

Dr. William Church's 1822 British Patent No. 4664 for a Typecasting, Typesetting and Printing System

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This is a digitization of the 1857 official printing by Eyre and Spottiswoode of the Specification (Inrolled 1822-09-21) for Dr. William Church's 1822 British patent (No. 4664 of 1822, granted 1822-03-21) for "An Improved Apparatus for Printing." It describes a system of three machines: a typecaster, a typesetter, and a press.

This patent is important for several reasons. It contains the first patented typesetting machine. It contains a very early typecasting machine. Most importantly, it establishes for the first time what became known later as "the principle of non-distribution." It is a complete typecasting and composing system (lacking only in automatic line justification) in which types are cast for single use, composed, used, and then not distributed but rather remelted to be cast anew each time. This is the basic principle behind the two composing technologies which later revolutionized printing: the Linotype and the Monotype.

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The digitizations were done at 600dpi in 8-bit greyscale. The text is twelve pages and there are eight sheets of drawings.

Notes on the Publication History of this Patent:

Dr. William Church's British patent, No. 4664 of 1822, was granted by King George IV on 1822-03-21. The "Specification" was Inrolled on 1822-09-21. As Inrolled, it contained a text along with drawings in color. I do not know the present status of these drawings; copies of them are not what one receives when obtaining copies of this patent from the UK Intellectual Property Office. To the best of my knowledge they have never been literally reproduced.

Although Dr. Church was an American, no patent was filed in the United States.

A report of Dr. Church's patent was printed in *The London Journal of Arts and Sciences* [popularly known as "Newton's"], [original series], Vol. 6, No. 25 (1823): 225-232 and Plate 12 and [original series], Vol. 6, No. 26 (1823): 281-285 and Plate 15. This report contains versions of a subset of the drawings of the Specification. Given the date (1823), the drawings in Newton's are certainly hand-drawn copies. A

copy of this journal has been digitized by Google Books. The resolution of the drawings as currently (2010) presented online is not, however, sufficient to make out their detail.

The Specification was officially printed by Eyre and Spottiswoode in 1857. The drawings as printed were redrawn by hand on stone in black and white. This 1857 printing is the version supplied if one obtains copies of this patent from the UK Intellectual Property Office. The version presented here is a digitization done by CircuitousRoot of a paper copy so obtained.

The Specification was also officially abridged (without drawings) in 1859 in *Patents for Inventions: Abridgments of Specifications Relating to Printing*. (London: George E. Eyre and William Spottiswoode, 1859.) A digitization of this volume of abridgments has been done by Google Books.

There are references to this patent, in varying levels of detail in several contemporary and later sources. These include:

The Monthly Magazine. No. 382 (5 of Vol. 55, June 1, 1823): 453. This is a one-page summary, without illustrations. It claims a company is to be set up in New York.

Hansard, Thomas Curson. *Typographia*. London: Baldwin, Craddock and Joy, 1825: 665-677. This is a text description without drawings.

The Franklin Journal and American Mechanics' Magazine. [later the Journal of the Franklin Institute]. Series 1, Volume 1, No. 3 (March 1826): 150-151. This is a copy of the report in *The London Journal of Arts and Sciences* (but without the illustrations).

Brewster, David, Ed. "Church's Type-Founding and Printing Machinery" within the article "Printing Machinery" in *The Edinburgh Encyclopaedia*, Vol. 17 (Edinburgh: Printed for William Blackwood [*et. al.*], 1830): 173-174. and Plate CCCCLXIX. The illustrations appear to be those from Newton's *London Journal*.

"The Inventions of Dr. William Church[:] The First Patented Typesetting and Composing Machine." *Scientific American*, Vol. 88, No. 7 (Feb. 14, 1903). This article contains beautiful renderings of the machines. These illustrations may not, however, be accurate.

John S. Thompson's *History of Composing Machines*. (Chicago: The Inland Printer Company, 1904) reproduces a view of the typesetter from the *Scientific American* article.

Richard E. Huss' book *Dr. Church's "Hoax"* (Lancaster, PA: Graphic Crafts, Inc., 1976) is the only real study of this typesetting and typesetting system. He reproduces a subset of the patent drawings at a reduced scale.

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