

J. GILLHAM.  
Processes of Applying Ornamental Designs to Steel  
Engraving Plates.

No. 149,467.

Patented April 7, 1874.

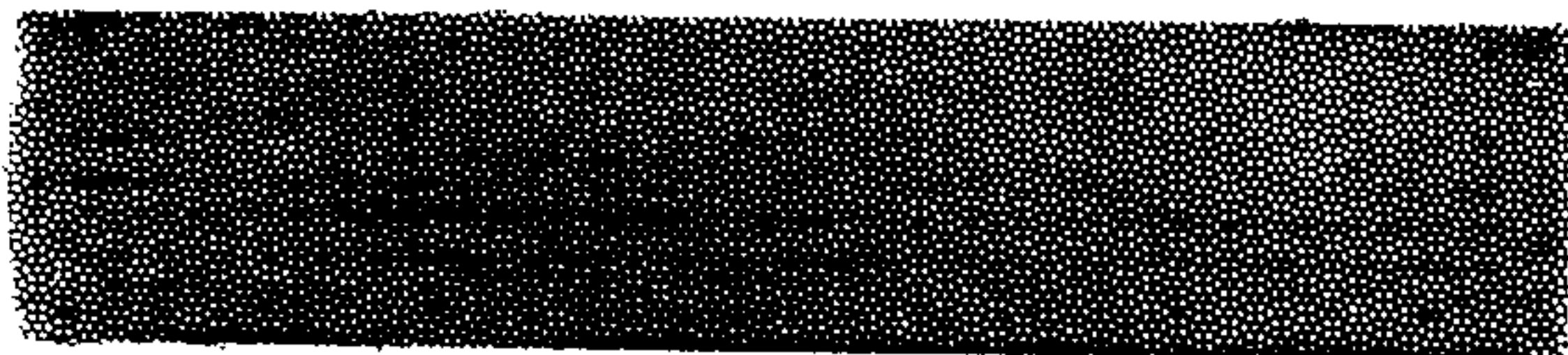
*Fig. 1.*

Insurance

*Fig. 2.*

Insurance

*Fig. 3.*



*Witnesses*

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# UNITED STATES PATENT OFFICE.

JOHN GILLHAM, OF LODI, NEW JERSEY.

## IMPROVEMENT IN THE PROCESSES OF APPLYING ORNAMENTAL DESIGNS TO STEEL-ENGRAVING PLATES.

Specification forming part of Letters Patent No. **149,467**, dated April 7, 1874; application filed March 5, 1874.

*To all whom it may concern:*

Be it known that I, JOHN GILLHAM, of Lodi, Bergen county, New Jersey, have invented certain new and useful Improvements in Steel-Engraving; and I do hereby declare the following to be a full and correct description of the same, reference being had to the accompanying drawings, in which—

Figure 1 shows the word "insurance" engraved in the ordinary manner, the face of the letters being of a deep-black color. Fig. 2 shows the same word with the face of the letters covered with an ornament composed of white dots introduced by my improved method of engraving. Fig. 3 shows the impression of the ornamental work from the plate on which it was engraved.

These figures are intended to give but a single illustration of the nature of my invention and its practical application.

The object of my invention is to provide additional security against the counterfeiting of bank-notes, bonds, or valuable engraved securities of any description, by increasing the difficulty of imitation of the original to such an extent as to render the attempt unprofitable and almost hopeless.

My invention consists in a method of introducing into the face of letters of the class represented in Fig. 1, or into any of the deep-cut or black portions of a steel engraving, a variety of ornamental or other work, consisting of dots or lines, or both, arranged in any desired form or pattern, or of cycloid-work, lathe-work, or any system of lines or marks that may be designed for the purpose.

A description of the method of producing the ornamental word "insurance" (shown in Fig. 2) will illustrate the mode in which my invention is to be carried out in practice.

The word "insurance," as presented in Fig. 1, is produced by the ordinary method of steel-engraving, the only variation being that the face of the letters (the black portion) is rather more deeply bitten in by the acid than is commonly done. The plate being hardened ready to take up the word "insurance" on the decarbonized cylinder, I first take up on the surface of that cylinder any previously-prepared pat-

tern of ornamental work. In this case the ornament consists simply of the dots shown in Fig. 3, and on the face of the letters in Fig. 2.

The cylinder or roll thus prepared is passed over the hard steel plate, under pressure, in the ordinary way, to take up the engraved word. During this process all the ornamental pattern, Fig. 3, on the surface of the decarbonized roller is crushed out by reason of the pressure, except that portion which comes over the deeply-cut parts of the engraving—i. e., the face of the letters—where it will remain unaffected. The cylinder or roll is now hardened, and the transfer of the engraving made to another plate, in the ordinary manner, when it will be found that, in all the dark portions of the letters in Fig. 1, the dotted ornamental work appears, as shown in Fig. 2. By another decarbonized roller, applied in the ordinary way, the letters thus ornamented can be taken up and transferred to a plate ready for printing.

This method is applicable to any of the deeply-cut portions of a steel engraving—as, for example, to the backgrounds of the portraits commonly introduced into our national-bank notes and other currency and securities.

Wherever introduced it makes the work of the counterfeiter greatly more difficult, by requiring him to reproduce by hand the most complicated combinations of lines and patterns which can be traced by the lathe.

The lathe-work patterns are among the most important and trustworthy safeguards against the counterfeiter's skill, as they can never be exactly reproduced except by transfer from the original plate, while the lettering of bank-notes, &c., is the part in which the imitation is most easy.

By my invention the same security from exact imitation which the lathe-work patterns afford to other portions of the note or bond can be given to the lettering, the backgrounds, and to any of the deeply-cut portions of the engraving.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—



1. The process herein described of applying a previously-prepared ornamental or other design to the deeply-cut portions of an engraved plate, by taking up said design on a decarbonized roller previous to taking up on the same roller the portions of the engraving intended to be ornamented, removing said design by pressure from the roller, except in the deeply-cut portions mentioned, then hardening said roller, and, finally, transferring the complete work to the plate in the ordinary manner, all as and for the purpose specified.

2. An engraved plate having previously-prepared ornamental or other designs introduced as a ground-work into its deeply-cut portions, in the manner and for the purpose set forth.

The above specification of my said invention signed and witnessed, at Washington, this 25th day of February, A. D. 1874.

JOHN GILLHAM.

Witnesses:

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