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UNITED STATES PATENT OFFICE.

BERNHARD LUDWIG, OF NEW YORK, N. Y.

PROCESS OF PRODUCING CELLULOID PRINTING-PLATES.

SPECIFICATION forming part of Letters Patent No. 747,738, dated December 22, 1903.

Application filed February 11, 1903. Serial No. 142,935. (No model.)

To all whom it may concern:

Be it known that I, BERNHARD LUDWIG, a citizen of the United States, residing in New York, in the borough of Bronx and State of New York, have invented certain new and useful Improvements in Processes of Producing Celluloid Printing-Plates, of which the following is a specification.

Attempts have been made heretofore for producing celluloid printing-plates from half-tone and other plates by forming a matrix of celluloid from said half-tone plate and then pressing a heated plate of celluloid into the cold matrix and printing from the celluloid plate thus obtained. In place of the celluloid matrix a hard-rubber matrix was used, but neither process gave satisfactory results in practice for the reason that the first process failed to transfer the fine points from the matrix-plate to the celluloid printing-plate, while in the latter process the sensitiveness of the hard-rubber matrix to the changes of temperature rendered the same not reliable enough for producing the printing-plates.

The object of this invention is to furnish a process of producing celluloid printing-plates by which the fine points of the half-tone plate are reproduced in the most accurate manner on the celluloid printing-plate, so that every detail of the original half-tone plate is reproduced in printing; and for this purpose the invention consists of a process of producing celluloid printing-plates by pressing the half-tone plate into a lead plate, heating the latter and pressing a celluloid plate into the lead matrix so as to reproduce all the fineness and detail of the original half-tone plate on the celluloid printing-plate.

In carrying out my improved process a lead plate of suitable thickness is placed on the half-tone or other plate to be reproduced and then subjected to considerable pressure, so that all the fine points of the plate are transferred to the surface of the lead plate, forming thereby a matrix which corresponds in fineness and detail to the original half-tone plate. On the lead matrix is then placed a celluloid plate and pressed into the same while the lead matrix is heated from the opposite side, the temperature for heating being preferably about 125° centigade, as at this temperature the celluloid is in the best plastic condition for producing the exact counterpart of the original plate pressed in the lead matrix. The celluloid plate is then permitted to cool and harden and is then in condition for use after being mounted on a suitable backing of wood or metal in the usual manner. This process permits the use of celluloid plates of considerable hardness and of any thickness for printing purposes, which could not be done in the process heretofore in use, in which a soft celluloid printing-plate could only be employed, as a hard celluloid plate had to be employed for the matrix-plate.

By my improved process all the fine lights of the original half-tone plate are reproduced in the lead matrix and then transferred from the same in an exact and accurate manner to the celluloid plate. Any number of celluloid printing-plates can be produced from the lead matrix as required by the exigencies of the printer, and thereby printing-plates of excellent quality obtained.

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

1. The herein-described process of producing a printing-plate, which consists in pressing together a plate of a material rendered plastic by heat, and a non-yielding matrix heated to the temperature of plasticity of said plate, and then removing said plate from said matrix, substantially as set forth.

2. The herein-described process of producing a celluloid printing-plate, which consists in pressing together a heated lead matrix and a celluloid plate until the latter assumes the shape of the former, and then removing said celluloid plate from said matrix, substantially as set forth.

3. The herein-described process of producing a celluloid printing-plate, which consists

in pressing together a plate of celluloid and a lead matrix heated to the temperature of plasticity of said celluloid, and then removing said plate from said matrix, substantially as set forth.

4. The herein-described process of producing a celluloid printing-plate, which consists in pressing together a lead matrix heated to 125° centigrade and a plate of celluloid, and then removing said celluloid plate from said matrix, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

BERNHARD LUDWIG.

Witnesses:

PAUL GOEPEL,

HENRY J. SUHRBIER.