Nov. 4, 1947. R. J. JACKSON 2,430,425

PROCESS OF MAKING PILE FABRIC FLOOR COVERING

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Fig. 1.

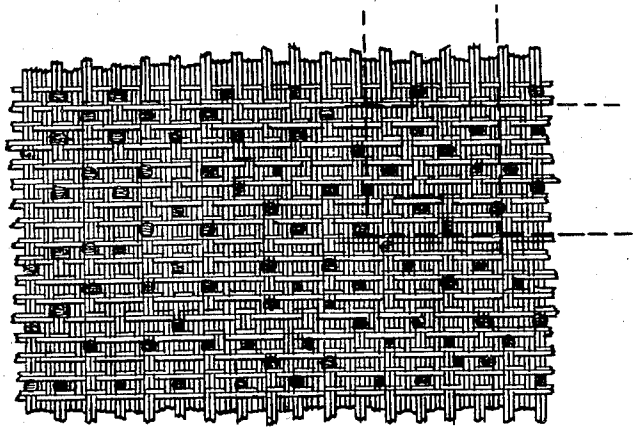


Fig. 2.

INVENTOR.

BY Robert J. Jackson
Rowland V. Patrick

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PROCESS OF MAKING PILE FABRIC FLOOR COVERING

Robert J. Jackson, Hazardville, Conn., assignor to Bigelow-Sanford Carpet Co., Inc., Thompsonville, Conn., a corporation of Massachusetts

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2 Claims. (Cl. 28—75)

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This invention relates to a process of producing a woven pile floor covering. The object is to produce a pile floor covering in which the pile has the curly appearance of Persian lamb or caracul and in which the curls of pile tufts, although spaced relatively far apart, provide a satisfactory surface coverage concealing the backing fabric.

In the drawing, Fig. 1 is a cross-section of pile floor covering and Fig. 2 is a view of the back showing the backing fabric and the bights of the pile tufts in the pattern-on-the back type of pile floor covering.

My preferred process is as follows:

Worsted roving, such as is commonly prepared preliminary to the manufacture of yarn for the pile of a woven pile floor covering, for example weighing about 25 grains per yard and containing about 1.8 turns or twists per inch, is produced in the usual way. This roving is twisted on a spinning frame so as to have between 5 and 10, preferably 8, turns per inch. The number of turns would increase or decrease proportionally with the use of lighter or heavier rovings. This twisting operation forms the strand into a yarn which is fairly hard twisted. The yarn is reeled into skeins and the skeins are removed from the reel, thereby relieving the tension on the yarn and causing it to relax and collapse into a tensionless kinky condition.

In this condition the yarn is set by wetting the skeins with water and, after centrifugally removing excess water, by subjecting the skeins to saturated steam at a pressure above atmospheric, for example of about 15 pounds thereabove, for approximately 90 minutes. The skeins are dried and the yarn is wound onto spools or bobbins.

The yarn from the spools is then twisted on a spinning frame in the direction opposite to that of the original twist, whereby it is provided with 1 to 4, preferably 2, turns per inch in that direction. The resulting yarn is soft, i. e., soft twisted, and large compared with the state in which it was after it had first been spun when it had a comparatively hard twist.

It is then woven as the pile yarn in the production of a woven pile floor covering. In the weaving, the pile loops, while spaced more or less evenly apart, are not over 20, preferably about 8, to the square inch, Fig. 2. This is a very limited number compared to the number of pile tufts per square inch, often as many as 75, in the ordinary woven pile fabric. For the purpose of illustration Fig. 2 shows the bights of the pile tufts at the back of the fabric but my invention

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may be embodied in a pile fabric in which the bights of the tufts are concealed in the backing fabric.

Best results are obtained when the yarn is woven as pile on a Servian (nipper type) loom, by means of which long pile tufts can be drawn so that each pile tuft spreads over a very large area of the backing fabric. When the yarn is woven on an Axminster loom the same effect is obtained althouhg the tufts may be shorter. When the yarn is woven as pile on tapestry or Jacquard looms the pile may be cut or uncut.

During the finishing processes of steaming and shearing the pile tufts are further spread out with the result that they form a full, fairly level, surface coverage which conceals the backing fabric. The pile surface has an enhanced soft texture and thick curly appearance, Fig. 1.

The product is a pile floor covering having a pile surface of a novel texture consisting of soft, curly tufts, which give the surface an appearance similar to that of Persian lamb or caracul and in which the tufts are relatively few in number and yet effectively cover and conceal the backing fabric.

I have found that worsted yarns produce the more desirable pile, but it is not intended to limit myself to worsted yarns as woolen yarns also may be used. I refer herein to both worsted and woolen yarns as wool yarns.

I claim:

1. The process for producing a woven pile floor covering having the curly appearance of caracul which comprises twisting wool roving into yarn having between 5 and 10 turns to the inch, reeling said yarn into skeins, collapsing said skeins into a tensionless kinky condition, setting the twist in the yarn, drying the yarn, twisting the yarn in the direction opposite to that of the original twist in the yarn to provide it with between 1 and 4 turns to the inch, and weaving the yarn as the pile in a floor covering.

2. The process for producing a woven pile floor covering having the curly appearance of caracul which comprises twisting wool roving into yarn having about 8 turns to the inch, reeling said yarn into skeins, collapsing said skeins into a tensionless kinky condition by removing it from the reel, setting the twist in the yarn by subjecting the skeins to saturated steam at above atmospheric pressure, drying the yarn, winding the yarn onto spools, twisting the yarn in the direction opposite to that of the original twist in the yarn to provide it with about 2 turns to the inch,

and weaving the yarn as the pile in a pile floor covering.

ROBERT J. JACKSON.

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