J. FITZ, JR.

PHOTOGRAPHIC PRINTING MASK.

APPLICATION FILED JAN. 14, 1909.

960,301. Patented June 7, 1910.

FIG. 1.

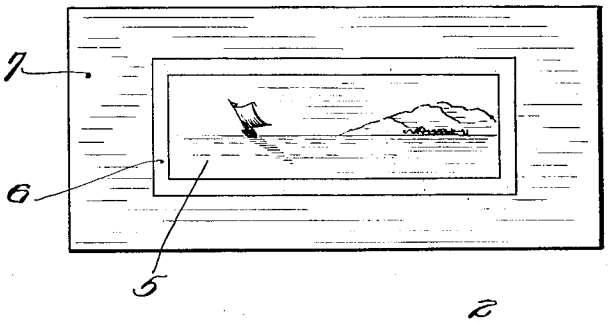


FIG. 2.

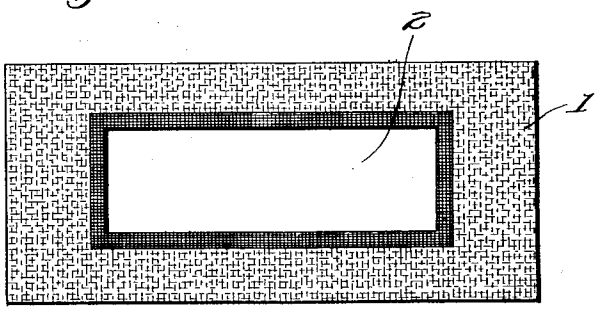


FIG. 3.

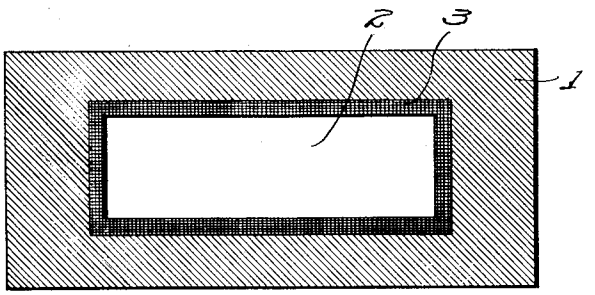
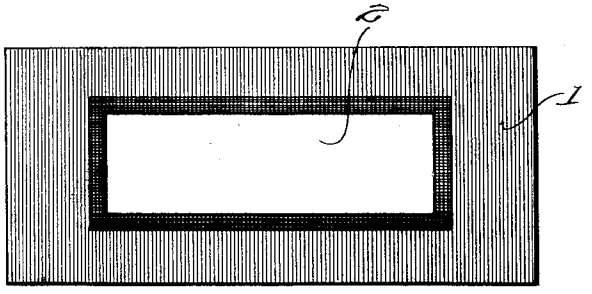


FIG. 4.



WITNESSES:

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PHOTOGRAPHIC-PRINTING MASK.

960,301. Specification of Letters Patent. Patented June 7, 1910.

Application filed January 14, 1909. Serial No. 472,243.

To all whom it may concern:

Be it known that I, JOHN FITZ, Jr., a citizen of the United States, and a resident of Germantown, Philadelphia, county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Photographic-Printing Masks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The main objects of this invention are to provide a photographic mask or device which may be used in printing from a negative to produce a tinted mat or background for the picture, simultaneously with the printing of the picture; to provide a photographic mask that may be used for printing to produce an unprinted marginal surface or border surrounded by a tinted mat; to provide a plurality of different devices of the character described to produce various results; and to provide other improvements as will appear hereinafter.

In the accompanying drawings, Figure 1 is a front plan view of a picture having an unprinted border and a uniformly tinted mat or background; Figs. 2, 3 and 4 are front plan views of photographic masks constructed in accordance with this invention.

Referring to the drawings, one embodiment of this invention comprises a mask 1, made of transparent material, preferably of a thin sheet of celluloid of rectangular shape and having a central rectangular opening 2, which is surrounded by a relatively narrow preferably opaque border or belt portion 3, which may be formed upon the celluloid by covering a portion of the celluloid with an opaque paint. The opening 2 in the mask is the usual opening for a negative, the opening being proportioned so that the edges thereof will overlap the edges on the negative, and the border or belt portion 3 is proportioned to cover the edges of the negative. The mask 1 is preferably made of a uniformly tinted or colored celluloid, and of a color which will permit only the proper amount of light to pass through the mask, for instance yellow celluloid may be used, as indicated in Fig. 2, or green celluloid, as indicated in Fig. 3, or red celluloid as indicated in Fig. 4, in forming the mask. These colors of celluloid have different degrees respectively of permeability to actinic rays of light, or in other words, to that kind of light that is useful in photographic printing processes and therefore different results would be produced by the different colors. The various colors of celluloid used for the mask are all translucent and in most cases also transparent. Celluloid is preferred for the mask as it is homogeneous and will permit light to pass uniformly therethrough to give an even flat tint in printing, without any mottled appearance. It is also preferred on account of its durability and the ease of keeping it clean and because of its other well known desirable qualities. By combining color with the celluloid, a mask may be made that will form an effective shield against the passage of part of the kind of light used in printing, and the mask may still be transparent so that the operator can readily place it in position for printing.

In the process of printing, the negative is first placed in a printing frame and the mask 1 is placed over and against the said negative, so that the inner marginal opaque portion 3 of the mask overlies the edge of the negative. A sheet of sensitized paper is then placed over the mask, the back of the printing frame secured against the back of the printing paper and the face of the negative exposed to the light. A picture similar to that shown in Fig. 1 is thus printed having the positive 5 of the photographic negative in the center of the sheet and surrounded by an unprinted margin or border 6, which in turn is surrounded by a tinted mat or background 7. The tint of the background will be light or dark according to the color of the mask used, for instance, with the same length of exposure to light, a green color in the mask would produce a darker tint in the mat than would be produced by a yellow mask, and a yellow mask would produce a darker tint in the mat than that which would be produced by a red mask.

As different negatives require different times of exposure to the light in printing, it is evident that different colored masks would be required with different negatives to produce the same tone of mat or background. For instance a "dense" negative, which requires a comparatively long exposure in printing, might require a red mask, and a "thin" negative a green mask, and a "medium" negative a yellow mask, to pro-

duce mats of the same tints surrounding the pictures. With the same negative the mats of different colors or combinations of masks of the same or different colors might be used to produce mats of different tints surrounding the different pictures printed from the negative, and to produce lines or borders of different or contrasting tones around the negative or the pictures printed therefrom.

Before this invention, the process of printing a picture surrounded by an unprinted border and having a tinted mat required a process of several steps and considerable manipulation. The negative was first inclosed by an opaque mask covering all of the paper to be printed upon except the portion inclosed by the marginal line of the picture. The paper thus protected was then exposed to the light until the picture was printed. The negative and opaque mask were then removed and a second mask substituted covering the printed portion of the picture and also the border or margin surrounding the picture, and a second exposure to the light was then made to tint the mat surrounding the border. By this old process it was very difficult to obtain results which were uniform and the labor and time required were about double what are required when the picture and the tinted mat are both printed by a single operation by the aid of the improved mask forming the subject-matter of this application. By the use of this improved mask not only is a saving effected in time and labor but also an improvement in quality of the results is secured, the mat being tinted uniformly and without the mottled appearance which often results from former methods. As when the improved mask is used the printing of the picture and the tinting of the mat proceed simultaneously, if the picture is either undertimed or overtimed in printing, the mat will be correspondingly timed and a proper relation will therefore always be maintained between the picture and the tint of the mat, a result which was impossible by former methods.

Although this invention has been shown only in its preferred form and only in a few of the combinations of color which may be used, it is not intended to be limited to the particular form disclosed or to any particular combinations of color or to any material, as many changes might be made in the form of the device, in the material used and in the combinations of color, without departing from the spirit of this invention or the scope of the appended claims.

Having thus fully described my invention, what I claim and desire to protect by Letters Patent of the United States is:

1. A photographic printing mask, consisting of a sheet having a border portion capable of preventing entirely the transmission of actinic rays, and a portion surrounding said border portion which permits the passage of actinic rays.

2. A photographic printing mask consisting of a sheet having a border portion and a surrounding portion, said border portion being capable of preventing the passage therethrough of actinic rays to a greater degree than the surrounding portion.

3. A photographic printing mask comprising a sheet having an opening therein for the negative, and an opaque border for said opening, the portion of said sheet outside of said border being capable of transferring actinic rays.

4. A photographic printing mask comprising a sheet having an opening therein for the negative, and an opaque border for said opening, the portion of said sheet outside of said border being capable of transmitting certain actinic rays and filtering out other actinic rays.

5. A photographic printing mask comprising a sheet having an opening therein for the negative, and an opaque border for said opening, the border of said sheet surrounding said border being capable of transmitting actinic light with diminished intensity.

6. A photographic printing mask, consisting of a sheet having an opening therein for a negative, said sheet being composed of celluloid having an opaque body portion surrounding said opening and the remainder so colored as to permit the passage of actinic rays.

7. A photographic printing mask, consisting of a sheet having an opening therein for a negative, and a border portion surrounding said opening and extending outwardly from said opening for a portion of the width of said mask, said border portion and the remaining portion of said mask being colored in different ways so as to prevent the passage of actinic rays through said border portion, and to permit the passage of actinic rays through said remaining portion.

In witness whereof I have hereunto set my hand this 12th day of January, A. D., 1909.

JOHN FITZ, JR.

Witnesses:
A. I. GARDNER,
ALEXANDER PARK.