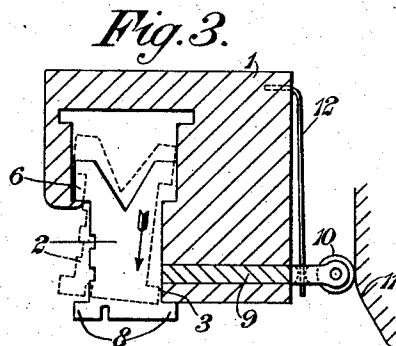
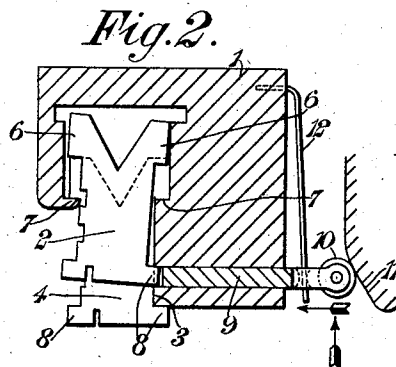
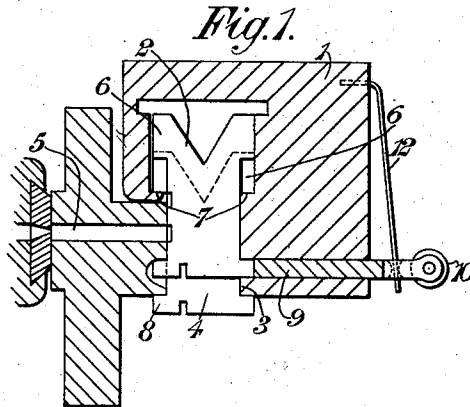


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 MEANS FOR LEVELING MULTIPLE FACE MATRICES IN TYPOGRAPHICAL COMPOSING MACHINES.
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1,009,622.

Patented Nov. 21, 1911.



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MEANS FOR LEVELING MULTIPLE-FACE MATRICES IN TYPOGRAPHICAL COMPOSING-MACHINES.

1,009,622.

Specification of Letters Patent.

Patented Nov. 21, 1911.

Application filed January 24, 1910. Serial No. 539,803.

To all whom it may concern:

Be it known that I, CHRISTIAN AUGUSTUS ALBRECHT, a citizen of the United States of America, at present residing at No. 23 Chausseestrasse, Berlin, N. 4, in the Empire of Germany, have invented new and useful Improvements in Means for Leveling Multiple-Face Matrices in Typographical Composing-Machines, of which the following is a specification.

The present invention relates to improvements in means for leveling multiple face matrices in typographical composing machines, after casting therefrom and preparatory to distributing them.

It is especially applicable to the Mergenthaler linotype machine described in the specification of Letters Patent 436532 dated September 16th 1890 when equipped with the alternative face devices of either Patent 547633 dated October 8th 1895 or 615909 dated December 13th 1898. For that reason, the application of it to that machine has been chosen for illustration and specification as to details.

When the matrices in the composed line, have two or more faces (which are then one above the other) they are supported in the so-called first elevator of the machine at as many different levels, and this difference in level must be maintained until the respective linotype has been cast. After it has been cast, the matrices must all be restored to a common level in order that they may be transferred from the first elevator to the second elevator, the latter having only one level and being the first organ of the distributing mechanism. The cooperation between these two elevators, excepting as to difference in level, is described in the specification of Patent 436532 dated September 16th 1890. The state of the art at the date of the present invention, in respect of means for restoring the matrices to a common level, is shown by the specifications of Letters Patent 615909 dated December 13th 1898 above mentioned and 880264 dated February 25th 1908. In both of these patents, the matrices that are required to present their lower faces to the casting mechanism, are supported, at a higher level than those that are required to present their higher faces thereto, by a ledge under their feet, which ledge is automatically with-

drawn between the casting of the linotype and the meeting of the two elevators, the direction of such withdrawal being in the plane of the ledge, whereby the matrices at the higher level, being then unsupported, drop vertically to the common level.

According to the present invention, the matrices to be leveled (*i. e.*, moved from the variant level to the common or normal level) are positively swung edgewise clear of the supporting ledge, the latter being relatively stationary instead of being retractable, and then allowed to drop by gravity to the normal level, and the swinging impulse being applied horizontally near the bottom of the matrices.

The invention is not limited in respect of its constructional details, because these are variable to any extent so long as the positively-effected edgewise swing and the dropping by gravity of the matrices are secured. Among the possible embodiments of the invention the following one has been chosen as the best example for illustration.

In the accompanying drawings:—Figures 1, 2 and 3, are vertical sections illustrating the selected embodiment of the invention, at three different stages of operation.

1 is the first elevator; 2, one of the matrices in the higher or variant position; 3, their supporting ledge fast to the elevator 1; 4, one of the matrices in the lower or normal position; 5, the mold against which the said elevator 1 is, in Fig. 1, holding the composed line, and both therefore, in the casting position; 6 are the top lugs of the matrices by which the latter are supported when in their lower or normal position, the said lugs then resting on relatively stationary ledges 7 in the elevator 1; 8 are the bottom lugs of the matrices, by the foremost of which the said matrices are supported when in their higher or variant position, the said lugs then resting on the ledge 3; 9 is a slide or matrix swinger working horizontally through the front of the first elevator 1 and having its nose in contact with the foremost of the lugs 8 of the higher matrices 2; 10, a roller on the outer end of the slide or matrix swinger; 11, a projection or cam on the machine frame, projecting into the upward path of the roller 10 to make the slide 9 swing the lower ends of the matrices 2 rearward as shown in Fig.

2; and 12, is a spring fast to the first elevator 1, to return the slide or matrix swinger 9 to its normal position.

This embodiment acts as follows:—After the elevator 1 has moved up from the casting position in which it is shown in Fig. 1, and as it approaches the second elevator, the roller 10 engages with the projection or cam 11 as indicated in Fig. 2, whereby, as the roller travels up the said cam, the matrix swinger 9 is pushed from the position in which it is shown in Fig. 1 through that in which it is shown in Fig. 2, and finally into that in which it is shown in Fig. 3. As the matrix swinger 9 is pushed in, it swings the lower ends of the matrices 2 edgewise to the rear as shown in Fig. 2. By the time the elevator 1 has completed its rise, the matrix swinger 9 has pushed the lugs 8 off the ledge 3 as indicated in dotted lines in Fig. 3, whereupon the matrices 2 drop by their own gravity to the common or normal level.

If desired, and although not so shown, the projection or cam 11 may be adjustable relatively to the machine frame by which it is supported.

The terms "matrix" and "matrices" are to be read as including type dies, and the term "elevator," as including any conveyer or means for moving the composed line toward the distributing mechanism, irrespective of its direction of motion.

Having described my invention, I claim and desire to secure by Letters Patent:—

1. In a typographical composing machine, the combination of matrices and relatively stationary means for supporting them, with matrix-leveling means comprising a device for moving said matrices to clear the supporting means.

2. In a typographical composing machine, the combination of matrices and a relatively stationary device for supporting them, with matrix-shifting means, whereby said matrices are shifted to clear the supporting device and to a relatively different level.

3. In a typographical composing machine, the combination with a supporting ledge adapted to support a series of matrices, of means adapted to positively swing the matrices edgewise so as to clear the said ledge.

4. In a typographical composing machine, the combination with a device adapted to support a series of matrices, of means adapted to positively swing the matrices edgewise so as to clear the said device to permit their being shifted from one level to another.

5. In a typographical composing machine, the combination with a conveyer adapted to convey matrices toward the distributor and a ledge relatively fast in the conveyer adapted to support a series of matrices at a variant level above the normal level, of a matrix swinger adapted to swing the matrices clear of the ledge to allow them to drop to the normal level.

6. In a typographical composing machine, the combination with a conveyer adapted to convey matrices toward the distributor, a ledge in the conveyer adapted to support a series of matrices at a variant level above the normal level, and a matrix swinger adapted to swing the matrices clear of the ledge to allow them to drop to normal level, of a relatively stationary cam with which the matrix swinger makes operative contact for causing it to make its matrix-swinging stroke.

7. In a typographical composing machine, the combination with a conveyer adapted to convey matrices toward the distributor, a ledge in the conveyer adapted to support a series of matrices at a variant level above the normal level, and a matrix swinger adapted to swing the matrices clear of the ledge to allow them to drop to normal level, of a relatively stationary cam with which the matrix swinger makes operative contact for causing it to be moved in one direction and a spring adapted to move the matrix swinger in the opposite direction.

8. In a typographical composing machine, the combination of a conveyer adapted to convey matrices toward the distributor, a ledge in the conveyer adapted to support a series of matrices at a variant level above the normal level, a matrix swinger horizontally slidable through the front of the conveyer and adapted at its rear edge, to bear against the lugs of matrices supported by the ledge, a roller on the forward edge of the matrix swinger, a spring tending to move the matrix swinger horizontally in the conveyer in a forward direction and a relatively stationary cam in the path of the roller, adapted to move the matrix swinger rearwardly in the conveyer so as to swing the matrices clear of the ledge.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CHRISTIAN AUGUSTUS ALBRECHT.

Witnesses:

HENRY HASPER,
WOLDEMAR HAUPT.