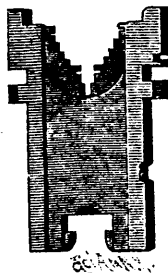


FURNACE FOR MELTING METAL.



MATRIX.



TYPE BAR.

lifted by a carrier to the distributing mechanism, at the top of the magazine, whence they are distributed to their several tubes. This distributing mechanism consists essentially of an endless chain or belt, arranged to travel horizontally above distributing rails, the belt carrying a series of blocks armed with adjustable forks or fingers to act between the matrices and push them forward. The rails are parallel and sufficiently separated to admit of the matrices being carried in an upright position between them, and the inner edge of each rail has a lip designed to engage the shoulders of the matrices and hold them in suspension, the lip being divided transversely into a number of sections to engage matrices having different shoulders, whereby each matrix will be sustained upon the rails until it is carried to the point at which it is to be released to drop into its proper tube in the magazine. Connected with the distributing rails are wires from a battery, by means of which a matrix forced or dropping out of place will cause the closing of a circuit and the stoppage of the carrier belt; the particular matrix causing the stoppage is always immediately in front of the operator, with whom it is only the work of a moment to replace the matrix, or remove it entirely if it happens to be defective.

How far this machine may be considered a practical success for general uses, in the way of superseding typesetting by hand in the old way, it is perhaps too early to give a definite answer. It is obvious that it is not adapted for work requiring different varieties of type, as small capitals, italics, accented letters, etc., although we understand the machine is now being made to use small capitals, as well as the other characters usually employed in Roman text. But there is a large class

of work, especially that required for newspapers in general, in regard to which this objection would not be very material. The actual performance of the machine at present, and for many months past, on such plain work, is about equal to that of three ordinary compositors, and it requires but a short time for an operator to attain an efficiency which will enable him steadily to maintain this speed, as compared with hand work. This, at least, has been the experience on the *New York Tribune*, where only thirty machines are ordinarily kept running for a day's work of eight hours each to get out a ten-page edition of the daily, which would require the services of about ninety men in the old way of working. The absolute saving of all distribution, which is equivalent to about one-quarter of the work of composition, is of itself a most important factor in the economy of the machine, while "standing matter," in the form of these type bars, can be kept for an unlimited time, and in any amount, without inconveniencing the office. To correct an error a new line has to be made, but this is done so quickly that the entire work of correcting is said not to be increased. When a considerable number of the machines are employed, the more or less constant services of a machinist or repairer would undoubtedly be necessary, but the machine, as it is, appears to be a wonderfully perfect piece of mechanism, almost endowed with intelligence, and we are informed that one machinist easily does all the repairing needed on the forty machines now in use in the *Tribune* office. The machines are not for sale, as we understand, so that the question of their cost cannot be answered, but they are to be leased, those using them to pay a fixed sum on the execution of the lease and a quarterly rent besides.—*Scientific American*.