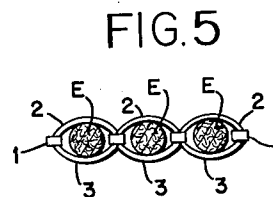
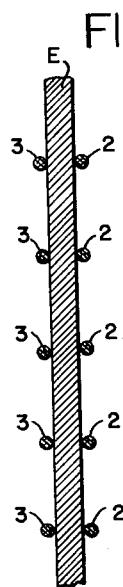
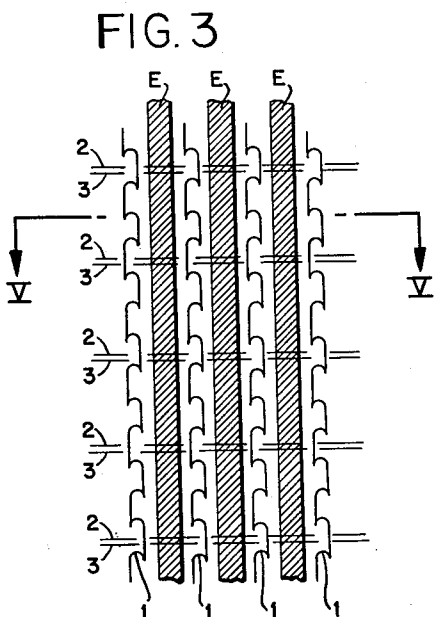
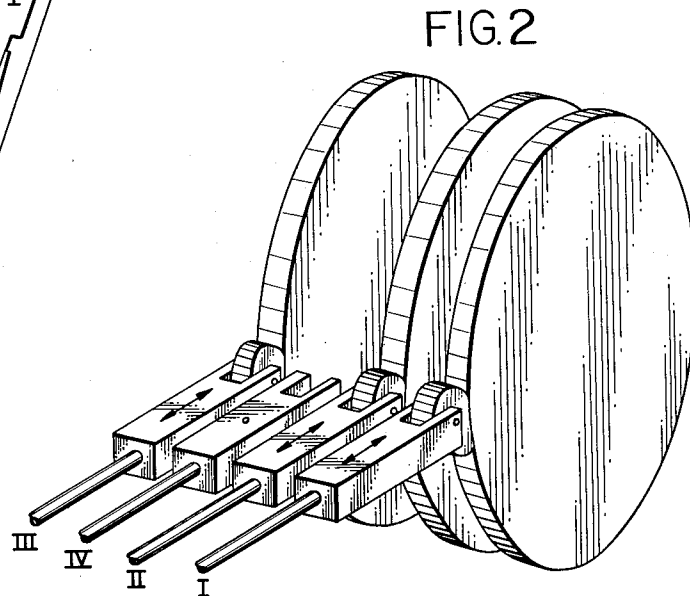
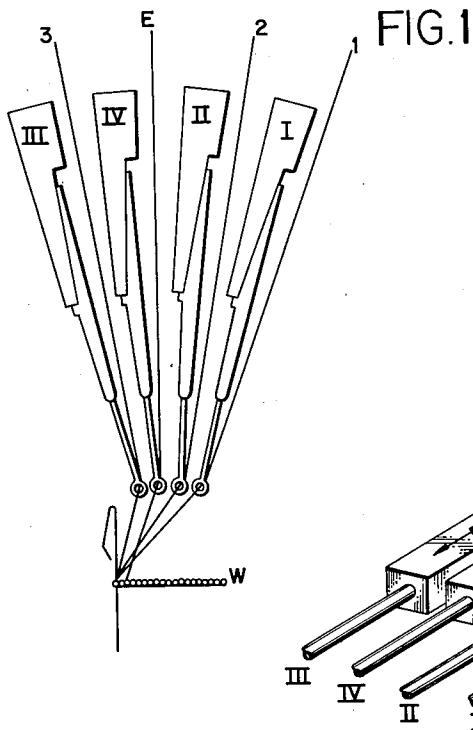


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WARP KNIT FABRIC AND METHOD

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INVENTORS
RUDOLF SCHMITZ,
RICHARD BRETTSCHEIDER
BY *Arthur O. Klein*

ATTORNEY

1

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WARP KNIT FABRIC AND METHOD

Rudolf Schmitz and Richard Brettschneider, Emsdetten, Westphalia, Germany, assignors to Gardisette-Werk Dr. Baier & Co., Emsdetten, Westphalia, Germany

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3 Claims. (Cl. 66—193)

This invention relates to improvements in and relating to warp knitting, machines therefor and the products thereof and concerns more particularly a knitted fabric, as well as a machine for, and a method of, producing the fabric.

The conventional method of producing a pattern, for instance, in a curtain material is to use additional guide bars for covering the individual openwork cells more or less closely with threads. However, the drawback of this method is that it entails reducing the speed of the machine very considerably. Moreover, if it is desired for instance to work effect yarns with thicker spots, flakes, knops, and so forth, into the fabric the wanted result is largely lost because the loops in the threads to a considerable extent deprive the yarns of their fancy effect.

In the past the only known way of solving this problem has been, for instance, when working in a spot twist, to employ superfine yarns so that the yarn between the spots will be sufficiently weak to produce an optical difference between the spots and the smooth parts of the yarn when the latter is worked into the fabric. For the greater number of articles, if not for every fabric, this is a prohibitive method, because these superfine yarns are so expensive that they will push the price of the finished product beyond its utility value. Furthermore the knitting process itself destroys the inherent advantage offered by a superfine yarn due to the difficulties encountered when working the latter into the fabric. In this connection it should be noted that the formation of a sizable spot in a very fine ground fabric yarn is a difficult matter, and the desired effect of producing a pattern may still not be attained if the spot happens to be obscured by a loop.

It is therefor an object of this invention to provide a knitted fabric with a novel type of patterning.

It is another object of this invention to achieve a greater inelasticity in the knitted fabric.

It is a further object of this invention to provide a novel knitting machine for the aforementioned novel type pattern knitting which has a high speed of operation.

It is yet an other object of the present invention to provide a novel type of patterned knitted fabric by respectively running in warp and weft threads by means of a stationary bar and a plurality of movable guide bars.

The method proposed by the invention consists in running in an additional warp thread between two consecutive loop-forming warp threads in such manner that it will be held between two laid-in threads without itself forming loops.

In a knitted fabric produced in this way intermediate warp threads can be run in between all the looped ground threads or single warp threads may be run in only at intervals.

Another knitted fabric according to the invention consists in that additional intermediate warp threads of different colour are run in in groups to produce a wanted design (striped pattern).

In another knitted fabric according to the invention a patterned marquissette-like curtain material is produced in which a weft thread is laid in after a number of ground thread loops have been formed, by running in additional intermediate warp threads of arbitrary type and colour at arbitrary intervals between the laid-in weft threads.

2

A knitting machine for performing the method and producing a fabric of the kind that has been described is characterised by the provision of a sufficient number of guide bars to ensure that the intermediate run-in warp thread will be held between the laid-in weft threads, the guide bar which carries the additional inserted thread being stationary.

Another feature of the knitting machine according to the invention is that three guide bars are provided, the central guide bar running in the intermediate warp thread in such a way that it will be carried alternately under and over the weft or laid-in threads in the manner of the end in a woven fabric.

Conveniently, four or more guide bars are provided, the guide bar for the run-in intermediate thread being arranged between two lapping laying-in guide bars.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims.

An illustrative embodiment of a machine constructed and of a fabric produced according to the invention 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 side view of the guide bars of a warp knitting machine for producing a curtain ground fabric comprising three guide bars and an additional guide bar for running-in an intermediate warp thread for forming a pattern.

FIG. 2 is a perspective view of the motion for actuating the guide bars shown in FIG. 1,

FIG. 3 is a schematic representation of a patterned curtain material produced by the present invention,

FIG. 4 is a side view of the fabric shown in FIG. 3, and

FIG. 5 is a section taken on the line V—V in FIG. 3.

Referring now to the drawing, FIG. 1 shows four guide bars and a knitting needle in a warp knitting machine. The thread 1 carried by guide bar I is formed into loops of the ground fabric by the knitting needle shown in FIG. 1, whereas the threads 2 and 3 in guide bars II and III form laid-in or weft threads. Between guide bars II and III is a stationary guide bar IV which carries the intermediate warp thread E. When the fabric illustrated in FIGS. 3 to 5 is produced the intermediate warp thread E will be held between the two weft threads 2 and 3 and thus held in position.

This arrangement permits the curtain fabric shown in FIGS. 3 to 5 to be provided with a striped pattern, the stripes being formed by groups of run-in intermediate warp threads E. The several groups of or single additional warp threads may be arranged at any desired intervals.

To produce a knitted fabric of greatly reduced elasticity intermediate warp threads may be run in in all the spaces intervening between loop forming threads, the weft threads being laid in as each loop is formed. This step permits fabrics which because of their elasticity could be produced in the past only by weaving, such as bed linen and the like, to be knitted, a very substantial advantage in view of the higher speeds obtainable on knitting machines than on weaving looms.

The invention is not intended to be limited to the illustrative examples shown in the drawings. Modifications of the principle underlying the invention can be readily devised. For instance, instead of the four guide bars shown in FIGS. 1 and 2 more guide bars or also less might be used, the principal feature of any such arrangement being that the stationary bar with the intermediate run-in warp thread is located between the laying-in bars which continuously or alternately lay in a weft thread.

3

Although the present invention has been described in conjunction with preferred embodiments, it is to be understood that modifications and variations may be restored to without departing from the spirit and scope of the invention, as those skilled in the art will readily understand. Such modifications and variations are considered to be within the purview and scope of the invention and appended claims.

What we claim is:

1. A knitted fabric, comprising a plurality of pairs of threads laid in a weft-wise direction, a plurality of rows of loop-forming threads interlaced with said laid in threads and extending substantially perpendicularly thereto, the threads of each row of loop-forming threads being separate from each adjacent row of loop-forming threads, and a plurality of warp threads extending substantially perpendicularly between said laid in weft threads and extending substantially parallelly to said separate rows of loop-forming threads.

2. Method for producing a knitted fabric comprising the steps of laying in weft threads at predetermined intervals, perpendicularly interlacing with said weft threads separate straight rows of loop-forming ground threads,

4

and running in between said weft threads and perpendicularly thereto additional threads at predetermined intervals.

3. Method for producing a knitted fabric of marquissette-like appearance as set forth in claim 2 wherein said additional threads are run in between consecutive separate rows of loop-forming ground threads, said additional threads being held in place between adjacent laid in weft threads, the threads of each row of loop-forming ground threads being separately interlaced to said weft threads from all other rows of loop-forming ground threads.

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