

945,497.

Patented Jan. 4, 1910.

Fig. 3.

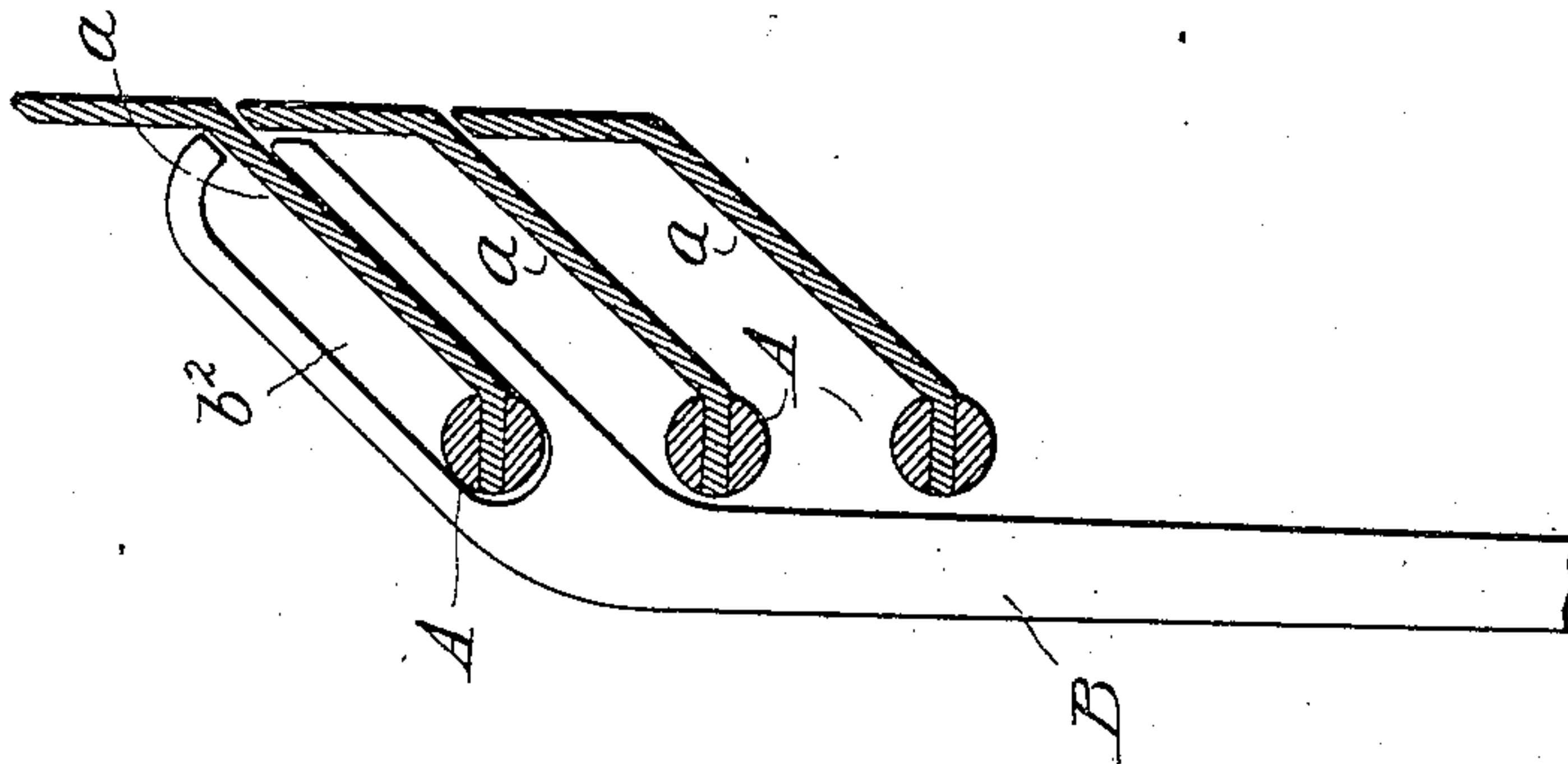


Fig. 2.

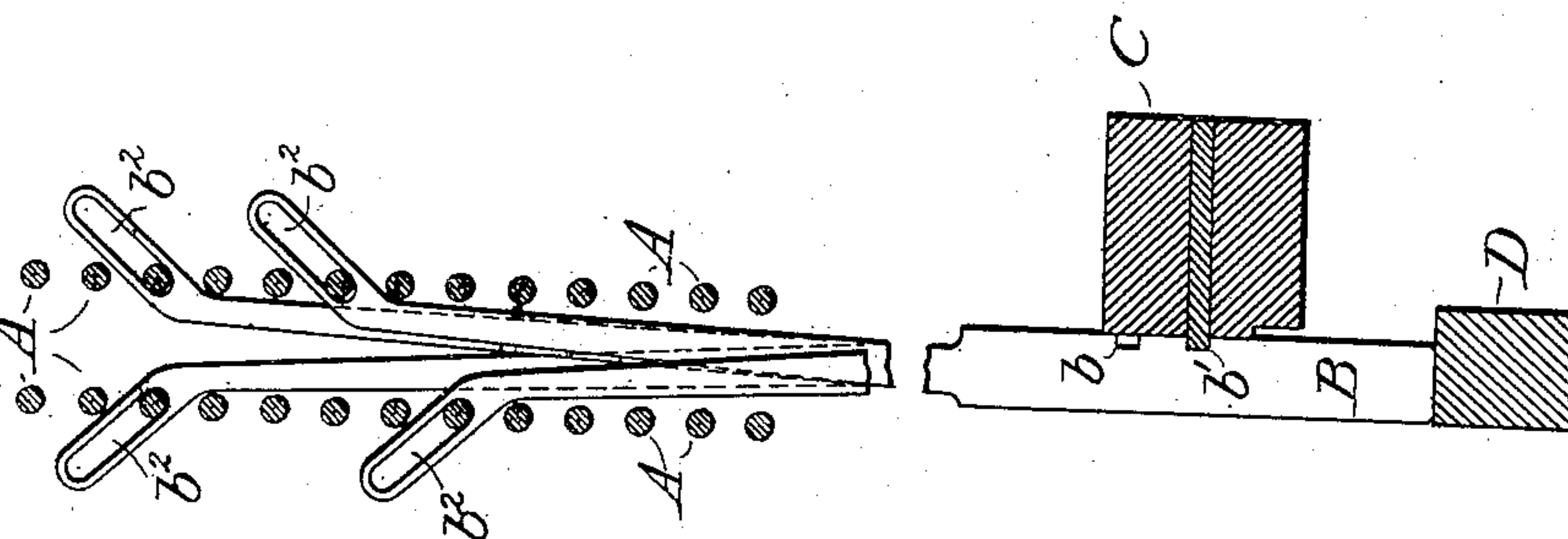
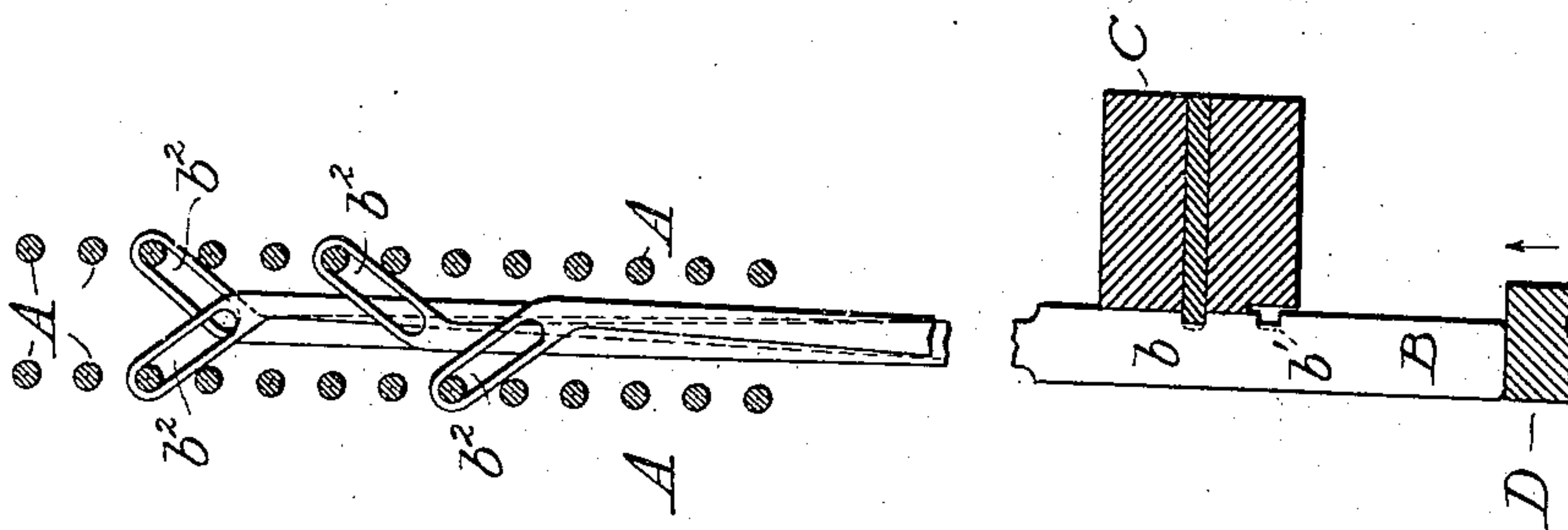


Fig. 1.



WITNESSES

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# UNITED STATES PATENT OFFICE.

PHILIP T. DODGE, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

## LINE-CASTING MACHINE.

945,497.

Specification of Letters Patent.

Patented Jan. 4, 1910.

Application filed March 3, 1909. Serial No. 481,212.

*To all whom it may concern:*

Be it known that I, PHILIP T. DODGE, of Washington, District of Columbia, have invented a new and useful Improvement in Line-Casting Machines, of which the following is a specification.

This invention relates to that class of line casting machines commercially known as "typographs," wherein the matrices are suspended from and arranged to travel on wires which are arranged in converging lines for a portion of their length, and then extended in parallel lines, so that selected matrices traveling along the respective wires will be brought into a common line for coöperation with the mold, as shown, for example, in Letters Patent of the United States to Rogers Nos. 437,139, 697,481, and 861,770. It has special reference to what are known as double alphabet machines, in which each matrix comprises a suspending shank or stem, having the lower end formed with or attached rigidly to a body portion provided with two different and separately usable characters, either of which may be presented to the mold at will.

The object of the invention is to permit the employment of the two characters on one matrix, without the application of parts commonly required in these machines.

To this end it consists in providing each matrix at the upper end as a rigid part thereof with a suspending eye or loop, arranged in an oblique position, or, in other words, with a lateral inclination, so that the matrix may be lifted from the lower or normal position, with its upper character at the casting level, to a height which will present the lower character at the casting level, the eye or loop at such time sliding upward and outward on the wire or guide from which it is suspended.

In this class of machines it is highly advantageous to have the supporting wires or guides arranged, where they lie one over another, as closely together as possible, in order to avoid the necessity which would otherwise exist for increasing the length of the matrix shanks or stems.

When the obliquely arranged eye is employed, I find it possible to arrange the wires in practically the same relations as heretofore, since the eye in rising will slide out-

ward between the wires, so that the upward movement of the eye on one wire is not impeded by the overlying wire.

With the exception of the matrices, the machine may be in all respects of ordinary construction, various machines suitable for the use of my matrices being already known in the art.

Referring to the drawings: Figure 1 represents a vertical section through a series of parallel guide wires, having my improved matrices supported therefrom, the matrices being at the lower casting level. Fig. 2 is a similar view, with the matrices supported at the upper casting level. Fig. 3 is a section showing a modified construction.

Referring to the drawings: A, A represent a series of parallel inclined guide wires overlying one another, and arranged in two vertical tiers at the point where the matrices are assembled between them.

B represents the matrices, each consisting of a slender shank or stem, having at the lower end a flat, rectangular portion, preferably of brass, containing the two intaglio characters or matrices proper,  $b$  and  $b^1$ . Each matrix has its upper end bent or curved obliquely edgewise, and formed with a slot or eye,  $b^2$ , through which the suspending wire or guide passes. It will be noted that this oblique eye forms a rigid part of the matrix, and matrices with such an eye are to be clearly distinguished from those heretofore known in the art, in which the eye is connected to the shank by a horizontal pivot, to admit of its assuming different relations to the shank if the matrix is raised and lowered. When the matrices hang in their normal positions, they will gravitate to the position shown in Fig. 1, with the eyes descending, until the supporting wires encounter their upper ends, so that the upper matrix characters,  $b$ , are presented opposite the slot of the coöperating mold, C, in which the slug or printing bar is cast, as usual. When it is required to produce the lower characters,  $b^1$ , an artificial support, D, is introduced beneath the lower ends of the matrices, or other means employed to support them above the normal level, in the manner shown in Fig. 2; the lower character,  $b^1$ , being presented opposite the mold, and the eye,  $b^2$ , being carried



upward and outward on the supporting wire and between the wires above and below it, as shown in Fig. 2.

In some machines the guide wires are endless, so that the matrices travel round and round thereon. In such case the guides are supported at various points, as shown in Fig. 3, by inclined plates, *a*, attached at one edge to the main frame. In order that the matrices may pass these plates without interference, the matrix having the oblique eye will be slotted or cut open at the upper end in the manner shown in Fig. 3; and this is in order that it may straddle the plate.

Having described my invention, what I claim is:

1. A matrix for a line casting machine, having at its upper end a rigid, slotted supporting eye, arranged in an oblique relation to the shank.

2. In a line casting machine, the combination of a supporting wire or guide and a matrix suspended therefrom and arranged to travel thereon, the matrix having a shank

or stem with a rigid, oblique slotted eye at the upper end, and two characters at the lower end.

3. In a line casting machine, the combination of a series of parallel guide wires, a mold, and a series of matrices suspended from the guide wires to cooperate with the mold, each matrix being provided with two independent characters and with a shank or stem having a rigid, obliquely arranged eye to receive the guide wire.

4. In a line casting machine, a series of guide wires and a series of two letter matrices suspended therefrom, each matrix having its upper, rigid end deflected laterally, and adapted to slide upward and downward in relation to its guide wire.

In testimony whereof I hereunto set my hand this 26th day of February, 1909, in the presence of two attesting witnesses.

PHILIP T. DODGE.

Witnesses:

A. KUNZ,

WALTER MOBLARD.