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NONOXIDIZING AND NONDETERIORATING DEVELOPER FOR OFF-SET OR CONTRAST FILM AND PLATE NEGATIVES

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4 Claims. (Cl. 95—88)

This invention relates to photographic developers and more particularly to non-oxidizing and non-deteriorating photographic developers for use in developing off-set or contrast film and plate negatives.

One object of this invention is to provide a developer which will not oxidize or deteriorate. Another object is to provide a developer which when in solution will not lose any of its developing strength because of exposure to the air. A further object is to provide a developer which will develop more plate or film negatives per unit quantity of developer.

Other objects include the provision of a developer which: does not lose strength because of contact with air; has greater developing strength because of its non-oxidizing character; decreases in strength solely because of the number of negatives developed; gives more definiteness, preciseness, exactness and clearness; avoids the need of special light protective bottles; does not require a full bottle to preserve its properties; requires a shorter time for developing.

Further objects of this invention include the provision of a developer which: will not injure the film or plate negatives; will not alter the form, size, or shape of the negatives; is a labor saving and time saving one in use; requires no special ability upon the part of the user; is easy to handle; is inexpensive.

The foregoing objects have been attained by the developer hereinafter more clearly described.

The developer of this invention is especially useful in developing film and plate negatives for the making of so-called line and half-tone negatives of great contrast for off-set printing, photo-engraving and lithography. In this application the term non-oxidizing will be understood to mean a developer which is not affected by the oxygen of the air. Expressing it another way one may say that the oxygen in the air does not destroy, disintegrate, or deteriorate the elements of the developer. Off-set or contrast film or plate negatives are herein used to distinguish from ordinary film or plate negatives, which latter after developing show the objects photographed by means of intermediate shades between black and white. The object, herein contemplated, on the off-set or contrast negatives appears white and the entire background appears black, there being no shades between black and white. There will be only the extremes of black and white. The contrast between black and white gives the object photographed a clear, definite outline. Developer as herein used has reference to a chemical composition or solution used in developing negatives after the film or plate has been exposed and an image of the object taken. The developer brings to view on the negatives the object photographed by inducing changes in the sensitized negative.

A preferred example of the developer is composed of the following chemical elements in about the proportions set out:

Sodium sulphite	ounces	8
Boric acid	do	2
Hydroquinone	do	3
Sodium carbonate	do	12
Oxalic acid	grains	200
Potassium bromide	do	360
Citric acid	do	50
Potassium metabisulphite	do	300

The above mixture is to be kept in a can in dry powdered form and will last indefinitely. Mixture. The chemical elements in their respective proportions are placed in an absolutely dry-sealed container (can) and in such state may be marketed. The above compound mixture must be kept in a container (can) in dry powdered form and in such form will last indefinitely.

When ready to use, it is to be mixed with one (1) gallon of distilled water at a temperature of 70°–80° F.

Compounding for usage.—When ready to be used as developer, the compound mixture should be dissolved in one (1) gallon of distilled water at a temperature of between 70°–80° F.

Actual usage.—After the above compound mixture is dissolved in distilled water, it may then be placed and kept in an open tray during the entire working day and kept in a bottle during the night. It is not necessary that the bottle be of brown color nor is it necessary that the bottle be filled fully with developer as any air present at top of developer will not affect it. The following day the same developer may be placed in an open tray and used again. Except for the loss of strength of the developer due solely and only to its depletion because of the number of film and plate negatives developed, the developer will not have lost any of its developing strength due to its exposure to air during the actual process of film and plate negative developing or any other time.

I am aware that prior to my discovery and at the present time there is in existence a type of an oxidizing developer made for the purpose of developing off-set or contrast film and plate negatives, but, to the best of my knowledge, there

is no developer in existence that has been manufactured which contains the elements, principles, and non-oxidizing and non-deteriorating feature as does my developer.

Although a preferred embodiment of the invention has been described in connection with the composition in both its dry and solution forms and also in connection with the manner of using the same, variations within the true spirit and scope of the same are to be determined by the appended claims.

What I claim is:

1. A non-oxidizing and non-deteriorating developer for off-set or contrast film and plate negatives consisting of: sodium sulphite—8 ounces; boric acid—2 ounces; hydroquinone—3 ounces; sodium carbonate—12 ounces; oxalic acid—200 grains; potassium bromide—360 grains; citric acid—50 grains; potassium metabisulphite—300 grains; and one gallon of distilled water.

2. A non-oxidizing and non-deteriorating developer for off-set or contrast film and plate negatives consisting of: sodium sulphite—8 ounces; boric acid—2 ounces; hydroquinone—3 ounces; sodium carbonate—12 ounces; oxalic acid—200 grains; potassium bromide—360 grains; citric acid—50 grains; potassium metabisulphite—300 grains.

3. A non-oxidizing and non-deteriorating developer for negatives including the following elements in about the proportions named: sodium sulphite—8 ounces; boric acid—2 ounces; hydroquinone—3 ounces; sodium carbonate—12 ounces; oxalic acid—200 grains; potassium bromide—360 grains; citric acid—50 grains; and potassium metabisulphite—300 grains.

4. A non-oxidizing and non-deteriorating developer for negatives including the following elements in about the proportions named: sodium sulphite—8 ounces; boric acid—2 ounces; hydroquinone—3 ounces; sodium carbonate—12 ounces; oxalic acid—200 grains; potassium bromide—300 grains; citric acid—50 grains; potassium metabisulphite—300 grains; and about one gallon of distilled water.

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