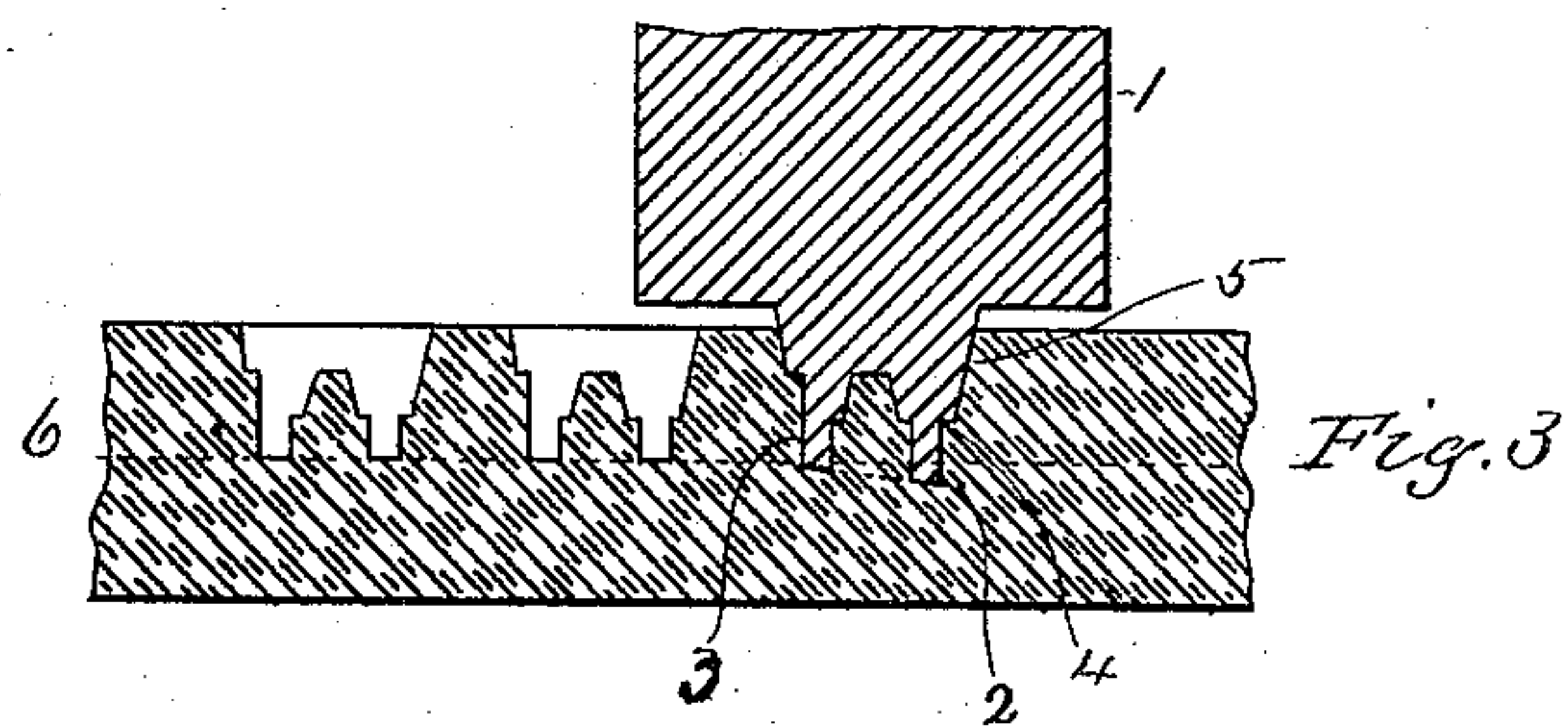
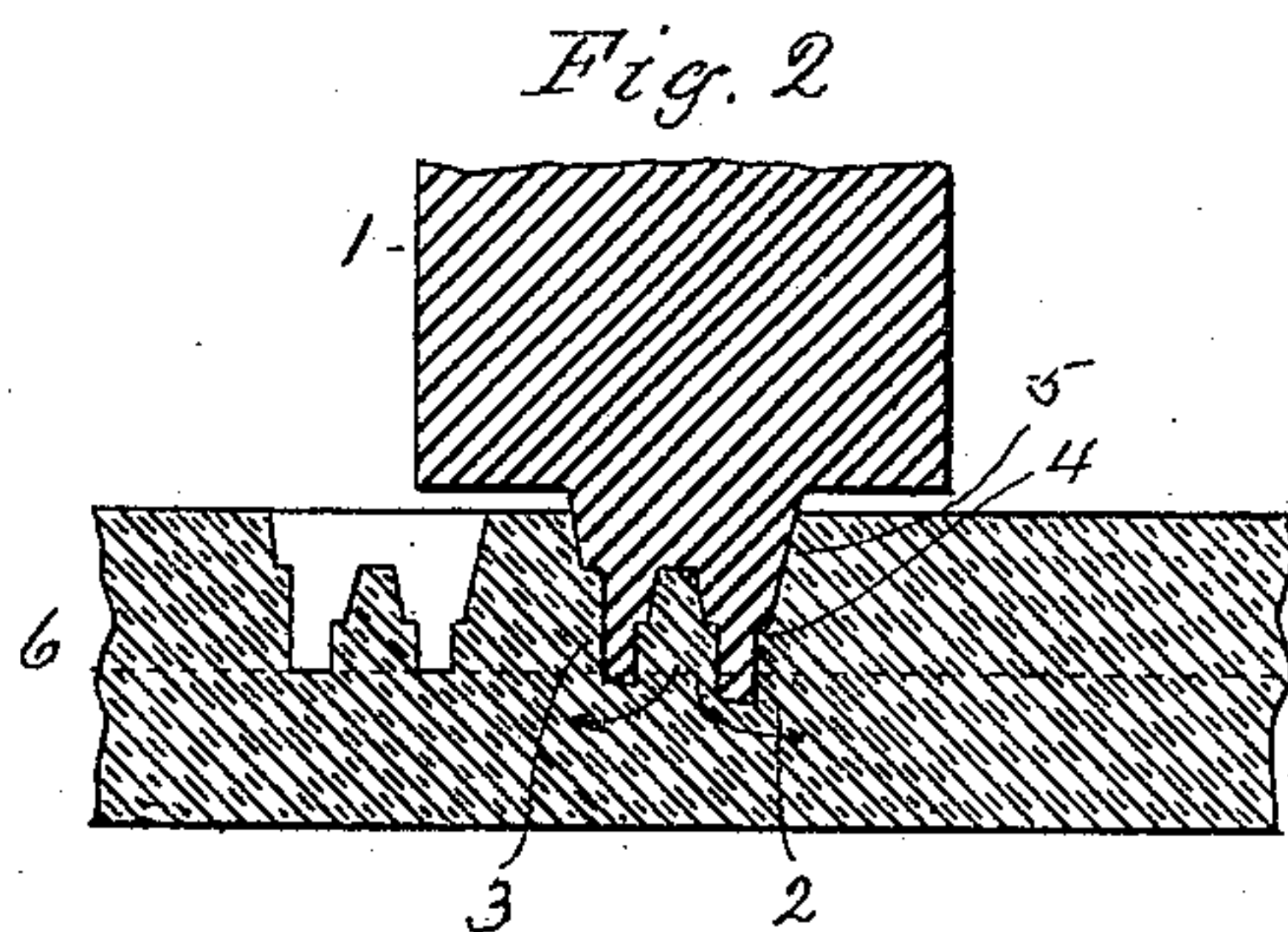
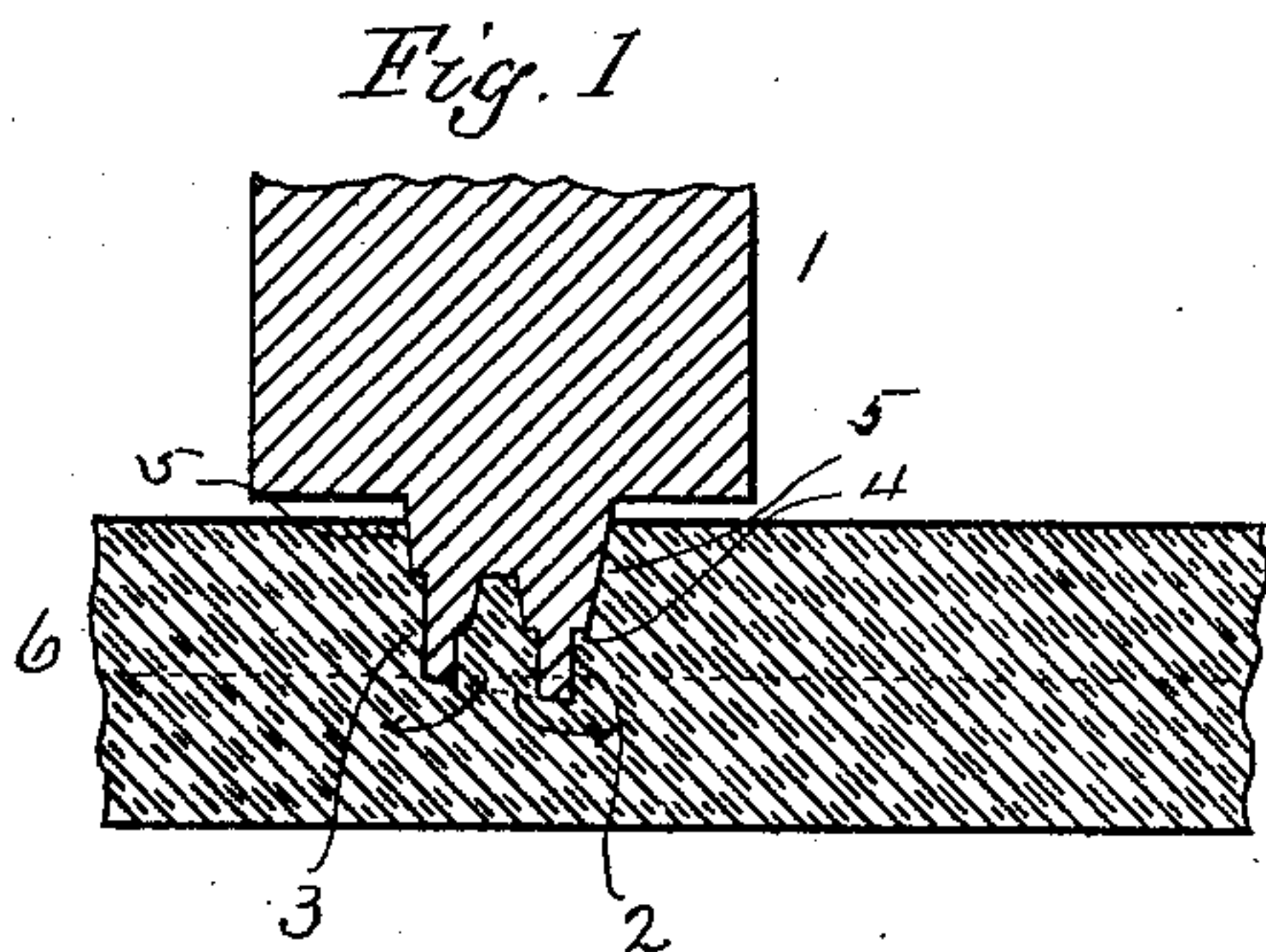


(No Model.)

C. L. REDFIELD.
PROCESS OF FORMING MATRICES.

No. 429,867.

Patented June 10, 1890.



Witnesses

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CASPER L. REDFIELD, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE CHICAGO MATRIX-MACHINE COMPANY.

PROCESS OF FORMING MATRICES.

SPECIFICATION forming part of Letters Patent No. 429,867, dated June 10, 1890.

Application filed March 26, 1890. Serial No. 345,378. (No model.)

To all whom it may concern:

Be it known that I, CASPER L. REDFIELD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in the Process of Forming Matrices, of which the following is a specification.

My invention relates to the art of producing matrices from which to cast plates for printing, and particularly to the formation of such matrices by the successive impressions of type-dies into a yielding matrix material.

The object of the invention is the correction of the distortions produced in the several impressions by the next succeeding impressions, so that when the matrix is completed a stereotype-plate can be cast therefrom that will be capable of producing good print. In forming the successive character-impressions each die unavoidably crowds laterally more or less of the matrix material, and the material so displaced forces inward the adjacent walls of the last preceding impression, and also to a greater or less extent raises the forward portions of the face (bottom) of the impression, so that if the walls were normally vertical and the face on a horizontal plane the forward wall would be crowded inward and the face inclined. To obviate this objectionable distortion, I widen the impression above the face and incline the face downward toward the forward side, so that the formation of a later impression will correct wholly or partially the face inclination of the earlier impressions and raise it to the horizontal plane.

In carrying out my process I prefer to use type-dies of the character disclosed in my application, Serial No. 345,377, filed concurrently herewith, in which the dies are shown as having shoulders surrounding the character-faces and the faces themselves are inclined downward toward the forward side. Any suitable mechanism may be employed to present and impress the dies to form the matrix.

In the drawings forming a part of this application, Figure 1 shows a die impressed into a matrix material; Fig. 2, a second impression of the die adjacent to the first, and Fig. 3 a third impression adjacent to the second.

In such drawings, 1 designates a type-die (shown in longitudinal section) having a forward branch 2 and a rearward branch 3, which may represent the two stems of a letter, as an "o." (Shown in transverse section.) The lower portions of these two branches 2 and 3 have their sides parallel, and these are abutted by shoulders 4, from which the walls 5 may incline outward to the body of the die-head. The matrix material 6, composed of any suitable impressible substance, is supported on an unyielding base or anvil while receiving die-impressions, and a distortion of its lower surface being thus precluded material is crowded laterally from the face and sides of the die, as indicated by arrows in the drawings. The inclined and shouldered portions of the die produce a widened opening toward the surface of the matrix-body, and the walls of the impression will not be sufficiently distorted by the succeeding impression to bring them in vertical line with the margins of the character-face. The inclination of the face of the impression will be affected by the spreading of the material by the die in making the next impression, and the forward portion of the face is thus caused to rise to the right position to be in horizontal line with other portions of the same face and with the preceding faces. Any other suitable form of type or die may be used that will serve to widen the impressions sufficiently to permit easy casting and serve also to incline the character-face suitably to allow the next impression to raise it to the desired plane. The degree of the face inclinations must of course be proportioned to the extent of the vertical displacement of matrix material produced by the successive impressions, in order that upon completion of the matrix the character-faces will be approximately on a horizontal plane. A stereotype-plate cast from such matrix, should the faces present any unevenness, can be dressed off slightly to produce absolutely level type-faces, from which perfect print may be made.

Having described my invention, what I claim is—

1. The process of forming matrices for stereotype-plates, which consists in impressing dies in sequence into a matrix-body to a greater

depth at the forward portion of the face than elsewhere, substantially as set forth.

2. The process of forming matrices for stereotype-plates, which consists in forming the impressions successively by dies and compressing the matrix material laterally at both sides of the path of the type-faces to widen the impression and inclining the face downward toward the front, substantially as set forth.

3. The process of forming matrices for stereotype-plates, which consists in forming successive impressions having sloping faces and correcting such irregularity in one impression by the making of the next, substantially as set forth.

4. The process of forming matrices for stereotype-plates, which consists in forming the im-

pressions successively by dies, depressing the forward portion of the face below the rear portion, providing vertical walls adjacent to the faces, and widening the outer portions of the impressions, substantially as set forth.

5. The process of forming matrices for stereotype-plates, which consists in impressing a die into a matrix material to form a character-face having a forward slope, and making a second impression adjacent to the first, and thereby crowding material underlying the first impression to raise the forward portion of its face, substantially as set forth.

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Witnesses:

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