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[54] PRIVACY CUBICLE CURTAIN CLOTH

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[51] **Int. Cl.** **D03d 15/12**

[58] **Field of Search**.....139/420; 57/140 R; 161/70, 161/91, 92, 403

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[57] **ABSTRACT**

Privacy cubicle curtain cloth suitable for use in hospitals, nursing homes, sanitariums, and the like, capable of providing some measure of privacy between patients in adjacent beds comprising: a warp of saran ribbon or strip materials having a thickness of from about 1-½ mils to about 3 mils and a width of from about 20 mils to about 35 mils; and a frilling of polypropylene spun yarn having a yarn size of from about 8/1 to about 12/1, as calculated on the cotton count system, said privacy cubicle cloth being inherently fire retardant or flame resistant and self-extinguishing, relatively inert chemically in the presence of gases and liquids normally found in hospitals, commercially launderable, and having sufficiently light weight characteristics as to be easily handled and quickly drawn or pulled back in use, while still being opaque or translucent but not transparent to afford some measure of privacy to patients.

4 Claims, No Drawings

PRIVACY CUBICLE CURTAIN CLOTH

Privacy cubicle curtain cloth are used in hospitals, nursing homes, sanitariums, and the like, to provide some measure of privacy between patients in adjacent beds. They are usually hung from curtain rods or like suspension devices which are attached to the ceiling of the room and normally go around both sides and the foot of the bed to be quickly and easily drawn or pulled back, depending on the needs and desires of the patients for privacy.

One of the most important requirements of privacy cubicle curtain cloth, and particularly from a government regulatory viewpoint, is that it be fire retardant or flame resistant and possess self-extinguishing properties. This is, of course, dictated primarily by safety considerations for the patients who, in many cases, may be bed-ridden and not ambulatory.

It is also important that the privacy cubicle curtain cloth be relatively inert chemically and that it be safe and resistant in the presence of gases, particularly oxygen, and chemicals such as aliphatic alcohols, glycerine, ether, and other chemicals and fluids normally found in hospitals, nursing homes, sanitariums, and the like.

Another important requirement is that the privacy cubicle curtain cloth be sufficiently light in weight that it can be easily handled and that it can be quickly and easily drawn or pulled back on the suspending rods, depending on the needs and desires of the patients for privacy. This is a relatively important physical requirement when it is realized that privacy cubicle curtain cloth is used in a rather large size, for example, perhaps 6½ or 7 feet high and perhaps 15 feet or more in length.

Also, it is essential that the privacy cubicle curtain cloth, even though sufficiently light in weight, be sufficiently opaque or translucent but not transparent as to afford some measure of privacy to the patients.

Launderability is also a factor on the economic side and it is highly desirable that the cubicle cloth be capable of being laundered under conventional or standard commercial laundering conditions and that it require a minimum and preferably no ironing, after washing.

It has now been found that such properties and characteristics of fire retardancy, chemical and gas inertness, light weight, opaqueness or translucency, lack of transparency, and launderability, are obtained by the selective use of a specific warp and a specific filling in the manufacture of the privacy cubicle curtain cloth. Such particular warp and filling will be described in greater detail in the following specification.

WARP

The warp is made of saran which, by definition, consists of polyvinylidene chloride homopolymer, or copolymers which contain at least 50% vinylidene chloride. Examples of copolymers are, for example, vinylidene chloride-ethyl acrylate "PC-120", vinylidene chloride-vinyl chloride, vinylidene chloride-acrylonitrile, and vinylidene chloride-vinyl chloride-acrylonitrile "Diurit". As used herein saran is manufactured fiber in which the fiber-forming substance is any long chain synthetic polymer composed preferably of at least 80 percent by weight of vinylidene chloride units ($-CH_2-CCl_2-$). When stretched or oriented, saran is strong, tough, and very flexible. It possesses

good chemical and solvent resistance. It has excellent resistance to moths and mildew and possesses self-extinguishing properties. It is a very heavy material and has a specific gravity of about 1.7.

It is woven as the warp in the fabrics of the present invention in a range of from about 36 ends per inch to about 44 ends per inch, with a commercially preferred range of from about 38 ends per inch to about 42 ends per inch.

The saran warp is used in the form of ribbons or flat strip materials having a thickness of from about 1½ mils to about 3 mils, and commercially preferably from about 2 mils to about 2½ mils. The widths of such ribbon or flat strip materials is in the range of from about 20 mils to about 35 mils, and commercially preferably from about 25 mils to about 30 mils.

FILLING

The filling is made of polypropylene which, be definition, is composed of at least 85 percent by weight of repeating propylene units. It possesses the desired characteristics and properties of low moisture absorbency and chemical inertness, making it resistant to attack by gases, stains, and chemicals, such as bleaches, aliphatic alcohols, glycerine, ether, carbon disulfide, acetone, etc. Polypropylene does not rot or mildew, and is unaffected by insects and vermin. It also is extremely light in weight and possesses the lowest specific gravity of all man-made fibers.

It is woven as the filling in the fabrics of the present invention in a range of from about 22 picks per inch to about 30 picks per inch, with a commercially preferred range of from about 24 picks per inch to about 28 picks per inch.

The polypropylene filling is used in the form of a spun yarn, preferably in the yarn size range of from about 8/1 to about 12/1, or as is more commonly stated in the cotton count system, from about 8's yarn single to about 12's yarn signal. Such numbers, or course, indicate the number of hanks per pound, as is well known in the textile and related industries.

The polypropylene fibers in the spun yarn have a denier in the range of from about 1 to about 3, but lighter or heavier denier fibers may be used, where desired or required. The staple length of the polypropylene fibers is in the range of from about 1 inch to about 6 inches, and preferably at least about 1½ inches.

Bulked multifilamentary polypropylene yarn may be used having a size and weight equivalent to the cotton count set forth hereinabove.

FABRIC WIDTHS, LENGTHS AND WEIGHTS

The fabric is normally woven in widths of from about 66 inches to about 84 inches, and commercially preferably from about 72 inches to about 78 inches. Inasmuch as this fabric dimension will become the height of the cubicle curtain, other widths of fabric are possible, depending upon the height of the room in which the cubicle cloth is to be used. It is to be appreciated that in such use, the polypropylene filling yarns will hang vertically.

The length of the cloth being woven is, of course, determined by the warp of the fabric and is naturally of very great length. It is usually cut to the desired or required length which normally is determined by the

lengths of the foot and the sides of the beds involved. It is to be appreciated that in such use the saran ribbon filamentary materials will extend horizontally.

The weights of such woven fabrics are normally in the range of from about 0.66 to about 0.74 pounds per linear yard, and commercially preferably from about 0.68 to about 0.72 pounds per linear yard for 76 inch widths.

By way of a weight comparison, it is to be pointed out that an equivalent or comparable cubicle curtain fabric woven of all-saran filamentary materials undesirably weighs up to about 30 percent more than the fabric of the present invention due to the differences in specific gravity between saran and polypropylene (1.7 grams per cubic centimeter, as compared to only 0.9 grams per cubic centimeter).

The fabrics are normally woven in a plain, tabby or taffeta weave for simplicity purposes. Such a weave is durable and strong and is the firmest and strongest method of interlacing warp and filling. However, if desired, other more fancy or more decorative weaves, such as twills and satins, may be employed.

The shrinkages of such fabrics are minimal and are in the range of about 3 percent or less in the saran ribbon warp direction and about 1 percent or less in the polypropylene filling direction.

The invention will be further illustrated in greater detail by the following specific examples. It should be understood, however, that although these examples may describe in particular detail some of the more specific features of the invention, they are given primarily for purposes of illustration and the invention in its broader aspects is not to be construed as limited thereto.

EXAMPLE I

Fabric suitable for use as hospital cubicle curtain use is woven to the following specifications:

Warp — 2¼ mil × 28 mil saran (sp.gr.–1.7) 40 ends per inch

Filling — 10/1 polypropylene (sp.gr.–0.9) 26 picks per inch

Weave — plain weave

Weight — 0.70 lbs./linear yarn (76 inches wide)

The saran is Enjay Fibers saran and is composed of at least 80 percent by weight of vinylidene chloride units ($-CH_2-CCl_2-$).

When fabricated into finished form, the fabric serves as a decorative, esthetic, and temporary privacy curtain of use to surround and separate adjacent beds in hospitals, nursing homes, sanitariums, and the like.

The fabric is inherently flame resistant and fire retardant; it has acceptable launderability under conventional commercial and domestic conditions, half cycle, no ironing required; it has shrinkage of less than about 1 percent in the polypropylene filling direction and less than about 3 percent in the saran warp direction; it has good colorfastness (solution dyed); it has excellent resistance to hospital stains; it is quick drying and does not absorb more than 0.1 percent moisture; it is safe in the presence of oxygen; it is rot, insect and vermin proof; and it will not promote the growth of mildew. It is opaque or translucent but not transparent, has good bulk and cover, and insures privacy. It has excellent wearability.

EXAMPLE II

The cubicle curtain of Example I is compared to a comparison cubicle curtain of equivalent physical dimensions made of Enjay Fibers saran vinylidene chloride ribbon materials and Eastman Verel modacrylic spun yarn (sp.gr.-1.4). The latter comparison cubicle curtain is launderable only up to 120° F. maximum wash temperature. The shrinkage of the comparison cubicle curtain is in the range of from about 4 to 5 percent under conditions above 120° F. The resistance to hospital stains is poor. The comparison cubicle curtain is also noted as being rather heavy in weight. The cubicle curtain of Example I is satisfactory in such specifications.

EXAMPLE III

The cubicle curtain of Example I is compared to an all-cotton comparison cubicle curtain which is pretreated with a conventional flame resistant agent which is applied during finishing. The all-cotton comparison cubicle curtain is launderable under commercial conditions but must be ironed. The resistance to hospital stains of the all-cotton comparison cubicle curtain is poor. The cubicle curtain of Example I is satisfactory in these respects.

Although several specific examples of the inventive concept have been described, the same should not be construed as limited thereby nor to the specific features mentioned therein but to include various other equivalent features as set forth in the claims appended hereto. It is understood that any suitable changes, modifications and variations may be made without departing from the spirit and scope of the invention.

What is claimed is:

1. Privacy cubicle curtain cloth for use in hospitals, nursing homes, sanitariums, and the like, capable of providing some measure of privacy between patients in adjacent beds comprising: a warp of from about 36 ends per inch to about 44 ends per inch of saran ribbon flat strip materials having a thickness of from about 1½ mils to about 3 mils and a width of from about 20 mils to about 35 mils; and a filling of from about 22 picks per inch to about 30 picks per inch of polypropylene spun yarn having a yarn size of from 8/1 to about 12/1, as calculated on the cotton count system, said privacy cubicle cloth being inherently fire-retardant and self-extinguishing, relatively inert chemically in the presence of gases and liquids normally found in hospitals, commercially launderable, and having sufficiently light weight characteristics as to be easily handled and quickly drawn or pulled back in use, while still being opaque or translucent but not transparent to afford privacy to patients.

2. Privacy cubicle curtain cloth for use in hospitals, nursing homes, sanitariums, and the like, capable of providing some measure of privacy between patients in adjacent beds woven from: from about 36 to about 44 saran ribbon flat strip materials per inch extending in one direction each having a thickness of from about 1½ mils to about 3 mils and a width of from about 20 mils to about 35 mils; and from about 22 to about 30 polypropylene spun yarns per inch each having a yarn size of from 8/1 to about 12/1, as calculated on the cotton count system extending in the other direction, said privacy cubicle cloth being inherently fire-retardant

and self-extinguishing, relatively inert chemically in the presence of gases and liquids normally found in hospitals, commercially launderable, and having sufficiently light weight characteristics as to be easily handled and quickly drawn or pulled back in use, while still being opaque or translucent but not transparent to afford privacy to patients.

3. Privacy cubicle curtain cloth as defined in claim 2 wherein it is woven in a plain weave.

4. Privacy cubicle curtain cloth as defined in claim 2, suspended in use, wherein the saran ribbon materials extend horizontally and the polypropylene spun yarns hang vertically.

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