

UNITED STATES PATENT OFFICE.

RENÉ BOHN, OF MANNHEIM, GERMANY, ASSIGNOR TO BADISCHE ANILIN & SODA FABRIK, OF LUDWIGSHAFEN-ON-THE-RHINE, GERMANY, A CORPORATION OF BADEN.

BROWN ANTHRACENE DYE.

SPECIFICATION forming part of Letters Patent No. 791,869, dated June 6, 1905.

Application filed December 8, 1904. Serial No. 236,036. (Specimens.)

To all whom it may concern:

Be it known that I, RENÉ BOHN, a citizen of the Swiss Republic, residing at Mannheim, in the Grand Duchy of Baden, in the German Empire, have invented new and useful Improvements in Anthracene Coloring-Matters, of which the following is a specification.

In the specification of Letters Patent No. 767,259 there is described the production of gray coloring-matters which possess properties similar to those of indanthrene and flavanthrene. These coloring-matters can be obtained by melting diamidoanthrachinons or their sulfo-acids with caustic alkali, and they can only be used for dyeing and printing when a special process is employed.

I have now discovered that coloring-matters which belong to the same generic class and which, with the exception of their shades, possess properties similar to those of the aforementioned coloring-matters can be obtained by melting with caustic alkali the formaldehyde derivatives of diamidoanthrachinons, such as are described in the German Patent No. 123,745. The compounds which I have up to the present employed are the formaldehyde derivatives of 1.5 and of 1.8 diamidoanthrachinon. Whereas the coloring-matters produced according to the specification of said Letters Patent No. 767,259 yield from reddish-gray to greenish-gray shades on cotton, my new coloring-matters produce brown shades.

The following example will serve to further illustrate my invention, which, however, is not confined to this example. The parts are by weight.

Melt three (3) parts of caustic potash and introduce slowly while at a temperature of one hundred and seventy degrees centigrade (170° C.) one (1) part of the formaldehyde derivative of 1.5 diamidoanthrachinon. After the addition is complete continue heating at the same temperature for one (1) hour, pour

into water, boil, and filter. The same procedure can be followed when the formaldehyde derivative of 1.8 diamidoanthrachinon is employed. Also, if desired, a mixture of the 1.5 and the 1.8 compounds can be used.

The coloring-matters in the form of pastes possess a reddish-brown color, but when dry form black powders which are practically insoluble in the usual solvents. They are, however, soluble in concentrated sulfuric acid, yielding yellowish-brown solutions. With reducing agents, such as sodium hydrosulfite, in the presence of caustic alkali, they give brown to red vats which dye vegetable fiber substantively, yielding reddish-brown shades, which, when exposed to the air, turn brown.

Now what I claim is—

1. As new articles of manufacture, the brown coloring-matters which can be obtained from the formaldehyde derivatives of diamidoanthrachinons, which, when dry, are black powders practically insoluble in water, which give from brown to red solutions with caustic alkali and sodium hydrosulfite, which solutions dye cotton brown-red shades, which shades become brown when exposed to the air.

2. As a new article of manufacture, the brown coloring-matter which can be obtained from the formaldehyde derivative of 1.5 diamidoanthrachinon, which, when dry, is a black powder practically insoluble in water, which gives a brown-red solution with caustic alkali and sodium hydrosulfite, which solution dyes cotton brown-red shades, which shades become brown when exposed to the air.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

RENÉ BOHN.

Witnesses:

J. ALEC. LLOYD,
JOS. H. LEUTE.