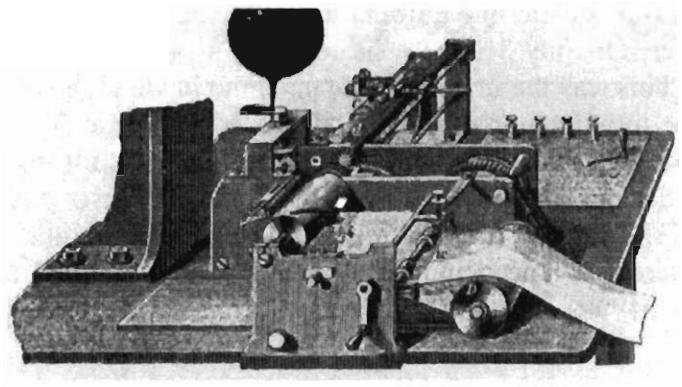

Figure 9.2 Autographic telegraph of Bernhard Meyer. (Scanned from *Archiv für deutsche Postgeschichte*, Vol. 1, 1995, p. 59.)

9.4 AUTOGRAPHIC TELEGRAPH OF BERNHARD MEYER

After the Franco–Prussian war, the pantelegraph was replaced in France by the *autographic telegraph*, developed by the French telegraph operator Bernhard Meyer (1830–1884) in the 1860s. Meyer used a drum with a helical edge which enabled a transmission speed about twice as fast as that of the pantelegraph. In 1865 he obtained a patent for his autographic telegraph (Figure 9.2), which was used on several French lines beginning in 1871.

Bernhard Meyer was also the first to produce a multiplexer capable of sending four telegraph signals simultaneously over the same line. His multiplexer was first used on the Paris–Lyon line in 1872 and was also used in Austria, Germany, and Switzerland. Just before he died, Meyer was the first to use perforated tape for the retransmission of Morse signals, in 1884.

9.5 TELAUTOGRAPH OF ELISHA GRAY

The American physicist Elisha Gray (1835–1901), born in Barnesville, Ohio, made various improvements in electrical telegraphy beginning in the early 1870s. He first

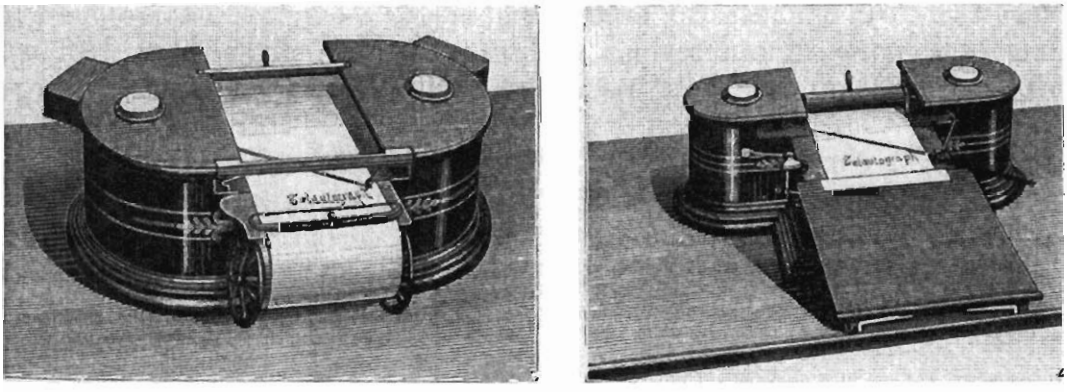

Figure 9.3 Telautograph of Elisha Gray. (Scanned from *Archiv für deutsche Postgeschichte*, Vol. 1, 1995, p. 59.)

developed a universal private line automatic printer, used mainly by private companies on leased lines. On July 31, 1888, he received a patent for a machine he called the *telautograph*. This was the first facsimile machine in which a stylet was controlled by two bars: one moving horizontally and the other vertically, a predecessor of the X/Y coordinate plotter. The movement of the transmitting stylet produced coded pulses on the line, which controlled X/Y movement of the stylet in the receiver. Figure 9.3 shows both the transmitter and the receiver unit. Obviously, Gray had already mastered advanced industrial design. Gray founded the Telautograph Company, which at the end of the twentieth century still manufactured telefax apparatus.

The telautograph was modified by Foster Ritchie at the end of the nineteenth century and called the *telewriter*. It could be operated on a telephone line, enabling simultaneous copying and speaking. When called in absence of a subscriber, the telewriter switched on automatically and reproduced a handwritten message. The telewriter was used in England and in Germany, where the company *Mix & Genest* (now Alcatel SEL) obtained a license for local production.

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