

## VICTORIA, B. C., FRIDAY, MAY 26, 1893.

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ing a machine in which an entire line of letter punches should be set up or com-posed like ordinary type and then im-pressed at a single stroke in order to give a better alignment and greater uni-formity to print. From the type of these machines much print of an ex-cellent character was produced. One great difficulty, however, that remain-ed, was that of the many necessary cor-rections and alterations in the text, and the difficulty in producing matter in such form that it could be conveniently and economically handled in the hurry and the difficulty in producing matter in such form that it could be conveniently and economically handled in the hurry and should be produced. At the time the first machine was produced the world rush of newspaper offices. Experiments were continued in vari-ous directions and a vast amount of money expended. Finally, in the course of these experiments, there was devel-oped the first radical departure from ordinary type and methods since the days of Qutenberg This departure. days of Gutenberg. This departure, which is rapidly revolutionizing the printing art throughout the world, con-sisted in abolishing ordinary single-letter printing art throughout the world, con-sisted in abolishing ordinary single-letter type and substituting therefor type-metal bars or slugs, each having on its edge a width. An ordinary sheet of paper is threeall the characters necessary to print an entire line, hence the name "Linotype." thousandths of an inch thick. When it is remembered that this hair line is to be one-fourth of the thickness of a sheet of paper in width, the difficulty of con-structing a machine to cut punches will be apparent. The machine, however, By the use of the linetypes the unit of composition is raised from a letter to a line. The linetypes being assembled side by side present the same appeardid produce, and to-day punches are cheaply and rapidly manufactured thereance, and in use give the same effect, as forms of ordinary type. After producting various machines, all on. Such is the marvelous precision adapted for the production and assem- that a punch smoked in a candle can be blage of these linotypes by the mere returned to the machine, and the film

PART 1

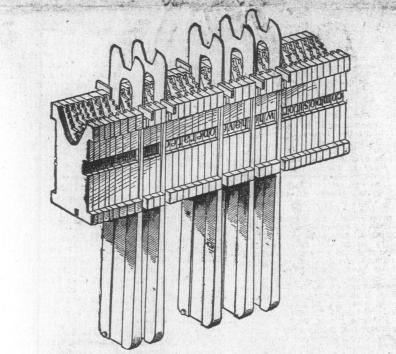


FIG. 2-LINE OF MATRICES AND SPACE-BANDS.

swept over the world like ly, faultlessly and cleanly than the best became apparent that "set-| compositor that ever handled types, it needs only a very ordinary exertion of the imagination to picture the amaze-ment of the father of printing. hand would soon have to

ment of the father of printing. The art of printing has been complete-ly revolutionized by Mergenthaler's mar-vellous machine. Usages of the com-posing room, venerable, hoary with the sanction of four hundred years' habitude, have been at one fell swoop "pied" for-ever more. The legends, the traditions, the truisms of the composing room have been made ancient history—curiosities to be sought henceforth in books—all in one brief decade. The stick now adorns

to be sought henceforth in books—an in one brief decade. The stick now adorns the walls of the Times office as a relic of an age that has passed on. The "cases" and the "types" remain, 'tis true; but, like Othello, "their occupa-tion's gone." A new order of things has become the fact and characteristic

tion's gone." A new order of things has become the fact, and characteristic crepitation of the type has given place

to the whirr of the operator's keys and the tinkle of his little warning bell. The

the tinkle of his little warning bell. The expert operator sits at his key-board like Paderewski playing one of Tschai-kowsky's demon Hungarische tanzen with improvised variations. The fin-gers of the tawny-maned Pole fly no faster over his echoing keys than do those of the expert linotyper over his more limited key-board. The nimble, nervous fingers, the dexterous, sentient arm of the compositor snatching the types with incredible celerity and rang-ing them in the stick are seen no more in the composing room. The machine does all this in another, faster, better

in the composing room. The machine does all this in another, faster, better

to the department of an-The huge metropolitan dailies tharder and harder to keep terrific strain with the old Gut-process of "sticking" type. La-time saving machines, exquisite eption and capacity were proin and capacity, were pro-astounding rapidity in all industry-why not in print-The thought was by no means a Clever brains for nearly a had been pondering the possi-producing a machine that away with "setting" and disg type. And it was found at It was reserved for the nine-century to make printing the colinventions, the most wonderful tation and triumph of human patience and skill. the memorable day when the hought flashed across the mind ine Gutenberg of Mainz, over

ago, and he made the first

types wherewith to overcome

difficulties in the way of dis-the treasures of thought

esent hour, printing has prov-creasing blessing to mankind.

idle to attempt in this time to even so much as catalogue ize the triumphs of the art ive, or recount ever so briefly asurable good it has done to the these things are known and

by every man, woman and can read a printed page.

<sup>c)</sup> can read a printed page. <sup>crg</sup>, for, after all, he seems to best claim as inventor, by his <sup>types</sup> and press ended forever <sup>ener's</sup> laborious art and the task of the monks with their <sup>cd</sup> missels and their

missals and their cramped And where, formerly, one py was worth a baron's ran-humblest hind could now read rn and inwardly digest. Printust in time to rescue from the

hat threatened them, the ines-riches of Greek and Latin Indeed, it came too late to ajor portion of that priceless

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what the world possesses The it may thank printing. Vention of the fifteenth century st in time for the splendid tri-f the sixteenth. But for print-well within the limits of possi-

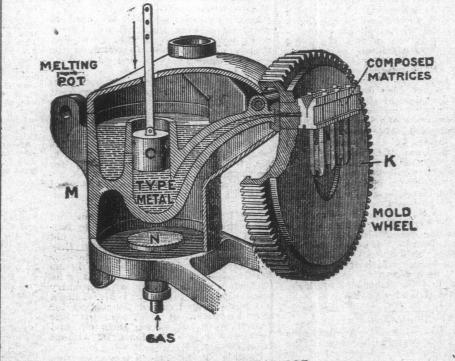


FIG. 3-HOT METAL POT.

does all this in another, faster, better way. It is the maximum of work with the minimum of trouble; a whole print-ing, shop compressed into what can be handled by a boy. But any description, however graphic or minute, can never adequately picture this extraordinary ma-chine or give a proper idea of its won-trous precision, speed and capacity for work. One has to see to believe un-derstandingly the Merganthaler linotype machine's posibilities. These machines have been built . ex-perimentally in great variety of forms. Fortures have been sunk by different in-ventors and companies in building the machines, which, although experimental-ly successful, were found in practice to be either worthless or of so little ad-vantage that their use was not con-tinued hand composition. Publishers, entrenched in the traditions and prejudices of centuries, also opposed its use. The latter, instead of investi-gating the machines, insisted that the results claimed were impossible, and re-fused to consider the subject. Organvantage that their use was not con-About 1876 various gentlemen, then residing in the city of Washington, rec-

manipulation of finger keys, there was finally produced in 1884 that form of machine now known as the Linotype. Great efforts were required before capi-tal was secured and the manufacture of machines commenced. Like all other pioneer inventions, the machine and its product immediately encountered the most violent opposition from compositors, who saw in this invention the death of hand composition. f metal. At the present time there are upward of 700 men employed in the American f shops and in the manufacture of ma-chines. Operators are given constant employment far in excess of what was paid for hand composition. The cost of composition has been greatly reduced, and as a consequence new fields have been opened in the printing art, and much printing is done which would never have been possible under the old system. The machine is operated from a key-

ing magazines or channels in the upper part of the machine. Each magazine has room for 22 matrices. Lower case e, the letter most used, has two maga-e, the letter most used, the two magae, the letter most used, has two maga-zines assigned to it, and there is an autolong distance. matic attachment to their mouths which causes seven matrices to be drawn from The distribution of the matrices back

to their magazines is perhaps the most ingenious, and certainly the most in-teresting, feature of this triple producone and then seven from the other alternately.

In most type-setting machines there is a direct mechanical connection between the key and the pusher which ejects a type from a magazine. This is true also of the linotype; but the machine has also additional features which go a long way toward insuring a positive and correct the machine direct the direct dir also additional features which go a long way toward insuring a positive and cor-rect action. With an operator giving the light touch which is a necessity in very rapid work, there is danger that the key may not be depressed far enough or held long enough to permit the matrix to start out of the magazine. To obvi-ate this the vertical rod connecting the end of the key lever to the matrix dis-charging mechanism has a projection on it against which a spring roller works. Its action is to resist the upward motion of the rod at the start and afterward to Its action is to resist the upward motion of the rod at the start and afterward to accelerate it. Then if the operator only partially depresses a key the automatic action completes it. The effect of this automatic action, however, would he to leave the key depressed, so a e.a. is brought against a rapidly revolving rub-ber roller. This revolves the cam and pushes the key and the rod back to ther normal position. Referring to the perspective view of the machine, the magazines are in the inclined plain at the top of the machine and their mouths are along the line

and their mouths are along the line where this plane meets the vertical. The ly in the matter of distribution, but in

and their mouths are along the line matrices fall from the mouths of the magazines down the vertical channels seen in the perspective view. The left hand channels end close to the point where the matrices are assembled. All the other channels deliver the matrices upon a rapidly running inclined belt. It was an absolute necessity in the design of the machine that the time of transiti between the mouths of the magazines and the setting point should be the same for every matrix. An expert operator will often have four or five matrices on their way from the magazine to the assembling point at one time. Evidently these must be brought to the assembling point in the same order in which the carrier belt are adjusted to effect this synchronous delivery, and so accurately is this done that a matrix from the far.

Continued on page 9.

