A. C. AUSTIN.

METHOD OF MAKING PRINTING PLATES.

APPLICATION FILED MAY 3, 1920.

1,382,613. Patented June 28, 1921.

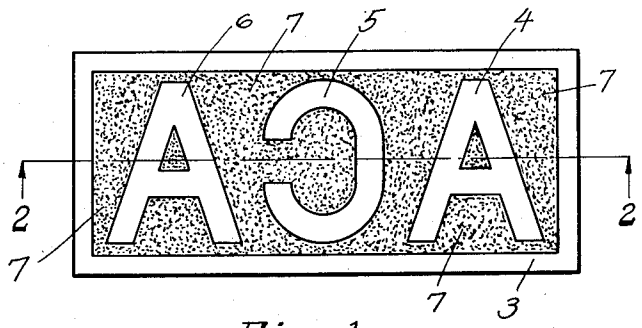


Fig. 1

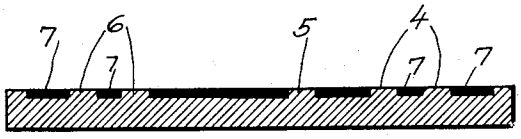


Fig. 2

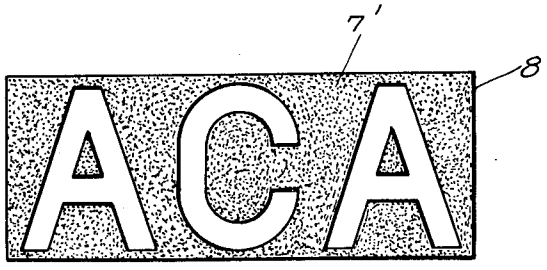


Fig. 3

Witnesses:
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UNITED STATES PATENT OFFICE.

ARTHUR C. AUSTIN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO MAGILL-WEINSHEIMER CO., OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

METHOD OF MAKING PRINTING-PLATES.

1,382,613. Specification of Letters Patent. Patented June 28, 1921.

Application filed May 3, 1920. Serial No. 378,629.

To all whom it may concern:

Be it known that I, ARTHUR C. AUSTIN, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Methods of Making Printing-Plates, of which the following is a specification.

My invention relates to an improved process for producing printing plates, and more particularly a process for producing so-called process half-tone negatives for such purpose.

It has heretofore been well known that to reproduce a half tone copper or zinc etched plate intended for printing in one color, or to reproduce a series of plates, each of which is a part of the whole and to be used in printing in several combinations of color, that recourse must be had to devious methods of proof transference through photographic camera negatives made from impressions on paper, or other printed impressions from the original etched relief plates by means of a printing press, upon suitably prepared thin metal plates, or upon a transparent paper surface for further treatment in lithographic work, which transparent paper image is positive in character and must further be manipulated in the photographic printing operation in order to obtain a positive image on the surface from which future typographic or lithographic printing is to be obtained. All of these methods are unsatisfactory and uncertain in results. The object of my invention is to provide an improved process for carrying on such work, which produces suitable negatives for the required purposes, and which obviates the uncertain and unsatisfactory methods heretofore used, and by means of which typographic printing plates may be readily translated into planographic printing plates, when desired, in an orderly, satisfactory, efficient and economical manner, as is more fully described hereinafter.

The invention consists in the novel methods, steps and processes hereinafter set forth and claimed.

The invention further consists in the novel methods, steps and processes used to produce a negative for actinic light printing purposes upon metal, glass, paper, or any other surface, as the case may be, which methods, steps and processes are wholly contrary to anything heretofore practised in the engraving or printing arts, be they typographic, lithographic, or photographic. The invention further consists in the novel methods, steps and processes by means of which ordinary half tone etched copper plates may be readily utilized for the reproduction of the same plate, or for producing a planographic printing plate for lithographic and offset printing purposes and the like.

The following invention will be best understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is a face view of a printing plate employed in the process;

Fig. 2 a section taken on line 2—2 of Fig. 1 but in which the thickness has been greatly exaggerated for the sake of clearness and;

Fig. 3 a face view of a negative produced by process from the plate illustrated in Figs. 1 and 2.

In carrying on the process, I first provide a metal plate of the subject which has been etched in relief, as for typographic printing purposes. This plate is first thoroughly cleaned and then a filler, in the form of an opaque substance, such as dry lamp black, or other suitable opaque pigment, is applied thereto and the printing surface of the plate smoothed off so that said filler fills up the interstices or etched portions in said plate to a level with the printing surface thereof. This prepared plate is then made ready in a suitable printing press, in the ordinary manner, as practised by typographic printers, or in any form or style of press suited to the purpose. The surface of a sheet of celluloid is then coated with an adhesive in the form of amyl-acetate or other solvent of celluloid adapted to adhere to the filler used. The celluloid sheet is then placed in the printing press, or other suitable press, and brought into contact with the filled-in plate, under pressure, where it is allowed to dwell for a fraction of a minute, and then removed. It will be found that the filler or opaque pigment which was in the interstices of the etched plate, has adhered to the celluloid sheet, thus producing what may be termed a negative, in which the visible or printable parts of the original

plate are reversed as regards black and white; and also being on a transparent surface, is, in effect, a photographic negative which may be used in making photographic prints upon metal, paper, or other surfaces, and by means of which an ordinary planographic printing plate may be readily produced in the usual way. The negative so produced and used, is superior to an ordinary photographic half tone negative produced from the original plate, for the reason that it obviates any further hand work on the planographic plate, because all the skilled labor necessary for a satisfactory reproduction has already been done on the copper etched plate, and the negative produced as described is a faithful reproduction of this plate, including the results produced by the labor of a skilled engraver, on the copper plate. For this reason, no additional skilled labor is required in utilizing a negative thus produced for producing planographic printing plates, or for other purposes.

The negative thus produced may be obtained on any suitably prepared sheet of transparent or translucent gelatin, or upon suitable paper, or other material, that is or may be made transparent. The negative may also be obtained by flowing over the surface of the etched plate a liquid gelatin, celluloid, or other medium that, when dry or solidified, may be removed from the plate, giving, in substance, a negative of the character indicated. The invention in its broader aspects is not limited to the particular manner or forms as described, but is capable of use in the production of a negative of suitable character for photographic printing purposes, from an etched-in relief plate, without recourse to a photographic camera, in a rapid, economical and satisfactory manner, and such negative is suitable for the reproduction of the original plate on either printing surface for lithographic or typographic use, or for the production of planographic printing plates, as above indicated.

In the accompanying drawings I have illustrated a simple etched plate and a negative produced therefrom. The etched plate 3 is shown as provided with a design consisting of the three letters A C A numbered respectively 4, 5, and 6 thereon and etched in relief or raised from the body of said plate as indicated. The interstices 7 between said letters are filled with lamp back as indicated and this lamp black is removed on the negative 8 forming the background 7′ for the letters as shown in Fig. 3. In this way a sharp clear outline of the design is obtained and various degrees and intensities of shading or light effects will be reproduced.

While I have set forth the preferred methods of procedure for carrying my invention into effect, these are capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details or methods of procedure set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

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

1. The method of making printing plates which consists in first preparing a plate with the design thereon raised and in relief; then filling the interstices in said plate with a filler; transferring said filler to a reproducing body; and utilizing said reproducing body to produce a printing plate, substantially as described.

2. The method of making printing plates which consists in first preparing a plate with the design thereon raised and in relief; then filling the interstices in said plate with an opaque filler; transferring said filler to a reproducing body; and utilizing said reproducing body to produce a printing plate, substantially as described.

3. The method of making printing plates which consists in first preparing a plate with the design thereon raised and in relief; then filling the interstices in said plate with a filler; then transferring said filler to a translucent sheet; and utilizing said sheet to produce a printing plate, substantially as described.

4. The method of making printing plates which consists in first preparing a plate with the design thereon raised and in relief; then filling the interstices in said plate with an opaque filler; transferring said filler to a translucent sheet; and utilizing said sheet to produce a printing plate, substantially as described.

5. The method of making printing plates which consists in first preparing a half-tone etched plate with the design thereon raised and then filling the interstices in said plate with a filler; transferring said filler to a reproducing body; and utilizing said reproducing body to produce a printing plate, substantially as described.

6. The method of making printing plates which consists in first preparing a half tone etched plate with the design thereon raised and then filling the interstices in said plate with an opaque filler; transferring said filler to a reproducing body; and utilizing said reproducing body to produce a printing plate, substantially as described.

7. The method of making printing plates which consists in first preparing a half tone etched plate with the design thereon raised and then filling the interstices in said plate with a filler; then transferring said filler to

a translucent sheet; and utilizing said sheet to produce a printing plate, substantially as described.

8. The method of making printing plates which consists in first preparing a half tone etched plate with the design thereon raised and then filling the interstices in said plate with an opaque filler; transferring said filler to a translucent sheet; and utilizing said sheet to produce a printing plate, substantially as described.

9. The method of making printing plates which consists in first preparing a half tone etched plate with the design thereon raised and then filling the interstices in said plate with an opaque filler; then covering a sheet of flexible transparent material with suitable adhesive and applying the same to said plate; and then utilizing said sheet to produce a planographic printing plate, substantially as described.

10. The method of making negatives for printing plates which consists in first preparing a plate with the design thereon raised and in relief; then filling the interstices in said plate with a filler; and then bodily removing said filler from said plate, substantially as described.

11. The method of making negatives for making printing plates, which consists in first preparing a plate with the design thereon raised and in relief; then filling the interstices in said plate with a filler; and then transferring said filler to a translucent sheet, substantially as described.

12. The method of making negatives for printing plates which consists in first preparing a half tone etched plate with the design thereon raised and then filling the interstices in said plate with a filler; and then covering a transparent flexible sheet of material with adhesive and applying it to said plate, substantially as described.

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

ARTHUR C. AUSTIN.

Witnesses:
JOSHUA R. H. POTTS,
ROSE K. TRIB.