

(19)



(11)

EP 2 228 472 B1

(12)

EUROPEAN PATENT SPECIFICATION

(45) Date of publication and mention of the grant of the patent:
02.03.2016 Bulletin 2016/09

(51) Int Cl.:
D03D 3/00 (2006.01) **D03D 1/00 (2006.01)**
D03D 35/00 (2006.01) **D03J 1/06 (2006.01)**

(21) Application number: **10156321.1**

(22) Date of filing: **12.03.2010**

(54) Loom for the production of a tape with visual checking elements and associated tape

Webmaschine zur Herstellung eines Bandes mit visuellen Prüfelementen und zugehöriges Band

Métier à tisser pour la production d'une bande dotée d'éléments de contrôle visuel et bande associée

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

(30) Priority: **12.03.2009 IT TO20090184**

(43) Date of publication of application:
15.09.2010 Bulletin 2010/37

(73) Proprietor: **FILMAR S.r.l.**
10072 Caselle Torinese (TO) (IT)

(72) Inventors:
 • **Paganini, Claudio**
10072 Caselle Torinese (TO) (IT)

• **Milanesio, Giovanni**
10072 Caselle Torinese (TO) (IT)

(74) Representative: **Di Gennaro, Sergio et al**
Barzanò & Zanardo
Corso Vittorio Emanuele II, 61
10128 Torino (IT)

(56) References cited:
EP-A- 0 043 704 **DE-A1- 4 111 436**
DE-A1- 10 325 791 **DE-B3-102006 028 210**
DE-C1- 4 303 578 **DE-C1- 19 731 260**
GB-A- 2 085 038

EP 2 228 472 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

Description

[0001] The present invention relates to the field of looms for the production of a tape with visual checking elements and associated tape.

[0002] It is known that tapes can be used in various fields, among which there is the completion of the upholstery for armchairs, chairs or seats.

[0003] In this case, a tape is sewn on the border of an upholstery or covering for armchairs, chairs or seats, in such a way as to act as perimeter element. Typically, to this tape are detachably fixed some tie rods, arranged in hidden position under the armchair, the chair or the seat, in such a way as to keep the covering in stretched position.

[0004] These tie rods are usually realized in form of tape, with very reduced size with respect to the perimeter tape; these are also provided at the two ends with eyelets or mounting hooks to the tape itself.

[0005] The keeping under stretching of the covering has not only an esthetical importance (in particular regarding armchairs or chairs) but also a security importance (particularly regarding the seats designed for the use on cars).

[0006] In light of the natural trend for producing in series armchairs, chairs and seats, in order to realize the highest possible productive economy, the abovementioned coverings are realized in standard sizes and this also applies to the tie rods for the stretching of the coverings themselves. Furthermore these tie rods are always positioned in the same positions, in such a way as to ensure the homogeneity of presentation of armchairs, chairs or seats between a model and the other.

[0007] Nowadays, for allowing for fixing the tie rods always in the same position, the tapes are provided with cut visual checking elements, so that during the mounting it is possible to mount these tie rods in an easier way, reaching therefore a more precise positioning.

[0008] The visual checking elements of known kind are typically made after the production of the tape, through handmade cuts, through blades or with laser.

[0009] This kind of cut has the disadvantage of having to act at least on two different steps. Furthermore, if there are many parallel production lines, the use of laser becomes particularly expensive, owing to the cost of the laser head itself, that must be positioned on each line.

[0010] Eventually, the use of a second step of production forces the increase of the completion time of the tape, making the process not so efficient.

[0011] Document DE 197 31 260 discloses a tape for car seats having reinforced plastic element. The tape of DE 197 31 260 is not suitable to be used in a single step process of weaving due to the presence of the plastic element.

[0012] Document DE 10 2006 028 210 teaches a tape with visual checking filaments that are made floating, thus exiting and then re-entering into the structure of the tape without being tightened.

[0013] In particular with this last document, some drawbacks arise since the floating filaments can get entangled with objects during the operations made on the tape, with the risk of damaging the tape.

5 **[0014]** Furthermore, when such checking filaments maintain the same colour of the tape, there is a risk of being confused in the exact tie rods positioning.

[0015] A first purpose of the present invention is to describe a loom for the production of a tape with visual checking elements that is free from the above described disadvantages.

10 **[0016]** A second purpose of the present invention is also to describe a tape with visual checking elements that is free from the above described disadvantages.

15 **[0017]** According to the present invention, a loom is used for the production of a tape with visual checking elements as claimed in the first claim.

[0018] According to the present invention, a tape is made with visual checking elements as claimed in the third claim.

20 **[0019]** The invention will be now described with reference to the appended drawings, that illustrate a not restrictive example of embodiment, wherein:

- 25 - Figure 1 shows a first form of embodiment of a tape with visual checking elements according to the present invention;
 - Figure 2 shows a scheme of a loom for the production of the tape of figure 1;

30 **[0020]** With reference to figure 1, a tape with visual checking elements is generally designated with the reference number 1.

35 **[0021]** Tape 1 acts as perimeter element for an upholstery or covering for armchairs, sofas, chairs or seats for vehicles. In detail, it is sewn on the border of the upholstery in such a way as to act as perimeter element: Typically, to tape 1 are detachably fixed some tie rods 3, arranged in hidden position under the armchair, the chair or the seat, in such a way as to keep the upholstery in stretched position.

40 **[0022]** Tie rods 3 are usually realized in form of tape, with very reduced size with respect to the tape object of the present invention and provided at the two ends with eyelets or mounting hooks to the tape itself.

45 **[0023]** Tape 1 comprises a fabric in weft and warp (simple or double) and is optionally provided with a cord designed to close the covering. This cord typically inserted on the tape so that it can slide with respect to it in order to stretch the covering during the mounting operation.

50 **[0024]** Tape 1, comprises a plurality of visual checking elements 2, for allowing a visual indication of the position within which to position tie rods 3.

55 **[0025]** Each element 2 can have various shapes, as triangles, little circles, rectangles or other symbols, and is positioned on one of the two sides of tape 1 being preferably of a first colour that differs from at least a second colour of the tape. Many elements 2 can be posi-

tioned at an equal distance or at different distances among them; this depends upon the typology, shape and number of tie rods that must be fixed to tape 1.

[0026] In detail, elements 2 are tightly woven in such a way they remain visible on both faces of the tape and, at the same time, they do not substantially loosely protrude out of the surface of tape 1; this allows for not limiting the effective usefulness of elements 2 only to the case in which the tape is observed towards a face rather than towards the opposite one.

[0027] The tight weaving of elements 2 allows them to remain in the same woven tissue of the tape; in fact, elements 2 are produced during a continuous process of production of the tape from a production loom.

[0028] Thanks to the tight weaving, elements 2 lie on the same plane of the border of tape 1 in which they are woven.

[0029] Figure 2 shows a loom 10 for the production of tape 1 that differs from the ones of known kind for the presence of means 13 for the working and production of elements 2; means 13 are integrated into loom 10.

[0030] In detail, loom 10 shows as traditionally known, a station for the formation of the fabric with at least a first section 11 comprising one or more reels upon which the warp is wrapped, a second section 12 with a shed (for instance of jacquard or dobby kind) and for the formation of the weft and eventually means 13 for the production of elements 2. Means 13 are positioned in correspondence with the creation of the weft of the tape 1 and are actuated to weave the pattern of elements 2 temporarily, during the same process of weaving of tape 1, when an electronic processing unit (disclosed later on) sends them a command to produce such a pattern.

[0031] In other words, means 13 provide for making the set of elements 2, directly during the production of tape 1 and without the need of external equipments. In detail, for the production of the first form of embodiment of tape 1, means 13 provide for making a weaving of elements 2 during the process of creation of tape 1. The reciprocal distance of elements 2 is counted for instance through an hardware and/or software electronic control system 16 with which counts the number of pitches made by the loom. In detail, electronic control system 16 comprises a memory within which it is stored the sequence of the reciprocal distances of elements 2.

[0032] In this way, it is possible to store a priori within electronic control system 16 distances among many consecutive elements 2 even different among them, in such a way as to adapt the production of tape 1 to the needs of the product (seat, armchair, chair or else) to which it is destined and, in particular, to the number of the tie rods required. The changing of the destination product of tape 1 is therefore quick and is automatically managed, without structural changes on the loom upon which the tape itself is produced.

[0033] The advantages of the present invention are clear in the light of the previous description; in particular tape 1, 1', allows connection to tie rods for easily and

precisely cutting the coverings for armchairs, sofas, chairs or seats, because for each tie rod to be constrained to it there is a reciprocal element 2, 2', and with high productive economy; actually, the realization of elements 2, 2', is made during the step of production of the tape itself, and not later on. Therefore, there is no need of processing again tape 1, 1' once woven, with different machines. At the end of the process of creation of elements 2, 2', within loom 10, tape 1, 1', does not have to undergo other processes excepting from the installation on the covering to which it is destined. As a matter of fact, loom 10 comprises all the necessary means for the production of the finished tape. Once left loom 10, tape 1, 1', does not have to be processed anymore, it is instead directly ready for being sewn to its covering or associated upholstery.

[0034] Tape 1 produced according to the present invention is therefore provided with visual checking elements 2, 2' that do not protrude out of the surface of tape 1, 1' and, in particular, do not protrude loosely or slackly from it, remaining actually on the same plane of the tape border in which they are woven; therefore this leads to a tape that cannot entangle to any means of working further used to work and/or attach tape 1 to the product on which it will be mounted.

[0035] Finally, it is clear that to the tape and to the loom described in the present invention can be applied changes without extending out of the scope of protection of the annexed claims.

Claims

1. A loom (10) for the production of a tape (1, 1') with visual checking elements (2, 2') along the periphery of said tape (1, 1'); the loom (10) comprising a station for the formation of the fabric (12); in correspondence to the station for the formation of the fabric (12) are present means (13) for the creation of said checking elements (2, 2') at predetermined distances; said means (13) being configured for creating checking elements (2, 2') lying on the same plane of the border of said tape (1, 1'); the loom is **characterized in that** said means (13) realize the tight weaving of said checking elements (2, 2') in such a way they remain visible on both faces of the tape and, at the same time, they do not loosely protrude out of the surface of tape (1); the elements (2) remaining in the same woven tissue of the tape (1, 1').
2. A loom (10) according to claim 1, further comprising an electronic control system (16) of hardware and/or software type sending a control signal to means (13) to produce the checking element (2, 2'); the electronic control system (16) also comprising a memory for storing a distance between the checking elements (2, 2').

3. A tape (1) (1') comprising a plurality of visual checking elements (2, 2'); said tape (1, 1') possessing a first face and a second face opposed to the first one; said visual checking elements (2, 2') are realized by a loom (10); said visual checking elements (2, 2') being positioned at a predetermined distance one with respect to the other, lying on the same plane of the border of said tape (1, 1'), and said tape (1, 1') being **characterized in that** said visual checking elements (2, 2') being tightly woven in such a way they remain visible on both faces of the tape and, at the same time, they do not loosely protrude out of the surface of tape (1); the elements (2) remaining in the same woven tissue of the tape (1, 1').
4. A tape (1, 1') according to claim 3, comprising a first side and a second side of major extension and wherein said visual checking elements (2, 2') are positioned on one of said two sides of major extension.

Patentansprüche

1. Webmaschine (10) für die Herstellung eines Bands (1, 1') mit Sichtprüfelementen (2, 2') entlang der Peripherie des Bands (1, 1'), wobei die Webmaschine (10) eine Station zur Bildung des Stoffs (12) umfasst, wobei in Verbindung mit der Station zur Bildung des Stoffs (12) Mittel (13) zur Bildung der Prüfelemente (2, 2') in vorgegebenen Abständen vorhanden sind, wobei die Mittel (13) konfiguriert sind, im Wesentlichen auf der gleichen Ebene des Rands des Bands (1, 1') liegende Prüfelemente (2, 2') zu bilden, wobei die Webmaschine **dadurch gekennzeichnet ist, dass** die Mittel (13) das dichte Weben der Prüfelemente (2, 2') auf eine derartige Weise durchführen, dass sie auf beiden Flächen des Bands sichtbar bleiben und sie gleichzeitig nicht aus der Oberfläche des Bands (1) lose hervorstehen, wobei die Elemente (2) im gleichen gewebten Gewebe des Bands (1, 1') verbleiben.
2. Webmaschine (10) nach Anspruch 1, welche ferner ein elektronisches Steuersystem (16) vom Hardware- und/oder Software-Typ umfasst, das ein Steuersignal zu den Mitteln (13) zum Erzeugen der Prüfelemente (2, 2') sendet, wobei das elektronische Steuersystem (16) auch einen Speicher zum Speichern eines Abstands zwischen den Prüfelementen (2, 2') umfasst.
3. Band (1) (1'), welches eine Vielzahl von Sichtprüfelementen (2, 2') umfasst, wobei das Band (1, 1') eine erste Fläche und eine zweite Fläche entgegengesetzt zur ersten Fläche aufweist, wobei die Sichtprüfelemente (2, 2') durch eine Webmaschine (10) hergestellt werden, wobei die Sichtprüfelemente (2, 2') in einem vorgegebenen Abstand voneinander posi-

tioniert sind, wobei sie im Wesentlichen auf der gleichen Ebene des Rands des Bands (1, 1') liegen, und wobei das Band (1, 1') **dadurch gekennzeichnet ist, dass** die Sichtprüfelemente (2, 2') in einer derartigen Weise dicht gewebt sind, dass sie auf beiden Flächen des Bands sichtbar bleiben und sie gleichzeitig nicht lose aus der Oberfläche des Bands (1) hervorstehen, wobei die Elemente (2) im gleichen gewebten Gewebe des Bands (1, 1') verbleiben.

4. Band (1, 1') nach Anspruch 3, welches eine erste Seite und eine zweite Seite größter Ausdehnung umfasst, und wobei die Sichtprüfelemente (2, 2') auf einer der beiden Seiten größter Ausdehnung positioniert sind.

Revendications

1. Métier à tisser (10) pour la production d'un ruban (1, 1') comportant des éléments de contrôle visuel (2, 2') sur la périphérie dudit ruban (1, 1') ; le métier à tisser (10) comportant un poste de formation du tissu (12) ; étant présent, en correspondance avec le poste de formation du tissu (12), un moyen (13) de création desdits éléments de contrôle (2, 2') à des distances prédéterminées ; ledit moyen (13) étant conçu pour créer des éléments de contrôle (2, 2') situés sur le même plan de la limite dudit ruban (1, 1'), le métier à tisser étant **caractérisé en ce que** ledit moyen (13) réalise le tissage serré desdits éléments de contrôle (2, 2') de manière à ce qu'ils restent visibles sur les deux faces du ruban et à ce que, en même temps, ils ne dépassent pas d'une manière lâche de la surface du ruban (1) ; les éléments (2) restant dans le même tissage du ruban (1, 1').
2. Métier à tisser (10) selon la revendication 1, comprenant en outre un système de commande électronique (16) de type matériel et/ou logiciel envoyant un signal de commande au moyen (13) afin de créer l'élément de contrôle (2, 2') ; le système de commande électronique (16) comprenant aussi une mémoire pour sauvegarder une distance entre les éléments de contrôle (2, 2').
3. Ruban (1) (1') comprenant une pluralité d'éléments de contrôle visuel (2, 2') ; ledit ruban (1, 1') possédant une première face et une seconde face opposée à la première ; lesdits éléments de contrôle visuel (2, 2') étant réalisé par un métier à tisser (10) ; lesdits éléments de contrôle visuel (2, 2') étant positionnés à une distance prédéterminée l'un de l'autre, se situant sur le même plan de la limite dudit ruban (1, 1') et ledit ruban (1, 1') étant **caractérisé en ce que** lesdits éléments de contrôle visuel (2, 2') sont tissés serrés de manière à rester visibles sur

les deux faces du ruban, et, en même temps, à ne pas dépasser de manière lâche de la surface du ruban (1) ; les éléments (2) restant dans le même tissage du ruban (1, 1').

5

4. Ruban (1, 1') selon la revendication 3, comprenant une première face et une seconde face d'extension majeure et dans lequel lesdits éléments de contrôle visuel (2, 2') sont positionnés sur l'une desdites deux faces d'extension majeure.

10

15

20

25

30

35

40

45

50

55

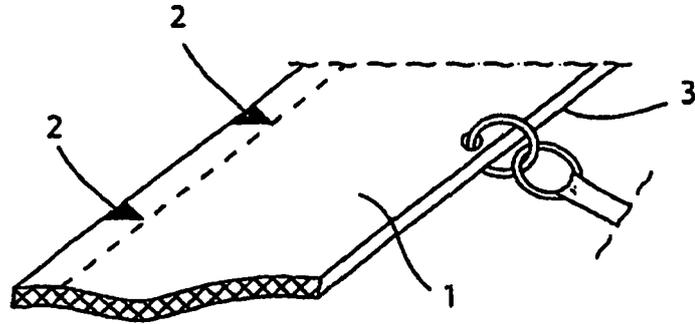


Fig. 1

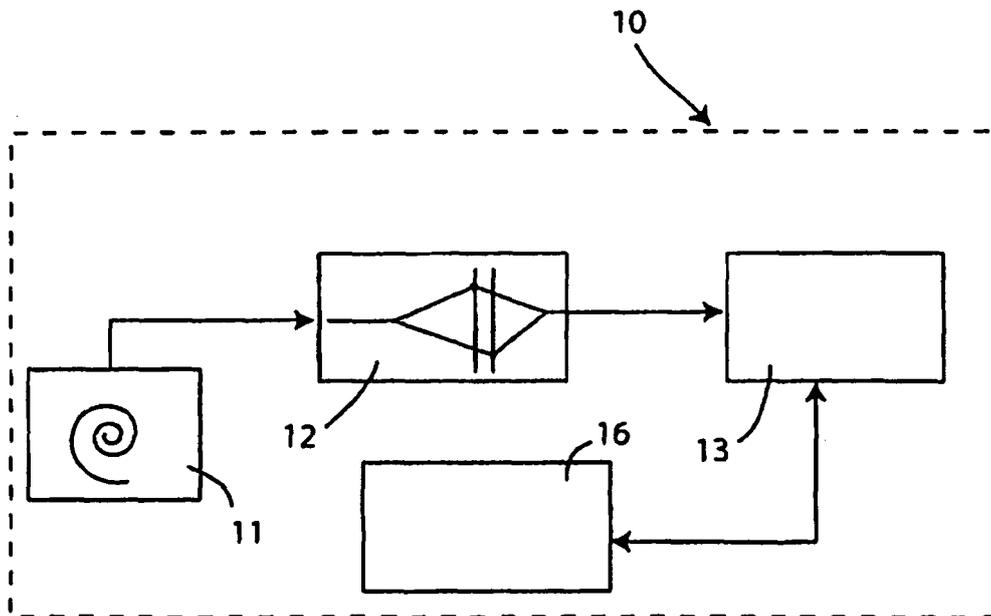


Fig. 2

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- DE 19731260 [0011]
- DE 102006028210 [0012]