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PATENTED JAN. 27, 1903.

S. SMITH.
LINOTYPE MACHINE AND MATRIX THEREFOR.

APPLICATION FILED JULY 10, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig 1

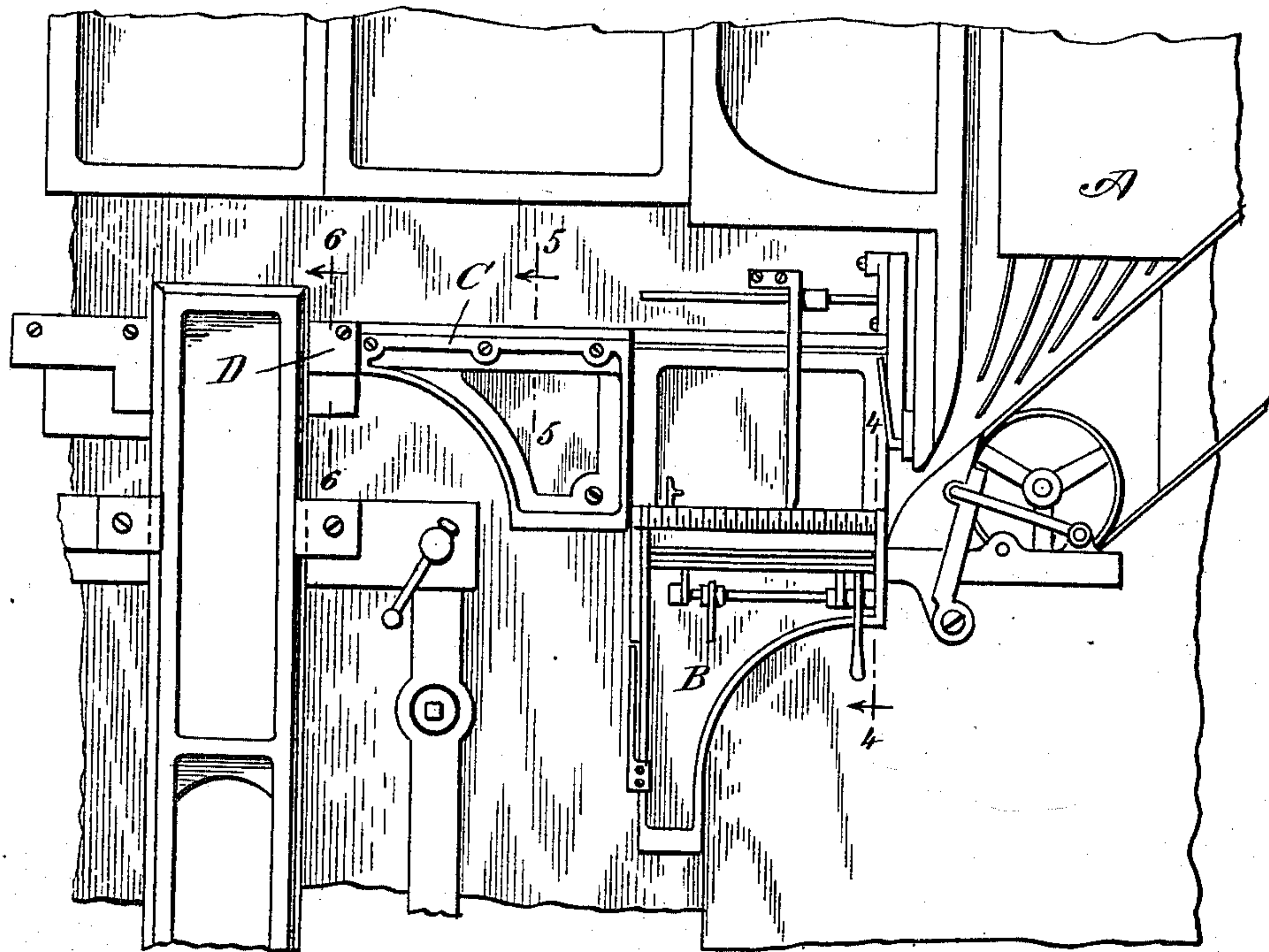


Fig 2

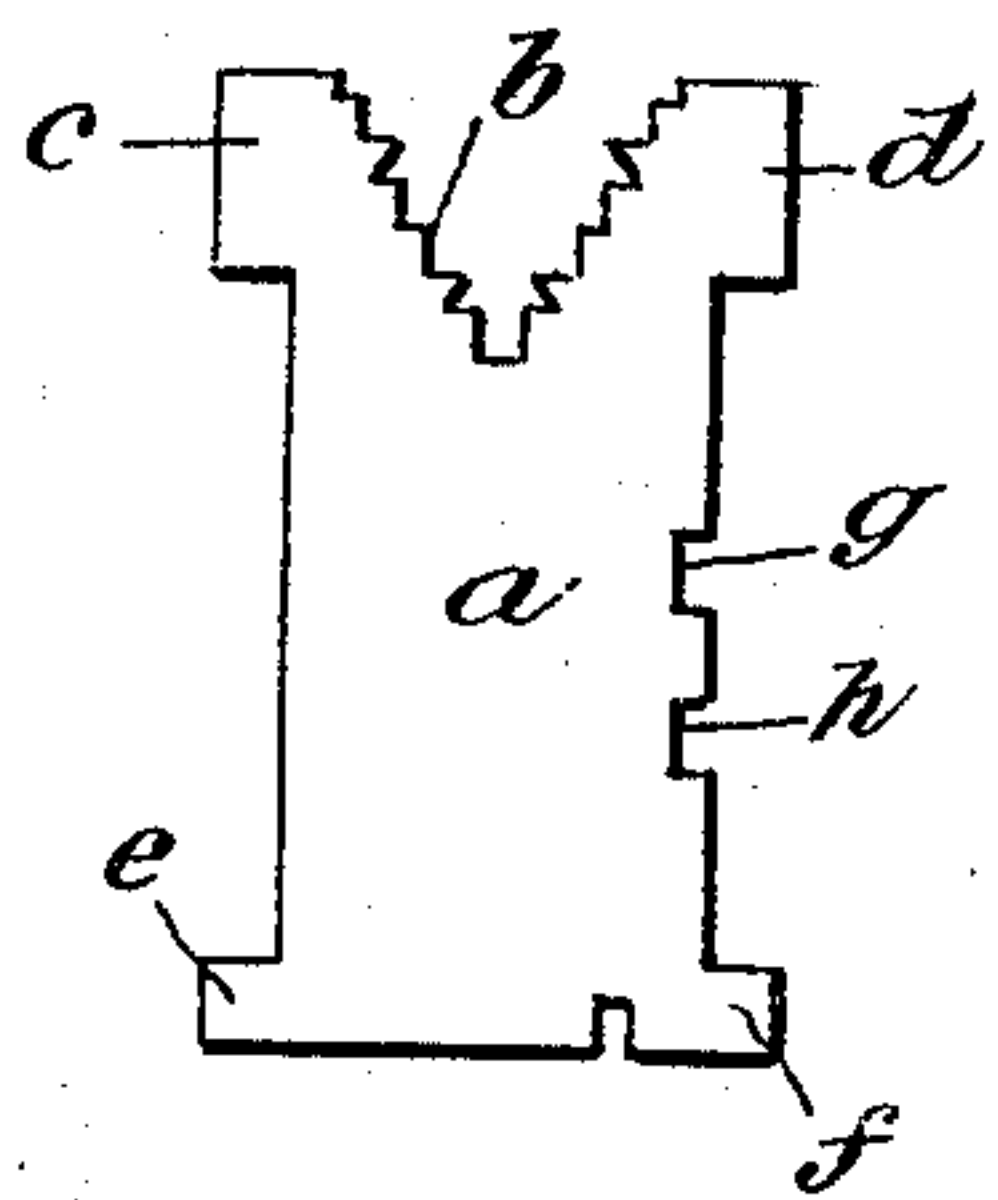
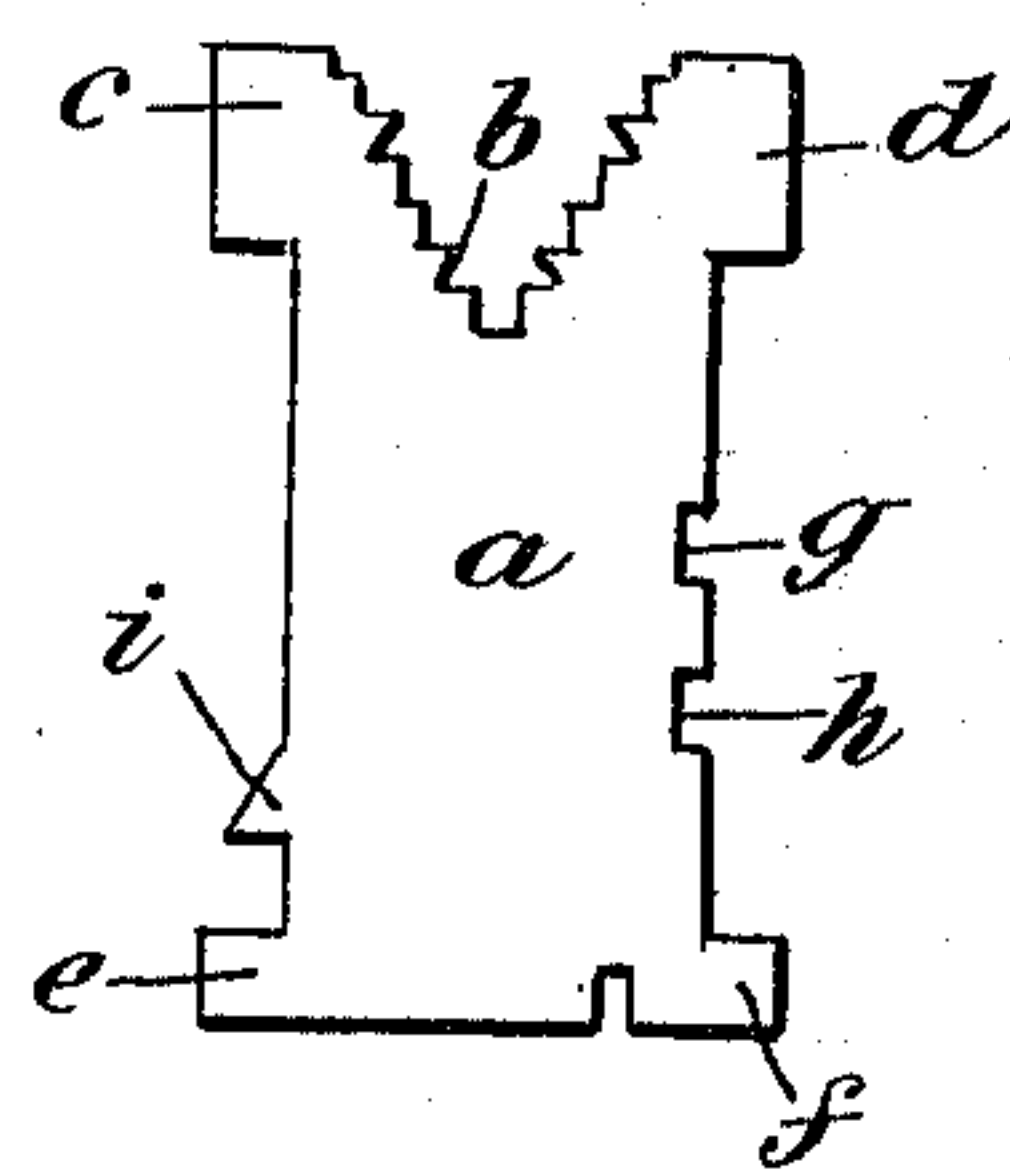


Fig 3



WITNESSES:

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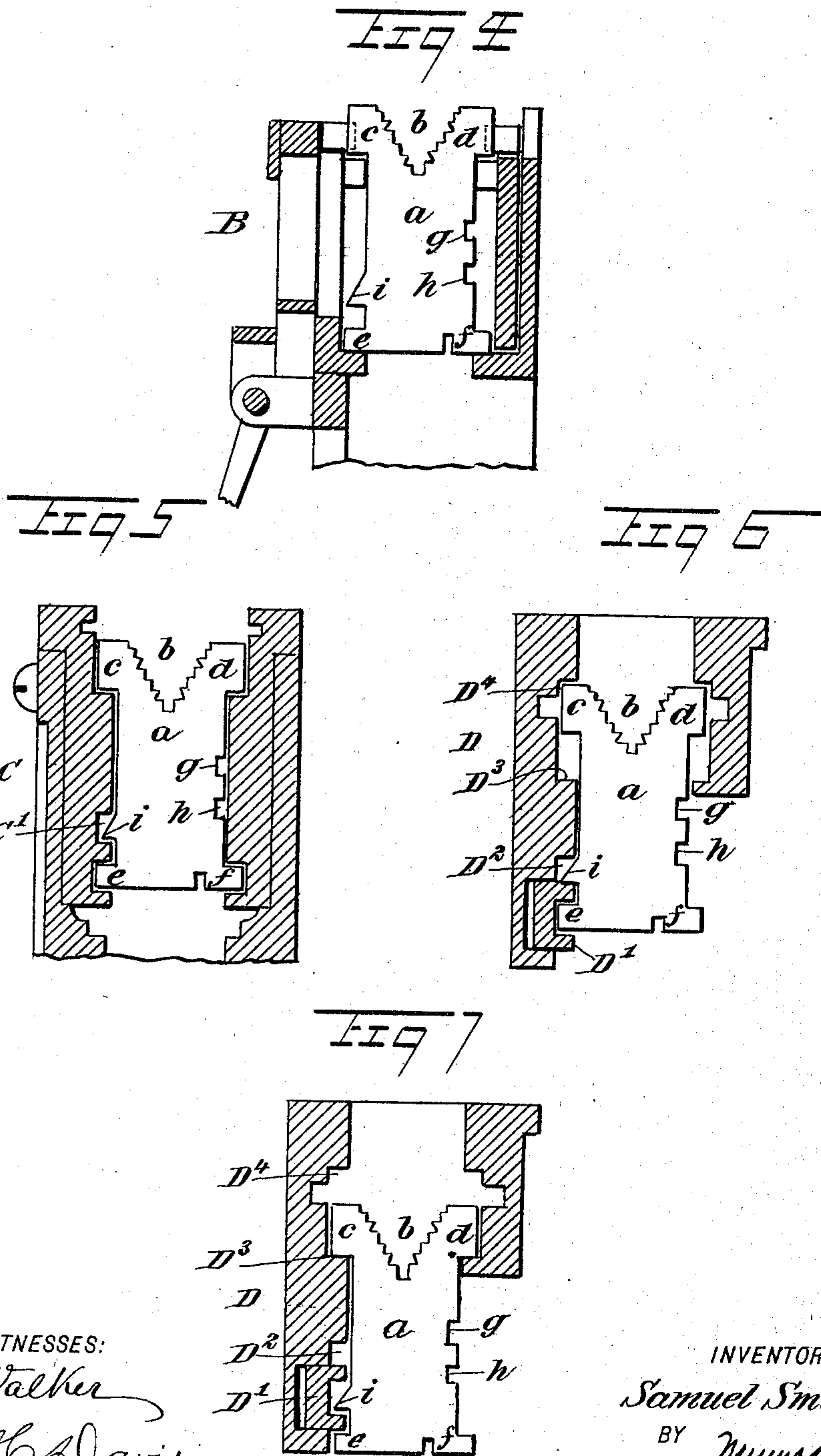
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UNITED STATES PATENT OFFICE.

SAMUEL SMITH, OF BROOKLYN, NEW YORK, ASSIGNOR TO LANGUAGES
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LINOTYPE-MACHINE AND MATRIX THEREFOR.

SPECIFICATION forming part of Letters Patent No. 719,270, dated January 27, 1903.

Application filed July 10, 1902. Serial No. 115,052. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL SMITH, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Linotype-Machine and Matrix Therefor, of which the following is a full, clear, and exact description.

In the Mergenthaler linotype-machine and other apparatus of similar character the matrices fall from the magazine into an assembler, and on reaching the same strike the bottom edges of their lower lugs against the ledges or other parts of the assembler, their falling movement being thus arrested. The continual dropping of the matrices batters and abrades said bottom edges, and in so far as these edges are used in effecting the alinement of the matrices before the mold it follows that as these edges become worn said alinement of the matrices becomes imperfect, resulting, as the machine and its matrices are at present constructed, in the non-alinement of the italic, small-capital, bold-face, or other characters borne in the lower type-molds of the matrices. My invention seeks to overcome this defect—that is to say, to attain perfect alinement of the matrices notwithstanding that the lower lugs or other parts may be very much battered by the continual falling of the matrices into the assembler. This end I attain by providing on each matrix an alining surface or surfaces, each of which is independent of the surfaces which engage with the assembler as the matrix falls thereinto.

This specification is an exact description of one example of my invention, while the claims define the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a fragmentary front elevation of a Mergenthaler linotype-machine, illustrating the assembler-entrance, the assembler, the line-delivery channel, and the first elevator, the last-named part being in its normal position. Fig. 2 is a view of a two-letter matrix of the ordinary construction. Fig. 3 is a view of the same matrix, but showing my

improvement as applied thereto. Fig. 4 is a cross-section on the line 4 4 of Fig. 1, said section being taken through the assembler and showing a matrix deposited therein. Fig. 5 is a cross-section on the line 5 5 of Fig. 1, illustrating the line-delivery channel with the change required by my invention and showing a matrix in position. Fig. 6 is a section on the line 6 6 of Fig. 1, said section being taken across the first elevator, illustrating the change in the construction of this elevator which my invention requires and also showing a matrix in its upper position with respect thereto; and Fig. 7 is the same section as that shown in Fig. 6, but showing the matrix in its lower or normal position.

As ordinarily constructed the matrix (see Fig. 2) has a body *a*, formed of a sheet of metal, in the top of which is arranged an indentation *b*. The body *a* is in rectangular form and has at its respective corners the lugs *c*, *d*, *e*, and *f*. According to the form of matrix here illustrated two type-molds *g* and *h* are provided. The matrix thus constructed falls into the assembler and strikes the lower edges of the lugs *e* and *f* on the shelves or ledges of the assembler, thus arresting the movement of the matrix. This continual striking of the lugs batters their lower edges, and thus they are driven out of alinement with the lower edge of the body *a*. When the upper type-mold *g* of the matrix is to be placed in alinement with the slot in the mold, the first elevator strikes the under side of the lug *c* and draws up the matrix until the upper side of its lug *f* strikes the side wall of the proper alining-groove in the mold. It will be observed that the alinement just described for this upper type-mold *g* is not concerned with the lower edge of the lug *e*. When, however, the lower type-mold of the matrix—that is, the mold *h*—is to be alined with the slot in the mold, the first elevator engages the lower edge of the lug *e* and carries the matrix upward until the top edge of the lug *f* hits the wall of the proper alining-groove in the mold. Now it will be seen that if the lower edge of this lug *e* is battered or worn the alinement must be imperfect. The foregoing relates to the commercial linotype-machine, for which see *The Illustrated Catalogue Linotype Parts*

and Supplies, Mergenthaler Linotype Co., New York, copyright 1900. The addition to the matrix of a special alining-lug *i*, (see Fig. 3,) placed above the lug *e* in position to be engaged by the first elevator instead of the lug *e*, overcomes this defect in that the alining function of the lug *e* is performed by the lug *i*, which in turn is immuned by the lug *e* from the battering and abrasion to which the lug *e* is subject.

The invention involves no essential change in the linotype-machine proper, it being only necessary to provide for the passage of the additional lug *i* through the line-delivery channel and through the first elevator. The other parts of the machine as at present constructed will not interfere with the passage of this additional lug *i*.

In Fig. 1, A indicates the assembler-entrance; B, the assembler; C, the line-delivery channel, and D the first elevator.

In Fig. 5, C' indicates the longitudinal groove, which must be cut in the line-delivery channel to accommodate the lug *i* of the matrix.

Fig. 6 shows the necessary changes in the first elevator. These changes lie in providing at the lower inner edge of the first elevator front jaw a longitudinally-extending channel-guide D' in place of the usual L-shaped guide (see the part E, 372, of the catalogue aforesaid) and in constructing a longitudinally-disposed guide-groove D² immediately above the guide D'. The guide D' is spring-actuated in the same manner and for the same purpose that the above-mentioned L-shaped guide of the commercial machine is spring-actuated. When the matrix is to be alined with the upper type-mold *g*, the elevator strikes its shoulder D³ against the under side of the lug *c*, the lug *i* lies idle in the channel-guide D', and the lug *e* idle below the channel-guide D', as illustrated in Fig. 7. The first elevator then moves the matrix up until the top edge of its lug *f* strikes the wall of the proper alining-groove in the mold. When the matrix is to be alined for the lower type-mold *h*, the top side of the channel-guide

D' is engaged with the lower edge of the lug *i*, while the lug *e* lies idle in the channel-guide D' and the lug *c* lies idle in the guide-groove D² of the front jaw of the first elevator, the first elevator moves up, and by the engagement of the parts *i* and D' the matrix is moved up until the top edge of the lug *f* strikes against the wall of the proper alining-groove in the mold. In other respects the matrix runs through the machine as usual.

I desire it understood that my invention is not limited to the precise form of matrix illustrated in this specification, but is applicable as well to any matrix, simple or multiple, which is or may be used in any composing-machine.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A linotype-matrix having the lugs *d* and *f* on one side edge, a type-mold on said edge between the lugs *d* and *f*, the lugs *c* and *e* on the other side edge, and the alining-lug *i* on the second-named side edge immediately above the lug *e*, for the purpose specified.

2. An essentially rectangular linotype-matrix having a type-mold in one side edge, a lug *e* on the lower corner of the other side edge, and an alining-lug *i* on said other side edge directly adjacent to the lug *e*.

3. A linotype-machine having the first elevator provided with a movable guide, and a guide-groove immediately above the said movable guide and extending parallel therewith, for the purpose specified.

4. A linotype-machine having the first elevator provided with the movable channel-guide D', and the guide-groove D² immediately above the channel-guide and extending parallel therewith, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL SMITH.

Witnesses:

ROBERT M. PIERCE,
E. C. EVANS.