MILESTONES

OF LINOTYPE ACHIEVEMENT

TRADE LINOTYPE MARK

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THIS is a picture record answering briefly the many questions we are asked about the development of the slug-casting typesetting machine from the early days of groping for a practicable idea on down through five decades of continued progress.

These pictures of the successive stages of mechanical development reflect the parallel growth in printing and publishing which they made possible. They are among the significant features of this history. Of course there have been many improvements from time to time which are not included here through limitation of space.

The first commercial Linotype was the product of twenty years' cooperation of a small group of pioneers who employed the watchmaker, Ottmar Mergenthaler.

But the subsequent fifty years of Linotype leadership have resulted from a far wider cooperation. The honor roll of men who have developed the Linotype is long and varied. It includes not only the generations of engineers, draftsmen, pattern-makers, tool-makers, precision machinists and matrix makers, but also those experienced users and maintenance machinists throughout the world who have contributed constructively to Linotype progress with suggestions that grow out of day-by-day working experience.

Through the years it has always been the policy of the Company to receive and carefully judge all suggestions and ideas from the users of Linotype machines. With the growth and widespread use of the Linotype the natural skill and ingenuity of operators and machinists have resulted in many thousands of new suggestions. Frequently, identical ideas are received from different parts of the world—and often an idea, quite original with the proposer, will be found to have been developed previously.

Suggestions are always welcome. They are given prompt and wholly confidential study—and, if adopted, the originator receives proper consideration.

So these milestones of typesetting history do honor to more than the pioneer inventors. They likewise pay tribute to the ingenuity of thousands of men whose exceptional ability, knowledge and experience have made the Linotype for a half century the acknowledged instrument for the advancement of civilization.

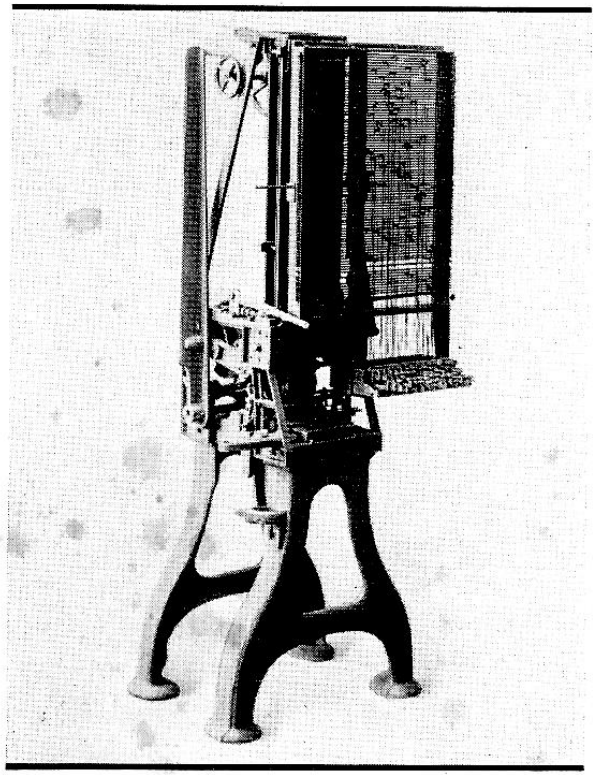
MERGENTHALER LINOTYPE COMPANY

1883

ROTARY MATRIX MACHINE

In this machine, finger keys controlled a rotary type wheel equipped with projecting characters. The characters were selected successively by the operation of the keyboard and indented in a papier-maché strip. The matrix strip thus formed was then cut up into lengths and secured to a flat backing sheet in such a way as to form a page or column matrix. Justification of the lines was effected by crimping or cutting the matrix strips. Type metal was then cast into the assembled matrix strips and the printing plate obtained.

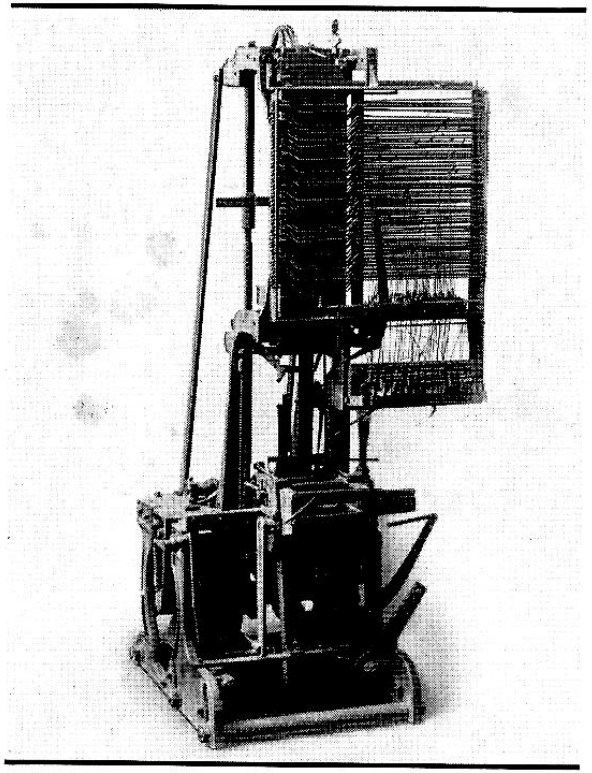
1884



FIRST BAND MACHINE:

This machine, without metal pot, was equipped with a series of vertical bars, each carrying a full alphabet of type and space characters raised on its surface. The bars descended at the touch of a finger key, each bar being arrested to bring its selected character to a certain level. After the Line-o-type was assembled and justified, a papier-maché strip was forced against it, thus producing a matrix for one line. The matrix strips were then assembled side by side to form a stereotype matrix and type metal was cast into it to form a printing plate.

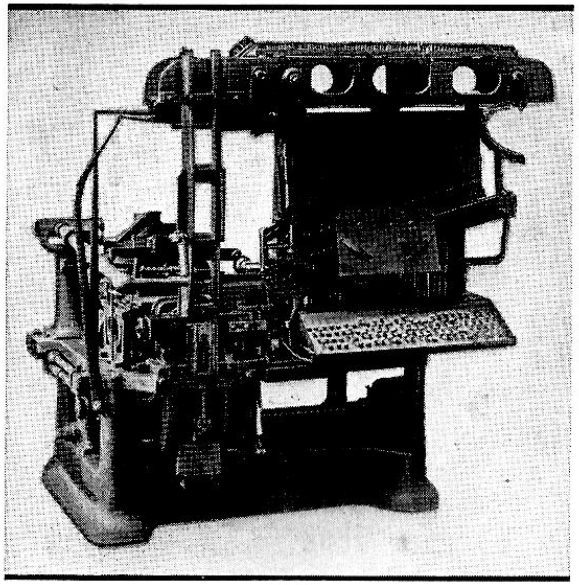
1885



SECOND BAND MACHINE:

This machine, with metal pot, was the first to produce Lines-o-type automatically, through the action of finger keys. Vertical bars containing an alphabet of female characters descended at the touch of a finger key, were brought to a common alignment and metal forced through a mold into the depressed characters in the bars, thus forming raised type on the front edge of the slug in the mold. The slug was ejected through trimming knives into a galley and the vertical bars were lifted to their original position, ready for the next line.

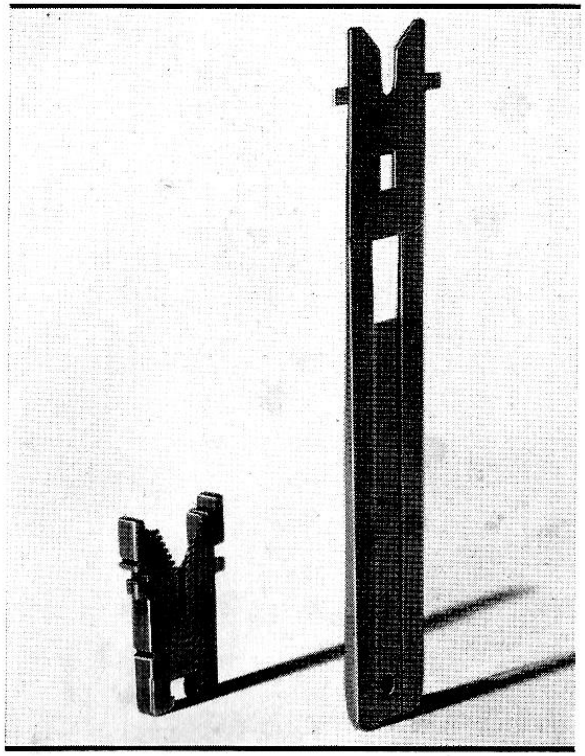
1886



THE BLOWER LINOTYPE: The first commercial line casting machine using small circulating matrices, each containing one character. The matrices, stored in vertical tubes, were released in the proper order by finger keys, delivered to an inclined chute along which they were carried laterally and successively by an air blast to form a composed line. This line was transferred to the face of a slotted mold, justified by wedge spacers and a slug produced by forcing metal through the mold into the depressed characters of the matrices. The matrices were then lifted to the top of the machine and returned through a distributor to the vertical tubes.

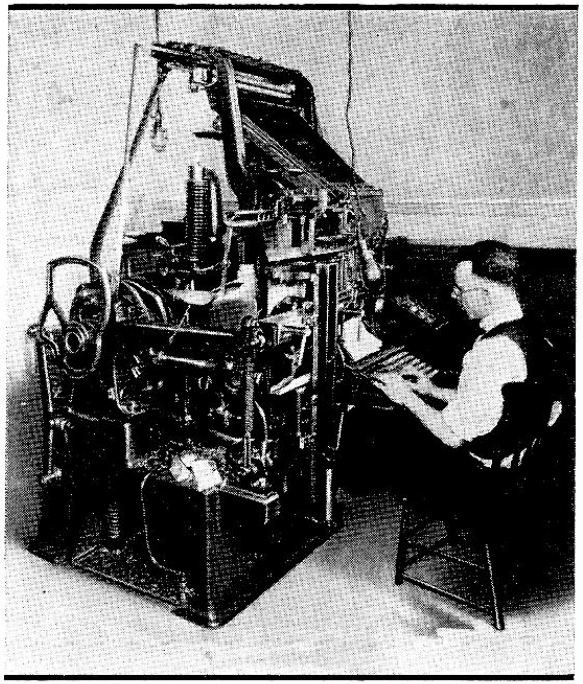
The first commercial operation of this machine was in the office of the New York *Tribune* in July, 1886.

1886



BLOWER MATRIX AND SPACEBAND: The invention of the individual free circulating matrix solved the aggravating problem of correcting errors as soon as discovered, something that was impossible with the former band matrices. The type bars or bands, each impressed with its row of all the characters of the alphabet, were discarded, and in their place were substituted small, finely tooled brass matrices, each bearing its own individual character. The spaceband was used to automatically justify the line of matrices by its wedge action.

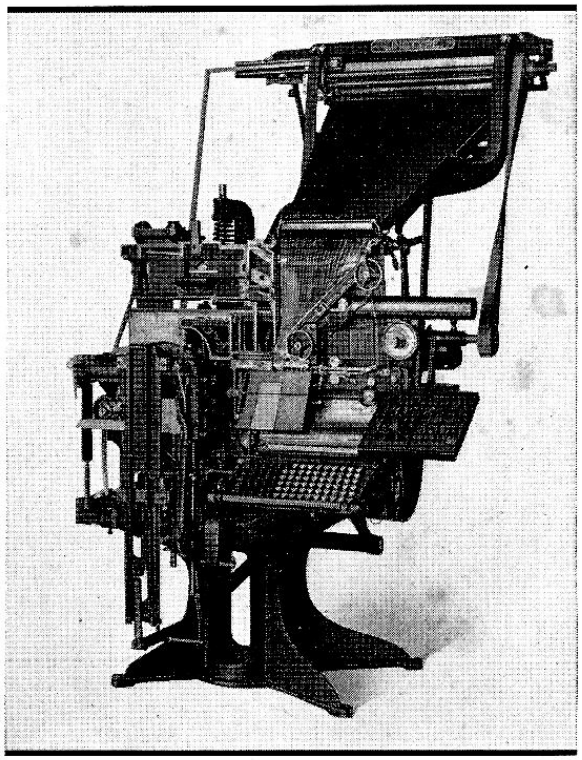
1890



SQUARE BASE MODEL 1: Forerunner of the present day Linotypes. Matrices were stored in an inclined magazine at top front of the machine. The magazine was narrow as compared to present day magazines and accommodated matrices up to and including 11 point. It was the first machine to have a 90-character keyboard and to use matrices similar to the ones used today. The single magazine was removable from the rear of the machine.

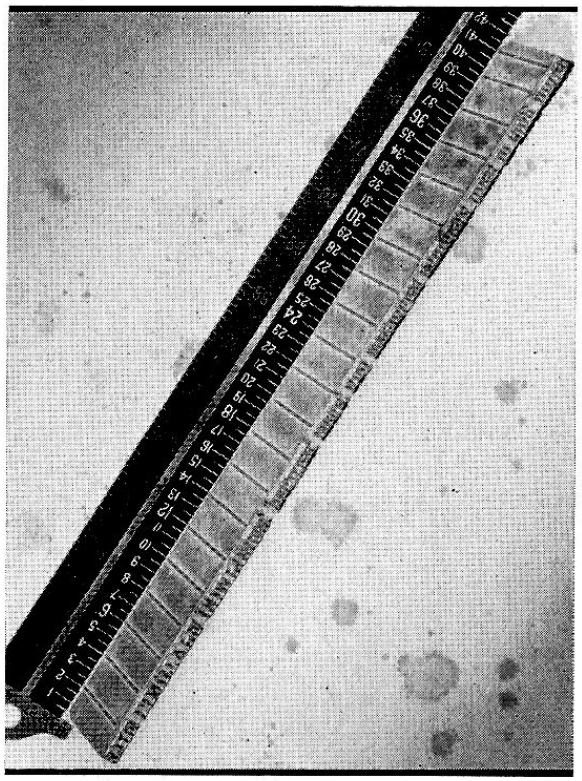
The *mercury gas governor*, the *pot pump safety stop*, the *power-driven keyboard* and numerous other improvements were incorporated in this model. Some of these machines are still in use today.

1892



MODEL 1: The massive square base of the original Model 1 was replaced by the star or regular base similar to the type used today. The justification and other levers were made lighter and springs were used to perform the same function as the former weighted levers. These springs applied starting motion to the levers, the cams returning them to their original position. This principle permitted the use of "automatics" so arranged that the machine would stop or the spring would expand without breaking any parts. The Model 1 was a commercially popular machine.

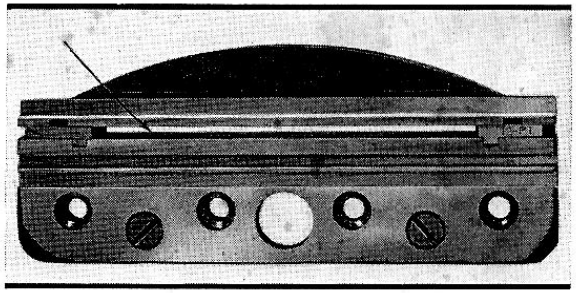
1897



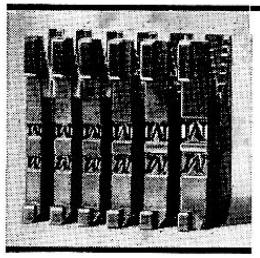
WIDE-MEASURE 42-EM LINOTYPE: Developed to meet the needs of those printers who desired to set wide measure slugs. It eliminated the necessity of setting two separate slugs and butting them together for measures over 30 ems. Any length slug up to 42 ems in any face size within the range of the machine could be cast without change or adjustment, other than those usually made on 30-em Linotypes.

The assembling elevator, vise, pot, and various other parts were changed for the casting of a 42-em slug.

1898

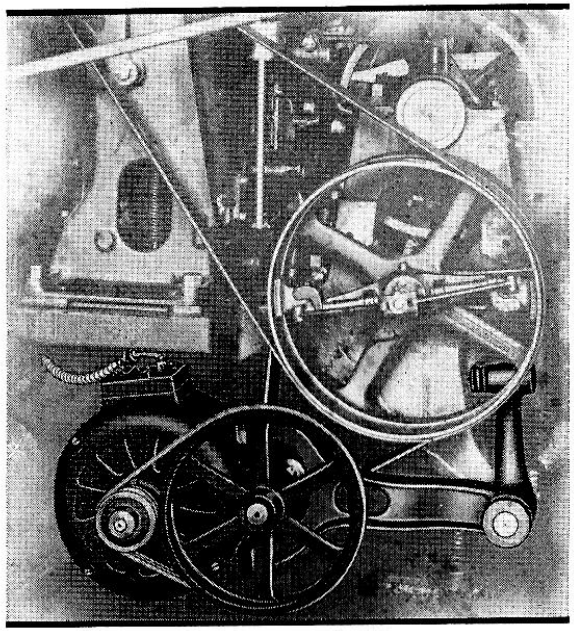


UNIVERSAL ADJUSTABLE MOLD: Up to this period, the standard mold used on all Linotypes was adjustable to any measure up to 30 ems, but would cast only one size of body. Thus a separate mold was required for each different body it was desired to set. The Universal Adjustable Mold, as its name implies, was adjustable both as to measure and thickness.



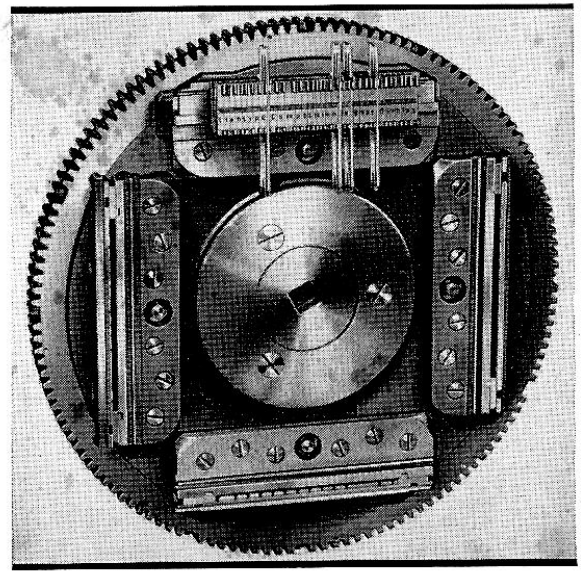
TWO-LETTER MATRIX: The introduction of the Two-Letter Matrix in 1898 was a distinct innovation. Previous to this time, matrices had been made with only one character punched in them. The two-letter matrix doubled the variety of type faces on a given machine. The operator was enabled, without loss of time, to set as a continuous operation, in connection with body faces, either italics and small caps, or bold faces for headings, etc.

1901



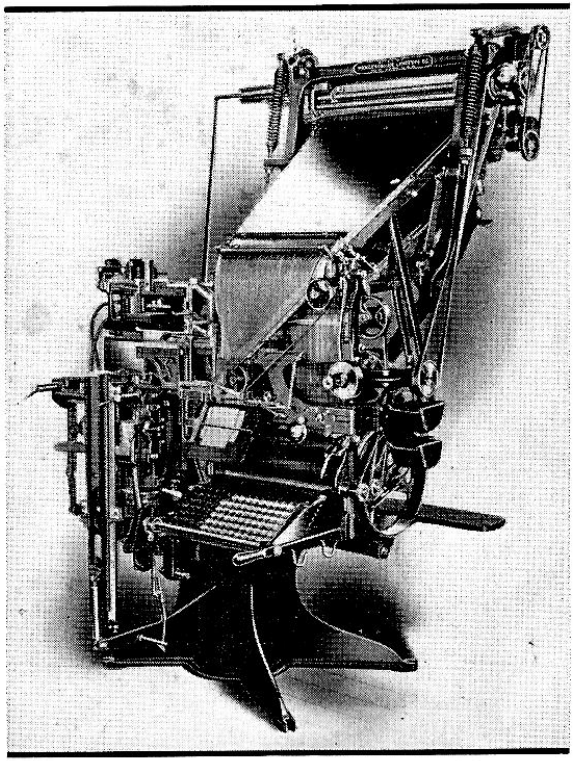
INDIVIDUAL MOTORS: This improvement simplified the driving of the Linotype. Floor space in every printing office is valuable and the individual drive motor was designed so that no additional floor space, beyond that required for the Linotype itself, was needed. It was a great advance over the older system of belting, line-shafting, etc. There were no overhead shafts with belting running down to the Linotype or shafts along the floor to take up space. The individual drive motor assured a constant speed and smooth operation for every Linotype. At the same time it did away with dangerous and unsightly encumbrances and allowed more flexibility in locating machines.

1902



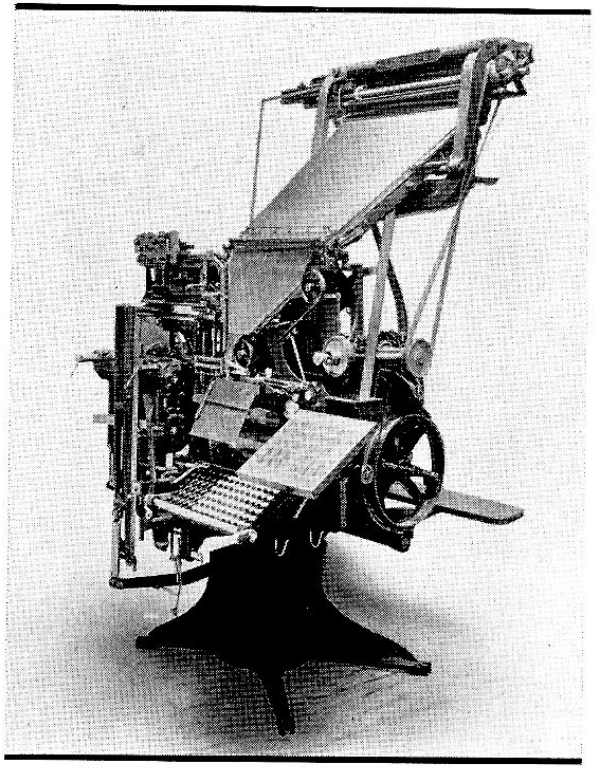
FOUR MOLD DISK: This was a further step in building the earlier Linotypes to do more work in the composing room. Previous to the introduction of this disk, the operator was limited to the choice of only two molds and, if the copy called for a measure or body size other than that for which the molds were adjusted, it became necessary to change liners. With this four-mold disk, each mold could be set to a different body size and measure, thus enabling the operator to switch from one to another by simply turning the mold disk pinion. For instance, one mold could be set to cast a 6 point slug, 12 ems measure, a second for 8 point, 12 ems measure, a third for 10 point, 24½ ems measure and the fourth for 12 point, 30 ems measure. Various other arrangements could be made at the will of the operator.

1903



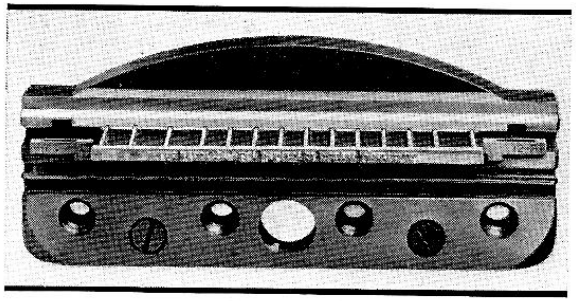
MODEL 2: This was the first two-magazine machine to be developed. Matrices from both magazines could be mixed at will in the same line and distributed automatically. It was the *original* mixer Linotype. Selection of matrices from both magazines was controlled by a small lever which locked one escapement while unlocking the other. The lower magazine was shorter than the upper, was stationary and could only be removed for repairs. The upper magazine was wider than that of the Model 1, and was interchangeable with magazine of Model 3. It was removable from the rear.

1903



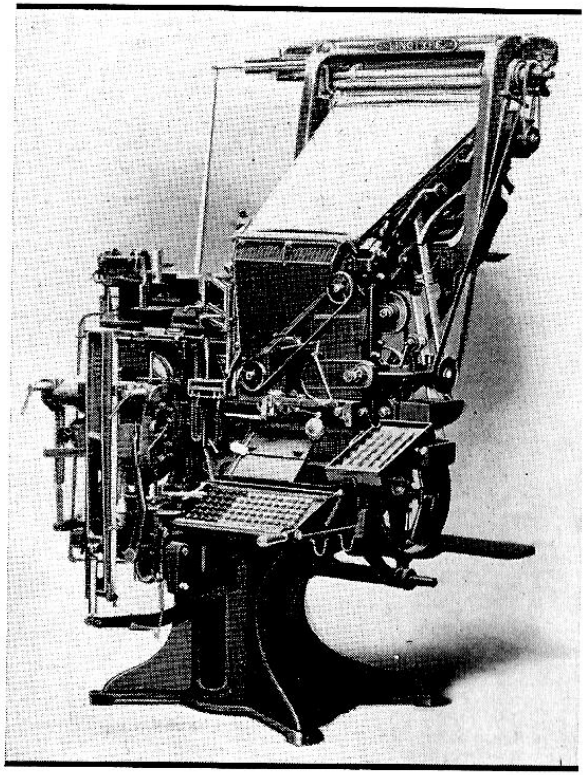
MODEL 3: A single magazine machine with a magazine two inches wider at the lower end than the one used on Model 1. In shape and size, the magazine was similar to the ones in use today. This Linotype was known as the "Pica" machine since faces, pica or 12 point, and over could be used. The faces previously used on the Model 1 had been limited to 11 point. Many improvements appeared in this "Pica" Linotype. Various parts of the machine, besides the magazine itself, were enlarged in proportion. The single magazine was removed from the rear of the machine.

1905



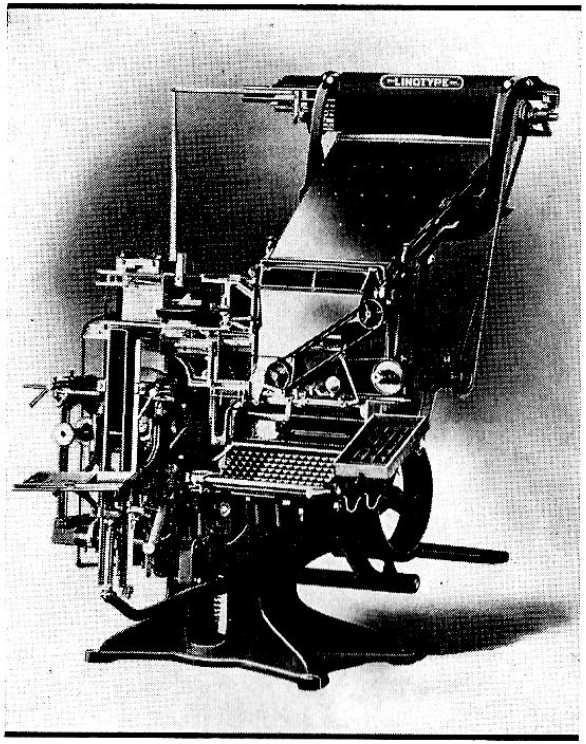
RECESSED MOLD: In order to reduce the quantity of metal in larger slugs and to improve the action of the machine, the Recessed Mold was provided with a cap which had projecting portions which formed large cavities or recesses in the slug, thus reducing the weight of each Linotype slug about one-third. The introduction of Recessed Molds reduced the expense to the printer of keeping matter standing. Because of the smaller amount of air to be expelled from the mold, more perfect slugs were secured. The slug produced from a Recessed Mold had a solid face, as usual, and ribs at the side to sustain the face, so that it stood up solidly in stereotyping, electrotyping or printing direct from the slugs. The Molds were Universal in design and with the necessary liners, could be changed from one body and measure to another quickly and easily. With two molds (and the necessary liners), slugs of any measure up to 30 ems pica could be cast. With the modern Recessed Mold, only one mold is required to set most of the measures used.

1906



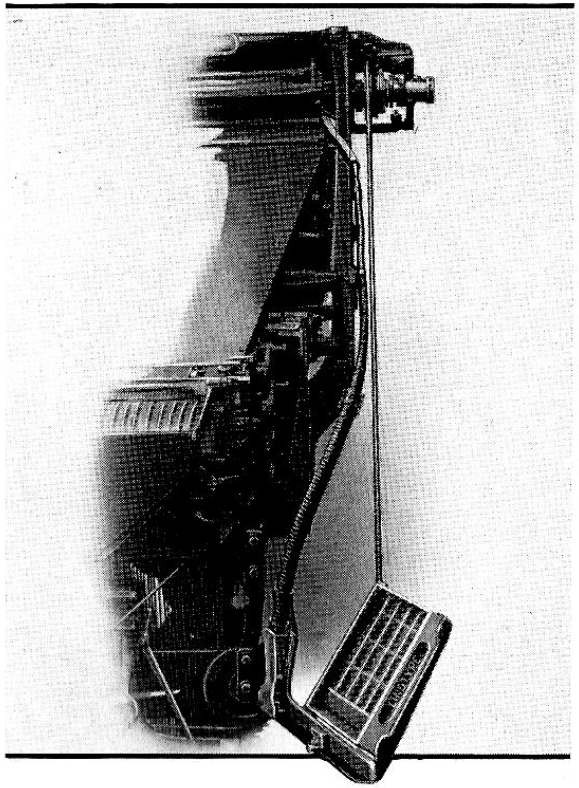
MODEL 4: A quick-change double magazine Linotype—a great advance over the Model 2 in that both upper and lower magazines were readily removable and changeable, the upper from the front—the lower from the rear. This was a mixing machine. Matrices from both magazines could be mixed in the same line and distributed to their respective magazines. A small lever at the right of the keyboard controlled the selection of matrices from each magazine, the magazines remaining stationary as in the Model 2. The upper magazine was interchangeable with that of Model 5.

1906



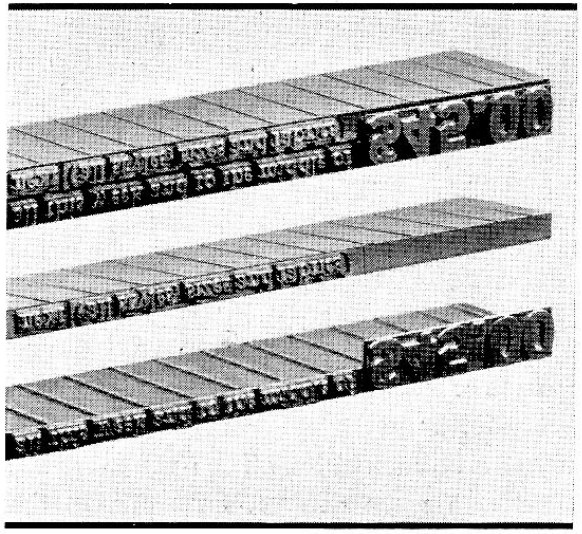
MODEL 5: Quick change single-magazine Linotype. The light weight magazine was easily changed and was removable from the front of the machine. This was the first machine that could be used against a wall or backed up against another machine to save space. The escapement in former machines formed part of the magazine. In this machine the escapement was separated from the magazine and remained on the machine when the magazine was removed. The magazines were wide enough to accommodate many 18 point faces and were interchangeable with the upper magazine of the double-magazine Model 4.

1907



SORTS STACKER: An ingenious device which permitted pi characters to assemble in a stacker in exactly the order in which they had been set in the assembled line. Previous to this development, matrices fell directly through a pi tube to a small pi box, were jumbled up and had to be picked out by hand and set in order again. The automatic sorts stacker eliminated this and saved the side walls and lugs of the sorts matrices from the constant battering action of the fall into the pi box. Multiple sorts stackers were also developed at this time to have separate stacking of matrices.

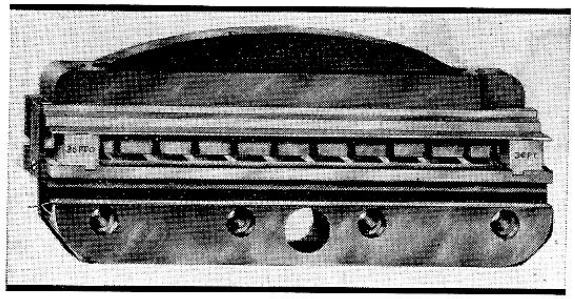
1909



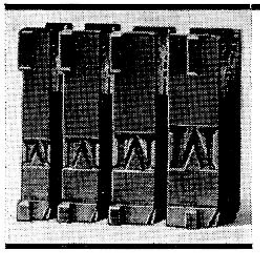
ADVERTISING FIGURES: The use of these matrices as price figures in advertisements eliminated the necessity of cutting the slugs and inserting the display figures by hand as well as the subsequent hand distribution. They were made in two sizes, 18 and 24 point, and punched in the normal position on the matrix so that they could be cast in a line with either the normal or auxiliary position characters of 5- to 12-point two-letter faces. The 18-point size was used with two lines of 8 point and the 24-point with two lines of 10 point.

The Advertising Figure Mold developed for casting these figures had a slug range from 5 to 12 points and a lip which permitted up to 12 points of overhang. Since the overhanging slug was not trimmed, the ribs were made without taper. The supporting slug was trimmed in the usual manner.

1909

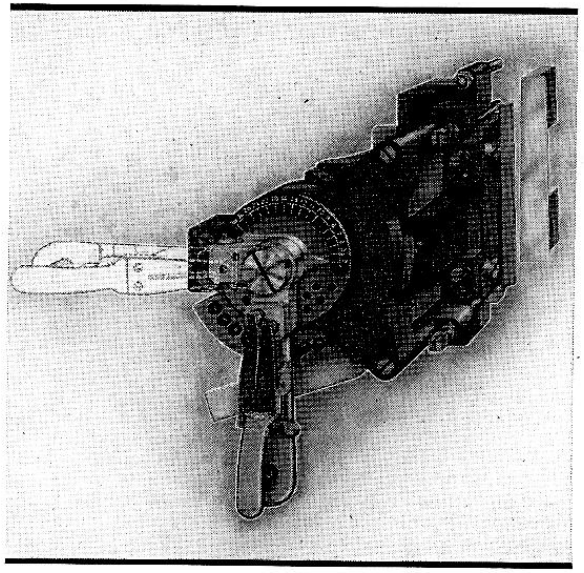


DISPLAY MOLD: This mold, developed to cast head-letter or display matrices, was a further development of the Recessed mold introduced in 1905. The recesses in the mold cap were deeper, however, to decrease the weight of the larger slugs. These molds, made of the finest steel, and machined to the thousand part of an inch permitted the casting of large display slugs with the same accuracy of dimensions as the former smaller ones.



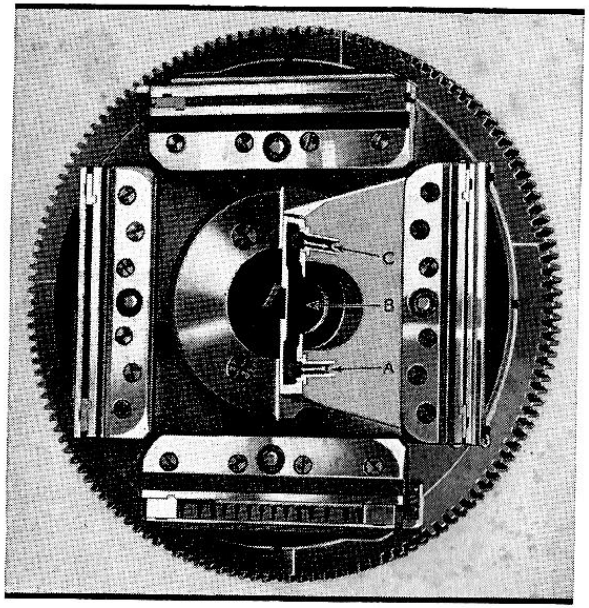
DISPLAY MATRICES: The introduction of Head-Letter or Display composition marked one of the greatest advances in machine composition since the Linotype cast its first slug. It enabled the printer to set large sizes of type direct from the keyboard. One man, at the keyboard of one machine, could compose, cast and distribute matter from 5 to 36 point, inclusive.

1909



UNIVERSAL KNIFE BLOCK: With the introduction of the first Display Molds and Matrices, in 1909, a knife block was developed to trim these larger slugs. This knife block, justly called the Universal Knife Block, since it was universally adjusted for all sizes, was a great improvement over the older style wedge adjustment block. It trimmed slugs of any body from 5 to 36 point inclusive. Each point size could be independently adjusted without interfering with adjacent settings. The convenient handle could be swung out of the operator's way. The Universal Knife Block also permitted the use of advertising figures where large display figures could be set on the same slug with the text matter in one operation, thus eliminating the cutting of slugs and inserting of the figures.

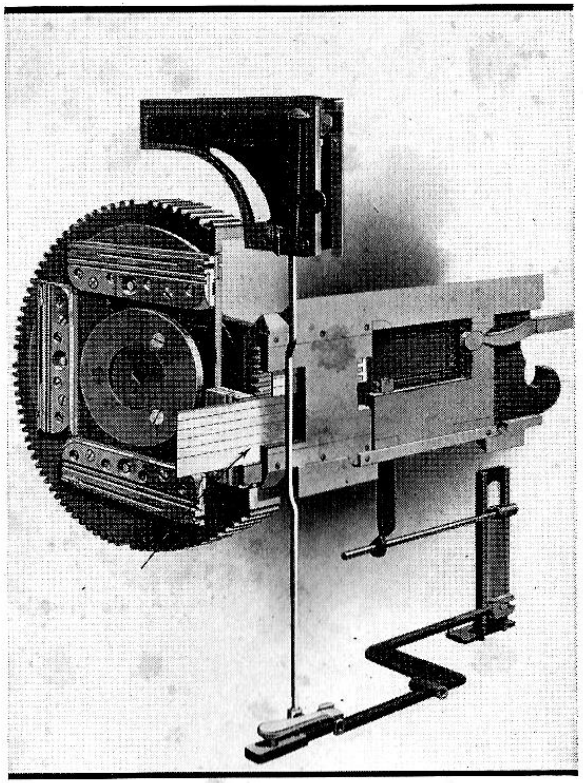
1909



WATER-COOLED MOLD DISK: Previous to this time, no provision for artificial cooling of the area of the machine subjected to the high temperature of the molten metal at every cast had been made. With the introduction of the water-cooled mold disk, water was allowed to constantly flow through a portion of the mold disk, cooling the disk and molds. The result of this cooling was evident in the product of the machine—solid, close-grained slugs. This cooling process also played a great part in reducing the tendency of the molds and disk to warp.

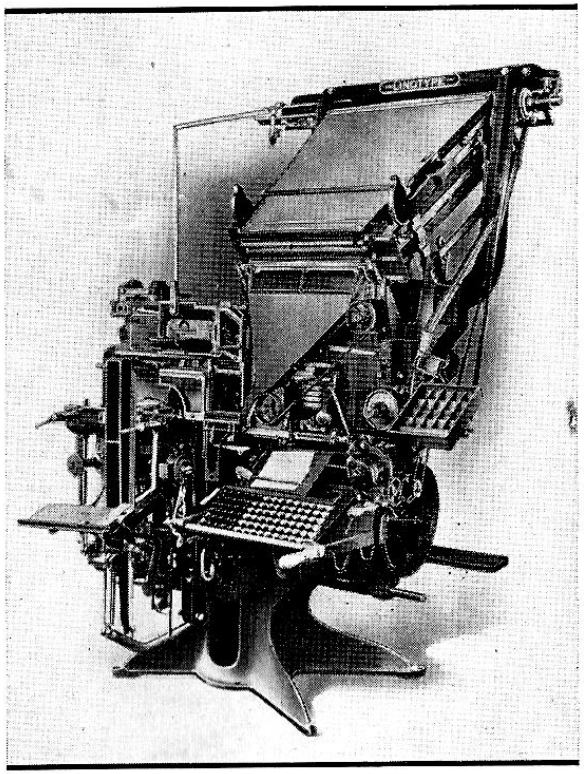
The free circulation of water entered the mold disk at inlet A, filled the chamber B, and was discharged through outlet C, as indicated.

1909



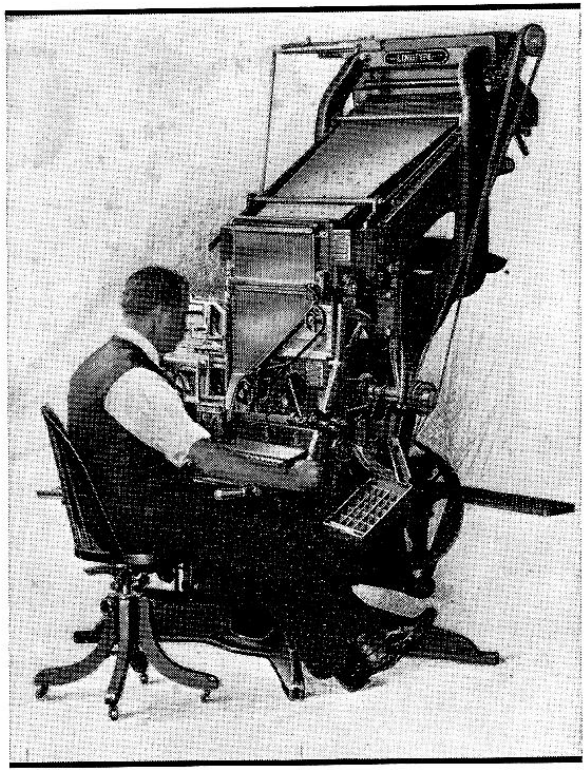
UNIVERSAL EJECTOR: The early Linotypes were equipped with an Ejector which had a solid blade; different blades being used whenever the measure was changed. In contrast, the Universal Ejector consisted of a series of horizontal sections arranged edge to edge in connection with a locking block by which any desired number of sections could be connected to the ejector lever. The action of the lock-block was controlled by a lever within easy reach of the operator. The Universal Ejector ejected slugs of any thickness and could be set almost instantly.

1911



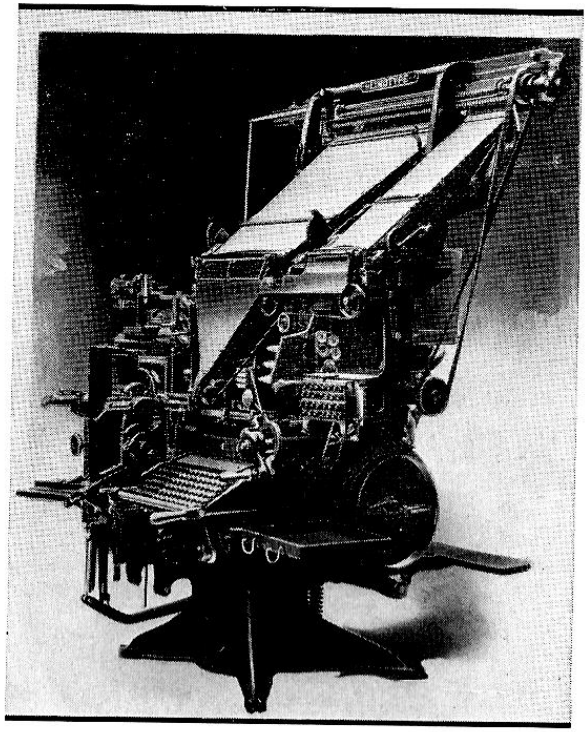
MODEL 8: This was the first three-magazine Linotype. In its general features the Model 8 resembled the Model 5 but was a great advance over that model in that it carried three magazines, any one of which could be quickly brought into operation. The two upper magazines of this original Model 8 were readily removable from the front of the machine. The lower magazine could be removed but required a little more time. Along with the development of the Model 8, the *Automatic Font Distinguisher* was introduced—a device to prevent matrices from entering the wrong magazine.

1911



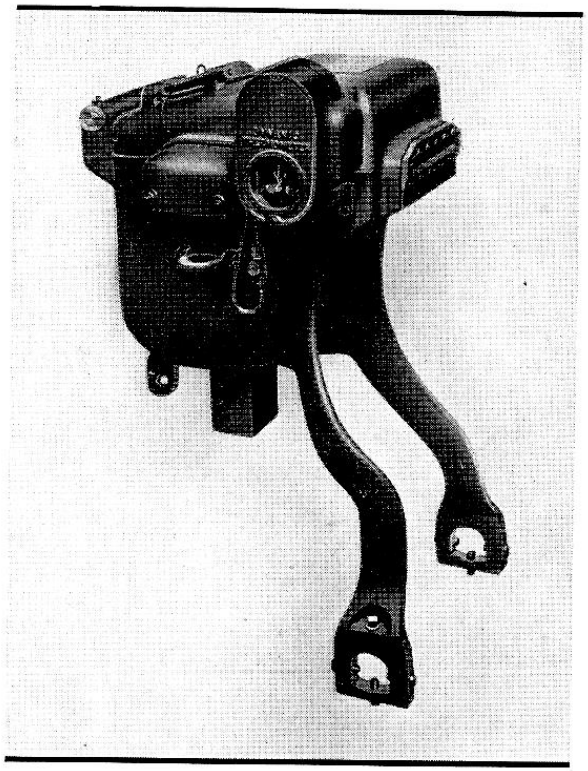
MODEL 9: The first four-magazine Linotype. Radically new in many of its features and was designed to meet varied requirements for advertising, display and job composition, calling for frequent change of face and body. It was a mixer Linotype and successfully solved the principle of mixing matrices from four magazines in one line and distributing the matrices automatically to their respective magazines. Any one of the four magazines could be instantly brought into operation by a convenient lever at the right of the operator. All magazines were removable from the front.

1914



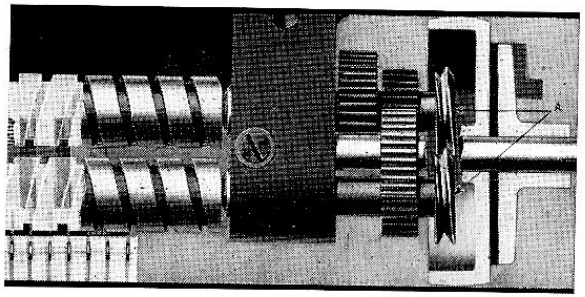
MODEL 14: This was the first machine to have an *auxiliary magazine*. The addition of this 28-channel auxiliary magazine, located to the right of the main magazines, increased the available range of the Linotype in the number and size of characters. The auxiliary magazine of this machine was operated by a separate punch keyboard to the right of the regular keyboard. In the modern Model 14, the auxiliary magazines are operated from the same keyboard as the main magazines, insuring fast and accurate composition, without the necessity of turning to operate a separate keyboard.

1915



ELECTRIC METAL POT: Previous to the introduction of the Electric Metal Pot, the metal had been heated by gas, with all the obvious disadvantages of open flames and attendant odoriferous gas fumes which, in the interests of the well-being of operators, had to be conducted away by unsightly chimneys. The Electric Pot eliminated these disadvantages and in addition improved the quality of the slugs and increased the output of machines by maintaining a uniform temperature of metal. It also gave instant, convenient control of the temperature of the mouthpiece.

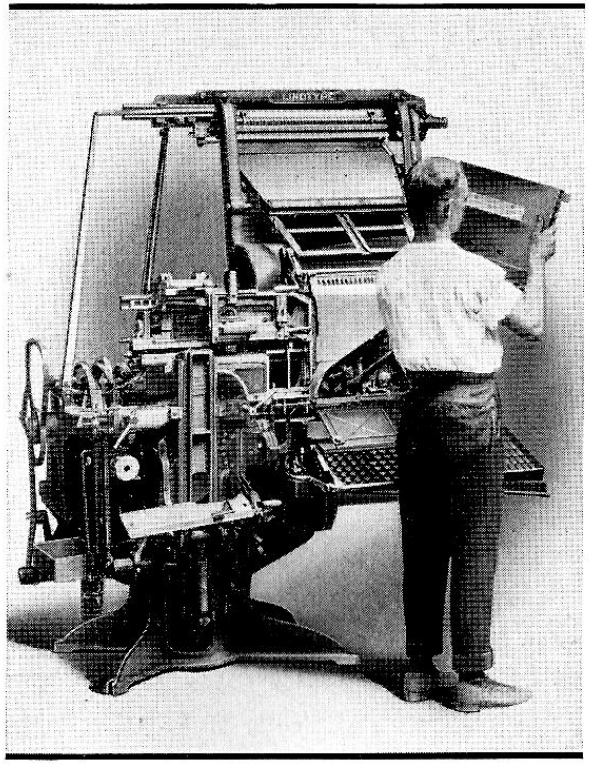
1917



TWO-PITCH DISTRIBUTOR SCREWS: The development of these screws enabled the matrices to be conveyed to the magazines at the highest possible rate of speed consistent with operating efficiency. They separated the matrices widely on the distributor bar, eliminating any tendency of large matrices to crowd, and insuring smooth, uninterrupted distribution. Magazine changes could be made more promptly, as there was less time waiting for matrix distribution.

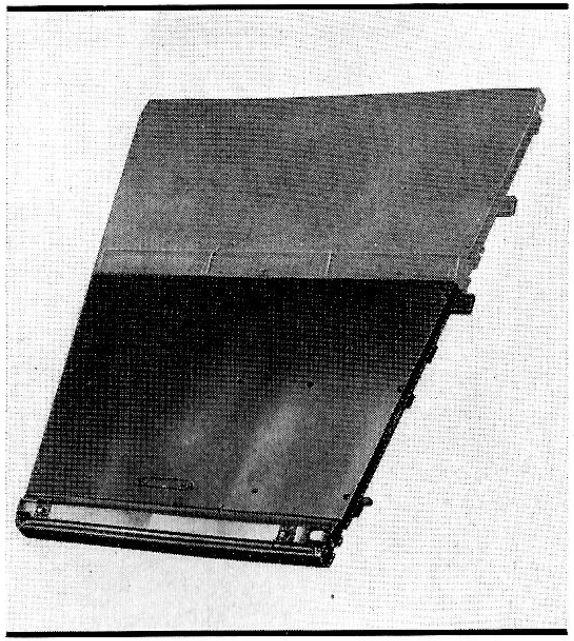
The spiral automatic, an important part of the two-pitch distributor screw, eliminated the older flexible channel entrance partitions. The partitions were now anchored and could not bend or twist out of adjustment. The spiral automatic consisted of two rotary wedges, A, with the thin edge of one opposite the thick edge of the other. The lower wedge was connected by a spring to a loose gear. When the motion of the lower screw was retarded from any cause, the wedges would lock and stop the distributor with no strain on the matrices or channel entrance partitions.

1918



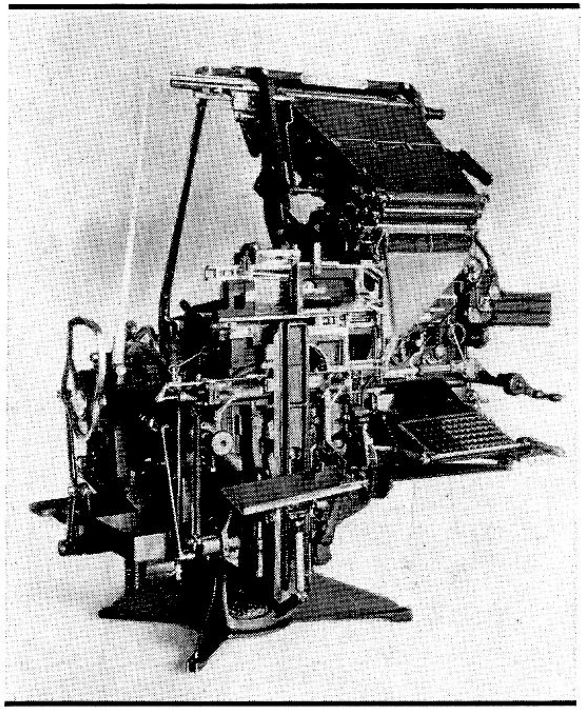
MODEL 20: This was the first display Linotype. Originally made with one short magazine, it was later built with three short display magazines. The magazines contained 72 channels instead of the usual 90, the space between each channel being wider to accommodate large faces. Display matter up to 30 point, and larger sizes of condensed faces were set on a straight matter basis direct from the keyboard. The short magazines could be changed quickly and easily. This machine accomplished for display composition what the original Linotype did for news composition.

1918



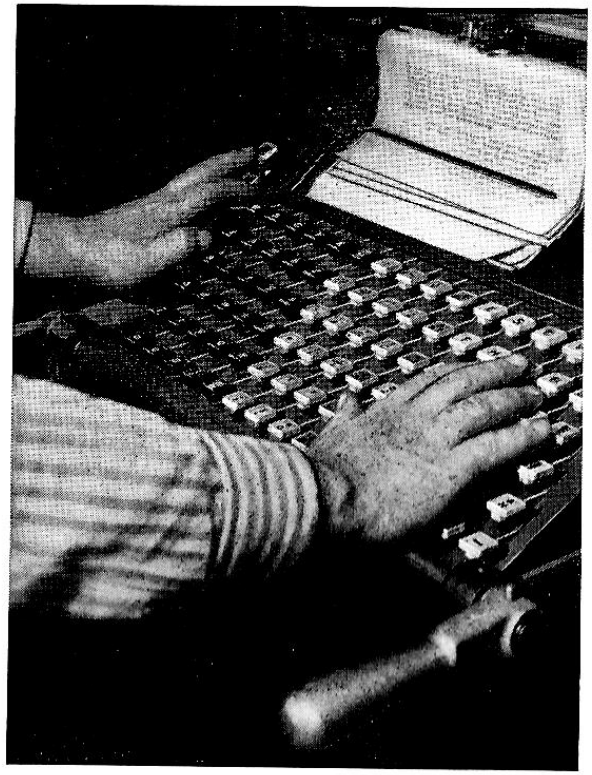
THE SPLIT MAGAZINE: With the advent of the Model 20, the first Display Linotype, the Split Magazine was introduced. This step ahead was accomplished by dividing the magazine transversely into two parts and altering the magazine frame to suit. The upper half or magazine entrance remained on the machine, while the lower half, called the Split, could be readily taken off and changed. The Split Magazine was half the length of the full-length magazine, weighed only 21 pounds and had a channel capacity of ten matrices, ample yet economical for general advertising and newspaper work. The Split was lighter, easier to handle and needed less storage space than the full-length magazine.

1921



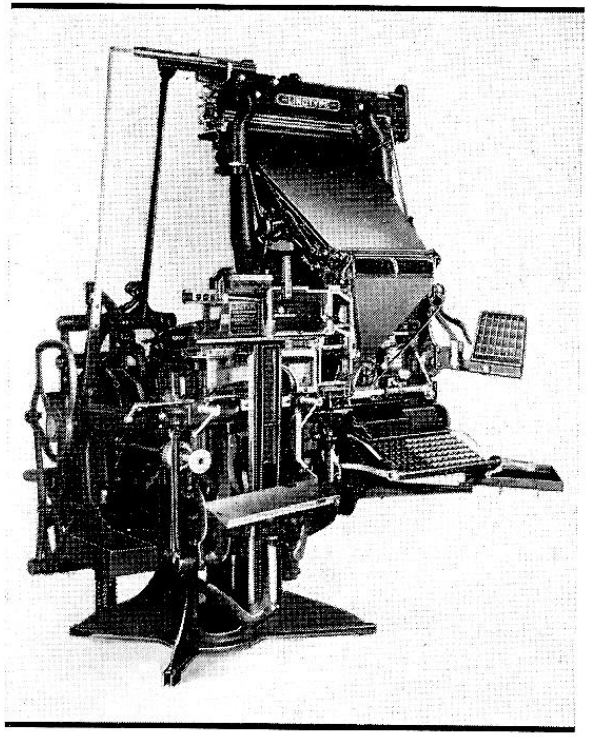
MODELS 21 and 22: These machines were an improvement over the Model 20. The Model 21 was a three-magazine machine. The Model 22 was the same as the Model 21 with the addition of a single auxiliary magazine. In addition to using the three magazines as 72-character magazines, they could be used as 55-character magazines by the simple swinging of a second channel entrance in place and a movement of a lever at the right of the keyboard. This permitted wider faces to run in 55 channels of the 72-channel magazine than was possible in the regular 72-channel layout, a valuable feature on newspaper heads.

1923



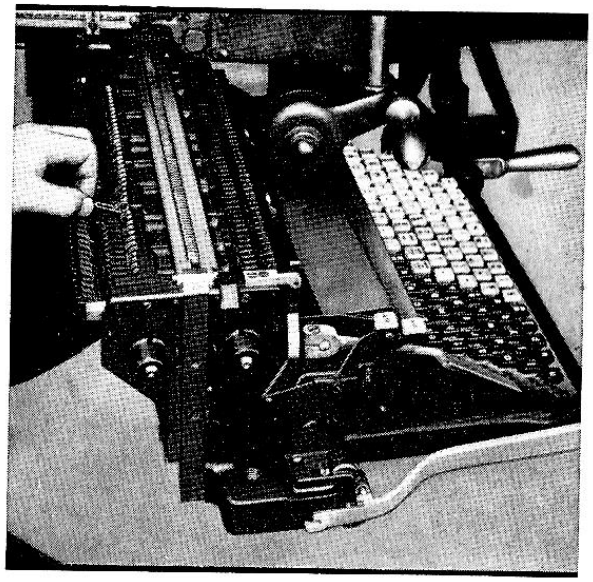
SINGLE POWER-DRIVEN KEYBOARD: With the development of this feature the change from main magazine operation to auxiliary magazine operation was accomplished by means of a key-button shift similar to that on a typewriter. This permitted the operator to shift from main to auxiliary magazines without reaching over to operate a separate auxiliary keyboard. It not only had the effect of simplifying keyboard operation, but brought the auxiliary magazine into closer relationship with the main magazines, thus permitting more flexible layouts.

1924



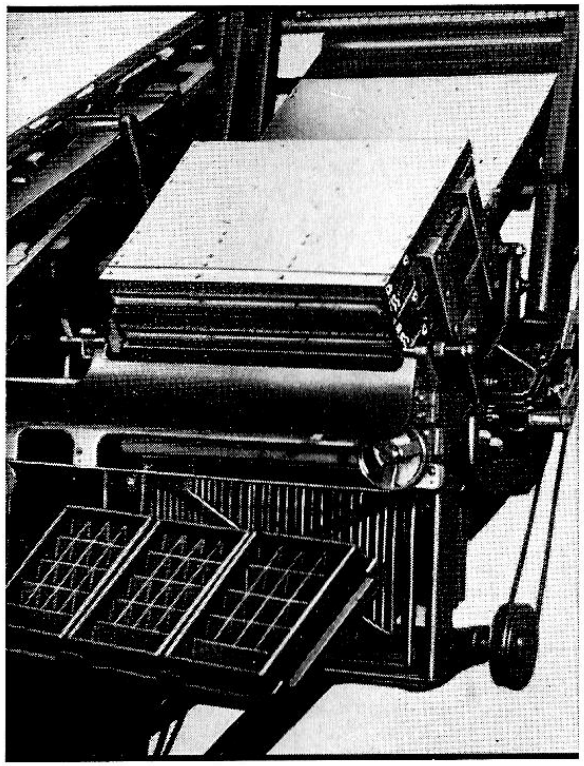
MODELS 25 and 26: These were mixing machines and were a distinct improvement over the Models 16 and 17 mixers brought out in 1916. In the Model 25, two main magazines, and the 26, two main and two auxiliaries, the magazines themselves were brought into operating position by a convenient hand lever. (The modern mixing machines also offer an optional power key-button shift.) In the previous Models 16 and 17, the magazines remained stationary, the escapements of the two magazines being locked or unlocked by means of a small lever. The new method eliminated many parts and gave positive action.

1929



SWINGING KEYBOARD: The introduction of this feature greatly increased the accessibility of every part of the keyboard. It gave the same freedom in reaching any part of the keyboard that removing the keyboard to the work bench provided. No fumbling or groping in the dark at the back of the keyboard to inspect and service a part. The keyboard opened right out in front of the operator where it could be examined with ease. The time required for loosening the locking screw and swinging the keyboard out was a matter of seconds. This development was a great advantage to both the operator and machinist in that it materially reduced the time required for servicing or repairing the keyboard, thus enabling the machine to be back in service in the least possible time.

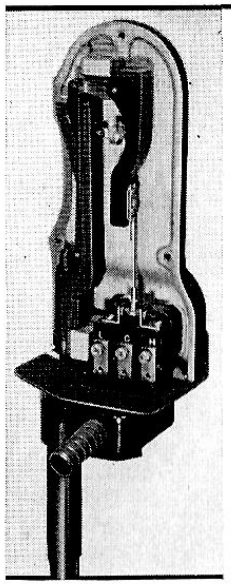
1929



WIDE AUXILIARY MAGAZINES:

Increased the size of faces that could be carried on the Linotype and set direct from the keyboard. These auxiliary magazines were Splits, and machines could be equipped with either one, two or three auxiliaries. They contained 34 channels more widely spaced than the previous auxiliary magazine and could carry large display faces, including extended 36-point caps or moderately condensed faces up to 60 point. To meet special needs, such as accent and foreign language layouts, they were also available in full-length size.

1931

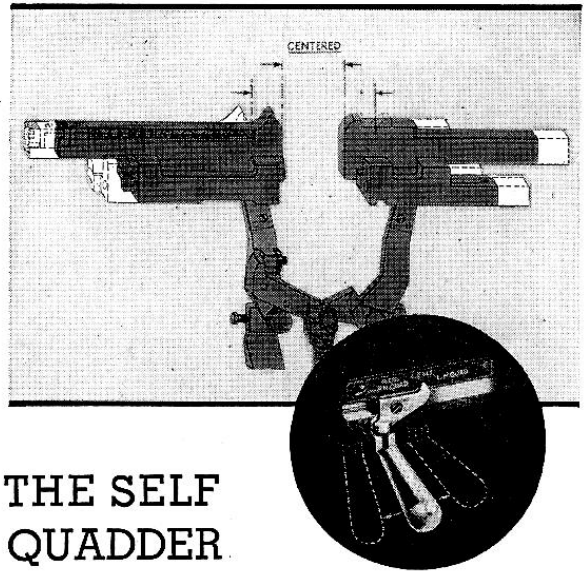


MECHANICAL THERMOSTAT

This device materially simplified the control of heat for the electric pot. It functioned by the expansion and contraction of two unlike metals. The expansion element was a sturdy aluminum bar (supported by a slotted invar tube) which could withstand considerable overheating without deterioration. No mercury was used. Through a system of strong, short levers and the use of the best suited metals, close regulation of temperature was obtained as well as permanent setting of the Thermostat.

The two elements used in the expansion system have the greatest difference of expansion of any two metals that can be used at the correct operating temperature so that maximum movement was obtained. This, with the shortest possible leverage, made for a responsive control of current flow.

1932

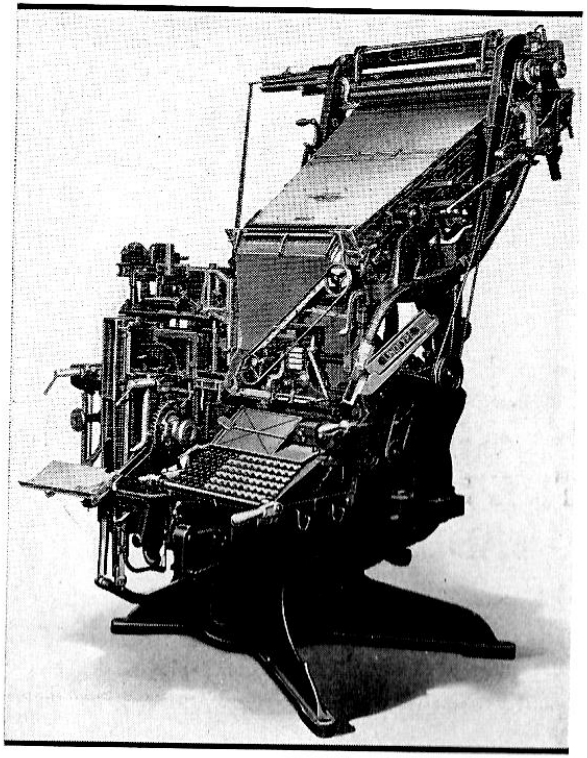


THE SELF QUADDER

The Self-Quadder automatically quadded lines of any length within the range of the machine, either to the right or left, or centered them. The operator simply touched a convenient handle for any of the three operations he wanted it to perform. It worked with a line that was almost full or one containing only a single matrix. If there were no matrices in the line, the jaws closed and cast a blank slug. By shifting the handle to the proper position, the machine could be operated in the same manner as any Linotype not equipped with this device.

An additional feature that could be applied to the Self-Quadder was the right-hand vise jaw Fixed Indention Attachment which, in conjunction with the standard left-hand vise jaw adjustment, permitted fixed indention at either end of the line.

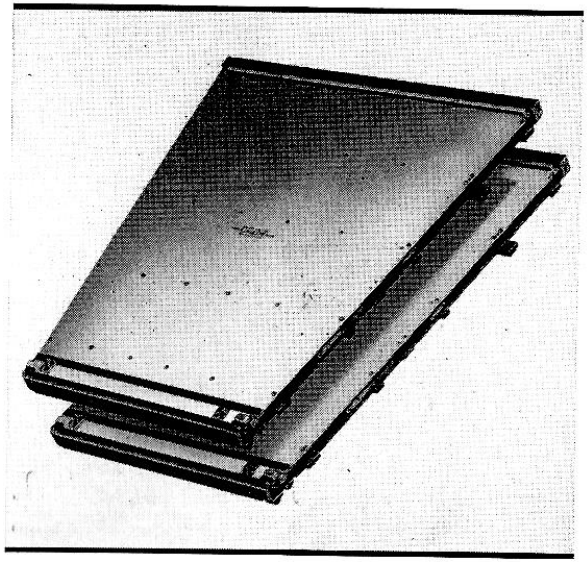
1932



TWO-IN-ONE LINOTYPES:

These machines gave greater plant capacity by their ability to shift from text to display range. They offered in one machine all the advantages of straight matter speed and economy, plus a fuller range of typographic display. Text and display were handled with equal speed and the operator could change from one to the other and back again in seconds. They carried both 90- and 72-channel magazines and had two separate distributor bars and channel entrances. Either set could be swung into place by a convenient lever.

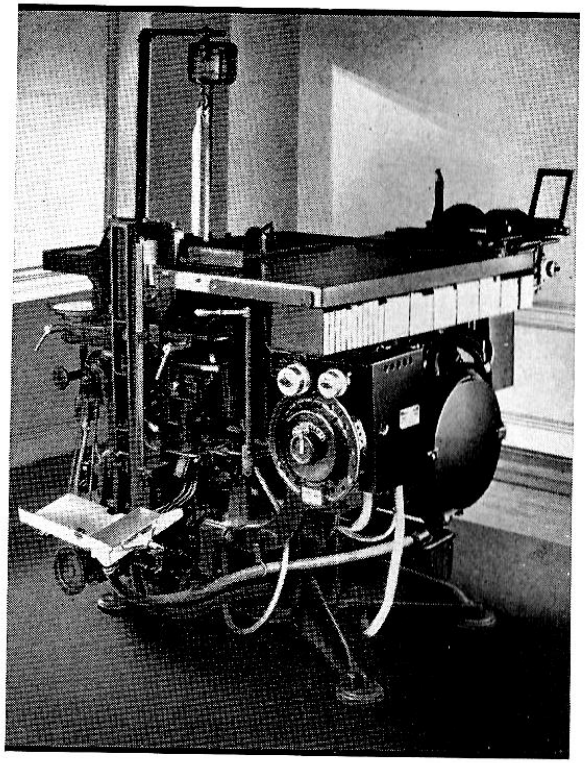
1932



LINOLITE MAGAZINES:

These were developed to ease the burden of the operator in changing magazines. They were made of a special wear-resisting alloy that was remarkably light and easy to handle. Under exhaustive testing in a variety of book, commercial and newspaper plants, they have proved as durable and as satisfactory as brass magazines in every respect. A standard full-length 90-channel Linolite Magazine weighed 22 pounds less than the same style brass magazine. When filled with a complete font of 1500 matrices (10 point) the Linolite Magazine weighed no more than the empty brass magazine. Identical in construction with the brass magazine, they were interchangeable in all respects. They were made available for the Linotype in a complete range of styles.

1932



ALL-PURPOSE LINOTYPE:

A complete self-contained unit for casting of type in the form of slugs, in faces ranging from 5 point to 144 point; the casting of furniture, rules, borders, decorative and spacing material from 6 point to 72 point body and up to and including 42 picas in length. Universal A-P-L matrices, standard Linotype matrices and other hand set matrices may be used.

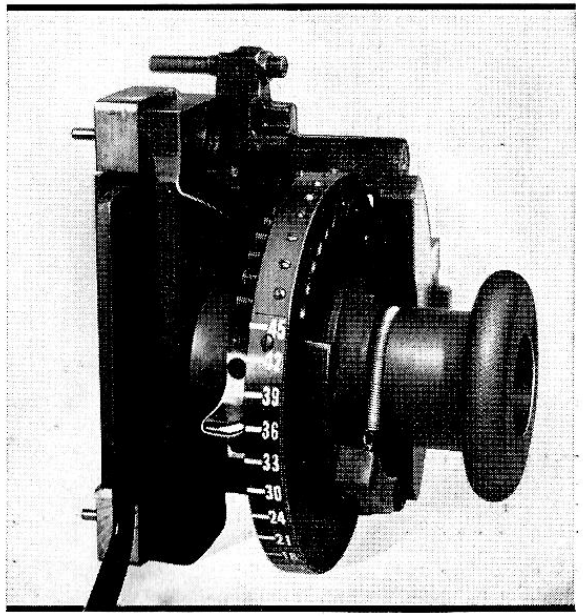
In the All-Purpose Linotype, the compositor sets lines of matrices by hand in special sticks and the machine casts and delivers the finished slug ready for use.

1933

POWER MAGAZINE SHIFT:

With the advent of the mixer Models 25 and 26 in 1924, a hand lever had been used to move the magazines into operating position. In the year 1933, a further refinement was added—that of a power shift of magazines. The operator merely touched a convenient button located at the right of the keyboard whenever the magazines were to be shifted. This simple touch was enough to raise or lower a magazine into operating position. No effort was necessary—the power necessary being derived from the intermediate shaft. Fool-proof guards were used in conjunction with this device so that the magazines would not shift if there was any obstruction to their movement. The action of the guards or any undue resistance to the shifting movement caused a friction clutch to slip thus protecting parts from damage. Auxiliary magazines were shifted in the same way—by a second button immediately to the right of the main magazine button.

1934

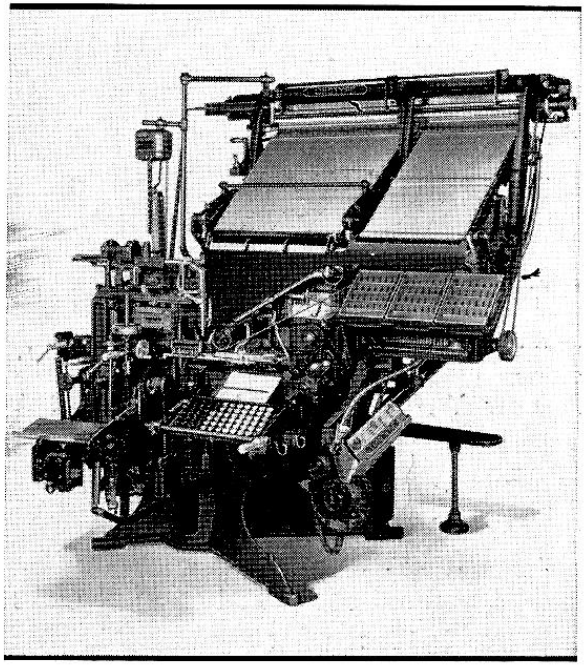


THE UNIVERSAL PRECISION KNIFE BLOCK:

For a period of 25 years, since the introduction of the original Universal Knife Block, successive improvements and refinements had been made until the year 1934, when the Universal Precision Knife Block was introduced, embodyinging not only the best features of older blocks but incorporating many new ones.

A third bearing gave rigid support to the right-hand knife and assured exactly parallel movement throughout its length. Each point size, 5 to 45 point inclusive, could be independently adjusted without interfering with adjacent settings. A slight upward and outward turn of the knob moved the slide away from the setting screws, permitting free and noiseless operation.

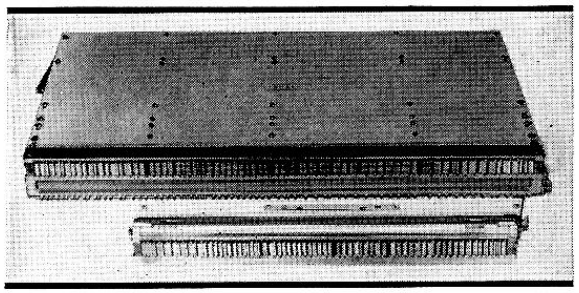
1935



MODELS 27 and 28:

These were called Super-Display Linotypes because their Extra Range magazines accommodated normal 36 point and condensed faces up to 60 point. Model 27 was equipped with three Extra-Range 72-channel main magazines. Model 28 was similar to the 27, but supplemented the three main magazines with either one or three wide auxiliaries. The Extra Range magazines were made of Linolite and were easy to change and shift. A swinging bracket held them conveniently for quick removal. For those few faces infrequently used, or for faces larger than the Extra-Range magazines or auxiliary magazines would carry, a detachable hand stick was furnished.

1935



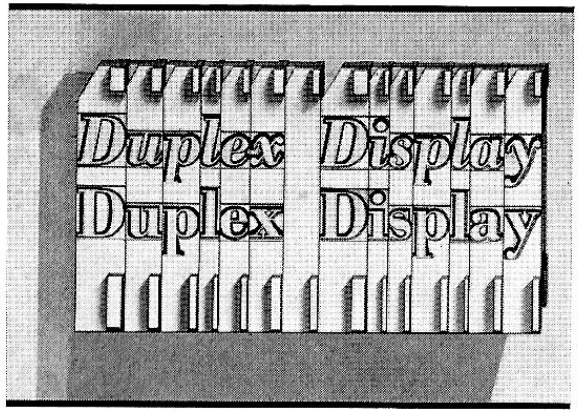
EXTRA-RANGE MAGAZINE:

A new Wide 72-channel magazine, 5¾ inches wider than the standard 72-channel magazine. By this increase in width, the magazine was enabled to carry faces 35 per cent fatter. This meant that normal 36-point faces and condensed faces up to 60 point ran in the regular 72-channel layout. This permitted the operator to set these large display faces direct from the keyboard, and practically eliminated the pi tray. Each channel of the magazine held 12 matrices. The Extra-Range Magazine was made of Linolite, the special magazine alloy with the lightness of aluminum and the strength of brass. It was actually lighter than the standard width brass split.

The escapements on these Extra-Range Magazines formed an integral part of the magazines and were always locked until the magazine was placed in operating position, thus guarding against matrix spills.

The illustration shows the Extra-Range Magazine superimposed over a standard-width 72-channel split magazine. The relative increase in width is readily apparent.

1935



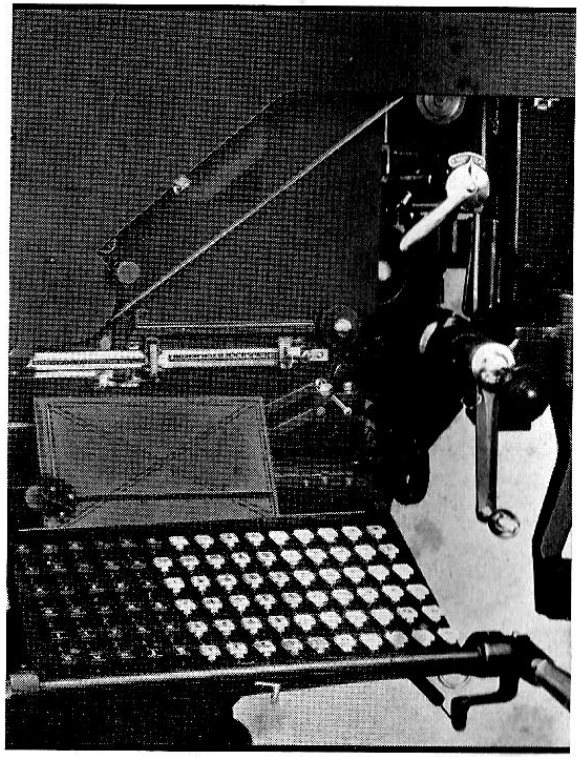
DUPLEX-DISPLAY MATRICES:

Up to this time two-letter matrices were limited to sizes no larger than 14 point. Now, two 18- or 24-point display faces could be cast from a single font. This meant twice as much service from a font and a magazine.

The duplexed faces were exactly the same size as corresponding foundry faces and one-letter Linotype faces and were made available in various useful combinations. The upper character on the matrix was in the same regular position and alignment as the character in the normal position on any two-letter 4- to 14-point matrix. The lower character was moved closer to the foot of the matrix, with its alignment on the 45-point standard created in 1913.

In addition to doubling the face capacity of an 18- or 24-point matrix, Duplex Display doubled its usefulness in the increasingly important food-store-ad field by permitting new "tricks" of combination casting.

1936



BLUE STREAK LINOTYPES:

This term was applied to the Linotype Line with the adoption of a number of improvements designed to make the machine easier to operate and maintain, better to look at.

Optic-Aid Front. Reduced eye fatigue.

One-Turn Shift. One turn of the handle shifted magazines with ease and speed.

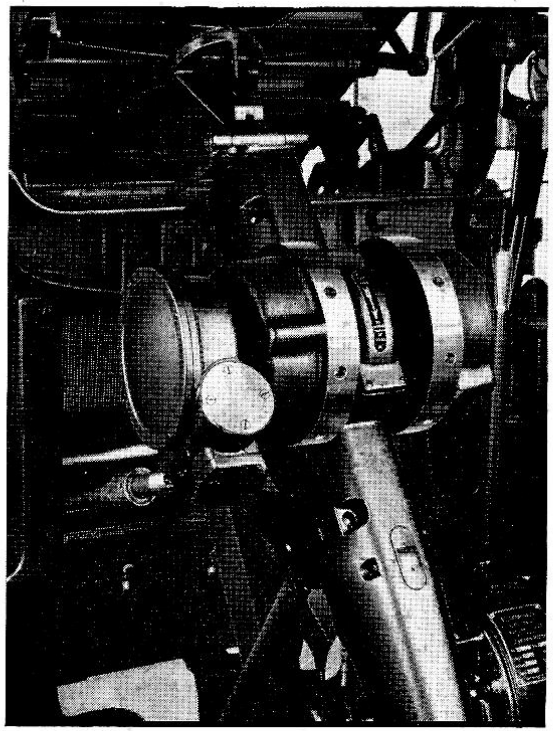
Unit Control. "Gear Shift" change of One-Turn Shift action from main to auxiliary.

Direct-Line Assembler Slide Return.

Universal Copy Holder. Adjustable to any position through pantagraph action.

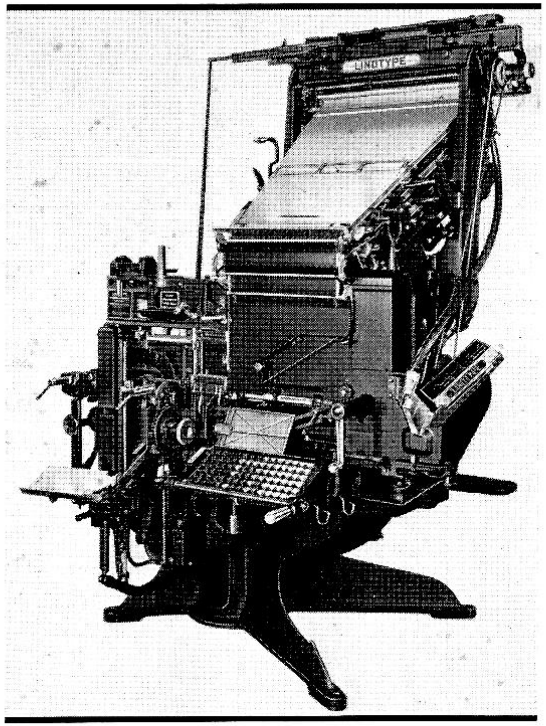
Improved Finish. Gave smart appearance.

1936



ONE-TURN SHIFT: This foremost feature of the Blue Streak Linotypes brought a new ease of operation and a new speed of action to the magazine shift. One turn of the familiarly located crank handle was all that was required to bring another magazine into operating position. Four powerful clock-form springs, actively counterbalancing the magazine load, supplied the energy. Adjustability of spring tension, properly proportioned worm and gear mechanism, strategically positioned ball and roller bearings, all contributed to an effortless two-second shift.

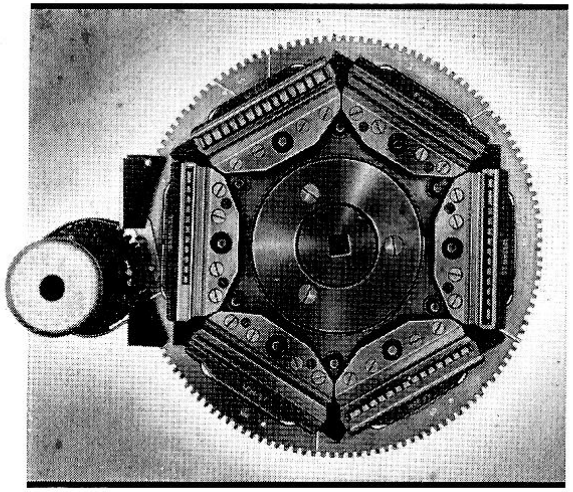
1936



MODELS 29 and 30: Introduced as "Blue Streak Mixer Models" the four-magazine 29 succeeded the two-magazine Model 25, while the 30 with four main and four auxiliary magazines took the place of Model 26 with but two of each.

An entirely new method of changing from one font to another was employed. The touch of a finger on a Quick-Mixing Key caused the lower assembler front to pivot from one magazine to another, thereby allowing the operator to select matrices instantly and interchangeably. The action was simple, positive and instantaneous.

1936

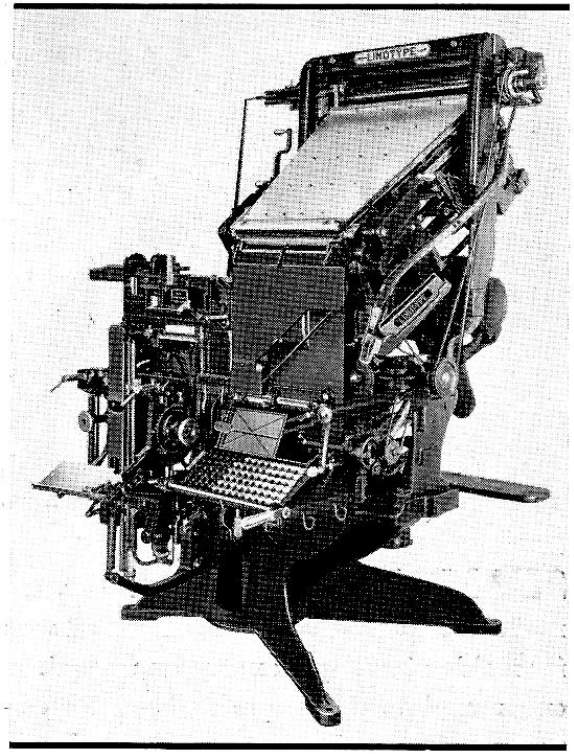


SIX-MOLD DISKS: These were made available in two styles. The first was for molds of 24½-pica maximum length to accommodate the single and double column measures of newspaper plants. Later, the second was developed for molds of 30-pica measure for those plants whose composition requirements covered this range.

The advantage gained in putting six molds on a machine was to reduce or eliminate liner changes. Yet, realizing that composition needs might vary through the life of a machine, Linotype engineers were careful to design the molds for these disks with liner construction so that, when the need of a change in slug size did arise, it could be done readily and inexpensively.

The Six-Mold Disk proved a significant production booster in keeping with the new versatility of the assembling side.

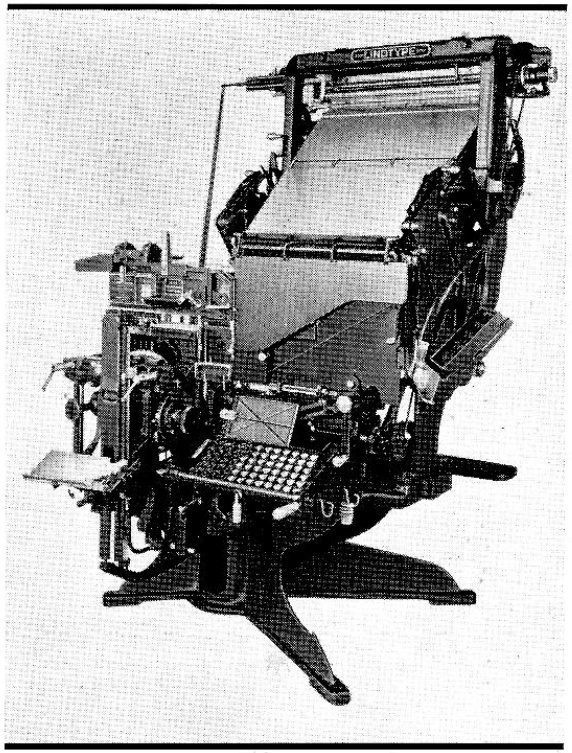
1937



MODELS 31 and 32: Termed "Blue Streak Master Models," the 31 with four main magazines and the 32 with four main and four auxiliaries provided 33⅓ per cent greater capacity than their respective predecessors, Models 8 and 14. As Two-in-One models, they could have any arrangement of 72- and 90-channel main magazines.

The inbuilt "Magazine Quick-Change" contributed to ease and speed of changing just as the One-Turn Shift did for shifting. The "rails," permanently attached to the magazine frame housing, folded back out of the way when not in use.

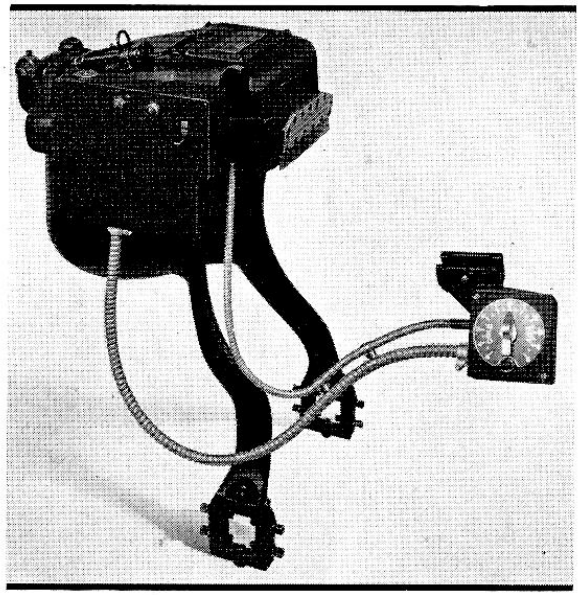
1938



MODEL 33: This Blue Streak single-distributor Extra-Range Linotype succeeded Model 27. It carried four Wide 72-channel main magazines of the same Extra-Range type as its predecessor, but now they could be split size (twelve matrices to the channel), each with its own entrance, or full-length if desired.

Along with four magazine capacity came the One-Turn Shift, Inbuilt Magazine Quick-Change, Optic-Aid Front and the many other Blue Streak features that made this line famous for operating ease, efficiency and economy.

1939

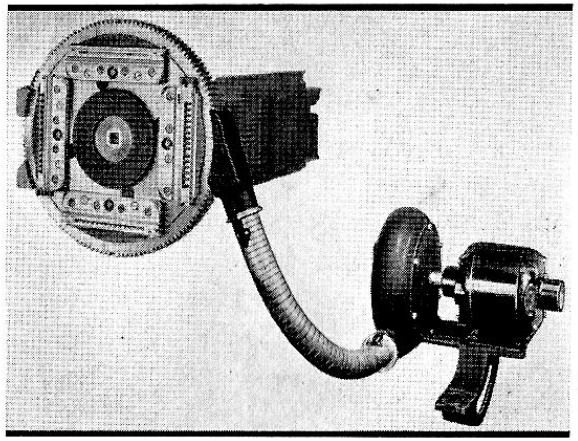


THE MICRO-THERM POT: New types of heating elements and temperature controls were introduced with this electric pot to provide better heat distribution under more responsive control.

"Lino-Therm" heaters were tubular in shape, sturdy in construction, and designed to cover to best advantage the interior of the crucible and the exterior of the throat.

Metal and mouthpiece temperatures were controlled by separate expansion bulbs and bellows operating small automatic MU-switches, with a change of two degrees sufficient for operation. A further refinement was the use of signal lights to indicate not only when the power switch was on but also when the current was passing through either crucible or throat heaters.

1939



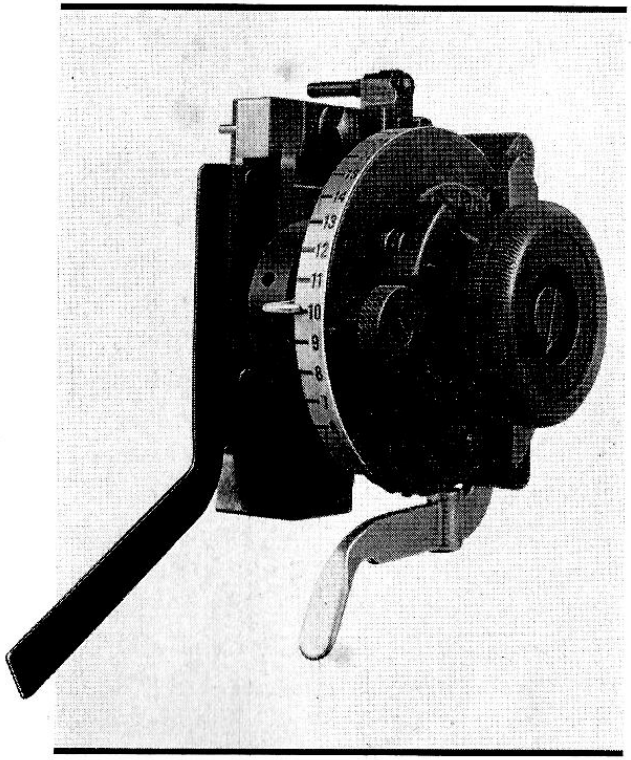
THERMO-BLO MOLD COOLER:

This device consisted of a motor, a fan, a connecting tube and a nozzle so shaped that air would not pass out at the top or side and cool the mouthpiece, but was restricted to flow over the back of the mold cap, through the mold cavity and across the front surfaces of the mold.

The fan, its housing and motor were securely bolted to the base of the Linotype, and controlled by a switch conveniently located adjacent to the keyboard.

Thermo-Blo could deliver 200 cubic feet of air per minute and, since the air was not compressed, the danger of moisture condensation and consequent rusting of molds was avoided. The efficiency of its design and the soundness of its construction were amply proven by its results: the permitting of the rapid casting of small or large slugs with good printing face, solid back and proper density of metal.

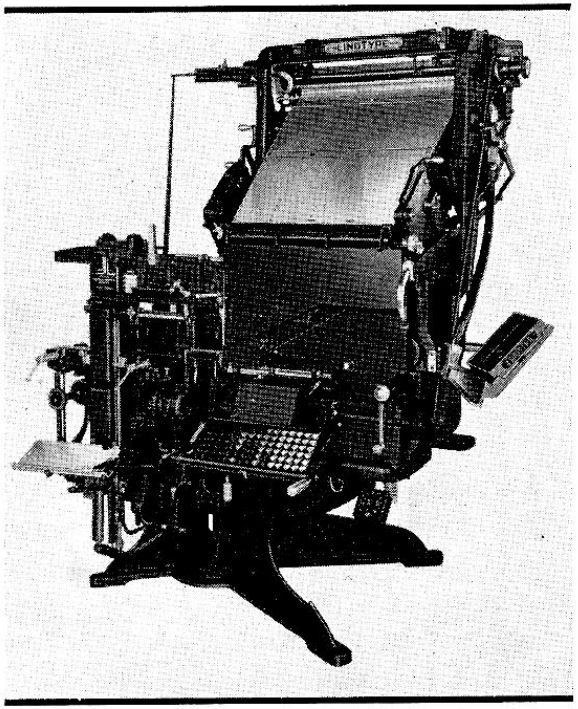
1939



ADVERTISING KNIFE BLOCK:

This new type of knife block was developed to speed up advertising and food store composition. It was equipped with a quick opening lever which, when depressed, opened the knives instantly to clear the overhanging slug. To restore the original setting, the lever was moved upward. There was no disturbance of the knob setting. All the important advantages of the regular knife block were embodied in this special one, including the 20 independently-adjustable point size settings and the 3-bearing construction for accuracy of trim.

1940



MODEL 33 TWO-IN-ONE:

This was a single distributor machine equipped to carry any combination of four Wide 72-channel or Wide 90-channel magazines. This meant that it would handle all faces from the smallest up to normal 36 point and was thus a completely flexible machine.

The Wide 90-channel magazine was the same width as the Wide 72. This permitted faces up to normal 24 point to run in a regular 90-channel layout. The problem of smooth assemblage of transposition-free lines with matrices ranging from 5 to 36 point was solved by the new Variable-Speed Assembler.

A TRIBUTE

THE LINOTYPE has created for itself a unique place in the roster of inventions by reason of the universal benefits it has conferred on mankind, individually and collectively.

It has rewarded those whose early sacrifices of time, money and energy made its creation possible.

It has rewarded those early investors whose confidence led them to remain with it from the start and to permit its progress and development through prosperity and depression.

Apart from other valuable considerations, it has rewarded Ottmar Mergenthaler and his heirs with about a million and a half dollars in royalties alone.

It has rewarded those early users of the machine whose enterprise and foresight led them to take advantage of the speedier and more economical method of setting type.

It has rewarded the printers and publishers of the world by giving them a means of composition quicker and more economical than any heretofore known and it has been a tremendous aid in raising the printing business to a high place among the industries of the world.

It has rewarded the worker—not only those engaged in designing and building the machine, but those engaged in the graphic arts—by greatly increasing the demand for and supply of printed matter, thereby providing increased and more lucrative possibilities of employment.

It has been of incalculable benefit to mankind as a whole, for, through its means, newspapers, books and printed matter of all kinds have been greatly reduced in cost and hence made more readily available at prices within the reach of all. Thus knowledge and the works of great minds of all ages can be secured by the people in nearly all the languages of the world, greatly increasing the spread of education and civilization. By cooperation with schools, colleges and universities, the Linotype has helped to broaden the possibility of instruction and it has enabled students to acquire a lucrative vocation.

In the modernization of its factory, the Company has been mindful of its threefold moral obligation: to its customers; to its employees; to its shareholders.

For its customers it has maintained the highest standards of machine and typographic design, building to standards of precision only possible through the remarkable developments in modern engineering and manufacturing technique.

It has given its employees a healthful, safe and pleasant place to work, in which they can devote their best efforts to turning out a superior product.

It has given its shareholders assurance that the institution which their investment has made possible will maintain the position which it has held from the start, of dominant leadership in its field.

The Linotype belongs today to the whole printing industry. We believe, therefore, that "Milestones" will find widespread interest, that the trail of mechanical progress thus marked will carry Linotype Leadership on to further achievement in the future.

MERGENTHALER LINOTYPE COMPANY