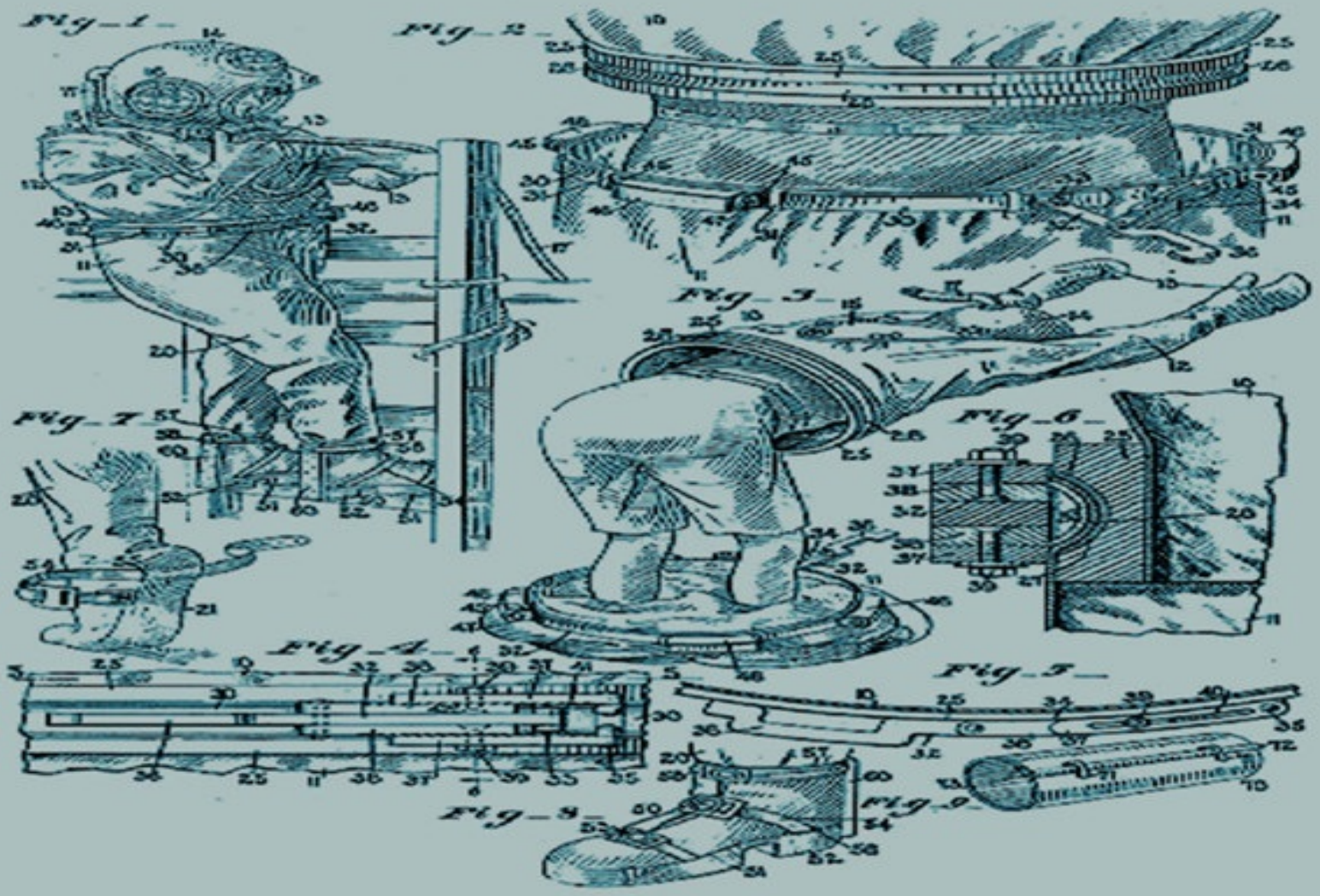
Inventions and their Inventors

vol 1



David Rogers

M-Y Books

Danercon Ltd

Inventions

and

their

inventors

David Rogers
Danercon Ltd

Dedication

Dedicated to

my son James

Introduction

From personal experience there is nothing like receiving a copy of your first patent, especially so if the patent is filed in several countries. Whilst my own patents sank without trace barely making an impact, the inventions covered in this first volume of *Inventions and their Inventors* have all either been the seminal patents connected with a particular endeavour or have led to inventions that changed the modern world.

Arguably the Industrial Revolution in Britain started the trend to mechanisation and indeed industrialisation. To that end the patent awarded to Hargraves for a spinning device now known almost universally known as the *Spinning Jenny* is included in the clothes section as it was this that increased productivity beyond all levels known at that time.

As well as this early patent over one hundred and eighty inventions have been documented, each accompanied by a brief biographical sketch of the inventor(s). Not all of the inventions were patented, for example the piano and miner's lamps of Cristofori and Davy respectively. However these inventions are worthy of inclusion even though the inventor was unable to profit from the hard work!

The Intellectual Property Office comment that patent artwork has the same copyright protection as other artwork. As far as possible the diagrams used with the patent abstracts are taken from the original patents, however there are inventions listed below whose inventor passed away less than seventy years ago. In most cases it has been difficult to contact the current copyright owner and so alternative diagrams/pictures have been used.

Contents

1 Communications

1.1 Computers

Calculating Machine

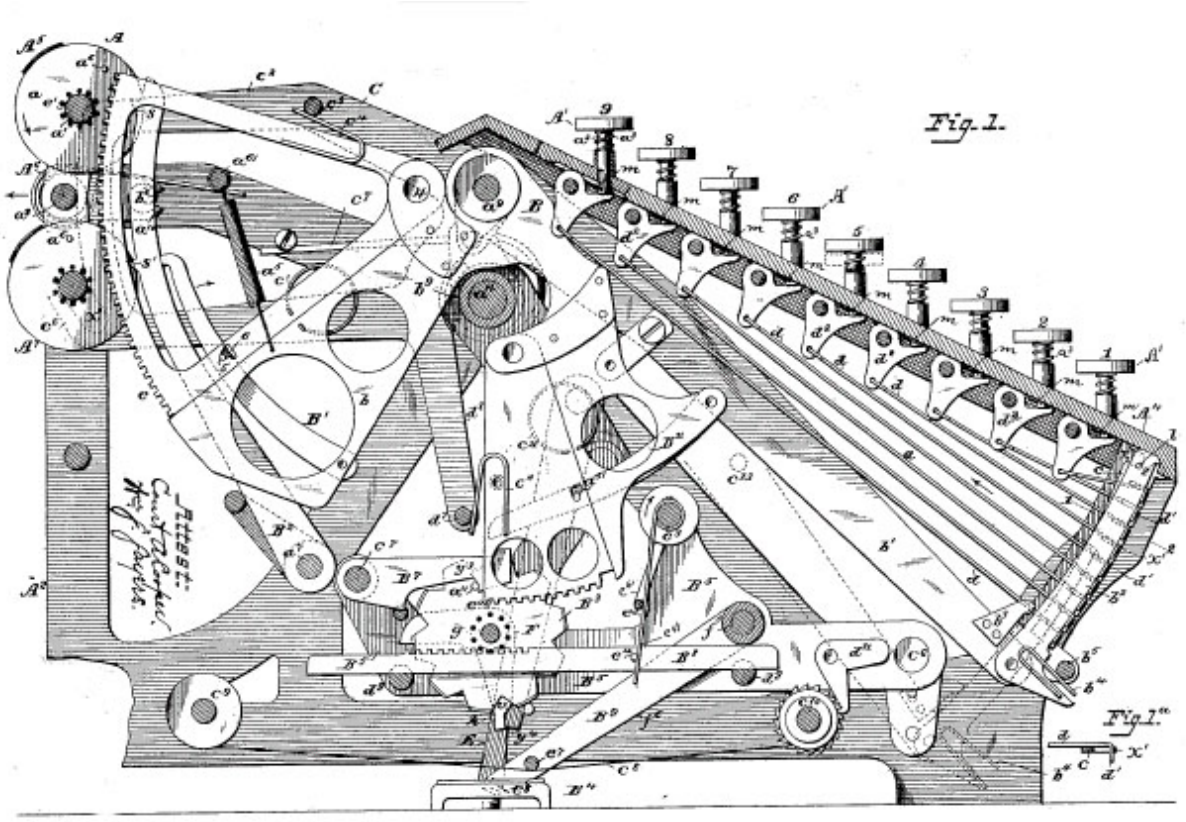
Patent title:	Calculating Machine
Patent number:	US 388,116, patented 21st August 1888
Inventor(s):	S. Burroughs, of St. Louis, Missouri, assignor, by direct and mesne assignments, to the American Arithmometer company, of same place.
Biography:	William Seward Burroughs, born 28th January 1855, Auburn, New York, U.S. died 15th September 1898, Citronelle, Alabama. Burroughs received the John Scott Medal of the Franklin Institute as an award for his invention a year before his death. Although his machine was a commercial success, Burroughs died before receiving much money from it.

Patent abstract:

Be it known that I, WILLIAM S. BURROUGHS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Mechanical Accountants, of which the following is a specification.

My invention relates to that class of apparatus used for mechanically assisting arithmetical calculations; and my invention consists in the combination, with one or more registers, of a series of independent keys and intervening connections constructed, arranged, and operating, as fully specified hereinafter, so as to indicate upon the register the sum of any series of numbers by the proper manipulation of

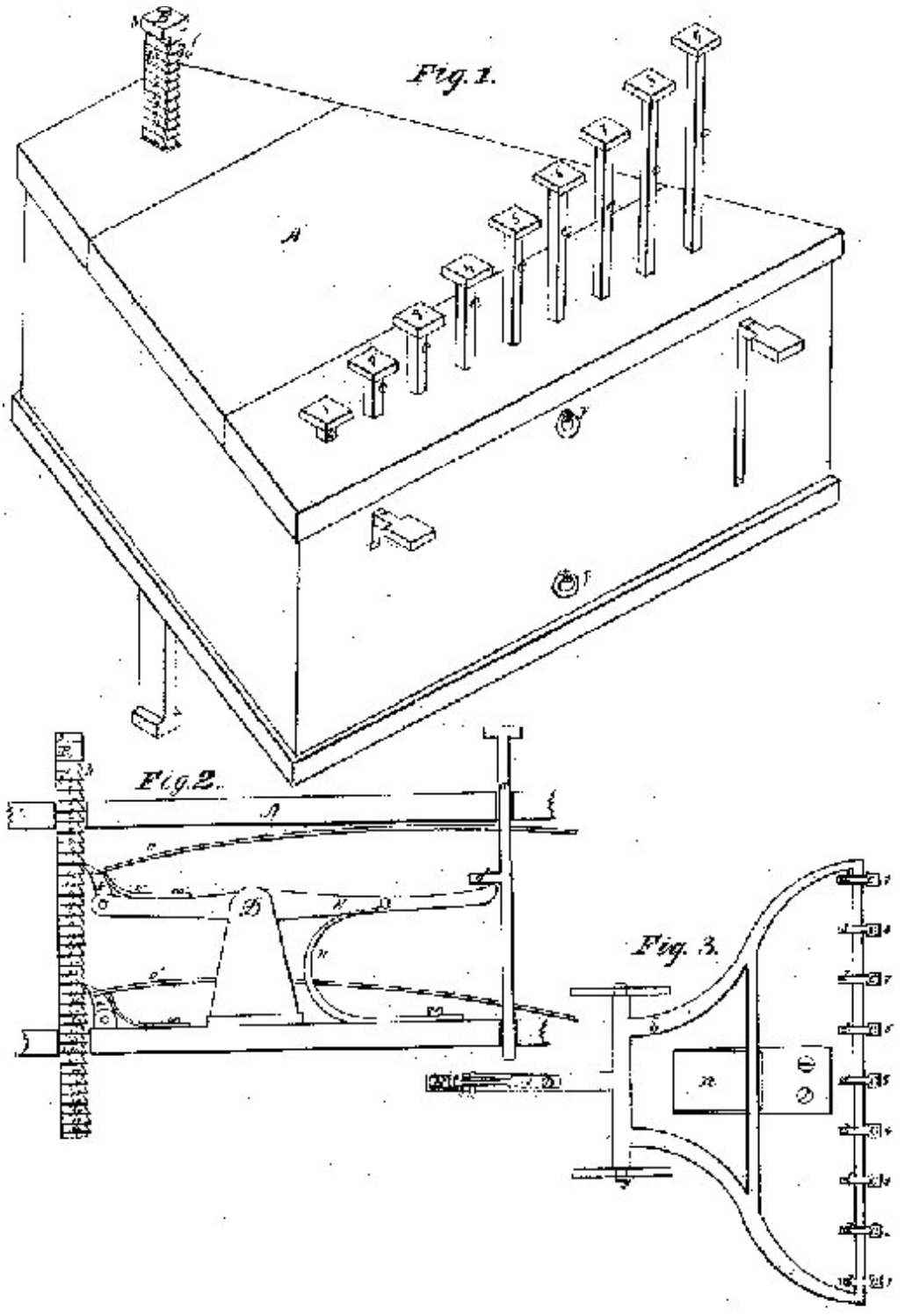
the keys, and also so as to print or permanently record the final result.



Calculating Machine

Patent title:	Calculating Machine
Patent number:	US 7,074, patented 5th February 1850
Inventor(s):	D. Parmelee of New Platz, New York
Biography:	Dubois D. Parmelee was born in 1830 in Redding Conn. died 18th April 1897. Qualified as both a chemist and medic, Parmelee worked in the rubber industry in Salem Mass. until the Goodyear inventions ran out and rubber prices dropped. He was one of the most active members of the American Institute and was the consulting chemist of the New York Belting and Packing Company.

Patent abstract:



The key No. 1 is of such length that when pressed down to its stop it will cause the lever (E) to traverse through a space sufficient to raise the rod B by the action of the pawl one

notch and showing on the side the indication "1." The key No. 2, is of such length that when depressed to its stop it will cause the lever to traverse twice as far as will the key No. 1, and consequently will raise the rod twice as much, or two notches, and the other keys are proportioned in the same manner, No. 9 then is capable of being depressed nine times as far as No. 1, and will therefore raise the rod or indicator nine notches.

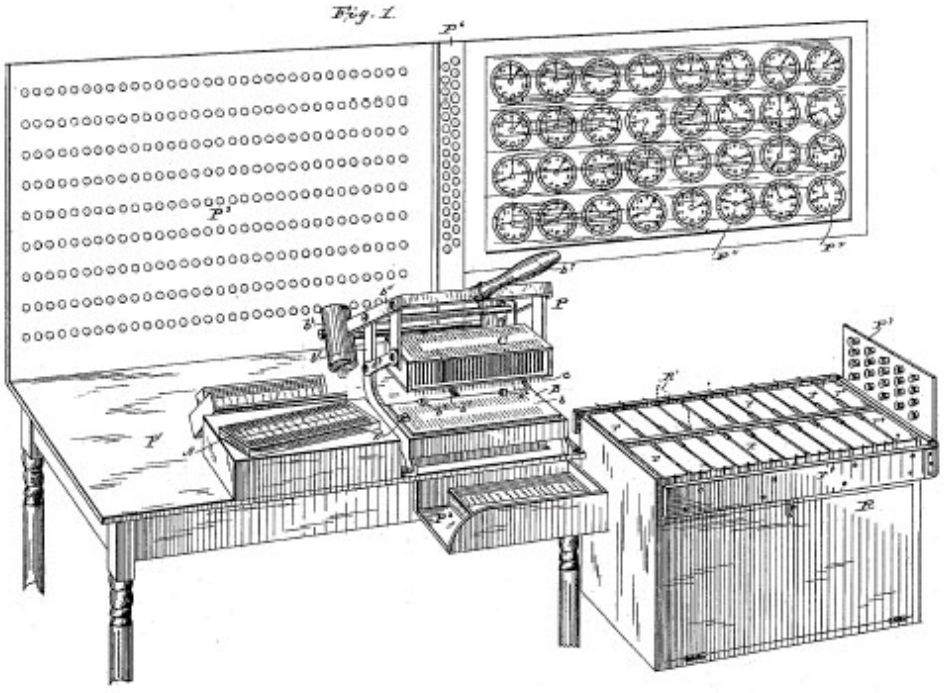
Mechanical Tabulating Machine

Patent title:	Art of compiling statistics
Patent number:	US 395,781, patented 8th January 1889
Inventor(s):	Herman Hollerith of New York, N. Y.
Biography:	Herman Hollerith, born 29th February 1860, Buffalo, New York, died 17th November 1929, Washington, D.C. Whilst his invention was a success in the United States, it drew much more attention in Europe and was widely adopted for a number of statistical purposes. Hollerith organised the Tabulating Machine Company (in 1896), which, through subsequent mergers, grew into the International Business Machines Corporation (IBM).

Patent abstract:

In the first place I have substituted for the continuous web or strip of my prior application a separate strip, card, or tablet, A, upon or within which the index-points are forged, as by punching holes in said card, and instead of using a separate templet or die for locating the several index-points I prefer to stamp or impress upon the cards, as by printing, the places or relative positions in which the index-point for each item is to be located. The card is, for convenience only, divided by lines into spaces, each space being numbered, lettered, or otherwise designated by marks or printed matter to indicate the place where a hole is to be punched in recording the several items pertaining to the individual. In this way each card when properly punched becomes a permanent record of

the individual (whose name and number in the books or other matters can, if desired, be written on the face or back of the card) and can be filed away as such, or the several records so formed can be classified and distributed, as hereinafter described. Moreover; the record-card thus formed can be prepared at any time or place and by unskilled operatives, as each record is complete in itself and bears no special relation to any other record except in so far as the relative locations and positions of the corresponding marks are concerned, it being necessary that the corresponding index-points of all cards should occupy the same relative positions to all the others, which condition is insured by printing all the cards belonging to the series from the same or duplicate plates.

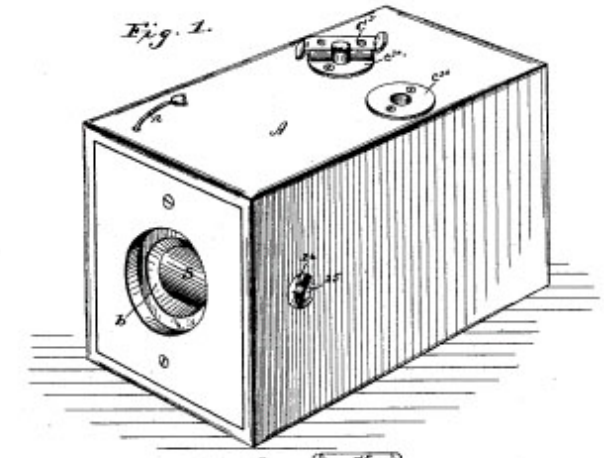


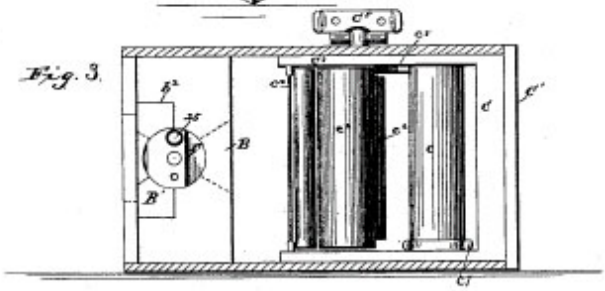
1.2 Printing and photography

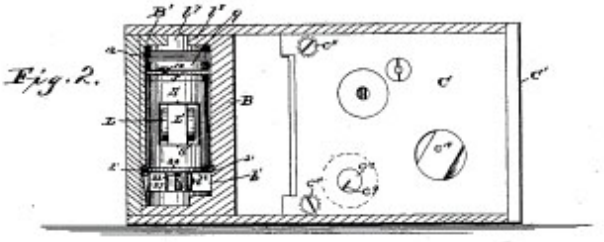
Camera

Patent title:	Camera
Patent number:	US 388,850, patented 4th September 1888
Inventor(s):	George Eastman, of Rochester, New York
Biography:	George Eastman, born 12th July 1854, Waterville, New York, died 14th March 1932, Rochester, New York In 1892 he reorganised his business as the Eastman Kodak Company. Eastman gave away half his fortune in 1924. His gifts, which totaled more than $75,000,000, went to such beneficiaries as the Massachusetts Institute of Technology and the University of Rochester.

Patent abstract:







This invention relates more particularly to improvements in that class of photographic apparatus known as "detective cameras;" and said invention consists in the novel and improved form, construction, and arrangement of parts constituting the case or body, the lens-support and shutter, and the film-holder, together with the various combinations of such instrumentalities as are hereinafter described, and set forth in the claims.

In the accompanying drawings, wherein I have illustrated one embodiment of my present improvements, Figure 1 is a view in perspective of the complete instrument.

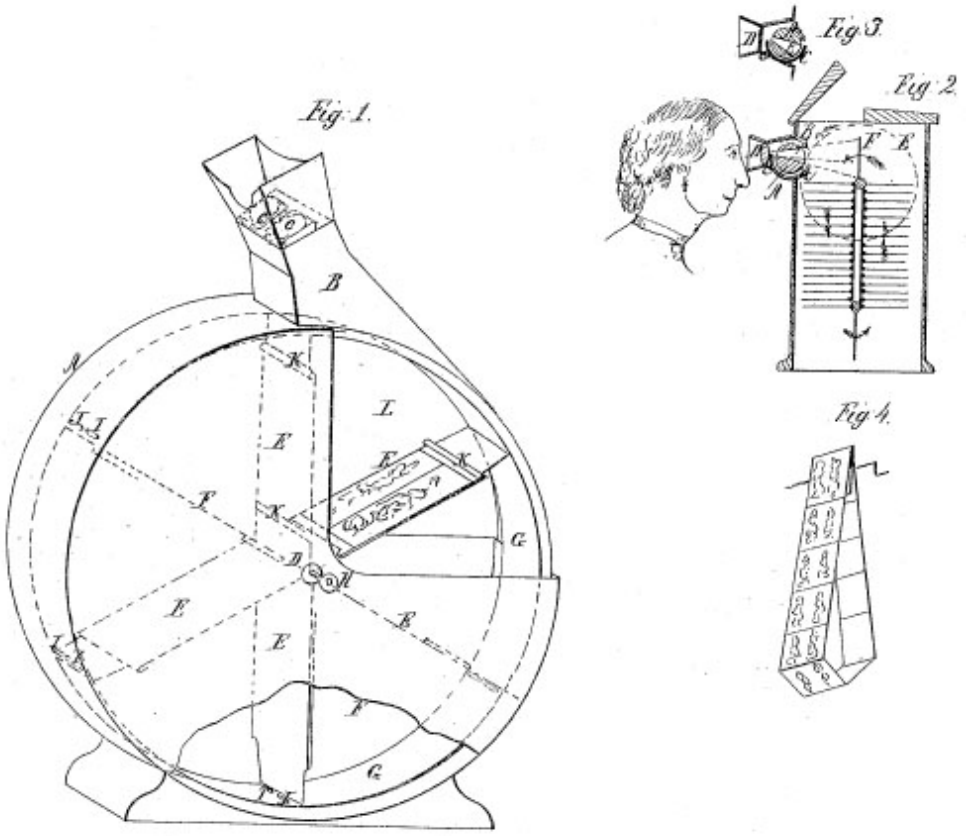
Kinematoscope

Patent title:	Exhibiting stereoscopic pictures of moving objects
Patent number:	US 31,357, patented 5th February 1861
Inventor(s):	Coleman Sellers, of Philadelphia, Pennsylvania, assignor to himself and G. Burnham of same place
Biography:	Coleman Sellers was in born 1827 died 1902. Known briefly, as the Motoscope, Sellers posed his children working in his factory in Philadelphia for the original photographs for the Kinematoscope which were stereoscopically produced in a double-lensed camera. He was appointed Professor of Mechanics at the Franklin Institute (1881) and was non-resident Professor of Engineering at the Stevens Institute of Technology (1888). Sellers was awarded the order of St. Olaf by the King of Sweden (1877) and many other degrees and honours. He was a member and correspondent of the British Journal of Photography (1861-1863).

Patent abstract:

What I aim to accomplish is as I have above stated, to so exhibit stereoscopic pictures as to make them represent objects in motion such as the revolving wheels of machinery, and various motions of the human body, adding to the wonders of that marvellous invention “the stereoscope” a semblance of life that can only come from motion. It is to

breathe into the statue like forms of the stereograph as it were, the breath of life. It may have occurred to many the possibility of effecting this desirable result, and the “phantasmascope” gives a clue to the manner of *accomplishment* of it. That is, that it must be done by viewing in succession a series of pictures (taken in different positions of the moving object) with sufficient rapidity to insure the image of one being retained on the retina until the next one is brought into view.



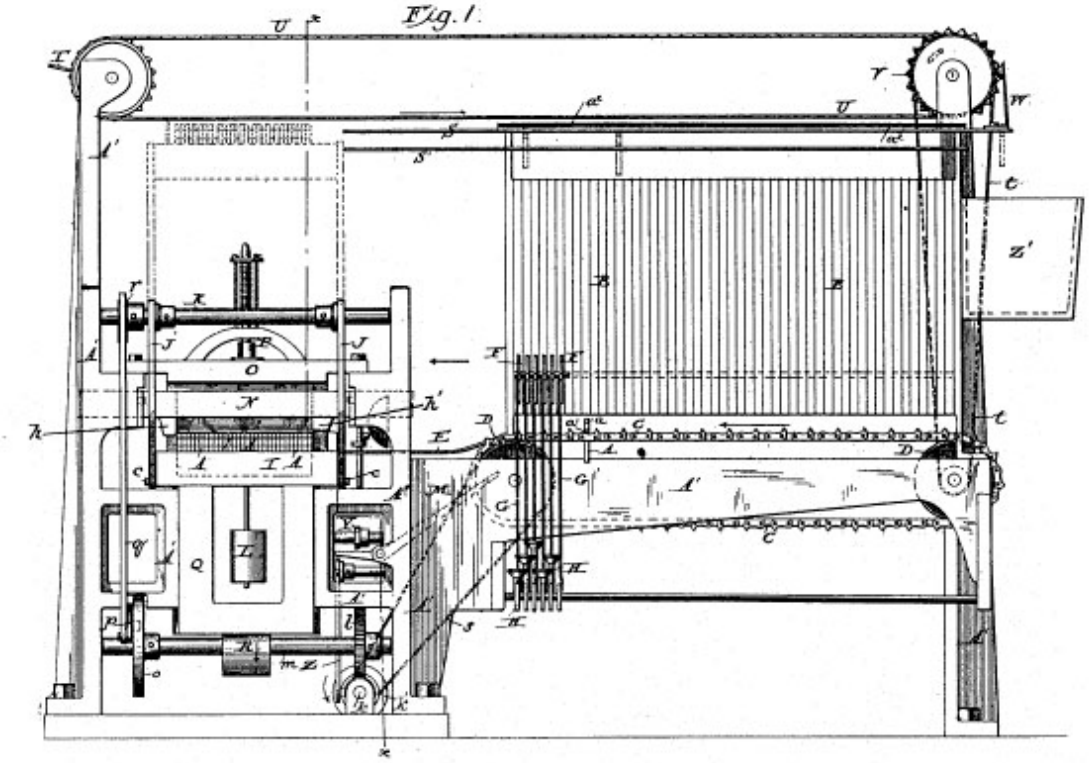
Linotype

Patent title:	Machine for producing printing bars
Patent number:	US 317,828, patented 12th May 1885
Inventor(s):	Ottmar Mergenthaler, of Baltimore, Md., assignor to The National Typographic Company, of Washington, D. C.
Biography:	Ottmar Mergenthaler, born 11th May 1854, Hachtel, Württemberg, Germany died 28th October 1899, Baltimore, USA. In 1872 Mergenthaler emigrated to the United States, becoming a citizen in 1878. The machine reduced costs by speeding up the printing process thereby fostering a dramatic expansion in all areas of publishing.

Patent abstract:

My invention relates to a machine in which a series of loose independent matrices or dies each containing one or more characters, and a series of blank dies for spacing purposes, are combined with finger keys and intermediate connecting and driving mechanism in such manner that when power is applied to the machine and the preferred finger keys actuated the matrices will be assembled or composed in line. A mould of suitable form is arranged to be operated in connection with the assembled dies and with means for supplying molten metal or its equivalent, whereby a printing bar may be formed in the mould against the assembled matrices, so as to bear on its edge in relief the characters represented by said matrices. A mechanism is also provided to effect the distribution of the matrices after the completion

of the cast to the respective holders or magazines from which they were originally delivered.



Photographic Plates

Patent title:	Method and apparatus for coating plates for use in photography
Patent number:	US 226,503, patented 13th April 1880
Inventor(s):	George Eastman, of Rochester, New York
Biography:	George Eastman, born 12th July 1854, Waterville, New York, U.S. died 14th March 1932, Rochester, New York. In 1892 he reorganised his business as the Eastman Kodak Company. Eastman gave away half his fortune in 1924. His gifts, which totaled more than $75,000,000, went to such beneficiaries as the Massachusetts Institute of Technology and the University of Rochester.

Patent abstract:

By my improved process plates are covered with a perfectly uniform coating of gelatine emulsion, extending entirely out to the edges of the plate, and this result is accomplished very much more rapidly than inferior plates are produced by the old method.

In the operation of my improved process of preparing gelatine plates I employ a bromide of silver gelatine emulsion prepared according to any well known formula. I prefer to employ in the emulsion for use in my process an article of gelatine which sets readily, though any sample of gelatine suitable for making emulsions for coating in the old way can be employed.

Fig. 1.

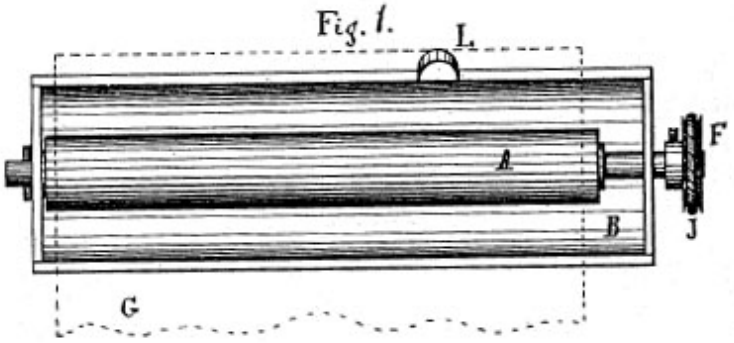


Fig. 2.

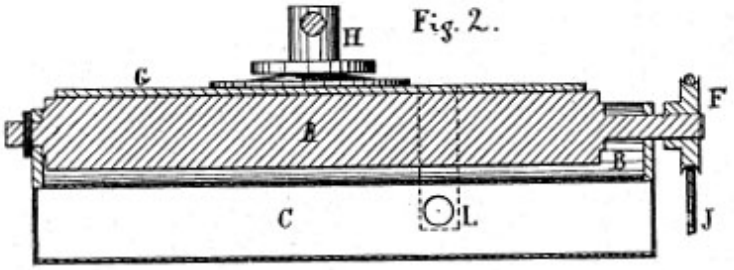
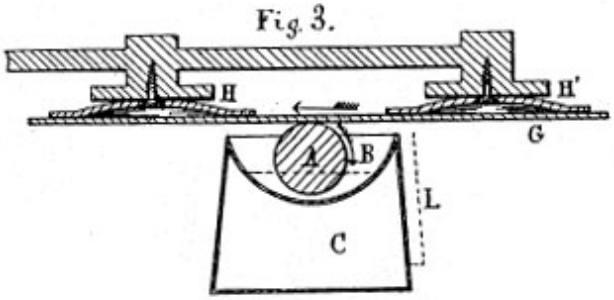


Fig. 3.



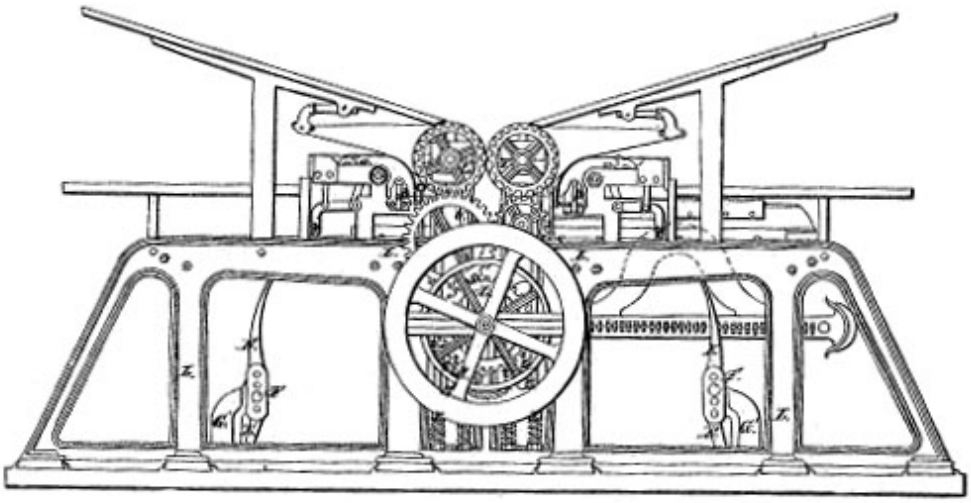
Printing Press (double cylinder)

Patent title:	Double cylinder printing press
Patent number:	US 2,629, patented 20th May 1842
Inventor(s):	Richard M. Hoe, of New York, N. Y.
Biography:	Richard March Hoe, born 12th September 1812, New York, N.Y., died 7th June 1886, Florence, Italy. First used by the Philadelphia Public Ledger in 1847, it produced 8,000 sheets per hour printed on one side. It was further improved under the name of the Hoe web perfecting press, which was first used by the New York Tribune and produced 18,000 sheets an hour, printed on both sides.

Patent abstract:

In its general construction this press combines what have been found to be the most valuable of the properties contained in the well known presses invented and patented in England by Applegath, by Cooper and Miller, and by Napier, upon the particular manner of arranging the respective improvements in these presses, which I have combined in my press. I do not now found any claim to an exclusive right; but I have made certain new and useful improvements in presses of this description, the first of which improvements consists in a novel and efficient arrangement of the levers and springs which are used to stop the momentum of the bed of the press at the end of its traversing motion in either direction; and the second is an improvement in the manner of raising and lowering the

pressing cylinders, so as to cause them to rise and fall with the most perfect steadiness, without the possibility of their being subjected to those jerks, to which they have been liable under a rapid motion of the press as heretofore constructed.



Typesetting

Patent title:	Matrix for linotype machines
Patent number:	US 837,127, patented 27th November 1906
Inventor(s):	John Raphael Rogers, of Brooklyn, New York, assignor to Mergenthaler Linotype Company, a Corporation of New York
Biography:	John Raphael Rogers, born 11th December 1856 died 18th February 1934. Prior to this invention, skilled typesetters had to manually insert blank type of varying sizes once the line was completely set in order to justify it. Rogers was awarded A.B., A.M., and D. Sc. degrees from Oberlin College, and his LL.D. degree from Berea College

Patent abstract:

The object of my invention is to adapt Mergenthaler linotype machines and kindred machines commonly sold and known in the art under the trade-mark ‘Linotype’ in which the printing slugs or linotypes are cast against the composed lines of matrices to produce slugs with recesses extending through the characters and adapted to receive rules for printing the cancellation lines. To this end I provide matrices each having in addition to the usual characters therein a rib or projection adapted to form a cavity in the slug in suitable position to receive the rule or other inserted member.

Fig. 1.

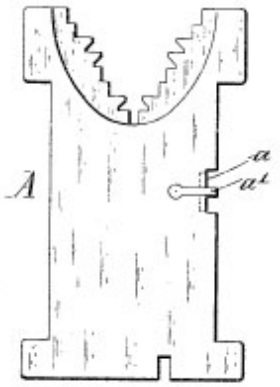


Fig. 2

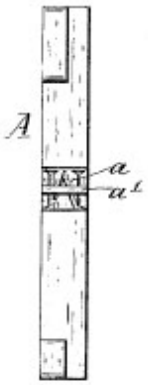


Fig. 3.

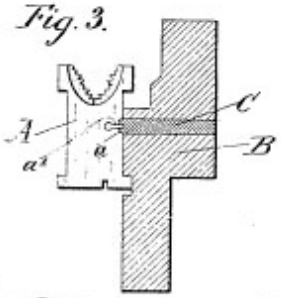
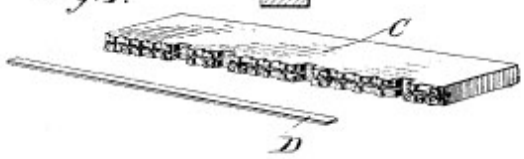


Fig. 4.



Typewriter

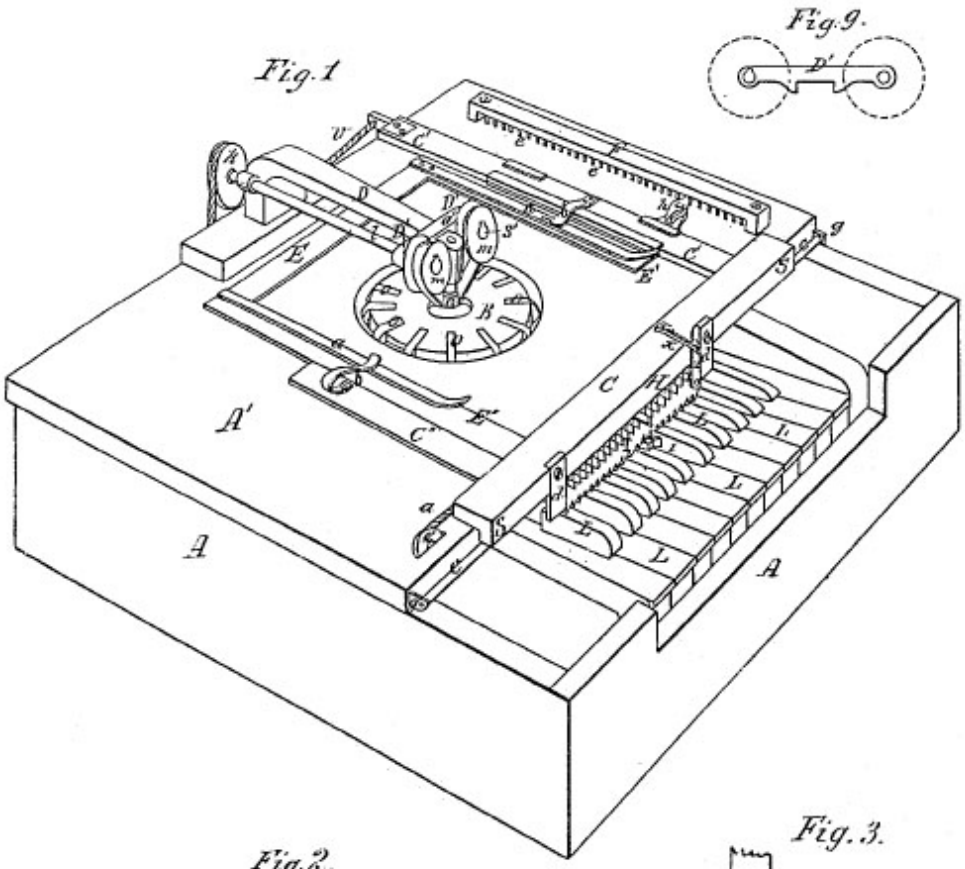
Patent title:	Improvement in type writing machines
Patent number:	US 79,265, patented 23rd June 1868
Inventor(s):	C. Latham Sholes, Carlos Glidden, and Samuel W. Soule, of Milwaukee, Wisconsin
Biography:	Christopher Latham Sholes, born 14th February 1819, near Mooresburg, Pa., died 17th February 1890, Milwaukee. In 1873 he sold his patent rights for $12,000 to the Remington Arms Company that resulted in the machine being marketed as the Remington Typewriter.

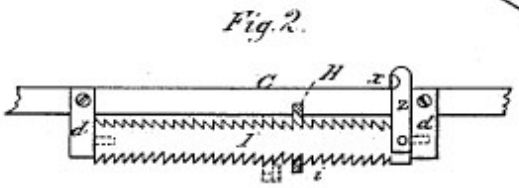
Patent abstract:

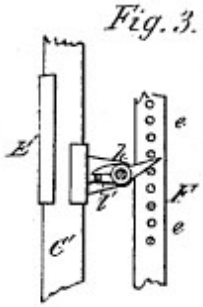
What we claim as new and useful in our invention, and desire to secure by patent, is:

- the key levers L, vibrating on the fulcrum M, with the inner ends or fingers *u* reaching under the type bars, so that the keys will act directly on the types, substantially as and for the purpose described
- the spacer or ratchet I, combined with the bifurcated lever H, connected with the bar T, pivoted at *s* and resting on and across the arms of the keys L behind the fulcrum M, so that striking the faces of the keys will work the teeth of the forks of the lever up and down and into the notches of the spaces and give a certain uniform and regular space movement to the paper carriage in line of the types, when made substantially as described
- the pins *e*, fastened to the table A', combined with the pawl h and the spring l' to give the paper carriage a

certain and regular cross line movement at a right angle to the space movement from line to line, when made substantially as described







Typewriter – portable

Patent title:	Typewriting machine
Patent number:	US 472,692, patented 12th April 1892
Inventor(s):	George C. Blickensderfer, of Stamford, Conn., assignor to the Blickensderfer Manufacturing Company, of New York, N. Y.
Biography:	George C. Blickensderfer born 1850 Erie, Pa. died 15th August 1917. The Blickensderfer Typewriter Company began business in Stramford and erected its own plant in Atlantic Street (1896-97). Blickensderfer's typewriter contained only 250 parts compared with the 2,500 parts of a standard typewriter.

Patent abstract:

This invention relates to typewriting machines and it consists in certain improvements in the construction thereof, as will be hereinafter fully set forth, and pointed out in the claims. What, I claim as new is:

- the combination of a type wheel, a sleeve, a non-rotative longitudinally movable spindle, part of which passes through said sleeve to support the type wheel and the other part bent upon itself to form a bail, and means which engage said bail to hold said spindle against rotation
- the combination, with the type wheel, of a sleeve, a non-rotative longitudinally-movable spindle, part of which passes through said sleeve to support the type wheel