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Description

The present invention relates to a fabric and more particularly, but not exclusively to a clothing fabric.

It is known to produce breathable fabrics such as those marketed under the trade mark GORETEX (RTM). Breathable fabrics are substantially impermeable to water from one side thereof whereas they allow water vapour to exit through the fabric from the other side. These fabrics are used as a component of clothing, particularly jackets and coats. Here the fabric provides rainproofing while at the same time preventing the entrapment of water vapour from perspiration under the coat. US-A-3272685 discloses a waterproof fabric having at least two separate layers.

The present invention seeks to provide a further breathable fabric suitable for making into clothing.

According to the present invention there is provided a multilayer breathable cloth of a clothing garment, said cloth comprising at least two separate layers interlocked, the layers having differing deniers so as to provide a denier gradient through the thickness of the fabric, at least one of the layers being of a woven structure, wherein the finer denier layer is located at the outside of the garment.

The denier gradient enables condensation formed on the inside of the garment to migrate to the surface of the fabric layer whereupon it evaporates. In use the finer denier layer is located at the outside of the garment.

The woven layer provides windproofing. Ideally all of the layers are woven. The weave pattern of the finer layer may comprise any conventional weave pattern for example plain weave or twill such as 2/2 twill, 2/1 twill or 3/1 twill.

The cloth is preferably of a Duplex construction. The individual layers are linked together by locking of the thread from the coarse back layer the fine face layer. Permanent contact between the back and face layers is preferred, but not necessary, although it is the contact of yarns with the face that increases the capillarity of the fabric, creating the wicking action which is necessary for transport of the condensation from the innerside to the outside of the garment. The number of contact points between the threads of the backing layer and the face layer is preferably in the range from 120 to 220 per cm².

A typical fabric in accordance with the invention would comprise two individual interlocked layers. The layers may be made from any conventional natural or synthetic material such as polyamide or more preferably polyester. Part of the fibres in the back are preferably raised, for example by emerising, to produce a light nap.

The outer face of the fabric may be provided with a hydrophylic coating finish in order to enhance the capillary action of removal of water vapour from the inner face of the garment.

The garment may also comprise an inner lining layer for the fabric in accordance with the present invention which is provided at the outside of the garment.

In order that the present invention may be more readily understood a specific embodiment thereof will now be described by way of example only with reference to the accompanying drawings in which:-

Fig.1 is a plan view of the back layer of a fabric in accordance with the present invention; and Fig.2 is a cross section through the fabric of fig.1 along the line A-A.

A fabric for use in the outerlayer of a garment has a Duplex-style configuration, i.e. it comprises two individual interlocked layers. The upper layer as illustrated comprises a 50f88 polyester microfibre warp (85-95 ends per cm) and various polyester wefts, including 50f88 with 2/167f20 false twist textured or 78f36 false twist textured; or 170f272 air jet textured with 2/167f30 false twist textured (40-68 picks per cm). The back layer threads were the 2/167f30 or 78f36 false twisted textured. A dobby weave was used.

In use water vapour from perspiration is transported from the inner to the outer face of the fabric by capillary action.

Claims

1. A multilayer breathable cloth of a clothing garment, said cloth comprising at least two separate layers interlocked, the layers having differing deniers so as to provide a denier gradient through the thickness of the fabric, at least one of the layers being of a woven structure, wherein the finer denier layer is located at the outside of the garment.
2. A multilayer cloth as claimed in claim 1, wherein all of the layers of the cloth are woven.
3. A multilayer cloth as claimed in claim 1 or claim 2, wherein the cloth is of a Duplex construction having two separate layers interlocked.
4. A multilayer cloth as claimed in any preceding claim, wherein the number of contact points between threads of the said layers is in the range from 120 to 220 per cm².
5. A multilayer cloth as claimed in any preceding claim, wherein the fabric is provided with a hydrophylic coating.

Patentansprüche

1. Ein mehrschichtiger, atmungsfähiger Stoff von einem Kleidungsstück, wobei dieser Stoff wenigstens zwei ineinandergreifende, separate Schichten umfaßt, wobei diese Schichten unterschiedliche deniere (= längenbezogene Masse der Fasern) aufweisen, um einen denier-Gradienten über der Dicke

dieser Stoffbahn zu bewirken, wobei wenigstens eine dieser Schichten von einer gewebten Struktur ist und wobei die feinere denier-Schicht auf der Außenseite des Kleidungsstücks angeordnet ist.

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2. Ein mehrschichtiger Stoff nach Anspruch 1, wobei alle von diesen Schichten von diesem Stoff gewebt sind.

3. Ein mehrschichtiger Stoff nach Anspruch 1 oder 2, wobei dieser Stoff eine Doppelkonstruktion ist, die zwei verschiedene ineinandergreifende Schichten aufweist. 10

4. Ein mehrschichtiger Stoff nach irgendeinem der vorhergehenden Ansprüche, wobei die Anzahl der Kontaktpunkte zwischen Fäden von diesen Schichten in dem Bereich zwischen 120 und 220 pro cm² ist. 15

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5. Ein mehrschichtiger Stoff nach irgendeinem der vorhergehenden Ansprüche, wobei die Stoffbahn mit einer hydrophilen Beschichtung versehen ist.

Revendications

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1. Etoffe multicouche permettant la respiration d'un vêtement, l'étoffe comprenant au moins deux couches séparées entrelacées, les couches ayant des deniers différents pour présenter un gradient de denier sur l'épaisseur du tissu, l'une au moins des couches ayant une structure tissée, dans laquelle la couche de denier le plus fin est située à l'extérieur du vêtement. 30

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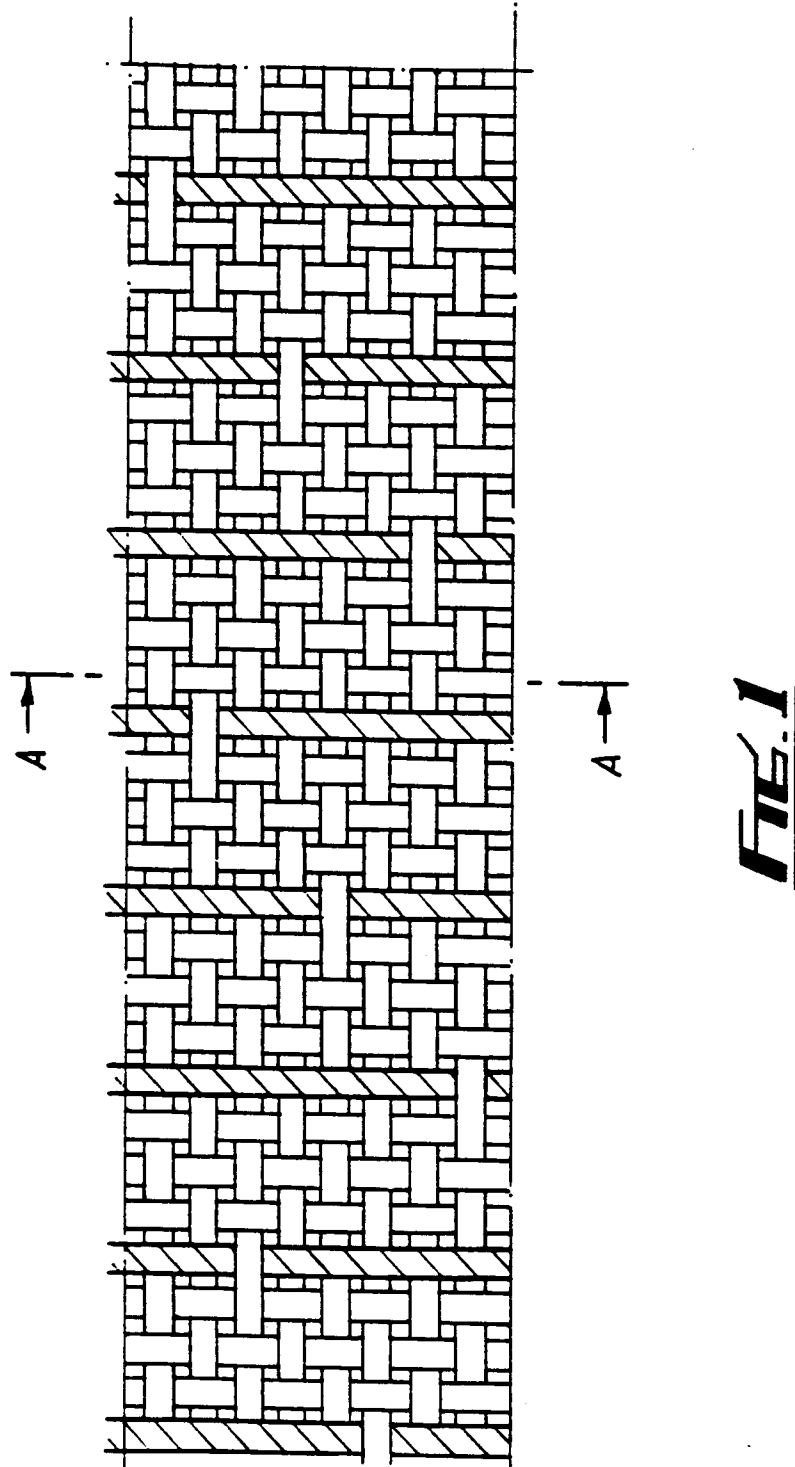
2. Etoffe multicouche selon la revendication 1, dans laquelle toutes les couches de l'étoffe sont tissées.

3. Etoffe multicouche selon l'une des revendications 1 et 2, dans laquelle l'étoffe est de construction duplex et comporte deux couches séparées entrelacées. 40

4. Etoffe multicouche selon l'une des revendications précédentes, dans laquelle le nombre de points de contact entre fils desdites couches est dans la plage allant de 120 à 220 par cm². 45

5. Etoffe multicouche selon l'une des revendications précédentes, dans laquelle le tissu comporte un revêtement hydrophyle. 50

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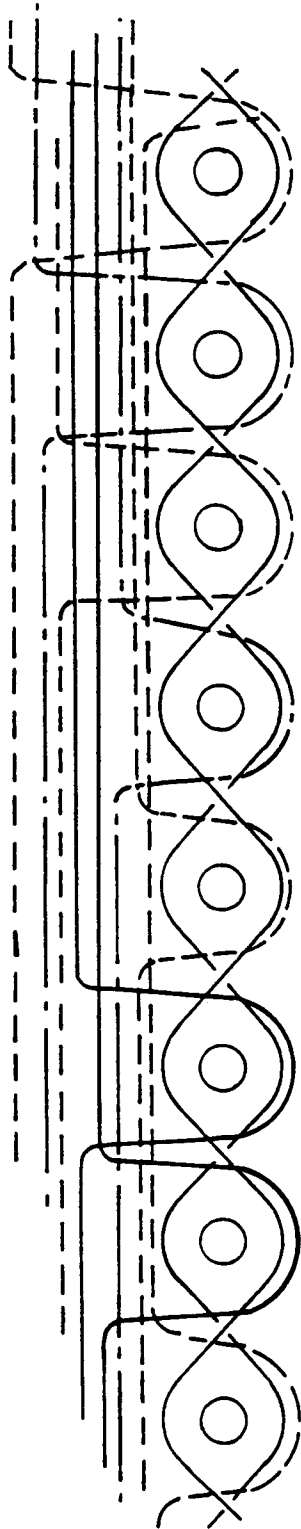


Fig. 2