

Uncoverings 1998

Volume 19 of
the Research Papers of
the American Quilt Study Group

Edited by Virginia Gunn



Stitches in Time: The Development of Sewing Thread in the Nineteenth Century and Beyond

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One of the most overlooked, yet potentially important, aspects of any sewn item is the thread with which it is sewn. The number of plies, the construction method, and the materials used all point to when a type of thread was made. Sewing thread has undergone many changes through time as a result of technological advances, including the invention of the sewing machine, mercerization of cotton, and the introduction of synthetic fibers. While documentation for these changes is often sketchy, there are means by which the changes can be traced, including examination of thread in extant and dated textiles and analysis of advertisements for sewing thread. Consequently, changes in manufactured sewing thread can provide clues to the manufacture date for sewn textiles such as quilts.

All around the cobbler's bench
The monkey chased the weasel
The monkey thought t'was all in fun
Pop goes the weasel
A nickel for a spool of thread,
A penny for a needle
That's the way the money goes,
Pop goes the weasel.
English folk song¹

Sewing thread can prove to be an important tool in determining the possible age of a textile such as a quilt. In the fall of 1996 and the winter of 1997, I was fortunate to be able to study fifteen quilts from the private collections of Sara Dillow and Mary Ghormley.

These quilts were featured in an exhibit of nineteenth-century quilts held in the gallery at the University of Nebraska-Lincoln, Department of Textiles Clothing and Design, in March of 1997. Under the direction of Dr. Patricia Crews, I analyzed the quilts with the hope of better understanding the fabrics and thread. The ultimate goal of that project was to determine the possible manufacture dates of the quilts and to confirm the dates the owners already had for them.

Barbara Brackman's book, *Clues in the Calico*, became a very important source of information to help date the quilts, especially her discussion of Grace Rogers Cooper's research on the changes in thread through time.² Cooper had indicated some very clear-cut dates for the introduction of certain types of thread. She suggested that 3-ply manufactured thread was introduced around 1800, 6-ply thread around 1840, and 6-cord thread around 1860.³

One of the quilts in the exhibit, a Baltimore Album quilt owned by Sara Dillow, held confusing clues to its probable date of manufacture. Baltimore Album quilts like this one were usually made between 1845 and 1855, a few years before 6-cord thread was supposedly available.⁴ This quilt, however, contained 6-cord thread. While it is possible that it was sewn and quilted in the 1860s after the Baltimore fad had faded, another possibility was that 6-cord thread was available earlier than previously thought. Thus I began the research on when manufactured sewing thread came into existence, what changes thread went through during the nineteenth century, and when the changes occurred.

To use thread as a dating tool, one must obtain a sample of thread large enough that it can be untwisted to find the number of plies that make it up. It is the number of plies and how those plies are twisted together that determine a thread type. It is not always possible to obtain a thread sample from the sewing and the quilting threads for use in the analysis of a quilt without damaging the quilt, but when thread can be obtained, it proves to be a useful tool. Knowing when a new thread type was introduced helps to determine the earliest date an item may have been made.

Thread is made up of a series of plies or cords twisted together. Twisting and plying of strands of fiber create a stronger unit than the original strands. A ply is made up of two or more strands twisted together while a cord is made up of two or more plies twisted to-

gether. As mentioned, the earliest manufactured thread was 3-ply, which consisted of three single strands twisted together (see figure 1). Two-ply thread has two strands, 4-ply has four strands, 6-ply has six strands and so on. On the other hand, a 6-cord thread consists of three plies with each ply made up of two strands each. Four-cord would only use two 2-ply threads to make the finished thread (see figure 1).

Events Leading to the Invention of the Manufactured Cotton Thread

Today we take for granted going to the store and buying a spool of thread. This has not always been the case. It was not until about 1800 that manufactured cotton thread was available to the hand sewers of the United States and Europe and only after 1820 that thread came on a wooden spool.⁵ Before 1800, textiles were sewn with silk or linen thread and, rarely, homespun cotton or wool thread.

In the mid-eighteenth century the Industrial Revolution began. The textile manufacturing processes were some of the first to change, including the changes that resulted in the manufacture of cotton sewing thread.

James Hargreaves, in 1764, invented the spinning jenny, which greatly increased the speed at which yarn could be spun. Hargreaves's invention was not appreciated in its time; story has it that his machines were destroyed by a mob of handsp spinners who were afraid of losing their livelihood.⁶ The yarns made on a Hargreaves spinning jenny only had enough twist to make them sufficiently strong for use as weft yarns in woven goods. They were not suitable for the warp yarns in weaving or for sewing thread.

In 1769 Richard Arkwright designed a water-spinning frame that, unlike the spinning jenny, had a continuous operation from carding to spinning. Ten years later Samuel Crompton, in 1779, combined aspects of both Hargreaves's and Arkwright's inventions into the spinning mule. With either Arkwright's or Crompton's inventions, cotton could now be spun into a fine smooth cotton yarn suitable for either warp or weft yarns but they were still not suitable for sewing thread.

Figure 1. Drawings of the construction of the most commonly encountered thread types. Drawings by the author.

Plans for Arkwright's water-spinning frame made their way to the United States, despite England's attempt to prevent exportation of the plans or the emigration of those who knew how to build and operate the equipment. Samuel Slater, after an apprenticeship with Jedediah Strutt, a partner of Arkwright, immigrated to the United States and was soon hired to run the Arkwright-like frames owned by William Almy and Moses Brown, businessmen of Pawtucket, Rhode Island. Slater quickly made improvements in their equipment, making the business the first successful cotton textile concern in the United States. The yarns spun on this early equipment were suitable for weaving but were still not strong enough for hand sewing.⁷

The Invention and Early Development of Manufactured Cotton Sewing Thread

Cotton sewing thread was first manufactured in either the late 1790s or early 1800s; the exact date remains uncertain. There were two independent inventions of manufactured cotton thread around this time, one in the United States, the other in Scotland.

Tradition attributes the United States invention to Hannah Wilkinson Slater, the wife of Rhode Island textile manufacturer Samuel Slater.⁸ According to the story, one day in 1793 or 1794, Mrs. Slater was at Slater's mill in Pawtucket and admired the smooth even yarns that were being spun there for weaving. She took some yarns home and spun them together on her spinning wheel into a plied thread suitable for sewing. Thus she created the first no. 20, 2-ply thread.⁹ To test the quality of her thread, she sewed a sheet half-way with linen thread and finished with cotton thread. Supposedly the cotton thread outlasted the linen. While this account of the U. S. invention of cotton sewing thread is believable and even shows up in accounts as early as 1831, there will always remain some doubt as to its authenticity.¹⁰

George S. White, Slater's biographer stated that Slater immediately began, in 1794, the manufacture of cotton thread in his textile mills.¹¹ Other say it was not until a few years later, in 1797, that the first thread was manufactured.¹² By 1809, William Almy and Moses Brown, one-time partners of Slater, were making and sell-

ing cotton sewing thread. A Boston newspaper advertisement stated that the Factory Cotton and Thread Store had "five hundred pounds Cotton THREAD, in hanks, from No. 12 to 60, of superior quality and very white" for sale.¹³ An 1810 advertisement from Hartford, Connecticut, shows that Almy and Brown made yarn, cotton twist, weavers' filling, sewing thread, and cloth of varying kinds.¹⁴ Sewing thread, sold as hanks at this time, was a side product of some spinning mills. It was not until later that thread became commonly produced at mills dedicated to its manufacture. For example, the textile mills begun by Michael Schenck, in 1813, near Lincolnton, North Carolina, eventually developed the Lily brand sewing threads.¹⁵

In Europe the invention of manufactured cotton thread is attributed to Patrick or Peter Clark in the early 1800s. Most sources attribute it to Patrick Clark, while George A. Clark, sole agent in America for Clark's O.N.T. spool cotton in the 1880s, attributed it to Peter Clark.¹⁶ It is possible that Patrick and Peter are the same person but no evidence of that has yet been found. Patrick and his brother James made silk heddle twine in Paisley, Scotland, for the local weaving mills. Heddle threads were made of silk until 1806 when the French trade with England was cut off by Napoleon. Consequently, silk was no longer available in England to make the silk heddle threads. The Clarks turned to cotton as a possible alternative to silk. The smooth cotton thread proved to be an excellent substitute for silk and remained in use even after silk was again available. The Clark brothers quickly saw the potential use of these heddle threads as sewing thread. This new cotton heddle twine was smoother and more even than the linen sewing thread commonly in use at this time.

During the first half of the nineteenth century, most thread sold in the United States was from European manufacturers.¹⁷ Edward Bains stated that 1,187,601 lbs. of thread were sent abroad from England in 1833.¹⁸ While he does not indicate who imported the thread, some of it had to be reaching the American market.

James and Patrick Clark, the men attributed with the invention of manufactured sewing thread, built their first thread factory in Paisley, Scotland, in 1812. James Clark's sons, James Jr. and John, took over the business, forming J. & J. Clark Co. They were the first to put thread on a wooden spool around 1820.¹⁹ The Clarks

handwound each spool with 3-ply cotton thread and charged the customer a half penny deposit on the spool, which would be refunded when the customer returned the spool. In 1864, George Aitkin Clark and William Clark, grandsons of James Clark, opened a cotton thread mill in New Jersey.²⁰

James Coats, another predominant manufacturer of sewing thread began producing thread in Ferguslie, Scotland, around 1815.²¹ James Coats's sons, James and Peter, formed J & P Coats Company. Harry Ballam and Coats and Clark publications suggest that both Coats threads and Clarks threads were introduced to the United States around 1818 or 1820.²² Grace Cooper suggested that it was not until 1840, when Andrew Coats, brother to James and Peter Coats, became the first selling agent for J & P Coats in the United States, that Coats thread first became available to American markets.²³ Regardless, by 1869 the Coats began to manufacture sewing thread in Pawtucket, Rhode Island.²⁴ In 1896, J & P Coats merged with J & J Clark, but each continued to produce thread under their own names.²⁵

Homespun Cotton Thread

In studying the changes in manufactured cotton thread, it is important not to forget the importance of its homespun beginning. A great deal of information is gleaned from studying homespun thread and its implications in the dating of quilts and other textiles.

The earliest cotton sewing thread was homespun. It is likely, especially in the cotton-producing states, that some late-eighteenth and early-nineteenth-century textiles were sewn with homespun cotton thread, probably 2-ply. I have seen one quilt, dating from the very late-eighteenth to early-nineteenth century, sewn with irregular 2-ply cotton thread that appeared to be homespun.²⁶ Barbara Brackman, a noted quilt researcher and author, described a quilt, dated 1798, sewn with what appears to be homespun cotton thread.²⁷ The maker was from Virginia and would have had access to cotton. Cooper described some Copp family textiles, most of which date to the latter part of the eighteenth century and one which dates to the first quarter of the nineteenth century, as having 2-ply cotton threads. Other Copp textiles were sewn with combinations

of 3-ply cotton thread, 2-ply cotton thread, and 2-ply linen thread.²⁸ The availability of manufactured cotton thread did not immediately cause the abandonment of linen or other homemade threads. It also cannot be assumed that with each new improvement all the old thread was thrown out and the new thread was used exclusively.

It must be pointed out that homespun cotton thread is not always an indicator that it was made in a Southern state where cotton was grown. Manufactured warp and filling cotton yarns could be handplied into sewing threads much like Hannah Slater's first cotton thread. In a spirit of economy, thrums, weavers' threads left on the loom after the fabric is cut off, could be spun into sewing thread too.²⁹ Almy and Brown of Rhode Island sold warp and filling cotton yarn to markets as far away as New Hampshire.³⁰ Thus machine-spun yarns were available to spinners throughout the New England states for making into homeplied thread if they chose to make their own cotton thread.

While it seems likely that 3-ply cotton threads are machine-made rather than handspun, it cannot necessarily be inferred that 2-ply is an indication of homespun or homeplied thread. Edward Bains suggested that 2-ply, 3-ply, and 4-ply threads were machine-made in the 1830s in Manchester, England, and in Scotland.³¹

Finally, we cannot assume that all homespun 2-ply threads date only to the eighteenth or early nineteenth centuries. In the South during the Civil War, many women were forced by necessity to spin their own thread for weaving and sewing. Parthenia Hague, a young schoolteacher living on an Alabama plantation during the Civil War, wrote of her wartime experiences. She told how they made-do, to compensate for the many manufactured goods they could no longer buy from the industrial North:

Our sewing-thread was of our own make. Spools of "Coats" thread, which was universally used in the South before the war, had long been forgotten. For very fine sewing-thread great care had to be used in drawing the strand of cotton evenly, as well as finely. . . . From broaches of such spun sewing-thread balls of the cotton were wound from two to three strands double, according as coarse or fine thread was needed.³²

Changes to Manufactured Cotton Thread

At first, the most common cotton thread commercially available to handsewers was 3-ply, though 2-ply and 4-ply were also available.³³ Around 1840 cotton thread went through a change to 6-ply (see figure 1). This 6-ply thread did not gain popularity and was not widely sold.³⁴ When Grace Cooper served as curator of the Division of Textiles, National Museum of American History, Smithsonian Institution, she analyzed more than thirty early American flags dating from ca. 1800 to ca. 1870 and found only seven contained some 6-ply thread.³⁵ Other threads found in Cooper's study were 2-ply and 3-ply linen, 2-, 3-, 4-, and 5-ply cotton, and 2/2-ply (4-cord?) and 3/2-ply (6-cord) cotton threads.

Changes in sewing thread seem to be directly tied to the development of the sewing machine in the 1840s and 1850s.³⁶ At the time of the widespread distribution of the sewing machine, in the 1850s, the most common thread options were 3-ply or 6-ply cotton thread, silk thread, or linen thread. All of these proved to be inadequate in some way. The 3-ply cotton thread had a glaze finish and was too wiry and uneven for use in sewing machines and 6-ply cotton thread was too thick.³⁷ Regular silk and linen threads were either too weak or too thick to use in a sewing machine. Early sewing machines required a high quality thread that combined strength and fineness. A 3-ply silk thread, known as machine twist, was available by 1852. It combined strength with fineness, but was too expensive for most people.³⁸ Improving cotton thread seemed the only option for an inexpensive alternative to silk machine twist. Since two to four times more thread is needed to sew an item by machine than by hand, an improved cotton thread could prove profitable to its producers.³⁹

Around 1850 cotton thread went through another metamorphosis into what is known as 6-cord thread, which consists of three plies of two single strands each (see figure 1). According to current industry conventions, 6-cord thread would be designated a three, 2-ply cord. George Aitkin Clark is attributed with perfecting 6-cord thread during the early 1860s for use in sewing machines.⁴⁰ He introduced it to the market as O. N. T. or Our New Thread. Clark's 6-cord thread proved to be the best thread for a sewing machine, combining fineness with strength, and it was inexpensive. In 1880,

George A. Clark, the sole agent in the United States for Clark's O. N. T. wrote:

In fact, the sewing machine came into a world with no thread ready for it, thirty years ago [1850]. It called for a mathematical roundness and precision of size, strength and tension, and a smoothness of finish, such as had never before been thought of in thread. . . . By reduplicating many times over the refining processes at their command for the staple, the yarn and the cord; by the introduction of still finer machinery for carding, combing, and drawing the cotton; by substituting yarn finer by half in every number of thread, and doubling the number of yarns in the twisted product; by these and other novel refinements the modern six-cord spool cotton was soon perfected as the "true yoke-fellow" of the sewing machine.⁴¹

Other manufacturers adopted Clark's construction for their thread, quickly making 6-cord thread the industry standard.

George A. Clark indicated that 6-cord thread was already being made when George Aitkin Clark came to the United States in 1855 and that he only improved it by making it suitable for use with the sewing machine.⁴² I originally thought that Clark was referring to the 6-ply thread that had been manufactured since about 1840, but a *Scientific American* article dated 1850 states that C. E. Bennett of Portsmouth, New Hampshire, received a gold medal in 1850 at the fair of the American Institute for manufacturing "superior six-cord Spool Cotton."⁴³ While we may never know whether Bennett's thread had 6-ply or a 6-cord construction, this article is the first to use the term 6-cord to designate the construction of thread.

Recent analysis of twenty-four quilts with inscribed dates ranging from 1841 to 1859 found nine quilts which contained 6-cord thread.⁴⁴ Each of the nine quilts found to contain 6-cord thread had it used as either sewing or quilting thread (see table 1). This suggests that Bennett's thread could have been a true 6-cord thread as the *Scientific American* article indicated.⁴⁵ This also implies that the date of the introduction of 6-cord thread may not be as late or clear-cut as Cooper made it seem.⁴⁶ Analysis of these date-inscribed quilts and further research shows that 6-cord thread was possibly available for use around 1850. While it is possible that a quilt could be quilted after the blocks were made, the top assembled, and the date inscribed by ink or embroidery, it seems unlikely that all of

Table 1. Results from the analysis of the thread found in date-inscribed quilts made prior to 1860 found in the Ardis and Robert James Collection in the International Quilt Study Center at the University of Nebraska-Lincoln.

Accession Number	Date	Thread	Uses
1997.007.935	1821	3-ply	quilting
1997.007.749	1838	3-ply	quilting
1997.007.876	1841	6-cord	quilting
1997.007.421	1842	6-ply	quilting
1997.007.458	1842	6-ply	quilting
1997.007.697	1843	6-cord	quilting
1997.007.479	1844	4-cord	quilting
1997.007.955	1844	3-ply	basting
1997.007.444	1846	6-ply	quilting
1997.007.520	1847	6-ply	quilting
1997.007.023	1851	6-cord	quilting
1997.007.666	1851	6-cord	quilting
1997.007.149	1852	6-cord	quilting
1997.007.780	1852	6-ply	quilting
1997.007.570	1853	6-cord	sewing and quilting
1997.007.665	1853	4-cord	quilting
1997.007.832	1853	6-ply	quilting
1997.007.869	1853	3-ply	quilting
1997.007.654	1854	4-cord	sewing
1997.007.774	1854	6-cord	quilting
1997.007.908	1857	3-ply	quilting
1997.007.720	1858	3-ply	quilting
1997.007.730	1858	6-cord	quilting
1997.007.859	1859	6-cord and 4-cord	quilting

Note: All threads analyzed were cotton machine-made thread. Sewing thread could not be analyzed in all cases because it would have meant damaging the quilt to obtain a sample large enough to untwist. In the cases where sewing thread was available for analysis either it was only a quilt top or it was a damaged quilt where sewing threads were available without further damaging the quilt.

these quilts can be explained by this theory. One quilt had the date of 1852 quilted in with 6-cord thread.⁴⁷ The quilts made prior to 1850 that contained 6-cord thread were probably quilted some time after being dated with ink. Until other quilts or dated textiles of a similar age are found containing 6-cord thread, the date for the introduction of 6-cord thread cannot be taken back further than 1850s.

Little is written about the 4-cord thread similar to that noted in a number of quilts from the James Collection. Consequently I can, at present, only guess as to its origins. Edward Bains indicated that 2-ply, 3-ply and 4-ply threads were being manufactured in Manchester, England, and in Scotland in the 1830s. One can only suppose that some of the 4-ply thread made at this time actually had a corded construction thus making it, in reality, a 4-cord thread. Cooper described a flag, dating to the first quarter of the nineteenth century, as having "2/2 cotton" thread in it. This designation suggests that the thread has 4-cord construction since other flags are described as having "4-ply thread."⁴⁸

While I found only limited examples of 4-cord thread, it seems to appear in use early in the nineteenth century and it shows up periodically in quilts and other textiles well into the twentieth century. There are at least seven quilts ranging in date from 1844 to 1912 in the James Quilt Collection at the University of Nebraska-Lincoln that contain 4-cord thread, which is of two, 2-ply construction.⁴⁹ The most recent indication of 4-cord thread is found in the Fall/Winter 1960-1961 Sears catalog, which advertised 4-cord quilting thread.⁵⁰ Further research needs to be done in order to find when 4-cord thread was introduced and when it was made in order for it to become a useful tool in dating quilts and other textiles.

Changes to Sewing Thread in the Twentieth Century

Little is written about the changes that manufactured cotton sewing thread underwent over time. Changes in sewing thread did not stop with the invention of 6-cord cotton sewing thread; developments have continued through the years. Since there is so little published, I sought other sources of information that would lead to a better understanding of these changes in sewing thread.

Advertisements document some of these changes in their images and descriptions of the products. Advertising trade cards were a means for manufacturers to get their product name before the public. The earliest advertising cards date to around 1810, but they did not reach their height of popularity until 1880 to 1900.⁵¹ Advertising cards had colorful pictures on them, often of the product in use, others with just a general scene.⁵² One of the earliest known thread advertising cards is one for Clark's O.N.T. from 1872.⁵³

Thread advertising cards often have pictures of the spool ends. Consequently, the trade cards seemed to be an excellent source for how spools looked from the 1870s to the 1900s. I expected to find that changes in the end labels could be charted based on these cards, but I observed no changes to the spool ends illustrated on these cards. The spool ends from 1880 to 1900 look the same as spools from the first quarter of this century.

The spool ends shown in the advertisements for Clark's O.N.T. usually show the bottom label which does not indicate the type of thread; it is the top label that clearly states that it holds "Clark's Best Six Cord" (see figure 2). The trade cards for Merrick Thread Co., Kerr & Co., and J & P Coats all show spool ends that clearly state that the thread is also 6-cord (see figure 3). While a card for Willimantic Thread does not show a spool end, the card does state that the thread is 6-cord spool cotton. These advertising cards clearly show that 6-cord thread remained the industry standard in the latter part of the nineteenth century and the early-twentieth century.

I also decided to examine changes in thread as reflected in the entries in the Sears, Roebuck and Company (Sears) catalogs, by checking the sewing threads offered for sale in both the Spring/Summer and the Fall/Winter catalogs between 1895 and 1972. The Sears catalogs provided a glimpse of the changes and developments in machine-made thread in the late-nineteenth and twentieth centuries. While Sears did not necessarily offer products when they first came on the market, the Sears catalog was often the first time some consumers saw or had access to a product. Therefore, products listed in the catalogs represent items commonly available to the general public throughout the twentieth century.

The first Sears catalog was published in 1891 and was devoted to watches.⁵⁴ By 1893 the catalogs were advertising a variety of items, including sewing machines; however, it was not until 1896

that sewing thread was first sold by Sears. In 1896 Sears offered 6-cord cotton thread as well as silk and spool linen threads for sale.⁵⁵ Sears ceased its sale of thread in the catalogs in the 1970s, so changes in sewing threads could no longer be monitored through this source.⁵⁶

In 1905, 3-cord thread began to be advertised in the Sears catalog.⁵⁷ The advertised 3-cord was apparently the same as 3-ply thread. According to current industry conventions of nomenclature of yarns, a cord is a yarn composed of plied rather than single strands; however, there is no logical way to produce a so-called 3-cord thread. While 6-cord thread was made up of three plies of two single strands each, a so-called 3-cord can only reasonably be composed of three single strands making it, in actuality, a 3-ply thread. The "Conso" brand of heavy duty mercerized cotton sewing thread labeled as "three cord" I found to be 3-ply thread. Spools of "Twist De Luxe" thread from the American Thread Co. labeled three cord also proved to be 3-ply (see figure 4). Therefore, it is likely that other

Figure 2. Advertising trade card for Clark's O. N. T. showing top and bottom labels. Card from the collection of Virginia Gunn.

Figure 3. Advertising trade card from Kerr & Co. showing spool of six-cord thread. Card from the collection of the author.

brands called 3-cord are also truly 3-ply. This should also hold true for the 2-cord basting thread advertised in the Sears catalog, which is assumed to be 2-ply as well.⁵⁸ Calling all plied threads "cord" appears to be more a result of an advertising ploy or the ignorance of copywriters than an accurate description of the construction.

This apparent confusion as to the nomenclature of thread goes back at least to the 1850s. An 1853 article in the *Scientific American* describes displays of spool cotton.⁵⁹ The display included cases which housed "three cord" thread manufactured by Jonas Ralph of England. Two cases showed products by Francis Hord of Manchester, one of which had "two cord" thread, the other "six cord" thread.⁶⁰ While the 2- and 3-cord threads described in the article are likely, in reality, plied threads, it may never be known whether the 6-cord thread was truly ply or cord construction.

The appearance of 3-cord thread in the Sears catalog corresponds to the appearance of mercerized thread.⁶¹ Mercerization is a process of immersing cotton thread, under tension, in a solution of caustic soda. This process results in a stronger and more lustrous thread that also accepts dye more readily. Since 6-cord thread is tightly wound to obtain the desired fineness, it cannot be mercerized. The caustic soda solution cannot penetrate into the tightly wound strands. Three-ply thread has fewer strands than 6-cord and therefore is less tightly wound for the same thickness of thread. Consequently, 3-ply thread can be mercerized when 6-cord can not.

In the 1930s a quilting resurgence occurred in this country, and by 1932 the Sears catalog offered a wide selection of quilt blocks, books, and other supplies to feed this new fad.⁶² In 1934 the first quilting thread, Grandma Dexter's, became available through the Sears catalog. It is advertised as being a "strong smooth three cord cotton thread correctly sized. Mercerized finish."⁶³

In 1960 Lily quilting thread is advertised as 4-cord.⁶⁴ While Lily brand quilting thread had been available through Sears since 1957, this is the first mention of it being 4-cord.⁶⁵ It is unknown whether the difference in the number of plies in the 1960s Lily brand quilting thread and the 1930s Grandma Dexter's quilting thread was a result of different brands with different construction methods, or if it reflects a change in the industry standard in the manufacturing technique of quilting thread. Yet, examples of recent quilting threads

Figure 4. Spool of Twist De Luxe thread marked three cord wound with 3-ply thread. Collection of the author.

in my possession are either 2-ply cotton/polyester blend or 3-ply all-cotton thread. Other examples of quilting thread I analyzed also proved to be 3-ply cotton thread. One example is probably pre-1950s J & P Coats thread on a wooden spool; the other is a post-1960s Talon brand (a subsidiary of Coats and Clark) on a styrofoam spool.⁶⁶ This suggests that quilting thread has not changed much since 1934.

Thread construction was not the only thing to change; materials used to make thread also changed. Sears offered an artificial silk (rayon) embroidery thread for sale in 1924, but not an artificial silk sewing thread, probably because it would be too weak for machine sewing. During World War II, nylon thread became available through the Sears catalogs.⁶⁷ DuPont had first introduced nylon darning and sewing thread to the market in 1941.⁶⁸ While duPont's entire production of nylon was supposedly allocated for war-time production, nylon sewing thread remains listed (and presumably available) in the Sears catalogs throughout World War II.⁶⁹ Dacron (polyester) fabrics and thread became available in 1952, but it was not until 1958 that Dacron thread was sold in the Sears catalog.⁷⁰ Spools of Dacron thread that I have examined have labels from

both Coats & Clark and from J & P Coats, showing that Dacron thread became available through J & P Coats prior to the 1952 name merger of J & P Coats and Clark Thread Co. into Coats & Clark. In 1969 Sears offered, for the first time, a cotton-wrapped polyester core thread which is available even today.⁷¹

Conclusions

Quilting and sewing thread analysis provides useful clues for helping to confirm the date of historic textiles. It must be remembered, however, that the type of thread present in an item is only an indicator that the item was made sometime after the thread type was first introduced. For example, textiles with 3-ply cotton thread would have been made after 1800; those with 6-cord thread would have been made after 1850; and the presence of polyester thread means it has to have been made after 1952. Furthermore, it is known that homespun thread was made prior to 1800 and again in the South during the Civil War. So, the presence of homespun thread is not proof of a late-1700s or early-1800s date for a textile sewn with it, but it supports such an attribution. The presence of linen or silk threads cannot be used as proof of an item's age either. Both types of thread were available through the Sears catalog well into the twentieth century. Linen thread was available until 1942 in the Sears catalog.⁷² Silk thread is available even today in some fabric stores. It is important to examine a variety of clues including style, printed patterns (when present), fiber content, and dyes in addition to sewing thread, before assigning a probable date of manufacture for an item.

Acknowledgments

This paper would not have been possible without the encouragement, guidance and support of Dr. Patricia Crews, Director of the International Quilt Study Center and Professor in the Department Textiles, Clothing and Design at the University of Nebraska, Lincoln, Nebraska. I would also like to thank the Lincoln Quilters Guild

for the 1996 Research Scholarship which helped to underwrite the research costs. The staff of the Historical Society of North Dakota deserves my thanks, especially Todd Strand for preparing the photographs and the entire Museum Division staff for their general support during the final phase of this project.

Notes and References

1. Theodore Raph, *Songs We Sang, The American Song Treasury: 100 Favorites* (New York: Dover Publications, Inc., 1986), 131–33; Vance Randolph in *Ozark Folksongs* (Columbia: State Historical Society of Missouri, 1949), 368–69; John Harrington Cox, “Singing Games,” in *Southern Folklore Quarterly* 6, no. 4 (1942): 246–47. I had hoped the obscure reference to a spool of thread in this song could provide a clue to the origins of spooled thread. The origins of “Pop Goes the Weasel” are English, though it is unknown exactly when or where it was first sung. The earliest versions were popular as a child’s singing game around 1620 and probably referred to a hank of thread, as did one version reported by Vance Randolph. Randolph’s version has likely survived from the days prior to the introduction of spooled thread. Another interesting point is that different versions of the song have the price for the thread range from a penny to a nickel. A version reported by John Harrington Cox places the price at “six per cent for a spool of thread.”
2. Barbara Brackman, *Clues in the Calico: A Guide to Identifying and Dating Antique Quilts* (McLean, VA: EPM Publications, Inc., 1989), 50.
3. Grace Rogers Cooper, *Thirteen-Star Flags: Keys to Identification* (Washington DC: Smithsonian Institution Press, 1973); Grace Rogers Cooper, *The Copp Family Textiles* (Washington DC: Smithsonian Institution Press, 1971).
4. Jennifer Faulds Goldsborough, *Lavish Legacies: Baltimore Album and Related Quilts in the Collection of the Maryland Historical Society* (Baltimore: Maryland Historical Society, 1994), 1.
5. Cooper, *Thirteen-Star Flags*, 25.
6. Kax Wilson, *A History of Textiles* (Boulder: Westview Press, 1982), 200.
7. Cooper, *Thirteen-Star Flags*, 24.
8. George S. White, *Memoir of Samuel Slater, The Father of American Manufactures* (Philadelphia: n.p., 1836): 262–63; George S. Cole, *A Complete Dictionary of Dry Goods* (Chicago: W.B. Conkey Company, 1892), 353; William R. Bagnall, *The Textile Industries of the United States, Volume I* (Cambridge, MA: The Riverside Press, 1893); bound facsimile of original book, (Ann Arbor, MI: University Microfilms, 1968), 161; Edward Hugh Cameron, *Samuel Slater Father of American Manufactures* (Portland,

- ME: The Bond Wheelwright Company, 1960), 68; and Cooper, *Copp*, 26.
9. Bagnall, 161.
 10. White, 262.
 11. White, 262-63.
 12. John F. Schenck, Jr., *A Story of How Sewing Thread is Made*, 2nd. ed. (Shelby, NC: Lily Mills Company, 1937), 7.
 13. Bagnall, 164.
 14. Catherine Fennelly, *Textiles In New England, 1790-1840* (Sturbridge, MA: Old Sturbridge Inc., 1961), 22.
 15. Schenck, 7.
 16. Harry Ballam, *The Story of a Thread of Cotton* (Harmondsworth, Mddx., England: Penguin Books Ltd., n.d.), 14; Coats & Clark Inc., *The Basics of Hand and Machine Sewing* (Greenville, SC: Coats & Clark, Inc., Consumer and Education Department, 1995), 16; and George A. Clark, *A Thread Mill in Miniature. How and Where it is Made* (New York: Clark's O.N.T. Spool Cotton, 1880), ii. George A. Clark is the only author who attributes the invention of cotton thread to Peter Clark.
 17. Cole, 354.
 18. Edward Bains, *History of the Cotton Manufacture in Great Britain*, 2nd ed. (London, England: 1835); reprint, (New York: A.M. Kelley, 1966), 346 (page references are to reprint edition).
 19. Ballam, 15; Cooper, *Thirteen-Star Flags*, 25.
 20. The relationship between George A. Clark, who was the sole agent for Clark's O.N.T. in 1880, and George Aitken Clark, who co-founded the American Thread Company, is unknown, but it seems likely that George A. is the son of George Aitken Clark.
 21. Ballam, 15; Cooper, *Thirteen-Star Flags*, 26.
 22. Cole, 356; *A Story of Thread* (New York: The Educational Bureau of Coats and Clark Inc., n.d.), n.p.
 23. Cooper, *Thirteen-Star Flags*, 25.
 24. Coats and Clark, 16.
 25. Ballam, 16; Coats and Clark, 16.
 26. This quilt is a part of the private collection of Byron and Sara Dillow. The quilt is made up of alternating equilateral triangles of early indigo prints and plain white cotton. It is quilted with three types of thread: blue 2-ply cotton thread, white 2-ply cotton thread, and white 3-ply cotton thread. The 2-ply threads, both white and blue, have a loose and varied twist and an uneven thickness along their length. This unevenness is suggestive of handmade (or homespun) thread. The 3-ply thread has a tight, even twist and is easily distinguished from the 2-ply discussed above. It is clearly a machine-made thread. These clues suggest an early 1800s date for the construction of this quilt.
 27. Brackman, 50.

28. Cooper, *Copp*, 27.
29. Parthenia Antoinette Hague, *A Blockaded Family* (Boston, MA: Houghton, Mifflin and Co., 1888); reprint, (Lincoln: Bison Books, University of Nebraska Press, 1991), 55 (page references are to reprint edition).
30. Bagnall, 163.
31. Bains, 346.
32. Hague, 54–55.
33. Cooper, *Thirteen-Star Flags*, 25.
34. Ballam, 16.
35. Cooper, *Thirteen-Star Flags*, 44–47.
36. Grace Rogers Cooper, *The Sewing Machine: Its Invention and Development* (Washington DC: Smithsonian Institution Press, 1976), 63–64.
37. Cooper, *Thirteen-Star Flags*, 44–47; Ballam, 16; Coats and Clark, 16.
38. Cooper, *Thirteen-Star Flags*, 25.
39. Ibid.
40. Ibid.; Clark, 1.
41. Clark, ii.
42. Ibid., 1.
43. "Fair of the American Institute," *Scientific American* 6, no.7 (2 November 1850): 50.
44. Quilts numbered 1997.007.023, dated 1851; 1997.007.149, dated 1852; 1997.007.570, dated 1853; 1997.007.666, dated 1851 to 1853; 1997.007.697, dated 1843; 1997.007.730, dated 1858; 1997.007.774, dated 1854; 1997.007.859, dated 1859; 1997.007.876, dated 1841; James Collection. The threads were analyzed independently by Dr. Patricia Crews, Director of the International Quilt Study Center, and myself. In all cases, we agreed in our analysis that these quilts did contain 6-cord thread, not 6-ply thread, as was previously expected in quilts of this age. These expectations were based on the published research by Grace Rogers Cooper, cited by Barbara Brackman in *Clues in the Calico*. Artifact analysis confirmed suggestions that 6-cord thread was available prior to 1860. Current research is indicating a ca. 1850 date for the introduction of the 6-cord thread.
45. *Scientific American* (2 November 1850):50.
46. Cooper, *Thirteen-Star Flags*, 43.
47. Quilt number 1997.007.149, James Collection.
48. Cooper, *Thirteen-Star Flags*, 44, 46. A flag designated as A-1 has 2/2 cotton while other flags are described as having 4-ply thread. Cooper was inconsistent with how thread construction was designated. In the case of 6-cord thread, she sometimes referred to it as 3/2 s-twist cotton (p. 52, fig. 25) while other times she referred to it as 3/2 cabled cotton (p. 46). Therefore it is reasonable to assume that her reference to 2/2 cotton is a reference to 4-cord thread.

49. Quilts numbered 1997.007.479, dated 1844; 1997.007.481, ca. 1840; 1997.007.541, dated 1912; 1997.007.654, dated 1854; 1997.007.665, dated 1853; 1997.007.778, ca.1850 and 1997.007.859, dated 1859, James Collection. Each of these quilts contains 4-cord thread either as sewing, quilting, or basting thread.
50. *Fall/Winter 1962-1963 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1962), 319.
51. Debbi Fuller, *Introduction to Sewing Trade Cards* (N.P.: Thimble Collectors International, 1988), 4.
52. *Ibid.*, 5.
53. *Ibid.*, 9.
54. Gordon L. Weil, *Sears, Roebuck, U.S.A.: The Great American Catalog Store and How it Grew* (New York: Stein and Day, 1977), 10.
55. *Fall/Winter 1896-1897 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1896), 195.
56. *Spring/Summer 1972 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1972).
57. *Spring/Summer 1905 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1905), 850.
58. *Fall/Winter 1924-1925 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1924), 465.
59. "Cotton Thread - American and Foreign," *Scientific American* 9, no. 6 (22 October 1853): 46.
60. *Ibid.*
61. *Sears Catalog*, 850. In 1905, Sears begins to advertise "Klostersistk." It is described as a "mercerized thread," which is "as good as the best sewing silk and no more expensive than ordinary cotton."
62. *Spring/Summer 1932 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1932), 190-93.
63. *Fall/Winter 1934-1935 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1934), 268.
64. *Spring/Summer 1960 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1960), 334.
65. *Spring/Summer 1957 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1957), 226.
66. Though J & P Coats and the Clark Thread Company merged in 1896, the spool marked J & P Coats must have been manufactured prior to 1952 when these companies merged their names, becoming Coats & Clark.
67. *Spring/Summer 1942 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1942), 490.
68. DuPont de Nemours & Co., *Milestones in the DuPont Company's Textile Fibers History*, 13th ed. (Wilmington, DE: E. I. duPont de Nemours & Co. (Inc.), 1980), 3.

69. *Ibid.*, 3; and *Fall/Winter 1943-1944 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1943), 690.
70. *Ibid.*, 4; and *Fall/Winter 1958/1959 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1958), 350.
71. *Fall/Winter 1969/1970 Sears Catalog* (Chicago: Sears, Roebuck and Company, 1969), 699.
72. *Spring/Summer 1942 Sears Catalog*, 490.

Appendix *Time Line of Sewing Thread*

- *ca. 1794 Hannah Slater "invents" 2-ply cotton sewing thread
- *ca. 1800 3-ply cotton thread available
- 1806 Clark invents cotton thread as a replacement for silk heddle thread
- 1809 Almy and Brown advertise cotton sewing thread for sale in regional newspapers
- 1812 Clark opens thread mill in Paisley, Scotland
- 1815 Coats opens thread mill in Ferguslie, Scotland
- ca. 1820 First cotton thread spooled by Peter Clark
- *ca. 1830 2-ply and 4-ply (4-cord?) manufactured cotton thread available from Manchester England and Scotland
- *ca. 1840 6-ply cotton thread is on the market; Clark and Coats send representatives to the U.S.
- *ca. 1850 6-cord cotton thread is available
- 1852 3-ply "machine twist" silk thread on the market
- 1860 Clark's O.N.T. 6-cord thread on the market
- 1866 George Aitken Clark and William Clark form the American Thread Company
- 1896 J & P Coats absorbs Clark Thread Co. but each division still produces thread under its own name
- 1905 Mercerized cotton thread advertised in the Sears catalog; 3-cord thread advertised for the first time in the Sears catalog
- * 1924 "Artificial silk" embroidery thread (rayon) first offered in the Sears catalog
- 1932 Quilt books, blocks and other quilting supplies are advertised in the Sears catalog
- * 1934 First advertised quilt thread in the Sears catalog; described as 3-cord
- * 1941 DuPont introduces nylon darning and sewing thread
- 1942 Nylon thread available in the Sears catalog

- * 1952 Dacron (polyester) home sewing thread introduced J & P Coats and Clark Thread Company combine names to form Coats and Clark Inc.
- 1958 Coats and Clark Dacron (polyester) thread available in the Sears catalog
- 1960 Quilting thread advertised as 4-cord in the Sears catalog for the first time
- * 1963 Nylex thread (Zytel bonded nylon thread) available in the Sears catalog
- 1966 6-cord thread is no longer advertised in the Sears catalog, only 3-cord is sold
- * 1969 Cotton-wrapped polyester core thread is available in the Sears catalog

* Asterisks indicate the introduction of a new thread type. Such events should be helpful in the dating of quilts and textiles.