UNITED STATES PATENT OFFICE.

WILLIAM T. HOWARD, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN THE ART OF AUTOGRAPHIC PRINTING.

Specification forming part of Letters Patent No. **215,926**, dated May 27, 1879; application filed February 15, 1879.

To all whom it may concern:

Be it known that I, WILLIAM T. HOWARD, of the city of Baltimore, in the State of Maryland, have invented an Improvement in Preparing Autographic-Printing Plates, together with an improvement in the art of autographic printing, in which the use of said plate is involved, of which invention the following is a full, clear, and exact description.

This invention is founded on the known fact that a mercurial surface will resist or repel printers' ink. I am aware that heretofore inventions in printing and analogous arts have been made in which this fact has been availed of; but in one class of such inventions, wherein unengraved plates have been used, the galvanic battery has been called into requisition in the preparation of the printing-surface of the plates, while in the other class engraved plates, which it is the object of my invention to avoid, have been used.

The plates used in these inventions have, as far as I have been informed, been made in two ways. In the first mode silver has been deposited by galvanic action on a copper plate, as a medium to promote a union between the said plate and a coating of mercury. In the second mode the engraved plates, after the engraved lines have been filled with wax or other substance, have been rubbed with metallic mercury. The first class of such inventions are unsuitable for use in the hands of persons unskilled in electroplating, while the second class involve, as above stated, the use of an engraved plate, which cannot be applied to the purposes for which my invention is designed.

The simplicity of my improvements adapts them to the general uses of merchants, professional men, and subordinates in counting-rooms, as indeed all to whom the rapid, cheap, and exact reproduction of manuscript is of value.

My invention relates, first, to providing an unengraved printing-plate, having an inked inscription thereon, with a mercurial surface without the use of electrical apparatus, and without the necessity of rubbing the mercury on said plate, which would obliterate or deface the inked inscription. In carrying out this part of my invention, I take an ordinary copper plate and transfer thereto from a paper written in ink the writing or inscription to be reproduced in print, and then apply to the printing-surface of the plate one or more of the salts of mercury in solution, whereby an amalgamated or ink-resisting coating is given to the uninscribed portion of said plate.

The invention relates, secondly, to the process of autographic printing, in which the preparation and use of the above-described plate are involved.

I carry out the process as an entirety as follows: I write or otherwise inscribe in transfer-ink, on paper, the desired writing or inscription to be reproduced in print; then transfer the same in reverse to an ordinary copper plate by pressure; then remove the transfer-sheet; then apply, by immersion or a saturated pad or brush, to the surface of the plate bearing the inked design one or more of the salts of mercury in solution, to form a mercurial or amalgamated coating to the uninscribed portion of said plate; then dry the plate and burnish it; then pour upon the amalgamated coating a small quantity of metallic mercury, which is diffused over the surface of the plate; and finally roll it up in ink, and print therefrom after the manner of lithography.

It is obvious that the same effect may be obtained by writing the subject to be printed in reverse with ink on the plate before treating it with the mercurial solution; but it is equally apparent that great inconvenience would arise therefrom to persons unskilled in the art of engraving or etching.

I am aware that it is not new to coat metals with mercury by means of a solution of the salts of mercury; but I am not aware that an unengraved ink-inscribed plate has been thus treated with the view of obtaining a printing-surface, or with any other view whatsoever.

Having described my invention, I claim as new and wish to secure by Letters Patent of the United States—

1. The within-described mode of preparing an autographic-printing plate, consisting in transferring thereto from a paper written in suitable ink, the writing or inscription to be reproduced in print, and then applying to the inked surface of said plate one or more of the salts of mercury in solution, whereby an amalgamated or ink-resisting coating is given to

the uninscribed portion of said plate, substantially as specified.

2. The within-described improvement in autographic printing, consisting in writing or otherwise inscribing in ink, on paper, the desired writing or inscription to be reproduced in print, then transferring the same in reverse to an ordinary copper plate by pressure, then removing the transfer-sheet, then applying to the surface of the plate bearing the inked design one or more of the salts of mercury in solution, to form a mercurial or amalgamated coating to the uninscribed portion of the plate, then drying the plate and burnishing it, then pouring upon the amalgamated coating a small quantity of metallic mercury, and finally rolling up the plate in ink and printing therefrom, substantially as set forth.

In testimony whereof I have hereunto subscribed my name this 14th day of February, A. D. 1879.

WILLIAM THOMPSON HOWARD.

Witnesses:
WM. C. NICHOLLS,
JNO. S. MADDOX.