

## PATENT SPECIFICATION



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444,773

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## PROVISIONAL SPECIFICATION

## Improvements in or relating to the Toning of Photographic Prints

We, THOMAS THORNE BAKER, a British Subject, of The Hut, Hatch End, Middlesex, and DUFAYCOLOR LIMITED, a British Company, of 19, New Bridge Street, London, E.C.4, do hereby declare the nature of this invention to be as follows:—

This invention consists in improvements in or relating to the toning of photographic prints, and has for its object to provide a process whereby photographic prints may be toned magenta.

The invention comprises the use, as a toning solution for silver bromide photographic prints, of a solution of *p*-dimethylaminobenzylidenerhodanine. Preferably the solution is weak and is made alkaline with ammonia.

The invention includes a method of toning a silver bromide photographic print which comprises first bleaching the image (e.g. by treatment with a suitable copper

salt) and then treating with a solution of *p*-dimethylaminobenzylidenerhodanine. Alternatively the image may first be converted into silver iodide or mercuric silver chloride before the treatment with *p*-dimethylaminobenzylidenerhodanine.

Photographic images toned in this way are magenta in colour and are found to be particularly suited to the making of magenta coloured images for the preparation of natural colour photographs by the subtractive process, in which a magenta image is transferred to a yellow basic image and a bluish-green image is then transferred on top. The toned prints are also useful for two-colour processes.

Dated this 2nd day of February, 1935.  
BOULT, WADE & TENNANT,  
111 & 112, Hatton Garden,  
London, E.C.1,  
Chartered Patent Agents.

## COMPLETE SPECIFICATION

## Improvements in or relating to the Toning of Photographic Prints

We, THOMAS THORNE BAKER, a British Subject, of The Hut, Hatch End, Middlesex, and DUFAYCOLOR LIMITED, a British Company, of 19, New Bridge Street, London, E.C.4, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention consists in improvements in or relating to the toning of photographic prints, and has for its object to provide a process whereby photographic prints may be toned magenta.

It is known (see Zeitschrift für analytische Chemie, volume 74 (1928), pages 382—385) that a coloured precipitate is produced when a solution of a silver salt is treated with a solution of *p*-dimethylaminobenzylidenerhodanine and it has now been found that good toning can be obtained by treating photographic prints with this solution whereby an image in magenta can be obtained. The invention accordingly consists in a

method of toning a silver halide photographic print which comprises the step of treating it with a solution of *p*-dimethylaminobenzylidenerhodanine. Preferably the treating solution is made alkaline with ammonia. The silver halide print may be a bromide print.

Some specific methods of carrying the invention into effect will now be described by way of example. Three colour separation positive prints on bromide paper are first prepared by printing from a colour photograph comprising a multi-colour screen of the kind described in Specification No. 322,432. These bromide prints are respectively a blue separation record, a green separation record and a red separation record. The image of the green separation record is first bleached (e.g. by treatment with a suitable copper salt) and is then toned magenta by treatment with a weak solution of *p*-dimethylaminobenzylidenerhodanine, the solution being rendered alkaline with ammonia.

The blue separation record is toned

[Price 1/-]

yellow for example by bleaching it in a solution of lead acetate and potassium ferricyanide and then converting it with potassium bichromate or chromate to a yellow image of lead chromate.

The red separation record is toned blue for example by bleaching with potassium ferricyanide and toning with iron alum.

The toned green and red separation records (which each have a paper backing similar to that used for the blue separation record but which may be separated from their backings) are then superimposed on the toned blue separation record and their backings are removed. The registration of the prints is secured by perforating their bases and by the use of a registering board in a manner similar to that described in Specification No. 406,663.

In an alternative example the image of the green separation record is coloured magenta by first converting the image into silver iodide or mercuric silver chloride before treatment with a dilute solution of *p*-dimethylaminobenzylidenerhodanine, the solution being rendered alkaline with ammonia. The toning baths may consist of a 0.1 to 0.3% solution in acetone diluted with one or more volumes of water.

It is to be understood that although the invention has been specifically described in relation to a three-colour process it may be applied to any process (e.g. a two-colour process) in which a magenta print

is required.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. The method of toning a silver halide photographic print which comprises the step of treating it with a solution of *p*-dimethylaminobenzylidenerhodanine. 45

2. The method of toning a silver bromide print which comprises the step of treating it with a solution of *p*-dimethylaminobenzylidenerhodanine. 50

3. The method according to Claim 1 or Claim 2 in which the treating solution is rendered alkaline with ammonia.

4. The method of toning a silver halide photographic print which comprises first bleaching the image and then treating it with a solution of *p*-dimethylaminobenzylidenerhodanine. 55

5. The method of toning a silver halide photographic print which comprises the steps of first converting the image into silver iodide or mercuric silver chloride and then treating it with *p*-dimethylaminobenzylidenerhodanine. 60

6. A magenta print for use in three-colour subtractive photography when produced by the method according to any one of the preceding claims. 65

Dated this 16th day of September, 1935.  
BOULT, WADE & TENNANT,  
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Chartered Patent Agents.