

No. 843,577.

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MATRIX MAKING PLATE AND BLOCK ATTACHED.

APPLICATION FILED MAY 18, 1905.

Fig. 1.

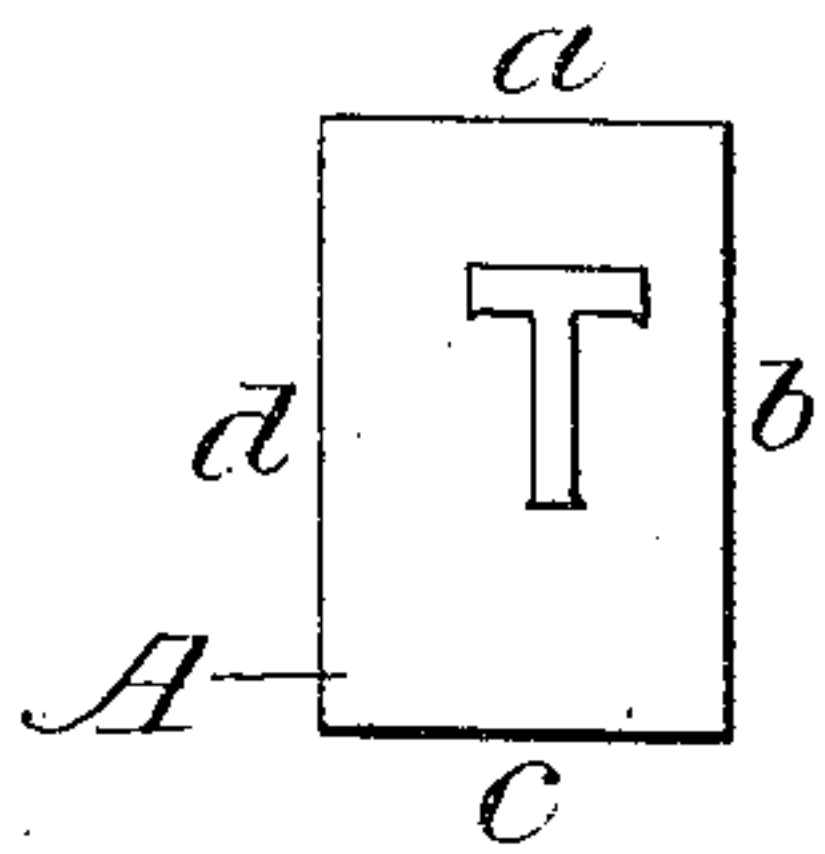


Fig. 2.

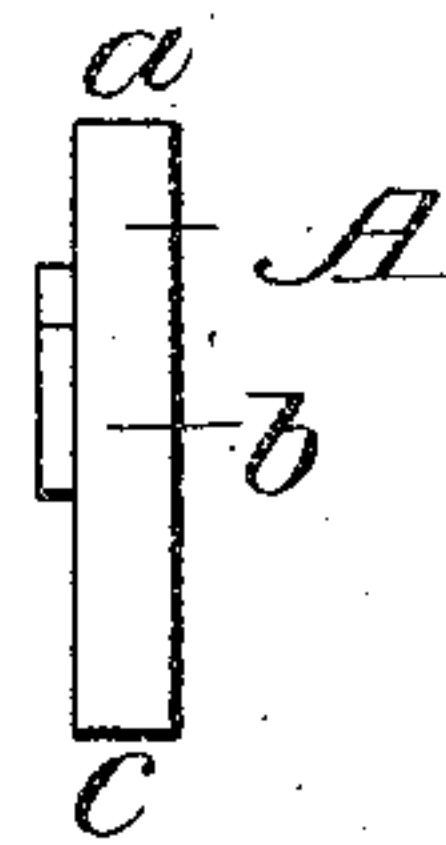


Fig. 3.

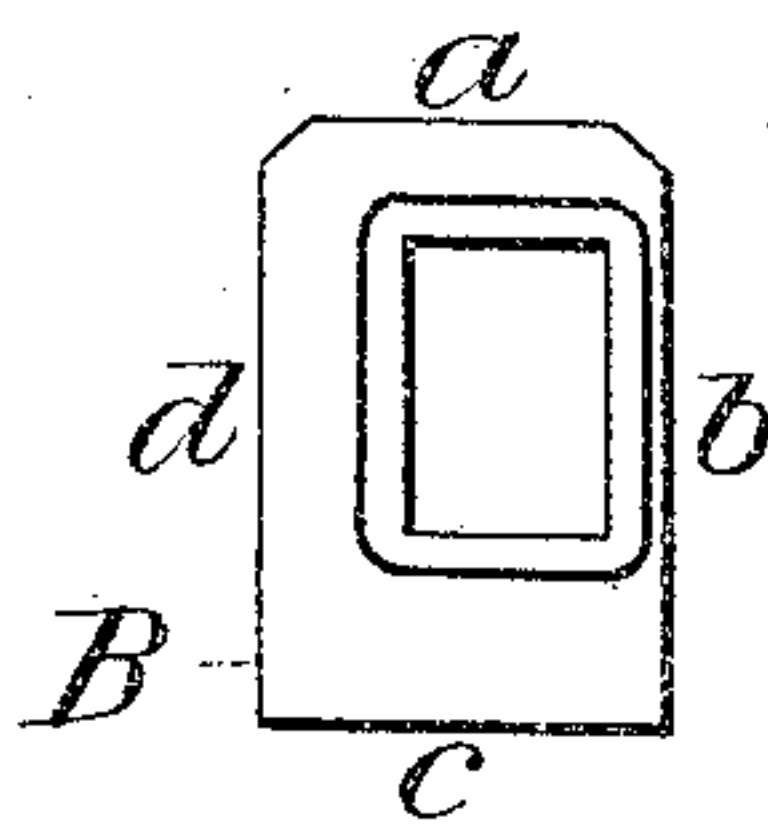


Fig. 4.

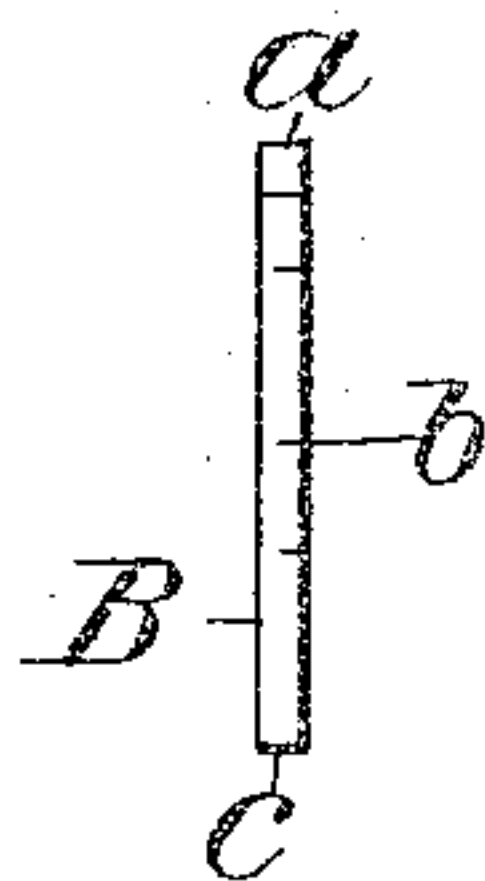


Fig. 5.

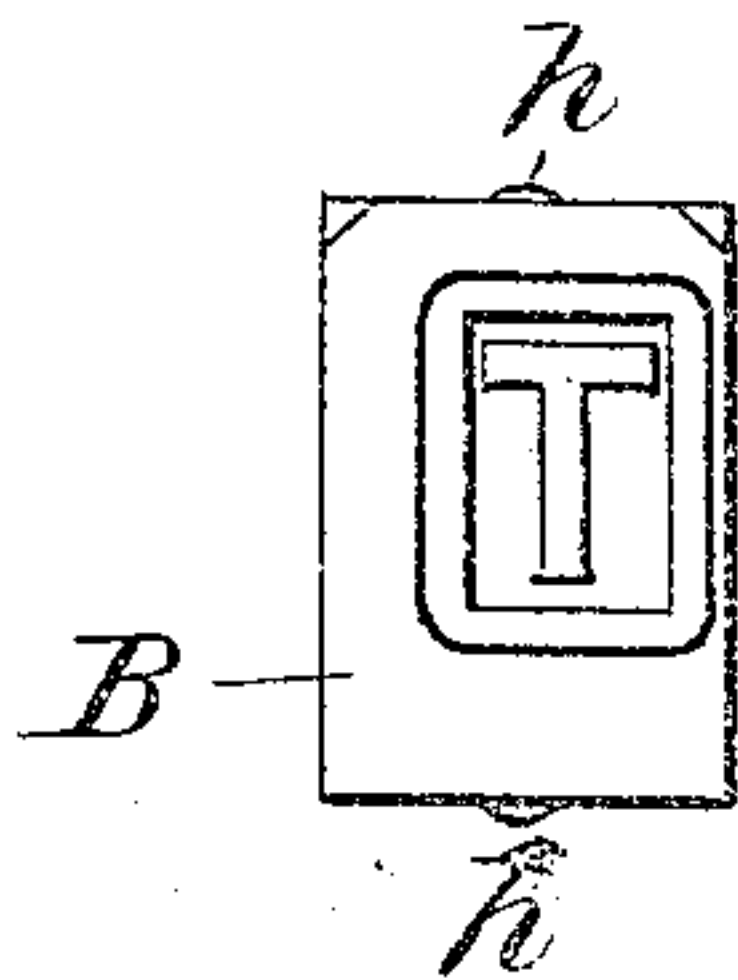


Fig. 6.

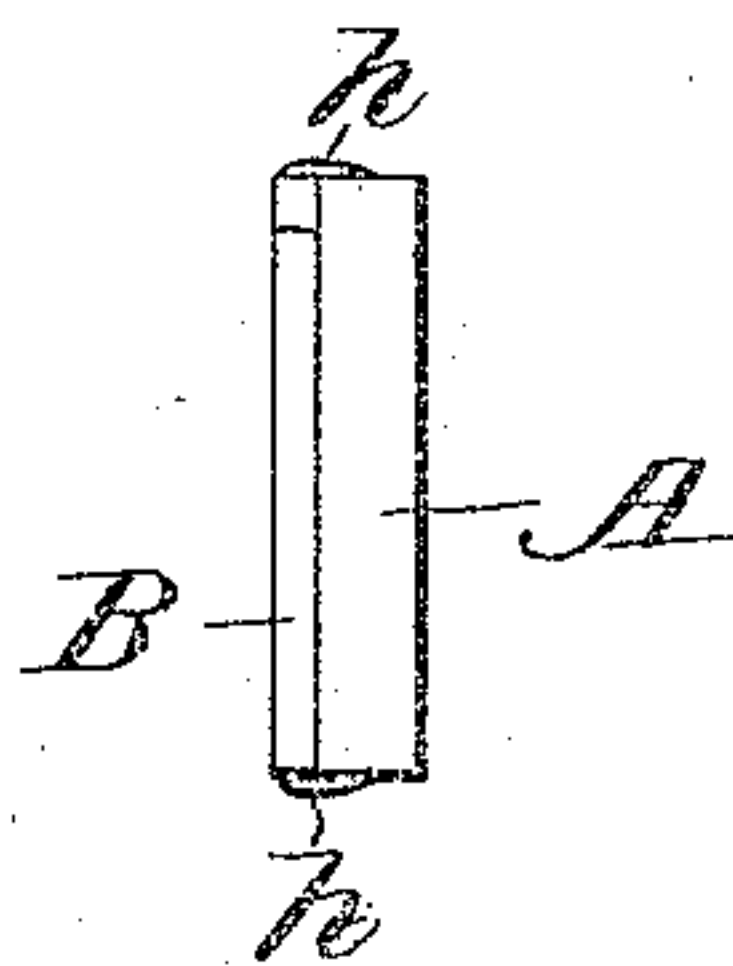


Fig. 7.

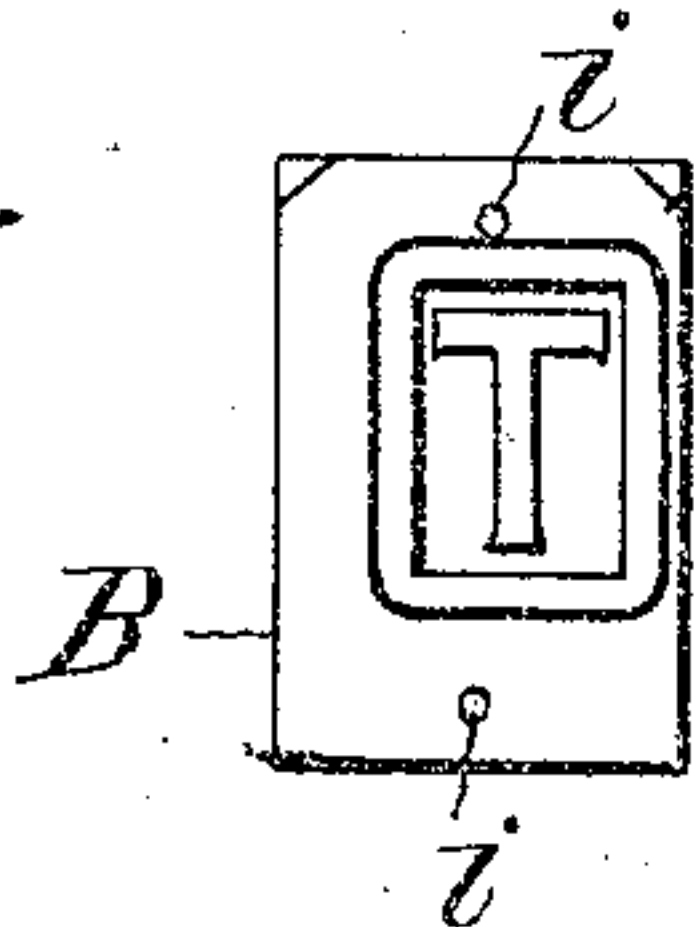
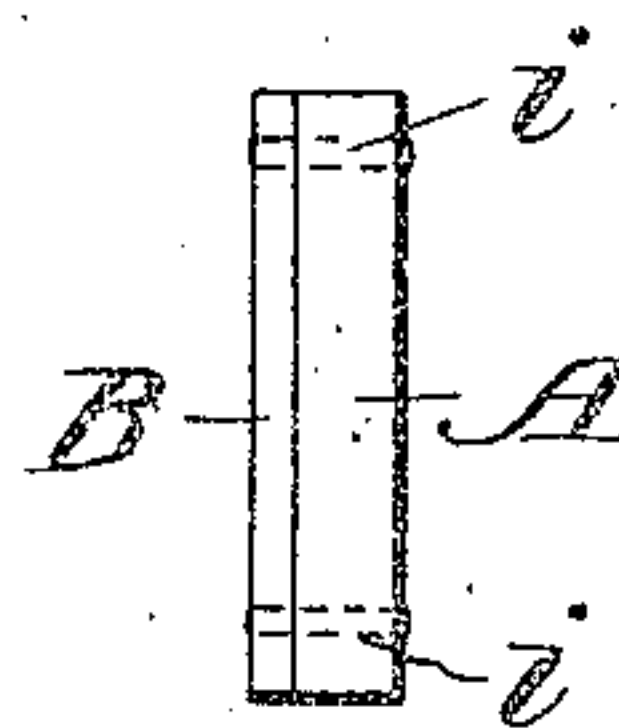


Fig. 8.



Witnesses

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# UNITED STATES PATENT OFFICE.

FRANK H. BROWN AND JOHN E. HANRAHAN, OF BALTIMORE, AND GEORGE A. BOYDEN, OF MOUNT WASHINGTON, MARYLAND, ASSIGNORS TO NATIONAL COMPOSITE COMPANY, OF BALTIMORE, MARYLAND, A CORPORATION OF DELAWARE.

## MATRIX-MAKING PLATE AND BLOCK ATTACHED.

No. 843,577.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed May 18, 1905. Serial No. 261,035.

*To all whom it may concern:*

Be it known that we, FRANK H. BROWN and JOHN E. HANRAHAN, of Baltimore, and GEORGE A. BOYDEN, of Mount Washington, in the county of Baltimore, State of Maryland, have invented certain new and useful Improvements in Matrix-Making Plates and Blocks Attached; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention pertains to matrix-making, and has for its object securely and rigidly attaching the matrix-plate in which the electrodeposition is to be made to a master-block containing the type character, whereby the two are properly held together during the deposition.

With the introduction of the "sorts-machine for casting type" invented by these same inventors the art of producing type at this time is being revolutionized, for the reason that instead of making type under the present foundry practice with skilled labor and then distributing the type throughout the country for the printers to use the printers are now producing type in their offices with unskilled labor. This results in a great saving of time and money and affords convenience in producing immediately type and sorts when needed. This innovation necessitated the creation of various systems and inventions, not only with relation to the type-casting machine proper, but in molds, mold-making, matrices, and matrix-making, and to one of these systems the present invention relates.

Heretofore the positioning of the matrix-plate and the type character prior to the electrodeposition being made has been done in an uncertain and complicated manner, as regular printing-type was used for the type character, necessitating the building up of the positioning material to hold the type in its place approximately with the matrix-plate. This required time and great care and then only resulted in approximately locating the type character and plate in their correct position, which again necessitated a great deal of time and efficient skill to finish the matrix correctly.

In the accompanying drawings, Figure 1 represents a front view of a master-block with the character in cameo. Fig. 2 is a side view of the same. Fig. 3 is a front view of a matrix-plate with a hole in the same in which electrodeposition is to be made of a type character. Fig. 4 is a side view of the same. Fig. 5 is a front view of a matrix-plate with the master-block secured thereto in the rear of the plate with solder tips. Fig. 6 is a side view of the same. Fig. 7 is a front view of a matrix-plate with master-block secured thereto in a modified form by means of rivets. Fig. 8 is a side view of Fig. 7.

In preparing the plate B and block A for deposition the plate is placed over the face of the master-block A, with its four sides *a, b, c,* and *d* coinciding with similar surfaces of the master-block A. This is usually done by first placing the master-block in a frame of exact size to fit the dimensions *a, b, c,* and *d* and then placing the matrix-plate B on top of the same, the projections of the frame being of sufficient depth to accommodate both the master-block and the matrix-plate, and while thus held correctly and accurately together the top and bottom of each are attached by means of a tip of solder *h*, as shown in Fig. 5, there being spaces formed in the frame to permit same. After this is accomplished the two parts thus secured together are removed from the frame, with the result that the plate is in exact position with reference to the type character on the master-block without requiring any adjustment, uncertain measurement, or skilled labor. The master-block and matrix-plate are then placed in a waxing-flask containing as many as convenient and the surface covered with wax, except where deposition is to take place over the character. The whole is then suspended in a battery for electrodeposition. After such electrodeposition has been accomplished the flask is removed from the battery, the wax scraped from the parts, and the matrix-plate is removed from the master-block A by breaking the solder tipping, after which all that is required to finish the said matrix ready for commercial purposes is to remove any excess deposition on the back of the same. Consequently there is little or no finishing, and matrices are produced at a



minimum cost and of such precise accuracy that they can be used in any standard mold without adjustment.

As shown in Figs. 7 and 8, instead of attaching the matrix-plate B to the master-block A by means of solder tipping a modification of same can be accomplished by inserting rivets *i*, which answer the same purpose as solder tipping already described and with the same result as above set forth. Also any other equivalent ways of attaching the two may be devised and would be within this claim.

Having described our invention, what we claim, and desire to secure under United States Letters Patent, is—

1. The combination of a master-block and a matrix-plate the faces of which are of approximately the same dimensions, whereby said plate and block may be accurately assembled for subsequent processing.

2. The combination of a master-block and

a matrix-plate, the faces of which are of approximately the same dimensions, and means for holding said block and matrix-plate rigidly together, whereby they are accurately positioned for further processing.

3. The combination of a master-block and a matrix-plate, the faces of which are of approximately the same dimensions, said plate and block being rigidly united by tips of solder applied to their contiguous edges, whereby they are accurately positioned for further processing.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

FRANK H. BROWN.  
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GEORGE A. BOYDEN.

Witnesses:

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