(No Model.)

W. SCOTT.

MOLD FOR BACKING ELECTROTYPE AND CASTING STEREOTYPE PLATES.

No. 442,276. Patented Dec. 9, 1890.

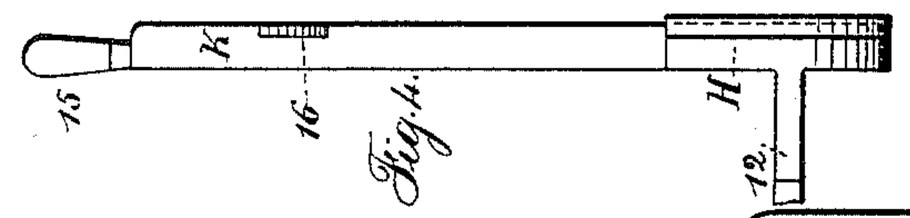

Fig. 4.

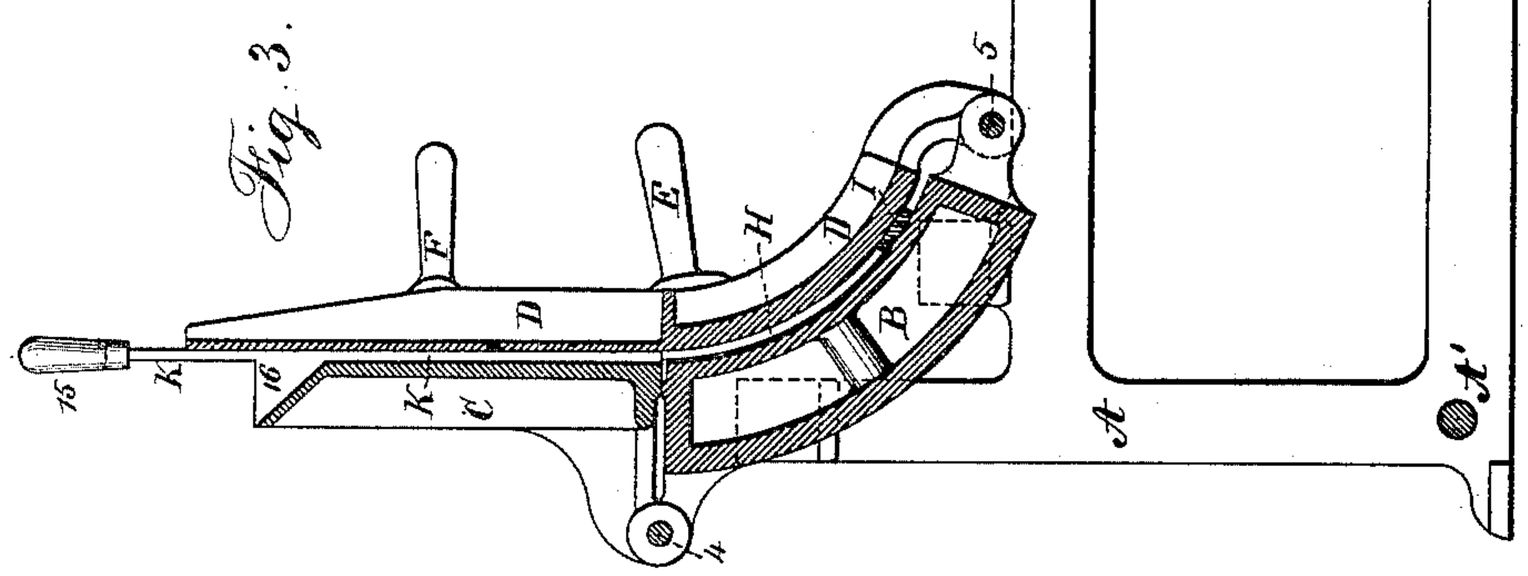

Fig. 3.

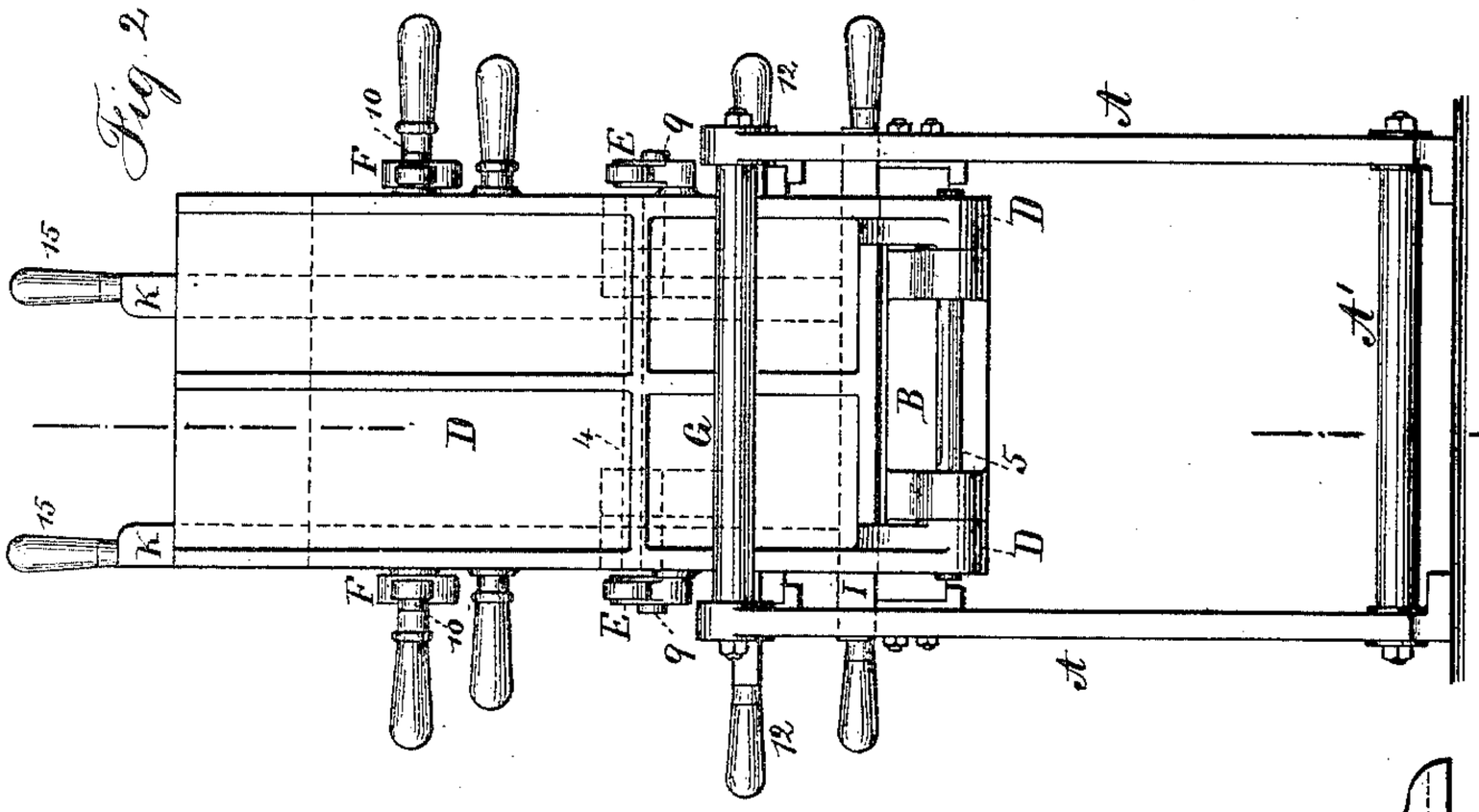

Fig. 2.

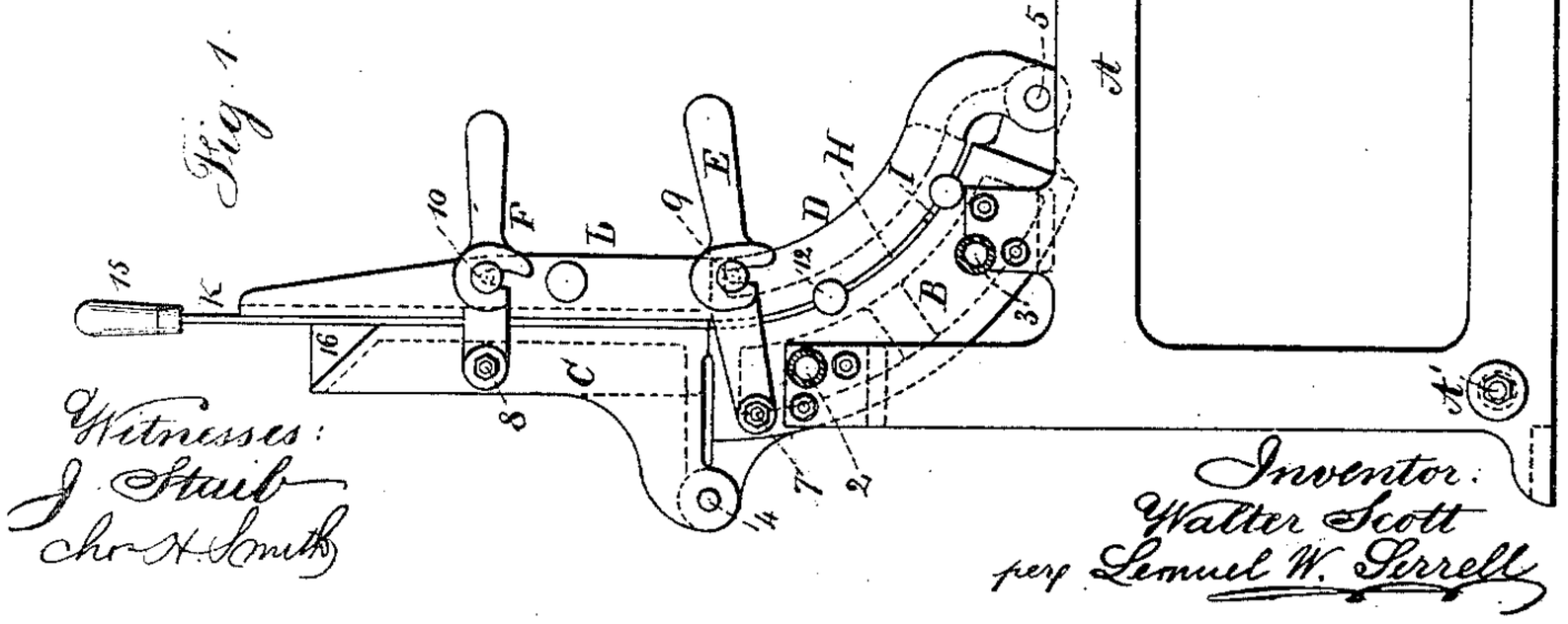

Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

MOLD FOR BACKING ELECTROTYPE AND CASTING STEREOTYPE PLATES.

SPECIFICATION forming part of Letters Patent No. 442,276, dated December 9, 1890.

Application filed July 11, 1887. Serial No. 243,959. (No model.)

To all whom it may concern:

Be it known that I, WALTER SCOTT, of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Molds for Backing Electrotype and Casting Stereotype Plates, of which the following is a specification.

The object of this invention is to facilitate the placing and holding of the paper matrix made use of in casting curved stereotype-plates or the electrotype while casting into the same the backing or support to the thin layer of copper. I employ a stationary concave box, heated by steam, so as to warm up and completely dry the paper matrix, or to warm up the copper electrotype, so that the type-metal will more completely fill the interstices and adhere thereto. The convex side of the mold is hinged, and there is a hinged gate forming part of the upward extension of the mold, so as to obtain the necessary height of column for the melted metal to exert the proper pressure in filling out the matrix.

In the drawings, Figure 1 is a side elevation of the apparatus. Fig. 2 is an end elevation. Fig. 3 is a vertical section, and Fig. 4 is an elevation, of one of the edge bars and arc bars.

The side frames A are connected by the bolts and columns A′ and G, and they receive between them the stationary hollow concave B, which is made as a cast-box, sufficiently strong and heavy to withstand the pressure of live or superheated steam introduced into the same by a pipe 2, and 3 is a pipe for the discharge of water of condensation, or through which the steam circulates.

Above the concave B is the hinged gate C, that is connected to such concave by the hinges 4, and when in the position of use such gate rises vertically above the top edge of the concave B, and the top edge of this gate is at an outward inclination.

The convex side D of the mold is hinged at 5 to the lower part of the concave B, and it is constructed so that the surface thereof is parallel to the surface of the concave B and hinged gate C, the distance between the two surfaces corresponding to the thickness of the printing-plate that is to be cast within the mold, and there are hooks E and F, pivoted at 7 and 8 upon the concave B and gate C, respectively, and pins 9 and 10 upon the convex mold D, so as to connect the parts of the mold firmly while the casting is being performed.

When the mold is opened, the convex side D is swung over until its back rests upon the cross-bar G, and the gate C is swung back upon its hinges sufficiently to allow the edge of the metal or paper shell designed to form the electrotype or stereotype to be entered between the top edge of the concave and the bottom edge of the gate and firmly held by swinging the gate down to place.

Arc bars H, corresponding in thickness to the casting and in curvature to the parallel mold-faces, are now laid so as to lap slightly upon the edges of the paper matrix or the electrotype, and these arc bars have handles 12 extending out horizontally at the ends of the mold, so that the arc bars can be easily placed in position. This, however, is to be done after the cross-bar I has been laid in place upon the bottom edge of the matrix, and I remark that the top edge of the cross-bar I and the inner edges of the arc bars H are usually beveled, so that the casting is made with the proper beveled or dovetailed edges, so as to be held upon the printing-cylinder by the clips ordinarily employed. The hooks E or any suitable clamps serve to hold the parts of the mold firmly together; but before closing the hooks or clamps F the edge bars K are to be inserted between the hinged gate C and the upper part of the convex mold D. These edge bars K have handles 15 at their upper ends and triangular plates 16, that fill in at the sides of the beveled space or mouth that receives the melted metal in casting the plate, the top end of the gate C being made at an inclination, as shown. The arc bars H and the edge bars K may be in one piece, if desired.

It will be now understood that the vertical portion of the convex side of the mold and the swinging gate are to be of any desired height, in order that the column of melted metal within the mold and between these parts may exert the proper pressure to cause a perfect stereotype or electrotype. In both instances the pressure of the melted metal causes the matrix to set closely against the surface of the concave, and thereby assume the proper segmental form for the printing-

cylinder of the press, and the matrix being held at the edges the melted metal cannot pass in between the matrix and the concave.

The portion of the casting above the matrix is to be sawed or cut off by any suitable means after the removal from the mold or while in the mold.

Hot water or hot air may be made to circulate through the hollow mold to heat the same, if desired, in place of steam, or gas may burn within or against the concave D for heating the same. In all instances the heat causes the electrotype-shell to expand and assume its proper position before the melted metal is poured in, and the metal remains in a fluid condition sufficiently long for the copper matrix to fully expand and be pressed against the concave.

The arc bars and cross-bar, although lapping on the edges of the matrix, do not confine it, but allow it to expand, and I remark that, instead of nipping the edge of the matrix between the top of the concave and the bottom of the gate, a bent strip of thin sheet metal may be inserted at that point and the edge of the matrix inserted beneath the same, so that the melted metal cannot get in behind the matrix.

I claim as my invention—

The combination, with the stationary concave B, of a vertical gate C above such concave, and hinges 4, upon which the gate can be swung in clamping the edge of the electrotype, the convex portion D of the mold having a vertical extension parallel to the gate C, and the hinges for uniting the lower ends of the convex and concave portions of the mold, and clamps and a supporting-frame, substantially as specified.

Signed by me this 5th day of July, A. D. 1887.

WALTER SCOTT.

Witnesses:
GEO. T. PINCKNEY,
W. L. SERRELL.