

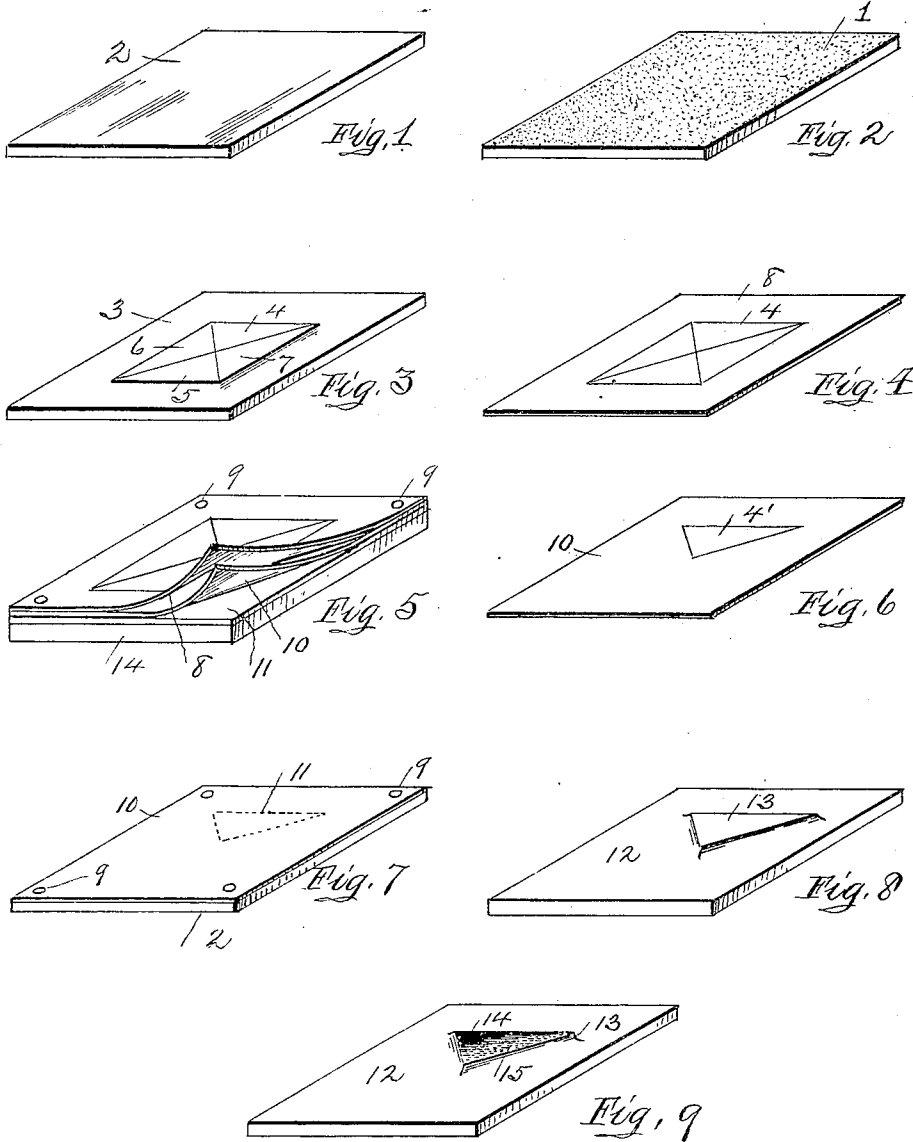
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PATENTED SEPT. 26, 1905.

J. H. SWAIN.

PROCESS FOR PRODUCING CURVED OR FLAT COLOR PLATES  
FOR USE IN PRINTING PRESSES.

APPLICATION FILED DEC. 8, 1903.



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# UNITED STATES PATENT OFFICE.

JAMES H. SWAIN, OF ALLEGHENY, PENNSYLVANIA.

PROCESS FOR PRODUCING CURVED OR FLAT COLOR-PLATES FOR USE IN PRINTING-PRESSES.

No. 800,601.

Specification of Letters Patent.

Patented Sept. 26, 1905.

Application filed December 8, 1903. Serial No. 184,352.

*To all whom it may concern:*

Be it known that I, JAMES H. SWAIN, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Processes of Producing Curved or Flat Color-Plates for Use in Printing-Presses, of which improvement the following is a specification.

This invention relates to an improved process for producing curved or flat color-plates for use in printing-presses; and it consists in the several steps and the use of the apparatus hereinafter described.

In the accompanying drawings I have shown a series of views illustrating the method, and in which—

Figure 1 is a perspective view of a plain blank plate. Fig. 2 is a similar view of what is known in the art as a "screen-plate." Fig. 3 is a perspective view of the black or key plate from which the proof is printed. Fig. 4 is a view showing the press-proof. Fig. 5 is a perspective view of the several parts attached together, by means of which the transfer of one of the colors is produced. Fig. 6 is a perspective view of the transfer. Fig. 7 is a perspective view of the transfer attached to one of the blank plates, showing the perforations traced thereon by means of a suitable tool, the said perforations marking the surface of the plain plate beneath. Fig. 8 is a perspective view of the finished plate used in printing one color. Fig. 9 is a perspective view of a finished screen-plate, showing solid color and light and dark shades of the same.

In the use of my improved process a form is made up to the size of the page or print to be produced, consisting of a type-high smooth blank surface, such as a block of wood type high and of the required width and length, a matrix made therefrom, and a blank cast in the matrix and completed as if for the printing-press. For the tinted or screen plate 1 a piece of brass-wire gauze of about No. 60 mesh is used and laid over the blank form above mentioned and a second matrix prepared, and in this matrix a second blank is cast. This now gives two kinds of blanks, one, 2, smooth and the other, 1, full of fine dots due to the impression of the wire-gauze upon the matrix from which the cast is made and usually termed a "screen." These plates 1 and 2 are made up in any quantities for fu-

ture use and are trimmed to guides corresponding to similar guides upon the black or key plate 3 to be colored. These plates 1 and 2 may be flat or curved to suit the press on which they are used.

The black or key plate 3 is made up with guides corresponding to the blank plates 1 and 2 and is cast in the usual way, and from this plate 3 a press-proof 8 is taken. This press-proof is trimmed to the register-guides and laid flush with the edges of a sheet of tough Manila paper (see Fig. 5) and the two sheets tacked, 9, to a stout cardboard 11, mounted upon a board 14, and the upper side of the cardboard 11 is coated with plumbago or other suitable material in order that a transfer may be made in such order as to produce a negative print upon the paper 10.

With the colored hand-made drawing in view a hard pencil is used to trace over the outlines of the press-proof 8 for those parts 4' to be printed in red. (See Fig. 6.) Then with another sheet of Manila paper 10, arranged in the same manner, an outline transfer is formed for the blue color, and so on, for as many plates as will be used. Thus a transfer clear and sharp of such parts only as are to appear on each printing-plate is made. When the transfer-sheets have been prepared as above described, the red transfer-sheet 10, of Manila paper, is tacked upon the screen-plate 1, the register edges even and in line with the register-guides upon said blank screen-plate. This Manila sheet 10 is secured in position with the negative-transfer up or exposed to view, then with a pointed or cutting instrument follow the transfer-lines (shown by dotted lines 11 in Fig. 7) with a sharp instrument, cutting through the paper 10 and making a sharp visible line upon the metal plate 1 beneath, the whole producing a perfect register without the danger of shrinkage, &c., as when all plates are cast from one original, as the color-plate is made from the finished black plate or key as it prints upon the press.

The transfer of each color to be employed is tacked onto a separate plate in the manner above described and each plate treated in the same way, so that a plate will be produced for each color having the printing-surface in suitable relief. If the color is to lie in stipple or dots, screen-plates like plate 1 will be used; but if the color is to be printed solid plain plates like plate 2 will be used.

When the tracings are all finished, I place the plate 1 upon a routing-machine and rout away the metal up to the traced lines such parts as are not desired to print, using large and small tools, and as the lines are very clear no difficulty is found in following the same. The small angular places of the plate are finished with a hand-graver. The blank plate 12 (see Fig. 8) is now ready for the press; but the screen-plate 12' requires another operation, as after the same has been prepared, as above described, there remain parts of the plate which require a heavy or deep shade and some parts which require solid color. These are shown by the line produced by following the dotted line 11 with a sharp instrument, as before described, and with a small brush are given several coats (for that depth of color desired) of asphaltum enamel or other suitable material, to which the blue flame of a gasolene-lamp is applied, which spreads the coating evenly, hardens and causes it to adhere firmly to the plate, and in the course of half an hour (see Fig. 9) is ready for the press, the enameled part 14 printing in solid surrounded by fine screen-dots 15. This in practice has a double advantage in that it makes a perfect solid color, as it is slightly higher than the surrounding screen, a very desirable effect for pressmen, as it saves the tedious overlays usually applied to solid parts of color-plates.

It is obvious that various slight modifications and changes may be made in the details of the invention without departing from the spirit of the same. Therefore I wish to claim the same broadly.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. The method herein described for making color-printing plates consisting in making a key-plate, making a proof from said plate, making a transfer of a portion of the subject from said proof, attaching said transfer to a blank plate, making indentations in the blank plate through the transfer and following the outlines thereof, and then routing the parts on the blank plate not to be printed.

2. The method herein described for making color-printing plates consisting of making a key-plate having the entire image to be printed in relief, then making a press-proof from said key-plate, then transferring the several sections representing different colors from the said press-proof each to a separate transfer-sheet, then placing each transfer-sheet in contact with a stippled plate, then following the outline of the partial image on each transfer-sheet with a suitable tool and impressing each outline in its respective stippled plate, then routing away the parts not to be printed on each stippled plate, then applying a suitable substance adapted to receive printing-colors to those portions of each stippled plate where solid color is desired thereby filling and elevating those portions of the plate, as and for the purpose described.

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

JAMES H. SWAIN.

In presence of—  
MAX W. KURNIKER,  
M. HUNTER.