Ironing and Irons, Before Electricity

Iron is a tool. They remove wrinkles, giving the fabric a smooth and satisfying finish. In some parts of the world, ironing still serves another purpose—sanitation. The heat of an iron kills parasites and bacteria which can cause harmful effects on health.

The desire for smoothly finished fabric is old. In Asian cultures, there is evidence of irons in use circa 800 A.D., and it is likely that ironing stretches back much further. In European cultures the evidence goes back just as far, people used smooth stones and pieces of glass with a flat surface or even the jaw of a cow or tooth of a pig to press out the wrinkles.

Before the effectiveness of heat for ironing was realized, pressure was the sole force on the fabrics. In northern Europe the 13th century, a mangle board became a popular tool for flattening cloth. A mangle board, a piece of wood that had one side or two handles, would be pressed down and rolled along a thin, wooden cylinder that had been wrapped with a damp article of clothing. (Imagine rolling dough, but the dough is uncooked.) After sufficient rolling, the article would be removed from the cylinder and laid flat to dry.

By the 1600s, heat was being used in the ironing process. Heating the fibers of fabric allows them to regain their plasticity, and the application of pressure forces them back to being straight instead of wrinkled and lumpy. The European irons of the 1600s and the 1700s were most often box or “skull” irons. They were constructed of thin slabs of metal that were allowed to cool off in a box or socket with a rectangular opening at the rear. A solid skull of metal, which had been heated in a fire, was placed inside the box to heat the iron, resulting in stabilizing heat for the person using the iron.

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Until the Industrial Revolution of the 1800s, ironing was a time-consuming task. Irons were expensive objects and only wealthier families, who employed servants to iron their clothes, could afford them. After the production of cast iron was perfected in the 1800s, a simple ironing implement became a practical tool for ironing clothes. A mangle board became a popular tool for flattening cloth. A mangle board, a piece of wood that had one side or two handles, would be pressed down and rolled along a thin, wooden cylinder that had been wrapped with a damp article of clothing. (Imagine rolling dough, but the dough is uncooked.) After sufficient rolling, the article would be removed from the cylinder and laid flat to dry.

The earliest technical hurdle involved making a heating element that would work. The metal wire had the characteristic of electrical resistance: resistance to flow of electricity converts some of the electrical energy into heat. Earl Lifshey’s Prometheus Story describes this development by quoting Robert Kuhn, the son of Frank Kuhn who founded an electric heating company in 1894:

Pioneers, no. 203

The biggest problem was getting resistance wire for the heating elements. The only source was Germany, yet even this material was not a true wire but rather a fragile, to conduct electricity and generate heat. Seely’s next patent, in 1883, switched from carbon sticks to compressed carbon powder and put the heating element in a stand that the iron sat upon until heated sufficiently. Under this second design, the iron’s heating element would not be subject to movement and physical shock, which tended to ruin it. In an 1890 patent, Charles Carpenter claimed that he had solved this problem by incorporating a steel plate into the iron. The plate supplied mechanical pressure to the heating element, the pressure increased as the temperature increased.

Iron in the Early Years of Electricity

The first U.S. patent for an electric iron was filed on December 8, 1881, by Henry W. Seely of New York City. The patent was awarded to him on June 6, 1882. In 1882, Seely’s patent had been awarded an English patent for an electric iron just six days earlier, on May 31, 1882. French and German patents were awarded about the same time. No example of Seely’s iron has survived, and it remains in doubt if any were produced for the market.

In 1890, Charles E. Carpenter of Minneapolis, Minnesota, produced electric irons for use in a factory—details reported in the August 30, 1890, issue of Scientific American. (The full history of Carpenter and his company is detailed in the Early Electric Irons section of this book.) Carpenter produced irons for just a few years, and by 1894, when he dissolved the second of two companies he formed to produce irons. The industry spent the next 30 years developing and perfecting the technology needed to produce a reliable, durable and safe electric iron.

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“Wood handle is a complex turning with grooves or other decorative touches. Instead of a standard two-prong plug, there is a light socket adapter for some other non-standard plug, such as one made of wood. These light socket adaptors are sometimes seen on irons made after 1915. The first use of electricity in a residential setting was for lighting, and typically, the only outlet for electricity would be a light bulb socket hanging from the ceiling (wall receptacles came much later). Thus the first irons were equipped with light socket adapters. Since the electric light bulb had to be removed from the socket in order to connect the iron, ironing had to be done during the day, when natural lighting was available. This presented a definite problem: The earlier power companies did not supply electricity before noon, because electric lighting was not in demand during daylight hours. And they reacted with distress when it was first proposed. It wasn’t until about 1910 that the power companies realized they could increase revenue by providing electricity during the day. This was a turning point for the manufacturers of electric home appliances.

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