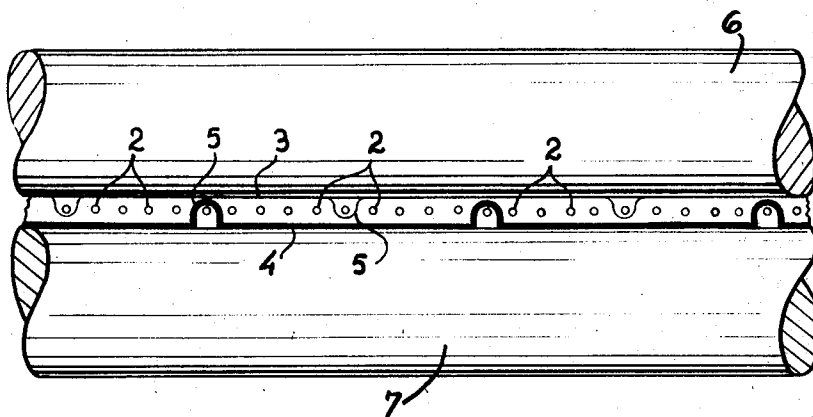


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JEAN-LEON LAURENT
FABRIC WITH ELASTIC WARP, TREATED FOR THE
PURPOSE OF IMPROVING SPEED
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INVENTOR
JEAN LEON LAURENT
BY
Young & Thompson
ATTYS

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FABRIC WITH ELASTIC WARP, TREATED FOR
THE PURPOSE OF IMPROVING SPEED

Jean-Leon Laurent, 20 Rue Auguste Comte,
Lyon, France

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2 Claims

ABSTRACT OF THE DISCLOSURE

A one-way stretch fabric has a smooth outer face and an inner insulating face and is constituted by elastic warp threads double-faced with satin-woven smooth hot-pressed weft threads on the outer surface and high-bulk insulating weft threads such as wool on the inner surface.

The present invention relates to a fabric which is elastic in the direction of its warp, and which is treated so as to obtain a very good penetration of air.

When practising certain sports, in particular skiing, the search for speed requires studying extensively all the various parts of the outfit, as regards both the clothes and the implements. As a matter of fact, at high speeds, the drag from the air is a very important factor since it interferes with the forward movement of the skier.

The fabric of the invention aims at obviating this latter drawback. To this end, said fabric has two faces, the upper face being made of smooth threads and having the appearance of satin and being subsequently subjected to a calendaring or hot-pressing operation to remove any unevenness therefrom, while the underface is made of high-bulk insulating threads. Furthermore, said fabric must have, in the direction of its warp, an elasticity ranging from 50% to 80% which it will retain after treatment.

The present invention will be readily understood from the following description, with reference to the appended diagrammatic drawing which illustrates, by way of non-limiting example, an embodiment of the fabric of the invention.

The single figure in said drawing is a cross-section showing the arrangement of the warp threads with respect to the weft threads in the case of a double faced satin weave with weft floats over nine warp threads.

For making said fabric, the warp used is made of elastic threads 2 of foamed superpolyamide or having an elastomer foundation.

Said warp is woven with a double faced satin weave, while using for the upper face weft threads 3 made of a smooth and strong material adapted to be readily hot pressed, such as, for instance, a superpolyamide which allows obtaining a smooth surface.

Furthermore, the trousers made from such a fabric must be cut in the direction of the warp threads 2 so as to make use of the longitudinal elasticity of the latter. Consequently, as the smooth upper face of the fabric has been made of weft threads 3 to have the appearance of satin, the friction from the air takes place in the same direction as that of the floated weft threads 3, that is, under the best conditions required for improving the sliding.

For making the other face, or back, of the fabric,

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threads 4 are used, of a high-bulk insulating material such as, for instance, wool, so as to make the surface of the fabric in contact with the skier's body as warm as possible.

The upper face of the fabric thus produced is then hot pressed. This hot-pressing operation consists in pressing very strongly the fabric between two rolls, one of which is heated to about 180° C. The crushing to which the fabric is thus subjected removes, as, for instance, at 5, the asperities resulting from the interlacing of the warp threads 2 and the weft threads 3 or 4.

During said hot-pressing operation, owing to the great longitudinal elasticity of the fabric, the latter would be likely to pass in the wrong way between said two rolls which squeeze it, which would result in fold marks. It is therefore necessary to stretch the fabric lengthwise during the hot-pressing operation.

The temperature of the heated roll, about 180° C., would be likely to destroy, or at least to alter to a great extent, the elasticity of the warp threads 2, which are made of elastomers or superpolyamides, if said threads were not sandwiched between the two layers of weft threads, to wit, the threads 3 of the upper face and those 4 of the underface, whereby they are kept out of direct contact with the rolls 6 and 7 between which the fabric passes. Consequently, during the hot-pressing operation which is executed in the direction of the warp threads 2, the direct contact of the heated roll 6 with the smooth threads 3 forming the upper face of the fabric and the direct contact of the unheated roll 7 with the high-bulk insulating threads 4 do not alter the elasticity of the warp threads 2.

As far as the search for speed is concerned, tests made in a wind tunnel have proven that, for a speed of 100 km./hour, a skier dressed with the fabric of the invention is subjected to an air drag of 8 kg. as a whole, whereas, if he is dressed with a fabric of the kind known heretofore, the value of said drag is at least 9.6 kg.

What I claim is:

1. A fabric constituted by elastic warp threads and double-faced with satin-woven weft threads, said weft threads on one surface of the fabric being smooth and hot pressed and of superpolyamide and said weft threads on the other surface of the fabric being high-bulk insulating threads of wool.

2. A fabric as claimed in claim 1, having 50 to 80% elasticity in the warp direction.

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ROBERT F. BURNETT, Primary Examiner

R. L. MAY, Assistant Examiner

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