UNITED STATES PATENT OFFICE.

CHARLES W. HEERGEIST, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO CHARLTON H. ROYAL, OF SAME PLACE.

METHOD OF FORMING METALLIC SIGNS WITH INTAGLIO LETTERS OR CHARACTERS.

SPECIFICATION forming part of Letters Patent No. 633,315, dated September 19, 1899.

Application filed April 20, 1899. Serial No. 713,805. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HEERGEIST, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Methods of Forming Metallic Signs with Intaglio Letters or Characters; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to an improved process or method of forming metallic signs or plates having letters and characters or suitable designs thereupon in intaglio, such as are ordinarily produced by routing or indentation in the metal base; and the invention has for its object to provide for the production of such signs and the like with any desired variation in the intricacy of pattern without in any way increasing the labor or difficulty of production.

In carrying this invention into practice a stock supply of letters, characters, and designs of the desired pattern are provided, which may be of any suitable or preferred material—such as metal, wood, or composition—and having their faces or outer surfaces suitably ornamented, while their rear surfaces are preferably plain and adapted for attachment to a plain or smooth metal backing or support. These letters, characters, or designs are formed in negative or reverse and are adapted to be immovably attached to the back in reverse order, and their outer faces, while conductive, are of such character that metal deposited thereon by electrochemical action may be stripped therefrom. When so attached by wax or other suitable attaching means, the edges of the backing are suitably protected by a non-conducting substance. The whole is then plunged into a bath or solution of the metal of which the sign is to be formed and subjected to the action of an electric current for depositing the metal from the solution over the entire exposed surface of the previously-arranged sign or design and backing. The deposition is continued until the deposit has reached the desired thickness, when the back and deposit are removed from the bath and separated or the deposit stripped from the backing. In this stripping the characters or designs will remain embedded or held in the deposited metal and are subsequently removed, leaving the deposited metal in the form of a plate with the desired design formed therein in intaglio. The thin plate of deposited metal forming the sign is then backed, either on a plain flat backing or it may be curved in accordance with the particular style of sign desired, and, where desired, the depressed portions of the face may be filled in with any suitable or preferred composition or cement for giving a contrasting color, and the surface being smooth may be polished or otherwise treated for ornamental or protective purposes, just as in the case of a sign made by the old process of engraving and routing.

It will be noted that by allowing the letters to strip from the backing with the deposited metal the metal is not liable to be distorted by the hanging of individual letters in the metal. Thus very thin deposits may be successfully removed. Furthermore, by removing the letters individually from the deposited metal after its removal from the backing attention may be given to any points in the sharp edges of the characters which for any cause stick and would otherwise be broken or rendered irregular.

This process is simple, cheap, and entirely obviates the old expensive and slow hand processes involving the routing or sinking of the characters in the base-plates of signs of this character, such as have heretofore been produced, besides saving the cost of the expensive plate necessary in such old processes.

Obviously in lieu of the electrochemical deposition hereinbefore described any of the ordinary processes of depositing metal in thin films from a solution may be employed without departing from the spirit of the invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States of America, is—

The herein-described process of producing metallic signs having intaglio characters in a base-plate, consisting in mounting the pattern letters or characters which are to appear in the complete sign upon a suitable back-

ing by wax or similar material so as to be easily separable therefrom, electrochemically depositing metal upon the pattern formed by the assembled letters or characters and backing, to the desired thickness, then separating the deposited metal and letters or characters from the backing, then separating the letters or characters from the deposited metal and finally dressing the face of the deposited metal; substantially as described.

CHARLES W. HEERGEIST.

Witnesses:
THOMAS DURANT,
HUGH M. STERLING.