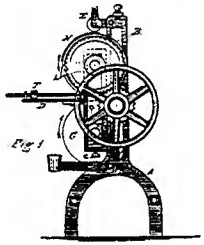
Patent Models *in the* Graphic Arts Collection

THE NATIONAL MUSEUM OF AMERICAN HISTORY

Patent Models in the Graphic Arts Collection

Elizabeth M. Harris



THE NATIONAL MUSEUM OF AMERICAN HISTORY, SMITHSONIAN INSTITUTION
WASHINGTON D.C.

1997

Overleaf: Martial Hainque, Rotary press for printing or branding wooden box covers, 1877

In the same series: *Printing Presses in the Graphic Arts Collection*

Copies of these catalogs may be obtained from the Graphic Arts Office, NMAH-5703, Smithsonian Institution, Washington D.C. 20560

[1997:1]

Contents

Introduction

The four hundred-odd models described in this catalog are among more than ten thousand in the collections of the National Museum of American History. The entire collection represents but a small part of all the models made in the nineteenth century, or even of all that survive today.

Until 1880, the U.S. Patent Office required most inventors to submit a model with their application for patent protection. The Patent Office thus became the keeper of a huge collection, one that suffered several catastrophes over the years. In 1836 a fire at Blodgett's Hotel, where the Patent Office was housed, destroyed all existing models—about 10,000 items—as well as the records of some specifications. After the fire new patents, hitherto unnumbered, were numbered in a consecutive series. In 1840 an effort was made to restore models and specifications lost in the fire. Some 2845 were restored (and numbered in a new X... series), but there were gaps that could not be filled and remain blank to this day. In 1887 a second fire started in a loft in the Patent Office where 12,000 rejected models were stored. It spread rapidly, destroying or damaging 114,000 more models out of the total collection of around 200,000. Of these, 27,000 were eventually restored, while 87,000 were lost.

The first patent models now in the Graphic Arts Division came to the Smithsonian in 1908—a group of eleven models transferred by the Patent Office.[1] In 1926 Congress decided to dispose of the remaining Patent Office collection, which then consisted of some 150,000 models. About 10,000 pieces came to the Smithsonian's U.S. National Museum.

The largest single group within that transfer—about 4,000—consisted of models for the textiles industry. More than 300 were for the printing trades. Other printing models have arrived since 1926, singly or in small groups.

[1] Two years earlier the Interior Department had transferred three newly made wooden models of historic presses–a "Gutenberg press," a "common press," and a "Stanhope press." These models were not part of any patent claim and are not included in this catalog. There are also about dozen unidentified patent models, some of them fragmentary, which are recorded in the Graphic Arts Office files but not in this catalog.

Some of the best-printing models in this collection are, at the time of writing, on exhibition in the Hall of Printing and Graphic Arts. These can be photographed freely by the public, but arrangements must be made in advance if special lighting is required. Others may be in storage and not readily accessible, or away from the Museum on loan, but file copies of photographs of the collection are usually held in the Graphic Arts Office. Anyone wishing to research a particular model should, therefore, contact the office beforehand by mail or phone to find out where the model is, and whether it is available for study.

Photo numbers in the catalog refer to Smithsonian negative numbers. They were made at different times, are of variable quality, and may occasionally be misidentified, so it would be wise to look at a photocopy from the Graphic Arts Office before ordering photographs.

Figures in the text are from the patent specifications, unless otherwise stated.

For the history of the Patent Office, see *An Account of the Destruction by Fire of the North and West Halls of the Model Room,* Washington D.C., 1877; and Kenneth W. Dobyns, *The Patent Office Pony. A History of the Early Patent Office,* 1994. Other bibliographic references in the catalog are limited to a few basic sources, as follows:

Annenberg, *Type Foundries*
Maurice Annenberg, *Type Foundries of America and their Catalogs*, altimore and Washington, 1975, and (new edition) New Castle, Delaware, 1994

Comparato, *Books*
Frank E. Comparato, *Books for the Millions*, Harrisburg, Pennsylvania, 1971

Green, *Platen Jobber*
Ralph Green, *A History of the Platen Jobber*, Chicago, 1953

Hoe, *Short History*
Robert Hoe, *A Short History of the Printing Press,* New York, 1902

Huss, *Typesetting*
Richard E. Huss, *The Development of Printers' Mechanical Typesetting Methods 1822-1925*, Charlottesville, 1973

Kelly, *Wood Type*
Rob Roy Kelly, *American Wood Type 1828-1900*, New York, 1969

Legros, *Typographical*
Lucien Alphonse Legros and John Cameron Grant, *Typographical Printing Surfaces*, London, 1916

NCAB
The National Cyclopaedia of American Biography, New York, 1898–1984

Ringwalt, *Encyclopaedia*
J. Luther Ringwalt, *American Encyclopaedia of Printing*, Philadelphia, 1871, reprinted New York, 1981

Sterne, *Presses*
Harold E. Sterne, *Catalogue of Nineteenth Century Printing Presses*, Cincinnati, 1978

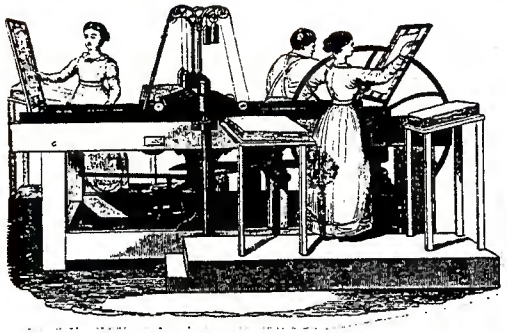
Tucker, *Hoe*
Stephen D. Tucker, "History of R. Hoe & Company, 1834–1885," edited by Rollo Silver, in *Proceedings of the American Antiquarian Society* for October 1972, Worcester, 1973

I am grateful to Alison Gibson and Marion Tiger,
who gave invaluable help in the compilation of this list.

Catalog of Patent Models

Isaac Adams

Bed-and-platen printing press



R. Hoe: Short History (where it is mistakenly described as Daniel Treadwell's press)

Unnumbered patent; 1830
GA catalog 11,024
Photos 2865, 77.654, 86.6338
Ref. *NCAB* vol. 9, p. 224

• Double bed-and-platen power press, with a frisket at each end. The bed was raised by toggles beneath against the fixed platen.

This patent provided the basis for the single-ended Adams Power Press, a well-loved iron machine later produced by R. Hoe & Co. In the 1870s it was still considered to produce finer letter-press work than any other machine on the market. It was pre-eminently a book press.

Isaac Adams (1803–83), with no schooling but ample inventive genius, introduced his power press at the age of 25 and derived his living from its success.

Edwin Allen

Sheet-feed apparatus

Patent 39,872; 1863
Photo 69.457

• Apparatus for feeding sheets or blanks into an envelope-making machine.

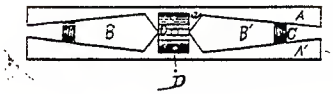
Jerome Allen

Process for preparing autographic stencils

Patent 211,682; 1879

• Preparing paper stencils by coating paper with a gummy solution such as collodion, and then writing on it with sulphuric acid or another corrosive liquid.

Chauncey W. Ames



Printers' quoins

Patent 139,351; 1873

• Quoins whose two sides were opened or closed by wedges governed by a central double-threaded screw.

J. Ames

Paper-trimming machine

Unnumbered patent; 28 February 1834
Photo 69.525

• A crank-driven guillotine paper cutter.

Ezra R. Andrews, Robert B. Randall, William H. Clague

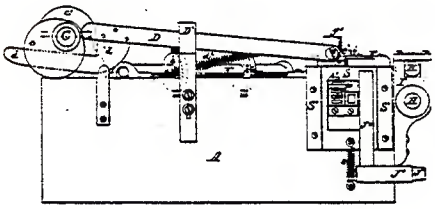
Sheet-feed apparatus for bookbinding and other machines

Patent 114,087; 1871
Photo 69.630

• This invention was intended for "use in connection with the pamphlet-covering apparatus" covered by another Clague and Randall application, but was adaptable to other bookbinding or printing machines.

Model damaged and incomplete.

John T. Ashley



Sheet-feed apparatus

Patent 107,851; 1870
Photo 69.638

• A pneumatic feeder for use with presses, calendars and other apparatus.

Model damaged.

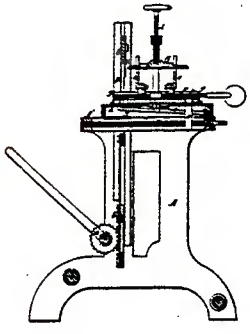
John T. and Frederick Ashley

Sheet-feed apparatus

Patent 143,740; 1873
Photo 69.656

• A pneumatic feeder adaptable to sheets of different sizes, as well as sheets for printing on both sides.

Jane Austin



Machine for cutting books

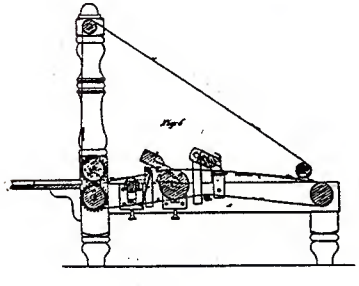
Patent 41,337; 1864
Photo 69.478
Ref. Comparato, *Books*, p. 31, 118

• This was a guillotine for cutting the top, foot and foredges of books. Two sets of books could be clamped simultaneously, without moving the clamps between cuts.

Jane Austin was administratrix to the estate of Frederick J. Austin, inventor of this and other book-binding machines. F. J. Austin, the proprietor of a machine works in New York, also built hand printing presses along the lines of the Washington.

Model incomplete.

Ellicott David Averell



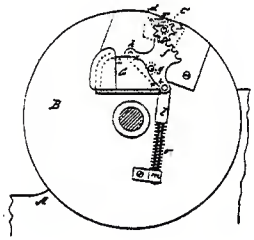
Paper-ruling machine

Patent 135,751; 1873
Photo 69.712
Ref. Comparato, *Books*, pp. 139-40

• The ruling pens on this machine were lowered and lifted by electro-magnetic apparatus, a "quick and lively but soft and easy" action.

Averell is best know as the inventor of a wire stitcher (or stapler), which he patented in 1874.

Nathan Babcock



Sheet-gripper motions for flatbed cylinder presses

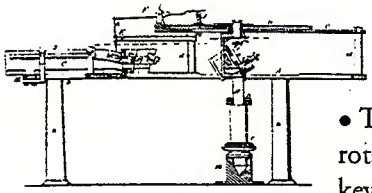
Patent 208,359; 1878
Ref. *NCAB* vol. 16 p. 238

• This invention concerned improvements in the action of gripper fingers on press cylinders.

Nathan Babcock (1824–1902) set up a partnership in 1855 with Calvert B. Cottrell, initially manufacturing wool and cotton machinery but quickly turning to printing presses. He retired from that company in 1880, and established the Babcock Printing Press Manufactory in 1882.

Model incomplete, all critical parts missing.

Charles Baer

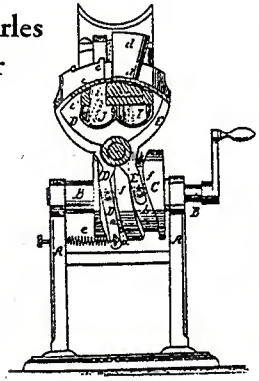


Typesetting machine

Patent 57,034; 1866
Photo 67.909
Ref. Huss, *Typesetting,* p. 61

• Type was held in cases arranged radially around a rotating "receiver." As each letter was selected at a keyboard it was released to the receiver, lined up, and passed to a galley.

Charles Baer



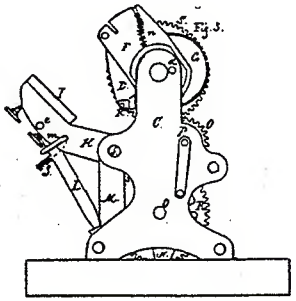
Type breakers

Patent 86,968; 1869
Photo 69.690

• This device broke the jets from the bodies of newly cast type and was intended to be attached to a type-casting machine.

The patent was assigned to Philip Heinrich, proprietor of the Ph. Heinrich type foundry in New York.

Franklin L. Bailey



Platen printing press

Patent 16,109; 1856
Photo 69.516

• This press had a revolving ink cylinder behind the type bed. Inking rollers circulated entirely around the cylinder and over the type. The patent also covered a device for quick disconnection of bed and platen in case of a feeding accident.

Bailey took out a number of printing patents, and sold several of them to the Hoe Company. This one was assigned to Hoe in 1860.

George L. Bailey

Machine for rounding and backing books

161,089; 1875
Photo 69.520

• A machine for performing the rounding and backing of books as two successive and automatic operations.

William H. Baker and George J. Hill

Press for printing railroad tickets in two or more colors

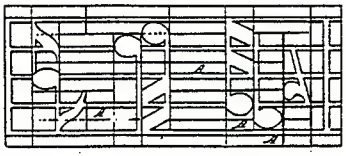
Patent 38,781; 1863
Photo 69.643

• This press carried two or more reciprocating "heads," each with a form of type, and an inking apparatus capable of inking each form in a different color. Printing was on a roll of paper or card, which was cut into strips after printing.

Edward L. Balch

Music type

Patent 78,855; 1868



• This patent was for a method of printing large music charts for educational purposes. The type was of wood. Each note came with its part of the staff lines, and with shoulders that interlocked and overlapped its neighbors to produce a continuous line of music.

David Baldwin

Sheet-feed apparatus

Patent 16,168; 1856
Photo 69.464

• Paper feeder to handle folded sheets, together with folding apparatus.

John Jex Bardwell

Autographic printing

Patent 223,873; 1880

• This patent covered a method of making printed copies from handwriting on paper. Sulphate of iron was added to ordinary writing ink. The completed writing was pressed onto a plate coated with sensitized gelatine, which received the image in a form that could be printed like a lithograph.

The patent model consists of a coated plate with an image. Both coating and image have deteriorated badly.

Henry Barth

Improvement in stop-cylinder presses

Patent 139,229; 1873
Photo 69.633
Ref. Annenberg, *Type Foundries*, pp. 104-7

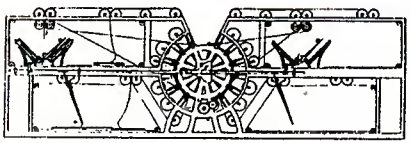
• This patent relates to the method of stopping and

starting the cylinder, feeding and delivering paper, and distributing ink. The press could have two or more printing surfaces and stops on the cylinder, giving multiple impressions for each full revolution.

Henry Barth was one of the owners of the Cincinnati Type Foundry. He was later famous for the Barth Type Caster.

See also Charles Wells and Henry Barth, Patent 29,554.

Victor Beaumont — *Rotary printing press*

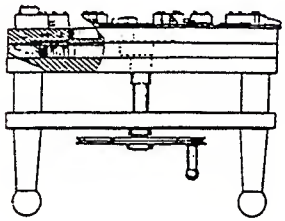


Patent 9,987; 1853
Photo 69.647
Ref. Tucker, *Hoe*, p.395

• This press had several impression cylinders and inking stations arranged around a large type cylinder. A web of paper was moistened and folded concertina-fashion for feeding. It was printed at the first series of impression cylinders and refolded. Then it was turned, and printed on the other side at the next series. Finally, it was cut into sheets.

According to Tucker, this patent was bought by R. Hoe & Co., probably more to keep it out of the market than with a mind to its development.

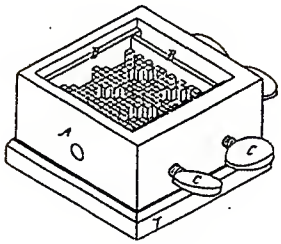
Victor Beaumont — *Type-distributing machine*



Patent 10,656; 1854
Photo 67.906
Ref. Huss, *Typesetting*, p. 43

• A rotary distributer, using notched type. The specification includes a brief description of other distributers of his day—the Gaubert, Clay and Rosenberg, and Sorenson machines.

James Berry



Molds for casting blocks for printing carpets or wall paper

Parent 10,630; 1854
Photo 69.620

• The design, formed of short and long pieces of type, was set up in a square casting box. The printing block was then cast in any suitable material such as type metal, plaster-of-paris, vulcanized rubber, or, by preference, gutta percha—a popular material in the mid nineteenth century.

James R. Bettis

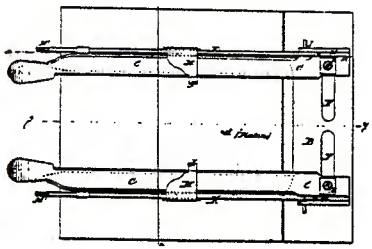
Divided type

Patent 200,020; 1878

• Display letters were to be cast in two parts so that a second line of type could be set between them, a style popular at the time. This invention was to replace the usual methods by which either a special block was engraved, or two forms were printed successively, each having the top or the bottom of letters masked off.

The patent was assigned to Carl Schraubstaedter and James A. St. John of the Central Type Foundry in St. Louis. The model and drawing advertised one of Central's products, "Copper alloy type."

Alexander L. Bevans

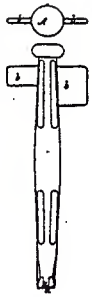


Adjustable card guides for Gordon presses

Patent 111,304; 1871

• The model consists of two hinged plates representing the platen of the Gordon press and the shaft below it, on which the guides were mounted.

Benjamin B. Blackwell

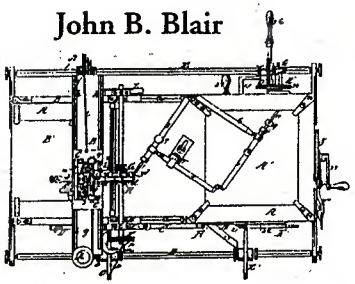


Printers' shooting sticks

Patent 107,154; 1870

• The shooting stick was used for driving in quoins, or wedges, to tighten a form in its chase. These sticks had different-sized notches to fit different quoins, and two wings to help open spaces for the quoins among the furniture.

John B. Blair



Engraving machine with pantograph

Patent 9,743; 1853
Photo 69.596

• A machine for "mezzotint or other engraving." It stood on a table and was operated by crank and pedal.

Model incomplete

Albert H. Bogart

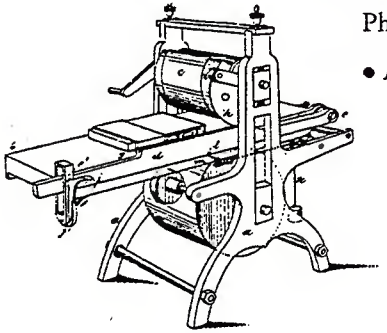
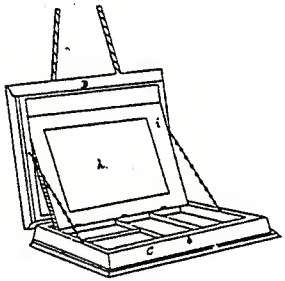


Plate-printing machine

Patent 224,132; 1880
Photo 69.524

• A D-cylinder press with improved movement.

Sereno A. Bowers and William Murphy

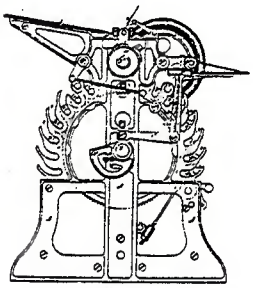


Picture frames

Patent 191,795; 1877

• A picture frame for hanging on the wall, combined with a writing desk and toilet case. The frame was in the form of a box with compartments for toiletries and writing materials, and a central hinged leaf with mirror on one side and writing surface on the other.

Edward S. Boynton



Lithographic printing press

Patent 116,406; 1871
Photo 69.571

• A self-inking rotary press carrying the stone or plate on a segment of a large cylinder. The bed of the stone and the shaft of the cylinder were adjustable, to meet the surface of the smaller impression cylinder.

The rights to this patent were assigned jointly to Boynton and Charles Parker of Meriden, Connecticut.

Edward S. Boynton

Book-stitching machine

Patent 232,446; 1880
Photo 69.503
Ref. Comparato, *Books*, p. 170

• This patent covered a signature holding and presenting device. It was to be used with David McConnel Smyth's book-stitching invention (Patent 220,312, 1879).

Model incomplete. Only the folding metal signature-holder and wooden carriage rack survive.

Edward S. Boynton

Book-stitching machine

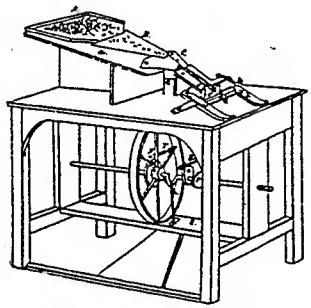
Patent 232,447; 1880
GA catalog 24,910
Photo 78.14925

• This was an improvement on Boynton's earlier patent 203,530, 1878, and allowed for easier adjustment for books of different sizes.

Model damaged.

David Bruce Jr.

Machine for smoothing the sides of type



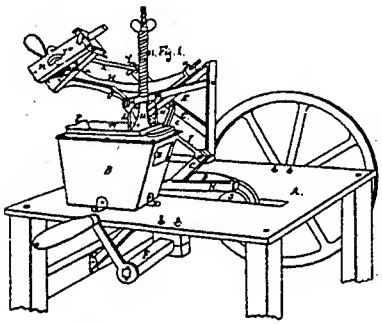
Patent 631; 1838
Photo 69.580
Ref. Ringwalt, *Encyclopaedia*, pp. 83, 477

• In the inventor's opinion, this foot-driven machine allowed the operator to rub around sixty thousand types in a day, in conditions of less "unhealthiness" than the usual.

Treadle missing.

David Bruce Jr.

Typecasting machine

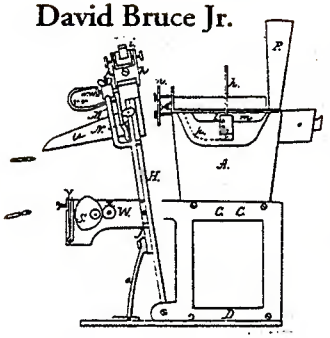


Patent 632; 1838
Photo 67.584
Ref. Legros, *Typographical*, p. 302

• This, Bruce's first patent for a typecasting machine, provided the basis for a generation of pivotal casters.

Model damaged.

David Bruce Jr.

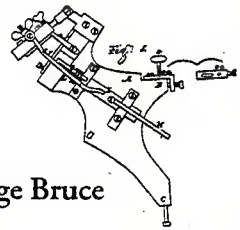


Typecasting machine

Patent 3,324; 1843
Photo 67.896

• Improvements to Bruce's earlier pivotal typecaster, specifically, adjustable parts to the mold, a method of opening the mold and tilting the matrix, and the piston to force metal into the mold.

David Bruce Jr.



Typecasting machine

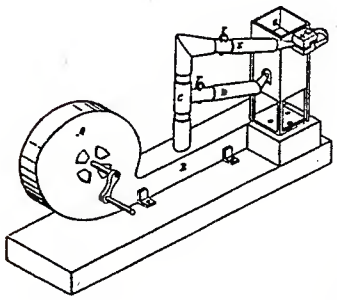
Patent 4,072; 1845
Photo 70.861

• Further developments on Bruce's pivotal typecaster.

George Bruce

Artificial blast for typecasting machines

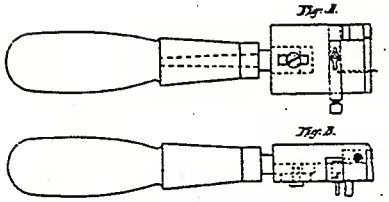
Patent 11,955; 1854
Photo 69.603
Ref. Ringwalt, *Encyclopaedia*, p. 84; *NCAB* vol. 11, p. 274



• This device was particularly intended for small-type molds, which were apt to overheat at fast casting rates. A blower, operated by a steam engine, drove air through a wooden tube around the casting room. Tin pipes from the tube supplied each casting machine with a double blast of air, one directed at the fuel to fire it, the second at the mold to cool it.

George Bruce (1781-1866) followed his brother David to America from Scotland in 1795. The brothers first worked around the printing trades, and in 1816 set up their own type foundry. David retired in 1822 and was followed in the business by his son David Jr., author of the patents listed above.

Isaac C. Bryant — *Typecasting device for embossed or pointed type*



Patent 30,293; 1860

• Bryant's hand mold with double matrix was intended for the casting of "pointed type," as used by the blind. The letters (not Braille signs) in the matrices were built up from the sharp ends of wires.

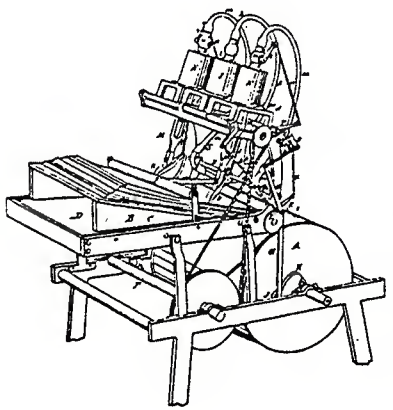
John Bryson — *Stereotype block holders*

Patent 146,163; 1874

• Bryson's patent concerned methods of fitting a printing block with underlays and overlays that could be left in place when the block was washed.

William Bullock — *Sheet-feed apparatus, using vacuum cylinder*

Patent 21,591; 1858
Photo 69.528
Ref. *NCAB* vol. 9 p. 538



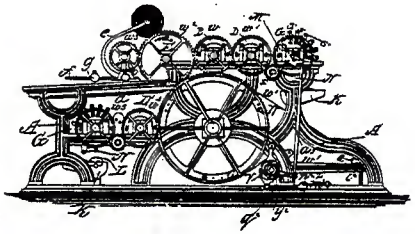
• A sheet-feeding apparatus, operating independent of the printing machine, and with improved registration.

William Bullock (1813-1867) made himself a name in 1852 with a hand-cranked wooden press to which a self-feeder was attached. He followed this with other fast presses, focusing on the problems of feeding. This led him to his most famous press, the web perfecting press (Patent 38,200, below). In 1867 Bullock was caught in a press he was installing for the Philadelphia *Public Ledger,* and died from the injuries.

William Bullock

Rotary perfecting press

Patent 38,200; 1863
GA catalog 11,027
Photo 77.655
Ref. Tucker, *Hoe*, pp. 406, 434



• This was the first of a generation of fast web perfecting presses. But on this press, unlike its successors, the paper was cut into sheets before being printed. According to Tucker, the web cutting knife had been used years before on a Hoe press, but without patent protection.

Andrew Campbell

Ink fountains for printing presses

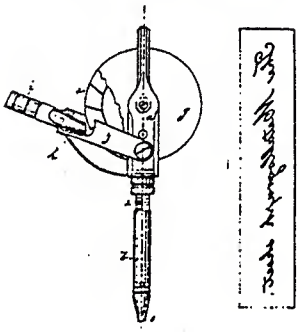
Patent 194,218; 1877
Photo 69.491
Ref. *NCAB* vol. 9 p. 154

• This patent provided a way of controlling the flow of ink from the fountain, and avoiding the accumulation of lint on the doctor blade.

Andrew Campbell (1821–1890) exercised his mechanical genius in a number of trades—carriage making, box making, bridge building, and even surgery. In 1854 he designed a fast press feeder that one Taylor (perhaps the press builder A. B. Taylor) built for him. After fixing and improving several famous presses in New York, including the Bullock and the Hoe Lightning presses, he set up as a press builder in his own right in 1858.

Model incomplete.

Augustus C. and George R. Carey



Metallograph, or embossing pen for autographic printing

Patent 215,792; 1879
Photo 69.618

• With this tool, a writer could turn a sheet of metal into a printing plate as he wrote on it. The air-powered writing instrument made a series of sharp blows to the metal, knocking out projections on the back of the sheet. The projections formed a facsimile of the writing in reverse and in relief for printing at a type press.

Charles A. Carlson

Loose leaf binder

Patent 787,353; 1905

• A loose leaf binder with adjustable sides.

Luman Carpenter

Ellipsographic copying machine

Patent 2,894; 1842
Photo 69.482

• Carpenter's Type-cutter and Protractor was a machine for cutting multiple copies from a single pattern. Typically, it was to be used in making wood type, which could be enlarged or reduced, extended or compressed, thrown into perspective, or turned into "grotesque type of any given fashion from the same plain pattern."

Nathaniel L. Chamberlin

Portable hand press

Patent 16,718; 1857
Photo 69.695

• The cylinder and handle of this portable roller press are fastened on the end of a long sliding shaft.

In the 1870s Chamberlain, as he spelled his name then, ran a Boston business specialising in office stamps for banks and counting houses.

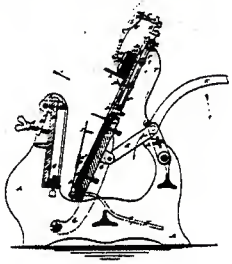
A. B. Childs and Henry W. Dickinson

Sheet-feed apparatus for cylinder presses

Patent 12,401; 1855
Photo 69.456

• Blasts of air were used to separate the top sheet of the pile and carry it to position on the press board.

William M. Clark

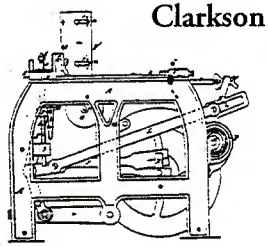


Feeding apparatus for card presses

Patent 182,104; 1876
Photo 69.544

• William Clark had taken out an earlier patent for the press sold as Daughaday's Model (Patent 155,927; 1874). The new patent was for a fast card feeder, which was shown attached to a Model press.

William W. Clarkson

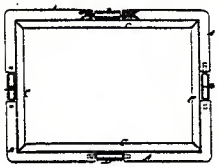


Card printing press

Patent 20,039; 1858
Photo 69.557
Ref. *Scientific American,* 20 October 1860

• A crank-operated, self-feeding card press. A press based on this patent was produced for sale, and was demonstrated in the offices of the *Scientific American* in 1860.

Thomas A. Clements



Printers' chases

Patent 108,759; 1870

• An adjustable type chase that could be clamped on to the type, avoiding the use of quoins.

John E. Coffin

Machine for shaping the backs of books

Patent 24,425; 1859
Photo 69.696

• A machine for rounding the backs of books by means of rollers, either before or after binding.

See also Sanborn and Coffin, below.

John E. Coffin

Machines for rounding and backing books

Patent 158,679; 1875
Photo 69.568

• A machine for automatically rounding and backing books by using two shaped bars—the presser bar and the backing bar.

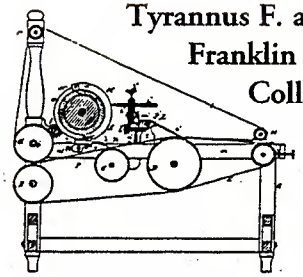
James R. Cole

Writing apparatus for the blind

Patent 125,024; 1872
Photo 69.514

• A board with movable guide for pencil writing (ordinary manuscript, as distinct from braille and other forms of writing with a point).

The model, as it survives, consists of the guide only, without the board.



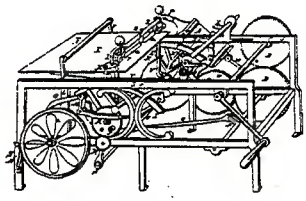
Tyrannus F. and Franklin H. Collins

Paper-ruling machine

Patent 157,715; 1874
Photo 69.448

• A ruling machine with the ability to start and stop lines within the edges of a sheet of paper.

John P. Comby

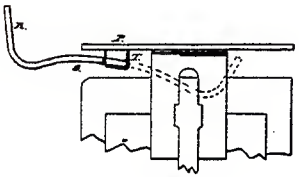


Sheet-feed apparatus for printing machines

Patent 9,623; 1853
Photo 69.698

• This machine was to separate sheets and pass them to the press board by means of suction tubes, entirely replacing the human sheet feeder.

James Cook and William Fosket



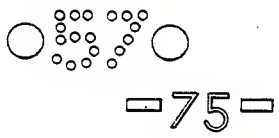
Ink-roller rest for toy or business presses

Patent 166,675; 1875
GA catalog no. 24,909
Photos 78.14915, 78.14916 (two views from beneath)

• This patent covered a simple rest attached to the inking plate on a small hand press, to support the handle of a hand roller. When not in use, the support could be stored under the plate.

James Cook was the inventor and manufacturer of two amateur presses, the Enterprise and the Victor.

Willliam F. Corne



Hand cancelling machine

Patent 106,665; 1870

• A device for cancelling checks and drafts by punching figures into the paper to match the value of the check.

George R. Cornwall

Preparing aluminum plates for surface printing

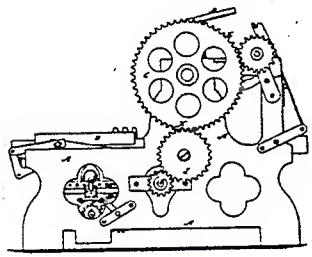
Patent 590,966; 1897

• A method of cleaning and surfacing aluminum plates to give them a better printing surface.

Calvert B. Cottrell

Flatbed cylinder printing press: brakes

Patent 172,974; 1876
GA catalog no. 1995.214.062
Photo 69.686
Ref. *NCAB* vol. 3 p. 397



• On a cylinder press, a strain was put on the press each time the bed stopped at the end of its tracks while the cylinder continued to turn with its original momentum. This patent dealt with the problem by braking the cylinder at the same time as the bed.

Calvert Cottrell (born 1821), press builder, formed a partnership with Nathan Babcock (qv) that lasted from 1855 until 1880. He then set up a company with his three sons, C. B. Cottrell & Sons. Cottrell was responsible for several important improvements to the flatbed cylinder press.

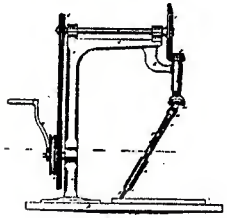
Calvert B. Cottrell

Flatbed cylinder perfecting press: set-off web

Patent 175,036; 1876
Photo 69.685

• This patent dealt with perfecting presses in which the first side of a sheet was printed from type on a cylinder, and the second from a flat form. Normally slip sheets were used in such presses. This invention replaced the slip sheets with a length of tympan paper stretched between rollers, a new section being wound out for every impression. The invention was widely adopted.

Charles J. Coulter



Engraving machine for drilling straight or oblique holes

Patent 103,576; 1870
Photo 69.668

• This invention, which was said to be designed for engraving, was probably intended for working ornamental plates rather than printing plates.

Joseph L. Cox

Flatbed cylinder web press

Patent 218,493; 1879
Photo 69.658

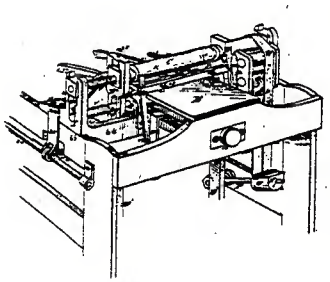
• A web-fed press that printed on both strokes of the bed, doubling the usual output of cylinder presses. It also stacked, cut, and counted the sheets after printing.

Edwin Crawley and Frank Thomas

Machine for rounding and backing books

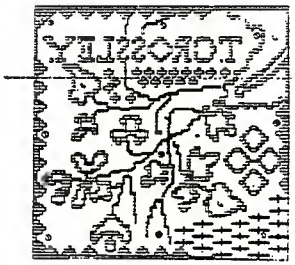
Patent 184,198; 1876
Photo 69.588
Ref. Comparato, *Books*, p. 114

• Improved methods of guiding the book and controlling the rounding rollers. Two books could be processed at once—one being rounded while the other was backed.



Edwin Crawley, a Cincinnati bookbinder, continued to to work on the problems of rounding and backing, and in 1891 introduced a machine that set industry standards for many years.

Thomas Crossley

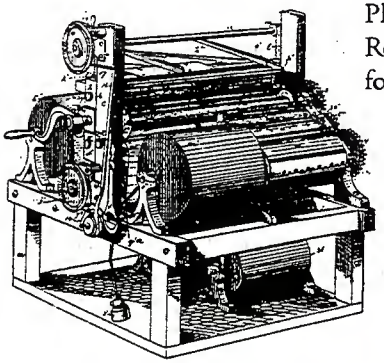


Electrotype printing blocks for textile printing

Patent 25,953; 1859
Photo 69.495

• Common textile printing blocks were made of wood. The wooden blocks gave trouble when wet, and their inclined walls tended to spread the color and broaden lines in printing fabric. This patent covered a method of making metal printing blocks with high vertical walls. Matrices were first constructed of numerous pieces of rectangular type of different lengths, then molded in wax, and finally electrotyped.

Luther Childs Crowell



Web perfecting rotary press

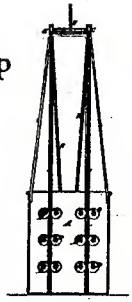
Patent 212,444; 1879; patent assigned to R. Hoe & Co.
Photo 69.610
Refs. *NCAB* vol. 13, p. 604; Tucker, *Hoe*, p. 444 and footnote; Comparato, *Books*, p. 117

• A compact rotary press in which the forms for printing both sides of the paper were mounted on the two ends of a single type cylinder. After one side was printed, the web was turned and moved sideways so the other side could be printed. The press was designed particularly for newspaper printing.

Luther Crowell (1840–1903) began his adult life as a sailor, then turned to questions of aerial navigation and patented a flying machine. He also invented machines to make paper bags, then machines to print the paper bags, and from there moved on to printing presses. In 1879 a fast press that he built for the *Boston Herald* brought a suit for infringement from R. Hoe & Co., as

a result of which Hoe was compelled to buy all of Crowell's patents for printing, and ended up hiring him as superintendant of their mechanical department. There Crowell was responsible for several important improvements to Hoe's presses.

Samuel Crump

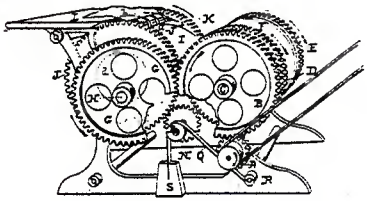


Apparatus for cleaning and preserving inking rollers

Patent 120,043; 1871
Photo 69.476

• Racks of rollers were lowered into a bath of oil, where the rollers were cleaned and protected until their next use.

Samuel Crump



Multiple color printing press

Patent 228,517, 1880
Photo 69.636

• Improvements in the smooth movement of multi-color presses.

George W. and John R. Cummings

Electrotype shell and base

Patent 313,812; 1885
Photo 69.484

• A method of fastening thin electrotype shells to cast metal bases by bending the edges of the shell into grooves on the base. The invention was said to be particularly appropriate for newspapers, which might

otherwise depend on heavy stereotype plates shipped over long distances.

The patent was assigned to the American Press Association.

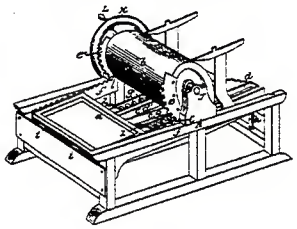
Loring Danforth

Machine for making book covers

Patent 10,961; 1854

• A machine for folding book cloth quickly and neatly over the boards.

John C. Davis and William Miller

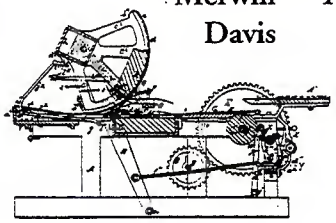


Flatbed cylinder printing press

Patent 16,826; 1857
Photo 69.635

• A flatbed cylinder press on which the bed ran on sloping ways, or tracks. For the impression pass, the bed was powered up the slope and under the cylinder. It was returned by gravity.

Merwin Davis

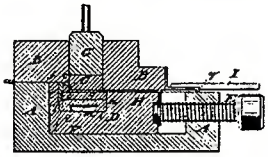


Flatbed cylinder printing press

Patent 18,567; 1857
Photo 69.497

• A press with a segmental impression cylinder, which rocked back and forth across the bed.

R. W. and D. Davis

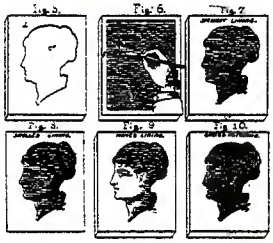


Type mold

Patent 40,076; 1863
Photo 69.623

• A mold for casting multiple pieces of type from a strip of matrices.

Benjamin Day



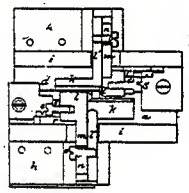
Printing films

Patent 214,493; 1879

• The patent for Day's shading medium, an important tool in chromolithography and later in other kinds of commercial illustration. A flexible glue sheet, cast from the surface of a plate ruled with parallel lines, was inked and then pressed over an image to shade it.

The model consists of a very fragile pack of samples.

Hartley W. Day

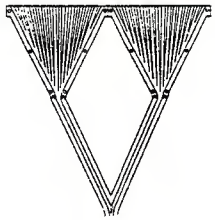


Type mold

Patent 5,846; 1848
Photo 69.621

• Day's Universal Hand Type-Mold for casting type of any size.

Manoel De La Pena



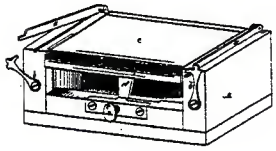
Typesetting machine

Patent 108,980; 1870
Photo 67.905
Ref. Huss, *Typesetting*, p. 69

• A keyboard typesetter with a "branching gravitation type-slide."

De la Pena was an Argentinian living in New York City.

Eugenio De Zuccato



Apparatus for copying writing

Patent 211,877; 1879
Photo 69.566

• A printing frame for paper stencils.

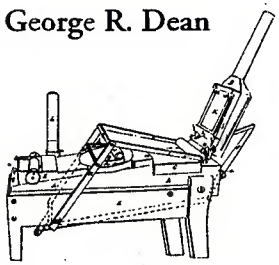
Eugenio De Zuccato

Stencil frames for autographic writing

Patent 219,665; 1879
Photo 69.705

• A stencil-printing frame, adjustable to take stencil sheets of different sizes.

George R. Dean

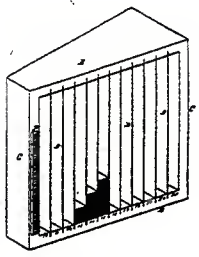


Hand printing press

Patent 32,242; 1861
Photo 69.60

• The Chatauqua Jobber was a self-inking bench-top press along the lines of the A. and B. Newbury Mountain Jobber of 1859 (Patent 24,655, below).

Octavus A. Dearing

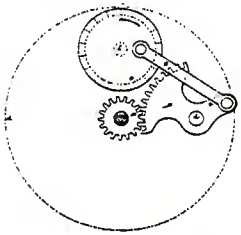


Printers' lead racks

Patent 135,894; 1873
Photo 69.489 (photographed on end)

• A cabinet of graded slots, vertically arranged. According to Dearing, leads were usually stored on ordinary type cases adapted for the purpose.

Frederick Otto Degener



Inking apparatus for platen presses

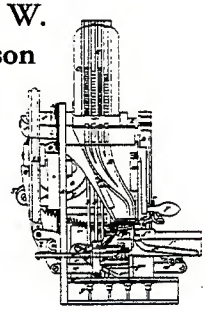
Patent 110,018; 1870
Ref. Green, *Platen Jobber*, p. 22

• Apparatus for turning the ink disk on a platen jobber.

Degener, one-time employee of G. P. Gordon, was the inventor of the Liberty platen jobber.

See also Gordon and Degener's joint patent, below.

Charles W. Dickinson



Typesetting machine

Patent 174,901; 1876
Photo 69.683
Ref. Huss, *Typesetting*, pp. 94-6

• A keyboard-operated typesetting machine that set type in a line and then broke the line into column lengths.

Dickinson was at some time a partner in the development of the Burr-Empire line of typesetting machines.

John Dickson

Rubber plates or dies for printing

Patent 154,230; 1874

• A relief-printing plate of vulcanized rubber was molded directly from an intaglio—but right-reading—image etched into stone or metal.

Model consists of two mounted rubber plates.

Thomas Brown Dooley

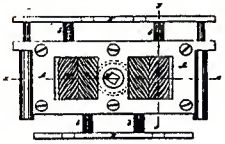
Paper cutting machine

Patent 127,226; 1872

• A guillotine blade was drawn through a stack of paper on a slanting downward path.

Model broken.

Daniel Dorrity

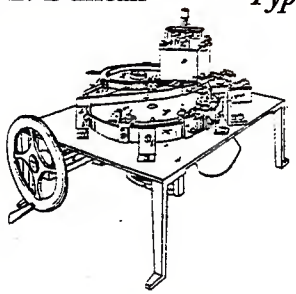


Printers' quoins

Patent 93,603; 1869

• Mechanical quoins, which expanded by means of paired screw gears.

James L. Duncan



Type rubbing machine

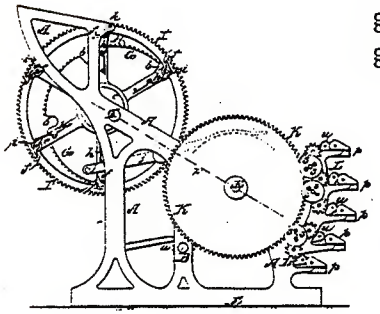
Patent 5,420; 1848
Photo 69.680

• Duncan's Rotary Type Rubber smoothed the rough edges on freshly cast type.

A. A. Dunk

Multicolor rotary printing press

Patent 75,394; 1868
Photo 69.560



• Five color plates were arranged around a cylinder, each with its own inking apparatus. The impression cylinder, of equal diameter, had five platen areas. Six sets of sheet grippers were mounted around a third rotating frame geared to the other two. But the gripper frame was one fifth larger in diameter than the two cylinders, so each sheet of paper was shifted one step for each revolution—it would be printed at the first plate on the first revolution, the second plate on the next revolution and so on. When it had collected all the impressions, the sheet was released: one fully-printed sheet for every revolution of the press.

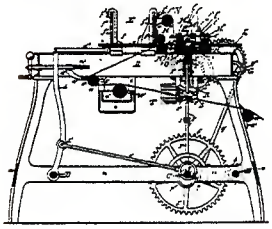
William Wallace Dunn

Typecasting machine

Patent 11,111; 1871
Photo 69.583

• A machine for casting, breaking off the jets, and dressing printers' type.

George B. Durkee and Angus Campbell



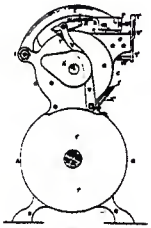
Bookbinding machine

Patent 330,303; 1885
Photo 69.480

• A machine for making the cases of books, by cutting leather or cloth from a roll and pasting it onto boards.

Durkee and Campbell were from Canada.

John Dyer



Railway ticket printing and registering machine

Patent 141,336; 1873
Photo 69.564

• A roll of card blanks was pre-numbered and printed with the station name. This machine added the destination and date and cut off each ticket, while printing a record copy of the sale. It was an improvement on an earlier Dyer patent (1872, Patent 134,042).

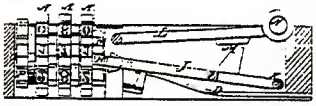
William H. Elliott

Hand stamp

Patent 16,641; 1857
Photo 69.624

• A self-inking stamp operated by hand or foot.

Robert Meade Evans

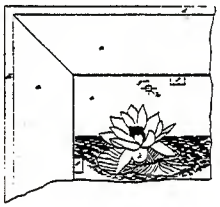


Numbering machine

Patent 144,196; 1873

• A consecutive numberer for a printing press.

Daniel Fausel

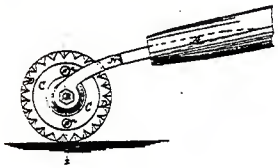


Drawing and shading pictures

Patent 432,994; 1890

• An improvement on known methods of shading lithographic drawings with molded gelatine sheets, as by the Ben Day method.

John Feely

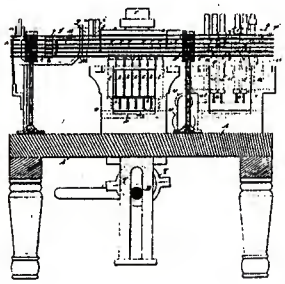


Bookbinders' roll

Patent 76,065; 1868
Photo 69.515

• A new method of attaching type to a roll. The type was formed in a ring that attached to the circumference of the wheel.

Charles W. Felt



Typesetting and distributing machine

Patent 28,463; 1860
Photo 67.897

• Typing at the keyboard perforated a paper tape to produce a complete "registry" of the keystrokes, including all spacing and leading. This record could be used to set several identical pages of type or, fed in reverse, to redistribute the type to its cases.

Keyboard missing from model.

Joseph Lannison Firm

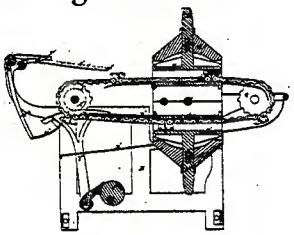
Rotary perfecting web press

Patent 169,796; 1875
GA catalog 24,906
Photos 78.14917, 78.14918
Ref. *NCAB* vol. 7 p. 356

• A rotary press with two type cylinders, two impression cylinders, and a knife to cut the sheet from the web of paper before the first impression was made. Half the rights were assigned to Calvert B. Cottrell and Nathan Babcock, press builders, of Westerly, Rhode Island.

Joseph Firm (born 1837) followed an interest in printing from his high school days. Apprenticed to Harper & Row and later employed by Frank Leslie, he was responsible for many patents and particularly concerned with large, fast presses. After 1892 he associated himself with the Goss Printing Press Company, which built some of his presses.

George F. Folsom

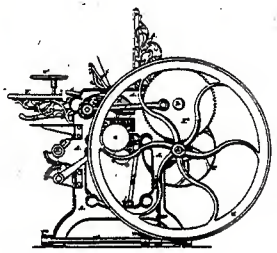


Bed-and-platen printing press

Patent 14,558; 1856
Photo 69.479

• A perfecting machine with two printing plates, two platens, and a rotary carrier to convey the paper between them.

Walter H. Forbush



Platen printing press

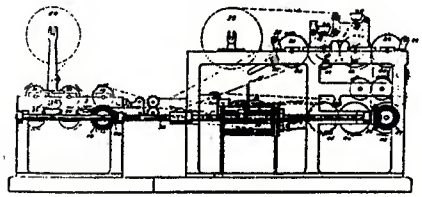
Patent 86,064; 1869
Photo 69.598

• A platen jobbing press with stationary vertical type bed below a flat-ink distributing surface in the same plane as the type. The lower part of the ink table shifted sideways, for better distribution.

Edward Lloyd Ford

Rotary web perfecting press, with folding apparatus

Patent 195,115; 1877
Ref. Tucker, *Hoe*, p. 441



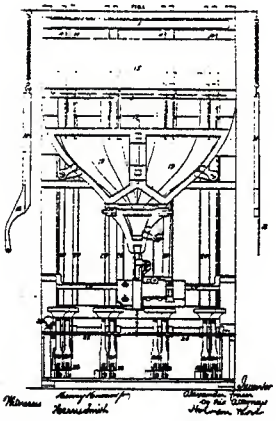
• The Duplex Printing Machine consisted of two printing machines working in unison to produce two perfected sheets at a time, and then fold and deliver them as one product.

This patent was bought by and assigned to R. Hoe & Co.

Alexander Fraser

Type-composing machine

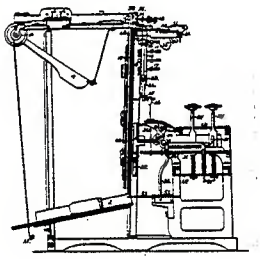
Patent 224,166; 1880
Photo 67.907
Ref. Huss, *Typesetting*, p. 55



• Fraser's composer was designed to work with his type-distributing machine (see next patent). Type, stored in horizontal trays at the top of the machine, was nudged forward at the touch of a key to fall down assembling channels and into a continuous line. The operator would break off line lengths manually and space out the words as needed.

Alexander Fraser was from Edinburgh, Scotland, where his composers were used successfully for several years. Elements of his typesetting and distributing machines were patented in Britain in 1872, 1875, and 1877, before the American patents were taken out.

Alexander Fraser



Type-distributing machine

Patent 224,167; 1880
Photo 67.908

• Fraser's distributer worked like his composer, but in reverse. Lines of dead type, held at the top of the machine, were read off by the operator who keyed in the letters. The action of the keys pushed the type down channels and back into storage trays, to be returned to the composing machine.

Thomas French

See under Thomas Trench

Julius Friedlander and Peter Korfitz Moeller

Printing surfaces

Patent 160,177; 1875

• A method for producing a lithographic printing surface by coating a metal plate or cylinder with tin, by electrolytic or chemical means.

Friedlander and Moeller were from Leipzig, Saxony.

Edward J. Frost

Paper-cutting machine

Patent 193,327; 1876
Photo 69.597

• A machine for cutting "Paper, Envelopes, Collars, Boxes &c," and also for cutting measured lengths of paper from the roll.

Merritt Gally

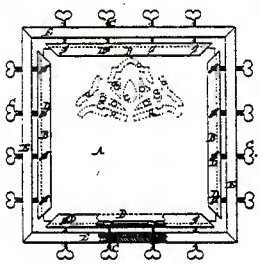
Platen printing press

Patent 97,185; 1869
Photo 70.856
Ref. *NCAB* vol. 4 p. 215; Green, *Platen Jobber*, pp. 24-6

• This patent covered various improvements on the inventor's earlier Universal press, a popular platen jobber in which the platen had a parallel approach to the bed.

Merritt Gally (born 1838) was known to his contemporaries as a scientist and philosopher, because of the breadth of his inventions and their original mathematical and philosophical basis. Apprenticed to a printer at 11, he built a cylinder and a platen press while in his teens. He put himself through college and then seminary, and was ordained in 1866. But his career in the Church was brief, for reasons of health, and in 1869 he set up a factory to build his new Universal press. Other inventions followed: a keyboard machine for setting justified lines of matrices (1872) which was later sold to Mergenthaler's backers, a multiplex telegraph system (1873), automatic musical instruments (sold to the Aolean Company), astronomical instrument control (1889), and cold type and linotype machines (1898).

John Z. Gifford



Apparatus for making paper stencils

Patent 211,988; 1879
Photo 69.670

• A stretcher frame for holding sheets of paper while multiple stencils designs were cut in them with a jigsaw.

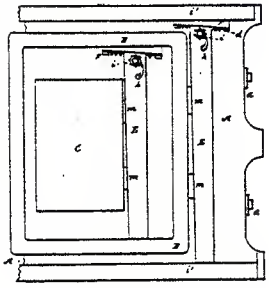
William Gilbert

Printers' sidesticks and quoins

Patent 164,543; 1875

• Tapered sidesticks were grooved along the inclined side. Quoins, with a metal key to slide in the groove, were made up of a pair of wedge-shaped blocks to provide fine adjustment.

Robert F. Gillin

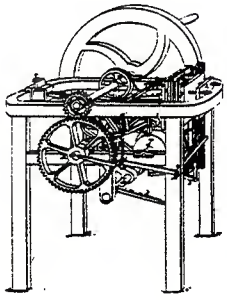


Printers' quoins

Patent 212,683; 1878

• Locking bars secured the type within the chase, and the chase on the bed of the press, without the use of wooden furniture to pack spaces. One end of the bar was oblique and included a toothed pinion. A short toothed piece with a matching taper fit across the end of the bar to lock against the chase or bed wall, and was tightened by turning the toothed pinion.

Alonzo Gilman



Platen press

Patent 3,716; 1844
Photo 69.627

• A self-inking platen jobbing press with a vertical bed and platen, brought together by toggle levers. An inking cylinder was beneath the bed, and a frisket frame was lifted up between impressions to receive sheets of paper.

This invention first appeared as Gilman's job presss, and then from 1846 to 1873 as the Hoe Company's Patent Machine Card Press.

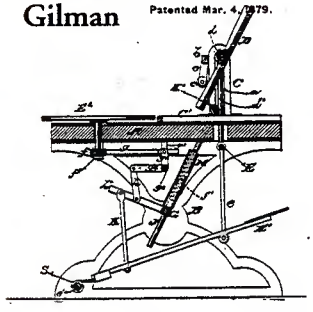
Edward Lowell Gilman

Platen printing press

Patent 203,335; 1878
Photo 69.700

• Gilman's simple treadle press was intended for job printers and amateurs. The rotating ink disk was on a plane with the type. The platen with paper was brought down against the type by a direct connection with the treadle.

Edward Lowell Gilman



Platen printing press

Patent 212,922; 1879
Photo 69.631

• An improvement on Gilman's earlier patent, with better inking and impression mechanisms.

George W. Glazier

Book-sewing machine

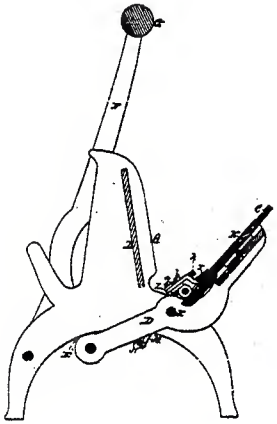
Patent 184,961; 1876

• A machine capable of sewing a large number of volumes without stopping the machine. It was an improvement on an earlier machine patented by David M. Smyth.

William Hughson Golding

Card gauge for platen printing press

Patent 145,101; 1873
Photo 69.710
Ref. Stephen Saxe, "A Brief History of Golding & Co.," in *Printing History. The Journal of the American Printing History Association*, New York, vol. III no. 2 pp. 13-19



• This patent provided a card feeder for Golding's Pearl press, which was covered by a patent of 1871 taken out by William L. Balch and assigned to Golding and his partner Edward Dennison (Patent 118,182).

William Golding (1845–1916) was apprenticed to a printer at the age of 15, and set up The Printer Manufactory Co. at 23 with his partner, Edward Dennison. The company at first supplied stamps and seals and other stationery goods, but soon moved into the manufacture of small presses for amateurs, such as the Pearl, and then full-sized jobbing presses. Two years after Golding's death, the company was sold to the American Type Founders Co., which continued the manufacture of his presses for some years.

William Hughson Golding

Platen printing press

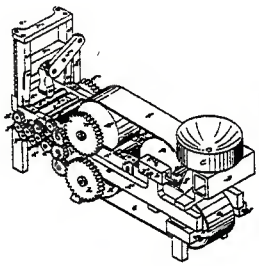
Patent 256,891; 1882
Photo 69.711

• This patent was applied to Golding's Official press. It included several mechanisms for a platen press, notably for conveying movement to the platen, the ink disk, and the distributor, and for adjusting the platen.

John Goodale

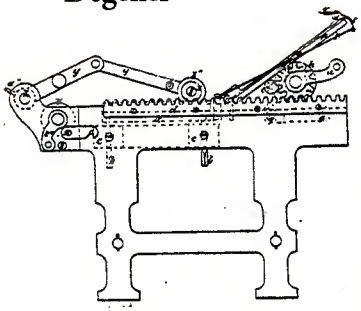
Machine for casting printers' leads

Patent 155,609; 1874
GA catalog 24,905
Photos 78.14921, 78.14922



• Molten lead was rolled out to thickness between two flexible steel belts, then cut into strips, trimmed, and planed smooth.

George Phineas Gordon and Frederick O. Degener



Hand cylinder printing press

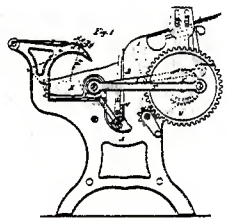
Patent 25,008; 1859
GA catalog 11022
Photo 69.492
Ref. *NCAB* vol. 5 p. 405; Green, *Platen Jobber*, pp. 10–21

• This self-inking hand-cranked cylinder press was intended to replace the common iron lever press.

George Gordon (1810–1878) started out as an actor but soon took up the printing trade in New York City. From 1851 he was responsible for a succession of jobbing presses—the Yankee, the Turnover, the Firefly, this cylinder press, and, finally, the Franklin jobber with which he established his name as well as his fortune. Degener was a Gordon employee in the 1850s, setting up in his own business in 1860.

See also Degener's separate Patent 110,018, above.

George Phineas Gordon

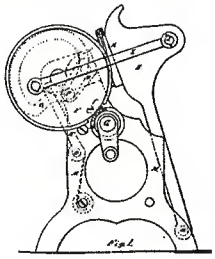


Platen press

Patent 32,130; 1861
Photo 69.707
Ref. Green, *Platen Jobber*, pp. 10-21

• A platen press in which the platen had, in addition to the usual rocking motion, a straight-line approach that took it perfectly parallel to the type bed for the impression.

George Phineas Gordon



Platen printing press

Patent 40,099; 1863
Photo 69.458
Ref. Green, *Platen Jobber*, pp. 10-21

• In this, one of a series of patents on Gordon's platen presses, the platen was pivoted on long legs. The bed, rocking on its own axis, was locked into vertical position to take the impact of impression.

Model incomplete: platen assembly missing.

George T. Gosorn

Sidesticks and quoins

Patent 218,518; 1879

• Combined quoins and sidesticks. The quoins swivelled on the ends of wide screws that turned into the sides of the metal sidesticks. A gauge in the center of each sidestick told the compositor how far the quoin could be extended.

Frederick Llewellyn Goss

Sheet-feed apparatus

Patent 229,998; 1880
Photo 69.540
Ref. *NCAB* vol. 18 p. 192

• A feeding attachment for flatbed cylinder machines that allowed sheets to be held obliquely, so that bands of color could be printed diagonally across the paper–a style popular at the time.

Frederick Goss (1847–1914) was born in Wales and came to the United States with his family at the age of ten. After working with a printer in Chicago, he set up his own printing business in 1873. In 1885, with his

brother Samuel and Jacob L. Walser, he organised the Goss Printing Press Co., which produced some of the largest and fastest presses the world had known. Samuel was the usual inventor in the company; Frederick was known as an extraordinary salesman.

John Gough

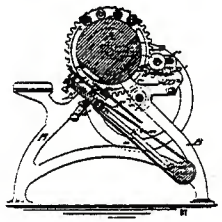
Bookbinders' arming press

Patent 114,130; 1871
Photo 69.559

• An arming press with a moveable bed and inking apparatus. It could be converted into an ordinary printing press.

John Gough was from London, England.

Frederick William Griffith and George P. Byrne



Platen printing press

Patent 168,635; 1875
Photo 69.622

• An oscillating press in which the type bed was a flattened surface of the ink-distributing cylinder. Fed by hand, printed sheets were delivered automatically to a pile beneath the press.

Harry S. Griffiths

Platen printing press

Patent 227,520; 1880
Photo 69.629

• Improvements to the platen jobbing press, adapting it to ticket printing. The press had a roll feeder, numbering wheels, and slitting and cutting knives.

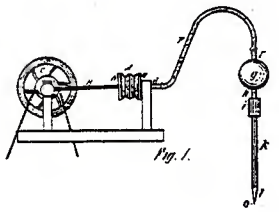
John C. Guerrant and Benton J. Field

Engraving machine

Patent 83,708; 1868
Photo 69.440

• Machine for engraving metal plates or cutting stencils from original designs. The engraved copies were engraved in reverse and reduced in size. The patent improved on patents taken out in 1866 and 1867.

Josiah H. Gunning and Harry B. Weiland



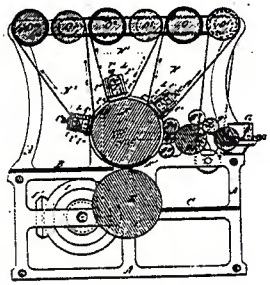
Pulsating stencil pens

Patent 216,086; 1879
Photo 69.632
Ref. *NCAB* vol. 6 p. 460

• A piston-driven stencil-cutting pen. The piston was driven by a bellows powered in turn by a machine wheel.

Josiah Gunning (1840–1910) graduated from medical school and spent the Civil War as a surgeon in the U.S. Navy. After his wife's death in 1869, he entered seminary and was ordained. His invention of a pulsating pen was considered remarkable enough to win him a bronze medal from the American Institute.

Constant Alexis Guy



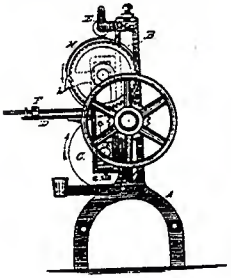
Intaglio plate printing machine

Patent 210,116; 1878
Photo 69.565

• Plate wiping mechanisms reproduced the sweeping movement of the human hand. The wiping cloth was in lengths travelling from one storage roller to another, always offering a fresh portion to the plate.

Constant Guy was from Paris, France.

Martial Hainque

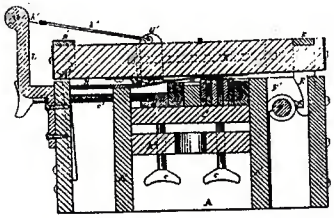


Rotary printing press for printing or branding wooden box covers

Patent 194,902; 1877
Photo 69.655

• This press had a feed table to steer boards between the impression cylinder and the hollow plate cylinder. Inking apparatus was overhead. For branding, a heating unit was fitted inside the plate cylinder.

H. M. Hall and George W. Espey



Hand printing press for amateur printers

Patent 79,751; 1868
Photo 69.453

• A portable printing press consisting of a box, the lid being the platen, operated by a hand lever. Built-in grippers released the paper when the lid was lifted.

The model is accompanied by a card bearing the inscription "Little Giant Hand Printing Press..."

J. Bishop Hall

Painting on translucent surfaces

Patent 5,495; 1848

• Method of painting on a sheet of glass coated with linseed oil and ground silica to give a luminous appearance to the painting. The inventor named the process Tachygraphic Painting.

J. Bishop Hall of Philadelphia may have been the same as the John Bishop Hall of New York, of the next patent model.

John Bishop Hall

Sheet-feed and delivery apparatus

Patent 12,702; 1855

• Nippers, a sheet separator, and a fly, all designed to ensure that only one sheet could be fed to the press at a time.

William Handy

Ink-feeding device for a paper-ruling machine

Patent 208,592; 1878
Photo 69.657

• A device to avoid overcharging pens with ink when the ruling machine was at rest.

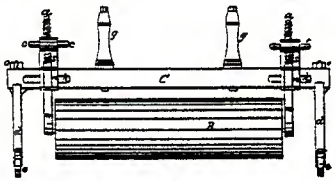
Stedman W. Hanks

Picture frames

Patent 59,836; 1866

• A system of hooks and springs for attaching pictures to their frames.

Alpheys A. Hanscom



Hand inking rollers

Patent 20,710; 1858

• An inking roller supported in a frame that allowed the roller's height to be adjusted against a set of bearing wheels.

Thomas C. Hargrave

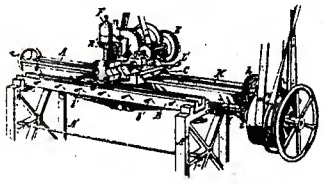
Postmarking and cancelling apparatus

Patent 121,099; 1871
Photo 69.678

• A device for the automatic cancelling of postage stamps. A cylinder was engraved with place and state names; the date was inserted in moveable type.

Richard W. Hartnett

Milling machine for dressing printers' chases

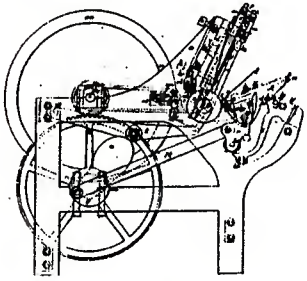


Patent 201,780; 1878
Photo 69.639

• Sides and ends of chases were dressed by revolving cutters, avoiding any need for hand finishing.

Charles W. Hawkes

Platen printing press



Patent 7,413; 1850
Photo 69.661

• The patent for the platen jobbing press manufactured as Hawkes's Lion.

Charles W. Hawkes

Platen printing press

Patent 18,812; 1857
Photo 69.594

• The Magic Card Press, a self-inking platen press with automatic card dropper and an ink drum below the type bed.

John T. Hawkins

Sheet-delivery apparatus for presses

Patent 221,458; 1879
Photo 69.545

• Apparatus to deliver sheets printed side up, without risk of the smudging when fresh ink came into contact with delivery tapes.

John T. Hawkins

Flatbed cylinder printing press

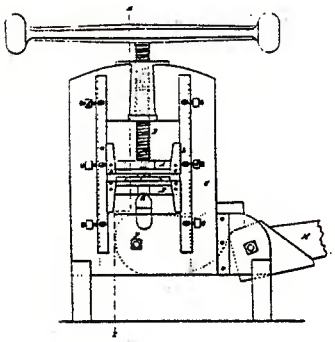
Patent 221,459; 1879
Photo 69.467

• A means of lifting the cylinder of a press by springs, rather than by the usual counterweights, so that the full weight of the cylinder could be used for the impression.

Jabez W. Hayes

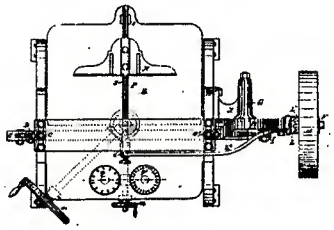
Apparatus for printing bank notes and drafts

Patent 33,526; 1861
Photo 69.637



• Security printing demanded that all prints be identical, but there were difficulties in achieving that goal by the preferred intaglio process. Dampened paper changed its dimension and was further distorted by the rolling press; while dry paper would not take an impression at a rolling press without immense pressure, which stretched the plate and image. Printing in several colors (a protection against photographic reproduction) compounded the distortions, making perfect registration between the colors impossible. This patent sought to avoid the problems by means of an intaglio press built along the lines of a coining press. It printed on dry paper, using a combination of screw and lever pressure.

William Heckert

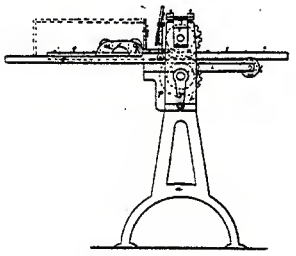


Paper-cutting machine

Patent 227,356; 1880
Photo 69.506

• A paper cutter with a guillotine blade.

George Henderson



Flatbed cylinder printing press

Patent 18,744, 1857
Photo 69.646

Newspaper and envelope addressing machine

Patent 25,363; 1859

• A small hand-cranked cylinder press with movable feed table. Paper was fed not to the cylinder but to a flat frisket. After printing, the frisket flipped up to drop the sheet on the delivery board. Inking was by hand.

The model, which combines the two patents, is broken.

Edward Hewitt

Intaglio plate printing and embossing press

Patent 272,878; 1883
Photo 69.573

• A machine with automatic inking and wiping, and the means to print in stripes of multiple colors. The patent was the latest in a series on plate printing machines taken out by Hewitt and was submitted after his death by Minnie Hewitt, administratrix of his estate.

Isaac W. Heysinger

Table cabinet for prints, maps, drawings, and books

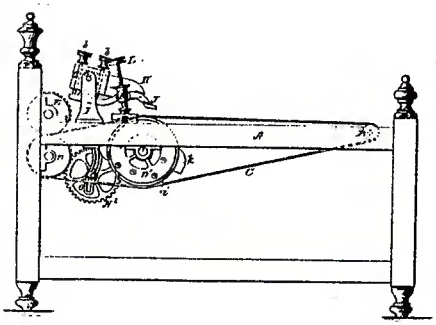
Patent 350,588; 1866
Photo 69.488

• A table with a sliding top that covered a series of slanting storage drawers.

William Orville Hickok and Albert Cooper

Paper-ruling machine

Patent 194,497; 1877
Refs. Comparato, *Books*, p. 133; and Hickok Company papers in the files of the Graphic Arts Collection



• Improvements principally to the pen cylinder and striker of ruling machines.

William O. Hickok (1815-1891) of Harrisburg, Pennsylvania, was in the bookbinding trade from about 1840. In 1852 he patented his first ruling machine, an improvement on the Hathaway machine then in use. In 1874, with the O-A Striker machine, he established the principles of all ruling machines to come.

George J. Hill

Card printing and numbering machine

Patent 21,418; 1858
Photo 69.634

• A little press with a numbering wheel, designed primarily for the production of railroad tickets.

Hill was a pioneer in numbering machines. His city, Buffalo, N.Y., became a center of the rail ticket business.

Albert E. Hix

Stencil writing

Patent 192,624; 1877

• A method of making perforated stencil sheets that were easy for the printer to read, and thus to use, by inking the edges of the puncture holes.

Richard M. Hoe

Note: Patents issued to Hoe singly and to Hoe and Tucker jointly are listed here in a single chronological sequence.

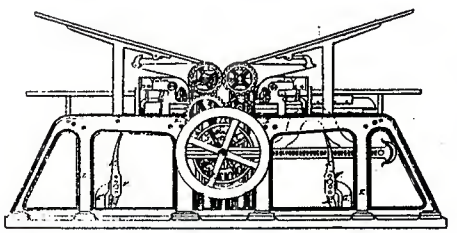
Tucker was also the author of many patents under his own name, qv.

Double cylinder flatbed printing press

Patent 2,629; 1842
GA catalog 11,023
Photo 71.924
Ref. *NCAB* vol. 7 p. 320; Tucker, *Hoe*, p. 370

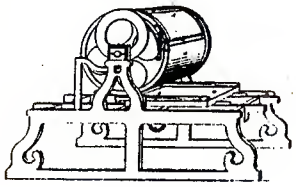
• Various improvements on the English presses of Applegath, Napier, and others, especially methods of stopping and reversing the press bed in its travel, and of raising the impression cylinders to allow the bed to pass underneath.

This was the patent for Hoe's Pony press, built specifically for the *New York Sun* to print 5–6,000 impressions per hour.



Richard March Hoe (1812–1886) was the son of Robert Hoe, founder of the original company, which he took over in 1833 after his father's death. Among many outstanding inventions, his most famous press was the Lightning of 1846. He was also known for solicitous management of his employees, for whom he set up set up a free but compulsory apprentice school.

Richard M. Hoe

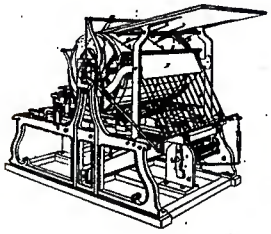


Flatbed cylinder press

Patent 3,551; 1844
Photo 69.533
Ref. Tucker, *Hoe*, p. 375

• Tapered bearers were attached to the bed to prevent slurring of the impression at the ends of the form.

Richard M. Hoe

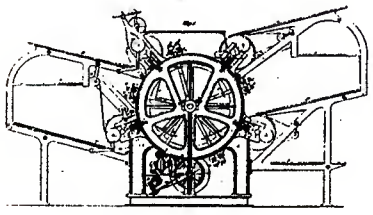


Flatbed cylinder printing press

Patent 4,025; 1845
GA catalog 11,016
Photo 77.656
Ref. Tucker, *Hoe*, p.377

• Improvements in feed and delivery, in raising the cylinder, and in stopping the bed.

Richard M. Hoe



Rotary printing press

Patent 5,199; 1847
GA catalog 11,017
Photos 60.957, 69.608

• On Hoe's type revolving press, improvements to the inking apparatus, the use of a portion of the type cylinder for ink distritution, and locking type to the cylinder with tapering rules.

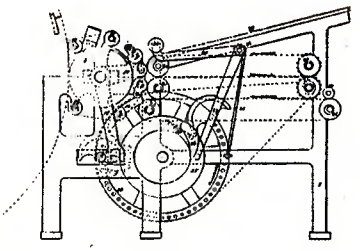
Richard M. Hoe

Sheet-delivery fly frames

Patent 18,640; 1857
Photo 69.609

• Improved fly frames for Hoe's type revolving presses that were more accurate and more convenient.

Richard M. Hoe



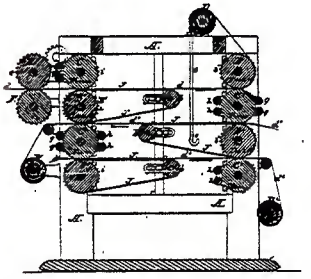
Printing both sides of a sheet

Patent 24,875; 1859
Photo 69.535
Ref. Tucker, *Hoe*, pp. 389, 409

• Sheet-handling system for printing both sides at a rotary press.

According to Tucker, this apparatus did not work well and was never brought into use.

Richard M. Hoe and Stephen D. Tucker



Rotary perfecting presses

Patent 92,050; 1869
Photos 69.539, 83.15991-4
Ref. Tucker, *Hoe*, p. 429

• Improvements to sheet- or web-fed perfecting presses. Instead of being attached to the impression cylinder, the press blanket was an endless web that travelled with the paper and acted as its support.

The press was patented in England in 1871 (Patent 1,825, to W. E. Newton).

Richard M. Hoe and Stephen D. Tucker

Flatbed cylinder printing press

Patent 108,785; 1870
Photo 69.530
Ref. Tucker, *Hoe*, p. 430

• Methods of controlling the motion of the type bed.

Model broken.

Richard M. Hoe

Rotary perfecting presses

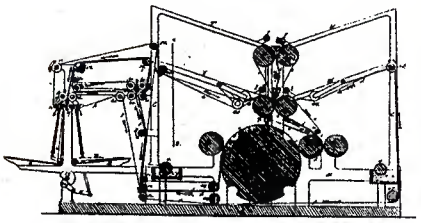
Patent 113,769; 1871
Photo 69.547

• Separating and piling set-off sheets on perfecting presses, and providing easier access to the blankets on the second cylinder.

Richard M. Hoe and Stephen D. Tucker

Rotary perfecting press

Patent 131,217; 1872
Photo 69.529
Ref. Tucker, *Hoe*, p. 431



• Feeding, carrying, and delivering sheets in rotary perfecting presses.

Model consists of the central group of feeding cylinders.

According to Tucker, a press on this plan was capable of printing 8,000 sheets per hour and was used successfully by the New York *Daily News*.

Richard M. Hoe

Rotary perfecting printing press

Patent 162,651; 1875
Photo 69.537

• A web of set-off paper replaced the usual sheets. The web was used on one side and then the other, repeatedly, allowing the ink time to dry on each side before it was presented again.

Richard M. Hoe and Stephen D. Tucker

Flatbed cylinder printing presses

Patent 173,295; 1876
Photo 70.858

• Improvements to the movement of the bed, the sheet fly, and the inking table of cylinder presses.

August Hoen

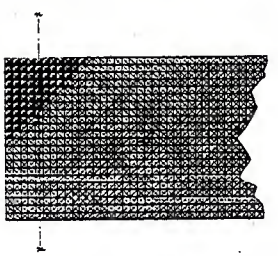
Chromolithographic press

Patent 89,997; 1869
Photo 69.692
Ref. *NCAB* vol. 14 p. 288

• A flatbed scraper machine with automatic inking, damping, feeding, and delivery. It printed at the rate of 300 impressions per hour, with the precise registration necessary for multicolor printing.

August Hoen (1817-1886) was born in Germany and came with his family to the U.S. in 1835. He worked with his cousin Edward Weber in a Baltimore lithographic shop. After Weber's death in 1848 Hoen took over the company and renamed it A. Hoen & Co. Both under Weber and Hoen, the shop specialised in manufacturers' ornamental labels, and was known for its exceptional color work. Hoen's lithocaustic process (next patent) was well adapted to this work.

August Hoen

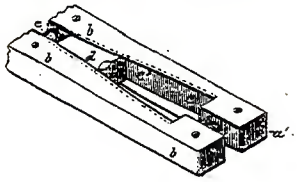


Lithocaustic printing process

Patent 227,782; 1880

• The surface of the lithographic stone was ruled and etched to form a pattern of minute regular pyramids, the points of which would print as dots. Then points were lowered according to the design, more lowering making wider dots and a darker printed tone.

Thomas J. House



Printers' sidesticks and quoins

Patent 87,339; 1869

• Paired sidesticks, grooved and tapered on the inside surfaces to take matching quoins. The sticks were held together loosely by dowels.

Anson Merrick Howard

Typecasting machine

Patent 187,278; 1877
Photo 69.648

• A machine for the rapid production of replica type, from originals made for the purpose in a hard metal such as steel. The type could have raised or sunken letters, and a straight, concave, or convex surface for printing on flatbed or rotary presses.

Frederick Webster Howe

Book-sewing machine

Patent 100,407; 1870
Photo 69.587

• A system of supports for the long slender paper-sewing needles, which were apt to break in use.

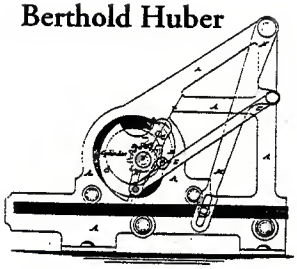
Berthold Huber

Flatbed cylinder presses

Patent 120,646; 1871
Photo 69.494

• Improvement to the movement of the bed in cylinder presses. The bed traveled faster when the cylinder was not in contact, allowing the cylinder to be of a smaller diameter than otherwise.

Berthold Huber

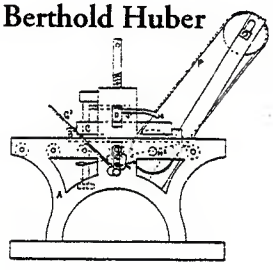


Flatbed cylinder presses

Patent 124,822; 1872
Photo 69.574

• Further improvements to the movement of cylinder presses. The cylinder turned at different rates when it was in contact with the bed and when it was free.

Berthold Huber

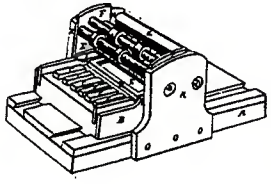


Lithographic printing press

Patent 145,420; 1873
Photo 69.709

• Adapting a hand press to power. Power sent the stone under the scraper and returned it. Inking the form and placing the paper were by hand.

Joshua Hunt

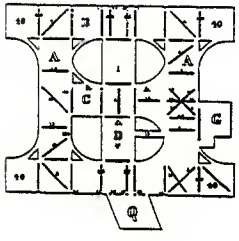


Inking apparatus for color printing

Patent 79,910; 1868
Photo 69.576

• Combining two forms on the bed of a press, one to be printed in a single color, and the other in bands of several colors. Double sheets were printed, rotated, and printed again.

Merrill Hutchison



Stencils for sign painter's template

Patent 147,942; 1874

• A template including all the letters of the alphabet in a single pattern.

William Hyland

Art of decorating wood and other opaque bodies

Patent 333,127; 1885

• Coating the surface for decorating with bright metal foil or polished metal, then painting and lacquering over that metallic base to produce brilliancy in the design. The patent was not related to printing.

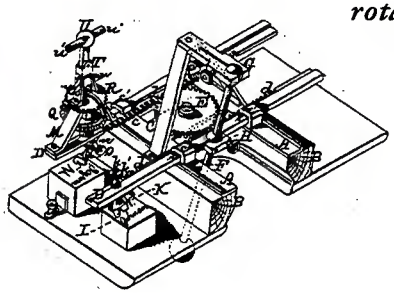
Asahel Alanson Johnson

Book-stitching machine

Patent 210,782; 1878
Photo 69.559

• A machine for stitching magazines, pamphlets, and similar printed material.

Roice W. Johnson

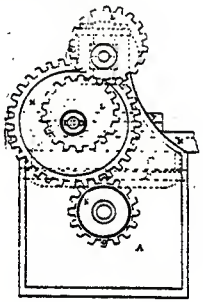


Pantographic engraving machine with rotating engraver

Patent 167,542; 1875
Photo 69.459

• A mechanical device for copying and engraving a design on to wood.

William Johnson



Flatbed cylinder printing press

Patent 128,731; 1872
Photo 69.589

• Eccentric gears gave a variable motion to the cylinder, synchronizing it with the reciprocating bed.

Daniel A. Johnston

Printing apparatus for the blind

Patent 62,206; 1867
Photo 69.682

• A device for producing embossed letters on paper for communication between blind people. Raised letters on plungers on a disk above the table were matched with sunken-letter plungers below it. The paper was squeezed between the two types of plungers by treadle force.

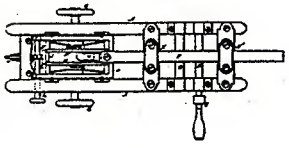
Gilbert E. Jones

Inking apparatus for printing machines

Patent 150,762; 1874

• Ink fountains with cleaning blades that overcame the problem of accumulated lint on the rollers.

Isaac Jones

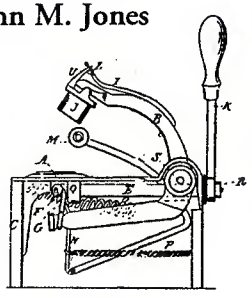


Machine for cutting the front of books

Patent 59,229; 1866
Photo 69.465

• Machine to cut the fronts of books to a concave form.

John M. Jones

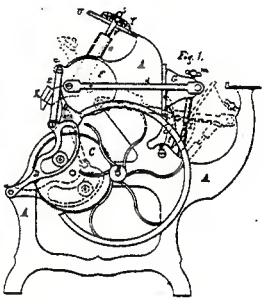


Hand stamp

Patent 18,907; 1857
Photo 69.697

• A self-inking hand stamp that accepted ordinary printers' type.

John M. Jones



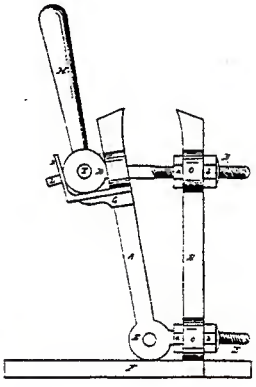
Platen printing press

Patent 215,459; 1879
Photo 70.860

• Means of giving the proper dwell to the platen at each end of its stroke.

Jones developed many successful platen jobbers including the Star, Washington, Jones-Gordon, Clipper, and Jewel, as well as the patents to cover them. Jones had patented a "domestic printing machine," or typewriter (Pat. 14,919, 1856), and his hand stamp (above), before he became involved with platen jobbers.

Joshua W. Jones



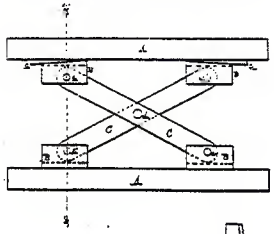
Book clamp

Patent 50,597; 1865
Photo 69.500
Ref. *NCAB* vol. 10 p. 128

• A clamp for holding books while they were backed.

Joshua Wiestling Jones (born 1831) was apprenticed to the printing and binding trades. For a time he worked with the binder W. O. Hickok and helped in building Hickok's prototype paper-ruling machine. Later he worked in public printing, particularly at the state printing house in Harrisburg, Pennsylvania. Jones pioneered the use of electric arc lighting in Harrisburg, one of the first American cities to adopt the system.

James A. Kearney

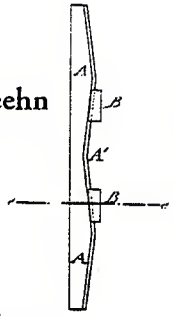


Printers' furniture

Patent 151,883; 1874

• Adjustable furniture, intended to replace sidesticks, quoins, and loose furniture. The device was pulled open to the desired width and locked in that position by driving wedges under two of the feet, which slid in grooves on their side bar.

Francis Keehn



Printers' sidesticks and quoins

Patent 145,574; 1873

• Sidesticks with several tapering sections, and grooves or steps to guide the quoins on their path.

Sidney Kelsey

Sheet feeder and fly operation for a bed-and-platen press

Patent 12,183; 1855
Photo 69.493

• Paper was fed through a slot on the feedboard to a carriage, which placed the sheet for printing. Then the carriage withdrew with the paper, and it was lifted off by a sheet fly.

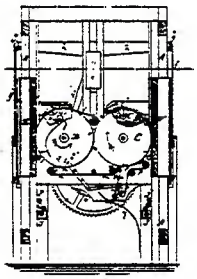
Thomas C. Kenworthy and Archibald McGregor

Plate printing press

Patent 203,465; 1878
Photo 69.474

• A copperplate press in which the "plank" or bed carrying the plate ran vertically. The plate was heated by steam, and automatically inked and wiped.

William Anderson Kerr

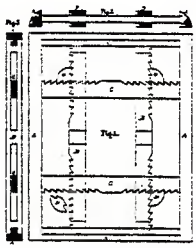


Sheet perfecting flatbed cylinder press

Patent 103,894; 1870
Photo 69.676

• This press had two vertical type beds, one at each end of the press. A sheet of paper was fed to the first cylinder and printed at the first type form traveling upwards. Next the sheet was passed to the second cylinder and printed on the other side at the other form travelling downwards. Finally it was deposited under the press.

Joseph Kingsland

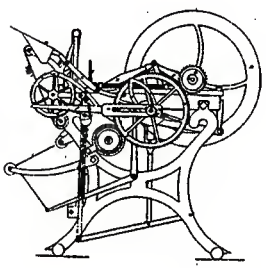


Printers' chase

Patent 228,201; 1880

• A chase that eliminated the need for furniture. Four metal bars, matching the inside length and breadth of the chase, were toothed along their outer sides. The bars could be locked in any position in the chase by four matching toothed blocks that fitted at the crossing points.

J. C. Kneeland



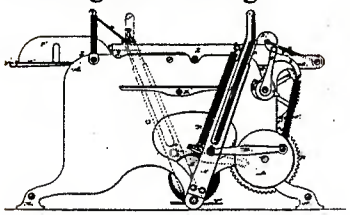
Platen printing press

Patent 3,917; 1845
Photo 69.613

• A self-inking press with vertical bed and platen, and sheet grippers traveling on an endless chain.

Model damaged.

Margaret E. Knight



Pneumatic sheet-feed apparatus

Patent 109,224; 1870
Photo 69.677

• A sheet feeder using two suction tubes to lift and carry each sheet from the paper bank to the cylinder.

Margaret E. Knight

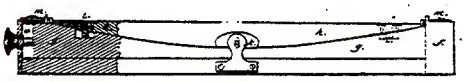
Paper bag machine

Patent 220,925; 1879
Photo 86.6161

• A machine for folding and pasting paper bags of what the inventor called the "satchel bottom class."

Joseph Koehler

Bed for a lithographic press



Patent 53,309; 1866

• A bed that could be adjusted for stones that were thicker at one end than the other.

Joseph Krayer

Lithographic printing press

Patent 216,193; 1879
Photo 69.593

• An improved flatbed cylinder machine.

Joseph Krayer was from Wiesbaden, Germany.

William C. Kritch and Arthur Greenwood

Platen printing press

Patent 188,151; 1877
Photo 69.556

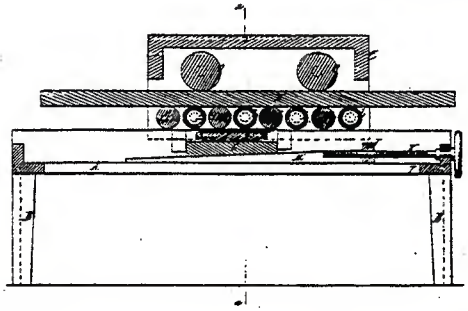
• Improvements to the ink fountain and the movement of the platen in a platen jobbing press.

Kritch and Greenwood were from Leeds, England.

Moritz Laemmel

Press for printing from multicolor blocks

Patent 123,266; 1872
Photo 69.473

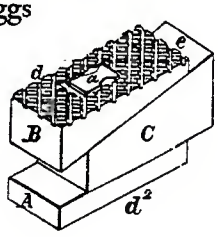


• A method of making multicolor prints on paper from special compound blocks of pigmented resin. A series of steam-heated impression rollers alternating with cold rollers melted and then fixed the resin onto the paper. The press bed rested on wedges, so the resin block could be raised as its surface was used up.

Samuel C. Lame and Ferdinand Sherwin Briggs

Printers' quoins

Patent 148,308; 1874



• A three-part quoin, the parts being held together by a key passing through a slot in the central wedge. Roughened sides of the quoin prevented slippage on other furniture.

Frank H. Lauten

Sheet-feeding machine

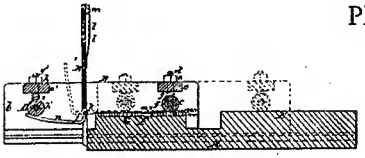
Patent 283,906; 1883
Photo 69.518

• A sheet feeder for "printing-presses, ruling-machines, paper box and bag machines, and analagous machines."

S. D. Learned

Hand printing press

Patent 17,405; 1857
Photo 69.487

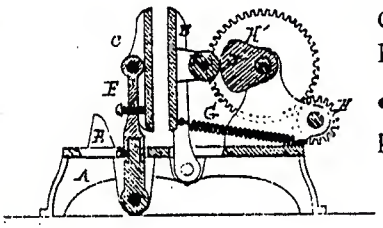


• A small self-inking card press. A traveling frame carried the inking and impression rollers across the fixed type bed and ink plate.

Thomas Leavitt

Platen printing press

Patent 117,088; 1871
GA catalog 23815
Photo 72.4705



• Improvements to the motion of bed and platen in a platen jobbing press.

Thomas Leavitt

Postmarking and cancelling machine

Patent 219,587; 1879
Photo 69.578

• The feeding mechanism for a postmarking machine.

Marshall C. Lefferts

Printing or decorating the surface of celluloid

Patent 346,376; 1886
Ref. *NCAB* vol. 10 p. 243

• A celluloid sheet was printed, and then heated under pressure against a polished sheet to finish the surface.

Model consists of two photogravure specimens. The patent rights were assigned to the Celluloid Manufacturing Company, New York.

Marshall Clifford Lefferts (born 1848) first worked with the American Telegraph Company. In 1870 he joined with the new Celluloid Manufacturing Company, of which he became president in 1890.

Marshall C. Lefferts and John W. Hyatt

Printing on pyroxyline compounds (celluloid)

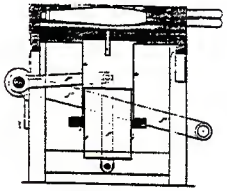
Patent 348,222; 1886
Ref. *NCAB* vol. 12 p. 148

• Variations on the method of printing celluloid under heat and pressure.

Model consists of three photogravure specimens.

John Wesley Hyatt (born 1837) started his working life as a printer. Early in his career, he took out a patent for a composition for artificial ivory billiard balls, which led him to the invention of celluloid in 1868. In 1869 Hyatt and his brother Isaac founded the Celluloid Manufacturing Company. He held some 250 patents, mostly concerned with the use of celluloid.

Alfred Leighton



Printing press for uneven surfaces

Patent 62,646; 1867
Photo 69.670

• Relief printing from a vulcanized rubber plate with fluid pressure, such as air pressure.

Alfred Leighton was from London, England.

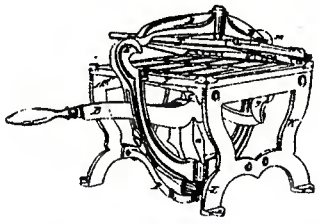
William Leist

Feed mechanism for power presses

Patent 354,480; 1886
Photo 69.536

• Apparatus for the automatic feeding of strip material to power presses—not necessarily printing presses.

John Lewis



Hand printing press

Patent 9,923; 1853
Photo 69.626

• A toggle lever press in which the platen was forced down by bails.

Model incomplete.

Marshall T. Lincoln

Bookbinder's sewing table

Patent 59,240; 1866
Photo 69.586

• A sewing table that was vertically adjustable, so the sheets could be lowered to a convenient height for the sewer as the pile grew. This avoided the usual practice of "putting blocks or boxes of increasing thickness in the operator's chair."

William A. Lorenz

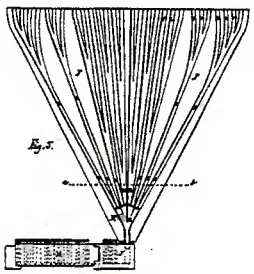
Type-distributing machine

Patent 174,915; 1876
Photo 67.904
Ref. Huss, *Typesetting*, p. 83-5

• Improvements to a machine invented by Charles W. Dickinson and patented in 1872 and 1875.

The rights were assigned to Samuel W. Green, who reassigned them to Edward N. Dickerson, trustee for Henry A. Burr. Burr, a hat manufacturer, was the proprietor of the Burr, later Empire, typesetter.

William A. Lorenz



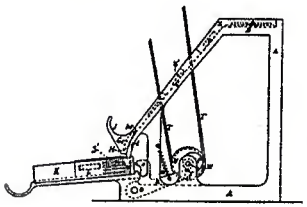
Typesetting machine

Patent 174,916; 1876
Photos 67.900, 70.859

• A typesetting machine in which type was stored vertically in channels, dropped piece by piece down converging tracks behind a glass panel, and assembled in a long line in a raceway at the bottom. The line was divided and space-fitted by a second operator.

As with Lorenz's first patent, the rights were assigned indirectly to Henry Burr.

William A. Lorenz and Louis K. Johnson



Typesetting machine

Patent 244,723; 1881
Photo 67.903

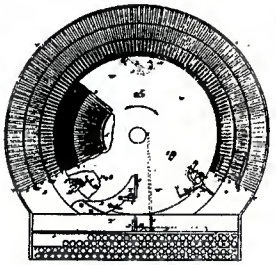
• Improvements to typesetting machines, specifically in the control of type traveling from storage channels to assembly point.

Both Lorenz and Johnson had a financial interest in the Burr typesetting machine (see Lorenz's earlier patents).

William S. Loughborough

Typesetting machine

Patent 13,710; 1855
Photo 67.910



• Type was stored in nearly vertical cells around a circulating wheel. A piece of type selected at the keyboard was pushed in from its cell, caught up by the wheel, and carried to a galley in front of the operator where the spacing was fine-tuned. The patent also covered arrangements for housing the kerned letter "j," and for correcting matter in the galley.

Model incomplete.

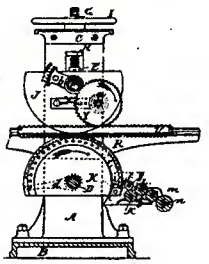
Henry and Henry W. Lovejoy and James H. Ferguson

Method of making curved electrotype and stereotype plates

Patent 86,021; 1869

• Manufacture of curved plates from flat plates without altering the dimensions of the image.

Samuel W. Lowe



Cylinder printing press and embossing machine

Patent 14,789; 1856
Photo 69.625

• A D-cylinder press adaptable for printing the relief plates covered by a Lowe patent of 1855 (Patent 13,585), as well as ordinary type and engraved plates.

Later in 1856 Lowe took out a patent for his more famous portable press with conical roller (Patent 15,428).

Robert G. Lowey

Bookbinding machine

Patent 115,621; 1871
Photo 69.526

• An improved machine for beveling boards for bookbinding.

Alexander Malm

Paper-cutting machine

Patent 223,744; 1880
Photo 69.532

• A guillotine paper cutter.

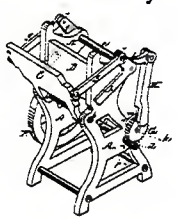
Alexander Malm

Paper-cutting machine

Patent 227,803; 1880

• A paper cutter with a stationary blade. A table and paper clamp rose obliquely against the blade.

Horace A. Manley



Platen printing press

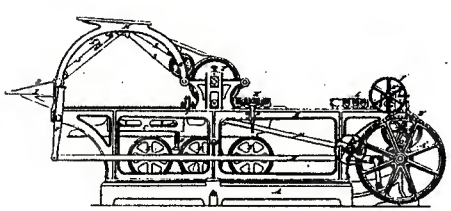
Patent 215,011; 1879
Photo 69.486

• Simplification of the drive of a platen jobbing press, with the object of making a cheaper press.

Auguste Hippolyte Marinoni

Lithographic printing press

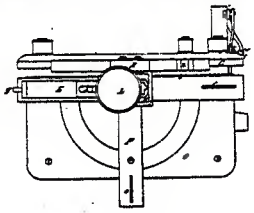
Patent 87,950; 1869
Photo 69.441
Ref. Tucker, *Hoe*, pp. 426-7



• A flatbed cylinder press with an adjustable bed, apparatus to lift the rollers from the stone, and a receiving cylinder with grippers to take the sheet from the impression cylinder.

Marinoni, a leading French press builder, assigned these patent rights to R. Hoe & Co.

Larnard F. Markham

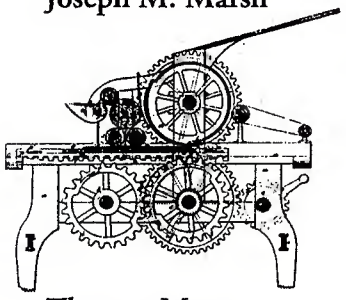


Trimming books

Patent 5,523; 1848
Photo 69.599

• A machine for cutting the edges of books, combining a sliding cutter with a turning and adjustable book holder and an adjustable table.

Joseph M. Marsh



Flatbed cylinder printing press

Patent 5,819; 1848
Photo 69.650

• Improved apparatus governing the motion of the bed on a flatbed cylinder press, as well as the gripper fingers and the inking system.

Thomas Mason

Type molds

Patent 187,880; 1877
Photo 69.617
Ref. Legros, *Typographical*, p. 12

• Type molds in which the jet of the newly cast type was broken off automatically as the mold was opened, saving a separate operation in the typecasting process.

Mason was from Islington in Middlesex, England. His invention was patented in England in 1877.

Thomas Mason

Type-dressing machine

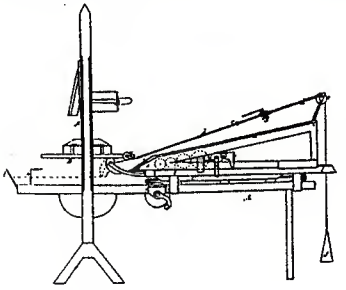
Patent 207,429; 1878
Photo 69.511

• A machine with files to dress and true the sides of type, along with a tool to nick the lower ends.

Ebenezer Mathers and William D. Siegfried

Paper-feeding apparatus for hand presses

Patent 12,634; 1855
Photo 69.517



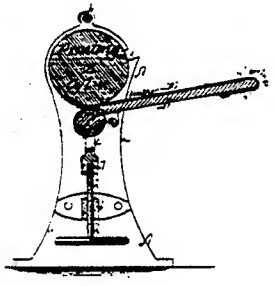
• An automatic sheet feeder for hand presses. It was assumed that the platen would be fitted with tympan blankets, and the press supplied with an inking machine.

The model, on a Washington-style press frame, is missing the feed apparatus itself as well as the inking rollers and press toggles.

Charles Camille Maurice

Lithographic rotary printing press

Patent 116,335; 1871
Photo 70.863



• A small press with a stone cylinder that was removable for wetting and inking. The stone was taken out and rolled across the ink and wetting slabs, then replaced for printing. The pressure roller below was hung on adjustable bearings.

From 1868 Maurice took out several patents for rotary and flatbed lithographic printing. He advertised this and his other presses as "Autographic Cylinders for Offices."

Charles Camille Maurice

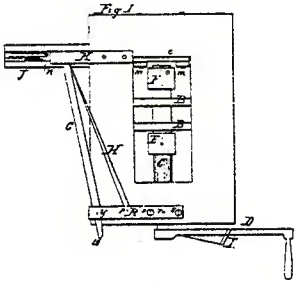
Producing paper printing surfaces

Patent 196,466; 1877

• A method of printing from paper plates. The original image, in lithographic crayon or ink on paper, was transferred by pressure at a press such as Maurice's rotary press to a second sheet of paper. After treatment, the second sheet became the printing plate. The purpose of the invention was to reverse the image, so it would be right-reading when printed.

Model consists of several fragile and damaged paper rolls.

John McCreary



Method of making wooden type

Patent 9,454; 1852
Ref. Kelly, *Wood Type*, pp. 54-55

• A method of stamping letters into blocks of wood from steel dies.

Thirty-five years later, a similar process was used extensively by the William H. Page Wood Type Company.

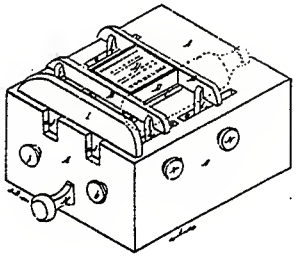
Thomas McGrath

Printers' sidesticks and quoins

Patent 133,948; 1872

• These sidesticks were made with two symmetrical series of inclined surfaces. Matching quoins were adjusted by turning a double-threaded screw.

Isaac I. Miles



Apparatus for printing bottles, boxes, and cans

Patent 56,593; 1866
Photo 69.513

• Printing directly on the glass or metal article with elastic type instead of the common practice of stenciling on the surface or using a paper label.

The rubber printing block of the patent model has hardened and perished.

In 1860 Isaac Miles had bought shares in the rights of two other printing patents: Samuel Lowe's cone press (Patent 15,429, 1856) and Charles Hawkes's platen press (Patent 7,855, 1850).

James Milligan

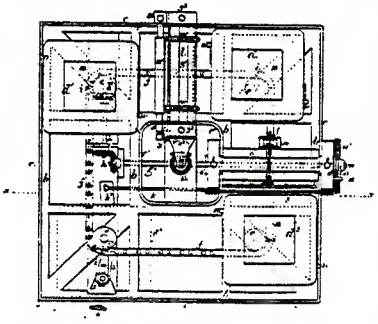


Plate printing press

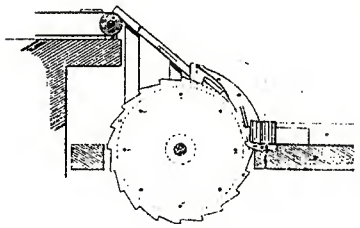
Patent 193,097; 1877
Phoro 69.579
Refs. Tucker, *Hoe*, p. 439 footnote; *History of the Bureau of Engraving and Printing*, 1862-1962 (Washington DC, Treasury Department). Other information kindly supplied by Cecilia Werrheimer, curator of the Historical Resource Center, Bureau of Printing and Engraving.

• The press bed was pulled by a continuous chain along a four-sided track, with stations for the operations of inking, wiping, supplying paper, and printing.

This patent improved upon Milligan's patent of 1876 (Patent 180,490). In 1878 Milligan steam presses were installed in the Bureau of Engraving and Printing for printing tobacco stamps and the green backs of some bank notes, replacing hand presses. In 1889, as a result of protest from the Knights of Labor on behalf of copperplate printers, 19 steam presses were taken from

the Bureau and replaced with 67 hand presses. After 1900, steam presses based on Milligan's pattern were gradually reintroduced to the Bureau. They were considered the Bureau's workhorses in the 20th century.

William H. Mitchel



Type-composing machine

Patent 10,929; 1854
Photo 67.901

• Improvements on Mitchel's earlier patent of 1853 for composing and distributing apparatus. Specifically, the patent covered a method of conveying type to the composer, and a wheel for setting the type in line.

The model shows only the composing wheel.

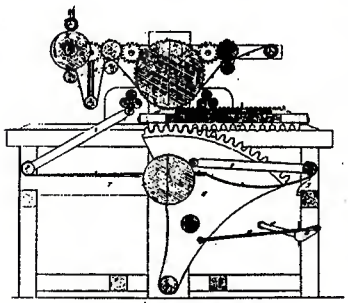
Thomas Mitchell and John Milne

Type mold

Patent 450,083; 1891
Photo 69.665

• A mold for casting type with letters on both ends, or "duplex-lettered type." Such type was used in printing for the blind, though no particular application is specified for this patent.

Charles Montague

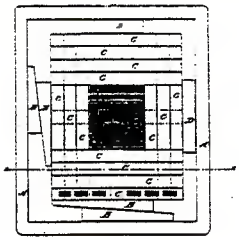


Flatbed cylinder web press

Patent 9,993; 1853
GA catalog 11,018.
Photo 69.509
Ref. Silver, *Web Press,* p. 348

• A web-fed cylinder press printing on both strokes of the bed. The web of paper was fed intermittently to match the printing motion, then rewound on a receiving cylinder at the other end of the machine.

Harlan P. Montague



Printers' furniture

Patent 141,450; 1873

• Furniture of a single length was used. Each piece was slotted horizontally from each end to near the middle, so that the side and end pieces could be fitted through each other.

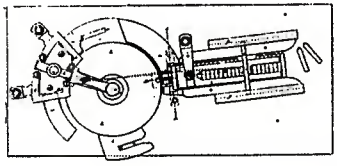
Henry Montgomery

Rotary press for printing on boards

Patent 193,538; 1877
Photo 69.612

• Press for printing on the flat boards for soap or candle boxes before folding, instead of the usual method of stenciling on the made-up boxes.

Daniel Moore

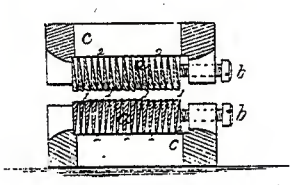


Type rubbing machine

Patent 13,935; 1855
Photo 69.577

• Type was passed endwise through the cutters, one piece at a time. This avoided the damage to hairlines or to the face produced by machines that took the type either sideways or in an endwise procession.

William Moore

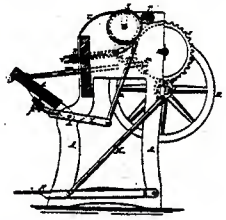


Apparatus for type rubbing

Patent 39,946; 1863
Photo 69.619

• Special type cutters, particularly applicable to the type-dressing machine patented by Daniel Moore in 1855 (see above).

William T. Morgans

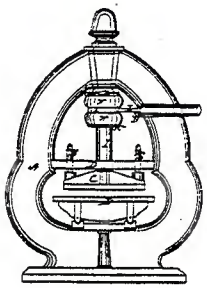


Platen press

Patent 99,101; 1870
Photo 69.616

• A self-inking card-and-billhead treadle press on a simple clamshell principle.

Jedediah Morse

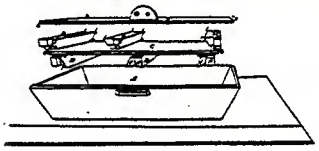


Hand press

Patent 18,527; 1857
Photo 69.659

• The platen was lowered by a series of conical rollers turning against cam discs. The platen adjustment wedge was placed at the crown of the press instead of the usual position in the hub of the platen, to avoid being knocked – "for it is well known that pressmen are in the habit of throwing their wrenches or other tools down on the platen."

Richard Dixon Mott

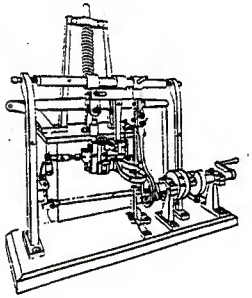


Stereotype pan

Patent 10,704; 1854
Photo 69.490

• Stereotype pan for casting metal plates from plaster of Paris molds.

Charles Mueller



Typecasting machine

Patent 10,377; 1854
Photo 69.605

• Improvements to the mechanism of typecasting machines, including placing the mold below its "axis of oscillation" instead of the usual higher position.

Robert Neale

Copper plate press

Patent 12,213; 1855
Ref. Tucker, *Hoe,* p. 408

• A plate attached to an endless chain was carried it past stations for automatic inking, wiping, and printing. There was provision for applying bands of different colors.

According to Tucker, this press was built by R. Hoe & Co. for D. Steffens in 1858.

Robert Neale, an American, was living in London when he took out this patent. He patented the press there in 1853.

Robert Neale

Copper plate press

Patent 245,970; 1881
Photo 69.644

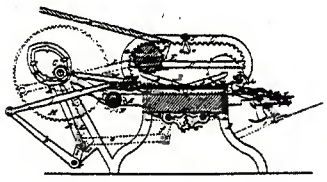
• A flatbed cylinder power press intended for printing bank notes and other high-quality work, with improved wiping apparatus that did not use the customary whiting powder as a polisher.

The specification includes a brief discussion of the recent development of plate printing machines, beginning with Neale's first British patent of 1853.

Alonzo and Boliver Newbury

Flatbed cylinder press

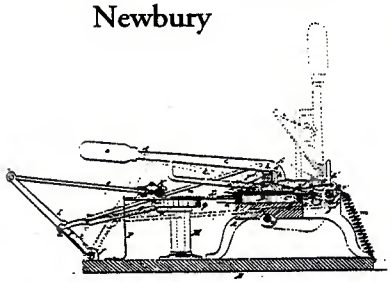
Patent 15,740; 1856
Photo 69.551
Ref. Ringwalt, *Encyclopaedia,* p. 312



• A press with a stationary bed. The cylinder followed an endless rack that lifted it for the return trip over the bed.

This patent covered the Newbury Country Press, a small hand-powered printing machine that was popular with country newspaper shops in the 1860s.

Alonzo and Boliver Newbury



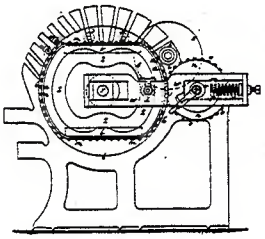
Hand printing press

Patent 24,655; 1859
GA catalog 11,021
Photo 69.522

• A self-inking bench-top press for cards or sheets.

This patent was the basis for the Newburys' Mountain Jobber or Machine Jobber. Early models followed the patent closely, but later (about 1871) the press had a sloping ink disk. A. N. Kellogg produced a modification of the press, which he patented in 1863 (Patent 37,293).

George Newsum



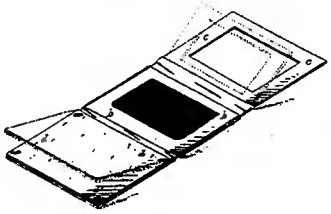
Rotary lithographic or type press

Patent 200,927; 1878
Photo 69.702

• The revolving type cylinder had two flat sides where type forms or lithographic stones were mounted. The two curved surfaces of the cylinder were used as ink distributing surfaces.

Newsum was from Leeds, England, where he patented this press in 1872.

Samuel Stickney Nickerson



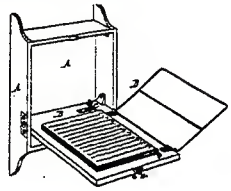
Method of making autographic stencils

Patent 215,833; 1879

• A porous paper stencil was prepared by varnishing the face of a sheet of paper, then drawing on it with a sharp stylus. The inventor called his process Multograph, or Stulograph.

The model consists of a stencil frame and an envelope of papers.

H. Shaw Noble

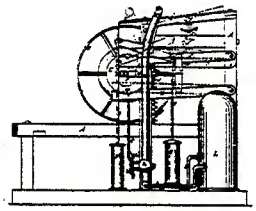


Newspaper files

Patent 173,047; 1876
Photo 69.691

• A folding wall-desk for newspaper reading and storage.

Oliver Norelius

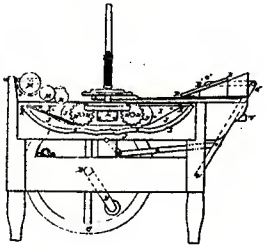


Sheet-feed apparatus with vacuum pipes

Patent 100,059; 1870
Photo 69.445

• The top sheet was lifted by suction cups, the table dropped a little, and jets of air completed the separation of the sheet from the pile.

Joel G. Northrup

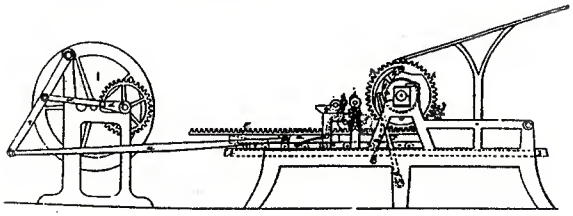


Double-ended press

Patent 2,793; 1842
Photo 69.652

• A method of bringing two alternating beds into printing position. The patent could be applied either to a bed-and-platen press or to a cylinder press.

Joel G. Northrup

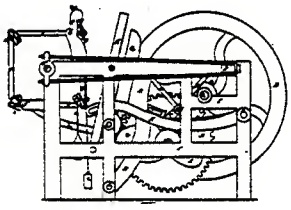


Flatbed cylinder press

Patent 9,408; 1852
Photo 69.602

• Stop cylinder press with inking apparatus and sheet fly.

Joel G. Northrup

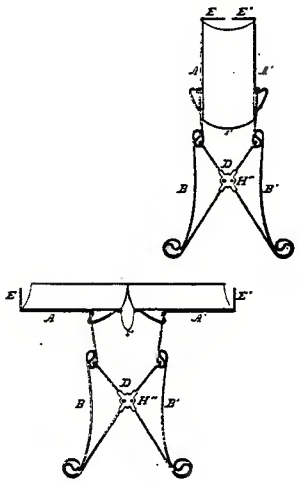


Self-inking platen press

Patent 9,925; 1853
Photo 69.449

• Four or more platens rotated intermittently around a single axis. The bed was rocked, clamshell fashion, against each platen in turn. Sheets of paper were fed to grippers on the uppermost platen, printed when that platen turned to the vertical, and then dropped to a pile beneath the press when the platen went to the bottom position.

LaVerne W. Noyes



Book holder

Patent 239,055; 1881
Photo 69.590
Ref. *NCAB* vol. 17 p. 156

• A stand to hold large books, such as dictionaries, open or closed.

LaVerne Noyes (1849–1919) started his career in the manufacture of agricultural machinery. After taking out this patent, he made a successful market of wire book holders for some years. Later he became interested in windmills and their potential for generating electricity, and set up the Aermotor Company for the production of steel windmills. Electricity generated by a rooftop windmill lit the New York office of Aermotor in 1895.

Benjamin F. Nutting

Copy holder

Patent 155,202; 1874
Photo 69.664
Ref. Sally Pierce and Catharina Slautterback, *Boston Lithography 1825–1880*, Boston Athenaeum, 1991, p. 178

• A portable and adjustable copy holder on which the reader could tilt the manuscript backwards or spin it sideways, "with reference to light, &c., to suit himself."

Nutting (1803?–1887) was one of the first generation of American lithographers, working at the profession as early as 1826. Later in his life he was also an art teacher, and published a series of art teaching manuals.

W. H. Oakes

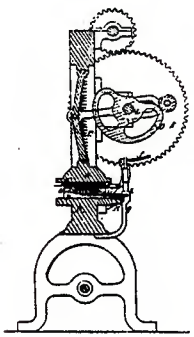
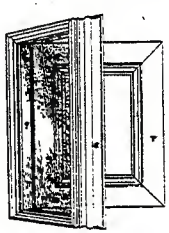


Plate printing press

Patent 30,495; 1860
Photos 69.452, 83.15991-2

• An intaglio system designed to avoid the slow operation of copperplate wiping, using an ordinary platen lever press. After paper was brought against the face of the engraved plate, ink was piped from a reservoir to spaces under the plate and then forced up through holes in the plate into the engraved lines. Here the ink made contact with the paper. Unused ink was then sucked back out of the lines, leaving the plate clean as the platen was lifted again for the next sheet.

Frank Odenbaugh



Picture frames

Patent 190,068; 1877

• A frame constructed in three parts: a backboard holding the picture, a frame, and a glazed box covering and protecting the frame. All were hinged together, for easy access and cleaning.

Edmund Oldham

Pantographic engraving machine

Patent 54,759; 1866
Photo 69.471

• Engraving machine capable of producing copies the same size as the pattern, or larger or smaller, or of altered proportions; also, a ruling machine.

Andrew Jackson O'Shea

Printers' quoins

Patent 167,780; 1875

• A screw quoin, adjustable with any common wrench.

Andrew Overend

Stereotype plate holder

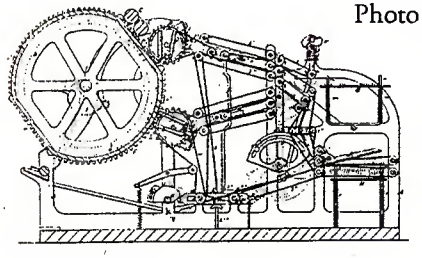
Patent 252,694; 1882

• A block with clamps to hold stereotype plates in position for printing.

Thomas and Alfred Parkes

Rotary sheet perfecting press

Patent 15,437; 1856
Photo 69.645



• Type forms were bedded on the two flat surfaces on opposite sides of the type cylinder.

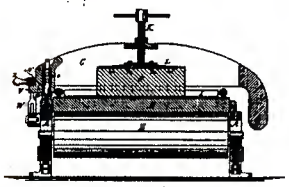
Edward G. Parkhurst and Henry G. Thompson

Book-sewing machine

Patent 151,507; 1874
Photo 69.660
Ref. Comparato, *Books*, p. 169

• Various improvements to David Smyth's book sewing patents of 1868 and 1869.

John A. Parks

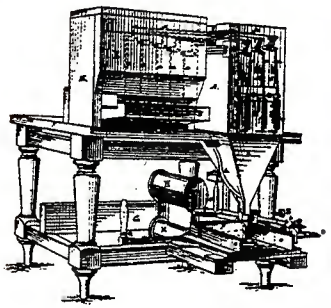


Lithographic scraper press

Patent 228,271; 1880
Photo 69.499

• A method of mounting a scraper to a swinging arm to produce more even pressure in "Photo-Mechanical Presses."

William D. C. Pattyson



Typesetting machine

Patent 166,549; 1875
Photo 67.894
Ref. Huss, *Typesetting*, p. 86

• The Electro-Magnetic Type-Setting Machine. Type was stored in vertical channels (right-hand box) and dropped into a funnel at a touch on the keyboard (left-hand box). The falling type hit a see-saw lever, making an electrical connection and exciting electromagnets. The magnets moved sliding blocks, pushing the type into place into a galley. When a line of type was complete, the operator reset the adjustable back of the galley to make room for the next line.

John Paulding

Typesetting for stereotype plates

Patent 52,073; 1866
Photo 67.895

• The use of a "perpetual font of type" for impressing letters into a plastic molding material. Type was stored in a permanent holder, each piece tied by a thin strip of metal. At the touch of a key, type fell to casting position, the faces protruding below the holder. After casting, the type was returned to the storage cell.

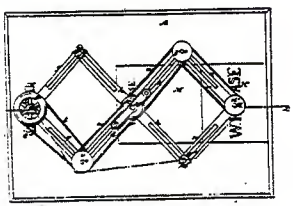
James G. Pavyer

Type-scouring machine

Patent 28,899; 1860
Photo 69.575

• Machine for removing the burr from the foot of newly cast type.

W. H. Pease



Pantographic carving machine

Patent 27,827; 1860

• An engraving pantograph particularly intended for cutting letters from a pattern into stone. The graver was provided with a rotating and/or a pecking motion.

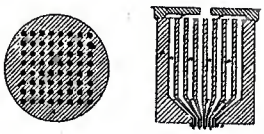
Maltby K. Pelletreau

Bookbinders' standing press

Patent 30,243; 1860
Photo 69.510

• A standing press with a platen, or upper follower, lowered in the usual way by an iron screw, and a bed, or lower follower, that was raised by a rack and pinion.

Joseph Perkins



Color printing blocks

Patent 172,340; 1876
Photo 69.553

• Multicolor printing blocks particularly intended for oilcloths, requiring colors to be applied thickly and in an intricate pattern. The blocks were pierced by channels, which conducted the ink from reservoirs of converging tubes surmounting the block.

Jean Constant Petyt

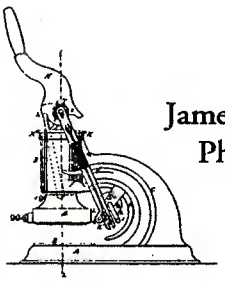
Machine for making cold wrought type

Patent 5,049; 1847

• A machine for producing type by compression and cutting from rods of any metal. The face was formed using a steel letter matrix or, for reversed type (type *en creux*), a steel punch.

The model is a full-sized working machine.

Jean Petyt was from Paris, France.



James N. Phelps

Hand stamp

Patent 21,980; 1858
Photos 69.538, 83.15993-2A

• A self-inking hand stamp.

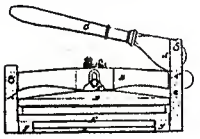
Edwin J. Piper

Pen-ruling machine

Patent 148,381; 1874
Photo 69.708

• Arranging all the cams operating the pen bar and stop gate on a hub to the side of the pen cylinder, for quick access and adjustment.

Edwin and Jacob B. Platt

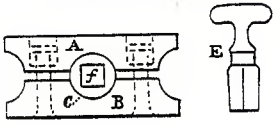


Traveler's copying press

Patent 21,902; 1858
Photo 69.483

• A letter-copying press that could be dismantled and packed up for the road.

George B. Polen

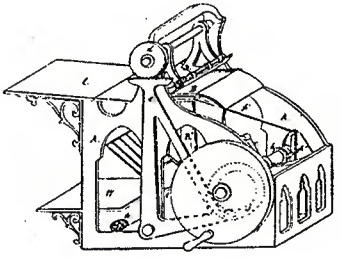


Printers' quoins

Patent 173,493; 1876

• Two connected parts of the quoin were adjusted by means of a tapered screw.

Charles Potter Jr.



Platen printing press

Patent 17,449; 1857
Photo 69.671

• Improvements to the feed and delivery systems of a press patented by Merwin Davis in 1855.

Charles Potter was at this time in business building Merwin Davis's Oscillating Press and a jobber for George Babcock. After 1864 he turned to his own large cylinder presses, for which he is better known.

Charles Potter Jr. and James F. Hubbard

Bearings for ink distributing rollers

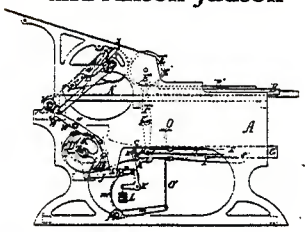
Inking apparatus for printing presses

Patents 169,191 and 171,243; 1875
Photo 69.672

• Two inventions relating to the inking apparatus on oscillating presses, such as Potter's jobbing press.

The two patents are demonstrated on one model.

Charles Potter Jr. and Anson Judson

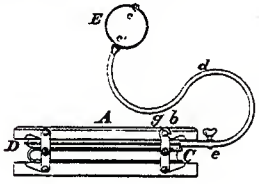


Flatbed cylinder printing press

Patent 178,326; 1876
Photo 69.604

• Improvements to the distribution, inking, and feeding apparatus on stop cylinder presses.

James A. Powlett

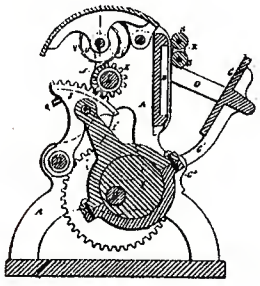


Copying press

Patent 193,346; 1877
Photo 69.468

• A letter-copying press in which the pressure was produced by inflating an air bag.

G. W. Prouty



Inking apparatus for platen presses

Patent 141,077; 1873
Photo 69.595

• Giving a lateral motion to the ink-distributing plate. The patent is demonstrated on a platen jobber similar to one of Prouty's, patented in 1872.

Josiah Pumphrey

Autographic printing

Patent 200,759; 1878

• Converting a sheet of paper into a printing plate by writing in a special ink.

Josiah Pumphrey was from Birmingham, England.

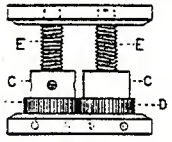
William Quail

Printers' pocket case for bodkin and tweezers

Patent 70,261; 1867

• The bodkin (a small pointed awl) and tweezers were tools with many uses in the print shop, and always ready to the printer's hand. In this combined tool, bodkin and tweezers folded into their own handle for portability.

William Quail

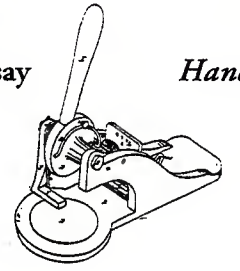


Printers' quoins

Patent 158,001; 1874

• Quoins were expanded by turning an internal screw.

P. A. Ramsay



Hand stamp

Patent 16,608; 1857
Photo 70.862

• Self-inking percussion stamp.

Edwin Reynolds

Lithographic printing press

Patent 41,862; 1864
Photo 69.641

• Improvements to the inking and printing mechanisms on a scraper machine. This patent related to the press patented by George Reynolds in 1863 (below).

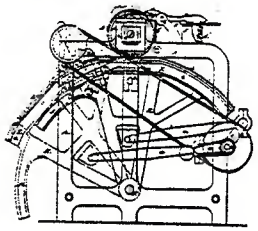
Edwin Reynolds

Lithographic printing press

Patent 43,796; 1864
Photo 69.555

• A scraper press with stationary stone and moving scraper.

Edwin Reynolds



Lithographic printing press

Patent 46,390; 1865
Photo 69.548

• A cylinder press in which a carriage bearing the flat stone moved through an arc of a circle and under the rotating cylinder.

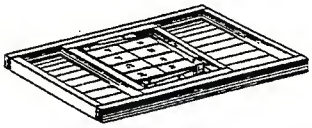
George H. Reynolds

Lithographic printing press

Patent 37,727; 1863
Photo 69.531

• Improvements to the inking, dampening, and tympan apparatus in a scraper machine.

Ira Reynolds

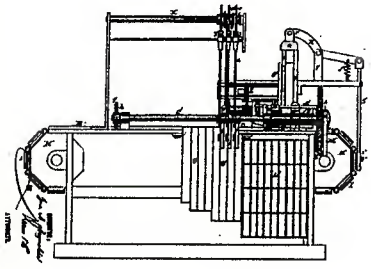


Lithographic printing forms

Patent 144,796; 1883
Photo 69.504

• Assembling multiple stones for printing together as a composite form.

John A. Reynolds



Type setting machine

Type distributing machine

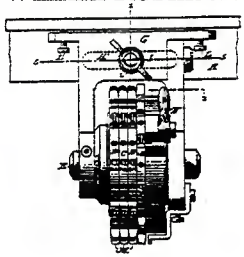
Patents 152,868 and 152,869; 1874
Photo 67.898
Ref. Huss, *Typesetting*, p. 82.

• Type stored in a case of vertical channels was selected and pushed out by keyboard action to a moving belt, then dropped down a slot to be assembled in a composing stick. For distribution, the dead matter was placed in

front of the operator who read off and keyed in a line of letters. Each piece of type was pushed in turn onto the moving belt and dropped into its appropriate slot for return to the storage case.

The two patents are demonstrated on a single model.

William Robinson

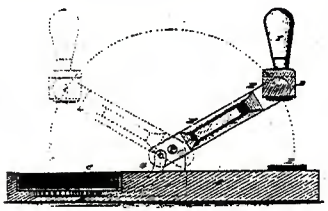


Numbering machine

Patent 245,220; 1881
Photo 69.447

• A numbering machine in which blank space was filled by a character, such as a star or dash, to prevent the alteration of figures after printing.

G. H. Rountree

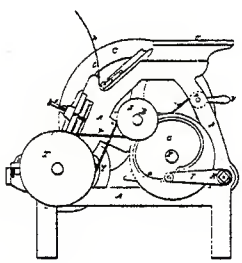


Hand stamp

Patent 136,458; 1873
Photo 69.653

• A self-inking hand stamp.

Stephen P. Ruggles

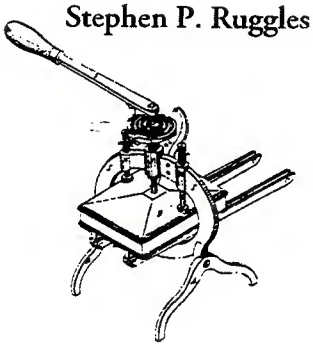


Platen printing press

Patent 10,588; 1854
GA catalog 24,907
Photos 78.14923, 78.14924
Ref. Green, *Platen Jobber*, p. 9

• The patent for the platen jobber manufactured as Ruggles's Combination Job Press.

Stephen P. Ruggles



Hand printing press

Patent 23,951; 1859
GA catalog 11,020
Photo 69.600, 69.507

• A lever press using a combination of coarse and fine screws, the first to lower the platen fast, and the second to produce greater power at the end of the pull; also, inclined ways or tracks, so the bed was raised as it was drawn under the platen.

G. H. Sanborn and John E. Coffin

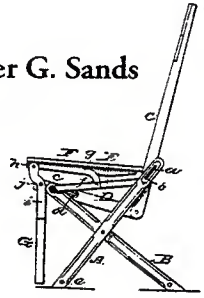
Shaping and finishing the backs of books

Patent 25,548; 1859
Photo 69.507
Ref. Comparato, *Books*, p. 110-11

• A machine with a pair of divided rolls, or roll segments, to shape book backs.

Sanborn (d. 1881) established his reputation and his company with his rounding machine and went on to develop and sell a full line of equipment for bookbinders.

Weimer G. Sands



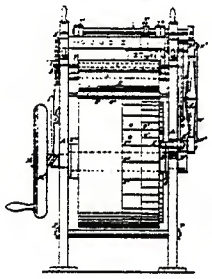
Folding chair

Patent 268,941; 1882

• A cheap chair that could be arranged in upright or reclining positions, or folded up for storage or shipping.

The patent is not related to printing.

James Sangster

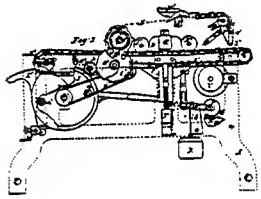


Press for card and ticket printing

Patent 48,493; 1865
Photo 69.552

• A self-inking press in which a series of flattened surfaces on a large rotating drum provided multiple platens. The type was suspended face down and lowered against the drum. Paper could be fed from a roll, or placed on the flat surfaces, a card at a time, as each platen approached the type. There was also a numbering device.

Charles G. Sargent and Abram Keach



Bed-and-platen press

Patent 16,221; 1856
Photo 69.679

• A bed-and-platen machine in which the paper and inking rollers were carried on endless chains.

Joseph Schedler

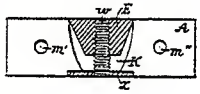
Crystallotypes

Patent 209,521; 1878

• Crystallotypes were textured printed surfaces made from crystalline surfaces, and were used for security printing. This invention produced crystallotype plates by means of electrotyping.

The model consists of an electrotyped block.

Ernest A. Schmid and Adolph G. Schmid

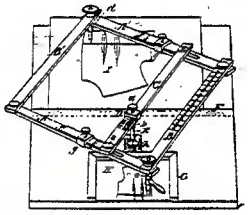


Printers' quoins

Patent 483,792; 1892

• Printers' quoins combined with sidesticks, adjusted by wedge-shaped nuts.

John Jergen Friederich Schnoor



Pantograph

Patent 222,798; 1879
Photo 69.477

• The arrangement of scales and adjustment devices on a pantograph, particularly intended for use by tailors and dressmakers.

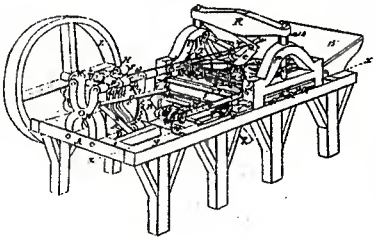
Socrates Scholfield

Pneumatic sheet-feed apparatus

Patent 160,721; 1875

• A suction bar and pins to lift and separate sheets.

William and Thomas Schuebly



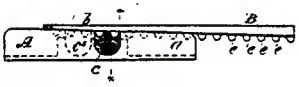
Bed-and-platen press

Patent 1,315; 1839
Photo 69.561

• A press on which the feeding, inking and printing actions were directed by grooves on a driving cylinder.

The patentees were named "Schnebly" in an August 1833 patent (unnumbered) for a grass- and hay cutting machine.

George Scott



Printers' quoins

Patent 232,551; 1880

• Quoins consisting of two wedge-shaped pieces, one with a rack of teeth, which were adjusted by turning a pinion key against the teeth.

Walter Scott

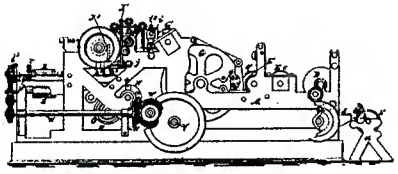
Trimming stereotype plates

Patent 221,366; 1879
Photo 69.662

• A machine that combined the operations of trimming (cutting the rough edges) and shaving (cutting down the back ribs) of curved stereotype plates for rotary printing.

Walter Scott was a well-known manufacturer of fast rotary perfecting machines.

Walter Scott



Rotary printing press and folding machine

Patent 221,704; 1879
Photo 69.614

• Improvements to a web perfecting rotary press, with cutters and folding apparatus.

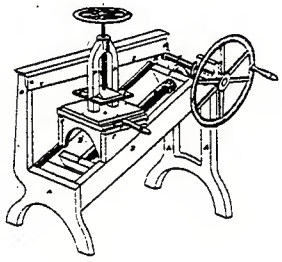
Alfred Sellers

Bank note printing: method of making plates of requisite hardness

Patent 41,724; 1864

• In the steel transfer process used for intaglio security printing, it was difficult to make a plate that was both soft enough to receive an impression and hard enough to resist distortion in the transfer process. By this invention, a hard steel plate was faced with a sheet of soft iron.

A. C. Semple

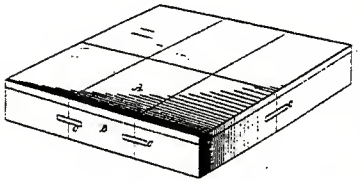


Book-trimming and paper-cutting machine

Patent 19,654; 1858
Photo 69.687

• A paper cutter on which the table rode up a sloping track, pulling the paper obliquely across the horizontally mounted blade.

George C. Setchell



Wood blocks for engraving

Patent 203,856; 1888

• A method of reusing engraved boxwood blocks by shaving down the engraved surface and gluing the shaved block between two pieces of a cheaper wood. This sandwich was then cut through the middle to give two new blocks, each with a thin face of boxwood.

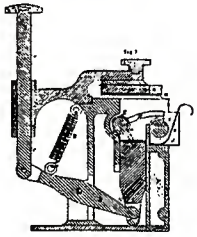
Amaziah G. Shackford

Lithographic printing press

Patent 80,771; 1868
Photo 69.669

• A self-inking scraper press in which the stone was moved beneath the stationary scraper. The stone was dampened by hand.

John Shaffer and Edward Spencer



Hand stamp

Patent 34,166; 1862
Photo 69.451

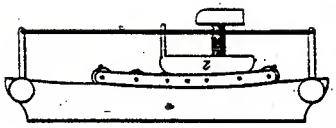
• A percussion stamp for marking the backs of railroad tickets with the ticket remaining face up, and for perforating tickets printed on strips of paper.

R. Shaler

Exercising machine, children's railway swing

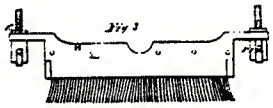
Patent 139,924; 1873
Photo 69.569

• A rocking swing for children or invalids, unrelated to printing.



This model may have entered the Graphic Arts Collection because of confusion over the word "exercising," which is also used for the softening of inking leather.

William M. Shaw and Ezra Gould



Machine for printing paper hangings

Patent 6,404; 1849
Photo 69.663

• A block-printing press for wallpaper and oilcloth. Two sets of blocks, suspended over the paper, were mounted in a frame that moved laterally so that one was re-inked by brushes while the other delivered its impression. The paper traveled along a table transverse to the block frame.

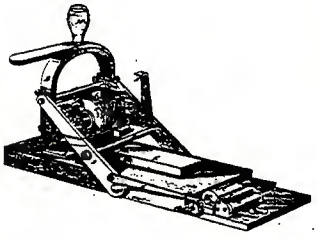
Alexander Shiland

Stereotype matrices

Patent 119,537; 1871
Photo 67.902

• Apparatus for stamping separate letters into soft materials to make electrotype or stereotype molds, or for stamping letters into wood.

Alpheus C. Sine

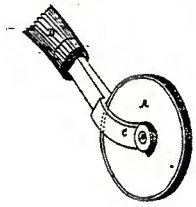


Numbering and paging machine

Patent 112,292; 1871
Photo 69.450

• Improvements to a numbering machine, to be operated by hand, foot or mechanical power.

Daniel J. Skelton and Michael Feely



Bookbinders' finishing roll

Patent 156,678; 1874
Photo 69.485

• Bookbinding roll, on which the design was cast on a strip "secured to the roller after the fashion of a tire to a wheel." The strip was usually of bronze, and was bent to fit around the wheel. A projection on the back of the strip fit into a groove in the wheel.

John T. Slingerland

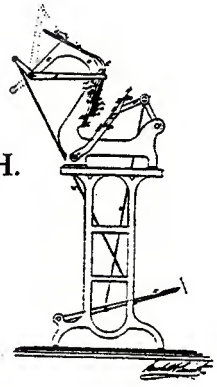
Typesetting and distributing machine

Patent 85,251; 1868
Photo 67.899

• Improvements to earlier patents taken out by Timothy Alden (1857), and Henry Alden and William Mackey (1866). This patent related to the distribution of type. It allowed for the use of any ordinary type in the distributer, instead of the special type required previously.

The patent was assigned to the Alden Typesetting and Distributing Company.

Earle H. Smith

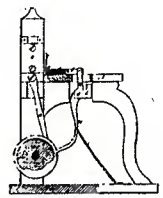


Printing press

Patent 111,581; 1871

• A self-inking clamshell press, treadle-operated, "particularly for small work."

John Joseph Charles Smith

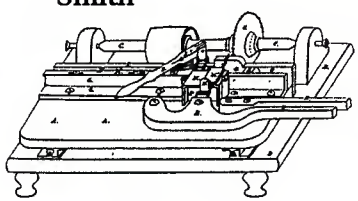


Type-cutting machine

Patent 31,333; 1861
Photo 69.611

• Machine for sawing type from a solid block of letters by first cutting a strip of letters from the block, then notching the strip, and finally cutting apart the letters. The block could be cast by Smith's patent of 1859.

John Joseph Charles Smith



Type-making machine

Patent 43,649; 1864
Photo 69.628

• A machine for sawing letters from cast strips of letters. The strips were to be made by Smith's companion patent of the same date (Patent 43,648).

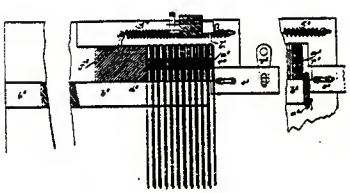
Luther L. Smith

Nickel-faced type

Patent 95,053; 1869

• Electroplating printers' type, electrotype plates, or stereotype plates with nickel. The patent improved on a patent for nickel plating of type taken out earlier in 1869 by Isaac Adams, Jr.

David McConnel Smyth



Book-stitching machine

Patent 250,987; 1881
Photo 69.567
Ref. *NCAB* vol. 7 p. 323; Comparato, *Books*, pp.155-87

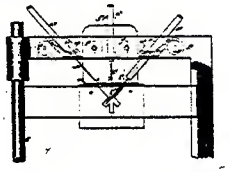
• Improvements to the method of feeding sheets to a sewing mechanism.

David Smyth (1833-1907), was a prolific inventor in many fields of manufacturing before patenting his first

book-sewing machine in 1868. Ultimately his machines redefined bookbinding, in the term Smyth-sewn.

Model incomplete.

David McConnel Smyth

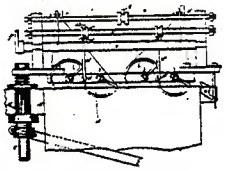


Book-stitching machine

Patent 250,990; 1881
Photo 69.701

• Machine for sewing books with two needles and an intermediate looper.

David McConnel Smyth



Book-stitching machine

Patent 250,991; 1881
Photo 69.699

• Machine for sewing books using a double-loop stitch.

James C. Smyth

Book-stitching machine

Patent 184,989; 1876
Photo 69.681
Ref. Comparato, *Books*, p. 170-1

• Machine for stitching the folded leaves of books by passing a needle lengthwise through the fold.

James Crawford Smyth was one of David McConnel Smyth's family. The two worked together on a number of inventions.

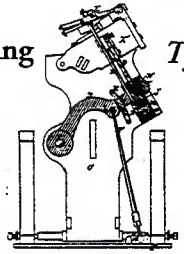
George C. Snow

Paper-folding machine

Patent 7,722; 1850
Photos 69.523, 83.15991-8
Ref. Tucker, *Hoe*, p. 405 and footnote

• A machine for folding sheets of paper by forcing them between plates.

William Spang

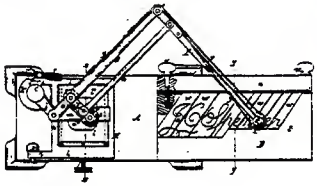


Typecasting machine

Patent 110,303; 1870
Photo 69.607

• Mechanism for tripping the matrix lever, and opening and closing the mold.

J. Civilian Spencer



Pantographic engraving machine

Patent 99,794; 1870
Photos 69.585, 83.15993-1

• Machine for engraving on name plates and other metallic ware.

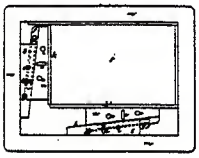
E. H. Sprague

Printers' chase lock

Patent 11,091; 1854

• Combination quoins and sidesticks, with a special lever for their adjustment.

Carlo Giuseppe Squintani

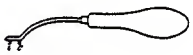


Printers' quoins

Patent 228,410; 1880

• Quoins that were slotted together along the oblique side, and a key for their adjustment.

Carlo Squintani was from London, England.



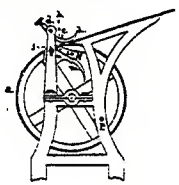
Linus Stewart and John McClelland

Plate printing press

Patent 16,952; 1857
Photo 69.496

• A flatbed cylinder press with a steam heating system and improved plate-wiping mechanism.

Clarence H. Stoddard and Edward D. Norton



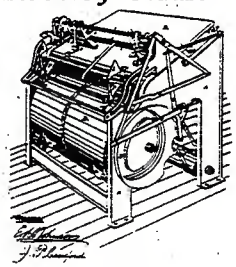
Sheet-feed apparatus for cylinder presses

Patent 140,962; 1873
Photo 69.554

• Pivoted guiding fingers on the press feed board.

Model incomplete.

Robert J. Stuart



Sheet-feed apparatus for cylinder presses

Patent 137,156; 1873
Photo 69.674

• Improvements in the delivery of sheets to the press, consisting in separating mechanisms and a vibrating table.

Henry D. and D. Wheeler Swift

Printing press, and sheet-feed apparatus

Patents 303,550; 1884, and 386,440; 1888
Photo 69.442

• A press for printing material such as envelopes, and the pneumatic apparatus for feeding sheets to the press.

The two patents are demonstrated on a single model. Despite the dates of the patents, both applications were made on 10 July 1880. They were granted after unusually long delays.

Jesse F. and George W. Tapley

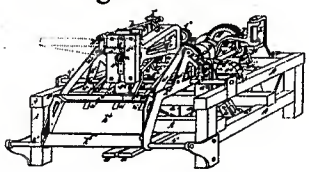
Cutting paper collars

Patent 56,679; 1866
GA catalog 24,592
Photos 78.14919, 78.14920
Ref. Comparato, *Books*, p. 107

• Machine for cutting paper collars and simultaneously indenting them with imitation stitches or printing them with ornamental devices.

J. F. Tapley, a bookbinder and a prolific inventor, founded the bookbinding J. F. Tapley Company in 1850. The company survived until its merger in 1970.

Jesse F. Tapley and George B. Kilbon



Book-stitching machine

Patent 265,463; 1882
Photo 69.470

• Improvements in sewing signatures of books. Stitches were of varying length, some of them being looped over binding tapes.

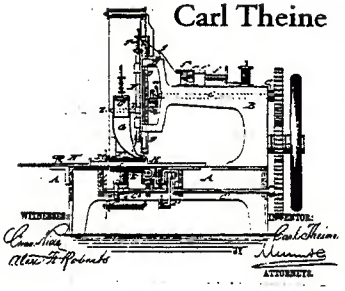
Isaac Taylor

Pantographic engraving machine

Patent 8,991; 1852
Photo 69.481

• Pantographic apparatus for engraving multiple images precisely placed and at extreme reduction; also for the engraving of cylinders for calico printing, and for the decoration of wallpaper.

Isaac Taylor was from Stamford Rivers, England.



Carl Theine

Book-stitching machine

Patent 197,575; 1877
Photo 69.562

• A shuttle sewing machine for stitching productions such as pamphlets, catalogs and periodicals, with a continuously lubricated needle.

Carl Theine was from Minden, Germany.

Henry G. Thompson and Edward G. Parkhurst

Book-stitching machine

Patent 150,495; 1874
Photo 69.527
Ref. Comparato, *Books*, pp. 141, 144, 169-70

• Mechanisms to protect needles in book-sewing machines: latches to hold the needles in position and an alarm bell to warn of approaching knots in the thread.

Thompson was an inventor and manufacturer in the field of book stitching, stapling and sewing machines who also acquired interests in the inventions of others.

William J. Tinsley

Printers' quoins

Patent 483,185; 1892

• Slim quoins consisting of two metal plates with slanting faces that worked on each other. They were for use when there was not enough space in the form for ordinary quoins.

Model incomplete.

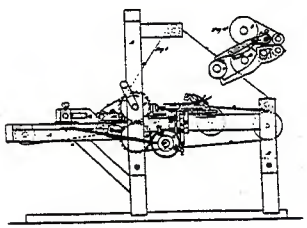
Edward L. Torsch and James R. Lee

Printers' quoins

Patent 223,192; 1879

• Quoins that were adjusted by means of concentric projecting spirals on one half, working on concentric grooves in the other.

Edward Town and James L. Chichester

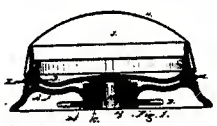


Paper-ruling machine

Patent 42,418; 1864
Photo 69.444

• A machine for producing both feint lines (ruled) and down, or striker, lines (blank spaces where the pens were lifted from the paper).

Henry R. Towne and Warren H. Taylor



Ink pads

Patent 135,949; 1873

• A strong, compact inking pad for canceling or dating stamps and other devices. The elastic stuffing of the pad was saturated with ink, which penetrated the cloth or chamois covering.

James Tregurtha

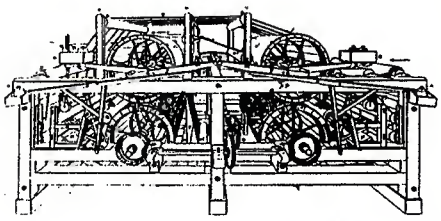
Paper-ruling machine

Patent 155,815; 1874
Photo 69.591

• Mechanisms for the control of the striker, or pen-lifting apparatus.

Thomas Trench

Web perfecting rotary press



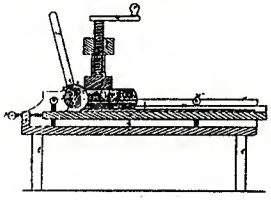
Patent 468; 1837
GA catalog 11,026
Photo 69.651
Ref. Silver, *Web Press,* 329-31

• Flat forms of type were arranged around the surface of two type cylinders to form polygons. The web of paper was printed on both sides at this press, then sent to a drying machine still in the web, and finally cut into sheets.

The inventor is named "Trench" on the patent drawings and "French" on the specification. Rollo Silver accepted the latter name.

Gregor Trinks and Louis Heitkamp

Machine for cutting books in the round



Patent 35,639; 1862
Photo 69.508

• Rocking knives for cutting the fronts of books in the round, an operation normally performed by hand.

Henry Pattman Trueman and John George New

Platen printing press

Patent 255,704; 1882
Photo 69.549

• Improvements to the inking and frisket arrangements on a platen press on which the bed is a flattened surface at the front of an ink distributing cylinder.

Henry Trueman and John New were from Birmingham, England.

Stephen D. Tucker

Machine for coating electrotype molds with plumbago

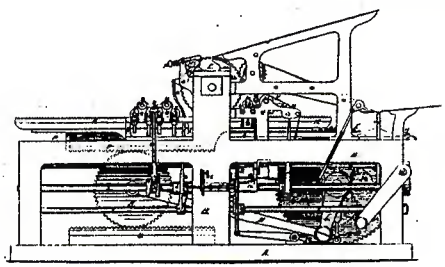
Patent 85,411; 1868
Photo 69.512
Ref. Tucker, *Hoe*, p.423-4

• Machine for brushing black lead (plumbago, graphite) or bronze powder onto either wax or gutta percha molds, in order to give them conducting surfaces.

Stephen Tucker was an employee and, from 1860, a partner with R. Hoe & Co. He was responsible for numerous patents for the company, and was the author of the company history, "A History of R. Hoe & Company, 1834-1885" (see bibliography, p. 7).

Stephen D. Tucker

Flatbed cylinder press, typographic or lithographic



Patent 124,460; 1872
Photo 69.542

• Improved mechanisms for control of the impression cylinder, inking rollers, sheet flier, and feed guides on stop cylinder presses for typographic or lithographic printing.

Model broken and incomplete.

Stephen D. Tucker

Inking apparatus for printing presses

Patent 173,085; 1876
Photo 69.642

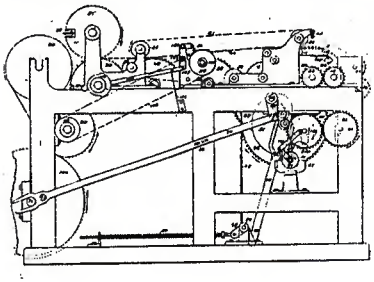
• Improved ink distribution on flatbed cylinder presses.

Stephen D. Tucker *Paper-folding machine*

Patent 186,384; 1877

Improved sheet-folding apparatus, to stand as an independent machine, or to be attached to a web perfecting press.

Stephen D. Tucker *Sheet-delivery apparatus for web perfecting presses*

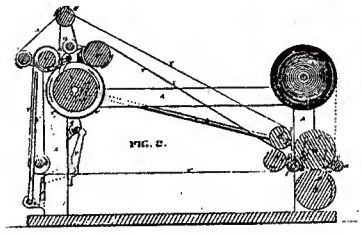


Patent 191,494; 1877
Photo 69.461
Ref. Tucker, *Hoe*, p. 440

• A delivering cylinder with accessories: grippers, tapes, a folding blade, and pasting devices.

Stephen D. Tucker *Sheet-delivery apparatus for web presses*

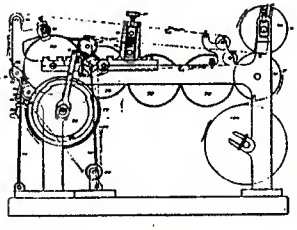
Patent 192,954; 1877
Photo 69.582
Ref. Tucker, *Hoe*, p. 440



• Mechanisms to cut, convey, and collect sheets from a web press. One of several Tucker patents dealing with the problem of receiving sheets at high speed.

This invention was patented in England in 1873. The application for the U.S. patent was filed in May 1874.

Stephen D. Tucker



Sheet-delivery apparatus for web presses

Patent 197,694; 1877
Photo 69.572

• Delivery apparatus that was adaptable for sheets of different sizes.

Stephen D. Tucker

Sheet-delivery apparatus for printing machines

Patent 197,700; 1877
Photo 69.443
Ref. Tucker, *Hoe*, p. 440

• Apparatus at which several sets of sheets, such as the inside and outside sheets of a newspaper, were collected, folded, and delivered from the press.

Stephen D. Tucker

Sheet-reversing apparatus for printing machines

Patent 214,065; 1879
Photo 69.675

• On a sheet-fed rotary press like Hoe's Type Revolving Press, apparatus to turn each sheet for printing on the reverse side.

Applications for this and the next three patents were filed in October, September, June, and October 1878, in that order.

Stephen D. Tucker

Sheet-delivery apparatus for web pressses

Patent 214,067; 1879
Photo 69.521

• Folding and collecting apparatus.

Stephen D. Tucker

Sheet-delivery apparatus for web presses

Patent 214,068; 1879
Photo 69.446

• Sheet collecting and manipulating mechanisms, pasters, and folders, for high-speed delivery.

Stephen D. Tucker

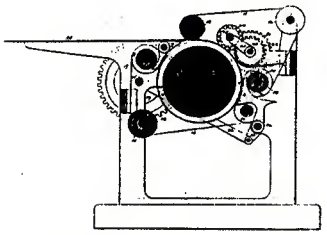
Sheet-delivery apparatus for web presses

Patent 215,844; 1879
Photo 69.498

• Improved folding mechanisms.

Stephen D. Tucker

Sheet-delivery apparatus for web prisses



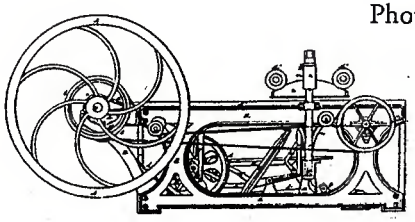
Patent 227,599; 1880
Photo 69.475

• Improved sheet-collecting cylinder and pasting apparatus.

Otis Tufts

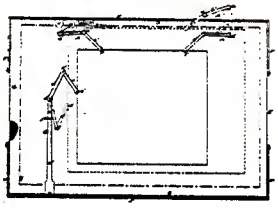
Bed-and-platen printing press

Unnumbered patent, 1834 (*Restored Patents* volume XVIII pp. 347-60)
GA catalog 11,025
Photos 69.673, 69.675



• A bed-and-platen power press with two friskets, which carried paper under the platen alternately. The platen was drawn down by toggles against a fixed bed. The press was to be powered by man, steam, horse, or water.

James Turner



Sheet-feed gauges for printing presses

Patent 162,207; 1875

• Adjustable feed gauges for platen presses, to take paper and cards of various sizes.

James Turner was from Montreal, Canada.

John Frederick Uhlhorn

Printers' extension sidesticks

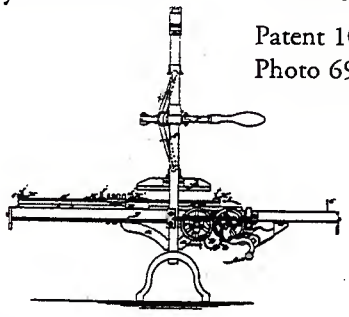
Patent 115,136; 1871

• Sidesticks composed of two parts that fitted together, tongue in groove, in such a way that the full length of the stick always pressed on the type, no matter how far the two parts were pulled out.

Henry Underhill

Hand lever printing press

Patent 10,717; 1854
Photo 69.615



• A self-inking hand press with a fixed bed. The paper was carried into position by a double frisket carriage with inking rollers. The carriage was propelled by a crank handle turned continuously in one direction.

Benjamin Underwood

Construction of printing blocks for oil cloths and carpets

Patent 10,483; 1854
Photo 69.502

• Composite printing blocks made up of long pieces of type and short blanks.

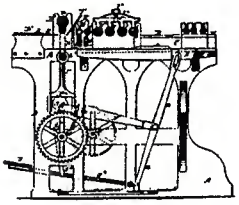
Gabriel Utley

Trimming books and paper

Patent 29,532; 1860
Photo 69.505

• Table with clamp and knives, for trimming paper to any size.

Charles Waddie



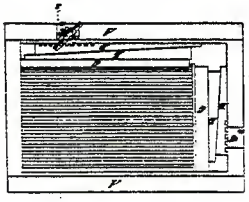
Lithographic printing press

Patent 148,530; 1874
Photo 69.462

• A self-inking, self-dampening, flatbed cylinder press.

Charles Waddie was from Edinburgh, Scotland.

Edmond A. Warren



Printers' quoins and chases

Patent 146,967; 1874

• Chase combined with ratchet-operated side- and endsticks.

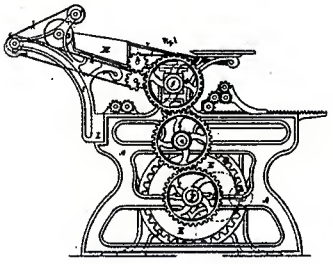
Richard C. Warwick

Flatbed cylinder printing press

Patent 111,407; 1871
Photo 69.455

• Two-feeder (double-ended) cylinder presses were normally limited to full-sized sheets because of the fixed distance that the bed and cylinder must travel. By this invention, a second type bed with variable travel mounted over the main bed made it possible to print smaller sheets.

John Watson and Albert Jones



Flatbed cylinder printing press for cards and tickets

Patent 146,792; 1874
Photo 69.519

• A press for printing and numbering tickets. A double strip of card stock was fed through the press. At the first pass, text was printed on one half of the sheet and the numbers on the other. The sheet was turned end-to-end and put through a second time to complete the tickets.

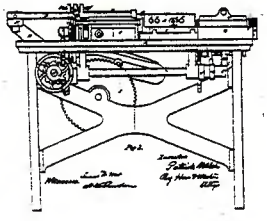
Cyrus C. Webster

Type-rubbing machine

Patent 226,377; 1880
Photo 67.881

• Machine for smoothing and trueing the surfaces of type, and bringing the type to a proper width. The machine was hand fed, but otherwise automatic.

Patrick Welch

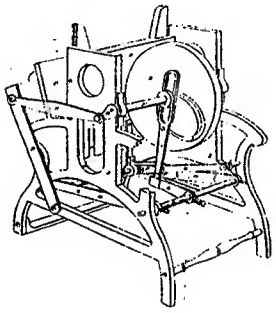


Type-dressing machine

Patent 60,450; 1866
Photo 69.563

• Machine for dressing and finishing the four sides, the shoulders, and the edges of type.

Charles Wells and Henry Barth



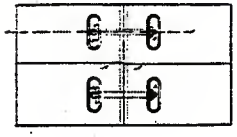
Platen printing press

Patent 29,554; 1860
Photo 69.501
Ref. Annenberg, *Type Foundries*, pp. 104-7

• Nippers for holding the paper on a platen jobbing press and then delivering it after printing.

Charles Wells and Henry Barth were owners of the Cincinnati Type Foundry, the company to which this patent was assigned. The patent represents improvements to the CTF Wells Jobber. Henry Barth was later famous for the Barth Type Caster.

Heber Wells



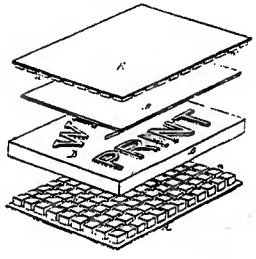
Fastening wood blocks for engravers

Patent 43,057; 1864
Ref. Kelly, *Wood Type*, pp. 44-5

• Improvements to the common method of fastening composite wood blocks together with bolts.

Wells was the proprietor of a wood type manufactory.

Joseph L. Wells



Elastic underlay for printing on glass

Patent 170,136; 1875

• Printing block and glass were sandwiched between two sheets coated with elastic pads.

Model consists of numerous rubber blocks, once fixed to a base but now detached and hardened.

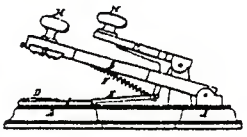
Charles S. Wescott

Typecasting and composing machine

Patent 115,796; 1871
GA catalog 24,908
Photos 78.14927, 78.14928
Ref. Huss, *Typesetting*, p. 72

• A machine for the casting, dressing, and setting of type. Type was set in a continuous line, to be divided up later by the operator.

Cullen Whipple



Hand stamp

Patent 45,000; 1864
Photo 69.706

• A hand stamp with a sliding bed covering an ink pad. One of the two hand levers pressed the type to the bed. The other pulled the bed back as the type was re-inked at the ink pad.

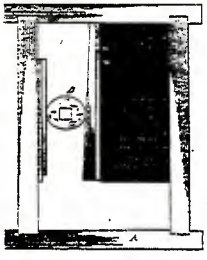
Milton D. and Lyman W. Whipple

Engraving and printing on glass

Patent 11,189; 1854
Photo 69.469

• A process and machine for grinding a design into glass from an engraved metal cylinder, using emery powder.

George D. Whittlesey

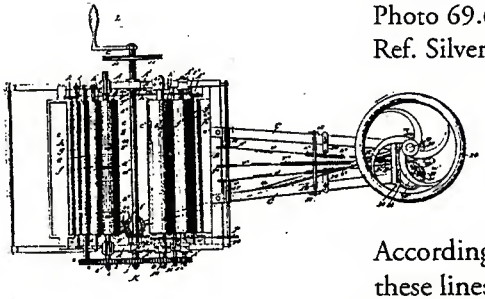


Printers' quoins

Patent 201,075; 1878

• A elliptical quoin, set between ordinary sidesticks and turned by a wrench to force the sticks apart.

Jephtha Avery Wilkinson



Rotary web press

Patent 9,525; 1853
GA catalog 11,019
Photo 69.688, 69.667
Ref. Silver, *Web Press,* pp. 336-344; Tucker, *Hoe*, p. 371

• Rotary press, tapered type for use on its type cylinders, and a special curved composing stick. The web of paper was cut and folded at the same machine, after printing.

According to Tucker, Wilkinson built a press along these lines for the New York *Sun* in 1842, but never suceeded in printing the paper at it.

Jephtha Avery Wilkinson

Sheet-delivery and piling machine

Patent 25,068; 1859
Photo 69.466

• Apparatus to receive and stack sheets as they came from a press, or cut and pile printed sheets from a web.

Jephtha Avery Wilkinson

Rotary web press

Patent 25,069; 1859
Photos 69.546, 83.13270

• Improvements to Wilkinson's press of 1853, above.

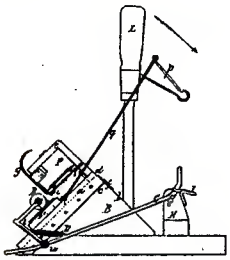
J. M. Willbur

Rotary printing press for cards, envelopes, druggists' labels, etc.

Patent 71,103; 1867
Photo 69.694

• A small, self-inking clockwork press that printed from curved stereotype plates.

Daniel K. Winder



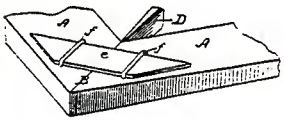
Card printing press

Patent 13,671; 1855
Photo 69.689

- A self-inking desk-top card press.

This was one of a group of card presses that Winder patented between 1855 and 1857. He assigned the rights for cash.

John H. Witt

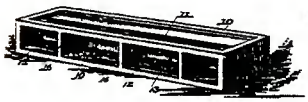


Stretcher frames for canvases

Patent 192,319; 1877

- Methods of making cheap and strong stretcher frames.

Jacob C. Wolfe

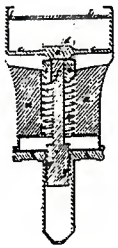


Printers' furniture

Patent 508,263; 1893

- Hollow metal furniture (printers' spacing material).

A. H. Wood

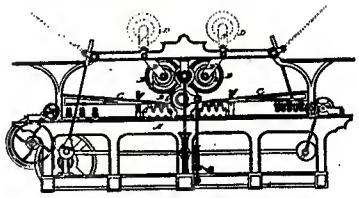


Engravers' vise

Patent 27,253; 1860

- A vise that held the engraving plate firmly, while offering the yielding surface that the engraver needed.

William H. Woodcock

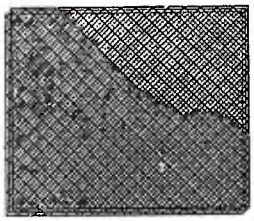


Flatbed cylinder printing press, double feeder

Patent 189,829; 1877
Photo 69.654

• A rocking cylinder with removable sections, so that sheets of differing sizes could be fed.

Charles B. Woodward



Printing photomechanical plates

Patent 493,850; 1893

• Methods of making photomechanical or other prints resemble original photographs. Tonal photomechanical reproductions had an objectionable coarseness because of the perceptible pattern of the halftone screen. By this invention, screened plates—either bearing an image or blank—were printed several times slightly out of register with each other, softening the effect of the screen. The key impression of the image would be made first in a dark ink with a heavy body, and then the other impressions in paler or lighter-bodied inks. To imitate sepia photographs, later impressions were made in brown tinted inks.

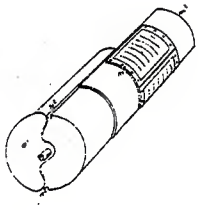
George M. Wright

Chromatic web press

Patent 225,501; 1880
Photo 69.649

• A press for printing a narrow strip of paper, such as a strip of tickets, with several colors successively. The long type form, suspended above the platen, was inked from a divided fountain. The paper moved intermittently down the length of the form and received each color in turn.

John K. Wright



Rotary web perfecting press

Patent 91,191; 1869
Photo 69.454

• The two pairs of printing cylinders had surfaces that were half type bed and half impression blanket, the type on one backing onto the blanket on its mate. As the web passed through the first pair, alternating parts of the paper were printed on each side. Then the web passed through the other pair, and the impression was completed. After printing, the web was cut into sheets.

Subject index

NOTE

Models are sorted into general groups, then more specific groups, then chronologically. Occasionally a model may be listed under two headings. The general groups are as follows:

1 Printing presses and stamps

2 Press-related apparatus

3 Compositors' tools

4 Type

5 Plate, stone, and block making

6 Bookbinding

7 Copying and autographic printing (with stencils and pantographs)

8 Picture framing

9 Miscellaneous

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- M. Hainque, 1877 (wooden box covers)
- M. C. Lefferts, 1886 (celluloid)
- M. C. Lefferts and J. W. Hyatt, 1886 (celluloid)

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A. L. Bevans, 1871
E. R. Andrew, R. B. Randall and W. H. Clague, 1871
J. T. and F. Ashley, 1870, 1873
W. H. Golding, 1873
C. H. Stoddard and E. D. Norton, 1873
R. J. Stuart, 1873
J. Turner, 1875
S. D. Tucker, 1877, 1877, 1877
N. Babcock, 1878
J. T. Hawkins, 1879
S. D. Tucker, 1879, 1879, 1879, 1879, 1880
F. L. Goss, 1880
F. H. Lauten, 1883
W. Leist, 1886

Paper-folding machines

M. E. Knight, 1879 (paper bags)
G. C. Snow, 1850
S. D. Tucker, 1877

Paper-cutting machines

J. Ames, 1834
J. F. and G. W. Tapley, 1866 (paper collars)
T. B. Dooley, 1872
E. J. Frost, 1876
A. Malm, 1880, 1880
W. Heckert, 1880

3. COMPOSITORS' TOOLS (furniture, quoins, bodkins, etc.)

E. H. Sprague, 1850
W. Quail, 1867
D. Dorrity, 1869
T. J. House, 1869
B. B. Blackwell, 1870
T. A. Clements, 1870
J. F. Uhlhorn, 1871
T. McGrath, 1872
C. W. Ames, 1873
O. A. Dearing, 1873
F. Keehn, 1873
H. P. Montague, 1873
J. A. Kearney, 1874
S. C. Lame and F. S. Briggs, 1874
W. Quail, 1874
B. F. Nutting, 1874
E. A. Warren, 1874
W. Gilbert, 1875
A. J. O'Shea, 1875
G. B. Polen, 1876
R. F. Gillin, 1878
R. W. Hartnett, 1878
G. D. Whittlesey, 1878

G. T. Gosorn, 1879
E. L. Torsch and J. R. Lee, 1879
J. Kingsland, 1880
G. Scott, 1880
C. G. Squintani, 1880
E. A. and A. G. Schmid, 1892
W. J. Tinsley, 1892
J. C. Wolfe, 1893

4. TYPE

Type and lead casting machines

D. Bruce, 1838, 1843
J. C. Petyt, 1847
H. W. Day, 1848
G. Bruce, 1854
C. Mueller, 1854
I. C. Bryant, 1860 (type for the blind)
R. W. and D. Davis, 1863
W. Spang, 1870
W. W. Dunn, 1871
C. S. Westcott, 1871
J. Goodale, 1874 (leads)
A. M. Howard, 1877
T. Mason, 1877
T. Mitchell and J. Milne, 1891

Type breaking, dressing, rubbing, finishing machines

D. Bruce, 1838
J. L. Duncan, 1848
D. Moore, 1855
J. G. Pavyer, 1860
W. Moore, 1863
P. Welch, 1866
C. Baer, 1869
T. Mason, 1878
C. C. Webster, 1880

Typesetting and distributing machines

W. H. Mitchel, 1854
W. S. Loughborough, 1855
C. W. Felt, 1860
C. Baer, 1866
J. Paulding, 1866
J. T. Slingerland, 1868
M. de la Pena, 1870
J. A. Reynolds, 1874
W. D. C. Pattyson, 1875
C. W. Dickinson, 1876
W. Lorenz, 1876
A. Fraser, 1880
W. A. Lorenz and L. K. Johnson, 1881

Special type

J. McCreary, 1852 (wooden type)
J. J. C. Smith, 1861, 1864 (type cut from block)
E. L. Balch, 1868 (music type)
L. L. Smith, 1869 (nickel-faced type)
J. R. Bettis, 1878 (divided type)

5. **PLATE, STONE, BLOCK MAKING**

J. Berry, 1854
R. D. Mott, 1854
B. Underwood, 1854 (oil cloths)
T. Crossley, 1859 (textile printing)
J. Bryson, 1863
A. Sellers, 1864
S. D. Tucker, 1868
H. and H. W. Lovejoy and J. H. Ferguson, 1869
A. Shiland, 1871
J. Dickson, 1874
J. Dickson, 1874
H. Wells, 1864
J. Friedlander and P. K. Moeller (1875)
J. Perkins, 1876

C. C. Maurice, 1877
J. Schedler, 1878 (crystallotypes)
B. Day, 1879
W. Scott, 1879
A. Hoen, 1880
A. Overend, 1882
G. and J. R. Cummings, 1885
G. C. Setchell, 1888
D. Fausel, 1890
C. B. Woodward, 1893
G. R. Cornwall, 1897

6. **BOOKBINDING**

Paper-ruling machines

E. Town and J. L. Chichester, 1864
E. D. Averill, 1873
T. F. and F. H. Collins, 1874
E. J. Piper, 1874
J. Tregurtha, 1874
W. O. Hickok and A. Cooper, 1877
W. Handy, 1878

Stitching machines

M. T. Lincoln, 1866
F. W. Howe, 1870
E. G. Parkhurst and H. G. Thompson, 1874
H. G. Thompson and E. G. Parkhurst, 1874
G. W. Glazier, 1876
J. C. Smyth, 1876
C. Theine, 1877
A. A. Johnson, 1878
E. S. Boynton, 1880, 1880
D. McC. Smyth, 1881, 1881, 1881
J. F. Tapley and G. B. Kilbon, 1882

Case and cover making

L. Danforth, 1854
R. G. Lowey, 1871
G. B. Durkee and A. Campbell, 1885

Trimming, cutting machines

A. C. Semple, 1858
G. Utley, 1860
J. Austin, 1864
L. F. Markham, 1848
I. Jones, 1866

Rounding and backing

G. H. Sanborn and J. E. Coffin, 1859
G. Trinks and L. Heitkamp, 1862
G. L. Bailey, 1875
J. E. Coffin, 1875
E. and F. T. Crawley, 1876

Presses, clamps

M. K. Pelletreau, 1860
J. W. Jones, 1865
J. Gough, 1871

Rolls

J. Feely, 1868
D. J. Skelton and M. Feely, 1874

7. COPYING AND AUTOGRAPHIC PRINTING

Copying presses

E. and J. B. Platt, 1858
J. A. Powlett, 1877

Stencils

M. Hutchison, 1874
A. E. Hix, 1877
J. Allen, 1879
E. De Zuccatto, 1879
J. Z. Gifford, 1879
S. S. Nickerson, 1879
J. H. Gunning and H. B. Weiland, 1879

Pantographs

L. Carpenter, 1842
I. Taylor, 1852
J. B. Blair, 1853 (engraving machine)
E. Oldham, 1866 (engraving machine)
J. C. Guerrant and B. J. Field, 1868 (engraving machine)
J. C. Spencer, 1870
R. W. Johnson, 1875
J. J. F. Schnoor, 1879
W. H. Pease, 1860

Others

J. J. Bardwell, 1880
J. Pumphrey, 1878
A. C. and G. R. Carey, 1879

8. PICTURE FRAMING

S. W. Hanks, 1866
F. Odenbaugh, 1877
S. A. Bowers and W. Murphy, 1877
J. H. Witt, 1877

9. MISCELLANEOUS

A. H. Wood, 1860 (engraver's vice)
I. W. Heysinger, 1866 (engraving cabinet)
J. R. Cole, 1872 (writing for the blind)
R. Shaler, 1873 (exercising machine)
C. J. Coulter, 1870 (drill)
H. S. Noble, 1876 (newspaper files)
LaV.W. Noyes, 1881 (book holder)
Weimer G. Sands, 1882 (folding chair)
W. Hyland, 1885 (decorating wood)
C. A. Carlson, 1905 (looseleaf binder)

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