

# Repairing Turnshoes

Pennsic XLVIII, 2019, A.S. LIV

Robert of Ferness ([kps1@cornell.edu](mailto:kps1@cornell.edu))

<http://www.ShoesByRobert.com/pennsic/2019/shoe-repairs>

Main points:

- Shoe soles wear out
- Repair option #1: replace the original sole
- Repair option #2: apply a clump sole

Items for examination:

- Pair of shoes with replaced soles and their old soles
- Single shoe repaired with a clump sole



## Introduction

Shoes wear out. There's only a single piece of leather between foot and ground, and it wears easily at the heel and ball of the foot. We have a few written records that show at least some people would replace shoes four times a year (Meek, 2017), but of course many things affect wear-and-tear such as gait, walking surface, foot health, wet-dry cycles, use of pattens, leather quality and care, just to name a few.

In the archaeological record, we find many more soles than uppers, inferring the replacement of worn-out soles (and assuming not many uppers were made of cloth that did not survive). We also find much evidence of repair and refurbishment, both professional and amateur. In some cases, shoes were repaired up to six times (Mould, 2014: 3349).

There are two main ways to repair turnshoes with worn-out soles: 1) replace the original sole with a new piece of leather; 2) attach a new piece of leather over the old sole (this patch is called a clump sole).

Depending on the skill of the leatherworker, the style of the shoe, the cost and availability of leather, the amount and location of damage, and the condition of the leather, it may be easiest / fastest / cheaper to choose one method over the other.

And what of uppers? Do they wear out? Do they need to be repaired? Yes, occasionally, but not nearly as frequently. Generally such repairs are effected by whip-stitching a hole or tear back together, or re-attaching a strap. Those could be made at home or by any leatherworker.

## Repair option #1: replace the original sole

In my experience, it's straightforward to replace an old sole in its entirety. This repair, done to historical shoes, is impossible to distinguish in the archaeological record. It seems to have been done often, given the number of soles vs. uppers found by archaeologists.



*Shoes with worn-out soles (left) and a detached upper/sole (right).*



*Stitching the new sole onto the old upper (left) and the new-soled shoes next to their old soles (right).*

### Steps to Apply a New Sole

- Detach old sole by cutting attachment thread (remove cut threads)
- Turn the upper inside-out
- Attach the new sole using normal shoemaker's stitch
- Soak the whole shoe and re-turn it

Note that many shoes recovered archaeologically have multiple-piece soles, which has been interpreted to represent repairs (Mould, 2004: 3348). This may be true, although it may also be the case that the original shoe was made thusly to maximise the use of leather.

## Repair option #2: apply a clump sole

The modern term for a piece of new leather applied over top of an old sole's hole is a "clump sole" and it usually covers a hole in the heel or one in the toe area, but it could be the whole sole.

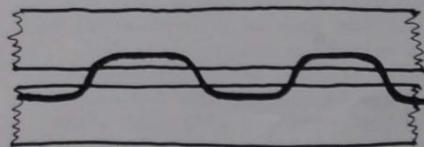
As I understand it, tunnel stitching is used to attach the clump sole. An awl is used to make a series of tunnels in both the original sole and in the new leather, and thread is pulled through them loosely while they are being made. When all the tunnels are complete and the thread has been put through, the thread is pulled tight, clamping the new leather to the old.



*Right shoe with sole hole (left photo), and with an attached clump sole (right photo).*

### Tunnel Stitch

A seam used in repairing to attach a new piece of leather, e.g. a clump sole (q.v.) on top of an old one. The holes enter the surface of each piece, pass for a short distance through the substance (between grain and flesh) and then reappear on the same side. Sometimes called a "caterpillar" stitch.



Tunnel stitching is used in order to protect the thread: you don't want to walk on it, which would happen if whip-stitching the new sole to hold it in place. In theory, one could make a groove in the new sole and then pass thread up and down within it and into the old sole / rand / upper as a way of attachment. Indeed, this is more than theory: this is how later shoes' outer soles are attached to uppers.

Historically, however, this way of shoebuilding follows the use of turnshoes so is not a repair option if wanting to stay true to their aspect. But just to get more mileage out of some shoes: sure, this method can be used to attach a new sole. (Illustration from Thornton, 1973).

### Steps to Apply a Clump Sole

- Soak old, hardened-leather sole in water for about 30 minutes
- Use an awl to make a series of short, alternating tunnels in old and new leather (bending the leather will help; a curved awl and/or curved needle / boar's bristle may also help)
- Run thread through the tunnels (I did this while making the tunnels)
- Pull thread tight (might be possible to do this in one tug, might be necessary to do it per stitch or for a few at a time, depending on friction and strength of thread and your grip)



*First tunnel being made with awl in old sole (left) and several tunnels in old and new soles (right).*



*Another angle on in-progress work (left) and stitching continuing on the other side (right).*



*Both sides of the applied clump sole.*

### **Notes and Thoughts About This Clump Sole Repair**

**My first try:** this is my first attempt at such a repair. I have no doubt that it's rather crude, although Goubitz notes such repairs are often coarse (2007: 77). Perhaps the stitches should be smaller or closer together. The leather's difficult to work this way, though, so I'm not sure how I would do anything different. Perhaps I could make more tunnels or smaller ones, but that would take even longer and be harder to achieve. I would much prefer to simply remove the old sole and apply a new one. That might take a bit longer, but it would look a lot nicer and feel more comfortable at the end, based on my experience so far.

**Comfort:** the clump sole adds significant weight to the shoe, and while not uncomfortable, definitely changes the feel of the shoe. Both the original sole and the clump sole are 9/10 oz. veg-tanned leather. The clump was applied with hand-waxed linen thread.

**Original sole size:** When it comes to deciding between replacing a new sole vs. applying a clump sole, determining the size and shape of the leather needed may be a factor. When I replaced the sole on the shoes illustrated above, I had a pattern available for the original so I just cut out a new sole from it, thus it fit perfectly. For the clump sole, I made a tracing of the shoe as-is and rough-cut leather to fit it, more or less successfully. Without the original pattern in the first case, it would have taken longer to size a new sole. Simply tracing the old, worn out one is not feasible because it's too distorted. (It might be feasible to remove the old sole, soak it, and then trace it as a good starting point for sizing.)

**Last vs. table:** As above when deciding on a repair option, it might matter whether or not one is used to working on a last to make shoes. If one prefers a last, then simply removing the sole and attaching a new one might not be a comfortable way to work. Although I have made shoes on lasts, the new soles for the shoes above were stitched on without one.

**Other repair options:** Much less frequently repairs were made by turning a shoe inside-out, then applying a patch to the inside of the sole. Further, very rarely, a clump sole might be nailed on or attached with wooden pegs rather than tunnel stitching (Goubitz, 1987: 77).

## Acknowledgement

Thanks to Mistress Rhiannon y Bwa for suggesting this topic. I hope you have found this class useful as a way to give new life to worn-out shoes.

Illustration on page 1 is from <https://hausbuecher.nuernberg.de/75-Amb-2-317-122-r> (Mendel I).

## Sources and Further Reading

Goubitz, O., et al., 2007. *Stepping Through Time: Archaeological Footwear from Prehistoric Times until 1800*. SPA Uitgevers. [See especially pages 77 and 84-87.]

Meek, C. 2017. "Calciamentum: Footwear in Late Medieval Lucca" in *Medieval Clothing and Textiles* 13, 83-105. Netherton, R. and G. Owen-Crocker, eds. The Boydell Press, Woodbridge, UK.  
[Documentary evidence of how often at least some people bought new shoes in one place and period.]

Mould, Q., 2004. *Craft, Industry and Everyday Life: Leather and Leatherworking in Anglo-Scandinavian and Medieval York* (The Small Finds). Council for British Archaeology. [See especially pages 3258, 3271, and 3346-9. Download this document for free from [https://archaeologydataservice.ac.uk/archives/view/yat\\_2011/downloads.cfm](https://archaeologydataservice.ac.uk/archives/view/yat_2011/downloads.cfm) along with others covering finds from York.]

Thornton, J. 1973. "A glossary of shoe terms" in *Transactions of the Museum Assistants' Group*, Number 12. P. Doughty, ed.

