

**A SHORT HISTORY OF THE PRINTING
PRESS AND OF THE IMPROVEMENTS
IN PRINTING MACHINERY FROM THE
TIME OF GUTENBERG UP TO THE
PRESENT DAY**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649419784

A Short History of the Printing Press and of the Improvements in Printing Machinery from the Time of Gutenberg up to the Present Day by Robert Hoe

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Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

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ROBERT HOE

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FROM A MEDAL BY SCHARFF OF VIENNA

PRINTED AND PUBLISHED FOR

[ROBERT HOE]

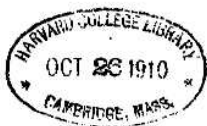
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THE PRINTING PRESS

ABOUT the year 1450, Gutenberg was engaged in printing his first book from movable types. No method of taking the impressions simpler than that employed by him can be imagined, unless it be with a "buffer," or by means of a brush rubbed over the paper laid upon the "form" of type, after the manner of the Chinese in printing from engraved blocks. His printing press consisted of two upright timbers, with cross pieces of wood to stay them together at the top and bottom. There were also intermediate cross timbers, one of which supported the flat "bed" upon which the type was placed, and through another a wooden screw passed, its lower point resting on the centre of a wooden "platen," which was thus screwed down upon the type. After inking the form with a ball of leather stuffed with wool, the printer spread the paper over it, laying a piece of blanket upon the paper to soften the impression of the platen and remove inequalities. This was the machine which Gutenberg used. The mechanical principle embodied in it was found in the old cheese and linen presses ordinarily seen in the houses of medieval times.

Were Gutenberg called upon to print his Bible to-day he would find virtually the same type ready for his purpose as that

THE EARLIEST FORM OF PRINTING PRESS



THE EARLIEST FORM OF PRINTING PRESS

made by him, no change having taken place in its general conformation; but he would be bewildered in the maze of printing machinery of the beginning of the twentieth century.

The simple form of wooden press, worked with a screw by means of a movable bar, continued in use for about one hundred and fifty years, or until the early part of the seventeenth century, without any material change. The forms of type were placed upon the same wooden and some-

times stone beds, incased in frames called "coffins," moved in and out laboriously by hand, and after each impression the platen had to be screwed up with the bar so that the paper which had been printed upon it might be removed and hung up to dry.

The first recorded improvements in this press were made by William Jensen Blaew, a printer of Amsterdam, some time about 1620. They consisted in passing the spindle of the screw through a square block which was guided in the wooden frame, and from this block the platen was suspended by wires or cords; the block, or box, preventing any twist in the platen, and insuring a more equal motion to the screw. He also placed a device upon the press for rolling in and out the bed, and added a new form of iron hand lever for turning the screw. Blaew's press was introduced into England, and used there as well as on the continent, being substantially the

THE BLAEW PRESS

same as that Benjamin Franklin worked upon as a journeyman in London, early in the last century.

Little further improvement was made in the printing press before the year 1798, when the Earl of Stanhope caused one to be made, the frame of which, instead of being of wood, was one piece of cast-iron. A necessity had arisen for greater power in giving the impression, especially in the printing of woodcuts, and the tendency was naturally toward larger forms of type, requiring greater

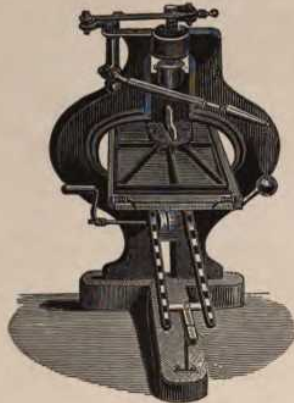


THE BLAEW PRESS

exertion on the part of the printer; the labor in working one of the old screw presses was about equal to that of the plowman in the field. The Earl of Stanhope reserved the screw, but caused to be added a combination of levers to assist the pressman in gaining greater power, when giving the impression, with less expenditure of energy. These machines were very heavy and extremely cumbersome. They were the first iron printing presses ever constructed, and came into use to some extent. The printers, seizing upon this new idea of a combination of levers to increase the power, were induced to place them upon their wooden presses, the improvement resulting generally in the destruction of the latter, which were not adapted to stand the strain. The iron platen employed by the Earl of Stanhope had, however, previously been used upon the wooden presses.

STANHOPE PRESS

The next practical improvement was made by George Clymer of Philadelphia, who, about 1816, devised an iron machine, entirely dispensing with a screw. A long, heavy cast-iron lever was placed over the platen, one end attached to one of the uprights of the cast-iron frame, and the other susceptible of being raised and lowered



STANHOPE PRESS

by a combination of smaller levers, worked by the pressman after the manner of the ordinary hand press. The impression was given and the platen raised and lowered by a spindle, or pin, attached to the centre of the large cross lever at the top, this being properly balanced to facilitate its being raised with greater ease. Mr. Clymer carried his invention to England, where it was introduced to some extent and was known as the "Columbian" press.

In England there were iron hand presses made by Rutheven, by Brown and by others, all, more

or less, improvements upon the Stanhope.

In 1822 Peter Smith, an American, connected with the firm of R. Hoe & Co. in New York, devised a machine which was in many respects superior to any up to that time. The frame was of cast-iron, and in place of the screw with levers, he substituted a toggle joint, at once simple and effective.

In 1827, however, Samuel Rust of New York, perfected an invention which was a great improvement on the Smith press. The frame, instead of being all of cast-iron, had the uprights at the sides hollowed for the admission of wrought-iron bars, which were