

Shoemaking's 'big bang'

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There are many branches of archaeology that, over the years, have given us a greater understanding of our past in terms of the way we lived, what we ate, how we socialised and what we wore. Calceology is a branch that specialises in the study of ancient footwear, its fashions and technology, based on artefacts retrieved from archaeological digs. Although complete shoes are rarely found, sufficient evidence has been accumulated over the years from sites spread throughout Europe to provide a good picture of what took place in the past.

Shoes from the Medieval period follow a steady pattern until around 1500 when a technological breakthrough seems to have occurred. It also happened quite suddenly and though we cannot be entirely sure as to why, it nevertheless caused a major

change in the way shoes were made and set the pattern for the evolution of shoemaking as we know it today. This 'big bang' also affected shoe fashion, shoe guilds, mobility, and general culture. It in fact played a major part in the way Europe developed during that period.

Leather shoes recovered from the 10th through to the 15th centuries show that shoemakers at the time all used the turn shoe construction. The techniques employed were in fact dictated by the guild system that effectively controlled all trades and where knowledge was handed down from person to person within each particular specialist occupation. The first written documentation in regard to how shoes were made did not appear until the late 18th century. For anything earlier, we are forced to rely on fragments of shoes recovered from archaeological sites.

Reconstructions based on these finds rely on the accurate identification of the fragments themselves. For example, the chronological period for a particular set of fragments is based on other archaeological evidence from the site, similar examples already dated and from contemporary illustrations and paintings. Compared to most other archaeological artefacts, footwear had a short life and, due to rapidly changing fashions, is therefore extremely time sensitive.

TURN SHOES

Following the Roman period with nailed and sewn shoe constructions, the early Middle Ages through to the early sixteenth century as we have seen, used only the turn shoe method of construction. It requires a thin, flexible sole and an upper design that allows the last to be removed and re-inserted after the shoe has been turned right side out so that the seam joining the upper to the sole can be flattened and polished. In this instance, the last should be regarded merely as a 'sewing support' since it does not give the shoe its final shape whereas a true last does. The thin soles wore out quickly (15th century domestic inventories indicate five pairs per year for men) and were repaired with fore and rear half soles sewn on with a tunnel stitch.

Stages in making a Medieval child's turn shoe. CREDIT:

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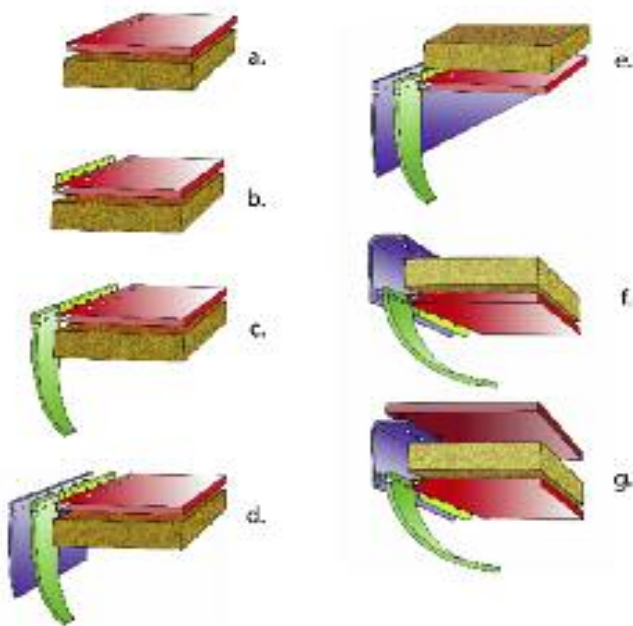


Fig1 – Pattens.

PATTENS

Sculptures from the 12th century suggest that wooden pattens were also worn in conjunction with leather shoes in order to protect the thin leather soles and to provide better traction in difficult or dirty conditions. The first pattens made with leather-covered cork soles appear in the early 15th century and appear in the St Veronica altar piece painted by the Flemish Master Robert Campion in 1415, while both wood types are shown in the Arnolfini wedding painting of 1434. The wood pattens symbolise the husband's work outside while the wife's leather pattens represent her life inside the home.

These leather-covered pattens followed a new method of construction in which the cork sole is used as a sewing support while stitching the insole to the side covers and straps (Figure 1 A-E). After the insole seam is stitched, the cork insole is removed and placed on the inside of the insole and side covers (Figure 1 F). The edges of the side covers are braced with a thread and the outsole sewn on with a tunnel stitch (Figure 1 G). This innovative construction was at first used only for leather-covered pattens and was probably protected by the patten maker's guild.

MULES

By the late fifteenth century, the technique of a cork insole was also applied to mules. In this instance, the thick, stiff cork sole was not used as a support when sewing the insole seam. Nor was the upper sewn with a turn shoe construction but temporarily attached to a last and the insole, upper and side cover stitched together with single seam (Figure 2 A-C). The cork insole was then put in place and the outsole sewn on with a tunnel stitch (Figure 2 E-F). The stiff outsole now used meant that the upper had to have the back open in order to remove the solid wood last, hence the 'mule' type of upper design.

The oldest archaeological examples of mules come from the Netherlands and date from between 1460 and 1550, while

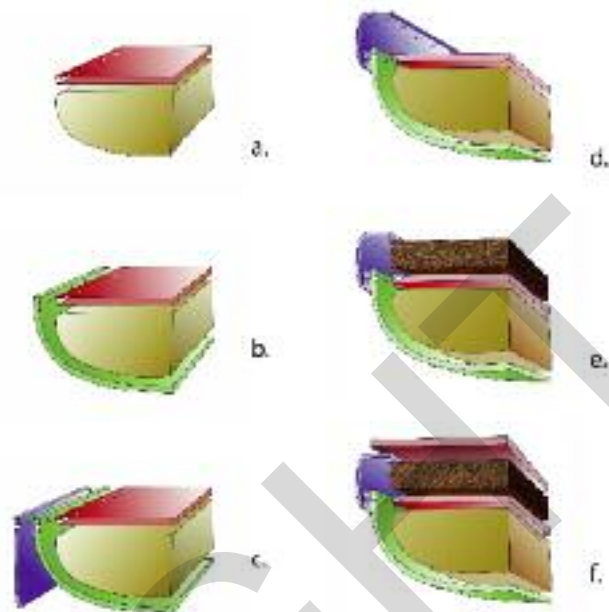


Fig 2 – Mules.

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the mule maker's guild itself was first mentioned in 1486. The first mule to appear in paintings of the period was in 'The birth of Mary' by the Oberrheinische Master and dated as 1460-1465. Other early images indicate they were used in the same way as leather-covered cork pattens to show women's role in the home. Then, suddenly, at the end of the 15th century, the shape and use of the cork-filled mule changed, as can be seen in contemporary paintings showing young men and mercenaries wearing round, bulbous toed mules together with a kind of light leather knee stocking. The thick-soled mule now becomes a symbol of the military man.

WELTED

The techniques used for stitching the insoles of leather covered cork pattens and mules were broadly the same as those needed for the welted construction (Figure 3) and something shoemakers must have been aware of. So, why did they not employ them to produce the much more robust welted type of shoe for another hundred years? It can only be a matter of speculation but was most probably linked to guild protectionism and the rigidity of 15th century thinking



Partially hand sewn welt.

CREDIT: JOHN LOBB, LONDON

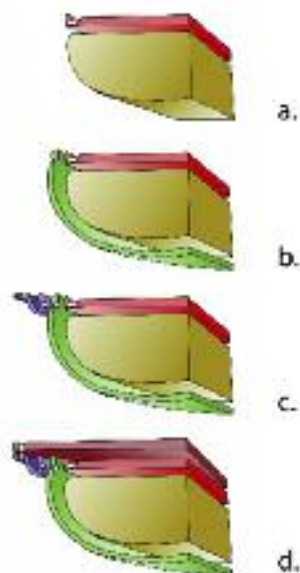


Fig 3 – Welted.

in general.

What is clear however is that the beginning of the 16th century saw radical changes at all levels of society. The New World was discovered, the professional mercenary soldier appeared, there were paved streets in towns, the use of printing became widespread and, arguably the most far reaching of all, the development of Protestantism allied to philosophical and technological changes all linked to the renaissance movement. Each of these factors may have played a small part in changing the mentality of shoemakers, though the paving of streets and new found mobility of the mercenary armies were probably the most direct.

STITCH DOWN

The invention of the stitched down construction seems to have occurred at about the same time as the welted shoe appeared but quite how it came about is not clear, as no clues can be found in earlier archaeological finds. However, it could be that once the idea of using a last instead of a sewing support had been adopted, the stitched down construction could have been a logical adaptation that at the same time also produced more robust footwear.

The way it was produced at that time was to sew the upper to the edge of the insole (Figure 4 A-B) with the upper flanged out and to which the outsole was then stitched (Figure 4-C). In its modern form it is often referred to as the Veldtschoen construction after the shoes worn by Boer farmers in South

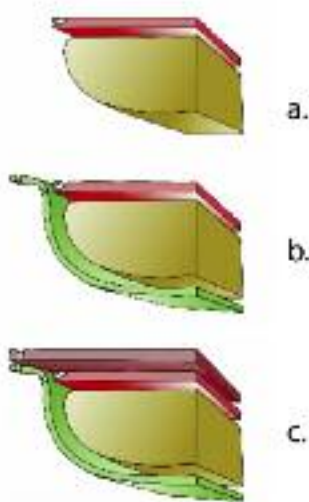


Fig 4 – Stitch down. CREDIT: MARQUITA VOLKEN

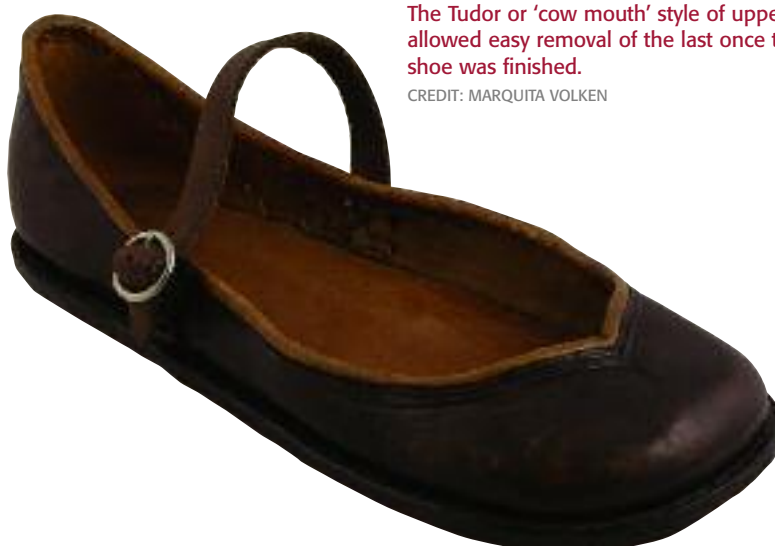
Africa. Furthermore, the insole now extends beyond the edge of the last so that upper, insole and outsole are all stitched together in a single operation.

In order to make such shoes using either the welted or stitched down construction, shoemakers needed to use a last instead of a sewing form. The combination of both a stiff insole and outsole securely sewn to the upper in turn meant that all shoes had to have a wide opening so that this solid last could be removed. Changing the fashion of closed shoe uppers to the open Tudor or 'cow mouth' style secured on the foot by a strap across the instep was a popular way of solving the problem. For a brief period at the beginning of the century, all three constructions can be found in the style of shoe: turn shoe, welted and stitch down.

THE WAY FORWARD

The turn shoe construction in fact continued in use right up to the mid 20th century but only for lightweight indoor shoes, slippers and some children's footwear. The welted construction, on the other hand, became the standard method of making shoes in general and, by the start of the 17th century, was sufficiently perfected to begin to incorporate toe and heel lifts with the latter having extra layers added as fashion demanded ever higher heels. Hand welted footwear reached its zenith in the mid 19th century and surviving examples demonstrate the extraordinary skills possessed by the best shoemakers (*World Footwear March/April 2011*).

Such shoes were inevitably expensive and poor people most usually wore second hand items. The one big advantage of the construction however was that shoes made this way could be re-soled and heeled repeatedly depending on the original quality of the shoes themselves. The invention by Charles Goodyear Jnr. in 1869 of a system to mechanise the hand welting process changed all this and made possible the mass production that drove down prices and made good shoes available to all. While the welted process now occupies only a very small and exclusive niche in the footwear market it was, nevertheless, its introduction in the early 16th century that created the 'big bang' which in turn led to the footwear industry we know today. 📌



The Tudor or 'cow mouth' style of upper allowed easy removal of the last once the shoe was finished.

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