



The History of Printing as Portrayed on Stamps: A Topical Study

A close-up photograph of a cave wall covered in numerous hand stencils. The stencils are primarily red and orange, with some yellow and white ones visible. They are of various sizes and orientations, some appearing as simple outlines of hands, others as more complex shapes. The rock surface is uneven, with visible cracks and mineral deposits. The lighting is somewhat dim, highlighting the texture of the rock and the colors of the pigments.

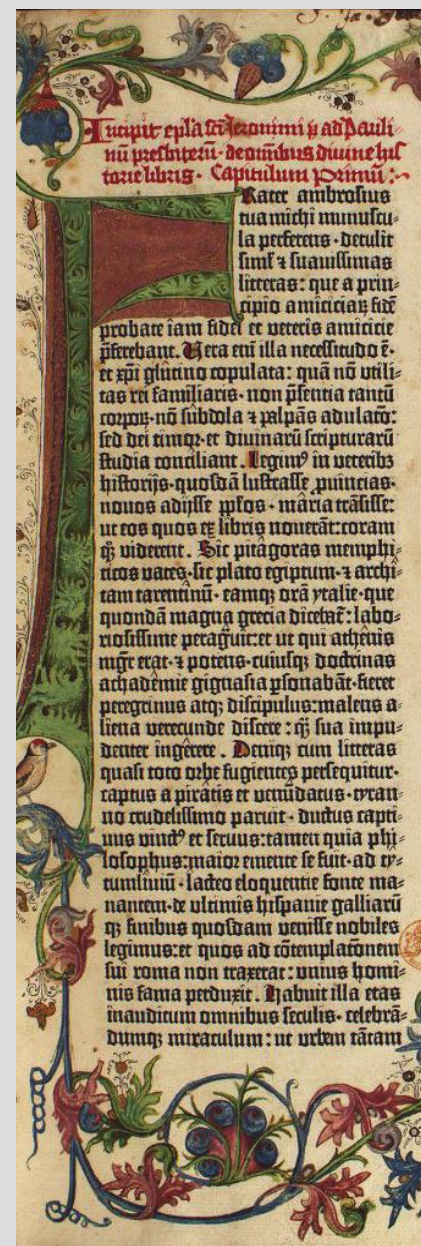
**Hand stencils, El Castillo cave,
northern Spain' s Cantabrian Sea coast,
approximately 40,800 years old.**



Hand Stencils, 40,800 years old



Diamond Sutra, 868



Gutenberg Bible, 1455



Inkjet web press



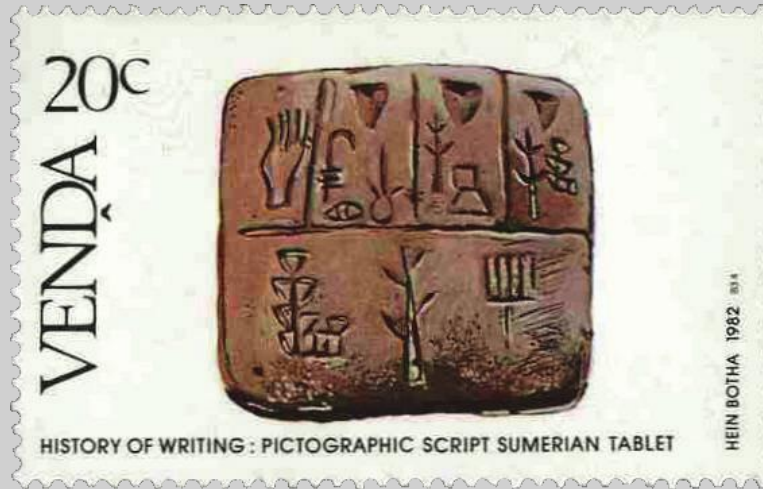
Desktop Inkjet Color printer



Montenegro, Sc35, 400th
Anniversary of Printing in
Montenegro.

Clay Tablets

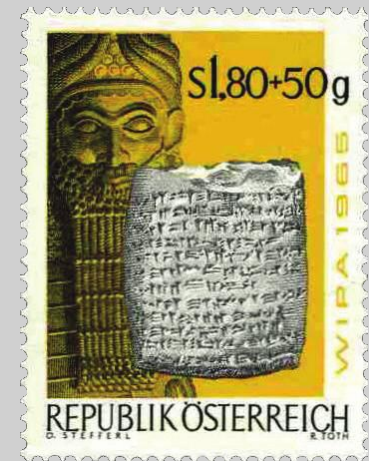
The first completely “manufactured” form of document was the clay tablet. The abundance of clay in Sumer, where “history” (that is, writing) began, made it the logical material to use when creating records and eventually entire books, which required a series of tablets.



Venda, Sc62, Clay Tablet, 4th millennium BCE



Israel, Sc2057, Cyrus Cylinder, 500 BCE



Austria, ScB316, Cuneiform, 2nd millennium BCE

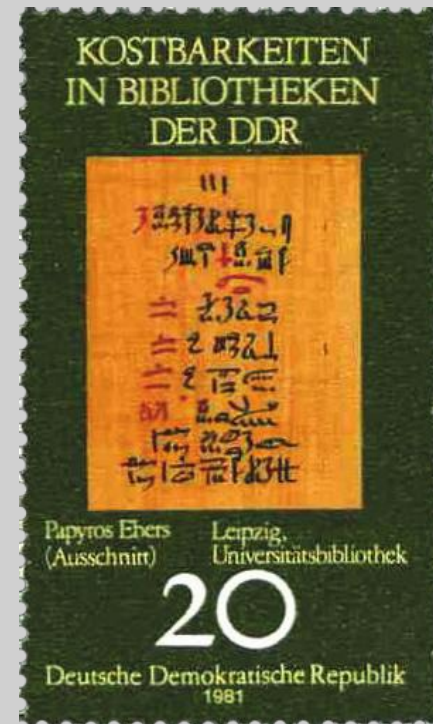
Papyrus

The use of papyrus in Egypt is at least as old as the use of clay. Papyrus stems were cut into strips and one thin layer of overlapping strips was covered with a second layer at right angles, giving sheets of papyrus a woven appearance.

The papyrus scroll is more of a direct antecedent of the codex (traditional book form) than the clay tablet.



Austria, ScB315, Hieroglyphics on papyrus fragment. Note woven texture.



DDR, Sc2207, Ebers Papyrus, Medical Text, 1600 BCE

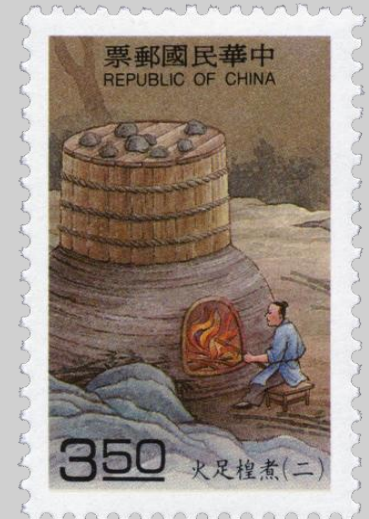
Paper (Beginnings)

Paper was made in China during the Hàn Dynasty (1st century BC). Cài Lún is said to have created an efficient, sustainable papermaking process about 105AD.

Stamp artwork of papermaking (right) is based on illustrations from Sung Ying-Hsing's 1637 publication *T'ien-Kung K'ai-Wu* (*The Creations of Nature and Man*).



China-PRC, Sc639, Tsai Lun, Inventor of Papermaking.



China-Taiwan, Sc2935-2939, Papermaking: Cutting Bamboo, Cooking Bamboo, Pouring Syrup into Wooden Panel, Stacking Panel, Drying Paper.

Parchment & Vellum

By the 4th century C.E., parchment and vellum had replaced papyrus for most books. Parchment was commonly made from goats and sheep. Vellum was made from calves. Parchment was more easily made than papyrus, was less brittle, could be folded to make a signature for a codex, and could be reused, and both sides could receive writing.



Ethiopia, Sc1253, Preparing vellum.



Liechtenstein, Sc1302, Digital Palimpsest Research. Palimpsest is writing material used one or more times after earlier writing has been erased.

Fact: One copy (2 volumes) of Gutenberg's 42-line Bible required an estimated 170 sheep.

Scroll

The scroll is an ancient form of the book. It was first used in Egypt. It contributed to the spread of literacy throughout the early Greek and Roman world.

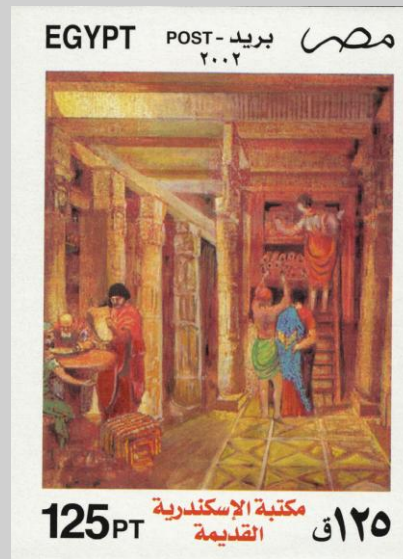
The Buddhist *Diamond Sutra* (868) is the earliest surviving, complete dated printed book. It is a scroll about 16 feet in length.



Jordan, Sc522d, Dead Sea Scrolls.



Terracotta Scroll Jar. 1st century BCE–late 1st century CE. Reconstructed from fragments found in caves near Dead Sea. Held fragments of Dead Sea Scrolls.



Egypt, Sc1830, Ancient Alexandria Library with Scrolls on Shelves.



Diamond Sutra, 868.

Codex

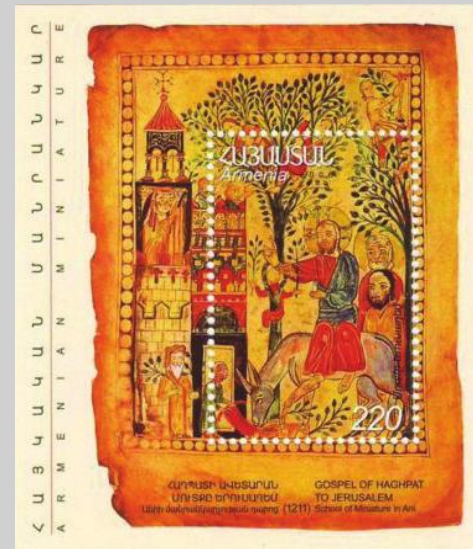
A Codex is a book constructed of a number of sheets of paper, vellum, papyrus, or similar materials. The Romans developed the form from wooden writing tablets. The gradual replacement of the scroll by the codex has been called the most important advance in book making before the invention of printing.



Montenegro, Sc265, Miroslav Gospels, 12th Century.



Frontispiece of the Codex Amiatinus (c700). Scribe with Shelves of Books in Background.



Armenia, Sc743, Gospel of Haghpat, early 13th Century.



Book of Kells (c800) Speculative Stamp Design by Veronica-Ronit Bliman. Inspired by the Chi-Rho, As Well As the Island of Iona in Which the Book Was Originally Created.

Paper (Europe)

It took 1,000 years for the Chinese process to reach Europe. In 1085 a mill at Jative, Spain was producing a rag sheet, chiefly of linen fibers.



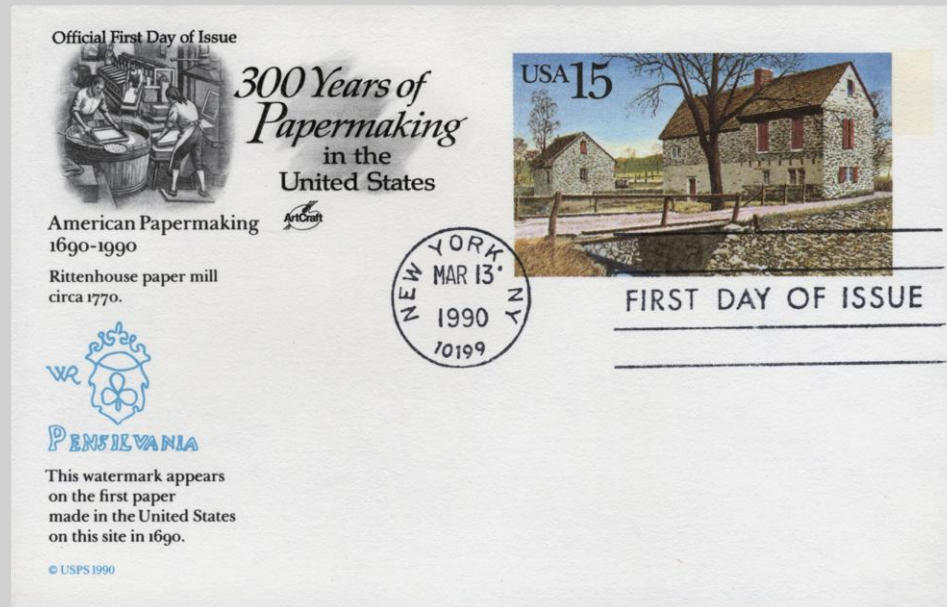
Hungary, Sc4165, 700th Anniversary of Hungarian Documents on Watermarked Paper (2010).



Poland, Sc3044, 500th Anniversary of the Polish Paper Industry (1991).

(North America)

The first paper mill in North America was built by the Spanish in Mexico City in 1575. The first mill in the U.S. was established in 1690.



U.S., ScUX145, American Papermaking 1690-1990.

Manuscripts

Although the Egyptians, Greeks, and Romans illustrated their papyrus scrolls and early codices with an occasional small format picture, frequent illuminations, many of them full-page, did not appear until the codex book achieved its final form.



Hungary, Sc3863-3864, Hungarian Illuminated Chronicle, 1358; Ritual of Zhou, China, 12th Century. (Joint Issue with Peoples Republic of China.)



Israel, Sc909, Frontispiece, Schocken Bible, South Germany, ca. 1290.



Mali, ScC105, Koran Page, Baghdad, 11th Century.

Scribes

Medieval books were produced in monastic scriptoria which arose in Europe in the 6th century.

These were often large rooms that also served as the library. Scriptoria also were often attached to royal courts.

By the start of the 13th century secular workshops developed, where professional scribes stood at writing-desks to work on the orders of customers.



Mali, ScC107, Miniature of Scribe, Baghdad, 1287

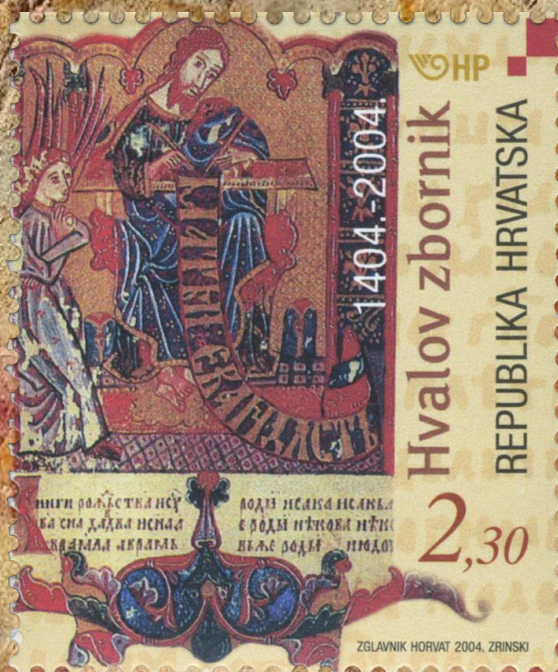
One scribe wrote in the margin of an eighth-century text: "Writing is excessive drudgery. It crooks your back, dims your sight, twists your stomach and your sides. Three fingers write, but the whole body labors."



Ireland, Sc128, 300th Death Anniversary of Brother Michael O'Clery



Russia, Sc6004, Miniature from "Ostromirov Gospel" by Sts. Cyril & Methodius, 1056-1057.



Croatia, Sc543, Hval's Manuscript,
600th Anniversary.

Woodblock Printing

Woodblock printing on paper originated in China around 200 CE. Printed texts can be traced to early 8th century China and Korea. Whole pages, including text, were carved into flat wooden blocks. Text was treated the same as a woodcut illustration.



South Korea, Sc650, Tripitaka Koreana, 80,000+ woodblocks from the 13th century.



Frontispiece of the Diamond Sutra of 868, a Woodblock Print Book in Scroll Form, about 16 Feet Long.

New Year Woodblock Print, about 1900.

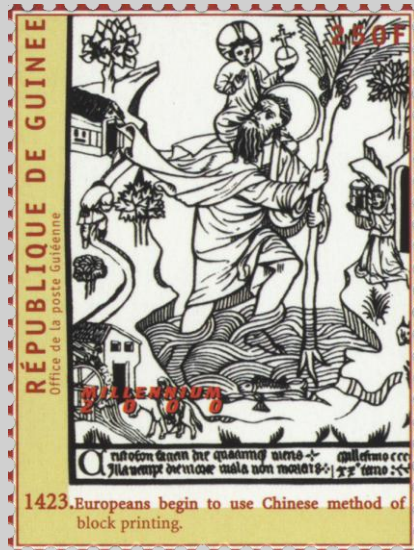


China/PRC, Sc3878, Fengxiang New Year Woodprint: General with a Whip in Hand.

Woodblock Printing

In Europe and Asia alike, the earliest major use of woodblocks was for reproducing religious figures. The custom reached Europe by the end of the 14th century.

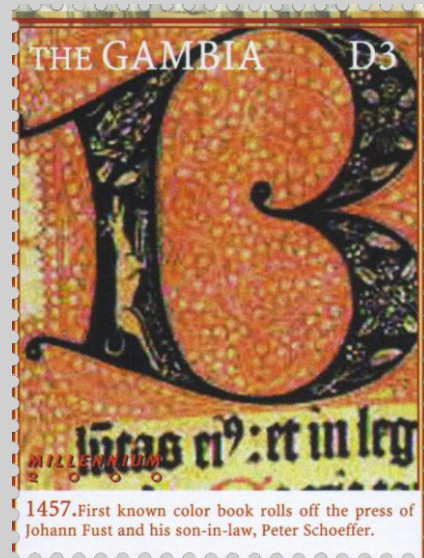
Woodblock book printing in Europe began during the time of Gutenberg.



Guinea, Sc1824f, Europeans Begin to Use Chinese Method of Block Printing, 1423.



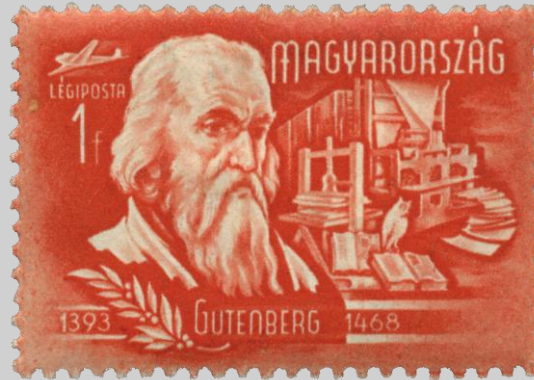
Czech Republic, Sc2520, 16th Century Playing Card.



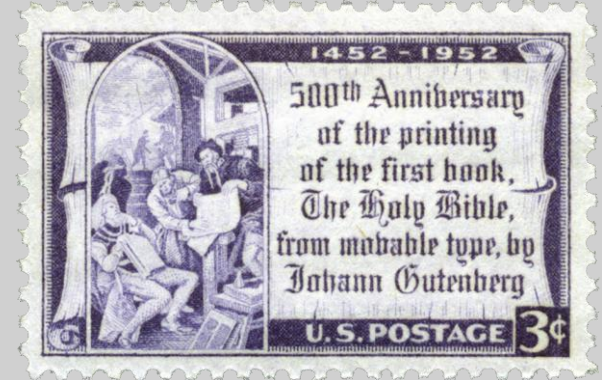
Gambia, Sc2189c, Fust and Schöffer's Mainz Psalter (1457). Large Initial Caps Were Probably Accomplished Using Nested Woodblocks.

Gutenberg

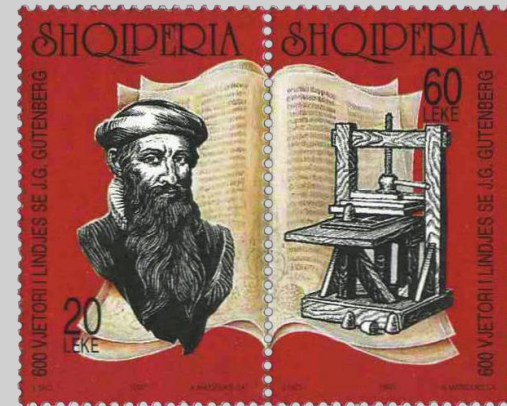
Johannes Gutenberg
(c1400-1468)
modified pre-existing technologies
(printing, the press, movable type, ink) so that they functioned together as a viable system for producing cost-effective multiple copies of printed matter.



Hungary, ScC53, Johannes Gutenberg and the Printing Press.



USA, Sc1014, 500th Anniversary of the Printing of the Gutenberg Bible from movable type.



Albania, Sc2529-2530, Johannes Gutenberg, 600th birth anniversary.

Germany-DDR, Sc1167, Johann Gutenberg.

Gutenberg

It's likely that the bulk of his inventiveness and labor was devoted to perfecting a system for making and using movable metal type.

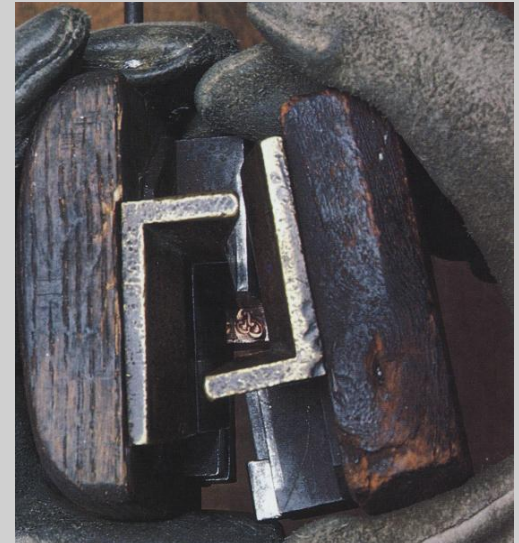
His printing method lead to an explosion of knowledge.



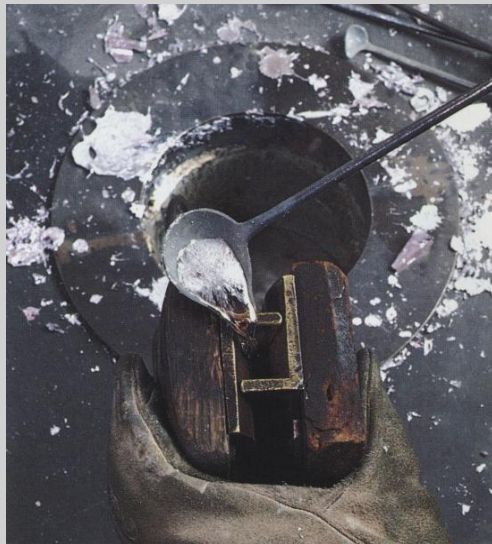
Germany, Sc1392, Europa, Invention of the Art of Printing.



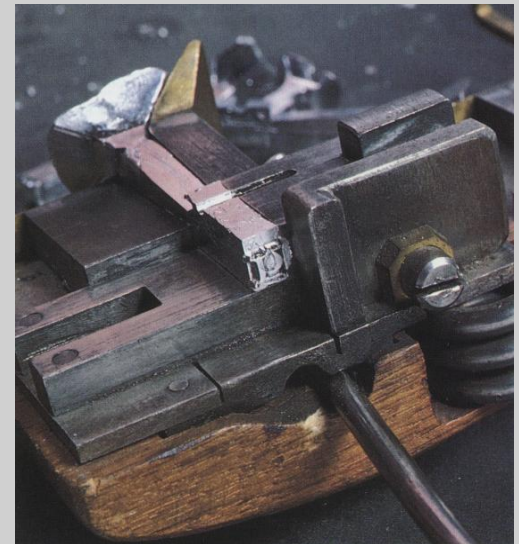
1. Steel punch strikes letter into copper blank (matrices).



2. Adjustable mold fits around copper matrix.



3. Molten type metal, a mixture of lead, tin and antimony poured into mold.



4. Hardened alloy from funnel of mold will be broken from type and remelted.

Gutenberg

Rare cover from
the Drukerei zum
Gutenberg (Printshop
of Gutenberg)!

Well, maybe not so
rare, and most likely
Johannes Gutenberg
did not work in this
printshop, but I can
always dream.



Germany, Sc2052, .

Paper (Manufacture)

Today, nearly 700 years after the founding of Italy's Fabriano mill, handmade paper is still produced there in much the same way as it was at the time of Gutenberg's birth. Industrial paper production was essential to the spread of knowledge, education and commerce and continues to be an essential product.



Italy, Sc2001-2002, Pietro Miliani (1744-1817). Convent of San Domenico, now Fabriano Paper and Watermark Museum.



Newfoundland, Sc95, 300th Anniversary of Colony. Grand Falls Paper Mill.



Austria, Sc1828, Papermaking/Printer.



Norway, ScB69a-d, Paper Industry. Clockwise from upper left: Wood Aging Containers, Boiling Plant, Paper-making Machine, Paper Dryer.

Letterpress

(relief-printing,
typography)

This was Gutenberg's method of printing, as well as earlier printing in China and Korea.

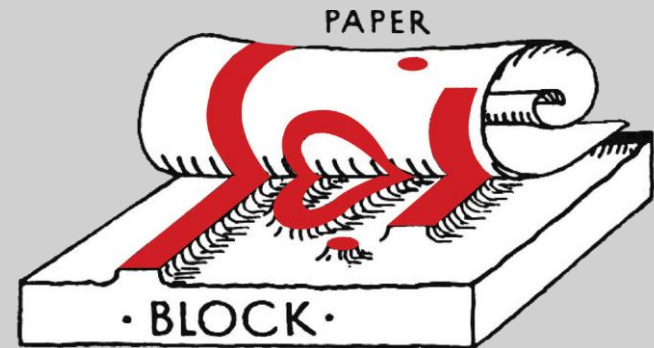
Letterpress was the normal form of printing text from its invention by Johannes Gutenberg until the 19th century and remained in wide use for books and other uses until the second half of the 20th century.



USA, Sc857, Printing in Colonial America, 300th Anniversary.



Finland, Sc242, 300th Anniversary of Printing of First Bible in Finnish.



Left, Mexico, Sc749, First Printing Shop in the Americas, 1539. Right, Recreation of First Press, which is displayed in Printing Museum housed today in building shown on stamp.



Engraving

(*intaglio, gravure, etching, recess*)

The first evidence for humans engraving patterns is a chiseled shell, dating back between 540,000 and 430,000 years, from Java.

Engraving of copper printing plates to produce artistic images on paper began in Germany in the 1430s.



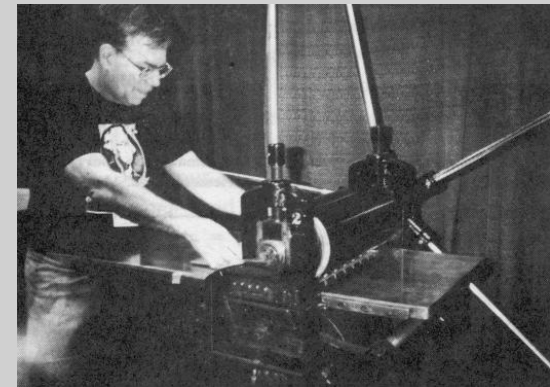
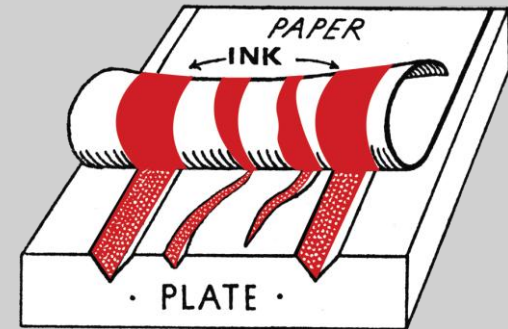
Czech, Sc816, Karel Klic,
Inventor of Photogravure.



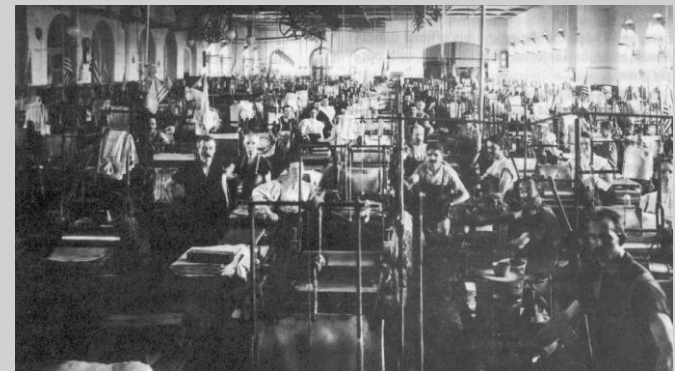
UN, Sc474, Stamp Engraver.



Czesław Sania,
Pacific 97.



Demonstration of BEP Spider Press, Pacific 97.



Bureau of Engraving & Printing, Main Press Room, 1889.

Lithography

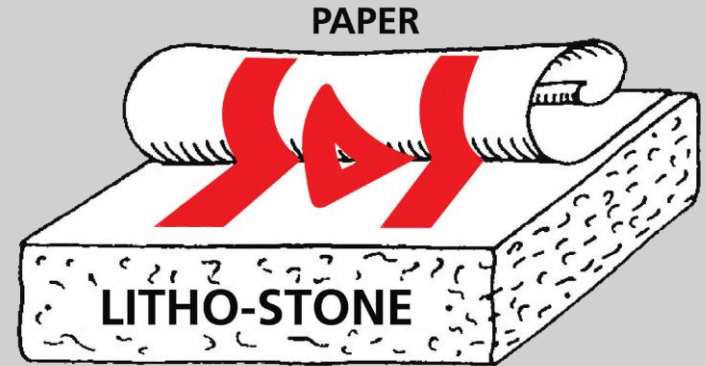
(offset)

Lithography was invented in 1796 by Alois Senefelder, Bavarian author and actor, as an inexpensive method of publishing theatrical works. The process is based on the principle that oil and water do not mix.

Lithographers print from a plane or level surface, hence it is also known as planographic printing.



Austria, Sc1749, Alois Senefelder (1771-1834) on Litho Stone. Bicentennial of the Invention of Lithography.



Germany, Sc1088, 175th Anniversary of Lithography.



Belgium, Sc1307, Manually Krause Lithography Press. Karl Krause, Leipzig.

Iron Hand Press

About 1800, Britain's Charles Stanhope (1753-1816) built the first hand press entirely out of iron. Its strength, innovative use of levers, and a platen the full size of the bed was the first of many productivity improvements achieved by this class of press.



Belgium, Sc1306, Manually-powered Stanhope Iron Press.



Hungary, Sc830, Centenary of War for Independence. Clymer Columbian Press Invented c1813.



Yugoslavia, Sc1543, 150th Anniversary, Serbian Printing Office, c1831.



Venezuela, Sc915, 150th Anniversary of the newspaper *Correo P Orinoco*.



Netherlands Antilles, ScB101, Mass Media. Bed and Platen Press.

Steam Press

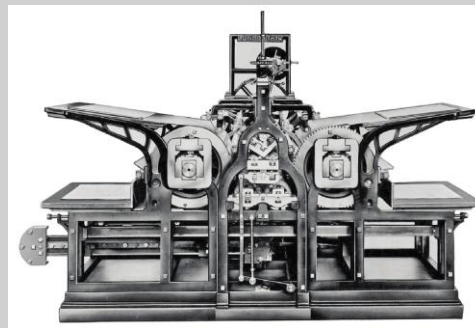
The German Friedrich Koenig (1774-1833) moved to London to realize his invention of the steam press. It was first employed to print *The Times* in 1814.



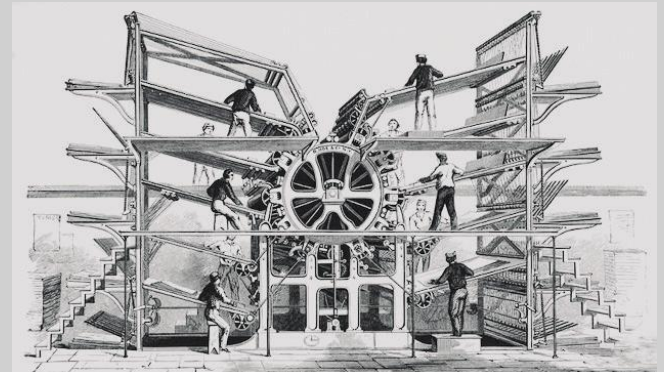
Austria, Sc1132, Steam Printing Press. 175th Anniversary of the Austrian Government Printing Office.



Germany, Sc978, Friedrich Koenig / 150 Anniversary of the Koenig Printing Press.



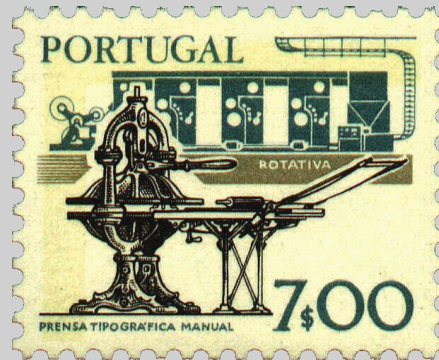
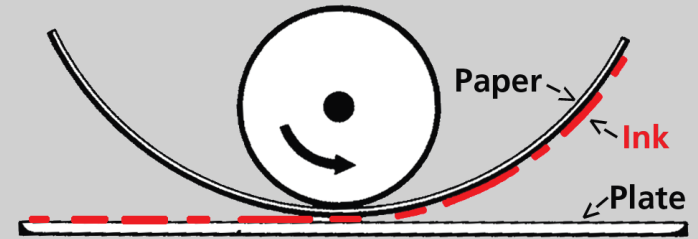
Koenig Two Cylinder Printing Press.



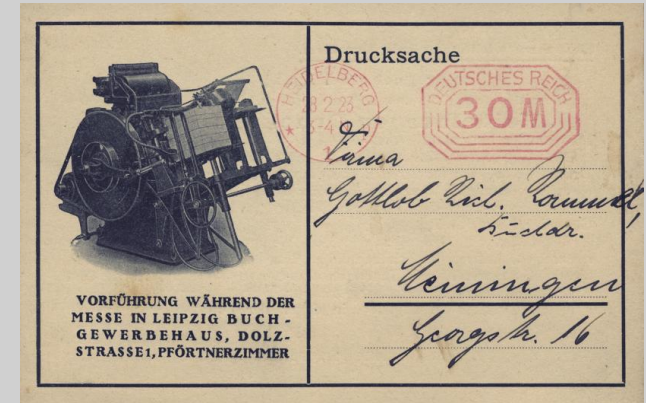
Lithography

In the 225 years since its invention, lithography has evolved from using manually operated, single color/single sheet presses to multicolor, auto-sheetfed and roll-fed computer-to-plate powerhouses.

Lithography is the predominant form of printing today.



Portugal, Sc1369, Old Hand Press and Modern Roll-fed Press.



Advertising Post Card for Heidelberg Offset Press, 1923.



DDR, Sc1086, Planeta-Variant 2-Color Offset Printing Press.



Contemporary Heidelberg Multicolor Sheetfed Press.

Printing Spreads



William Caxton 1476
Britain, 1476.



Denmark, 1482.



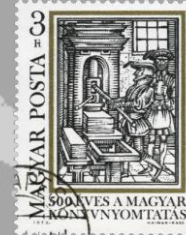
Russia, 1564.



USA, 1639.



Spain, 1472.



Hungary, 1473.



Armenia, 1512.



Mexico, 1539.



Ecuador, 1755.



Spain, Sc1791, Dates of First Printing.

Digital Printing

Today, the computer and software impact every aspect of printing. Digital presses can be as large as houses or small attachments to smart phones.

Setting type is completely digital.

Digitization of prepress functions enable computer-to-plate workflow. And in the case of inkjet and laser printing, there is no printing plate.



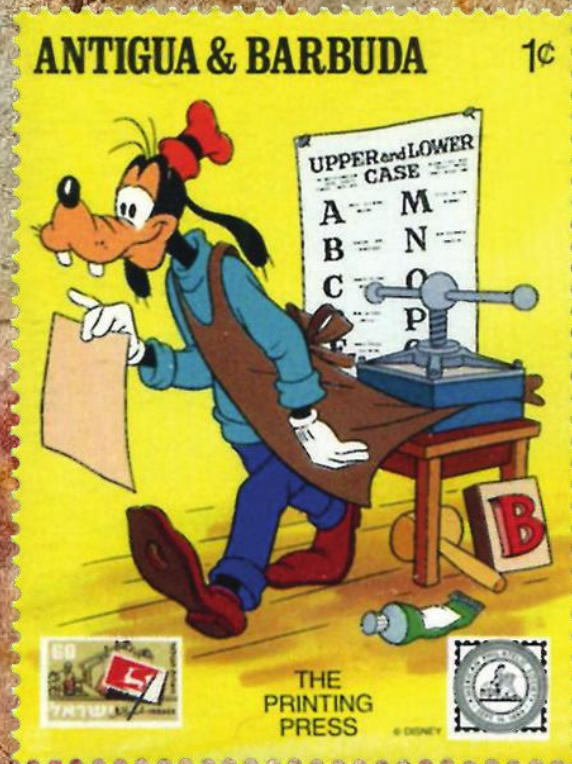
Israel, Sc2101, Indigo Press.



Israel, Sc2102, Digital Prepress.



Netherlands, Sc1083, Royal Dutch Association of Printers Centennial.



Antigua & Barbuda, Sc1238,
Disney Characters Promoting
Philately