Identifying Handmade and Machine Lace
DATS in partnership with the V&A
This information pack has been produced to accompany a one-day workshop of the same name held at The Museum of Costume and Textiles, Nottingham on 21st February 2008. The workshop is one of three produced in collaboration between DATS and the V&A, funded by the Renaissance Subject Specialist Network Implementation Grant Programme, administered by the MLA.

The purpose of the workshops is to enable participants to improve the documentation and interpretation of collections and make them accessible to the widest audiences. Participants will have the chance to study objects at first hand to help increase their confidence in identifying textile materials and techniques. This information pack is intended as a means of sharing the knowledge communicated in the workshops with colleagues and the public.

Other workshops / information packs in the series:

Identifying Textile Types and Weaves 1750-1950
Identifying Printed Textiles in Dress 1740-1890
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Identifying Handmade and Machine Lace

Introduction

Lace is basically a fabric in which the pattern is surrounded by air, with bars of net holding the various elements of the pattern together. The two types of hand-made lace, needle and bobbin, developed from cutwork embroidery and the plaiting and twisting of fringes in the 16th century. Except for laces made of metal thread most fibres were worth little, the cost and the exclusivity of the lace depending on the complexity and fashionability of the pattern and the weeks, months, even years it took to make. From the start it was a luxury fabric, rather than a necessity, and luxury goods can set their own price.

Almost from the beginning there were attempts to make cheaper copies of expensive laces but most of these copies failed because the originals were so densely patterned that there was no easy way of copying them on the weaving loom or the stocking frame, the only textile machines then available. However the coincidence of innovations on the stocking frame, a slight slump in the hosiery industry, the increasing airiness of fashionable laces and an increasing market for cheaper laces lead to experiments to make lace on the stocking frame. The first surviving piece of machine made lace, made by Robert Frost of Nottingham in c.1769 using a carved wooden cylinder to transfer loops from needle to needle, bears little relationship to a hand-made lace. But in a few years passable copies, in appearance at least, of certain types of bobbin lace could be made. In 1809 John Heathcoat in Loughborough invented a machine which could make an exact copy of the net of East Midlands laces. His invention lead to the Leavers, Pusher and Curtain machines.

From the mid-19th century huge quantities of machine-made lace of all sorts were being made in England and France. The quality had improved to such an extent that machine-made lace was extensively used on dresses made by Worth and other couture houses. At the end of the 19th century hand-made lace makers counteracted competition by producing new types and varieties of lace and by marketing all hand-made lace, from the most exquisite to the plainest, as 'real' lace.

The First World War devastated the European hand-made lace centres. Increasingly other countries, Armenia, India and China, to mention but three, took up lace-making and it becomes increasingly difficult to tell from the lace itself where it was made. The making of machine lace had recovered by the 1920s and Leavers lace was a popular fabric for evening and wedding dresses into the 1950s. The industry contracted after the Second World War. Traditional Leavers dress lace was often regarded as dowdy by the young and faced competition from the faster Raschel warp knitting machine which, initially at least, worked more easily than the Leavers machine with the new synthetic fibres nylon and polyester. Today, although some Leavers lace is still being made, most dress, lingerie and furnishing laces are made on Raschel machines, especially the computerised Jacquardtronic and Textronic versions.

The aim of the workshop will be firstly to learn how to distinguish hand-made from machine-made laces, secondly to ascribe machine-made laces to the machines that made them, and thirdly to identify the main types of hand-made lace. As a corollary some whitework embroidery will be looked at but the main emphasis will be on lace and in general the emphasis will be on those laces which survive in greatest number trimming 19th and 20th century dresses and accessories. Where possible hand and machine versions of the same lace will be shown side by side.
Identifying Handmade and Machine Lace

Illustrations 1a, b, c, d
Hand-made lace and Leavers lace copies side by side from a booklet prepared by Birkin and Co. Ltd. of Nottingham in about 1900. (NCMG 2005-121/4 © Nottingham City Museums)

Mechlin lace – left-hand version is hand-made, right-hand version machine-made.

Point de Flandre lace – left-hand version is hand-made, right-hand version machine-made.
Identifying Handmade and Machine Lace

The main types of hand and made machine lace

There are two basic types of **hand-made lace**: needle lace which is created by using a needle and thread and variations on buttonhole stitch and bobbin lace which is made by twisting and plaiting a large number of threads, each wound onto and weighted by a bobbin, on a stuffed pillow (the terms bobbin and pillow lace are interchangeable).

There are four families of **lace machine**:

1. **The stocking frame**, invented by William Lee in Calverton, Nottinghamshire, in 1589, to knit stockings. Unlike the hand knitter who knits one loop at a time, the stocking frame knits a row of loops in one operation on hooked needles. In the 1760s, with various adaptations, the stocking frame made lace by transferring stitches from one needle to another. Robert Frost made the first surviving piece of Nottingham lace by using a carved wooden cylinder to dictate the transfer of stitches. Later, a perfect net was made on the stocking frame and embroidered for sale.

   A cousin of the stocking frame is **the warp frame**, invented in the 1770s. Instead of the stocking frame’s horizontal row of needles and loops, it had vertical columns of loops which zigzagged to interconnect. It proved a very versatile machine; modern equivalents making not only fabrics but ‘string’ bags for fruit and vegetables.

   **The Raschel machine** was invented using the principles of the warp frame by A Barfuss in Germany in 1859. The Jacquard apparatus (see under Pusher machine below) was adapted to it in the 1870s. The Raschel machine could work at higher speeds than the Leavers machine and proved the most adaptable to the new synthetic fibres, such as nylon and polyester, in the 1950s. Most contemporary machine-made lace is made on Raschel machines.

2. **The bobbinet machine**, invented by John Heathcoat in Loughborough, Leicestershire, in 1809, makes a perfect copy of Lille or East Midlands net (fond simple, a six-sided net with four sides twisted, two crossed). The machine uses flat round bobbins in carriages to pass through and round vertical threads. John Heathcoat moved his factory to Tiverton in Devon in the 1820s. Much expanded, it still makes net.

   **The Pusher machine** is a variation of Heathcoat’s machine, created by Samuel Clark and James Mart in 1812. It takes its name from the rods which pushed the carriages through the machine. The Jacquard apparatus (a system of cards punched with holes invented for the weaving loom by J M Jacquard in France in about 1800) was adapted to it in 1839 but it could only make the pattern and the net. The outline had to be put in by hand or later, by embroidering machine. Nottingham stopped making Pusher lace probably in the early 20th century but it continued being made in France.

   **The Leavers machine** is an adaptation of Heathcoat’s machine by John Levers (the ‘a’ was added to aid pronunciation in France) in Nottingham in 1813. The original machine made net but it was discovered that the Jacquard apparatus (invented in France for weaving looms by J M Jacquard in about 1800) could be adapted to it. From 1841 lace complete with pattern, net and outline could be made on the Leavers machine. The Leavers machine is probably the most versatile of all machines for making...
patterned lace. Leavers lace was Nottingham’s chief lace product until recently. Now there is only one British firm (not actually in Nottingham) which still makes it.

The lace curtain machine, invented by John Livesey in Nottingham in 1846 was another adaptation of John Heathcoat’s bobbinet machine. It made the miles of curtaining which screened Victorian and later windows. Nottingham stopped making lace curtains in the 1980s and curtain lace in the 1990s.

3. The hand-embroidery machine was invented by Joshua Heilman in Mulhouse, France in 1828. It used pincers both sides of a piece of fabric, needles pointed at both ends, and single lengths of thread. A hand-operated pantograph dictated the movements of the needles which were grabbed by the pincers and pushed through the fabric. It makes a perfect copy of hand embroidery except that all the pattern repeats are identical. Lace is made by embroidering on machine-made net or on a fabric which is dissolved away by chemicals (‘chemical’ lace) or burned away by heat (‘burnt out’ lace).

The Schiffli embroidery machine was invented by Isaac Groebli in 1865. It uses two lengths of thread one on one face of the fabric, one in a shuttle on the other, to make a lockstitch. Like Heilman’s machine its movements were originally dictated by a hand-operated pantograph. Most embroidered laces are made using the Schiffli machine either on net or a soluble fabric. Nottingham, Plauen in Germany and St Gallen in Switzerland make a lot of machine embroidered laces.

4. The Barmen machine was developed in the 1890s in Germany from a braiding machine. Its bobbins imitate the movements of the bobbins of the hand-made lace maker and it makes perfect copies of torchon and the simpler hand-made laces. It can only make one width at a time and does not have the pattern potential of the Leavers machine.

Other techniques used for making lace

Crochet: made with a hooked needle, the basic stitch is a chain; used for all sorts of dress and furnishing trimmings; the finest is known as ‘Irish crochet’ no matter where it was made; imitated by Schiffli machine

Knitting: by hand; made by dropping and picking up loops; used occasionally for children’s dress and underwear trimmings; sometimes used for furnishings

Tatting: made with a shuttle and sometimes a pin and ring; it is characteristically made in rings or ovals, often edged with small loops; rather limited in pattern, usually used for collars and cuffs, but sometimes also as mats
Identifying Handmade and Machine Lace

Six Steps to Identification

1. Equip yourself with a good magnifying glass, at least X8 or X10 magnification.

2. Decide (by sight) as far as possible on the thread:
   - **nylon or polyester**: post 1950
   - **cotton**: early 19th century onwards, in machine lace often used with another fibre
   - **silk**: early 17th century onwards, nearly all black laces are silk; matt black silk is called grenadine
   - **rayon**: from 1915 onwards, often very difficult, if not impossible, to tell from silk (by sight anyway)
   - **linen**: 16th century onwards, in spite of the popularity of cotton in the 19th century linen seems to have been used for the finer laces, and also for peasant laces in the 19th and 20th centuries; often used as a gimp (outlining thread) with cotton
   - **wool**: used for very few laces, mostly mid 19th century or 1920 – 40

The fibre will decide, more or less, what you are looking at: if linen, cotton, silk or wool could be hand or machine made (all machines except Raschel)

   - **rayon**: machine made, most likely to be Leavers
   - **nylon or polyester**: machine made, Leavers or Raschel

3. Decide whether the lace is hand or machine by studying the ground, the pattern, and what the gimp (outline) does.
   - If hand, what type? needle, bobbin, crochet, embroidered?
   - If machine, which machine? Leavers, Pusher, Warp-frame, Stocking-frame, Raschel, Barman, Hand-embroidering machine, Schiffli, Cornelly

4. Decide on date, through studying portraits and reference books (see bibliography)
5. Decide on country of origin. This is very difficult, especially from the mid 19th century onwards as there was a lot of copying of hand made lace in unlikely places, Armenia and China in the 20th century for instance. Machines were exported from one country to another.

6. If you are doubtful, make a note of your reasons for the attribution or dating. This can be very useful if there is disagreement or later on you wonder ‘Why did I think that?’ There is no shame in changing your opinion; lace is still a very fluid subject.

Illus.2
## Identifying Handmade and Machine Lace

### Types of Lace – Single and Multi-thread

**NB. Dates below are only approximate. There are exceptions to every rule.**

### Single Thread

<table>
<thead>
<tr>
<th>Technique</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Needle</strong></td>
<td></td>
</tr>
<tr>
<td>cutwork, reticella</td>
<td>late 16th–early 17th C</td>
</tr>
<tr>
<td>punto in aria</td>
<td>late 16th – early 17th C</td>
</tr>
<tr>
<td>flat laces</td>
<td>late 17th – early 18th C</td>
</tr>
<tr>
<td>raised laces</td>
<td>mostly 1650 – 1700 but</td>
</tr>
<tr>
<td></td>
<td>some into the 18th C in Venice.</td>
</tr>
<tr>
<td></td>
<td>Revived in the late 19th C in centres other than Venice</td>
</tr>
<tr>
<td>point de France</td>
<td>1685 – 1710 (similar to</td>
</tr>
<tr>
<td></td>
<td>Venetian needle laces but more</td>
</tr>
<tr>
<td></td>
<td>regular ground)</td>
</tr>
<tr>
<td>Alencon and Argentan</td>
<td>mid 18th C to mid 19th C</td>
</tr>
<tr>
<td></td>
<td>with stops and starts</td>
</tr>
<tr>
<td>Brussels needle laces</td>
<td>1700s into 20th C</td>
</tr>
<tr>
<td>Brussels point de gaze</td>
<td>1850s to 1st World War</td>
</tr>
<tr>
<td>Brussels point de gaz appliqué</td>
<td>mostly from 1860s to 1st World War.</td>
</tr>
<tr>
<td></td>
<td>As insertions in bobbin lace</td>
</tr>
<tr>
<td></td>
<td>(duchesse) 1870s to 1st World War</td>
</tr>
<tr>
<td>Burano</td>
<td>18th C, revival at end of</td>
</tr>
<tr>
<td></td>
<td>19th C</td>
</tr>
<tr>
<td>Points de Venise a reseau</td>
<td>1700s to 1750s</td>
</tr>
<tr>
<td></td>
<td>(often however made in Brussels)</td>
</tr>
</tbody>
</table>

| **Tape**                         |                           |
| Branscombe                       | 1850 – 1920s              |
| Luxeuil                          | late 19th C               |
| Renaissance                      | 1870s – 1910s             |
| Battenberg                       | 1890s – 1920s             |
| Princess                         | 1890s – 1920s             |

| **Crochet**                      |                           |
|                                  | mostly from 1850s into    |
|                                  | 1920s                     |

| **Tatting**                      |                           |
|                                  | mostly from 1850s to      |
|                                  | 1920; revival in 1950s    |

| **Knitting**                     |                           |
|                                  | as lace from 1840s to end |
|                                  | of 19th C; 1950s revival  |

| **Embroidered nets**             |                           |
| hand embroidery                  | late 18th C into 1920s    |
| machine embroidery               | mostly from 1880s         |
**Single Thread cont’d**

**Machine**

stocking-frame 1760s to 1850s (mostly as point net)

**Multi thread**

**Bobbin**

continuous

- Binche
- Valenciennes
- Mechlin
- Lille
- East Midlands
- Genoa
- Maltese
- Flemish and Dutch early laces, Flemish, Belgian and Dutch Peasant laces, e.g. Antwerp, Bavaren-Waes

non continuous

(i.e the ground is made as a separate operation to the pattern elements; the ground can be needle or bobbin made mesh or bars [guipure])

- Brussels
- Milan
- some 19th cent. Valenciennes
- some Flemish
- Honiton
- some Northamptonshire

*dates not given for these as they change character so much. Good reference books will help

**Machine**

warp frame

("see pp. 18-19"

for details)

- Raschel
- Leavers: bobbin fining
- independent beam
- Pusher: hand run
- machine embroidered

- Barmen
- hand-embroidering machine
- Schiffli embroidering machine

**Applied**

hand made lace on net

- Brussels
- Honiton
- Northamptonshire inlay

fabric on net

- Carrickmacross
- Brussels

net on net
## Identifying Handmade and Machine Lace

### Characteristics of main bobbin laces with grounds

<table>
<thead>
<tr>
<th>Type</th>
<th>ground</th>
<th>pattern</th>
<th>gimp</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Valenciennes</strong></td>
<td>diamond, four plaited sides; also round</td>
<td>dense, mostly clothwork but sometimes half stitch</td>
<td>none</td>
</tr>
<tr>
<td><strong>Mechlin</strong></td>
<td>hexagonal; two sides plaited, four twisted</td>
<td>clothwork, some very elaborate fillings</td>
<td>thicker linen thread</td>
</tr>
<tr>
<td><strong>Brussels</strong></td>
<td>hexagonal; two sides plaited (shorter than Mechlin), four twisted</td>
<td>clothwork, usually very fine</td>
<td>woven as the lace is made, later bundles of thread</td>
</tr>
<tr>
<td><strong>Honiton</strong></td>
<td>hexagonal; two sides plaited, four twisted; sometimes with bars; needle made ground sometimes used mid 19th cent.</td>
<td>clothwork, some half stitch</td>
<td>as Brussels, late 19th cent. often with thick linen thread</td>
</tr>
<tr>
<td><strong>Lille</strong></td>
<td>hexagonal, four sides twisted, two crossed</td>
<td>clothwork</td>
<td>thicker linen thread</td>
</tr>
<tr>
<td><strong>Buckinghamshire</strong></td>
<td>as Lille, rose ground used as filling</td>
<td>clothwork</td>
<td>thicker linen thread</td>
</tr>
<tr>
<td>Northamptonshire, very similar to Buckinghamshire</td>
<td>as Lille; often with square spots in groups</td>
<td>clothwork, in slight patterns often almost omitted and the gimp forms the pattern</td>
<td>thicker linen thread</td>
</tr>
<tr>
<td><strong>Chantilly</strong></td>
<td>as Lille</td>
<td>usually half stitch</td>
<td>usually bundles of threads</td>
</tr>
<tr>
<td><strong>Point de Paris</strong></td>
<td>star shaped, twisted sides, popular 1840 – 60 and at end of 19th C</td>
<td>clothwork</td>
<td>thicker linen thread</td>
</tr>
<tr>
<td><strong>Point de Paris (genre espagnole) (19th &amp; 20th cent.)</strong></td>
<td>as Point de Paris but with Lille as filling at bottom edge</td>
<td>clothwork</td>
<td>thicker linen thread</td>
</tr>
<tr>
<td><strong>Point de Flandre (19th &amp; 20th cent.)</strong></td>
<td><em>cinq trous</em> (five hole)</td>
<td>clothwork, sometimes with holes</td>
<td>thicker linen thread; often without any</td>
</tr>
</tbody>
</table>
Identifying Handmade and Machine Lace

Characteristics of main bobbin laces with grounds – Brussels lace

Illus.3
Brussels ‘duchesse’ lace (bobbin lace with needle lace details), 1850-60, part of a bonnet veil. (NCM 1972-30/45 © Nottingham City Museums)

Illus.4 and 4a (detail)
Brussels needle lace applied to three twist net, 1840-50, part of a bonnet veil. (NCM 1972-30/17 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of main bobbin laces with grounds – Honiton

*Illus. 5 and 5a (detail)*
Honiton bobbin lace, 1880-1910, white cotton. Honiton lace is most often found applied to machine-made net but it sometimes has a needle-made ground or is a guipure as here. The pattern is linked by bobbin made bars with picots. *© Nottingham City Museums*
Identifying Handmade and Machine Lace
Characteristics of main bobbin laces with grounds – Lille

Illus.6 and 6a (detail)
Lille bobbin lace, 1790-1810, white linen.
(NCM 1991-336 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of main bobbin laces with grounds – Lille

Illus.7 and 7a (detail)
Lille bobbin lace, 1840-60, white cotton.
(NCM 1972-30/203 © Nottingham City Museums)
Identifying Handmade and Machine Lace
Characteristics of main bobbin laces

**Illus. 8**
Bedfordshire Maltese bobbin lace, 1860-80, black cotton. This example has the characteristic bars with picots, wheatear plaits and nine pin edge. (NCM 1991-336 © Nottingham City Museums)

**Illus. 9 and 9a (detail)**
Silk bobbin known as ‘blonde’, 1820-30, probably made in Caen. (NCM 1972-30/530 © Nottingham City Museums)
Identifying Handmade and Machine Lace
Characteristics of main needle laces with grounds – Alençon

Illustration 10 and 10a (detail)
Alençon needle lace border, 1770-90, white linen. The cordonnet (outline) is closely buttonhole stitched. The mesh is ‘tortille’ whipped over. (NCM 1981-509 © Nottingham City Museums)

Illustration 11 and 11a (detail below)
Alençon needle lace border, 1850-60, white linen. The cordonnet (outline) is closely buttonhole stitched. The net is made from left to right by making a loop, twisting the thread around the side of the loop before making another loop and so on. At the end of the row the thread is taken back to the beginning through the loops making a new square mesh. Brussels point de gaze is similar but the thread is not returned to the beginning but makes another row of loops. (NCM 1972-30/179 © Nottingham City Museums)
## Identifying Handmade and Machine Lace

### Characteristics of machine-made lace

<table>
<thead>
<tr>
<th>Name &amp;/or machine</th>
<th>date span</th>
<th>Ground</th>
<th>pattern</th>
<th>outline (when used)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocking frame</td>
<td>1760s-1780s</td>
<td>transferred loops</td>
<td>rows of horizontal loops</td>
<td>hand run</td>
</tr>
<tr>
<td>Single pressed point net made on stocking frame; largely superceded by double pressed, continued in France</td>
<td>1770s- mid 19th C</td>
<td>hexagonal, made by transferring loops; relies on dressing to keep its appearance</td>
<td>hand embroidered</td>
<td>hand run</td>
</tr>
<tr>
<td>Double pressed point net; finished in Britain in 1810s, continued in France; made on stocking frame</td>
<td>1786 – 1840s</td>
<td>hexagonal, made by transferring loops; relies on dressing to keep its appearance</td>
<td>hand embroidered</td>
<td>hand run</td>
</tr>
<tr>
<td>Bobbinet made on Heathcoat’s bobbinet machine</td>
<td>1809 to present</td>
<td>hexagonal ground made by threads transferring from side to side, very like Lille or Bucks grounds</td>
<td>hand embroidery (needle-running or tambouring), machine embroidery (from 1828), applique</td>
<td>hand run; or tamboured; machine embroidery (from 1828)</td>
</tr>
<tr>
<td>Leavers, made on adaptation of Heathcoat’s machine; Jacquard patterning device adapted to it in 1830s</td>
<td>1813 to present; patterned lace from 1830s on</td>
<td>all sorts; very versatile; most hand made grounds have been copied</td>
<td>ribbed (bobbin fining) imitation of clothwork (independent beam)</td>
<td>hand run (to 1850s) made with the ground and pattern 1841 onwards</td>
</tr>
<tr>
<td>Pusher, also an adaptation of Heathcoat’s machine</td>
<td>1813 to e.20th C (GB); to present (?) in France</td>
<td>hexagonal; ground made by threads transferring from side to side</td>
<td>imitation half stitch (as in Chantilly); threads pushed up together</td>
<td>hand run (to 1860s); by Cornelly machine from 1860s</td>
</tr>
<tr>
<td>Process</td>
<td>Year</td>
<td>Description</td>
<td>Technique</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Warp frame</td>
<td>1773 onwards</td>
<td>hexagonal, as chains vertical chains of loops in zigzag</td>
<td>hand run to mid 19th C</td>
<td></td>
</tr>
<tr>
<td>Raschel, development of warp frame</td>
<td>1859 to present, chiefly from 1950s for lace</td>
<td>hexagonal, as chains “inlay” threads trapped between chains</td>
<td>made with the lace</td>
<td></td>
</tr>
<tr>
<td>Barmen</td>
<td>1890s to present</td>
<td>twisted, very good imitation of hand, especially in narrow borders</td>
<td>as hand made with lace but usually not used</td>
<td></td>
</tr>
<tr>
<td>Machine embroidered: 1 &amp; 2 often referred to as chemical or burnt out: 1.hand-embroidering machine</td>
<td>1828 – 1920s</td>
<td>machine bobbinet or dissolvable fabric (after 1883)</td>
<td>pattern repeats using only one thread, usually small and each one identical rarely used</td>
<td></td>
</tr>
<tr>
<td>2.Schiffli</td>
<td>1860s to present</td>
<td>machine bobbinet or dissolvable fabric (after 1883)</td>
<td>two threads, above and below fabric, forming zigzag lockstitch rarely used</td>
<td></td>
</tr>
<tr>
<td>3.Bonnaz or Cornelly</td>
<td>1860s to present</td>
<td>machine bobbinet</td>
<td>close chain stitch in various thicknesses of thread chain stitch thicker than filling stitch; also used for stitching down muslin onto net</td>
<td></td>
</tr>
</tbody>
</table>
Identifying Handmade and Machine Lace

Characteristic of Machine Lace – Single pressed point net

**Illus.12**
Single press point net with applied embroidery, from an evening dress of c.1827, probably French; the silk net has one loop per vertical side and is very light and fragile; it relies upon its dressing (starch or gum Arabic) to keep its shape. (NCM 1907-190/1 © Nottingham City Museums)

**Illus. 12a**
Single press point net (detail)  
(NCM 1907-190/1 © Nottingham City Museums)
Identifying Handmade and Machine Lace
Characteristics of Machine Lace – Double pressed point net

Illustration 13
Double press point net with hand embroidery, 1800-10; more than one loop is used to make each side of the silk net and they bunch in the angles; again it relies on the dressing (starch or gum Arabic) to keep its shape.
(NTM 1926-166/63 © Nottingham City Museums)

Illustration 13a
Double press point net (detail)
(NTM 1926-166/63 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Bobbinet

**Illus. 14**
Bobbinet structure.
(© Nottingham City Museums)

**Illus. 15**
Needlerunning by hand on bobbinet; part of a woman’s cap, 1830-50.
(NCM 1972-30/522 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Leavers

Illus.16 and 16a (detail below)
Leavers lace border, 1870-80, white cotton; a complex pattern with a variety of fillings, not a copy of a hand-made lace. The ribbing in the solid areas (clothwork in hand-made lace) is clearly seen, running horizontally here as it would be worn. Ribs run vertically when the lace is on the machine.
(NCM 1991-231/477 © Nottingham City Museums)
Identifying Handmade and Machine Lace
Characteristics of Machine Lace – Leavers

**Illus.18 and 18a (detail below)**
Leavers lace border, 1870-80. White cotton, imitating Cluny lace; the thick threads which form the pattern are held together by thinner binding threads. In a piece of hand-made Cluny lace all the threads are of the same thickness. (NCM 1991-231/454 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Pusher

Illus. 19
Pusher lace structure

Illus. 20 and 20a (detail below)
Pusher lace border, 1840-70, black silk, probably Nottingham. The outline is put in by hand.
(NCM 1907/174 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Pusher

**Illus.21**

Part of a Chantilly bobbin lace cap, 1840-50. Both Chantilly and Pusher lace are made from a matt black silk called grenadine. Large hand made items could only be made in strips which were sewn together with a special stitch, point de raccroc. Here the joining threads have gone revealing the original strips. Large items in Pusher lace were made in one piece and this is one of the ways of telling the two laces apart. (NCM 1931-60 © Nottingham City Museums)

**Illus.22**

Pusher lace mat, white cotton, c.1920, probably French. The outline has been put in by a lockstitch machine. (NCM 1972-30/41 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Warp frame

Illus.24 (below) and 25 (above)
Warp frame lace, 1810-30, white cotton; the net is very similar to point net except for the stray threads crossing the mesh. (IMG_0775 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Warp frame and Raschel lace

Illustration 26
Warp frame lace, 1804-1814, white cotton; the chains which are characteristic of warp frame lace can be clearly seen. (IMG_0781 © Nottingham City Museums)

Illustration 27
Allover pattern Raschel lace, 1970-75, nylon, probably a dress or lingerie lace made by Arthur Phelps & Co. Ltd. of Nottingham. The sides of the mesh are made up of chains and the pattern threads are inlaid, trapped between the chains. (NCMG 2007-56/13 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Barmen and Machine Embroidered

**Illus.28**
Barmen lace border, 1920-30, cream silk. A very close copy of Cluny lace (NCMG ???)

**Illus.29 and 29a (reverse side above)**
Border embroidered by ‘hand machine’, from the trimming on a baby’s carrying mantle, 1870-80. The pattern repeats are identical, especially noticeable when the thread passes from one motif to the next.

(NCMG 2006-239 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Schiffli

Illus.30
Chemical lace made on the Schiffli machine, 1910-20, probably German or Swiss, part of a collar. The Schiffli machine uses two threads and makes a stitch similar to a closely spaced zigzag stitch on a domestic sewing machine. (NCM 2006-263 © Nottingham City Museums)

Illus.30a
Back of the Schiffli collar. (NCM 2006-263 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Characteristics of Machine Lace – Schiffli

Illus. Neex
Nottia

Illus. 31a
Detail of above
(NCM CTM 128 © Nottingham City Museums)

Illus. 31b
Detail of above – reverse side.
(NCM CTM 128 © Nottingham City Museums)
Identifying Handmade and Machine Lace

Glossary and useful terms

**Allover (machine)** patterned all over often with no obvious top and bottom; mostly cut and used as a fabric rather than a trimming

**Application** (hand and machine) one fabric applied to another, e.g. muslin onto net in Carrickmacross lace or bobbin made motifs in Brussels and Honiton application laces

**Bars/brides** (mostly hand) used instead of net to hold the lace together; lace using bars is called guipure

**Border** (hand and machine) trimming with one straight edge and one straight or shaped edge with picots (small loops); both hand and machine borders are made vertically with the straight edge to the right or left

**Clothwork** (hand) in bobbin lace the interweaving of threads so that the result looks like woven cloth

**Cordonnet/gimp** (hand) the outline of the pattern; not all laces have this, Valenciennes for example does not

**Fillings** (hand and machine) usually small areas of fancy nets within the pattern as opposed to the ground which is the net background to the lace

**Flounce** (hand) a deep border; (machine) a deep border made across with width of the machine; usually made on the Leavers machine as dress laces from 1920s onwards

**Galloon** (mostly machine) with two shaped edges; used in the same way as insertion

**Ground** (hand and machine) the net holding the lace together

**Guipure** (hand and machine) lace which has bars instead of net to hold the lace together

**Half stitch** (hand) in bobbin lace the interweaving of threads so that the result looks like a lattice; more open than clothwork; sometimes used for shading

**Hand or needle run** (hand) stitching in and out of the fabric, similar to darning; early lace embroiderers were called ‘lace runners’

**Insertion** (hand and machine) with two straight edges, used between the edges of two pieces of fabric, as application or as heading to a border

**Liner** (machine) the outline of the pattern, corresponding to the cordonnet in hand made lace
Motif (hand) in chiefly Brussels and Honiton laces a flower (for example) made individually for application to net; (machine) usually cut from a larger piece, again for application

Needle running (hand) see under Hand or needle run; (machine) Schiffli embroidery giving the appearance of being hand run

Picots (hand and machine) small loops on the edge of lace or on bars linking the various parts of the pattern (guipure)

Reseau (hand) French for net

Tambour work (hand) a chain stitch made using a pointed hooked needle and originally a round frame (the tambour or drum)

Tape lace (hand and machine) a bobbin or machine-made tape tacked over a pattern and connected by needle bars and stitches, when finished the tacking is removed and the lace released; there are various types, Branscombe and Luxeuil for example; Princess and Battenburg refer to particular patterns of machine made tape; lace made with tape with pointed ovals is sometimes, confusingly, referred to as Honiton lace

Three twist net (machine) a net with three twists per side of the mesh making a diamond shaped ground. Invented in the 1830s. There is no hand made equivalent. Much used for applied work especially in Brussels and Honiton and sometimes called ‘Brussels net’. There is also a much rarer four twist net.
Identifying Handmade and Machine Lace

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