

T. W. Starr,
Type Machine.
No 4,131 *Patented Aug. 4, 1845.*

Fig. 1.



Fig. 2.

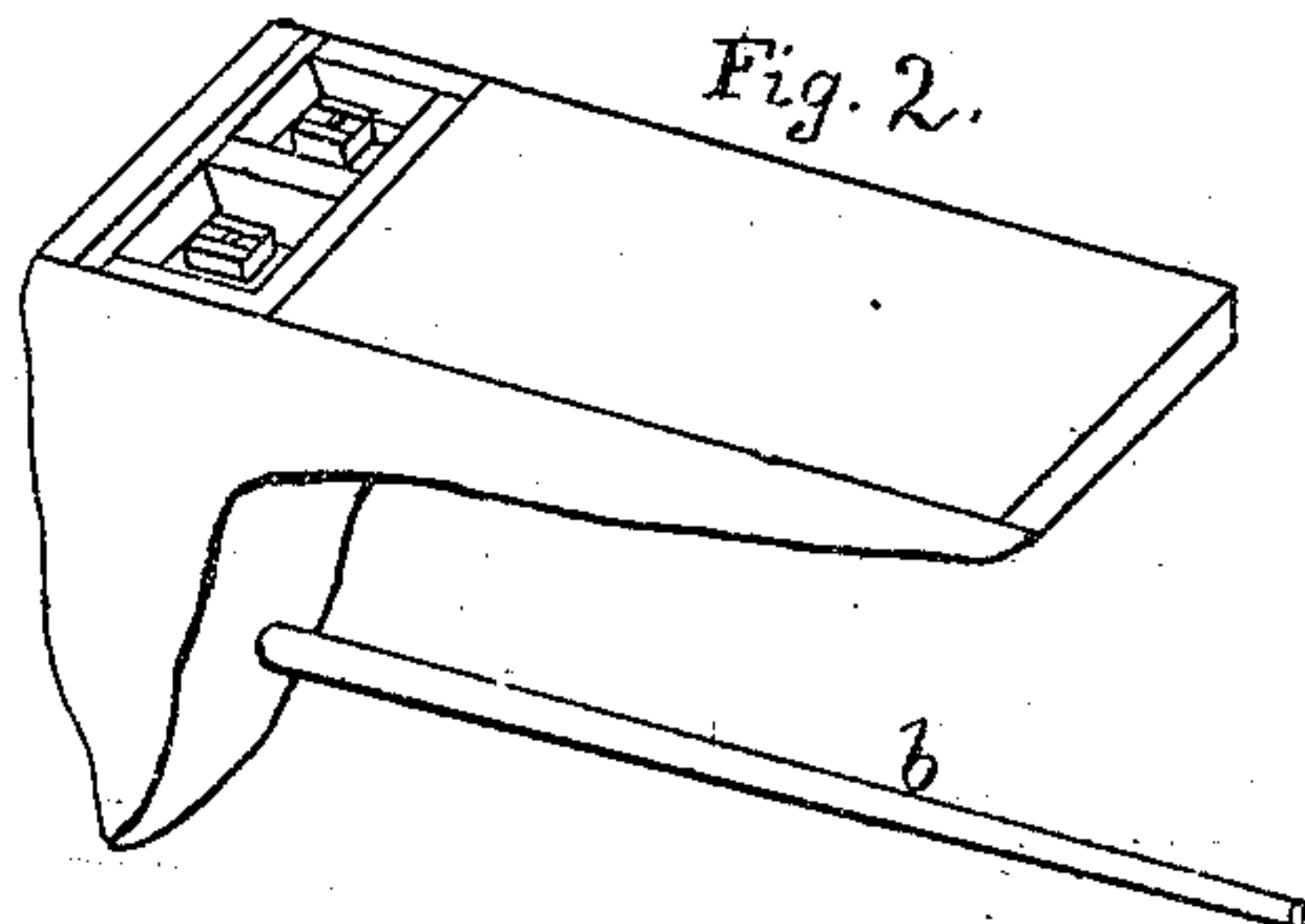


Fig. 3.

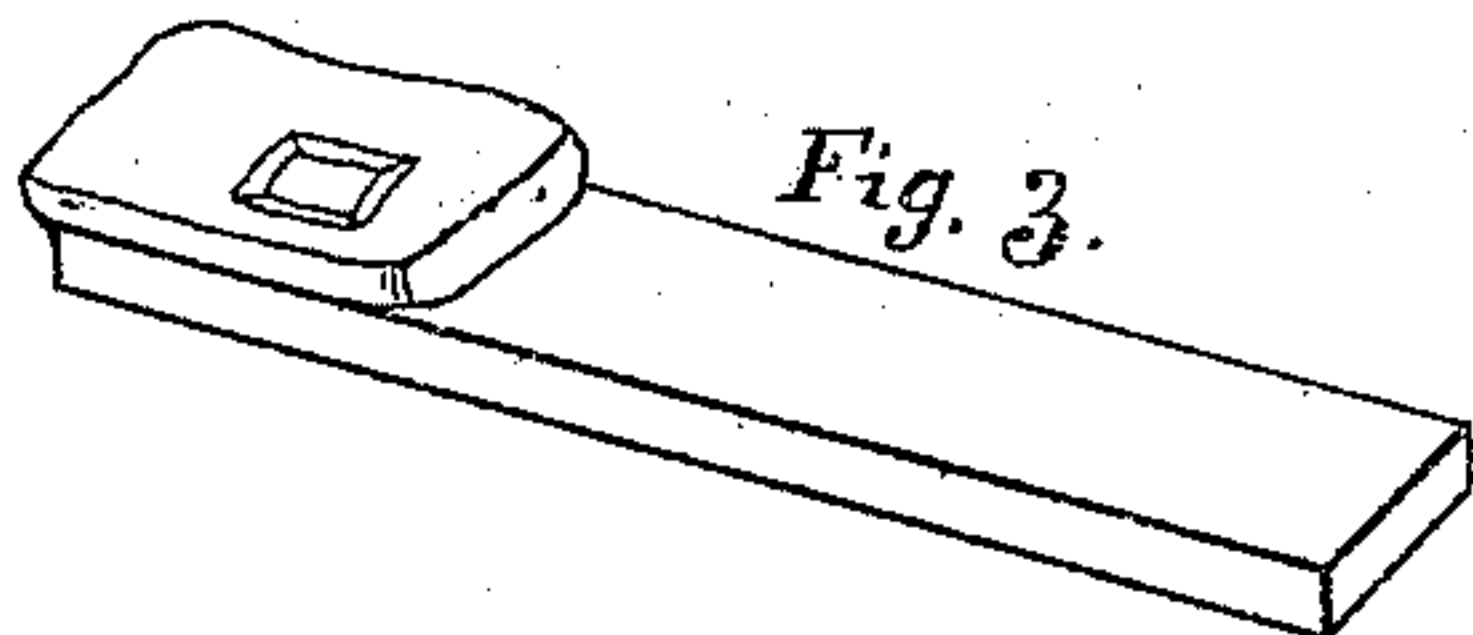


Fig. 4.

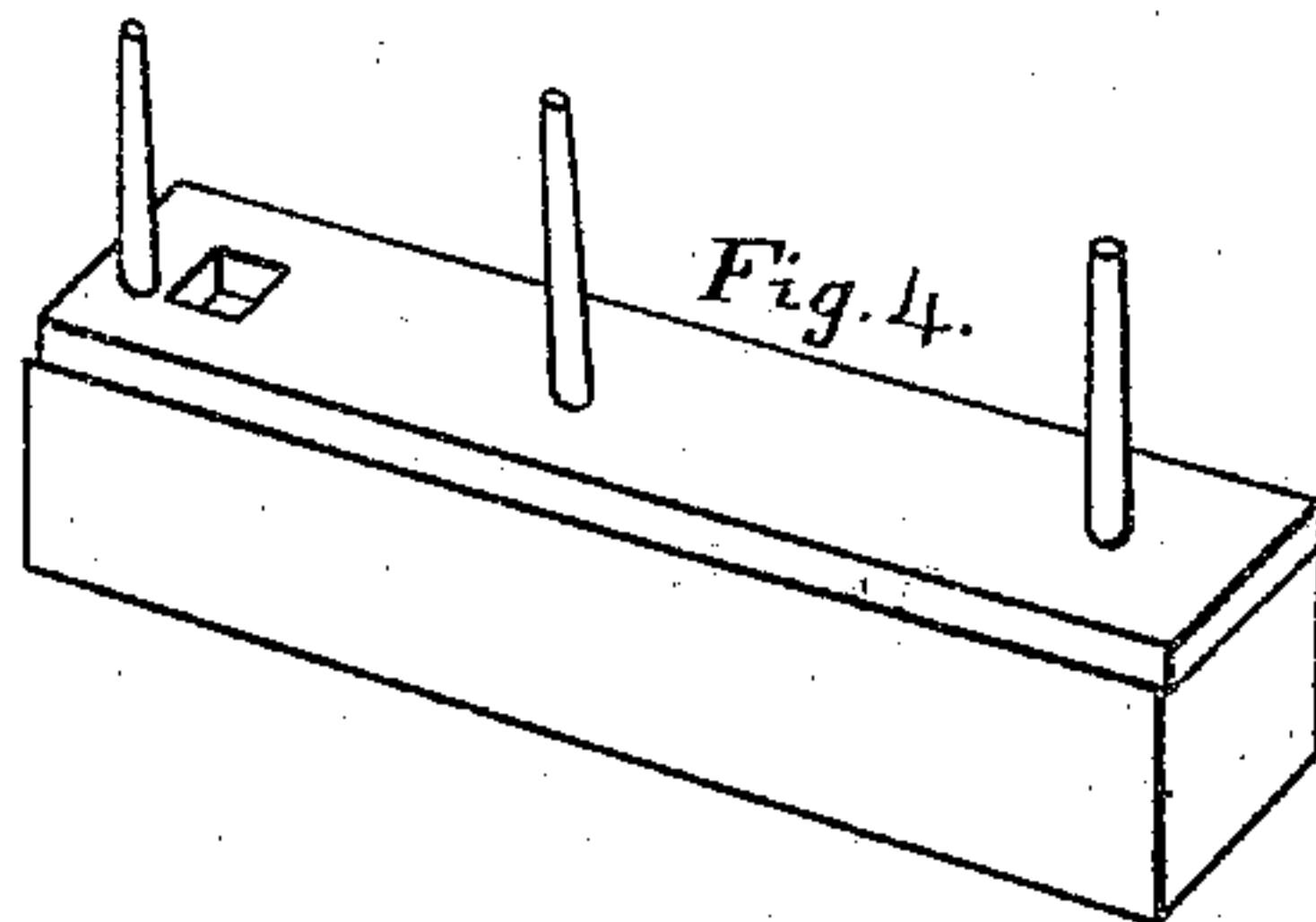
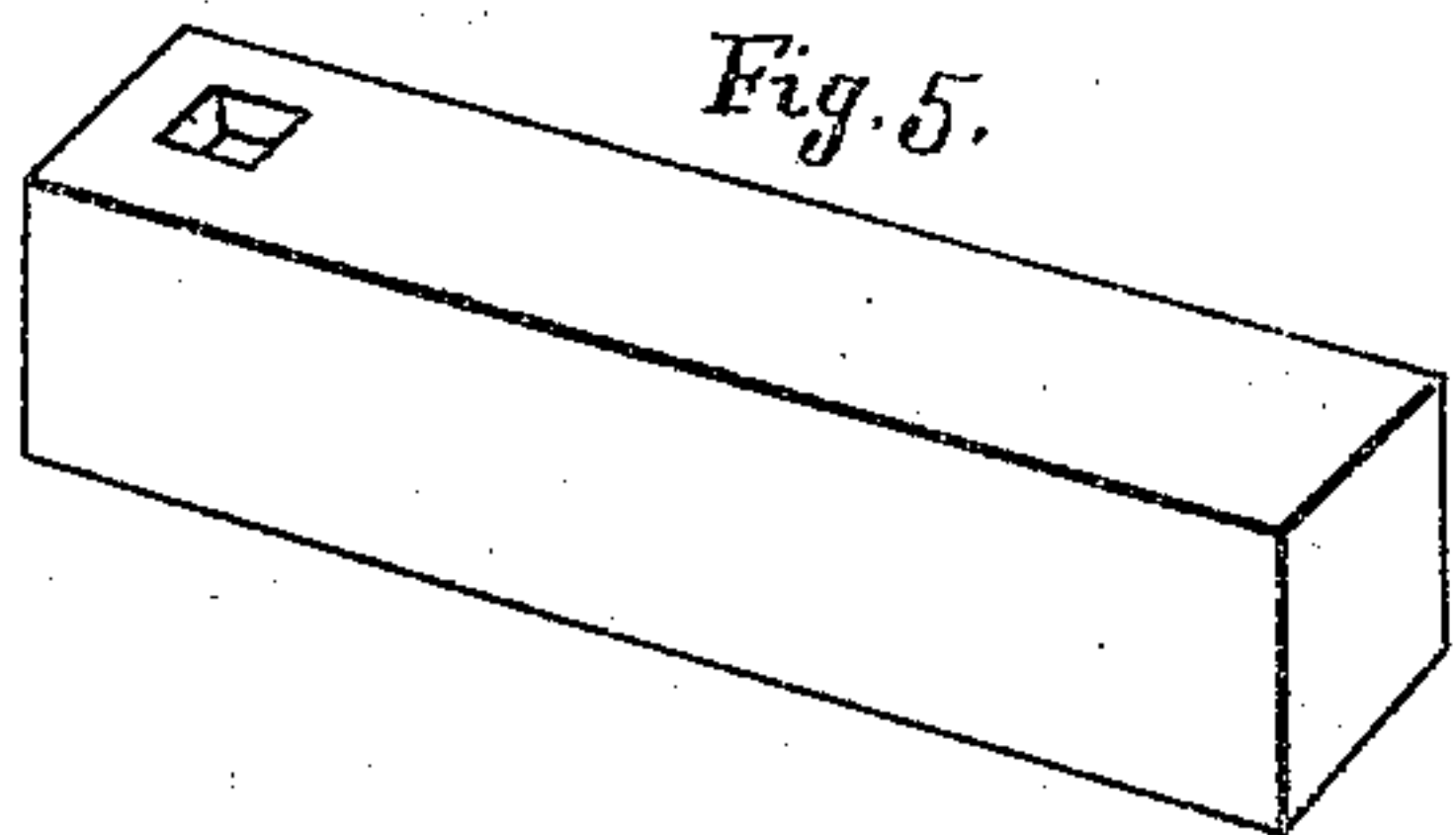


Fig. 5.



UNITED STATES PATENT OFFICE.

THOMAS W. STARR, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN PREPARING MATRICES FOR TYPE BY THE ELECTROTYPING PROCESS.

Specification forming part of Letters Patent No. 4,130, dated August 4, 1845.

To all whom it may concern:

Be it known that I, THOMAS W. STARR, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and improved manner of constructing matrices of copper or other metal for casting the face of types, borders, and other ornamental cuts used in printing; and I do hereby declare the following to be a full and exact description of my method, reference being had to the accompanying drawings, forming a part of this specification.

I in the first place take a plate of copper of a little greater thickness than the depth of the matrix is required to be (see Figure 1) and make a hole, *a*, in one end of the same, the sides of the opening to slant outward at an angle of forty-five degrees, (more or less.) I then insert the face of a type or cut from which I desire to form a matrix through the smallest end of the opening *a* and a little greater distance into the opening than the depth of the matrix is required to be, so as to allow for smoothing and polishing its surface after the matrix is formed. I then firmly secure them in that position and after connecting a copper conducting-wire, *b*, to them cover the whole with a coating of wax, save the face of the type, the opening in the plate surrounding the same, and a narrow margin around the edge of the opening, as represented in Fig. 2, two matrix-plates being represented connected together. The type-plate and conducting-wire as thus prepared is placed in a solution of sulphate of copper, (the usual preparation for electrotyping.) The conducting-wire *b* is then connected with the pole of a galvanic battery, the opposite pole being connected to a piece of copper

in the usual manner practiced in electrotyping. As soon as a sufficient quantity of copper is deposited upon the face of the type and the cavity surrounding it is entirely filled the whole is withdrawn from the solution, the wax is removed, and the type is separated from the matrix-plate, the back of the matrix-plate then presenting the appearance represented in Fig. 3. The surplus copper is next removed from the back of the plate and both the face and back are smoothed off and polished. The matrix-plate is next riveted to a block of copper, as represented in Fig. 4, and after securing the rivets and removing the surplus portions of the same the whole is fitted up to a proper size for use, as shown in Fig. 5.

Any number of matrix-plates may be placed side by side and secured to each other and all be acted upon at the same time.

Having thus fully described my method of forming the matrices for casting the face of printers' type and other articles therein, what I claim as new, and desire to secure by Letters Patent, is—

The manner of forming the same by means of a common type or cut and a metallic plate with an opening with slanting sides, the two arranged and prepared in the manner herein described and placed in a solution of sulphate of copper and connected with the pole of a galvanic battery in the same manner usually practiced in electrotyping, and after receiving a sufficient deposit of copper to be fitted up for use in the manner herein set forth.

THOMAS W. STARR.

Witnesses:

Z. C. ROBBINS,
WM. COOPER.