UNITED STATES PATENT OFFICE.

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PHOTOGRAPHIC NEGATIVE.

986,443. Specification of Letters Patent. Patented Mar. 14, 1911.

No Drawing. Application filed December 5, 1908. Serial No. 466,085.

To all whom it may concern:

Be it known that I, JOSEPH THACHER CLARKE, a citizen of the United States, temporarily residing at Harrow, in the county of Middlesex, England, have invented certain Improvements in Photographic Negatives; and I do hereby declare the following to be a full, clear, and exact description of the same.

My present invention relates to photography and has for its object to provide an improved negative for photographic printing of such nature that it is particularly adapted for use in connection with ordinary negatives in printing at one operation composite photographs or those containing two or more subjects matter. The principal use for a negative of this description is to enable a portrait photographer of limited means to carry in stock a supply of cheap auxiliary negatives containing tones and half-tones or gradations of light and shade of subjects which will form desirable backgrounds for his finished prints and which may be readily adapted to his negatives, thus giving him the opportunity of selecting for the subject of the negative made by him, a suitable background or setting without the necessity of carrying the usual expensive accessories of a portrait gallery. It is desirable that the stock or background negatives adapted for this use be capable of alteration or modification to the negatives made by the operator, by very simple operations not requiring the services of highly skilled operators or retouchers.

To these ends the invention consists generally in a stock negative adapted for photographic printing embodying a support of transparent or translucent material and preferably flexible, such as celluloid, gelatin or paper and having the desired scene, design or pattern printed thereon in the required varying degrees of density, in an ink or pigmented substance which is impervious or resistant to the passage of actinic light rays but capable of being discharged, bleached or rendered translucent by the application of a suitable chemical reagent preferably applied in liquid form. I have found that one such substance which is cheap, readily applied and altogether desirable for the body of the ink of which the negative is made, is hydrated oxid of manganese in the form of a fine powder of brown or sepia tone, insoluble in water, and well suited for non-actinic blocking out. When an ink of this material is painted over with dilute oxalic acid or dilute sulfuric acid, or a combination of the two, the coloring matter is discharged and the result is the production of a substance which is water soluble, translucent and almost white, and is, I believe, caused by the transformation of the manganese oxid into manganese oxalate or sulfate. In forming the stock negatives, therefore, I make negatives of the designed scenes, designs or patterns in the ordinary manner and then make from these printing blocks, such as are used for mechanical printing or otherwise, excepting that lights and shadows of the finished picture are reversed. In other words, I form a positive printing block or the image may be transferred and printed upon the support by lithography. The ink or pigment is formed by mixing the powdered hydrated oxid of manganese with a suitable menstruum such, for instance, as boiled linseed oil, or if desired, water, and I then ink the block and make an impression therefrom upon the suitable transparent or translucent support, such as celluloid, gelatin or paper and allow it to dry. This completes the background or auxiliary negative and any desired number can, of course, be printed from the blocks in the usual manner.

The exposure for the principal negative made by the photographer and to be used in connection with my auxiliary negatives is made with the subject against a black or very dark scene, which gives almost transparency for the background upon the negative and having finished his negative he takes one of my background negatives and viewing the images on both negatives by transmitted light, arranges his subject in proper position on the background and secures the background negative in position by gummed strips or otherwise. Then looking through the combined negatives with the inked face of the auxiliary negative toward him, the operator with a fine brush, applies to the inked surface, where it overlies the figure on the principal negative, the discharging chemical reagent described, rendering the auxiliary negative transparent or translucent at these points. It is desirable that the operator dab over the strokes of his brush with a bit of blot-

ting paper, thus removing the colorless salt so that only the transparent or translucent portion of the paper or film will remain over the portrait image. The combined negative may now be printed from in the usual manner and as the principal negative has not been altered in any way, other prints with different backgrounds may be made by applying other background negatives and treating them in a similar manner.

Different materials might be employed for the ink or pigment in which the auxiliary or background negative is printed and I do not, therefore, desire to be confined to that described but it is eminently desirable that it be such a one that it may be readily removed or its property of resistance to the passage of actinic light rays be eliminated by the application of a chemical reagent which can be readily applied by the operator without the exercise of great skill and without scratching or leaving marks liable to show in the finished print.

The method of forming the auxiliary negatives is not material to the substance of my invention, but as the material which I prefer to use, viz., the hydrated oxid of manganese is in a form which permits it to be used with a suitable menstruum to form an ink for mechanical printing and as the duplications may be readily made by the use of a printing press, the reasons for preferring this method will be obvious. For substantially the same reasons I prefer to employ paper as the support for the negative, but other transparent or translucent material, such as celluloid or gelatin, may be used.

The term translucent employed herein is intended to mean that quality of permitting the passage of actinic light rays sufficient for observation and for negative printing whether or not it is absolutely transparent and the term ink is used for convenience to designate a pigmented material and preferably such a one as may be mechanically applied in a desired design or pattern in various tones and half-tones or gradations of light and shade and duplicated by mechanical printing.

I claim as my invention:

1. As an article of manufacture, a negative for photographic printing embodying a translucent support having a design or pattern printed thereon in an ink which is impervious to actinic light rays and having the characteristic that its pigment may be discharged or rendered translucent by the chemical action of a reagent applied thereto.

2. As an article of manufacture, a negative for photographic printing embodying a translucent support having a design or pattern printed thereon in tones and half-tones or light and shade in an ink normally impervious to actinic light rays, and having the characteristics that its pigment may be rendered translucent by the chemical action of a reagent applied thereto.

3. As an article of manufacture, a negative for photographic printing embodying a translucent support having a design or pattern printed thereon in an ink containing hydrated oxid of manganese.

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Witnesses:

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