

UNITED STATES PATENT OFFICE

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SAFETY INK

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2 Claims. (Cl. 106—22)

1

This invention relates to inks for writing, stamping or printing documents and the like. It is one object of the invention to provide an ink of such a nature that alteration of a document in which such ink is used is made exceedingly difficult without easy detection. In preparing an ink for this purpose, it is important that the ingredients be compatible and free from any substance which would attack a pen or other writing instrument in which the ink might be employed. According to the invention, an ink is provided which is a mixture of two or more compatible constituents, one of which gives the ink a well-defined color but can be attacked by one or another of the oxidizing or bleaching reagents usually employed to bleach or fade ink. The other constituents are water-soluble substances which are normally colorless or nearly so but which take on a permanent color, preferably of a deep hue, when treated with any of the oxidizing or bleaching reagents usually resorted to as eradicators. Thus when a document has been written or printed with such ink, any attempt to bleach or fade a portion of it for the purpose of effecting a secret alteration results in the development of a latent color conspicuously differing from the original.

For the original color of the ink an aniline dye may be employed; for example, methylene blue, methyl violet or malachite green. With the dye is mixed a solution of a soluble diamino-diphenyl such as benzidine dihydrochloride. This substance is colorless in solution but when treated with a bleaching reagent, turns a bright red which is inert to almost all the ordinary laboratory reagents but may be considerably bleached by potassium permanganate followed by sodium bisulphite. To take care of that exception, a salt of cobalt is included in the ink; for example, cobaltous chloride is soluble and is but slightly colored when in solution. The cobalt salt is turned black by sodium bisulphite.

2

The following is a specific example of an ink embodying the invention, it being understood that the proportions of the ingredients given may be varied to get different color effects in the ink, and that in place of the substances named, other equivalent substances may be employed. In one gallon of distilled water dissolve an ounce of an aniline dye. Dissolve one ounce of cobaltous chloride in one half pint of hot water, filter, and add the filtrate to the dye solution. Make a saturated solution of benzidine dihydrochloride in one gallon of distilled water, add to the above mixture, and filter.

I claim:

1. A writing fluid consisting of a mixture of aqueous solutions of an aniline dye, cobaltous chloride, and benzidine dihydrochloride.

2. A writing fluid consisting of a mixture of aqueous solutions of an aniline dye, cobaltous chloride and benzidine dihydrochloride in the proportion of one ounce of aniline dye in a gallon of water, one ounce of cobaltous chloride in a pint of water and one gallon of saturated aqueous solution of benzidine dihydrochloride.

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