

Needle Binding: The Coptic Stitch And How To Make A Coptic Sock

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Needle binding occurs in most culture as knotless netting, used for making carrying nets for ceramic containers and for fish nets. These are often made in vegetable fibers, such as hemp and linden bast¹.

From Egypt we have several two toed socks made in the Coptic stitch; the Victoria and Albert museum sock (4-5th Century A.D), the Petrie museum sock (Hawara 400-500 AD), and the Kelsey museum sock, and a pair of baby socks, in the Ashmolean museum (from Fayum, Egypt, 300-400 AD). The adult socks are in one color, while the baby socks are striped.

The V&A two-toed socks are made in 3 ply wool, and dated to the 4th -5th century A.D⁴. These socks were found at the burial grounds in Oxyrhynchus, a Greek colony on the Nile in central Egypt.⁴

In Scandinavia and northern Europe, the technique has been used for making milk sieves, socks, hats and mittens in hair and wool. There are several milk sieves made from cow hair preserved from the early 19th Century, and there is a wooden sieve cup found in queen Åsa's grave in Norway¹. The oldest actual find in Europe to date, is the 10th century sock, or shoe liner, that was found in Coppergate, York². The famous Åse mitten, which first was dated to 3-4th century, was later re-dated to 1510-1640, and is no longer considered the earliest example³. There are several mittens found in Oslo and Lund, dated to 13th century¹. The identity of the stitches is not clear - the Oslo stitch is not the stitch seen in the picture of the Oslo mitten in Nordland's book, but is identified with another stitch from "Nålbinding, 12 varianter", a book that collected several stitches from Sweden around the end of the 19th century.

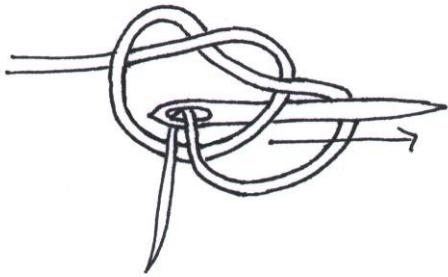
In all needle binding there is a primary and a secondary binding. The primary makes one string - one row, the secondary is how the string is joined to the previous row. So besides many stitches being different in the primary binding, you can also get different result with the same stitch by varying the secondary binding.

Most needle binding stitches is worked around the thumb, with loops being picked, twisted or moved off the thumb. There are stitches with one thumb loop and stitches with three or more. The Coptic stitch is a needle binding stitch that does not employ a thumb loop. It is also different from many other needle binding stitches, since you can work this stitch back and forth, besides working the stitch in the round. In this way it works and looks very similar to knitting, except for the "v" being upside down.

To start working with the Coptic stitch, you first need to make a starting loop, in this case an over hand knot. See picture 1. This is the foundation for two different starting rows, a circular starting row for mittens, hats, socks etc, and the chain starting row, used for flat pieces or square mittens, etc. The first stitch is the same in both starting rows, the difference is where the second stitch is added.

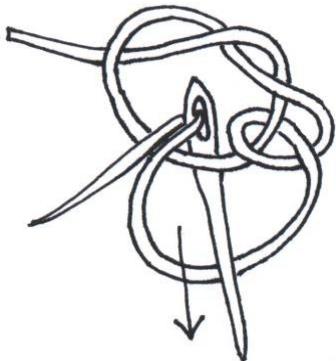


Picture 1. The over hand knot foundation loop.

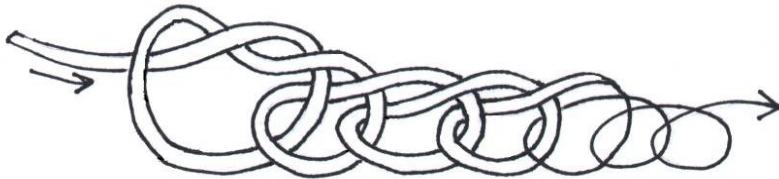
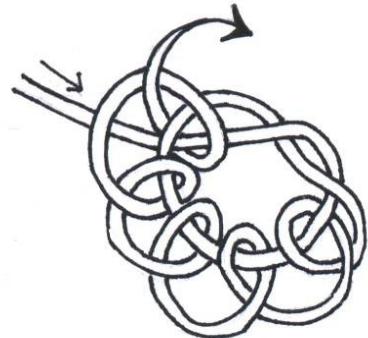


To make the first stitch on the foundation loop: Hold the foundation loop in your left hand, and create the first stitch on the foundation loop by placing (and pulling through) the needle as seen in picture 2. For the circular start, continue to repeat the stitch and add it around the loop, as seen in picture 3. For the chain starting row, see picture 4, where the second stitch is added in the first stitch, and subsequent stitches causing a chain.

Picture 2. Foundation loop with the first stitch. Arrow showing direction of needle

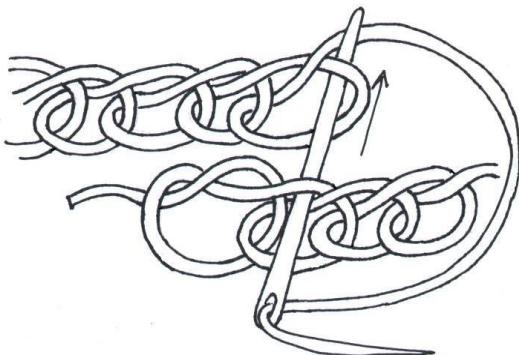


Picture 3a, left, the circular start with two stitches and 3b, right, with almost a full circle. Arrow in b showing the start end of the foundation loop. Arrow in a, shows the direction of the needle



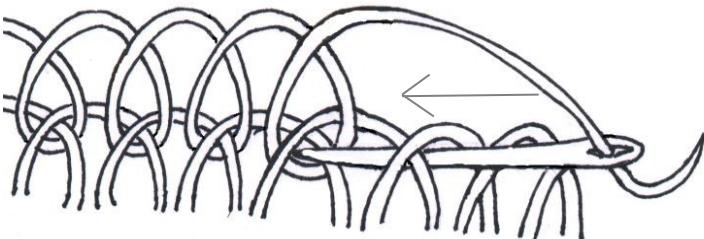
Picture 4, a chain stitch start, arrows the direction of the thread

To join the ends of a chain starting row to create a tube, see picture 5, for the position of the needle and the place where to join the rows.



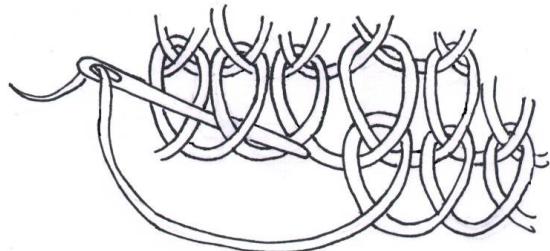
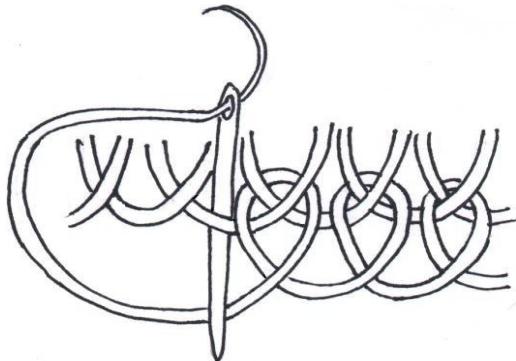
Picture 5. The chains are joined just before the foundation loop, further stitches are done as in picture 6, under the X, working the Coptic stitches.

Working the Coptic stitch, the row grows from left to right, but the needle is inserted from the right to the left, under the crossing X in the loops of previous rows, see picture 6, the arrow showing the direction of the needle.



Picture 6. Working the Coptic stitch, joining previous row with the row currently being made.

To increase and decrease the amount of stitches, for shaping a garment, such as a sock or a mitten, it is similar to knitting. To increase, add a stitch in the loop between the crossed X, as seen in picture 7. To decrease, skip one X when working the stitches, as seen in picture 8.



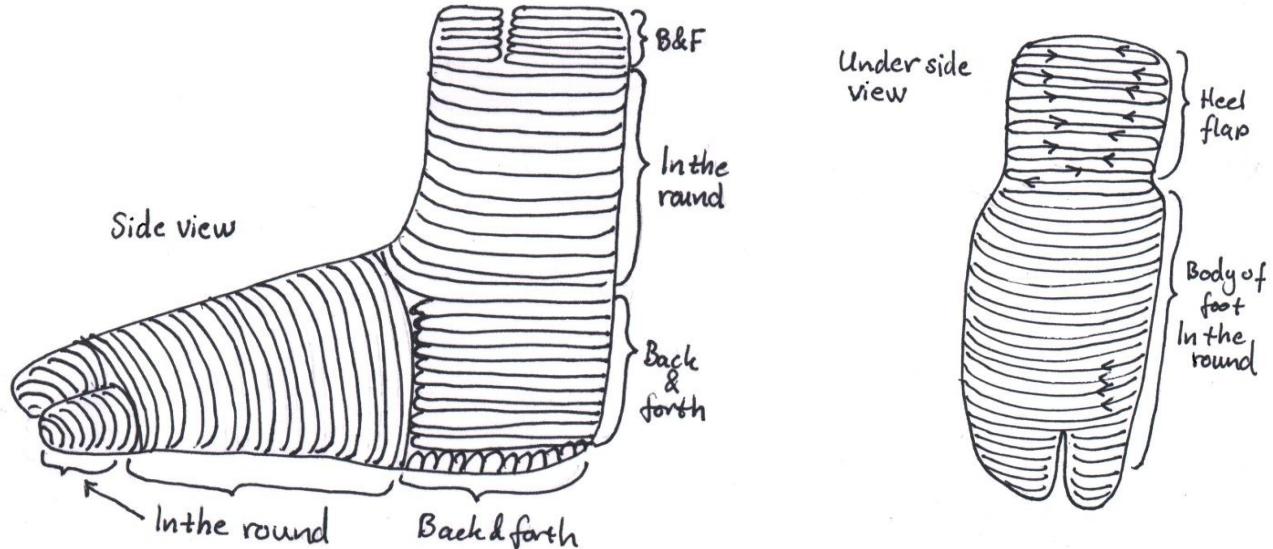
Picture 8. Decrease by skipping an X when making the next stitch.

Picture 7. Increase by adding a stitch in the loop between X:es.

To work a flat piece, there are three ways of working back and forth. The first is to use the knitting turn - to work on the front side, and when turning back, work on the back side. This creates visible horizontal ridges. The second way is to turn the work upside down to continue working from the front, from left to right. The third way is to switch the needle over to your left hand and work backwards along the front, still working the actual stitch from right to left. To keep the edges straight on a square piece, you will have to add an increase stitch (it is the same as a button hole stitch) at the edge before turning - you will not add a Coptic stitch in this extra stitch when you start on the next row after the turn. Flat pieces worked back and forth will have a slightly different look than Coptic stitch done in the round. In the round the stitch looks like a stockinette stitch, with quite obvious vertical ribbing, but with the "v" upside down, compared to knitting. Working back and forth, the vertical ribbing disappears, and it looks more like twisted knitting.

The Victoria and Albert museum Coptic sock (4-5th century), has two toes, a medium long shaft with a slit with a loop and a string. The Coptic stitch creates a textile that readily curls, and having the slit with the tie closure, is one way to stop the sock from coming down.

The sock is worked from the toes, creating the big toe and the multiple toe piece first. These two toes are done in the round, and joined in the round to create the body of the foot of the sock. When reaching the ankle of the sock, a heel flap is made by working back and forth. When the flap is done, you work the sides of the heel by working back and forth to the left and right edge of the sock foot, catching the sides of the heel flap, working until the rows are built up to the height of the foot. At this point you begin to work the shaft in the round, by connecting to the top of the body of the sock foot. To make the slit at the top, you again have to shift from working the stitch in the round, to working the stitch back and forth.

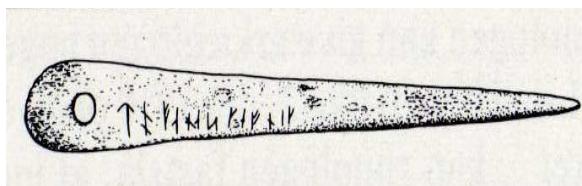


The arrows in the under side view shows the different in the direction of how the rows are worked. The lines represent how the rows are organized, the Coptic stitch will create vertical ribbing on the sock. The stitch is very elastic, but trying it on while making it is recommended, especially for the heel and to make sure you can get the sock on, past the widest point of the foot.

The original was made in a 3 ply wool yarn, but any ply of 100% wool will work. It needs to be wool, since needle binding uses a finite threads, that are joined when needed. The joining is done by splitting the ends, overlapping them, and then moistening the joint. This is most often done by sticking it in your mouth, but you can also spray it with water. The moisture, and the alkaline conditions of the saliva, causes the scales on the fibers to stick out, and when rubbing the join between the palms of your hand, the heat and the friction causes the fibers to entangle and felt together, joining the two ends of the yarn.

For a needle you can use a modern tapestry needle with a large enough eye, or you can make your own needle. I recommend using a wood with a small grain, and to carve it when fresh, but let the wood dry over night before drilling the hole, or it will most likely split. For a tight method as the coptic stitch I recommend a round and narrow needle, for more relaxed and elastic bindings I recommend a flat needle.

Needles are found in huge quantities, both in Egypt and in Scandinavia, there is one needle that we can for sure identify as a needle binding needle, and that is this one:



It is a needle found in Lund, Sweden, that carries a runic inscription, saying "Anne Tuesøns skämning", where skämning is an old name for a needle binding needle⁵. Picture 318, page 368, needle with runes, from "Uppgrävt förfletet för PKbanken i Lund", "Runerne" Erik Moltke.

Sources:

1. "Primitive Scandinavian textiles, in knotless netting". Odd Nordland, Oslo university press
2. "Textiles, Cordage and Raw Fibre from 16-22 Coppergate". Walton, Penelope. York Archeological Trust 1989.
3. "Nålbinding, 12 varianter", Västmanlands läns Hemslöjdsförbund. 2001.
4. The Victoria & Albert museum on -line collections. Museum number 2085&A-1900.
5. "Uppgrävt förfletet för PKbanken i Lund. En investering i arkeologi", red. Anders W. Mårtensson. Archaeologica Lundensia, Investigationes de antiquitatibus urbis Lundae VII. Kulturhistoriska museet i Lund, 1976. - An anthology collecting several articles regarding the finds made during a huge excavation in Lund. Needle accession number: KM 11028.