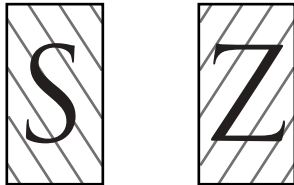


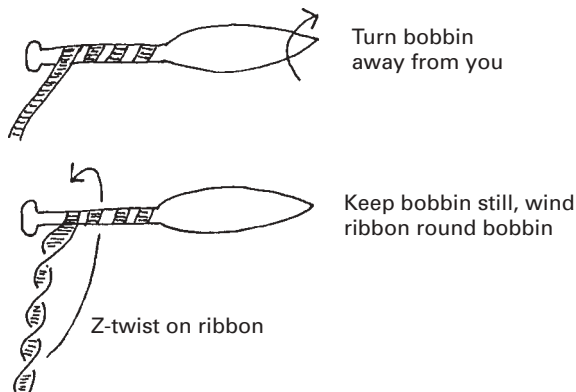
## Winding & Twist Direction

Threads are usually made up of two or more single strands twisted or plied together either clockwise (S-twist) or anti-clockwise (Z-twist). If you try untwisting a few different threads you will find that most linen threads have an S-twist (twisting anti-clockwise untwists them, twisting clockwise tightens them again), some cotton and silk threads, usually those manufactured for crochet and machine embroidery, will have a Z-twist, while others, particularly the finer ones, will have an S-twist.

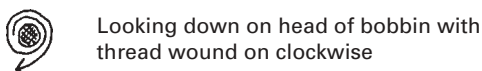


When I was fairly new to lacemaking I was told that because of the difference in twist, linen thread should be wound on to bobbins in the opposite direction to cotton thread as this would stop it breaking. No one was able to explain to me exactly why this was so and as I never had any trouble with linen thread breaking anyway, I have always wound all threads on in the same direction — clockwise looking down on the head of the bobbin. However, something I read in a book by Ulrike Löhr suggested a little experiment which explains why the direction you wind could matter for linen thread.

First find a large bobbin and some narrow ribbon (1/8th of an inch wide is ideal). Stick the end of the ribbon to the bobbin with a bit of Sellotape (Scotch Tape) to stop it coming undone, hold the bobbin in your right hand, and start winding the ribbon on to the bobbin by turning the bobbin away from you — the ribbon winds on smoothly. Now keep the bobbin still and wind the ribbon around it instead — what happens? The ribbon twists and it's impossible to wind it on smoothly.



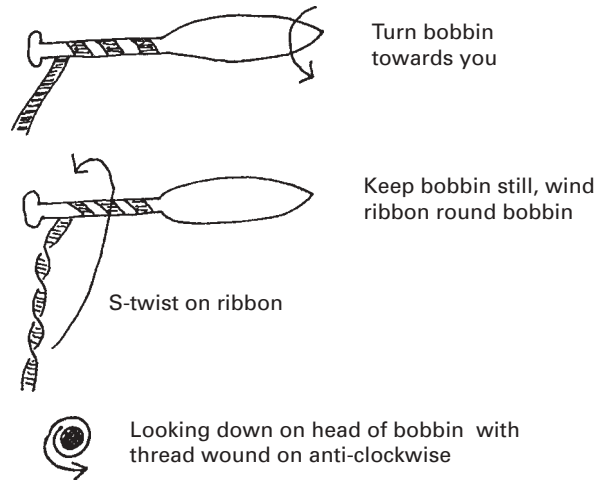
Have a look at the direction of the twist on the ribbon — is it S or Z? If the ribbon is being wound clockwise round the bobbin (looking down from the top), as in the diagram above it will have a Z-twist.



Looking down on head of bobbin with thread wound on clockwise

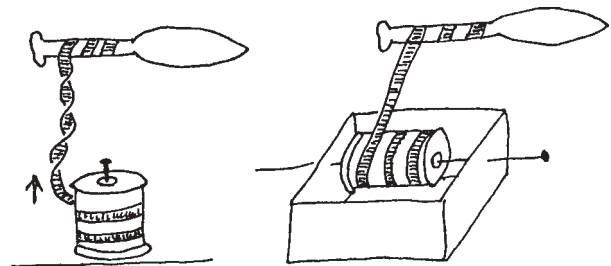
So if you wind bobbins by wrapping the thread round them like this rather than by turning the bobbin you will add to the twist on Z-twisted threads but take it away from S-twisted linen threads which will start to separate into their component strands.

Conversely, If you wind the thread round the bobbin in the opposite direction (anti-clockwise) as in the diagram below, the reverse will happen and the linen thread will end up with extra twist.



This means that if you wind bobbins by winding the thread round the bobbin rather than by turning the bobbin, it would indeed be better to wind linen thread on to bobbins in an anti-clockwise direction. However, it would be even better to try and make yourself turn the bobbin instead of winding the thread around it. I am a great believer in being kind to threads and subjecting them to as little stress as possible — they don't like being either untwisted or over twisted !


While you have the narrow ribbon you could try another little experiment. This time you'll also need an empty cotton reel. First stick the ribbon to the reel with a bit of sellotape and then wind the ribbon on to the reel (by turning the reel). Put the reel on to a long pin stuck in your pillow and pull the ribbon from the top of the reel as you wind it on to the bobbin (by turning the bobbin). The ribbon will twist as it comes off the reel.



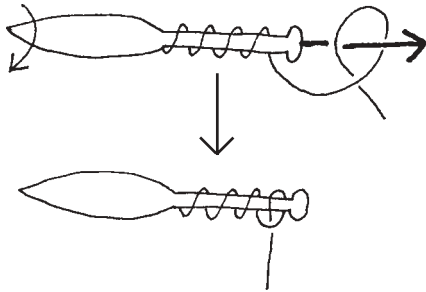
Wind the ribbon back on to the reel but now support the reel on a knitting needle fixed across a cardboard box (see diagram). When you now wind the ribbon on to the bobbin it will wind smoothly. Something else to think about when you next have bobbins to wind!

## Making the Hitch

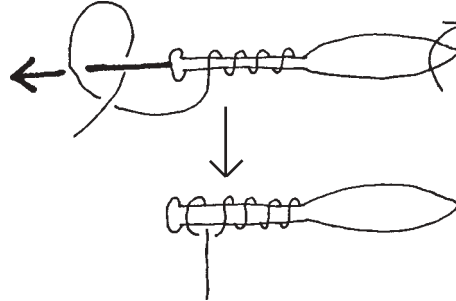
The hitch used to prevent the thread unwinding from the bobbins depends on the direction in which the bobbins are wound.

1. Thread wound on *clockwise*  Top of bobbin


Bobbin held in left hand — turn towards you



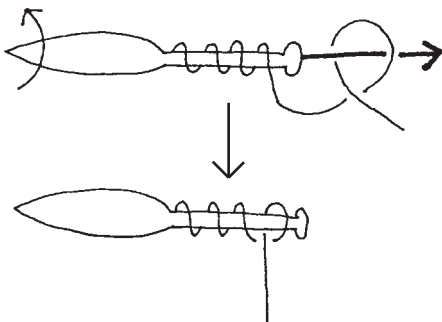
Bobbin held in right hand — turn away from you



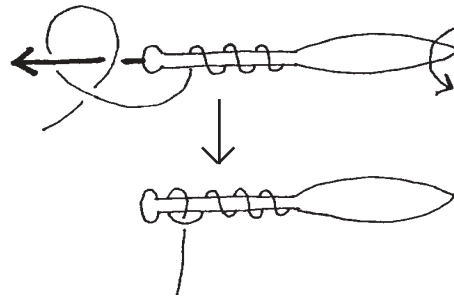
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2. Thread wound on *anti-clockwise*  Top of bobbin

Bobbin held in left hand — turn away from you



Bobbin held in right hand — turn towards you



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It's worth spending time checking that you've got it right! Try it out with a large bobbin and string so you can see what the 'thread' is doing.

### 3. Making a double hitch

If you have made the hitch correctly and the bobbin still unwinds try a double-hitch (shown on the right) which may hold better. Make two loops on top of each other, instead of the single one.

