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BASE FABRIC FOR CARPETS

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Fig. 1

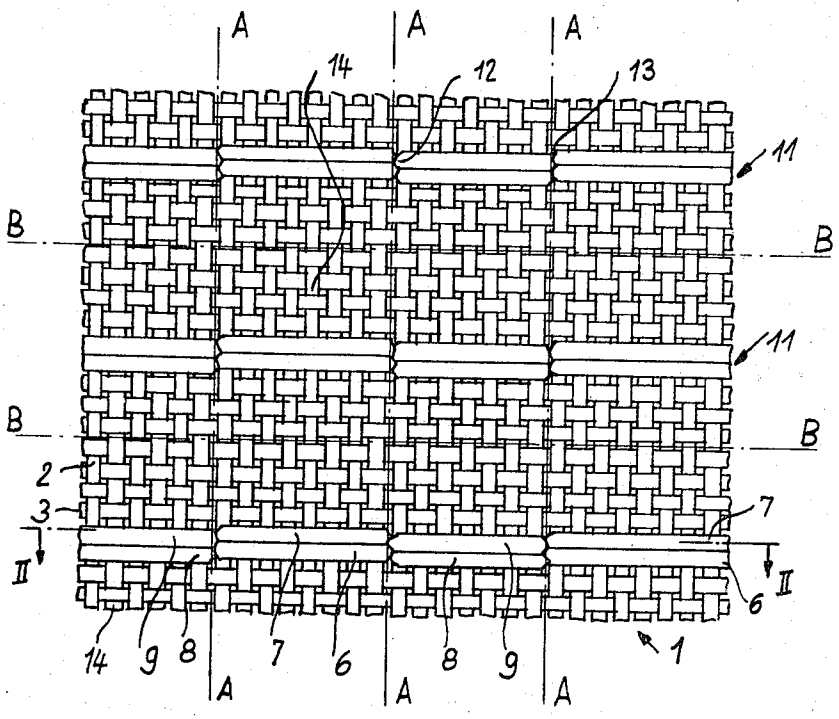
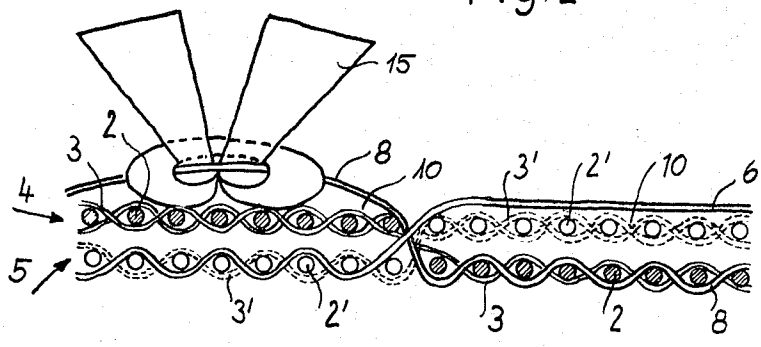


Fig. 2



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BASE FABRIC FOR CARPETS

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6 Claims. (Cl. 161—90)

The present invention relates to a base fabric for knotted carpets and to the method of making the same. More particularly, the present invention relates to a woven base fabric which is suited for hand made Smyrna rugs, Rya rugs and similar rugs or carpets.

Known base fabrics serving this purpose, for example, so-called Smyrna-Stramin base fabrics are woven of pairs of parallel threads in a plain basket weave so that substantially square openings are formed. The wool tufts are inserted into the openings, and knotted to the double threads.

The design of rugs of this type is made according to design patterns which show points corresponding to the openings in different colors, and such points are counted and the tufts are accordingly inserted into counted openings of the base fabric. The design pattern also indicates how many knots are to be made in each row. Usually the colors of the carpet are printed, or painted on the design pattern, or if the same is black and white, the colors are indicated according to point numbers.

Another base fabric particularly intended for Turkestan rugs has colored threads woven in accordance with the intended color design of the finished rug, and correspondingly colored tufts are knotted to woven threads of the base fabric having the same colors.

The knotting into the narrow openings of the base fabric according to the prior art is difficult, and the preparation of the colored design patterns is expensive. Furthermore, careful counting is required for most base fabrics.

It is the object of the present invention to overcome the disadvantages of known base fabrics for rugs or carpets, and to provide a base fabric which can be inexpensively manufactured, but which permits attachment of tufts in a very simple operation.

Another object of the invention is to provide a base fabric with loops into which the tufts can be inserted in a simple operation.

Another object of the invention is to provide a carpet base fabric which can be woven on a Jacquard machine, and indicates by straight lines determined by the threads of the fabric the contours of the colored design pattern of the rug or carpet.

Another object of the invention is to eliminate the painting, printing, or other application of a design on the base fabric.

Another object of the invention is to provide a carpet base fabric requiring no counting by the operator for the application of the tufts in accordance with a predetermined design.

Another object of the invention is to provide a carpet base fabric which is particularly suited for the knotting of tufts by a hook, so that the operator is not tired by the work.

Another object of the invention is to provide a carpet base fabric which results in a finished carpet requiring no lining of the back when the knotting operation has been completed.

Another object of the invention is to provide a base fabric of such stiffness that the loops by which the tufts are held can be spaced great distances from each other.

With these objects in view, a woven carpet base fabric according to the invention comprises weft and warp threads woven in a distinguishable pattern and anchoring threads woven into the base fabric and forming loops thereon so that the tufts can be easily inserted into the loops and knotted to the same avoiding the difficulty of knotting the tufts to the weft or warp threads.

In the preferred embodiment of the invention, first and second sets of warp threads and weft threads are interwoven in superimposed front and back layers in which the first and second sets alternate in a distinguishable pattern. The anchoring threads are preferably woven only into the back layer, and form floating loops on the front layer, each floating loop being located on one of the design portions.

The loops must be somewhat loose as compared with the woven base so that the base is not warped when the wool tufts are tied to the loops. When the tufts are tied, the loop threads are fixed in the respective position thereof, so that all loops are longer than the distance between the ends of the loops on the woven base, and such difference in length should be the same for all loops. In order to facilitate the manufacture of the base fabric, the anchoring threads which form the loops for the tufts, extend in weft direction, and are correspondingly woven into the base fabric.

In the preferred embodiment of the invention, two pairs of anchoring threads are provided which form loops, and are woven into the back layer of the base fabric. If the design requires more than two colors, a corresponding multiple weave is provided.

In accordance with the method of the present invention, the woven base fabric is shrunk to a greater extent than the anchoring threads so that the loops are wide enough for insertion of the tufts. The base fabric is treated with a sizing material to increase its stiffness and rigidity, but the loops are not exposed to the sizing material to prevent a sticking of the loops to the base fabric which would prevent the insertion of the tufts into the loops.

It is also advantageous to apply to the back face of the base fabric a non-skid substance, such as latex so that slipping of the rug is prevented, and the knotting of the tufts is facilitated since the fabric cannot slip during the insertion of the tufts.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

FIG. 1 is a fragmentary schematic plan view of a base fabric according to the invention shown on an enlarged scale; and

FIG. 2 is a fragmentary cross-section view on an enlarged scale taken on line II—II in FIG. 1.

Referring now to the drawing, the woven base **1** is double-woven of a first set of warp threads **2** and weft threads **3** and of a second set of warp threads **2'** and weft threads **3'** which form a front layer **4** and a back layer **5**. The first and second sets are interwoven in distinguishable portions **14** having different colors and are alternately located in the front layer **4** and in the back layer **5**. In FIG. 1, twelve rectangular portions **14** are schematically indicated by crossing imaginary lines A—A and B—B. Since the two sets of threads **2**, **3** and **2'**, **3'** have different colors, the portions **14** of the pattern formed in the front layer by threads **2**, **3** are clearly distinguishable on the front and back faces of the fabric.

Each rectangular portion **14** has an area receiving a single tuft **15**.

Two pairs of anchoring threads **6, 7** and **8, 9** are woven into the back layer **5** and form loops **11** on the front face **10** of the front layer **4**. The width of each pair of loops **11** in weft direction is the same and corresponds to the width of a rectangular portion of the front layer of the base fabric woven of the first set of threads **2, 3**, or of the second set of threads **2', 3'**. Each pair of anchoring threads is interwoven with the warp and weft threads of the base fabric so that the anchoring threads **6, 7** form floating loops over spaced fabric portions formed in the front layer by warp threads **2'** and weft threads **3'**, and are woven into the adjacent portions formed in the back layer by threads **2'** and **3'**. The pair of anchoring threads **8, 9** forms a pair of floating loops over a portion **14** formed by the threads **2, 3** in the front layer, and are woven into the alternate portions **14** of the back layer. The weave of the anchoring threads corresponds somewhat to a sateen weave but the anchoring threads are interwoven with a plurality of warp threads **2** or **2'** in the back layer in a plain weave corresponding to a weft thread so as to be held and tied by the warp threads. Due to the symmetrical weave, a portion of the pair of anchoring threads **6, 7** which is woven into the back layer **5** is located opposite a loop of the respective other pair of anchoring threads **8, 9** located on the front face of the front layer **4**.

The distinguishable pattern portions **14** formed by the two sets of threads **2, 3** and **2', 3'** are small squares, and one pair of loops **11** is located on each square, preferably at the center thereof, to hold a tuft on the respective square pattern portion.

When the base fabric including the anchoring threads is woven on a loom, the loops lie flat on the front face **10** of the base weave, and consequently it is difficult to insert the tuft yarns.

In accordance with the method of the present invention, a certain looseness of the loops is achieved by treating the fabric in such a manner that the woven base fabric shrinks more than the loops **11**. The fabric is treated with a liquid so that the tightly woven threads of the double weave formed by the threads **2, 3** and **2', 3'** shrink more than the loop threads. Thereupon, the fabric is permitted to dry on a frame in slightly stretched condition, and finally the woven base fabric is treated with a sizing material to increase its rigidity and stiffness as is suitable for a carpet or rug. The front face **10** and the loops **11** thereon must not be exposed to the sizing material since otherwise the loops would stick to the base fabric and insertion of the wool tufts into the loops would not be possible. A further advantage is that the loops retain their original strength and resistance against tearing not weakened by the application of the sizing material. The threads **2, 3** and **2', 3'** are preferably cotton threads.

The back face of the back layer is preferably treated with a substance, such as latex which increases its friction so that a skidding of the rug or carpet is prevented.

It will be understood that each of the elements described above, or two or more together, may also find a useful application in other types of base fabrics for rugs or carpets differing from the types described above.

While the invention has been illustrated and described as embodied in a base fabric for a hand made carpet or rug having floating loops for the anchoring of wool tufts, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. A woven carpet base fabric comprising a first set of warp threads and weft threads and a second set of warp threads and weft threads interwoven in superimposed front and back layers in which said first and second sets form pattern portions; and first and second pairs of anchoring threads, woven into said back layer and forming floating loops on said front layer, said first pair of anchoring threads being woven into said first set of weft threads and warp threads and said second pair of anchoring threads being woven into said second set of weft threads and warp threads where the same are located in said back layer, and forming pairs of floating loops where the respective set of warp threads and weft threads forms said pattern portions of said front layer, said loops being adapted to hold tufts on said front layer, pairs of said loops being aligned and spaced from other pairs of said loops a distance corresponding to a plurality of said threads of said first and second sets of threads.

2. A woven carpet base fabric comprising a first set of warp threads and weft threads and a second set of warp threads and weft threads interwoven in superimposed front and back layers in which said first and second sets form pattern portions; and first and second pairs of anchoring threads, woven in weft direction into said back layer and forming floating loops on said front layer, said first pair of anchoring threads being woven into said first set of weft threads and warp threads and said second pair of anchoring threads being woven into said second set of weft threads and warp threads where the same are located in said back layer, and forming pairs of floating loops where the respective set of warp threads and weft threads forms said pattern portions of said front layer, said loops being adapted to hold tufts on said front layer, pairs of loops of said first and second anchoring threads being aligned in weft direction and spaced from other pairs of loops a distance corresponding to a plurality of weft threads of said first and second sets.

3. A woven carpet base fabric according to claim **2** and comprising a coating of a sizing material adhering to said weft threads and warp threads only.

4. A woven carpet base fabric comprising a first set of warp threads and weft threads having one prevailing color and a second set of warp threads and weft threads having a different prevailing color and interwoven in superimposed front and back layers in which said first and second sets form pattern portions; and first and second pairs of anchoring threads, woven in weft direction into said back layer and forming floating loops on said front layer, said first pair of anchoring threads being woven into said first set of weft threads and warp threads and said second pair of anchoring threads being woven into said second set of weft threads and warp threads where the same are located in said back layer, and forming pairs of floating loops where the respective set of warp threads and weft threads forms said pattern portions of said front layer, said loops being adapted to hold tufts on said front layer, pairs of loops of said first and second anchoring threads being aligned in weft direction and spaced from other pairs of loops a distance corresponding to a plurality of weft threads of said first and second sets.

5. A woven carpet base fabric comprising a first set of warp threads and weft threads and a second set of warp threads and weft threads interwoven in superimposed front and back layers, said first and second sets forming pattern portions in each of said layers, said warp threads

and weft threads extending in two perpendicular directions; and anchoring threads woven into said back layer and forming floating loops on said front layer adapted to hold tufts passing through said floating loops, said floating loops extending in one of said directions over said pattern portions, and being spaced in the other direction from other floating loops a distance corresponding to a plurality of said threads of said first and second sets of threads.

6. A woven carpet base fabric comprising a first set of warp threads having one prevailing color and a second set of warp threads and weft threads having a different prevailing color, said sets being interwoven in superimposed front and back layers, said first and second sets forming pattern portions in each of said layers, said warp threads and weft threads extending in two perpendicular directions; and anchoring threads woven into said back layer and forming floating loops on said front layer adapted to hold tufts passing through said floating loops, said floating loops extending in one of said directions over said pattern portions, and being spaced in the other direction from other floating loops a distance corresponding to a plurality of said threads of said first and second sets of threads.

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