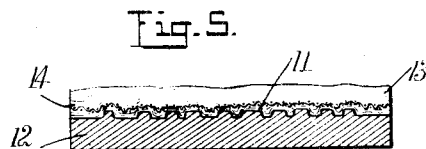
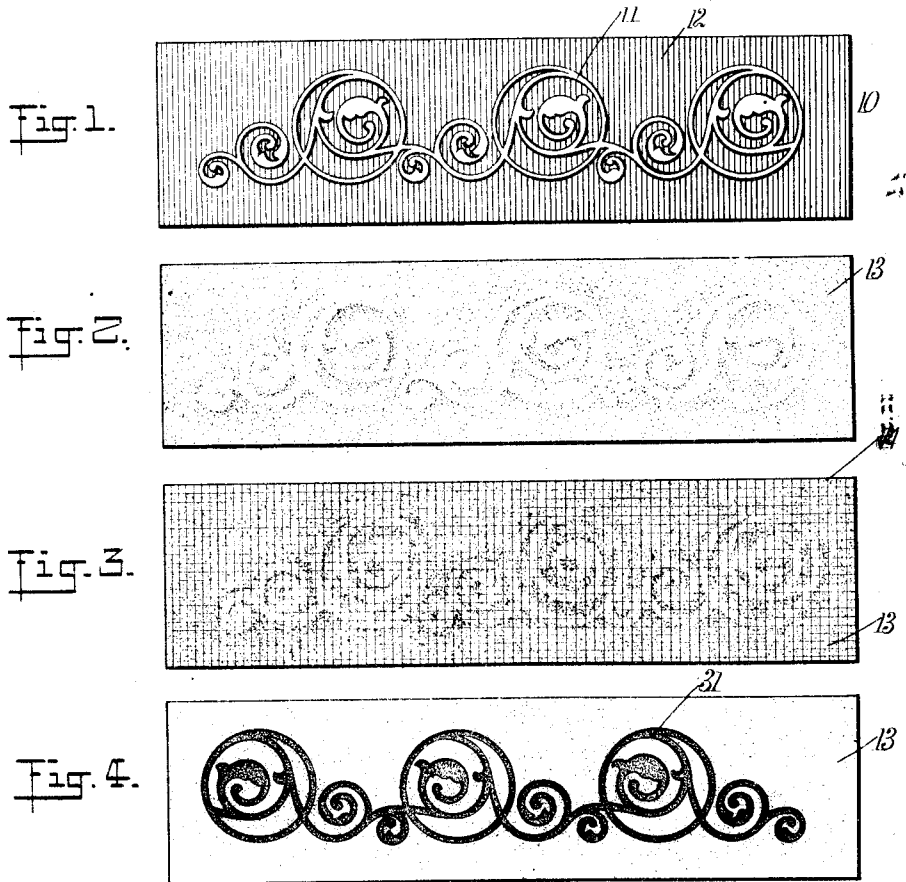


A. J. TIZLEY.
MOLD FOR ELECTROTYPING PROCESSES.
APPLICATION FILED MAR. 6, 1912.

1,063,749.

Patented June 3, 1913.



WITNESSES

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MOLD FOR ELECTROTYPING PROCESSES.

1,063,749.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed March 6, 1912. Serial No. 681,915.

To all whom it may concern:

Be it known that I, ARTHUR JAMES TIZLEY, a subject of the King of Great Britain, and a resident of the city of New York, through of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Mold for an Electrotyping Process, of which the following is a full, clear, and exact description.

My invention relates to molds for use in electrotyping processes using a cyanid bath and more particularly it is directed to a new and improved mold which is unaffected by the cyanid bath or by temperature variation.

A further object of my invention is to provide a new and improved mold made of celluloid in a particular manner which will not warp and which will permanently retain the embodied design.

Reference is to be had to the accompanying drawings forming part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is representative of any suitable master pattern; Fig. 2 discloses the pattern with the celluloid sheets positioned thereon, whereby the mold is formed; Fig. 3 sets forth the mold of Fig. 2 with a reinforcing element, such as wire mesh; Fig. 4 is the reverse side of the mold with the deposit of silver forming the pattern disclosed in Fig. 1; Fig. 5 is a vertical sectional view of the pattern with the mold adhering thereto disclosing the reinforcing mesh.

While a particular form of pattern is disclosed in the drawings in setting forth the mode of operation of my invention, it is clear that the process disclosed is equally well adapted to different patterns and those of widely varying dimensions, the figures of such patterns being more or less intricate.

Any suitable pattern 10, such as that shown in Fig. 1, preferably comprises the design 11 in bas-relief on any suitable base 12, such master pattern being adapted for continuous use and being made of such metal as will permit such repeated use. When it is desired to form a silver reproduction of the design shown in Fig. 1, a suitable mold is made in the manner to be presently described. It is well known that a mold of gutta-percha is not adapted for use in a cyanid bath for the reason that the gutta-

percha is attacked by the electrolyte; after much experimentation, I have discovered that a mold made of celluloid in a particular manner is particularly fitted for use in such a bath or electrolyte, inasmuch as there is no chemical reaction between the substances.

The preferred method of forming the celluloid mold may be described especially in connection with Figs. 2 and 3. Strips of softened celluloid of required dimensions are brought into intimate contact with the design to be reproduced, as, for example, that shown in Fig. 1, the celluloid being worked into all corners of the design and being in contact therewith throughout the entire surface thereof so that an exact intaglio reproduction is secured. The celluloid mold is preferably made up of a plurality of thin sheets which are suitably softened, whereby they may be worked to proper shape, the use of such material, however, demanding a suitable reinforcing element if the mold is to retain the same dimensions under different conditions and is not to be distorted after being dried out, or when lying exposed to the air.

Referring then particularly to Fig. 5, the successive layers of softened celluloid are designated 13, while the reinforcing element is designated 14, such element being preferably wire mesh, the number of openings in which will depend largely upon the character of the pattern to be copied, the use of such mesh providing an element which may be variously bent in order to take up varying shapes of patterns; as shown in Fig. 5, this reinforcing element is preferably positioned between the outer side of the mold and the inner side, the exact positioning of the element being such that, while it serves to maintain the shape of the mold as an entirety, it is positioned to particularly retain the peculiar design embodied in such mold. After the mold has been thus formed, it is stripped from the pattern and prepared for the bath in the following manner; in order to provide for the electrolytic deposit of the silver on the mold, it is essential that a portion, at least, of the mold act as a conductor for the current, and, to this end that side of the mold which carries the design is covered with a thin layer of lacquer acting as a vehicle for plumbago, the lacquer being preferably a

thin solution of shellac; the solution is thin in order to preserve the detail of the design, and the amount of plumbago carried thereby is sufficient to cover the design to be reproduced. After the mold has been thus prepared, it is suspended in the silver plating bath which, in this instance, is the double cyanid of silver and potassium, the plate of silver being also suspended within the bath, the current being then supplied and the deposit beginning to form.

Celluloid is peculiarly fitted as a material to form the mold since it is unaffected by the electrolyte, it being noted, however, that, in order to produce the best results, the celluloid is worked in the manner disclosed; thick sheets of celluloid are unsatisfactory, due to warping and shrinking; the use of the wire mesh reinforcer, embedded intermediate the sides of the mold, serves to retain the shape of the same and the metal deposit thereon in the bath is an exact reproduction of the design on the master pattern.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent:—

1. A mold for the purpose described, comprising a series of superposed celluloid foils, and a reinforcing element embodied between said foils near the face where the impression is to be formed.

2. A mold for the purpose described, comprising a series of superposed celluloid foils, and a metallic fabric embodied between said foils near the face where the impression is formed, said fabric being caused to follow substantially the sinuous shape of the impression and help to retain the shape of same in the mold.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ARTHUR JAMES TIZLEY.

Witnesses:

GEO. KNOCH,
L. LIVINGSTON.