

Elements of a Successful Machine

THE REQUIREMENTS for producing a successful, practical sewing machine were a support for the cloth, a needle to carry the thread through the fabric and a combining device to form the stitch, a feeding mechanism to permit one stitch to follow another, tension controls to provide an even delivery of thread, and the related mechanism to insure the precise performance of each operation in its proper sequence. Weisenthal had added a point to the eye-end of the needle, Saint supported the fabric by placing it in a horizontal position with a needle entering vertically, Duncan successfully completed a chainstitch for embroidery purposes, Chapman used a needle with an eye at its point and did not pass it completely through the fabric, Krems stitched circular caps with an eye-pointed needle used with a hook to form a chainstitch, Thimmonier used the hooked needle to form a chainstitch on a fabric laid horizontally, and Hunt created a new stitch that was more readily adapted to sewing by machine than the hand stitches had been, but, although each may have had the germ of an idea, a successful machine had not evolved. There were to be hundreds of patents issued in an attempt to solve these and the numerous minor problems that would ensue. But the problems were solved. And, in spite of its Old World inception, the successful sewing machine can be credited as an American invention.

Although the invention of the practical sewing machine, like most important inventions, was a many-man project, historians generally give full credit to Elias Howe, Jr. Though such credit may be

overly generous, Howe's important role in this history cannot be denied.

Elias Howe, Jr., was born on a farm near Spencer, Massachusetts, but he left home at an early age to learn the machinist's trade.³³ After serving an apprenticeship in Lowell, he moved to Boston. In the late 1830s, while employed in the instrument shop of Ari Davis, Howe is reported to have overheard a discussion concerning the need for a machine that would sew. In 1843, when illness kept him from his job for days at a time, he remembered the conversation and the promises of the rich reward that reputedly awaited the successful inventor. Determined to invent such a machine, he finally managed to produce sufficient results to interest George Fisher in buying a one-half interest in his proposed invention. By May 1845, Howe's machine (fig. 14) was used to sew the principle seams of two woolen suits for men's clothing. He continued to demonstrate his machine but found that interest was, at best, indifferent.

Nevertheless, Howe completed a second machine (fig. 15), which he submitted with his application for a patent. The fifth United States patent (No. 4,750) for a sewing machine was issued to him on September 10, 1846. The machine used a grooved and curved eye-pointed needle carried by a vibrating arm, with the needle supplied with thread from a spool. Loops of thread from the needle were locked by a thread carried by a shuttle, which was moved

³³ See biographical sketch, pp. 218-221.