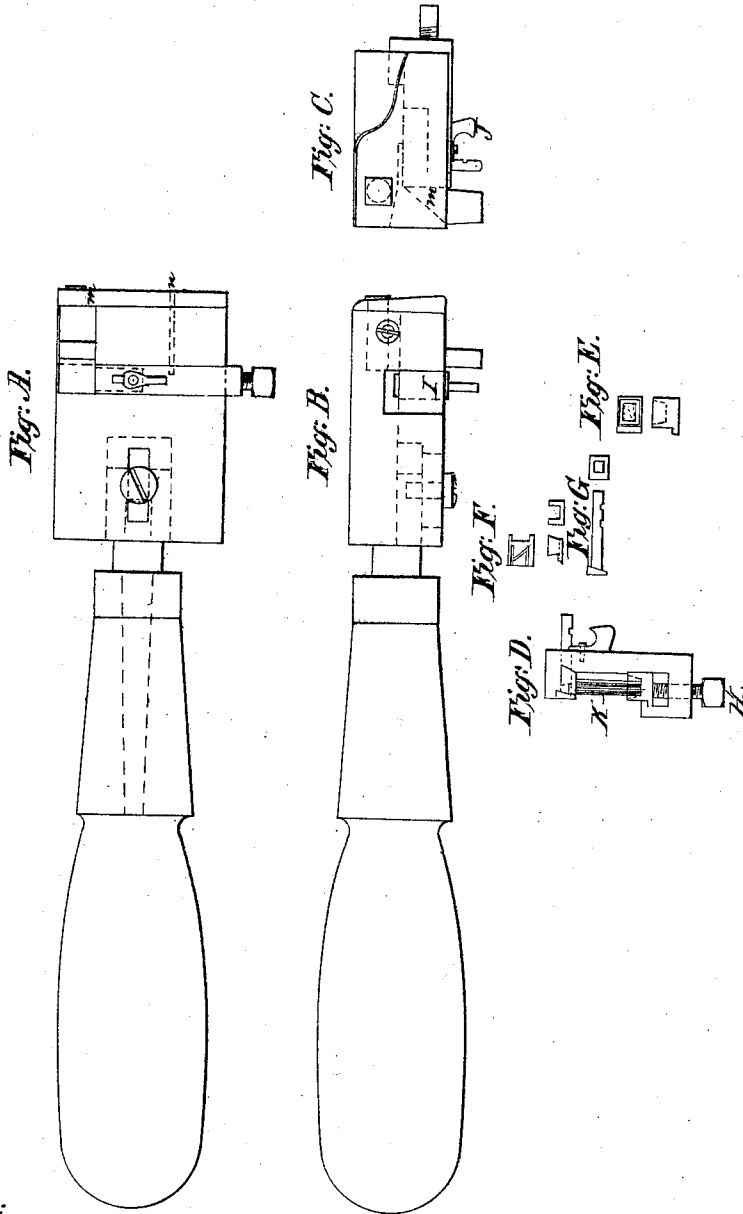


I. C. Bryant,

Casting Pointed Letters.

N<sup>o</sup> 30,293.

Patented Oct. 9, 1860.



Witnesses:

*Wm. G. Wood*  
*L. R. C. C. C.*

Inventor:

*Isaac C. Bryant*

# UNITED STATES PATENT OFFICE.

ISAAC C. BRYANT, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN CASTING EMBOSSED TYPE.

Specification forming part of Letters Patent No. 30,293, dated October 9, 1860.

*To all whom it may concern:*

Be it known that I, ISAAC C. BRYANT, of the city of Philadelphia and State of Pennsylvania, have invented a new and Improved Mode of Making and Casting Embossed or Pointed Type; and I do hereby declare that the following a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in providing a mold, and what I term a "double matrix;" and to enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation.

Figure A is a side view of mold and matrix or die made of cast-iron in two parts. Fig. B is a plan or edge view. Fig. C is an end view. Fig. D is a side view of matrix with points ready for casting when placed in mold. Fig. E is the face-letter. Fig. F is the top or guide letter. Fig. G is the bolt for holding in the guide-letter and points. Fig. H is the set-screw for holding up bottom letter. Fig. I is the gate for pouring in the metal. Fig. J is the button for holding in the bolt that holds in the points and top letter. Fig. K is the points in frame ready for casting. Fig. L is the frame matrix or holder, which forms the back of mold, and holds the letters and points ready for casting. Fig. M is the slide forming the front of gate to mold. Fig. N is the pin for holding in matrix or frame. Fig. O O are the openings in guide-letter N for putting in the points.

The mold is made of cast-iron in two parts similar to the mold now in use for casting ordinary type, except it is open on the face to receive the frame holding the top and bottom letters and a slide forming the front of the gate to pour the metal in, and a pin attached to slide to hold in the frame or matrix while casting. The matrix for bottom letter is made by casting on a pattern-letter or by drilling or punching into a brass, copper, iron, or steel plate the depth desired to have the points to project below the surface of the end of type when cast. The top letter is made by a pattern-letter used as a punch and punched

into a piece of brass, iron, copper, or steel, and filed the size the letter is intended to be, and to correspond with the bottom letter in shape. The matrix has two letters, one on each end. The letter on the lower end is perforated with points or cavities, forming the letter intended to be cast. The letter on the upper end is made to correspond in form with the letter on the lower end. The letter on the upper end is made the same as a pattern-letter for casting the common types, except it has one or more openings on the top for the purpose of placing in the steel, brass, or other pointed wires, which, when placed in, will form the entire letter or letters in points or projections. The two letters above are placed in a horizontal piece of brass, iron, or steel, the distance apart the length the type is intended to be, the said piece forming the back of the mold. The bottom letter is so arranged by a screw spring or wedge that when the cast is made that by loosening the screw spring or wedge the bottom letter will leave the points and the casting or type drop out of the mold. After the letters above described are placed in the horizontal piece of metal that forms the back of the mold, the points, after being previously tinned, sharpened, and made the length to fit the two letters above described and placed therein, the mold is filled with type-metal or any other metal answering the purpose. The type cast in the above way will form a solid type in the body with projecting points forming any letter or combination of letters desired.

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

1. The combination of the bottom and top letter or letters in a frame made of iron, brass, copper, or any other metal suitable for the purpose.

2. The arrangement of the openings in the top letters for putting in the steel, iron, or brass wire forming the points or projections on the face of the type.

3. The combination of one or more guide-letters at the top with one or more letters at the bottom formed so as to give the desired shape in points or projections to the letters or designs to be cast.

4. The combination of separate pieces of steel, iron, or brass wire, round, square, or any other shape suitable, in connection with frame and guide and bottom letters or designs.

5. The combination of points so as to form a letter or letters and solidifying them by casting type or other metal around them in a mold and double matrix, as described.

6. The mold, in connection with the matrix slide and pin, as described.

ISAAC C. BRYANT.

Witnesses:

W. G. CONNORS,

L. R. FLETCHER.