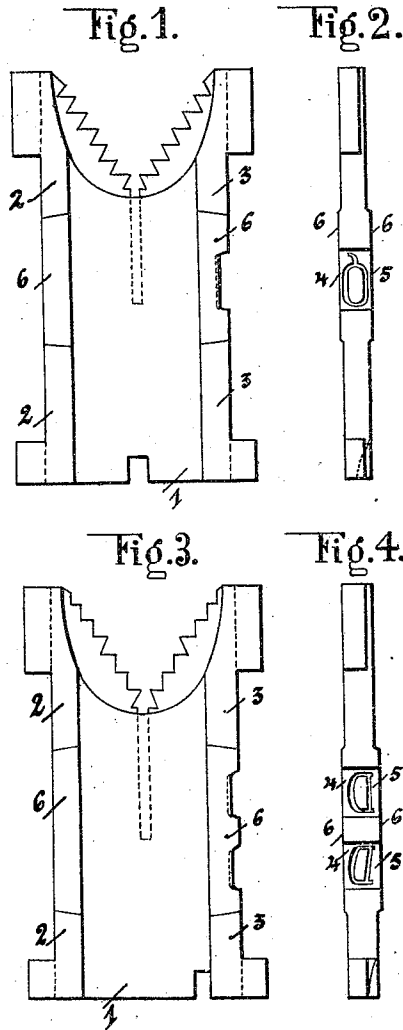


C. W. GRASNICK.
 MATRIX FOR LINOTYPE MACHINES.
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WITNESSES
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MATRIX FOR LINOTYPE-MACHINES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CARL W. GRASNICK, a citizen of the Empire of Germany, residing at Berlin, in the Empire of Germany, have invented a new and useful Matrix for Linotype-Machines, of which the following is a specification.

As is well known, a matrix for ordinary linotype-machines as invented by Mergenthaler is practically a rectangular plate with four lugs on the four corners and having its middle portion a little reduced in thickness, so that two parallel side portions slightly projecting on the front and on the rear are formed. Thus any two adjoining matrices will touch each other in the surfaces of their side portions and it is necessary, that these surfaces should exactly fit, so as to prevent during the casting operation the liquid metal from getting between these surfaces. Now that these surfaces are rather large, slight imperfections can not be avoided. The thickness of the two side portions may not be perfectly alike or uniform throughout; or one or both of the side portions may slightly taper upward or downward or in opposite directions. There may be some soft places in the surfaces of the side portions of the matrix, which may come in contact with hard pieces of adhering type metal on adjoining matrices, or from some reason dirt or grit may get at the side portions of the matrix, so that slight recesses may be formed in the surfaces of the side portions during the compression of the composed line of matrices. When the matrices are composed, it may be, that small open spaces are formed between some or all of them, so that liquid metal from the metal pot will find its way into these spaces and fill them up. The adhering metal will then occasion great inconveniences during the further use of the matrices and may even damage the intaglio letters. Or the metal may form "burs" on the printing edge of the linotype, which burs may be high enough to take ink and print what are known as "hair lines" between the letters in the printed matter.

My invention relates to an improvement in the matrices, whereby these defects are avoided. The improvement consists in reducing the contact surfaces of the side portions to middle parts which extend over the intaglio letters. Thereby the risk of im-

perfect fitting in the middle parts of the composed matrices is reduced and a more perfect lock-up of the composed lines is assured.

I will now proceed to describe my invention with reference to the accompanying drawing, in which—

Figure 1 is an elevation of an improved matrix with a single intaglio letter, Fig. 2 is a side view of the same, Fig. 3 is an elevation of an improved matrix with two intaglio letters, and Fig. 4 is a side view of the same.

The drawings represent two matrices such as are used in the well known Mergenthaler linotype machine modified according to my present improvements.

Referring to the drawings, 1 indicates the middle portion of the matrix, which is usually thinner than the vertical edges 2, 3. In the present specification I shall refer to the edge 2 as the rear edge and to the edge 3 as the front or character-indented edge. It has been customary heretofore to construct linotype matrices with front and rear edges of uniform thickness throughout their length and with a thinner intermediate body portion, the object being to secure a tight lock-up of the matrices in casting to prevent the metal from being injected between them. In practice however, as hereinbefore stated, it has been difficult to secure uniformly tight joints between the matrices on account of the extended character of the marginal faces, and according to the present invention the thicker portions of these marginal faces are limited to the zone which includes the characters, which zone in the present instance is indicated by the numeral 6.

In Figs. 1 and 2 the character zone includes a single intaglio character and in Figs. 3 and 4 this zone includes two characters, each of the characters being indented in a recess in the front edge of the matrix, which recess has lateral thin walls 4, 5. The front and rear edges of the matrix are of uniform thickness at the character zone and are reduced in thickness at the blank portions above and below this zone. The character zone is limited to a fraction of the height of the matrices, being sufficiently wide however to secure a firm locking-up of the line of matrices and prevent any tendency of the matrices to cant in the line. Where there is but a single character on the

edge of the matrix, as shown in Fig. 1, the zone 6 preferably extends to a greater distance above and below the matrix character than in matrices having a plurality of characters, such as that illustrated in Figs. 3 and 4.

It will be evident that the reduced blank portions of the edges of the matrices above and below the character zone may be of any desired thickness less than the thickness at the zone, it being only necessary to make them thinner than at the zone so that contact between matrices when locked in a line will be limited to those portions at and near the level of the character. The term "character zone" as used herein is to be understood to include a horizontal belt or section of the matrix extending from a line slightly above the character or characters to a line slightly below the character or characters, such belt being wide enough to afford a sufficient bearing between adjacent matrices, when locked in a line, to prevent the matrices from canting and prevent the walls of the matrix cavities from being crushed or injured. It will be evident that the narrower the character zone the closer will be the joints naturally formed between the matrices when locked in lines for casting.

It is not absolutely essential that the middle portion of the matrix at the character zone should be thinner than the edges but this is the customary construction and it is much to be preferred, as it is desirable to limit the contact faces of the matrices as much as possible without interfering with their capacity to resist the pressure brought to bear upon them when they are clamped during the casting operation.

It will be noted that the matrices illustrated in the drawing are provided with the usual laterally extending lugs at the upper and lower corners and with the usual V-shaped notch indented with distributing teeth. My invention is particularly applicable to these well known Mergenthaler linotype matrices, but it is also applicable to other forms of matrices sometimes used in linotype and logotype machines.

Without limiting myself to the precise construction illustrated and described, what I claim and desire to secure by Letters-Patent is—

1. A linotype matrix having front and rear edges of uniform thickness at the character zone and of less thickness throughout the blank portions above and below said zone, the body of said matrix between the edges at the character zone being also thinner than said edges.

2. A linotype matrix having the usual distributing teeth and laterally projecting lugs and having its character-indented edge of maximum thickness at the character zone and of less thickness throughout the blank portions above and below said zone.

3. A linotype matrix having the usual laterally projecting lugs, and having its front and rear edges of equal thickness at the character zone, but reduced in thickness above and below said zone to lessen the area of contact between matrices in a composed line.

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Witnesses:

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