

SEWING REVOLUTION: THE MACHINE THAT CHANGED AMERICA

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Introduction

The patenting of the sewing machine by Massachusetts native and Connecticut transplant Elias Howe in 1846 touched off a technological, industrial, and social revolution in the United States. By making possible the manufacture of inexpensive clothing, it greatly sped up the pace of American industrialization (which had begun only a few decades earlier with the inventions of the drum carder, **spinning jenny**, power loom, and cotton gin) and led to the building of newer, larger, and more modern textile mills, such as the Willimantic Linen Company's great granite Mill Number Two and modern brick Mill Number Four. By changing the way that clothing was manufactured, it spelled the end of cottage industry and the old putting out system and ushered in the age of the sweatshop. By appealing to middle class homemakers, it facilitated the Cult of Domesticity and provided middle class women with the opportunity to prove that they could master complex machinery. Widely available a half century before typewriters or automobiles, more than any other machine the sewing machine came to symbolize American women's work in the modern machine age. This article is intended to accompany the Windham Textile and History Museum's sewing machine collection, which focuses on sewing machines manufactured in the state of Connecticut.

Early Efforts, to 1846

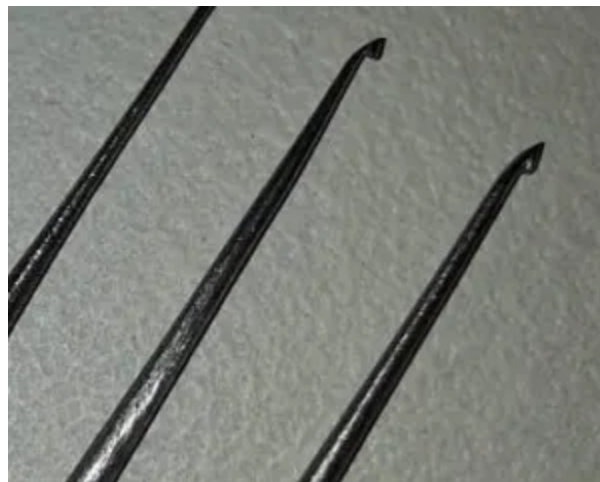
People have been sewing for a long time. They began using bone needles with eyes to stitch animal skins together at least 20,000 years ago, during the last Ice Age; started making needles from iron about 4,000 years ago, at the very beginning of the Iron Age; and first used thimbles in China about 2,000 years ago, during the Han dynasty. But the sewing machine itself is a fairly recent invention, less than 200 years old. For thousands of years, people – mostly women – were forced to sew slowly and laboriously by hand. (Below: Ancient sewing needles, from the Heraklion Museum. Public domain, Wikipedia Commons.)



The first attempts to make sewing machines failed, largely because inventors (all of whom were men) tried to make machines that could mimic the motions of hand sewers. Early attempts at sewing machines used only strand of thread and needles with eyes on the blunt ends, which were pushed completely through the cloth, grasped by a pincer or clamp on the

other side, and then pushed back through again. Such motions proved too complex for 18th- and early-19th-century technology.

Barthelemy Timmonnier. The breakthrough finally came in 1830, when a French embroiderer, Barthelemy Thimonnier (1793-1859), invented an embroidery machine that employed a modified traditional hooked embroidery needle with the hook near the point to sew a basic chain stitch. Although the stitches made by Thimonnier's machine were too weak to produce strong seams for sewing garments, it was nevertheless the first step towards what would be one of the key components of the working sewing machine: a needle with its eye in the pointed end. (Below: Barthelemy Thimonnier French postage stamp; embroidery hooks.)



Walter Hunt. Four years later, in 1834, Walter Hunt, an eccentric New York City mechanic who also invented the safety pin, designed a crude sewing machine that employed not one but two strands of thread – an upper strand carried by a curved needle with its eye in the pointed end and a lower strand delivered by a shuttle – to make a chain stitch. The cloth was held vertically by clamps. The needle pushed the thread through one side, but unlike earlier attempts at making sewing machines, the needle did not go all the way through the cloth; instead, it formed a gap on the far side between the curved needle and the straight thread, through which a shuttle pushed a second thread. The needle then withdrew, pulling the loop tight. These were crucial breakthroughs, but Hunt's sewing machine did not work well. The vertical

design was clunky. There was no automatic feed and no presser foot. Hunt set it aside to tinker with later, and never bothered to patent it.

Elias Howe

Like Hunt, Elias Howe was a mechanic and tinkerer with little in the way of a formal education. Howe's father was a farmer in Massachusetts, but had relatives in business who would later invest in Elias's invention. Traditional New England agriculture was in decline in the early 1800s, and life on a hardscrabble Massachusetts farm would have been difficult. A sickly child, Elias had little energy and walked with a cane. His father apprenticed him to a textile factory, but the work was exhausting and he gave the job up. At the age of 18, Howe left home (it was during the Panic of 1837) and moved to Cambridge, MA to seek his fortune and easier work. (Below: Statue of Elias Howe in Bridgeport, CT.)



Alas, Howe did not find life in Cambridge any easier. He apprenticed as a carding machine mechanic with his cousin, Nathaniel Banks. But the work was predictably exhausting, and so the next year (1838), Howe moved on to apprentice to Ari Davis, a master mechanic who specialized in making chronometers and other precision instruments.

It was while working for Davis that Howe first heard about sewing machines. Boston-area mechanics were all talking about how to create such a machine, and there was a general belief that whoever could build a functioning sewing machine would make his fortune. (It is not surprising that Boston and New York were the epicenters for American attempts to invent a working sewing machine. Both cities were firmly connected to the wider Atlantic economy and community, and word of European attempts to invent sewing machines would have circulated in both cities. It is also not surprising that much of the later activity in this article took place in Connecticut, which was located "between New York and Boston.") (Below: Elias Howe U. S. Postage Stamp.)



Howe worked for Davis and other mechanics sporadically, while also working in his spare time on trying to invent a sewing machine. He became more focused in 1841 when (age 22) he married and began to father children (he would have three).

In 1846 (age 27) Howe patented a sewing machine. It featured a lockstitch (an improvement over Hunt's chainstitch), a needle with the eye in the point (the needle, like Hunt's, was curved, not straight), a horizontal alignment with a shuttle beneath the cloth (an improvement over Hunt's vertical arrangement), and an automatic feed. These were all important improvements. The problem, though, was that Howe's machine was clunky didn't work any better than Hunt's. It jammed, the needle got caught, and it required almost constant fiddling. It was also heavy and clumsy. Howe sought to market it as an industrial machine, and sell it to tailors and factories, which could afford to hire mechanics to constantly adjust and tinker with the machine to keep it (semi) working. Most tailors, though, thought it was too expensive and not worth the trouble: they could hire hand sewers cheaper. (Below: Elias Howe's patent model. Public domain. Smithsonian Institution.)



Without a ready market for his finicky sewing machine, Howe and his older brother Amasa went to England to seek financing. Neither succeeded. Elias returned to the United States in 1849, settling in Connecticut. His wife (who had worked to support him) died the next year. Things were dire.

Thus, as of 1850 Howe had a patent for a sewing machine that did not really work and which nobody wanted. He had no money and was still sickly. Even worse, other mechanics were starting to make sewing machines, some of which worked better than his. (Below: Detail from Howe sewing machine, 1872, Windham Textile and History Museum.)



Isaac Singer

One of those mechanics was Isaac Singer. Born in 1811 in Pittstown, NY, Singer was (like Hunt and Howe) a mechanic, although with even less training. (He was also an actor, but not a good one.) Singer was also aggressive, loud mouthed, a bully, a serial liar, and completely self-absorbed – in short, he was a sociopath. During his lifetime Singer had several wives and mistresses (and most of his marriages were illegal, as he neglected to get divorces from his earlier wives), and fathered at least 24 children.

Singer left home early. Finding his way to Ohio, he worked for a while with a company that was building a canal. He invented and patented a rock drill, and sold the rights to his employer for \$2,000 (\$46,000 in today's money). He then blew it all creating an acting troupe, with himself as the lead actor. While doing this, he abandoned his first wife and took up with his second.

The acting troupe failed. At age 38, Singer moved with his second wife and their eight children to New York, where he rented a shop and set to work trying to invent a wood-block cutting machine for use in printing. When the boiler blew up and demolished the building, he slipped out of town and went to Boston, to try his luck there. It was in Boston that Singer heard about attempts to invent a sewing machine.

Singer repeatedly formed relationships with men and women whom he could bully. In Boston, he teamed up with a well meaning but weak-willed mechanic, Orson Phelps, who owned his own shop. He bullied Phelps into doing much of the work. (Below: Isaac Singer's patent model for a sewing machine, 1851. Public domain. Smithsonian Institution.)



Singer's sewing machine was only a bit better than Howe's. Like Howe, he conceived of it as an industrial machine. Singer was good at designing big, powerful, clunky machines, but not at making delicate precision instruments like sewing machines. The machine he patented in 1851 was heavy, clumsy, and incapable of doing delicate work. But it did include some crucial improvements over Howe's design. Singer made the shuttle move in a straight line, rather than a circle. And his needles were straight, not curved.

Lacking financing, Singer teamed up with banker Edward Cabot Clark – who turned out to be the one person that Singer was never able to bully. Together, Singer and Clark began manufacturing sewing machines for tailors in a factory in New York. The market turned out to be limited, however — as Howe had already discovered, tailors were not interested in big, noisy, clunky machines that needed constant tinkering. It was cheaper for them to hire hand sewers. Singer and Clark sold only a few machines.

Allen Wilson and Nathaniel Wheeler

By 1850, several mechanics (Hunt, Howe, Singer, and a few others) had developed sewing machines, but none of them worked well. Enter Allen Wilson.

Like Hunt, Howe, and Singer, Wilson was another mechanic with little formal education. And like the others, he was also eccentric: in Wilson's case the oddity was that he was intensely shy, introverted, and lacking in self-esteem. He was also, as it turned out, quite brilliant.

Moving to Massachusetts, Wilson took a job as a mechanic. In his spare time, he began working on trying to invent a sewing machine, although he knew nothing about Hunt, Howe, or Singer. He found a local investor, who soon gave up on him.

At this point, Wilson moved to Connecticut. Here he found luck: a brand new magazine, the New York City-based *Scientific American*, helped him apply for a patent (something they did for other inventors, too), which he received in 1850. But, alas, Wilson still needed money to begin manufacturing, and he ended up being bilked of by two New York City shysters, who cheated him and stole his patent.

Desperate for work, and with a family to support, Wilson gave up trying to invent a sewing machine and took a job as a mechanic with a Connecticut-based manufacturer, Nathaniel Wheeler, who owned a machine shop in Watertown, CT. Wheeler, too, was unusual: he was both impeccably honest and a shrewd businessman. When Wheeler discovered who his new employee was, he talked Wilson into going back to tinkering with sewing machines. Wilson worked out the last remaining practical problems, patented his improvements, and built something Hunt, Howe, and Singer had not – a sewing machine that actually worked! (Below top: Allen Wilson's patent model for a sewing machine, 1852. Public domain. Smithsonian Institution.) (Below bottom: Advertisement for Wheeler and Wilson Silent Feed Lock-Stitch Sewing Machines, n.d., Windham Textile and History Museum.)



WHEELER & WILSON'S

SILENT FEED

LOCK-



STITCH

Sewing Machines

ARE THE MOST

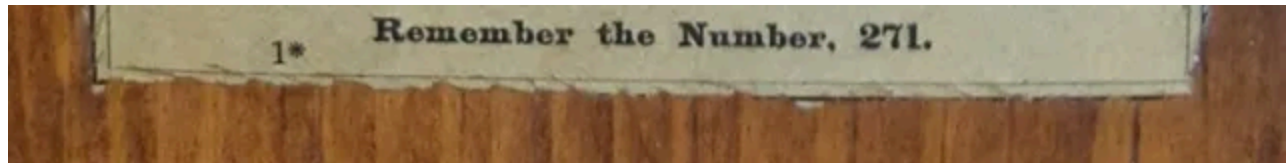
Simple, Practical and Economical

SEWING MACHINES IN THE WORLD.

They execute more rapidly, and with less noise, than any other Machine in use. Competent judges, who have used the different Machines, recommend the WHEELER & WILSON, as the most reliable, because they are the most simple and durable Machine, consequently not liable to get out of order; because they sew every variety of material, from the coarsest to the very finest fabrics. They Hem, Fell, Braid, Cord, Gather, Stitch, Bind and Ruffle. For every kind of practical sewing WHEELER & WILSON'S is the one in use.

C. M. LEE,

271 MAIN STREET, - SPRINGFIELD, MASS.

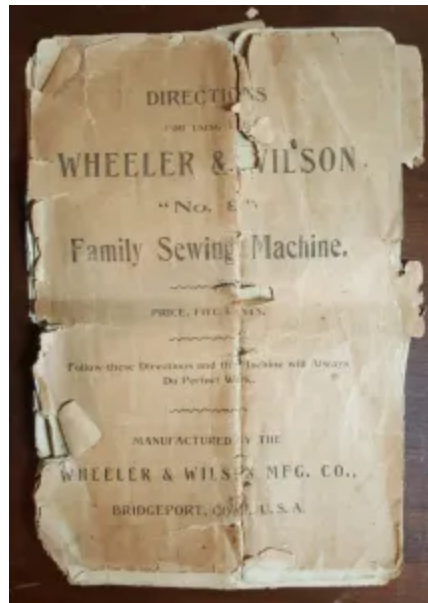


The two men founded Wheeler and Wilson, a partnership, in 1852 in Watertown, CT. Wheeler supplied the capital, Wilson the engineering know how and his patents for the rotary hook (1851) and the four motion feed (1854). In 1856 the company moved to Bridgeport. By the 1870s it was one of the world's largest manufacturers of sewing machines, second only to Singer. The Singer Company bought it out in 1908, long after all the original principals had passed away. (Below: Wheeler and Wilson sewing machine, 1875, Windham Textile and History Museum.)



In 1873 *The Christian Weekly* published a tour of the Wheeler and Wilson Sewing Machine Company's factory in Bridgeport, CT. The article contained several sketches of workers forging metal parts for the company's machines. According to the article:

"The works of this manufactory ... cover in round numbers seven acres of ground. Their business employs in its various connections as mechanics, salesmen, and agents, from six to seven thousand men and women. If we estimate, as is usually done, four persons to each family represented, we have a population of nearly ... thirty thousand, a good-sized inland city ... supported by this industry. There is a post office in the establishment, and a very pleasant sight it was to see the men at noon gathering here for their letters and papers." (Below: Wheeler and Wilson instruction manual, c. 1872, Windham Textile and History Museum.)



The Lawsuit

So, by the mid-1850s, several different manufacturers were (with varying amounts of success) making and selling sewing machines. Most of them had patents of some sort. Howe was almost completely a failure at actually making and selling sewing machines, but he had the oldest and best patent. So, with his brother Amasa's help, in 1849 he sued the other companies for patent infringement. His case looked cut-and-dried.

Then Singer's partner, Edward Clark, found out about Hunt's prior, non-patented invention. Seeking out Hunt, Clark persuaded him to sue Howe, claiming that Howe had stolen the idea from him (and he may have been right, as there is some evidence that Amasa Howe had once visited Hunt in New York). In the end, however, Howe won on a 19th-century technicality: as a "free thinker," Hunt could not in good faith take the required religious oath that his testimony was "the truth, the whole truth, and nothing but the truth, so help him God," and so his case was thrown out by the courts. Howe won. (Below: Wilcox and Gibbs sewing machine, c. 1895, Windham Textile and History Museum.)



The Sewing Machine Combine

Thus, in 1854 Howe had won. But really, all he won was the right to order the other manufacturers to cease and desist. He still couldn't make a sewing machine that actually worked.

So in 1856 Orlando Potter, the President of the Grover and Baker Company, called a meeting in New York of all the main sewing machine manufacturers and would-be manufacturers. Baker suggested forming a "patent pool," where all of them (including Howe) would pool their various patents. In addition, Howe would be paid a generous annual stipend. All the companies in the pool would all be able to manufacture sewing machines. All would have access to Howe's, Singer's, and Allen Wilson's patents — the latter of which actually allowed sewing machines to function and be marketable. (Below: Detail from a Finkle and Lyon sewing machine, 1871, depicting the company's factory in Middletown, CT, Windham Textile and History Museum. Finkle and Lyon were not part of the patent pool, but paid the combine license fees for the right to to manufacture sewing machines, as did another Connecticut-based company, Weed in Hartford.)



Until Elias Howe's original patent for the sewing machine expired in 1877, production and sales were dominated by the companies that joined with Howe in 1856 to form the Sewing Machine Combination, the first of the massive 'trusts' that dominated American – and global – industry in the Gilded Age: A. B. Howe (owned by Elias's brother, Amasa), Singer, Wheeler & Wilson, and Grover & Baker. Other manufacturers had to pay license fees to the combine. (Below: Finkle and Lyon sewing machine, 1871, Windham Textile and History Museum.)



At \$15 per machine the license fees steep enough to discourage competition. Still, 36 different companies produced sewing machines in these years, and sales increased briskly each decade, from about 2,500 machines in 1853, to around 50,000 in 1863, to more than 667,500 in 1873.

In 1877, Howe's original patent expired – as did the Combine. (Below: Detail from Wilcox and Gibbs sewing machine, c. 1875, Windham Textile and History Museum.)



The Howe Sewing Machine Companies

So what happened to Elias Howe?

He got rich off royalties. And he took advantage of the patent pool to form two companies (one owned and operated by his brother Amasa, the other by his sons-in-law the Stockwell brothers) in New York and Bridgeport that manufactured functioning, serviceable home sewing machines.

Howe settled into a life as a philanthropist, which would be how his fellow Bridgeporters would know and remember him. During the Civil War (1861-65), he funded the formation of the 17th Connecticut Volunteer Infantry regiment, joining himself as a private. Too sickly for combat, he did light duty behind the lines. He died two years after the war ended, in 1867, only 48 years old. (Below: Treadle from Howe sewing machine, 1872, Windham Textile and History Museum.)



The Singer Sewing Machine Company

Singer's partner, Edward Clark, quickly bought him out. Now very rich (he continued to collect royalties from the company), Singer retired to a life of luxury and notoriety. When his wife caught him with one of his mistresses, Singer fled to England to avoid the repercussions – where he soon took up with another mistress. Singer died in England in 1875, age 64, worth \$13 million, but generally despised by all who knew him. Almost all of the major business innovations that would eventually make the Singer Company the number one manufacturer of home sewing machines were Clark's ideas, not Singer's. (Below: Howe sewing machine, 1872, Windham Textile and History Museum.)



Indeed, under Edward Clark, the Singer Company became the world's largest sewing machine manufacturer, even though most of the important technological advances had been made by Wheeler and Wilson.

Why? There were several reasons. In 1856 the Company began making home sewing machines: at \$100 a machine (\$2,724 in today's money), these were expensive, though. So the Clark introduced mass production and interchangeable parts, lowering the cost 50%. Eventually, the Company was able to sell a new home sewing machine for \$10 (\$273 in today's money). The Company also introduced installment plans, marketed aggressively overseas, and marketed directly to women consumers. It also pioneered electric machines and cabinets that doubled as attractive furniture. (Below: Detail from Wilcox and Gibbs electric sewing machine, Windham Textile and History Museum.)



Merrow Sewing Machine Company

Although based today in Wareham, Massachusetts, the Merrow Sewing Machine Company, which manufactures industrial sewing and crochet machines, got its start in Mansfield, Connecticut. In 1838 the Merrow family founded the first knitting mill in the United States in the village of Merrow, on the banks of the Willimantic River in northern Mansfield. Two years later, the Merrows added a machine shop to build machinery for their factory. (below: Very early Merrow industrial crochet machine, burned in a fire, c. 1890, Windham Textile and History Museum.)



In 1877 the Merrow Company patented the first crochet machine. To accommodate its steady growth, the company relocated to Hartford, Connecticut, in 1892. It continued to grow. In 1964 it opened a subsidiary, Franklin Industries, in Georgia, and in 1972 acquired the Arrow Tool Company in Wethersfield, Connecticut. The company moved to Newington, Connecticut, in 1982, and to Wareham, Massachusetts, in 2004. (Below, Merrow Machine Company, Mansfield, CT, c. 1880, Windham Textile and History Museum.)



Number of Sewing Machines Licensed by the Sewing Machine Combine under the Howe Patent, 1854-76 (Some Data Missing)

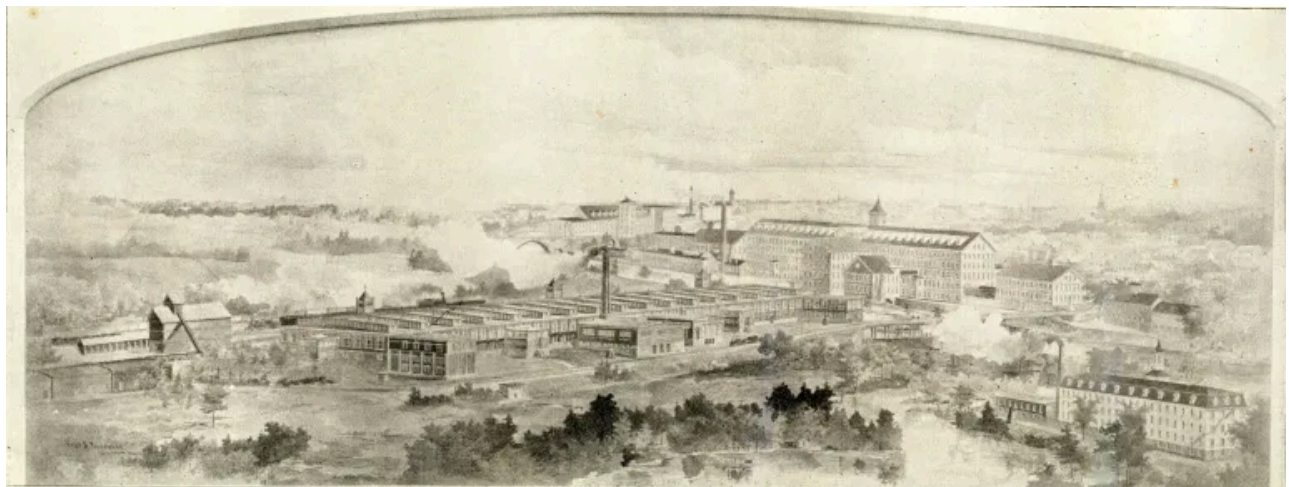
- Singer (New York, NY) – 1,875,439
- Wheeler & Wilson (Bridgeport, CT) – 1,196,498
- Howe (New York, NY) – 754,783
- Grover & Baker (Boston, MA) – 358,776
- Weed (Hartford, CT) – 231,108
- Wilcox & Gibbs (New York, NY) – 195,880
- Domestic (Norwalk, OH) – 167,804
- American (Philadelphia, PA) – 121,470
- Florence (Florence, MA) – 107,942
- Gold Medal (Orange, MA) – 94,463
- Wilson (Cleveland, OH) – 92,099
- Remington (Ilion, NY) – 76,124
- Finkle & Lyon (Boston, MA) – 53,378
- Empire (New York, NY) – 34,921
- Aetna (location unknown) – 32,895
- Davis (Watertown, NY) – 31,805
- Blees (Bordentown, NJ) – 14,068
- Secor (Bridgeport, CT) – 9,589
- Elliptic (New York, NY) – 7,740
- Bartram & Fanton (Danbury, CT) – 5,987
- Shaw & Clark (Biddeford, ME) – 5,692
- Parham (location unknown) – 4,963
- Leavitt (Boston, MA) – 3,909
- Ladd & Webster (Boston, MA) – 3,252
- Keystone (location unknown) – 2,919
- Goodspeed & Wyman (Winchendon, MA) – 2,126
- Bartlett (New York, NY) – 1,614
- Bartholf (New York, NY) – 1,102
- McKay (location unknown) – 738
- Centennial (Philadelphia, PA) – 514
- Folsom (Winchendon, MA) – 280
- Thompson (location unknown) – 147
- Union (Chicago, IL) – 124

**Sewing Machine Manufacturers that Have Been Located in Connecticut, Including
Brand Names**

- Atwater (Berlin, CT) – Atwater
- Bartram & Fanton Company (Danbury, CT) – Bartram & Fanton
- D. W. Clark (Bridgeport CT) – Cherub, Foliage
- Goodbody Company (Bridgeport, CT) – Goodbody Sewing Shears
- Greenman & True Manufacturing Company (Norwich, CT) – Greenman & True
- Merrow Machine Company (Hartford, CT)
- Nettleton & Raymond Company (Bristol, CT) – Hendricks
- Parkers, Snow, Brooks & Company (West Meriden, CT) – Landfear
- Secor Sewing Machine Company (Bridgeport, CT) – Secor, Fairy
- Smith & Egge Company (Bridgeport, CT) – Little Comfort, Reliable
- Stockwell Brothers (Bridgeport, CT) – Howe
- Victor Sewing Machine Company (Middletown, CT) – Victor
- Watson Company (Bristol, CT) – Watson
- Weed Sewing Machine Company (Hartford, CT) – Family Favorite, Manufacturer's Favorite, General Favorite, Hartford
- Wheeler & Wilson Manufacturing Company (Bridgeport, CT) – No. 1, No. 2, No. 3, No. 4, No. 5, No. 6, No. 7, No. 8, No. 9

The Willimantic Linen Company and the Sewing Machine

The invention and perfection of the sewing machine by Elias Howe, Isaac Singer, and others in the 1840s and 1850s vastly increased the market for smooth, sturdy, and uniform factory-made thread. Hand spun thread was too weak and irregular for the new machines. In 1864 in Willimantic, Connecticut, the Willimantic Linen Company, founded in 1854, erected a massive new granite mill, Mill No. 2, expressly for manufacturing sewing machine thread. (Below, the Willimantic Linen Company mills in c. 1890.)



According to an 1880 article about the Willimantic Linen Company in Scribner's Monthly:

“While hand-sewing, as a matter of convenience and ease, called for an even thread, the introduction of very wide-spread use of the sewing-machine has called for the same qualities as absolutely essential. Sewing-machines now take ninety per cent of the thread that is made, and in order to do their own work

these automatic seamstresses must be satisfied or they summarily strike. It was just as sewing-machines began to come into use that the manufacture of Willimantic thread on an extensive scale began, and the whole bent of the business there has been to supply a proper thread for machine use, since any thread that suits a machine suits anywhere.... The best incidental evidence of the success of the Willimantic efforts is found in the fact that at [the 1876 Centennial Exposition] at Philadelphia, where all the sewing-machines of the world came into competition on their own merits, all but two of them used the Willimantic thread."

To make sure that its product was strong enough, the Willimantic Linen Company twisted six strands of spun thread together into a single strand of "six-cord" sewing machine thread. The Company wound the thread onto both wooden spools and paper bobbins, the latter of which were sold primarily to sweatshops for use in industrial-size sewing machines. The Company advertised its thread as "the best thread for sewing machines." By the 1890s, thanks to the heavy demand for thread for sewing machines, the Willimantic Linen Company was a financial success and one of the largest thread mills in the world.

The Rise of the Middle Class and the Cult of Domesticity

The nineteenth century in America saw the emergence of the modern middle class. With it came dramatic changes in family life. Typically, middle-class families owned their own homes, lived in new suburbs, and could get along with only one breadwinner, usually the husband-father. Unlike working-class and agricultural families, where the wife-mother almost always contributed to the family economy by earning wages or laboring on the farm, in middle-class families she usually was a full-time homemaker, primarily responsible for preparing meals, making and mending clothes, cleaning the homes, and caring for the children. (Below: Wilcox and Gibbs electric sewing machine, Windham Textile and History Museum.)



Despite the fact that most middle-class American families actually remained quite patriarchal throughout the 1900s, nineteenth-century Americans created the fiction of the so-called "cult of domesticity," the myth that it was women, not their husbands, who actually controlled the homes, which therefore became extensions of their tastes and wishes. (Below: Detail from Wheeler and Wilson sewing machine, Windham Textile and History Museum.)



When middle-class women acquired and furnished sewing rooms – complete with sewing machines – society generally regarded it as proof that the cult of domesticity actually existed, and that these sewing rooms were manifestations of women’s increasing power within the home. However, the new mythology ignored the fact that the decision to buy a new sewing machine was usually made by husbands, who controlled the family bank accounts, and not by their wives. True liberation would not come until later, in the twentieth century. (Below: Wheeler and Wilson sewing machine, 1875, Windham Textile and History Museum.)



(Below: 1950s sewing machine manufactured for G. Fox department store in Hartford, CT.)



A Social Revolution: The Sewing Machine and Seneca Falls

Despite the myth of the cult of domesticity, many nineteenth-century American middle-class women remained dissatisfied with their lives. In 1848 – just two years after Elias Howe patented his first sewing machine – women’s discontent erupted when, at Seneca Falls, New York, several hundred middle- and working-class women gathered at the first women’s rights convention and drew up a Declaration of Women’s Rights. “We hold these truths to be self-evident,” they wrote, “that all men and women are created equal.” Both events – the invention of the sewing machine and the movement for equal rights – would spark revolutions in the everyday lives of American women.

The Sewing Machine in the Home: Women Conquer Machines

Before the sewing machine, most men – and probably many women – assumed that only men could master complex machines. As a result, many middle-class husbands (who in most families controlled the bank account) were reluctant to buy their wives an expensive new sewing machine, fearful that she would find it too complicated, become frustrated, and burst into tears. To reassure husbands that women could indeed learn to operate sewing machines successfully, manufacturers like Singer hired women to demonstrate the machines in store windows and at fairs, pictured women prominently in their advertising, manufactured toy sewing machines for girls, and offered sewing machines at half price to ministers’ wives, who they knew would make the machines available to charity sewing circles. Despite the complexity of the machines, women quickly mastered them, and by 1900 almost every middle-class home had a sewing machine. In the twentieth century, women would again surprise men when they mastered other complex machines as well: automobiles, VCR and DVD players, and even computers. But the sewing machine was the first complex modern machine available to middle-class women – the proof that they could be just as mechanically savvy as men.

From Cottage Industry to Sweatshops: Working Class Women and the Sewing Machine

Sewing machines revolutionized life for working-class as well as middle-class women, but did so in the urban workplace or apartment rather than in the suburban home. In 1850 an estimated 5,000 working-class women labored stitching shirts by hand in New York City alone.

Working mostly out of their homes, their pay and working hours were dismal. “We know of no class of workwomen who are more poorly paid ... or who suffer more privation and hardship,” declared the New York Herald in 1853. “A [male] tailor gets five dollars for a coat taking two days,” the Herald continued, but “a shirtwoman gets a maximum of one and a half dollars, working twelve or fourteen hours a day.”

While initially some social reformers (and many sewing machine manufacturers) hoped that poor “shirtwomen” might improve their lives by acquiring sewing machines, and others feared that the new machines might take work away from the shirtwomen, in fact neither happened. At approximately \$125, a sewing machine was far too expensive an investment for a poor seamstress who earned less than \$400 a year. Instead, businessmen bought them in bulk for around \$100 apiece – usually the larger, heavier, sturdier models that the manufacturers built for tailor shops – placed them in lofts, warehouses, factories, or even apartments, and hired the former shirtwomen as labor. These establishments, called sweatshops, paid low wages for long hours and had dismal working conditions, but the ever increasing demand for cheap clothing meant that jobs were as plentiful as before. For most of the former shirtwomen now laboring in sweatshops, their lives had not changed all that much.

For the most part, industrial sewing machines were larger and heavier than home models. Often, they were designed to be bolted to the floor, to cut down on vibrations.

Timeline

1755: Charles Wiesenthal invents double-pointed needle for hand sewing

1826: Henry Lye patents a machine that stitches together the ends of leather belting for machinery

1830: Bathelemy Thimonnier invents a wheel-driven embroidering machine that uses a needle with a hook at the pointed end

1834: Walter Hunt patents a crude, unworkable sewing machine that employs two strands of thread, one carried by a needle with an eye in the pointed end, the other driven by a shuttle

1846: Elias Howe patents first practical sewing machine

1849: Benjamin Wilson invents an automatic feeding system

1851: Isaac Singer patents and begins manufacturing the first sewing machine fit for home use

1854: Allen Wilson invents an improved reciprocating shuttle

1855: Allen Wilson and Nathaniel Wheeler begin manufacturing sewing machines with rotary hooks rather than shuttles

1856: Following loss of patent infringement lawsuit to Howe, Singer joins with Howe, Wilson & Wheeler, and Grover & Baker to organize Patent Combine to monopolize sewing machine production for 1860s and

1870s

1889: Singer Company introduces first practical electric sewing machine

1900: Singer Company claims 80% of global sewing machine Sales

The Triangle Fire, the Sewing Machine, and the Movement for Safe Workplaces

On March 25, 1911, fire broke out at the Triangle Shirtwaist Company, a sweatshop located on the top three floors of a ten-story building in New York City. The Company had 500 workers, most of them young Italian and Jewish immigrant women using sewing machines to stitch women's blouses and earning as little as three dollars a week. The fire spread rapidly. The door to the stairwell was locked. The only fire escape led down to a blind alley, or up to the roof. Some workers escaped when students in a classroom building next door pushed a ladder across the alley, connecting the windows of the two buildings. A few reached the alley. Others were rescued by heroic elevator operators who, risking their own lives, kept the one elevator running as long as they could. The fire department rushed to the scene, but their hoses could spray water only as high as the sixth floor. Many of the women burned to death, crowded around the locked door to the stairs, piled in the elevator shaft, or sitting at their sewing machines. Others leaped to their deaths from the open windows, their hair afire, human meteors plunging to the asphalt. Sometimes they jumped in groups, holding hands as they fell. 146 of the workers died. The horrific fire focused national attention on the grim conditions workers faced in the sweatshops: long hours, low pay, few breaks, frequent fires, and insufficient safety equipment.

Women's Education: Home Economics and the Sewing Machine

In the late 1800s American colleges and high schools began creating programs in home economics. Targeted at farmwives, working-class women struggling with the increased demands of combining jobs with housekeeping, and middle-class housewives coping with the Cult of Domesticity, home economics programs aimed to apply modern science to such domestic chores as cooking and sewing. Uniformly, home economics taught young women how to use sewing machines.

Typical of college-level home economics programs was the Domestic Science Department at the Storrs Agricultural College, now the University of Connecticut. Inaugurated in 1893, 12 years after the college first opened, the new department coincided with the decision to admit women to the college. Along with teacher training programs in normal schools, home economics programs at state colleges were the portals through which middle-class women for the first time were able to gain significant access to higher education. The doors were now open. (Below: Storrs Agricultural College, late 19th century. The structure on the far left was the Home Economics building.)



“To best fit our young women for homemakers and housekeepers, we instruct them scientifically as well as practically, so that at completion of the course the pupil will possess that knowledge which will incline her to make a home which will be healthful, comfortable and happy at a comparatively small expenditure of time, money, and labor. She will have learned the why as well as the how and will have become intimately acquainted with the scientific principles which underlie all household problems.”

— Maude Knapp Wheeler, Head of Domestic Studies, Storrs Agricultural College, Annual Report, 1897-98

“The skillful, tidy housewife, the mother wise in preserving the health of her children, the woman of economy who saves her dressmaker’s and milliner’s bills, her plumber’s charges and the doctor’s fees, each is a power to promote the physical, mental and moral well being of this world.”

— Alberta T. Thomas, Professor of Home Economics and Lady Principal, Storrs Agricultural College, Annual Report, 1902-03

Women as Mechanics: Women’s Tools and the Sewing Machine

Women who used sewing machines had to keep them in good working order, tightening screws and applying oil. Most sewing machines came with tools: oil cans, screwdrivers with short handles for reaching into the machines, thread cutters, and spare shuttles and bobbins. While most of us tend to think of tools as things used by men, the tool kits that came with sewing machines remind us that women, too, have long used tools.

Tailors and Cutters: Working Class Men and the Sewing Machine

While the majority of the workers whose lives were most affected by the invention of the sewing machine were women, some men used the new invention as well. Tailors – most of whom were men – used the same heavy industrial-style sewing machines that the women in the sweatshops used. And some of the workers in the sweat shops – mostly cutters, as opposed to stitchers – were men.

Women as Consumers: Advertising and Selling Sewing Machines and Thread

Although in the nineteenth century, most women – even middle-class women – lacked the money to buy sewing machines themselves (which meant that most machines were actually purchased by men: tailors, sweatshop owners, or middle-class husbands), manufacturers of sewing machines and of thread well understood that the chief consumers of home sewing machines were women. If housewives didn't want them, their husbands wouldn't be buying them. Much of their advertising, then, was aimed at women. Trade cards – provided by manufacturers to retailers, who then distributed them to potential customers – carried messages designed to appeal to women. They portrayed thread as strong enough to hold Jumbo, the famous elephant, or hold up the new Brooklyn Bridge. They showed sewing machines in family settings. And they featured homely scenes or art reproductions that manufacturers believed would grab the attention of middle-class women. (Below: Some late 19th-century trade cards, aimed primarily at female consumers.)







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