Extract of Paige Compositor material.

History of Composing Machines

A COMPLETE RECORD OF THE ART
OF COMPOSING TYPE BY MACHINERY

Fully Illustrated

ALSO

LISTS OF PATENTS

ON COMPOSING MACHINES, AMERICAN AND BRITISH,
CHRONOLOGICALLY ARRANGED

BY

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CHICAGO
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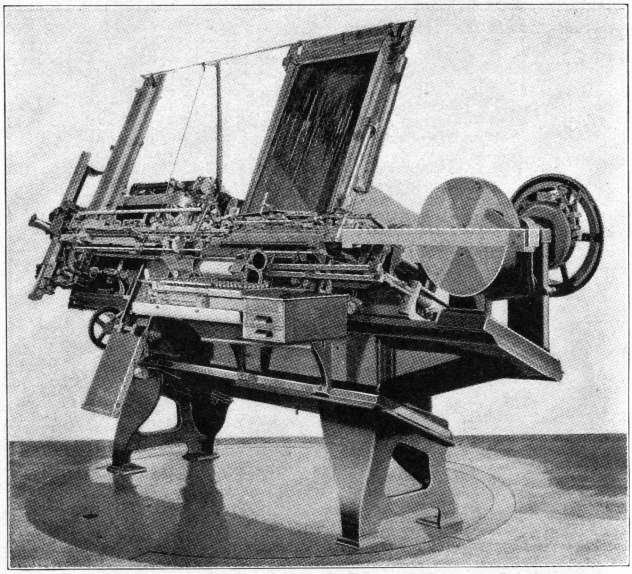
THE PAIGE COMPOSITOR.

Perhaps the most wonderful typesetting machine ever invented was the Paige Compositor, the product of the brain of James W. Paige, of Rochester, New York. Certainly no machine has a more interesting

history. Mr. Paige first conceived the idea for his typesetting machine in 1872, and in the years following conducted experiments with distributing, setting and justifying machines, a complete machine being constructed in 1887. In 1892 the apparatus was removed to Chicago, and two years later work



THE PAIGE COMPOSITOR.

was started on a commercial machine, which was installed in the office of the Chicago "Herald" in 1894. After several months' trial, during which time the machine was again partially reconstructed, work was abandoned and the apparatus, purchased by the Mergenthaler Linotype Company, was presented

to Columbia University, the earlier Paige machine going to Cornell University, at Ithaca, New York. Before the first Paige machine was constructed the promoters had spent $1,300,000. Probably another million was expended before the end came.

The history of the Paige patents is unique. The first application filed contained 204 sheets of drawings, with over a thousand separate views. It is said the attorney who first prepared the case received a fee of $10,000 with an allowance of $2,000 extra to pay for drawings. Examiners from the Patent Office were sent to Chicago, where a month was spent examining the working machine. This was an almost unheard-of proceeding.

Three patents were issued in 1895, one pertaining to the justifying apparatus, of which Charles R. North was joint inventor. The three patents contained 275 sheets of drawings, 123 sheets of specifications and 613 claims, all of which are now owned by the Mergenthaler Linotype Company. The application was filed in 1887 and was pending eight years, mainly owing to the work of examination by the Patent Office. One of the examiners died while the case was pending, another died insane, while the patent attorney who originally prepared the case also died in an insane asylum. It is estimated that the first edition of the Paige patents cost the Government $6 each, and the total cost of issuing the patents more than $1,000. The legal fees of the Government were only $35 on each patent and copies were sold at 5 cents each until the edition was exhausted. They are now held at a high premium.

In every way the Paige was a most remarkable piece of mechanism. Its complications were such as to demand the attendance of experts, and the impossibility of training mechanics to the degree of skill required made it a commercial impossibility. There were about eighteen thousand separate parts, eight hundred shaft bearings, and cams and springs innumerable. The keyboard alone was the result of ten years of study, its 109 characters being so arranged as to permit whole words to be conveniently assembled at one stroke of the keys. The operator used every finger of both hands and brought down whole words at a time. Averages of 12,000 ems per hour were frequently made by operators who had but little experience. At the end of each word a word-key was struck, and at the end of the line a line-key was pressed, the operator immediately proceeding with composition, the machine meanwhile measuring the space occupied by each word, forwarding the line to the justifying mechanism, dividing the space in the line not occupied by words into the proper number of spaces, and inserting the spaces to accurately justify the line before pushing the line on to a receiving galley, leaded or solid, as desired. Eleven different sizes of spaces were used in justifying. Meanwhile distribution proceeded undisturbed. Three columns of dead matter could be placed on the distributing table beneath the machine at one time, with leads and rules extracted. A line at a time was forwarded to a testing mechanism, where all defective type was discharged. A selecting mechanism next removed any type turned or inverted, as well as

all irregular characters, such as accents, reference marks, etc. The remaining types were advanced to their proper channels in the composing section of the machine, the spaces going to the justifying section. Distribution and composition proceeded simultaneously without interference, specially nicked type being used to accomplish distribution, the type entering the channels at the bottom and being pushed upward, the assembling types leaving the channels about two inches above. The distributor would handle the type wet or dry, clean or dirty, the distribution being stopped when any channel was full. Finally the machine measured the type set and a dial indicated the amount. Automatic stops locked every working part of the machine whenever its mechanism became deranged. Every movement was a positive mechanical one, there being no carrier belts or gravity devices. The model machines constructed were built for handling but one size of type, though the machine could easily have been made interchangeable. The Paige Compositor, nine feet long and weighing over three tons, was run by a quarter-inch round belt and required but one-twelfth horse-power.