

(No Model.)

W. KURTZ.
PHOTOMECHANICAL PRINTING.

No. 498,396.

Patented May 30, 1893.

Fig. 3.

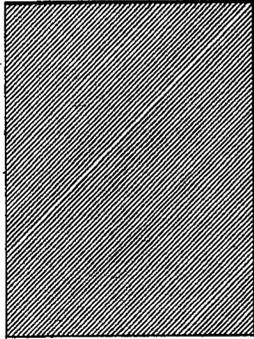


Fig. 6.



Fig. 2.

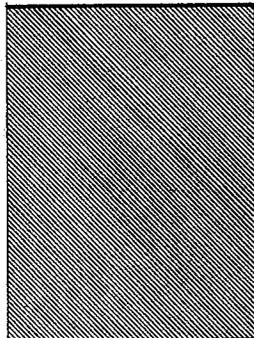


Fig. 5.

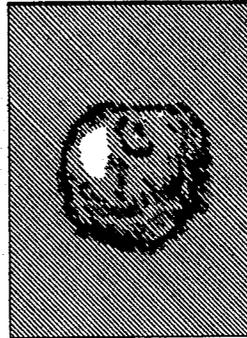


Fig. 1.

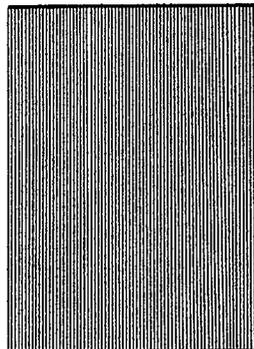
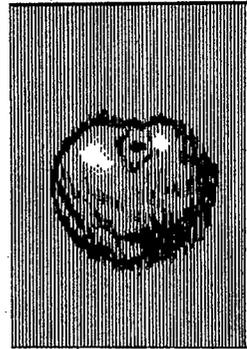


Fig. 4.



WITNESSES:

Harry R. ...
Thomas Littlejohn

INVENTOR
William Kurtz

BY
E. M. Dickerson
ATTORNEY

UNITED STATES PATENT OFFICE.

WILLIAM KURTZ, OF NEW YORK, N. Y.

PHOTOMECHANICAL PRINTING.

SPECIFICATION forming part of Letters Patent No. 498,396, dated May 30, 1893.

Application filed February 23, 1893. Serial No. 463,328. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KURTZ, of the city, county, and State of New York, have invented a new and useful Improvement in Photographic-Printing Methods, of which the following is a full, true, and exact specification, reference being had to the accompanying drawings.

In printing chromos or colored prints on the lithographic, type, "Lichtdruck," gelatine, photogravure, or any other press, either from half-tone plates or from transfers on stone, which have been produced by the half-tone photoengraving process or by similar methods, the prints show in spite of the most perfect register, a so-called "moiré-effect," a defect which may appear only in a few portions of the picture or recur regularly all over the picture in the form of a pattern resembling watered silk, thus rendering it entirely worthless. This "moiré-effect" or confusion of lines is due to the fact that the colors are printed one over the other while they should really be arranged side-wise of each other on the paper, or cross each other in such a way as to make confusion or "moiré" impossible. To avoid this serious defect, instead of making a half-tone negative of the yellow color, another of the red color and half-tone negatives for every other color that is to be used, all of which negatives would be produced by the screen or net in crossed lines, dots or stippled lines, my negatives are made in single lines by interposing in lieu of the screen or net, a glass-plate ruled with parallel lines running in one direction only, so that the negatives show only one half of the picture or color to be reproduced, instead of the more fully modeled negatives in use heretofore.

My invention consists therefore in a process of photo-mechanical printing, in which half-tone negatives are produced by exposing each plate with a screen with parallel lines running in one direction only, the lines of one negative running in a different direction from the lines of the other negatives, and then printing in colors from these half-tone negatives, so that the lines of the different plates will intersect each other in different directions.

In the accompanying drawings my improved

process of photo-mechanical printing is illustrated by six figures, in which—

Figures 1, 2 and 3, represent three different screens, provided with lines running in different directions from each other, and, Figs. 4, 5 and 6, represent the effect of the printing in different colors from the color-plates made from the half-tone negatives.

In carrying out my invention a sensitized plate is subjected to a single exposure through a screen, which is provided with parallel lines running in one direction only. The second plate is subjected to a single exposure through a screen, the parallel lines of which run in a different direction to the lines of the first screen. The remaining plates are likewise exposed in the same manner through screens, the parallel lines of which run in directions differing from the first two screens. When a picture is to be printed, for instance, in three colors, the color-plates are made from the half-tone negatives which are obtained by single exposures by the interpositions of the screens, shown in Figs. 1, 2 and 3, so that a picture representing one color is obtained in which the stripes run in one direction, say horizontally, as shown in Fig. 4, while the pictures obtained by the remaining color-plates are produced in stripes that run diagonally to the lines of the first plate and in opposite directions to each other, as shown in Figs. 5 and 6. The printing-plates are produced from the half-tone negatives by the photo-etching process in the well-known manner, so that when the colors are printed one over the other in colored printing inks, a picture is obtained, in which the light and shade of the original are fully shown, although each color has been photographed for only one half of its area, the remaining half being taken up by the lines. The "moiré" pattern or similar defects are thereby entirely obviated, as the color-stripes intersect each other and reproduce thereby the original picture in a more complete and artistic manner. One of the colors may be printed from a grained plate and the picture then be completed by printing the other colors over the color produced by the grained plate from printing plates, the lines of which cross each other at right angles. When the picture is to be printed in four colors, a fourth

printing-plate is used, the lines of which intersect the lines of the first plate at right angles, while the second and third plates produce intersecting lines in diagonal direction to the first and fourth. Thereby again confusion of color is obviated.

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

10 The herein described process of photo-mechanical printing, which consists in producing half-tone negatives by subjecting the sensitized plates to one exposure through screens which are provided with parallel lines running in one direction only, but in which the

lines run in different directions to each other, next producing printing plates from said half-tone negatives and finally printing in different colors from these printing-plates, so that the lines of the different printing-plates will intersect each other in different directions, substantially as set forth.

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

WILLIAM KURTZ.

Witnesses:

OWEN WARD,
CLARENCE R. COMES.