The Development of Sewing Cotton in Britain 1798-1862[1]

by Molly Pearce, 2020

> *"This cotton sewing thread was a great invention, a wonderful improvement on the flax thread in previous use, which it was difficult to get of sufficient fineness for some works and hardly possible to find evenly spun."*
>
> Elizabeth Grant, a child in 1804

Elizabeth Grant made this comment about the year 1804 when many years later she was describing her childhood. Flax thread and the alternative silk thread were both expensive, so it is not surprising that around 1800 experiments were being made in several different places aimed at developing a cotton sewing thread. These experiments were done in secret so it is difficult to find out the exact sequence of events; at present, this is what we know.

Richard Arkwright's water frame of 1769 produced a stronger, smoother thread than any other available, which was suitable for warp threads in weaving cloth, but it was not strong enough for sewing. To achieve a sewing thread, two or more yarns had to be twisted together (doubling) and then two or more doubled yarns had to be twisted together again in the opposite direction. This description simplifies a complicated process.

In 1798 Marsland, Son & Company started business as Spinners, Doublers and Sewing Cotton Manufacturers in Manchester. But in 1802 there was also a well-established sewing cotton industry in Paisley, so developments must have been almost simultaneous.

At first sewing cotton was sold in skeins or hanks. Before it could be used at home, the purchaser had to wind it into a ball, onto a flat winder of card or ivory, or into a cotton barrel.

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Figure 1 – Workbox showing a tangle of thread and floss which was not wound on to a holder. The straw work box also shows a bone spool with a tangle of unwound thread and also thread wound onto a folded paper tube and onto the reels built into the workbox. A red cardboard thread winder, edged in metal to protect the cardboard shape, has not been used.

By 1802 the engineer Marc Brunel had invented a device for winding cotton into balls which was quickly taken up by the industry. The cotton balls were wound in the same way as a modern ball of string, with a small label giving the size of the cotton inserted during the winding. None of the early balls found by modern research carry a manufacturer's name.

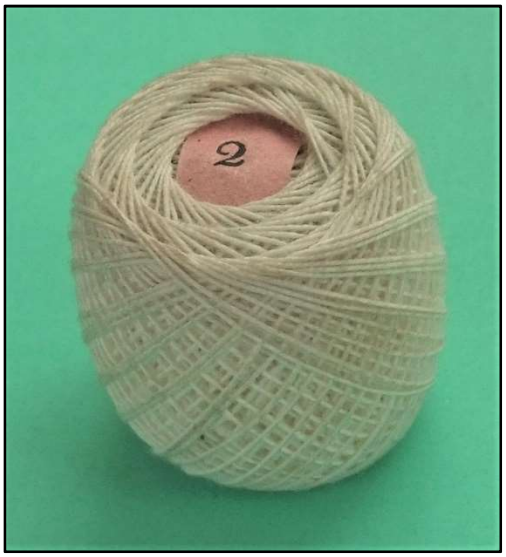

Figure 2 – an early machine-wound ball of cotton thread with size label inserted at the top by the winding machine.

For a while shop sold both skeins and ball cotton. An inventory of the stock of Cox and Hicks of Ringwood in Hampshire was taken in 1814. This shop sold everything from bonnet wire to snuff and barrels of herrings, but the stock included 2 lb (pounds weight) of sewing cotton in skeins at 5s 3d (five shillings and three pence) per lb and 4 ½ lbs of cotton balls at 5s 6d (five shillings and six pence) per lb.

Figure 3 – a Regency workbox fitted with wound balls of thread on the left, ivory thread barrels and winders along the bottom, and empty reels near the top of the box. The spools along the right side of the box are probably a later addition.

In 1818 Edmund Naish, a Bristol hosier and glover, took out patent No. 4221 for his Patent Diamond Cotton Balls. Naish realised he could make money from his invention and his Jonas Brook and Brothers of Huddersfield. The centre of these cotton balls was wound like those already being produced, but the outer layers of cotton were wound in an attractive diamond pattern, and they soon became very popular. In the early 1820s Miss Mitford described an imaginary country town of the period with one drapery and haberdashery shop run by Martha Deane. "I think I was never more astonished than when, on asking from mere force of habit for thread, I was presented instead of the pretty lattice wound balls or showy reels of cotton with which that demand is usually answered, with a whole drawer full of skeins peeping from their blue papers." The skeins reminded the author of her youth.

Figure 4 – Patent Diamond Cotton Ball

Developments in Paisley have become confused because when the Clark family became well known throughout Britain from the 1860s, they rewrote some of their early history. For instance, instead of the cotton thread industry developing there because Napoleon cut off supplies of silk from the Continent, it actually started some years earlier. I am inclined to

believe the story of James Clark who, in 1812, whenever he sold a skein of cotton would on payment of a halfpenny, wind it on a wooden reel. The money was refunded when the empty reel was returned. But instead of Clark taking the next step and selling this cotton on non-returnable reels, this seems to have been first done by James Carlisle of Paisley in about 1814. I have seen some early wooden reels from Regency workboxes. They have the size of the thread stamped on them but show no sign of ever having had a label with a maker's name. None of these early reels have survived in Paisley, either in the Museum or as part of the Coats/Clarks collection.

Figure 5 – early wooden spool of thread, showing the size stamped into the wood.

The use of makers' labels on the Diamond Cotton Balls and on wooden cotton reels in the 1820s shows that the manufacturers were slowly waking up to the importance of getting publicity for their products in what was becoming a crowded market. The oldest labelled reels I have come across have the Boar's Head crest of Walter Evans and Co of Derby printed in black on coloured paper and cut in a rectangular shape. They must date from early on in the 1820s, as later in the decade the Evans labels were printed in black on white paper and cut round to better fit the ends of the reels. Dated samples of these later labels with the full Evans coat of arms which were sent to the printer Perkins and Bacon still survive. It was not until the end of the 1830s that the maker's name was added.

Figure 6 – Progress in labelling Evans' Boar's Head brand thread – first black ink on coloured paper, cut in a rectangular shape and pasted on the top of the spool. Then the crest of the manufacturing firm in a round-cut label, and, finally, the name of the firm as well as the crest, this last about 1830. Note the lack of holes in the centre of each label – sewing machines were not yet invented.

In the 1820s and 1830s the first books about haberdashery, intended to be a guide for shopkeepers and some help for customers, were published. *The Haberdasher's Guide or a Complete Key to all the Intricacies of the Haberdashery Business* appeared anonymously in 1826. *A Treatise on Haberdashery and Hosiery* by E.E. Perkins was first published in 1833 and went into many later editions. The same author published *The Lady's Shopping Manual and Mercery Album* in the following year. By the time The Haberdasher's Guide came out in 1826, cotton was no longer sold in skeins.

Three qualities of sewing cotton were sold in balls, one of which was coloured. Bobbin or reel thread was already noted as a superior article. *The Lady's Shopping Manual* of 1834 goes into much more detail. Coloured ball cotton could be had in every variety of colour in 2 drachm and ¼ oz balls and in three qualities, Common, Super and Best. White ball cottons were in the same sizes and for quality of materials were called Common, Best, and

Patent. Quality was reckoned by the whiteness of the thread and its freedom from fine down, which was removed by passing the thread quickly through a gas flame.

Each quality could be had in the following numbers : 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 34, 36, 38, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100. The thickness of the thread is referred to as the size or count; the lower the number the stronger and thicker the thread. The very long list of numbers gives the impression that the thread manufacturers had already agreed a common numbering system. This was far from the truth.

Madame Dufour, author of the *Ladies Album for the Work Table*, published in 1849, states "makers of sewing cotton appear each to have his own way of numbering the spools – some begin at No 1, others at 12, 14, and so on." To get round this difficulty, the Victorian authors of little books on sewing recommended the cotton of one particular manufacturer. For instance, Madame Dufour liked Raworths of Leicester, while Mme Riego preferred Boar's Head cotton from Derby. E.E. Perkins noted that Chappée (Manchester), Fletcher (not yet identified) and Taylor (Leicester) were the best makers.

Figure 7 – comparing sizes on machine-wound balls and spools.

In the very early days of cotton thread manufacture, it was a very profitable business. By the 1830s and 1840s there were too many competing firms, and many bankruptcies. Little Mary hit the nail on the head in this extract from Mrs Warren and Mrs Pullan's *Treasures in*

Needlework, published in 1855. Mamma is trying to encourage Mary to do some needlework by telling her about the wonderful tools in her workbox. Eventually she says, "I think we have now examined everything except the sewing cottons. These are, I see, the same as are used in the *Family Friend* – Evans's Boar's Head cottons." "Yes, Mamma, I see they have a boar's head on the label. Why is that?" Mamma explains it is the family crest of the manufacturers and extols the virtue of the Boar's Head cotton. But Mary continues, "But surely, Mamma, there cannot be any difference in the quality of cotton. It seems to me that a reel of cotton is a reel of cotton, and that one is as good as another."

Increasing the attractiveness of reels was one way that manufacturers tried to make their products eye-catching. From the 1830s to the 1860s firms in Leicester and elsewhere in the Midlands used reels with their ends of turned bone and mother-of-pearl, stamped brass, horn, wood and entirely made of glass.

Figure 8 – Distinctive spools produced by I & P Clarkes and Raworth's.

Figure 9 - Materials and manufacturers for reels with distinctive tops –clockwise from extreme left –

- Barbers Penny Reel with an edge of pressed brass
- a flower-topped bone reel
- a top with painting or print under glass, with a pressed metal edge to hold the glass in place
- a mother of pearl topped reel
- Barbers, Leicester 70 xx,
- Raworths Nine Cord with a classical head in centre, pressed wood
- Excelsior, with the top of the reel cut in a Maltese cross shape – to allow the purchaser to see how much thread was being bought.
- a smaller mother of pearl topped reel,
- in the centre, IP Clarke Dorcas Six Cord

Such reels looked expensive, but often there was less thread on a reel or thread of inferior quality.

After William Weild of Manchester invented his improved spooling machine in the late 1850s, these decorative reels became obsolete. The new machine required wooden reels of uniform size and shape which it fixed in place ready for winding, guided the thread onto the spool until exactly 200 yards were wound on, cut a nick in the end of the spool, drew the thread end into it and then discharged the spool so that the whole process could begin again.

Figure 10 – "standardised" spools produced by the new, more efficient equipment

By 1861 when Weild read a paper about his invention to the Institute of Mechanical Engineers, there were about 30 machines working in different parts of the country – Huddersfield, Manchester, Derby, Paisley, and Glasgow. Jonas Brook and Bros. of Huddersfield showed one of these machines at work at the International Exhibition of 1862.

In the 1840s and 1850s the manufacturers also concentrated on making sewing thread smoother (making work box waxers unnecessary) and improving the colour. Several firms experimented with dipping the thread in a weak gluey material and then brushing it to achieve a lustrous or shining appearance, but the ultimate was Godfrey Ermen of Manchester's Diamond Thread patented in 1851. Ermen used a mix of soap and waxes, and then the thread was mechanically brushed under tension.

The earliest coloured cottons were produced using vegetable dyes, and they faded very quickly. Where the thread on a cotton garment would show, there was no alternative to using silk. But from 1856 aniline dyes were produced after an accidental discovery by the chemist William Perkin. The first of his chemically produced dyes was mauve, quickly followed by purple, magenta, crimson, violet, blues and greens.

In 1850 John Mercer patented his process for treating thread with caustic soda, probably aimed at increasing dye take-up. It was not until the late 1890s that the process was used to achieve a thread with a silk-like lustre, a satisfactory silk substitute. The mercerised threads were sold in Britain under names like Sylko, Syl-sol, Silkeena, Silcarn, and Silkee, playing on their silk-like appearance, or Perilusta, Glista and Armalustre, referring to their sheen.

By looking at the manufacturers who showed sewing cotton at the Great Exhibition of 1851 and the International Exhibition of 1862, it is possible to see an important change. In 1851 most of the exhibitors were English firms. In 1862 Coats and Clarks appear on the scene for the first time. Before then the majority of their production was exported to the United States through the port of Glasgow. In the 1860s these Scottish firms made an attempt to capture the English market and were very successful. Most of the Scottish cotton mills were new and their owners invested in the latest machinery, whereas a lot of English thread firms had old mills and out-of-date technology. Many of them were driven out of business and only the largest survived.

Bibliography and Notes

Grant, Elizabeth, *Memoirs of a Highland Lady*, Canongate Classics, 1992. See page 40 and page 68 of this edition.

Weild, William, *Proceedings of the Institution of Mechanical Engineers*, 1861. Weild showed Marc Brunel's original cotton balling machine of 1802 to members of the Institution.

In his article "Description of a Self-Acting Machine for Spooling Thread" published in these proceedings, Weild shows that he was very interested in the early history of the cotton thread industry, and it is he who gives credit to James Carlile of Paisley for being the first to sell thread on non-returnable reels in about 1814.

Blyth, H.E., *Through the Eye of a Needle; the Story of the English Sewing Cotton Company*, 1947. Marsland, Son and Co, founded in 1798, was one of the firms which joined the company when it was formed in 1897.

Sykas, P.A., "Notes towards a History of Sewing Thread in Britain" in *Textiles Revealed*, edited by Mary M. Brooks, Archetype Publications, 2000. Sykas was the first person to find the reference to "an extensive manufactory of cotton thread" in Paisley in Anthony Willich's *Domestic Encyclopaedia*, published in 1802.

Baldwin, Mary, *The History of Cox and Hicks of Ringwood*, 1989. I have had additional information about the shop inventory from Mary Baldwin.

Mitford, Mary Russell, *Our Village,* Everyman's Library, Vol 927, Dent, 1963. See page 206 for a description of the imaginary linen draper and haberdasher's shop run by Martha Deane.

Blair, Matthew, *The Paisley Thread Industry,* Alexander Gardner, 1907. This book contains inaccuracies. Treat with caution!

Grimwood-Taylor, James, *The Cavendish Chronicle,* February, 1998. Information about the black and white reel labels printed for Walter Evans and Co of Derby by Perkins and Bacon.

Garfield, S., *Mauve: How One Man Invented a Colour that Changed the World*, Faber and Faber, 2000.

Groves, Sylvia, *The History of Needlework Tools and Accessories*, Country Life, 1966, page 33. Sylvia Groves believed that the fancy reels would have been very expensive to produce and so would have been returned to the manufacturer for refilling when they were empty. This theory has been adopted uncritically by later writers. But the manufacturers in large mills were not equipped to deal with unpacking and repacking small parcels of reels. Possibly they could have been taken to a haberdasher where the correct amount of thread was wound on using a device like a clock-wheel but there is no evidence for this at present. Sylvia Groves did not consider the cost of cotton reels in the late 1830s and early 1840s. I know from my own research that prices ranged from a ha'penny to two pence ha'penny, but that cotton on plain wooden reels often cost two pence ha'penny while cotton on fancy reels was much cheaper. Manufacturers got round the cost of a fancy reel by winding on poor quality thread or short lengths – or sometimes both !

Cooper, Grace Rogers, *The Invention of the Sewing Machine*, Smithsonian Bulletin 354. Washington, D.C., 1968.

Samuel Slater and his wife took the secrets of the Strutt Cotton Mills in Belper, Derbyshire, and settled in Pawtucket, Rhode Island. She also managed to make a satisfactory sewing thread in the 1790s, but her husband did not manufacture it commercially until about 1809.

Exhibition Catalogues –

Official Descriptive and Illustrated Catalogue of the Great Exhibition of the Works of Industry of all Nations, 1851

Official Illustrated Catalogue of the International Exhibition, *London*, 1862.

The quotation from Mrs. Warren and Mrs Pullan's *Treasures in Needlework,* was found by Pam Palmer.

Finally, my thanks to David and Hazel Arnold for their help in many ways.