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(54) **Buttons that can be dyed with the fabrics they are sewn upon**

(57) Some buttons of any shape and/or size, are obtained from pressed vegetable pulp plates and are submitted to cleaning treatments so that the component of their vegetable cellular part corresponds to the one of the textile fibres the coarse fabrics they are sewn upon are made.

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Description

[0001] The present invention refers to some buttons that can be dyed with the fabrics they are sewn upon.

[0002] It is known that one of the greatest problems concerning the ready-to-wear monochrome garments is that after their making-up with coarse fabric, they must be sent to the dyeing factories to be dyed with the required colours and they must come back to the making-up departments so that the buttons can be sewn.

[0003] These needs require the presence of people and transport means, longer working times, increase in times and production costs in order to prepare the material, the handling of the made-up coarse garments to and from the dyeing factories for the finishing and the sewing of the buttons.

[0004] Object of the present invention is to remove the above-mentioned drawbacks. The invention as it is, characterized by the claims, addresses the problem with buttons by which the following results are obtained: the buttons are made of material having features similar to the ones of the fabrics; the coarse buttons, that are not dyed, are sewn on garments at the end of their making-up with coarse fabrics; the coarse garments complete with the coarse buttons, are sent to the dyeing factories and submitted to the simultaneous dyeing with the treatment the fabrics are usually submitted to.

[0005] The advantages obtained by the present invention essentially consist in the fact that the vegetable similar materials the fabrics and correspondent buttons are made of, allow the simultaneous dyeing thus assuring an even dyeing both for type, hue, intensity, consistency and duration.

[0006] The invention is described in detail here below, according to examples showing the procedure to obtain some buttons and their dyeing at the same time as the fabrics that are given only by way of non-limitative example.

[0007] The vegetable fibre pulp is treated under pressure (at about 1800÷2500 kg/cm² depending on the mechanical features and on the thickness of the buttons to be produced) in order to obtain single-layer or multi-layer plates with different thickness and appropriate physical features in order to assure the required resistance and mechanical workability of the buttons.

[0008] The pressed vegetable pulp plates, in particular the pressed plates obtained by cellulose fibres (white fibrous polysaccharide component of the cellular part of vegetables) are then submitted at least to one targeted cleaning treatment in order to remove the natural wastes contained therein.

[0009] These treatments aim at obtaining the utmost pureness of the material.

[0010] One of the cleaning treatments consists in:

- putting the vegetable fibre pulp plates in a solution with a 1/5÷1/10 ratio of water with PH 5.5÷9 and the detergent in a 3÷8 cc/l ratio of water at the temper-

ature of 40÷60°C for a variable time of about 0.5÷1.5 hours,

- carrying out a first rinsing in movement at about 70÷100 °C for a variable time of about 5÷15 minutes in an aqueous solution with 3÷9 gr/l of detergent,
- carrying out a second rinsing only in water.

[0011] As a non-limitative example, the physical features obtained on the pressed vegetable fibre pulp plates submitted to the above-mentioned cleaning procedure are the following ones: density: 0.8÷1.8 g/cm³, water absorption 3÷22%, humidity coefficient 5÷12%, compression resistance 14÷30 kgF/mm², bending resistance 12÷25 Jgf.mm², resistance to shocks 30÷50 kgFcm/cm, elastic modulus about 3÷8x10.4 kgFcm², hardness 70÷120 Rokwell.

[0012] Through workings with laser cut or other suitable procedure such as shearing, moulding or the like, some disks or washers of the required sizes are obtained and then turned and/or machine worked with the usual techniques in order to obtain buttons having the required sizes, shapes and pass-through holes for the sewing yarns.

[0013] The finished buttons are then submitted to a finishing process with a second and even surface cleaning to be prepared for the dyeing consisting in:

- an aqueous solution bath with about 40÷60 g/l of caustic soda or similar product, a 30÷45 °bouvè for a variable time of about 1.5÷3.0 hours,
- a first warm rinsing,
- a first neutralizing treatment for a variable time of about 10÷30 minutes, with 2÷10 cc/l of glacial acid at 30÷60 °C,
- a second warm rinsing,
- a cold rinsing with centrifugation,
- drying in a convection oven.

[0014] The worked buttons made of completely purified cellulose pulp are substantially white or white/ivory and have inner features corresponding to the white or white/ivory colour and to the inner ones of the coarse linen and/or cotton yarns for the manufacturing of fabrics that are especially used to make-up monochrome garments.

[0015] The correspondent vegetable fibre buttons obtained by the above-mentioned procedure are sewn on said coarse garments thus obtaining similar and homogeneous fabric-button combinations that can be submitted to simultaneous dyeing, in the same baths with the same procedures, sequences and treatment times that have been adopted up to now for the fabrics without buttons.

[0016] The dyes obtained on buttons with any dyeing bath or monochrome colour hue, are perfectly identical to the ones obtained on the fabrics the buttons are to be sewn upon.

[0017] Even though the present invention has been

described according to procedures and treatments that are given only by way of non-limitative example, it is clear that various changes to the compositions, procedure sequences, treatments and combinations of methods, clearing and neutralizing products can be carried out by people skilled in the art without leaving its purpose and protection scope.

Claims

1. Buttons that can be dyed with the fabrics they are sewn upon, **characterized in that** they are obtained from pressed and cleaned vegetable pulp plates made of one or more overlapped layers whose vegetable cellular part corresponds to the one of the textile fibres the fabrics they are sewn upon are made.

2. Buttons that can be dyed with the fabrics they are sewn upon according to claim 1, **characterized in that** the pressed and cleaned vegetable pulp plates they are obtained from are made of cellulose pulp (pressed vegetable pulp plates component of the cellular part of vegetables) cleaned from the natural wastes contained therein.

3. Buttons that can be dyed with the fabrics they are sewn upon according to one of the previous claims **characterized in that** they are made of pressed cellulose pulp and are suitable to be sewed on vegetable fabrics such as linen and cotton.

4. Buttons that can be dyed with the fabrics they are sewn upon according to one of the previous claims, **characterized in that** they are obtained from single-layer or multiple-layer plates with different cellulose pulp thickness obtained by pressing at about 1800÷2500kg/cm² according to the mechanical features and the thickness of the buttons to be manufactured.

5. Buttons according to one of the previous claims, **characterized in that** the pressed vegetable fibre pulp plates the buttons are obtained from are submitted at least to one cleaning treatment from the natural wastes contained therein consisting in: the application of a solution in a 1/5÷1/10 ratio of water with PH 5.5÷9 and detergent in a 3÷8 cc/l ratio of water, at the temperature of 40÷60°C for about 0.51÷1.5 hours; a first rinsing at about 70÷100 °C for 5÷15 minutes in an aqueous solution with 3÷9 g/l of detergent; second rinsing with water only.

6. Buttons according to the previous claims **characterized in that** the physical features of the pressed cellulose pulp plates from which the buttons are obtained are the following ones: 0.8÷1.8 g/cm³, water

absorption 3÷22%, humidity coefficient 5÷12%, compression resistance 14÷30 kgF/mm², bending resistance 12÷25 Jgf mm², resistance to shocks 30÷50 kgFcm/cm, elastic modulus about 3÷8x10.4 kgFcm², hardness 70÷120 Rockwell.

7. Buttons that can be dyed with the fabrics they are sewn upon according to one of the previous claims, **characterized in that** they are obtained by cutting, shearing, moulding, turning, mechanical and machine workings from cellulose pulp plates obtained by pressing.

8. Buttons according to one of the previous claims, **characterized in that** the finished buttons are submitted to a second surface cleaning to be prepared for dyeing consisting in: a bath in a solution of water with about 40÷60 g/l of caustic soda or equivalent product, at 30÷40° boumè for a variable time of about 1.5÷3.0 hours; a first warm rinsing; a neutralizing treatment for a variable time of 10÷30 minutes with 2÷10 cc/l of glacial acid at 30÷60 °C; a second warm rinsing; a cold rinsing with centrifugation; drying in a convection oven.

9. Buttons that can be dyed with the fabrics they are sewn upon according to one of the previous claims, **characterized in that** the white or white/ivory colour and the inner features of the cleaned and worked cellulose pulp plates they are made of correspond to the white or white/ivory colour and to the inner features of the linen and/or cotton coarse yarns used to manufacture the fabrics for the making-up of monochrome garments.

10. Buttons according to one of the previous claims **characterized in that** they are submitted to the simultaneous dyeing with the coarse fabrics they are sewn upon, wherein the dyeing cycle is the same as the one the same fabrics are submitted to, even without buttons.