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1,963,707

TONING PROCESS, PARTICULARLY FOR TONING THE RED COLOR
COMPONENT IMAGE FOR MULTICOLOR PHOTOGRAPHY
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Fig. 1

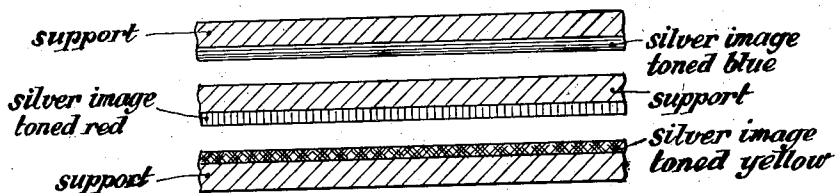
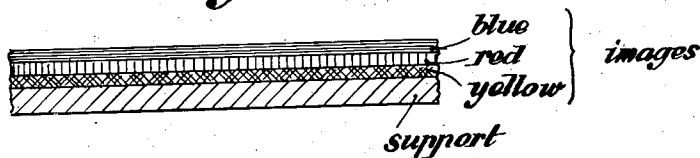


Fig. 2



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1,963,707

TONING PROCESS, PARTICULARLY FOR
TONING THE RED COLOR COMPONENT
IMAGE FOR MULTICOLOR PHOTOGRAPHYFranz Lejeune, Vienna, Austria, assignor to
Anton Jasmatzki, Vienna, AustriaApplication January 26, 1933, Serial No. 653,720
In Austria February 2, 1932

22 Claims. (Cl. 95—88)

This invention relates to an improved toning process, particularly for toning the red color component image for multi-color photography.

Heretofore it has been impossible to produce on developing paper natural colored paper pictures by way of copies which have been produced by contact printing or by enlarging. The blue color and yellow color component images have been toned in colors in accordance with the three color process, but up to now no process is known by which it is possible to transform a gas light paper copy into the red tone of color necessary in three color printing, because neither the copper toning nor the uranium toning satisfies the requirements for a correct color-synthesis. This deficiency is avoided according to the present invention, so that all three color component images can be produced by the toning of common silver images, for instance by transferring one component image to the common bromic silver or gas light paper and the other two component images onto transferable developing paper or film bands, and finally placing in exact register on top of one another all three layers.

The essential feature of the present process consists in that the silver image or the halide- or silver cyanide image or, in place of the silver image, a metallic salt image is transformed into a nickel salt image by treatment with a nickel salt, and this nickel salt image is treated with dimethylglyoxime.

The process may be carried out for instance by transforming in known manner the silver image into a lead ferrocyanide image. If treated with nickel salts, the same is transformed into a nickel image. According to the present invention, this nickel image is treated with a solution of dimethylglyoxime or its homologues, so that a red image of nickel-dimethylglyoxime is produced.

A further mode of carrying out the process according to the invention is the following:—

A common silver bromide or gas light paper copy is treated in a mixture of potassium ferricyanide and potassium bromide, washed and thereafter is placed in to a mixture of a solution of potassium nickel cyanide and an alcoholic solution of dimethylglyoxime with a few drops of ammonia in which red toning is rapidly effected.

The toning can be carried out also in a single operation by the use of a mixture of potassium ferricyanide, if desired with the addition of potassium bromide, potassium nickel cyanide, dimethylglyoxime and ammonia.

Also only a mixture of potassium nickel cyanide, dimethylglyoxime and ammonia slowly trans-

forms a silver image in to a red image. Further a blue unfixed silver image toned with potassium ferricyanide and a ferric salt is slowly transformed in to a red image by the use of said mixture of potassium nickel cyanide, dimethylglyoxime and ammonia. Further, if desired, the image to be toned is, at first, soaked in a dimethylglyoxime solution so that it contains a sufficient quantity of such solution. The nickel salt thus produced can be washed out of gelatine layers with the greatest difficulty only, and therefore the dimethylglyoxime bath may be applied after the use of the potassium nickel cyanide bath however with a less certain success.

Images treated with the well known lead intensifier of Eder-Toth can be colored red in view of the silver cyanide image by the mixture of potassium nickel cyanide and dimethylglyoxime, and yellow in view of the lead image by the use of a chromatic salt, so that an orange image is produced corresponding in color to the one color component of the two color process.

The invention is not limited to the use of potassium nickel cyanide but includes also other compounds of nickel which, per se, are not reacting with dimethylglyoxime.

One mode of carrying out the present invention is illustrated in the accompanying sheet of drawings in which Fig. 1 shows three separated supports with their image layers, while Fig. 2 is a view showing the red and blue images placed on top of and in register with the yellow image applied to its support.

What I claim is:—

1. Toning process particularly for toning the red color component image for multi-color photography, which consists in transforming the silver image into a nickel salt image, and treating said salt image with dimethylglyoxime.

2. Toning process particularly for toning the red color component image for multi-color photography, which consists in transforming the silver image into a nickel salt image, and treating said nickel salt image with the homologues of dimethylglyoxime.

3. Toning process particularly for toning the red color component image for multi-color photography, which consists in treating a photographically produced silver image with a nickel salt which reacts with dimethylglyoxime, and subsequently treating said salt image with dimethylglyoxime.

4. Toning process particularly for toning the red color component image for multi-color photography, which consists in treating a photo-

red color component image for multi-color photography, which consists in treating a photographically produced silver image with potassium nickel cyanide, and subsequently treating said salt image with the homologues of dimethylglyoxime. 80

15. Toning process particularly for toning the red color component image for multi-color photography, which consists in treating a photographically produced silver image with a mixture of nickel salt, which reacts with the homologues of dimethylglyoxime, and the homologues of dimethylglyoxime.

16. Toning process particularly for toning the red color component image for multi-color photography, which consists in treating a photographically produced silver image with a mixture of potassium nickel cyanide and the homologues of dimethylglyoxime.

17. Toning process particularly for toning the red color component image for multi-color photography, which consists in treating a photographically produced silver image with a mixture of potassium ferricyanide, potassium nickel cyanide, the homologues of dimethylglyoxime and ammonia.

18. Toning process particularly for toning the red color component image for multicolor photography, which consists in treating a photographically produced silver image with a mixture of potassium ferricyanide, potassium bromide, potassium nickel cyanide, the homologues of dimethylglyoxime and ammonia.

19. Toning process particularly for toning the red color component image for multicolor photography, which consists in treating a photographically produced silver salt image with a nickel salt which reacts with the homologues of dimethylglyoxime, and subsequently treating said salt image with the homologues of dimethylglyoxime.

20. Toning process particularly for toning the red color component image for multicolor photography, which consists in treating a photographically produced silver salt image with potassium nickel cyanide, and subsequently treating said salt image with the homologues of dimethylglyoxime.

21. Toning process particularly for toning the red color component image for multicolor photog-
raphy, which consists in treating a photographi-
cally produced silver salt image with a mixture
of nickel salt, which reacts with the homologues
of dimethylglyoxime, and the homologues of di-
methylglyoxime.

22. Toning process particularly for toning the red color component image for multicolor photography, which consists in treating a photographically produced silver salt image with a mixture of potassium nickel cyanide and the homologues of dimethylglyoxime.

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