

12

EUROPEAN PATENT SPECIFICATION

45 Date of publication of patent specification: **02.01.86**

51 Int. Cl.⁴: **D 03 D 11/02, D 03 D 3/02**

21 Application number: **82108571.9**

22 Date of filing: **17.09.82**

54 **Method for weaving tubular Jacquard fabrics on looms.**

30 Priority: **01.10.81 IT 4165681**

43 Date of publication of application:
13.04.83 Bulletin 83/15

45 Publication of the grant of the patent:
02.01.86 Bulletin 86/01

84 Designated Contracting States:
AT BE CH DE FR GB LI LU NL SE

56 References cited:
BE-A- 655 727
FR-A-2 355 105

73 Proprietor: **A. Mion S.P.A. Nastrificio**
Via Cornaro No. 5.
I-35038 Torreglia Padua (IT)

72 Inventor: **Mion, Sergio**
Riviera San Benedetto No 7
I-35100 Padua (IT)

74 Representative: **Petruzzelli, Antonio**
Via E. De Amicis No. 25
I-20123 Milan (IT)

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European patent convention).

Description

The invention concerns a weaving method for producing labels on jacquard looms, in the form of webs or ribbons having various widths, and/or with patterns visible on the outer faces of both sides.

As is known, fabric consists substantially of a close interlacement of lengthwise or warp threads, and of crosswise or weft threads, obtained by alternately raising warp threads having odd positional orders and warp threads having even positional orders, and by picking or inserting a weft thread between them, at each raising or opening of the shed. In textile looms fitted with a jacquard mechanism, the interlacement of the threads changes at each weft picking, according to a pre-established programme, so as to make weft threads of the same colour and/or of different colours appear on the upper surface of the fabric, in prefixed positions of the warp threads. In this way, wording and/or patterns appear in "obverse" on the upper side of the fabric, whilst on the rear or bottom side of the fabric appear the so-called floating threads and a reversed representation of the aforesaid wording and/or patterns.

Weaving procedures are also known, Bohumil Vlcer "Handbuch der Weberei" 1933 Julius Springer Verlag, Wien—p. 171, paragraph 13; Figure 551; by which it is possible to obtain a flat, tubular fabric, on a loom, which consist in weaving together all the warp threads, for example, having odd positional orders, with the weft threads having odd insertion orders, and respectively, in weaving together all the warp threads having even positions, with corresponding weft threads having even insertion orders.

From BE—A—655 727, it is also known to use jacquard weaving technique to produce patterns in obverse on one face only of a double-layer fabric for pockets and the like. None of the cited document, refers to weaving of reversible labels having independent double-layer portion(s) with designs in obverse on either outer faces; furthermore, none of cited documents, separately or in combination suggest or make obvious a composite weaving method, on jacquard looms, for producing labels as referred above.

The aim of this invention is to provide a weaving method for producing jacquard labels, in double-layer form, in which the jacquard weaving technique is combined in a new and original manner, with the tubular fabric technique on a loom, in order to obtain a completely new textile label which presents either identical or different wording and or patterns in obverse on both outer faces of the same label. This product differs substantially from tubular fabrics obtainable with conventional techniques, applying the conventional jacquard weaving method, as this would cause the interweaving of two sides of the tubular fabric in correspondence with the wordings or patterns, and produce an obverse or

"positive" image of the wordings or patterns only on one-face of the fabric.

Hence, the object of this invention is to provide a weaving method, in which the label keep its double-layer conformation in correspondence with jacquard wording and/or patterns, and in which differing wordings and/or patterns, may be produced independently on the outer faces of both sides of the label.

A further object of the invention is to provide a composite weaving method for producing double-layer labels on a jacquard loom, which allows to reduce weaving time and costs, simplifying the handling of labels by the users and providing labels having better aesthetical appearances.

These scopes are achieved by a weaving method for reversible labels according to claim 1.

The invention will be described in detail hereunder, with reference to the figures in the accompanying drawings, which illustrate an embodiment of a method for weaving double-layer labels/fabrics; in the drawings

Fig. 1 shows, by means of conventional signs, the usual arrangement of the warp threads;

Fig. 2 shows the relative positions of the warp threads, during the insertion of a weft thread, for producing a jacquard pattern or wording on the outer face of the upper part of a double-layer label;

Fig. 3 shows the relative positions of the warp threads, during the insertion of a weft thread following that of the previous figure, for producing a jacquard pattern or wording on the outer face of the lower part of the label;

Fig. 4 is a part view of a portion of a independent double-layer label showing the combined arrangement of the warp and weft threads of the previous figures 2 and 3.

In figure 1, the warp threads, represented schematically by alternate dots and crosses, are numbered progressively from 1 to 10; these warp threads can therefore be theoretically divided into two groups of warp threads having odd positions (threads 1, 3, 5, 7 and 9) and warp threads having even positions (threads 2, 4, 6, 8 and 10).

In making tubular fabric on a linear textile loom, the usual procedure is to use, for example, the odd-numbered threads as warp for the upper part 11 of the fabric (fig. 4), and the even threads as warp for the lower part 12 of the tubular fabric.

According to the invention, in order to obtain double-layer labels, on jacquard looms, with wording and/or patterns, in obverse on the outer faces of the two parts 11 and 12 of the label, it is necessary to proceed as follows: the jacquard programmes of the two patterns (or wording) are prepared, and the two programmes are then combined into a single one, thus obtaining programme cards or the like, in which the first row of the combined programme, corresponding to the first weft insertion of the upper part or layer 11 of the tubular fabric, consists of the first row of the first programme; the second row of the combined programme, corresponding to the first

row of insertion of the weft in the lower part or layer 12 of the label, corresponds to the first row of the second programme, taking care to reverse the raising or arrangement of the warp threads in the shed, with respect to the other part 11 of the fabric, so that the weft threads, in the programmed positions, always appear on the outer surface. Then the third row of the combined programme consists of the second row of the first programme, whilst the fourth row of the combined programme consists, in turn, of the second row of the second programme, always with reversed arrangement of the warp threads, and so on, alternately combining the rows of the two programmes until the composite or combined jacquard loom weaving programme is completed.

Consequently, according to the foregoing explanation, by means of a single weaving operation, a flattened tubular fabric is produced, and patterns will simultaneously appear on the outer faces of the two sides of the label. The jacquard loom may be programmed to produce portions of double-layer fabric as described, in delimited areas of the fabric, which are therefore separate from one another or enclosed between non-tubular, or single-layer portions of fabric.

In particular, the method according to this invention, can be used in manufacturing labels.

A more detailed description of the weaving method can be given by reference to figures 2 and 3 of the drawings. As can be seen in figure 2, during one step of the fabric-making process, in particular for the upper part of the label, the warp threads 2, 4, 6, 8 and 10 in even positions, that is to say, relative to the warp of the lower part 12 of the double-layer fabric, are all kept lowered; likewise, the warp threads 1, 5, 7 and 9 in odd positions, that is to say, relative to the warp of the upper part 11 of the label, are all kept lowered, except for the warp threads, such as, for example, thread 3, placed in correspondence with programmed positions in which weft threads 13, must not appear on the upper or outer surface.

In the next weaving step, fig. 3, that is to say, relative to the weaving of the lower part 12 of the label, there is a reversed arrangement of the warp threads with respect to the previous situation. In other words, all the warp threads, 1, 3, 5, 7 and 9, in odd positions, that is to say, relative to the warp of the upper part 11 of the double-layer fabric, are raised, and simultaneously all the warp threads 2, 4, 8 and 10, in even positions and relative to the lower part 12 of the fabric, are raised except for the warp threads (thread 6 in this case) in correspondence with programmed positions in which weft threads 14 must not appear on the lower outer surface. Figure 4 shows a double-layer label, in which the arrangement of the warp threads according to the two previous figures, are schematically indicated. Any floating weft threads, that is to say, those weft threads 15 of a different colour or type which, during an insertion of a weft, are not used, remain inside the label.

It is clear, from the foregoing description and accompanying drawings, that the invention provides a new method of weaving double-layer labels, on jacquard looms, in which the conventional tubular weaving procedures are combined in a new and original manner, by means of the "integration of two jacquard weaving programmes, in which one programme is used for producing the upper part of the label, with "positive" or obverse wording and patterns facing outwards, whereas the other programme is used for producing the lower part of the label, also with "positive" or obverse wording and/or patterns on the outer face; the invention also concerns tubular fabric, such as labels, having independent double-layer portions woven with external wording on both faces of portions thereof, obtained according to the described weaving method. It is understood that what has been described and shown by reference to the accompanying drawings, is given by way of example; with the described arrangement, in fact, a tubular fabric is formed in a lengthwise direction, however it is obvious that by inverting the function of warp and weft threads; and the weaving system, it is possible to produce portions of tubular fabric, with jacquard patterns, crosswise over the width of the fabric.

30 Claims

1. A weaving method for producing reversible labels on a jacquard loom, said method comprising the steps of providing a first (1, 3, 5, 7, 9) and a second (2, 4, 6, 8, 10) group of threads defined by alternate ones of warp threads, and weaving labels comprising independent double-layer portions (11, 12) having outer faces; the method being characterised by: providing a set of weaving instructions for a composite jacquard weaving program defining alternately a first weave pattern and second weave pattern; and interweaving weft threads (13, 1') alternately with said first (1, 3, 5, 7, 9) and second (2, 4, 6, 8, 10) group of warp threads, following instructions from said composite jacquard weaving programme, to define labels comprising double-layer portions (11, 12) having a first desired woven pattern in obverse on one outer face and a second desired woven pattern in obverse on the other outer face.

2. A reversible label comprising at least a double-layer portion having a first (1) and a second (12) independent layer provided with outer faces, the two independent layers being connected at their edges by integrally woven portions, characterised by having patterns and or wordings woven in obverse on each of said outer faces by means of composite weaving programme, according to claimed method of claim 1.

Revendications

1. Procédé de tissage permettant d'obtenir des

motifs réversibles sur un métier Jacquard, du type mettant en oeuvre un premier (1, 3, 5, 7, 9) et un second (2, 4, 6, 8, 10) groupe de fils correspondant à une série alternée de fils de chaîne, ainsi que des motifs de tissage comprenant des parties indépendantes à double couche (11, 12) présentant des faces externes, le procédé étant caractérisé en ce que: l'on fournit une série d'instructions de tissage dans un programme composite de tissage Jacquard pour obtenir en alternance un premier et un second modèle de tissage: puis on entrelace des fils de trame (13, 14) alternativement avec le premier (2, 3, 5, 7, 9) et le second (2, 4, 6, 8, 10) groupe de fils de chaîne, en suivant les instructions dudit programme de tissage Jacquard de façon à obtenir des motifs comprenant des parties à double couche (11, 12) qui présentent un premier type de dessin tissé désiré à l'obvers d'une face externe et un second type de dessin tissé désiré à l'obvers de l'autre face externe.

2. Motif réversible comprenant au moins une partie à double couche ayant une première (1) et une seconde (12) couche indépendante munie de faces externes, caractérisé en ce qu'il possède des dessin et/ou mots tissés à l'obvers sur chacune des faces externes, grâce à la mise en oeuvre d'un programme de tissage pour composite selon le procédé de la revendication 1.

Patentansprüche

1. Ein Verfahren zum Weben eines Jacquard-

Rundgewebes auf einem Webstuhl, wobei das genannte Verfahren die Phasen enthält, die eine erste (1, 3, 5, 7, 9) und eine zweite (2, 4, 6, 8, 10) Fadengruppe zuführt, welche aus wechselweisen Kettfäden gebildet werden, und Etiketten weben, die zwei unabhängige und doppelschichtige Abschnitte (11, 12) mit Aussenflächen haben, wobei das Verfahren dadurch gekennzeichnet ist, dass es eine Reihe von Anweisungen für ein zusammengesetztes Jacquard-Webprogramm liefert, die wechselweise ein erstes Webmuster und ein zweites Webmuster beschreiben, und welche die Schussfäden (13, 14) abwechselnd mit der genannten ersten Fadengruppe (1, 3, 5, 7, 9) und der genannten zweiten Fadengruppe (2, 4, 6, 8, 10) verbinden, wobei die Anweisungen des zusammengesetzten Jacquard-Webprogrammes befolgt werden, um Etiketten mit zwei doppelschichtigen Abschnitten (11, 12) zu beschreiben, die ein erstes gewünschtes Webmuster auf einer Aussenfläche und ein zweites gewünschtes Webmuster auf der anderen Aussenfläche haben.

2. Ein doppelseitiges Etikett enthaltend wenigstens einen doppelschichtigen Abschnitt mit einer ersten (11) und einer zweiten (12) unabhängigen Schicht, beide mit Aussenflächen versehen, wobei die unabhängigen Schichten an ihren Rändern durch vollgewebte Abschnitte miteinander verbunden sind, dadurch gekennzeichnet, dass sie rechtsgewebte Muster und/oder Worte auf einer jeden der genannten Aussenflächen haben, die durch das zusammengesetzte Webprogramm nach dem in Patentanspruch beschriebenen Verfahren erhalten wurden.

12345678910
 •x•x•x•x•x

Fig. 1

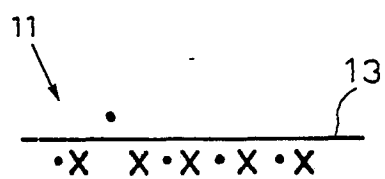


Fig. 2

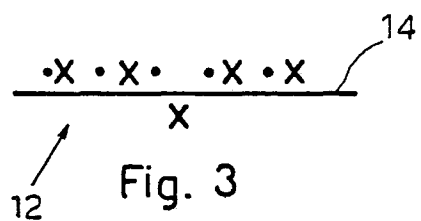


Fig. 3

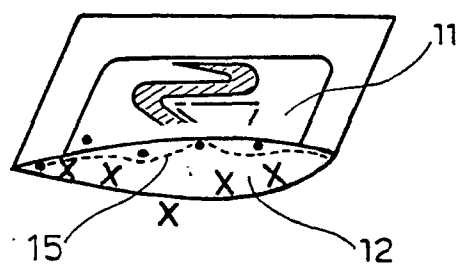


Fig. 4