UNITED STATES PATENT OFFICE.

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PRINTING-PLATE FOR MULTICOLOR PHOTO-ENGRAVING.

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To all whom it may concern:

Be it known that CARL BLECHER, a subject of the King of Prussia, residing at Berlin-Dahlem, Germany, Friedbergstrasse 23, has invented certain new and useful Improvements in Printing-Plates for Multicolor Photo-Engraving, of which the following is a specification.

My invention relates to printing plates for printing three- or multicolor photo-engravings on printing machines, and the object of my invention is to provide printing plates screened in such a manner as to render the covering of any part of the printing surface corresponding to any represented tone, for the purpose of fine etching any portion thereof safe and easy.

The single printing plates for three- or multicolor photo-engravings for printing machines are commonly prepared in the same way as ordinary one-color printing plates. Before or after the transparent half-tone positive separated into the different colors is printed on pigment-paper, a cross-lined screen showing black dots and white crossed lines is printed upon the same paper, and the screened half-tone print so obtained is then transferred to the plate or cylinder. After thorough etching the print appears upon the metal covered throughout with the same cross lines as compared with the surface of the plate or cylinder, the gradation between these lines being merely formed by their different depth. In looking at the surface of a plate or cylinder prepared according to this method it is extremely difficult for the eye to trace the demarcation of the different tones, as it is almost impossible to distinguish differences in tone by aid of the minute differences in depth. Under these circumstances it is almost impossible to effect the proper covering of the area of the printing surface corresponding to certain tones as is necessary to provide for the fine etching of the areas corresponding to other tones and which are not covered.

According to the present invention this difficulty is fully dealt with and the covering of the necessary surface indispensable to produce fine etching of a part or parts of the single printing plates is rendered easy by producing different screen effects for each of the single tones. The elements of the screens may differ either in number or in form, size and arrangement, it being merely necessary to employ screens suitable for the particular shade of the tone and for the mixed-color type in question. The kind of screen to be employed in each case is unimportant.

There are numerous methods available for producing such a varying screening. A very simple and effective method is the following: A piece of tracing paper of sufficient size is placed over the transparent positive and the screening to be obtained within the different tones is produced on the paper by means of an agate stylus and a number of differently grained gelatin films. The screens produced in this manner are then covered with bronze to insure better covering.

The transparent positive and the piece of tracing paper carrying the different screens should be provided with accurately coincident cross-marks. The transparent positive is then printed upon the pigment paper, it being essential that the cross marks are plainly visible on the paper. The tracing paper carrying the screens is then placed in the printing frame, the pigment paper print is adjusted thereon by means of the cross marks and the screens are then printed upon the paper. In the prints as well as in the transfers the different tones will now easily be distinguished by means of the difference in division. If the transfer is thoroughly etched and if it is then desired to subject the plate or cylinder, after a proof has been taken and the surface has been inked in order to protect the projecting parts, to a further treatment by fine etching, it is a matter of the greatest facility to cover or leave free the right parts, the different tones being strongly contrasted through the difference in screening.

I claim:—

1. A printing plate for use in three or

multicolor photo-engraving printing having the areas thereof requiring etching to different depths to produce the several tones in a print distinguished from one another by the representation thereon of different screens.

2. A printing plate for use in three or multicolor photo-engraving printing having the areas thereof corresponding to the several tones in a print distinguished from one another by dots and lines arranged in different relations.

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

CARL BLECHER.

Witnesses:
WOLDEMAR HAUPT,
HENRY HASPER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."