No. 765,574. PATENTED JULY 19, 1904.

J. E. GILBERT.

OVERLAY FOR HALF TONE PRINTING PLATES AND METHOD OF MAKING SAME.

APPLICATION FILED OCT. 11, 1902.

MODEL.

Fig. 1.

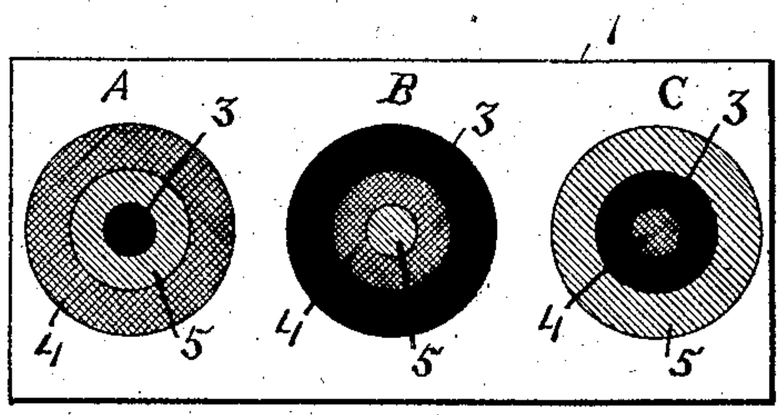


Fig. 2.

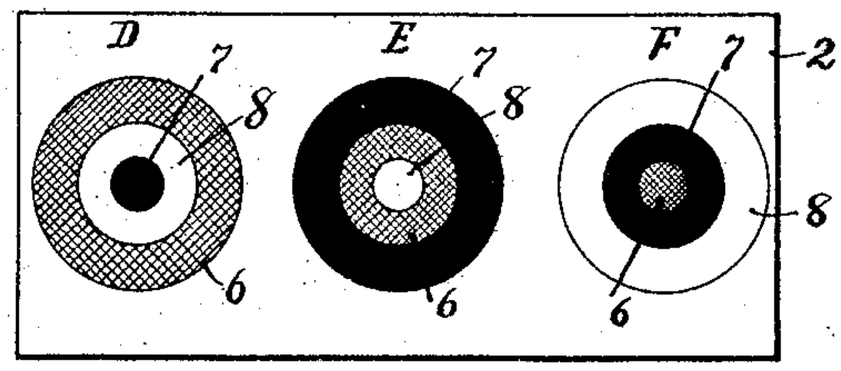


Fig. 3.

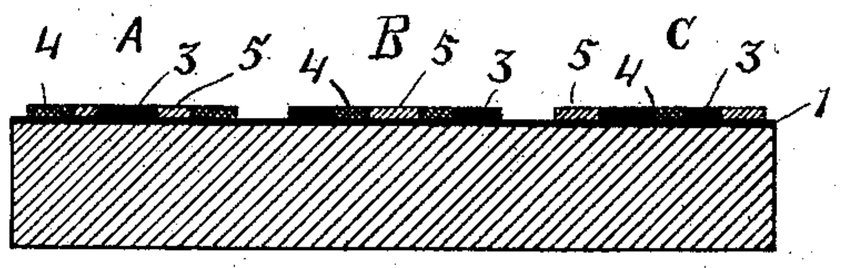
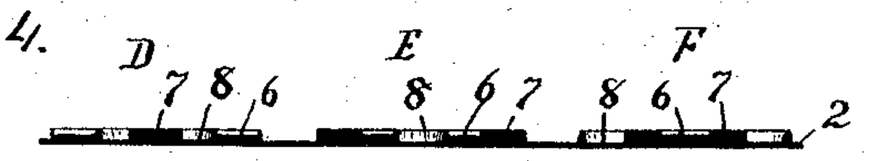


Fig. 4.



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No. 765,574. Patented July 19, 1904.

UNITED STATES PATENT OFFICE.

JAMES E. GILBERT, OF CHICAGO, ILLINOIS, ASSIGNOR TO GILBERT, HARRIS & COMPANY, OF CHICAGO, ILLINOIS.

OVERLAY FOR HALF-TONE PRINTING-PLATES AND METHOD OF MAKING SAME.

SPECIFICATION forming part of Letters Patent No. 765,574, dated July 19, 1904.

Application filed October 11, 1902. Serial No. 126,839. (Model.)

To all whom it may concern:

Be it known that I, JAMES E. GILBERT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Overlays for Half-Tone Printing-Plates and Methods of Making Same; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in overlays for printing purposes and the method of making the same; and the object of my improvement is to afford an accurate overlay which can be expediently produced.

This invention is particularly suited for use in printing from printing-plates known in the art as "half-tones," and is especially desirable when a highly-artistic production of printing is required.

I accomplish my object by the method hereinafter described and by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a diagram representing the face of a printing-plate. Fig. 2 is a diagram illustrating the face of my overlay as made for use with the printing-plate shown in Fig. 1. Fig. 3 is a longitudinal section through the printing-plate shown in Fig. 1, and Fig. 4 is a longitudinal section of the overlay shown in Fig. 2. The thickness indicated in Fig. 4 is greatly exaggerated for the sake of clearness, and the figures of the drawings in general should be read as illustrating the idea of the invention rather than dimensions.

Similar numerals and letters of reference indicate corresponding parts throughout the several views.

Referring now to the drawings, 1 is a printing-plate having thereon the printing-surfaces A, B, and C. The said printing-surfaces are divided into sections of different kinds—viz., the solid faces 3, the half-tone faces 4, and the high-light faces 5.

My overlay consists of a metal plate 2, having the thick portions D, E, and F. The said thick portions are divided into sections of different thicknesses—viz., the unetched faces 7 and the reduced faces 6. The said unetched faces correspond in size, shape, and position, respectively, with the solid faces of the printing-plate. The said reduced faces correspond in size, shape, and position with the half-tone faces of the printing-plate, and those portions 8 of the plate 2 which correspond with the high-light faces of the printing-plate are reduced practically to a level with the thin portion of the plate 2.

To produce my overlay, a cleaned sheet of zinc of suitable gage is cut to the approximate outline of the printing-plate and a printed impression is made thereon directly from the printing-surface of the printing-plate for which the overlay is intended for use. The said impression is made with "proof-ink" and should be carefully executed. While fresh the proof-ink impression is powdered with pulverized or floured dragon's-blood, which adheres to the ink, and the superfluous particles of dragon's-blood are dusted off from said plate by the use of a fine brush. Heat is then applied to said plate until the retained dragon's-blood becomes plastic and apparently combines with the ink and adheres to the plate 2 or said sheet. The back of the plate is coated with shellac preparatory to a treatment of the plate with an etching solution.

The etching solution which I have found suitable for producing the desired results consists of approximately one unit nitric acid in three similar units of water, liquid measure. The method of applying the solution or etching agent to said plate may be by complete immersion or in any manner suited to cause the exposed and semi-exposed parts of the plate to be attacked and reduced by the etching solution. The semi-exposed parts of the plate—viz., first, those portions upon which the impression was made from the half-tone faces of the printing-plate, and, second, those

portions made from the high-light faces—are reduced in proportion to the density of the coating of ink and dragon's-blood adhering thereto. The exposed portions of the plate—viz., those portions of the face thereof not protected from the acid—are reduced to film-like thinness when the etching process is terminated. Preparatory to use the shellac coating and other adhering matter is removed from the plate by the use of lye or like agent, and the plate is then washed and dried.

In using my invention the overlay thus produced is placed under the draw-sheet of a suitable printing-machine and in such position as will cause its thick portions to register in line with the corresponding printing-surfaces of the printing-plate when printing therefrom. The use of overlays being well known, the operation of my invention in use is obvious.

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

1. The method of making overlays for half-tone printing-plates, consisting in producing on a thin metallic sheet an impression, of the half-tone plate, with a suitable agent so applied as to present a varying resistance-surface to the action of an etching agent; and proportionately reducing the surfaces of said sheet corresponding to the half-tone and high-light surfaces and reducing to a film-like thinness the wholly-exposed surface of said metallic sheet by applying a suitable etching agent to the prepared face thereof.

2. The method of making overlays for use in printing from half-tone plates, which consists of making an ink impression from a half-tone printing-plate directly upon a normally thin metallic sheet, applying dragon's-blood or like agent, to that portion of said sheet covered by said impression, whereby the quantity of dragon's-blood or like agent is absorbed proportionately to the density of the ink impression corresponding to the varying printing-surface of the half-tone plate; and then subjecting the face of said sheet to the action of an etching agent for proportionally reducing the semi-exposed portions of the sheet, and reducing to a film-like thinness the wholly-exposed portions thereof.

3. The method of making overlays for half-tone printing-plates, consisting in making an ink impression, from a half-tone printing-plate, on a normally thin metallic sheet, applying dragon's-blood or like agent to said ink impression, brushing off the non-absorbed particles of dragon's-blood, applying heat to said sheet, subjecting said prepared sheet to the action of an etching agent composed of approximately one unit of nitric acid in three units of water, and continuing the etching process until the wholly-exposed surface of said metallic sheet is reduced to a film-like thinness.

4. As an article of manufacture a metallic half-tone overlay proportionately reduced in those portions corresponding to the half-tone and high-light portions of the half-tone plate, and reduced to a film-like thinness in those portions corresponding to the non-printing surface of the half-tone plate.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES E. GILBERT.

Witnesses:
GLENN W. HARRIS,
L. J. TALLMADGE.