May 16, 1933. R. KIRSCH 1,909,282

METHOD OF PRODUCING DIAPOSITIVES IN THE PRODUCTION OF PRINTING FORMS

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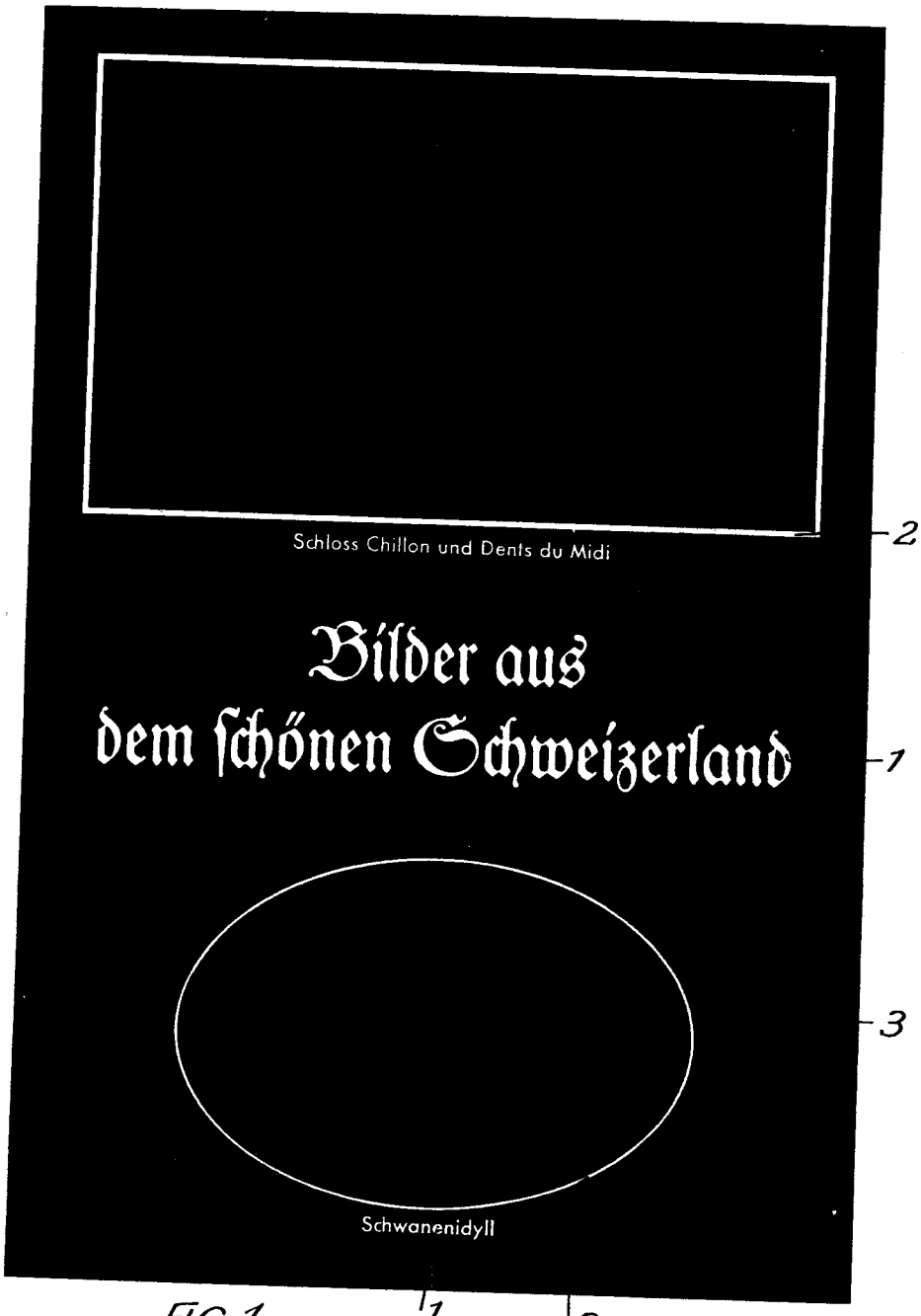


FIG. 1

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FIG. 2

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FIG. 3

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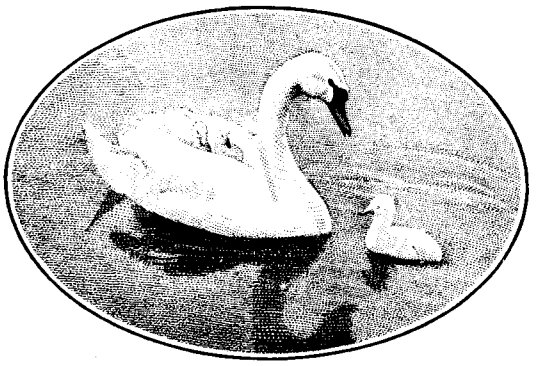
METHOD OF PRODUCING DIAPOSITIVES IN THE PRODUCTION OF PRINTING FORMS

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Schloss Chillon und Dents du Midi

Bilder aus dem schönen Schweizerland



Schwanenidyll

FIG. 4

INVENTOR:
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Patented May 16, 1933 1,909,282

UNITED STATES PATENT OFFICE

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METHOD OF PRODUCING DIAPOSITIVES IN THE PRODUCTION OF PRINTING FORMS

Application filed March 18, 1929, Serial No. 348,136, and in Switzerland March 23, 1928.

In producing printing forms according to the generally known method a transparent negative and after an eventual retouching a diapositive is made from the pictures to be reproduced. The diapositive of the pictures together with the characters which belong to the respective page to be printed and which are on a transparent support are mounted on a glass plate and the thus formed mounting is copied on light sensitive pigment paper having a screen and is then transferred to the printing form. The parts occupied by the pictures on the printing form are then covered by an acid resistant and the letters or characters are etched; thereupon the parts of the printing form occupied by the characters are protected and the pictures are etched; a simultaneous etching of pictures and of characters is not possible as the characters are sufficiently etched in 10 minutes whilst the pictures take approximately 30 minutes to be etched.

Further it is known to take a photograph of pictures and characters intended for a page to be printed and to mount the positive prints in the desired size and arrangement of the page to be printed. From this page a screened phototone photograph is taken with the characters covered and then a screen photograph with the pictures covered is taken. From the two negatives obtained in this manner a diapositive is produced by exposing the negative showing the characters and the negative showing the pictures one after the other on the same space; this diapositive is then copied on pigment paper in the known manner and transferred to the printing form by means of the pigment paper. The characters and pictures are then simultaneously etched.

These known methods present the disadvantages that they cause a considerable expenditure of photographic plates or films, in light and working time, which disadvantages are overcome by the method according to the present invention.

According to this invention a negative photograph of a scene or person is made on a sheet or plate of nontranslucid material such as for instance paper or sheet metal or the like having a coating of a light sensitive material. In the United States the term "full tone" photograph means an unscreened photograph and the term "half tone" photograph means a photograph taken through a screen whereby it is composed of very small areas or dots separated by crossed lines where the light was obscured from the light sensitive material by the screen. A photograph composed of a number of various shades such as a photograph of scenery or a portrait is sometimes known as a photo-tone photograph. A photograph of a surface having only two shades, for instance black and white, would have only two shades and would not be considered a photo-tone photograph. The photographic negative above referred to as being made for the purpose of the method forming the subject of this invention may be of the type known as a full-tone or photo-tone negative. This non-translucid negative together with negative characters, that is light or white letters or numbers on a dark background or black letters or numbers on a white background are mounted in the desired arrangement for the printing page and a diapositive is made from said negative photographically.

The accompanying drawings illustrate the different steps in carrying out the process according to the present invention, in which Figures 1, 2, 3 and 4 illustrate the several steps. In particular, Fig. 1 shows the first step of printing the characters 1 and border lines 2 in white ink on a black sheet 3. On the same black sheet 3 the nontranslucid negatives 4 and 5 of the pictures are mounted within the border lines 2, for instance, paper negatives are pasted on the sheet 3, as is shown in Figure 2. From the assembled negative shown in Fig. 2 the diapositive 6 shown in Fig. 3 is made photographically; and Fig. 4 illustrates the reproduction printed by means of the cylinder to which the characters and pictures have been transferred by means of the diapositive and pigment paper

In producing the diapositive a screen or hatching may be interposed in photograph-

ing whereby a screened diapositive is obtained.

The diapositive is then transferred in the known manner by means of light sensitive pigment paper or the like to the printing form on which pictures and characters may be simultaneously etched.

Instead of producing a screened diapositive the screen may be copied in the known manner on the pigment paper and the image of the screen transferred to the printing form.

The negative characters, that is white letters on a dark ground, may be produced in any known manner, for instance by printing with white colour, in a photographic manner and so on.

The negatives of the pictures and of the characters are preferably mounted on a dark ground, a black ground being best for the purpose. Thereby the advantage is obtained that when a screen is interposed in producing the diapositive no action of the light occurs on the black-ground and therefore no image of the screen is produced; these parts, do not show any tone in printing as the printing colour does not adhere to the parts which have no screen. The care which had to be taken heretofore in interrupting the etching the very moment in which the image of the screen begins to show itself in the parts of the ground is no longer necessary.

The production of diapositives according to the present invention has thus very considerable advantages as regards saving in photographic material, light and working time. A single mounting only has to be made, only one photograph of the mounted printing page is necessary, and any difficulties in coinciding marks are excluded.

I claim:

1. The process of producing printing forms comprising assembling a non-translucid negative by placing light shade characters on a non-translucid dark background, arranging a non-translucid photographic negative on said background in a desired position, photographing a diapositive of said assembled negative and transferring the diapositive image to a printing form.

2. In a process of producing printing forms the steps comprising assembling a non-translucid negative by placing light shade characters on a non-translucid dark background, arranging a variously shaded non-translucid photographic negative in a desired relation to the printed characters, photographing a diapositive of the negative so produced and transferring the diapositive image to a printing form, and screening the image intermediate the assembling of the negative and the transferring of the image to the printing form.

3. The process of producing diapositives for use in printing, comprising producing a non-translucid negative by printing light shade characters on a non-translucid dark background, arranging a non-translucid full tone photographic negative on said background in a desired position with respect to the printed characters and photographing the negative so produced.

4. The process of producing diapositives for use in printing, comprising producing a non-translucid negative by printing light shade characters on a non-translucid dark background, arranging a non-translucid photo-tone photographic negative on said background in a desired position and photographing the negative so produced.

5. The process of producing diapositives for use in printing processes comprising producing a non-translucid negative by locating light-shaded characters on a dark-shaded non-translucid background, locating a non-translucid full-tone photograph on the background in the desired relation to the characters and photographing the negative so produced through a screen.

6. The steps in a process of producing diapositives for use in printing processes comprising arranging light-shaded indicia upon a dark-shaded opaque background and arranging an opaque photo-tone negative on said background in a desired relation to said indicia.

7. The process of producing diapositives for use in printing comprising producing a non-translucid negative by printing light shade characters on a non-translucid dark background, arranging a non-translucid photographic negative on said background in a desired position, and photographically producing a diapositive from said negative through a screen.

8. The process of producing diapositives for use in printing comprising producing a non-translucid negative by printing light shade characters on a non-translucid dark background, arranging a variously shaded non-translucid photographic negative in a desired relation to the printed characters and photographically producing a screened diapositive from the negative so produced.

9. The process of producing diapositives for use in printing, comprising producing a non-translucid negative by printing light shade characters on a non-translucid dark background, arranging a non-translucid photo-tone photographic negative on said background in a desired position and photographing the negative so produced through a screen.

In testimony whereof I have signed my name to this specification.

RUDOLF KIRSCH.