a hydraulic system and controlled by analogue cylinders (1748), Jean-Baptiste Falcon's system of perforated cards, formed from a never-ending chain of boxes, ensuring that the textile machinery operated continuously (1728); and that of Basile Bouchon's needles, adapting the mechanisms involved in clock-making to the world of weaving, and the reading of paper tape (1725).

This led to the creation of a semi-automatic loom, which controlled all the threads – via 600 to 800 hooks – and selected them using a programme entered on perforated cards to create varied and complicated patterns. Its main asset was that it needed only one operator as opposed to several, just like the traditional loom.

Who?

Who made it? ...the Inventor: Joseph-Marie Jacquard

A son of Lyons, Joseph-Marie Jacquard (1752-1834) (Inv. 584 **Portrait of Joseph-Marie Jacquard**) perfected this loom, the patent for which was filed in 1801. The son of a "master craftsman", he had many professions connected with the silk and printing industries beforehand...and went on to develop his interest in mechanics, which was self-taught. On 12 April 1805, Emperor Napoleon I discovered Jacquard during a visit to Lyons. Subsequently, on 27 August 1805, Jacquard was awarded the Inventors' Prize by the Academy of Lyons. This accolade was followed by many other prizes and awards: on 17 November 1819, he was made Chevalier de la Légion d'Honneur (Knight of the National Order of the Legion of Honour)! A few years later he was even appointed the Town Councillor of Oullins.



In honour of the "benefactor of the workers of Lyons": on 16 August 1840, a bronze statue was erected in his honour at place Sathonay in Lyons. This was moved to place de la Croix-Rousse in 1898. Melted down in 1942, it was replaced in 1947 by the current stone statue.

Joseph-Marie Jacquard, engraver, H. Saunier and A. Prunaire, late 19th c., Inv. 1318.13

Attention knitters!

The name Joseph-Marie Jacquard has been recorded for posterity in the knitting glossary! Because the drawing of a “jacquard pattern” is represented by a grid of the same name – reminiscent of the perforated cards used in the loom. Whether Jacquard embroidery, Jacquard Knit or inlaid jacquard, this type of knitting is used for simple or complicated, single or repetitive patterns, which are always multi-coloured.

Who used it? ..

In operation since 1806, the Jacquard loom was developed in the Croix-Rousse workshops from 1817 onwards, following improvements made by mechanic Jean-Antoine Breton, who made the apparatus faster and twice less expensive. Despite initial reluctance on the part of the workforce who thought that it might lead to unemployment, the benefits of the Jacquard loom were soon realised. It made the work easier and improved production quality. In 1834, 2 885 looms were in operation on the hillsides of Croix-Rousse – a figure that had increased to almost 20 000 by the end of the 19th c. Throughout the 19th c., the hillside population increased ten-fold and the district quickly became urbanised. It was also at this time that the Croix-Rousse silk industry specialised in fashioned (patterned) fabrics whilst the hinterland produced less fine silks. The loom was also an international success story...and some are still used to this day to make complex patterns such as brocade* or damask* for example.

History of a collector's item

From the Croix-Rousse high street to the museum

The mechanical Jacquard loom, which dates from 1884. It was used in several canut workshops (**Inv. 97.3 and N 3066 canut workshops**) in Croix-Rousse, at the end of the 19th c., especially in commission weaver Jean Bonnet's premises, located in the Croix-Rousse high street. The lower section, the pivot arm-operated loom, is classed as a Historical Monument.

glossary

brocade: fabric embossed with silk silver or gold threads, giving the appearance of being embroidered on.

damask: brocade woven with gold and originating from Damascus in Syria. It is characterised by its reversible, colourful, figured fabric.

Fabrique Silk Industry: refers to all silk manufacturing activities including regulations and organisation.

An historical object

What it tells us:

The Jacquard loom tells us about an important period in the manufacturing of Lyons silk: its introduction marks the advent of the Industrial Revolution in the textile sector, which had a profound impact upon the silk economy in Lyons. Fabrique (silk industry)* developed from a fragmented, pre-industrial operation to a centralised industrial system.

But it is also symbolic on several counts in terms of the identity of the Croix-Rousse commune of the 19th c., which witnessed silk manufacturing almost exclusively:

- architectural identity, born of the need to construct workshops-come-living quarters with high ceilings and plenty of light,
- strong social identity forged during the silkworms' revolts and then consolidated by the creation via the latter of mutual benefit associations – France's first experience of mutual benefit insurance!
- political identity as highlighted in the workers' newspaper, *L'Écho de la Fabrique* (voice of the silk industry), which appeared in districts frequented by the Croix-Rousse workers in 1831.

This is an identity that has obviously undergone extensive transformation but which nevertheless lingers on in the pride of some of the inhabitants of La Croix-Rousse.

The Jacquard loom in its initial form using perforated cards is also said to be the ancestor of the computer: It allegedly inspired British mathematician Charles Babbage (1791-1871), the inventor of a mechanical computer known as the “difference engine”...



L'Écho de la Fabrique, silkworms' newspaper – a copy from 1841, Inv. 995