

## UNITED STATES PATENT OFFICE

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FABRIC CONTAINING ORGANIC DERIVATIVE OF CELLULOSE YARN

No Drawing.

Application filed July 16, 1930. Serial No. 468,460.

This invention relates to fabric containing yarns of organic derivatives of cellulose and relates more particularly to the preparation of fabric having yarns of cellulose acetate, which fabric is of more uniform appearance than has been heretofore possible.

An object of my invention is to prepare fabric containing yarns of organic derivatives of cellulose, which fabric has a uniform appearance. A further object is to avoid the appearance of streaks and the like in fabrics by employing more or less opaque yarn of cellulose acetate as at least part of the yarn of which the fabric is constructed. Other objects of this invention will appear from the following detailed description.

Yarns of cellulose acetate or other organic derivatives of cellulose as ordinarily made are more or less transparent. Moreover the lustre of such yarn is often not absolutely uniform. Therefore fabric made of such yarn often does not have a uniform appearance, its lustre is not as brilliant as may be desired, and it shows warp streaks due to the unevenness of the tension of the warp and to the difference of lustre of the warp yarns, weft bars where the weft pirns have been changed, wood grain effects and other streaks. I have found that this is due to the fact that the yarn is so transparent that most of the irregularities of the warp and weft are visible through them. Moreover pile fabric having pile made of such more or less transparent yarns does not have a uniform sheen or brilliant lustre or appearance for the same reasons.

I have found that if yarns of cellulose acetate or other organic derivatives of cellulose which have their transparency reduced or their opacity increased are employed in whole or in part in making the fabric, the above difficulties are avoided wholly or to a substantial degree and fabric of substantially uniform appearance and free from bars, streaks and the like and which has more covering power may be made.

In accordance with my invention I prepare a woven fabric containing yarns of cellulose acetate or other organic derivatives of cellulose of increased opacity, whereby

any streaks and the like either do not occur or are not visible.

While this invention will be described specifically in connection with yarn made of cellulose acetate, it is equally applicable to yarns made of other organic derivatives of cellulose such as cellulose ester and cellulose ethers. Examples of such cellulose esters are cellulose formate, cellulose propionate and cellulose butyrate, while examples of such cellulose ethers are ethyl cellulose, methyl cellulose and benzyl cellulose.

The yarns of cellulose acetate may have their opacity increased or their transparency decreased in any suitable manner. Thus the yarns may have a finely divided pigment such as titanium oxide, barium sulfate, barium phosphate, zinc oxide, zinc sulfide, lead sulfate or lithophone, etc. disseminated throughout the filaments thereof. This may be done by incorporating the finely divided pigments in amounts say of 0.5 to 3% of the weight of the cellulose acetate in the spinning dope from which the yarns are formed. If desired the yarns may have their opacity increased by treating the same with an aqueous solution of a metal salt, either in the presence or absence of a swelling agent for the cellulose acetate, and then the yarn treated with a solution of a substance that causes the precipitation of the insoluble pigment.

Another mode of increasing the opacity is to treat yarn of say acetone soluble cellulose acetate with boiling water or wet steam. It is to be noted that it is immaterial whether the lustre of the yarn is reduced or not provided its opacity is increased.

In carrying out this invention, the fabric may be made wholly of the yarn of increased opacity. However in many cases it is preferable to use such opaque yarn as only one component of the fabric while the other component may be normal yarn of organic derivatives of cellulose of normal transparency or yarns made of other fibres such as natural silk, cotton or reconstituted cellulose. For instance if a cotton warp is employed, the irregularities of this warp are much less apparent when an opaque yarn



is used as weft or filling than in the case where transparent yarn is so used.

In pile fabric such as velvets having a back of cotton, natural silk or reconstituted cellulose, by employing the relatively opaque cellulose acetate yarn as pile, any streakiness of the back is hidden by the opacity of the pile yarn so that the fabric is of substantially uniform appearance and of increased lustre and sheen.

In the case of knit fabric and articles such as hose, less distortions and holes are apparent when the opaque cellulose acetate yarns are employed, in accordance with this invention. By way of example it is pointed out that if a fabric is constructed of warp of the ordinary cellulose acetate yarn and a weft of yarn of increased opacity, streaks due to unevenness of the tension of the warp yarns or the difference of lustre between the warp yarns is hidden by the opaqueness of the weft yarn. Moreover no weft bars are apparent at those places where the weft pirn has been changed. A further advantage of the fabric made by this invention is that the fabric on the whole is less transparent than fabric made wholly of transparent cellulose acetate yarn, which is important when the fabric is used as lining for coats and the like. Moreover a fabric made by this invention while employing a yarn containing finely divided pigment, wears longer and can be rubbed more times without injury than can the fabric made wholly of the ordinary cellulose acetate yarn.

It is to be understood that the foregoing description is given merely by way of illustration and that many variations may be made therein without departing from the spirit of my invention.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. Method of preparing a fabric that is substantially free of warp streaks comprising weaving a warp consisting of normal yarns with a weft consisting wholly of yarns of organic derivatives of cellulose of increased opacity.

2. Method of preparing a fabric that is substantially free of warp streaks comprising weaving a warp consisting of normal yarns with a weft consisting wholly of yarns of cellulose acetate of increased opacity.

3. Method of preparing a fabric that is substantially free of warp streaks comprising weaving a warp consisting of normal yarns with a weft consisting wholly of yarns of cellulose acetate of increased opacity having a finely divided pigment therein.

4. A fabric of substantially uniform appearance and free of warp streaks having a weft of organic derivative of cellulose yarn of increased opacity and a warp of yarn of normal lustre.

5. A fabric of substantially uniform appearance and free of warp streaks having a weft of cellulose acetate yarn of increased opacity and a warp of yarn of normal lustre.

6. A fabric of substantially uniform appearance and free of warp streaks having a weft of cellulose acetate yarn of increased opacity containing a finely divided pigment therein and a warp of yarn of normal lustre.

In testimony whereof, I have hereunto subscribed my name.

CAMILLE DREYFUS.