

PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in and relating to Compositions of Matter
Containing Derivatives of Carbohydrates.

We, HENRY JAMES HANDS, of 100, Duke's Avenue, Chiswick, London, W. 4, a British subject, and SPICERS, LIMITED, of 19, New Bridge Street, London, E.C. 4, a company registered under the laws of Great Britain, 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 relates to compositions of matter containing derivatives of carbohydrates having the empirical formula $(C_6H_{10}O_5)_n$ and particularly the ethers and organic acid esters of cellulose and like carbohydrates in association with cellulose in finely divided form and suitable pigments.

The object of the present invention is to provide sheet material adapted for use as supports for photographic emulsions, photographic images and the like.

According to the present invention the sheet material is formed from compositions of matter of the character above indicated containing a white opaque pigment.

The cellulose in a relatively pure state employed may be purified cellulose derived from cotton, esparto grass, kapok, wood or cotton linters in a suitably divided form.

In forming compositions as is customary in the production of cellulose ester and cellulose ether compositions gelatinising or plasticising agents may be employed.

Compositions in accordance with the invention may contain in addition to carbohydrate derivatives gums, ester gums, natural or synthetic resins, non-drying, drying or semi-drying oils.

Conveniently such sheet material is formed from a plurality of compositions as described and claimed in Specification No. 23,577 of 1926 (Serial No. 281,803).

In forming sheet material from compositions in accordance with the invention the usual mechanical operations may be employed; for instance, the composition may be applied to an endless moving band or to the periphery of a wheel or drum from which the material, when hardened, is stripped.

[Price 1s.]

If it is desired that the composition should possess a low degree of inflammability, organic acid esters of cellulose may be employed, and bodies adapted to reduce the inflammability of the product and of which as examples zinc, tin and aluminium chlorides may be referred to may be used. Further examples of materials for use for the like purpose are the higher chlorinated hydrocarbons, for instance hexachlorethane, and the higher chlorine derivatives of propane, that is chlorine derivatives of propane containing more than three chlorine atoms in their molecules.

The following particulars are given to indicate by way of example the constitution of compositions for use in the production of sheet material:—

EXAMPLE 1.

10 parts by weight of finely comminuted purified cellulose, 10 parts by weight of zinc oxide, titanium white or other white pigment or mixture of white pigments, 10 parts by weight of cellulose acetate, 100 parts by weight of acetone, 4 parts by weight of cedar wood oil and 4 parts by weight of suitable plasticising agents.

EXAMPLE 2.

	(by weight)	
Cellulose acetate	— — — —	10
Cedar wood oil	— — — —	2
Triphenyl phosphate	— — — —	3
Boiled linseed oil	— — — —	0.5
Acetone	— — — —	80

To the above solution would be added the following:—

Finely ground purified cellulose	— — — —	2	} ground in tetrachlorethane 30,
Titanium white	— — — —	15	
Barium sulphate	— — — —	3	

the whole being very thoroughly ground.

EXAMPLE 3.

Cellulose acetate	— — — —	10	} ground in 20 of tetrachlorethane.
Acetone	— — — —	80	
Titanium white	— — — —	2	
Barium sulphate	— — — —	2	
Calcium sulphide (Luminous)	— — — —	8	

A composition such as that produced according to Example 2 and a composition as produced according to Example 3 may

be combined together by a double casting process as described and claimed in Specification No. 23,577 of 1926 (Serial No. 281,803), or compositions according to Examples 2 and 3 may be combined with a transparent carbohydrate ester or ether composition in like manner so that the last-mentioned composition forms the top layer, that is to say the layer in immediate contact with the photographic emulsion or image.

As will be understood, the relative proportions of the constituents of the compositions in accordance with the invention may be varied within wide limits and the character of the white pigments employed will, of course, be varied in accordance with requirements.

In suitable thickness and having a suitable colour and surface character the sheet material may be used in photography where, for instance, a waterproof, permanent or very strong base for a photographic emulsion or as a support for photographic images is required and it is of particular value in connection with colour photography as the base or support for the finished print.

The sheet material may be opaque or translucent and be of such character that when dyed or coloured by impregnation or otherwise a brilliant or luminous effect

is secured.

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. Sheet material adapted for use as supports for photographic emulsions, photographic images and the like formed from compositions of matter containing derivatives of carbohydrates having the empirical formula $(C_6H_{10}O_5)_n$ and particularly the ethers and esters of cellulose and like carbohydrates in association with relatively pure cellulose in a finely divided form and a white opaque pigment.

2. Sheet material adapted for use as supports for photographic emulsions, photographic images and the like formed by bringing together a plurality of carbohydrate ether or ester compositions as claimed in Claim 1 by the method claimed in the Specification No. 23,577 of 1926 (Serial No. 281,803).

3. Compositions of matter in sheet form adapted for use as supports for photographic emulsions, photographic images and the like containing derivatives of carbohydrates, substantially as hereinbefore described.

Dated this 29th day of December, 1926.
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