

Gutenberg and His Bible

At the time of Johann Gutenberg's birth in Mainz, Germany, in about 1400, books were precious and expensive objects. Each book was carefully copied by hand by a scribe—a slow process.

Gutenberg became a goldsmith and stone cutter, but his major contribution to the history of printing was his invention of **movable type**. He developed durable metal type from a combination of lead, tin, and antimony. Each letter or punctuation mark was made in a mold and then mounted in a wooden block. Each character could be moved, used, and reused many times. This innovation meant that books could be printed much faster, more accurately, and more cheaply than when they were handwritten by scribes.



Fig. 1–18. Johann Gutenberg. Portrait, 1584.

Gutenberg also developed a formula for a sticky ink that adhered to metal type. His printing press operated on the same principles as local wine presses: it used a large screw mechanism that pressed on heavy blocks.

After years of secret experimentation, in about 1455, Gutenberg's first printed book, a Bible, was released. It changed Western civilization forever.

Although Gutenberg was forced out of business before the printing was complete, between 158 and 180 copies of the Bible were printed by 1455. Most were printed on Italian paper; some were printed on vellum, which is made from animal skins. All were bound by hand. Twenty-two complete copies of the Bible still survive today.

After Gutenberg's printing innovations were made public, printing expanded dramatically in Europe. By 1498, just 43 years later, 15 million new books had been printed—about 30,000 new titles. Literacy rates went up, and new ideas began to spread quickly.



Fig. 1–19. Each page of Gutenberg's Bible was printed from individual letters arranged to form words, then locked into a wooden frame. Page 162 from the Gutenberg Bible, 1455–1456.