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Fast Presses

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Fast **Presses**

It's a *visceral thrill* to watch a large *press* in action - paper leaving huge rolls that weigh over a ton, flying through a *vast* machine that prints, cuts, and folds it, all faster than the eye can follow. Compare that with a Gutenberg-style hand press, where two printers might finish a few hundred sheets per day. Printers still used presses like that during the eighteenth-century Industrial Revolution. Only after that did things begin changing.

First, French printers began adding metal parts and clever mechanisms to presses. Then, around 1800, the Earl of Stanhope built an all-metal press. He used *compound levers* to drive a conventional screw mechanism. It *imposed* very high pressure at the end of the printing stroke. Printers who once had to *impress* each half of the paper separately could now, with far less effort, print a whole sheet in one pull of their lever.

During the War of 1812, George Clymer of Philadelphia built his famous Columbian Press. It was lighter than Stanhope's, with a *pure lever* system. Clymer eliminated the screw drive entirely. He also used a dramatic iron American eagle for the counterweight that lifted the *platen* after each impression. Historian James Moran tells how, as Columbian presses went international, other countries would replace the eagle with a globe, a lamp, or a lion.

In any case, hand presses now provided far greater outputs of printed matter; but, compared with our huge newspaper presses, they seem intolerably slow. They would clearly have to give way to a steady flow of paper through rollers.

That was first *hinted* at by an early seventeenth century Italian inventor. He proposed rolling a heavy wheel over paper lying on inked type. But it was 1790 before William Nicholson patented a *rotary* printing system, and then he failed to build a prototype. Not until 1810 did German inventor Friedrich Koenig began developing a steam-powered machine whose *inked* roller printed paper as it flowed by. Koenig also figured out how to print on both sides of paper. Think about that for a moment; just imagine the problem of *inverting* the paper and causing a second roller to place an image correctly on its back.

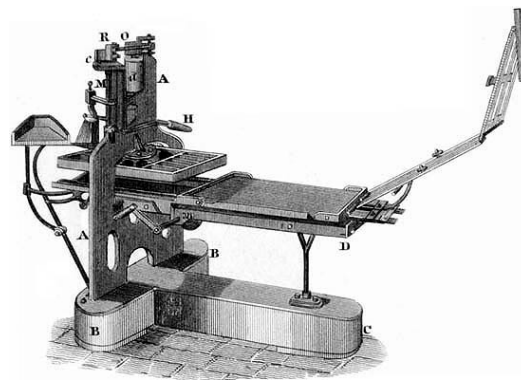
It took a generation for those complex cylinder machines to make serious *inroads* on the Columbian press and its *kin*. As they did, the printed word began reaching the general pub-

lic in ways that would transform the world and transform knowledge. Still it took a steam engine to run those machines. And that high technology could be hard to come by. Iron hand presses were still in wide use until we had electric motors, late in the 19th century.

And so, good listener, we came into the joy of cheap books. We became a literate people. We learned the *sheer* pleasure of reading - under the *elm* tree, behind the *plough* - aloud after supper and in the quiet of our room. ■

Prof. Dr. John Lienhard, University of Houston

Im Zeitalter der digitalen Revolution wurde der Druckerpresse schon mehrfach das Ende vorausgesagt. Noch dreht sie sich. Ein Überblick von Gutenberg bis heute.



<i>compound</i>	<i>zusammengesetzt</i>
<i>elm</i>	<i>Ulme</i>
<i>hint, to</i>	<i>andeuten</i>
<i>impose, to</i>	<i>aufbürden, auferlegen</i>
<i>impress, to</i>	<i>aufdrücken</i>
<i>ink, to</i>	<i>ein färben</i>
<i>inroad</i>	<i>Angriff, Eingriff</i>
<i>invert, to</i>	<i>umwenden</i>
<i>kin</i>	<i>Verwandschaft, Sippe</i>
<i>lever</i>	<i>Hebel</i>
<i>platen</i>	<i>Drucktiegel</i>
<i>plough</i>	<i>Pflug</i>
<i>press</i>	<i>Druckerpresse</i>
<i>rotary</i>	<i>Dreh-, drehend</i>
<i>sheer</i>	<i>rein, schier</i>
<i>vast</i>	<i>riesig, gewaltig</i>
<i>visceral thrill</i>	<i>tief bewegendes Erlebnis</i>

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