

(19)



(11)

EP 2 508 440 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

10.10.2012 Bulletin 2012/41

(51) Int Cl.:

B65D 33/22 (2006.01)

B31B 1/62 (2006.01)

B31B 1/64 (2006.01)

B65D 30/06 (2006.01)

(21) Application number: **12002583.8**

(22) Date of filing: **06.04.2012**

(84) Designated Contracting States:

**AL 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 RS SE SI SK SM TR**

Designated Extension States:

BA ME

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(30) Priority: **08.04.2011 TR 201103443**

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(54) **Bag with laminated mouth part and its production method**

(57) A net type, knitted or woven bag (T) production method, comprising weaving yarns characterized in that, the threads (strips) forming the bag (T) is woven in order to establish a tubular structure (Y); the hot melt, glue and similar liquid and adhesive structured laminate (L) is applied in certain intervals to the tubular structure (Y) in vertical strips; being vertical according to the longitudinal axis of the said tubular structure (Y); the tubular structure (Y) is cut all along the longitudinal edge of the laminate

(L) established, the pieces formed by cutting the tubular structure (Y), form the bag (T) by sealing (preferably sealing via stitching) at least one side of the tubular structure (Y) which stands vertically according to the longitudinal axis of the said tubular structure (Y). While providing a fast and continuous production method for producing bags (cases), at the same time bags (cases) (T) which are low cost and have reinforced mouths are obtained from this said production.

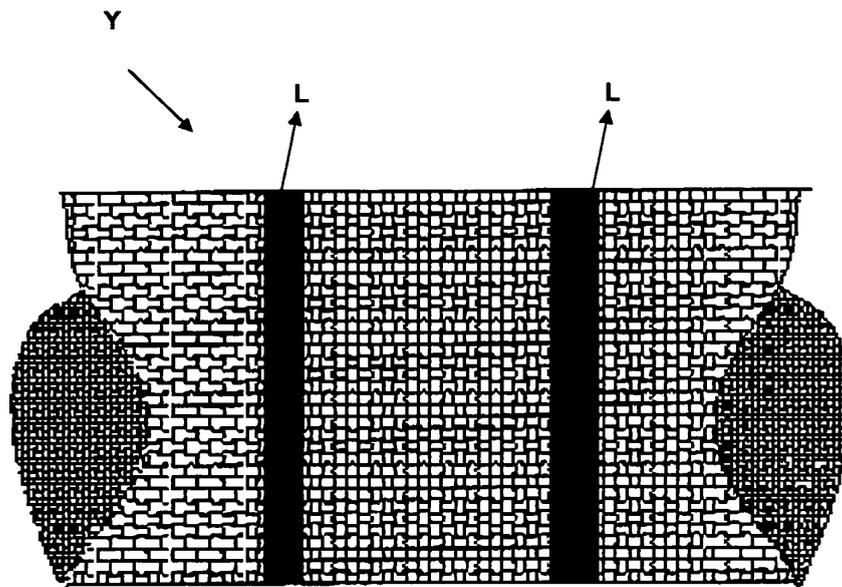


Figure 5

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Description

Technical Field

[0001] The present invention is related to increase the endurance of the mouth part of net, knitted or woven bags (cases) by laminating (covering) the mouth part of such bags or cases and is related to innovations that are made in order to ensure that the weft and warp threads (strips) located in the said mouth part are not split away from each other.

Prior Art

[0002] The mouth parts of the non laminated bags (cases) in the prior art are subjected to high force from the handle parts of the bags or cases that are used in order to carry the load inside such cases and are easily ripped and/or fall apart from this pressure or force. For this reason, the mouth parts of especially woven bags should be strengthened.

[0003] This said strengthening has been provided by supplying taught stitching named overllocking on the mouth parts of the bags known in the prior art. However, this process, is a process that is carried out after the manufacturing of the said bags are completed so an extra amount of workmanship is needed and thus the costs also increase due to this extra workmanship.

[0004] In the patent document numbered US3979049A in which a reinforced bag known the prior art is being explained, a bag which has a bottom part which closes by the overlapping of the bottom sides of the bag which is then reinforced by placing a placard to the base section formed is described. The additional material used as reinforcement in the said bag or case also increases the costs of the bag. Aside from this it is not possible to apply this above mentioned method to non laminated bags and especially to loosely woven bags (cases) such as string bags.

Brief description of the invention

[0005] The present invention is related to net type, knitted or woven bag (case) with a laminated (coated) mouth and a production method thereof. The method of the invention comprises the steps of the threads (strips) forming the bag being woven in order to establish a tubular structure ; the hot melt, glue and similar liquid and adhesive structured laminate being applied in certain intervals to the tubular structure in vertical strips; the strips being vertical according to the longitudinal axis of the said tubular structure ; the tubular structure being cut all along the longitudinal edge of the laminate established; the pieces being formed by cutting the tubular structure , form the bag by sealing at least one side of the tubular structure which stands vertically according to the longitudinal axis of the said tubular structure..

[0006] While fast and continuous bag (case) produc-

tion is ensured via the method of the prior art, low costing bags with reinforced mouth areas are being obtained with this said method. Thus problems such as the high costs of reinforced bags reinforced through taught stitching named overllocking in the prior art and their partial production rather than continuous production can be overcome by using this developed method.

The aim of the invention

[0007] The aim of the present invention is to develop a production method to produce a net type, knitted or woven bag (case) with a laminated (coated) mouth section.

[0008] Another aim of the present invention is to develop a production method to produce continually a net type, knitted or woven bag (case) which has a laminated (coated) mouth section.

[0009] Yet another purpose of the present invention is to develop a production method to produce a cost effective and high endurance net type, knitted or woven bag (case) which has a laminated (coated) mouth section.

The description of the drawings

[0010] The exemplary embodiments of the bags (cases) produced in accordance with the said production method to produce net type, knitted or woven bag (case) which has a laminated (coated) mouth section in the prior art have been illustrated with the drawings attached and the said drawings illustrate the following:

Figure 1; is the illustration of a net type bag (case) known in the priorart.

Figure 2; shows a net type bag (case) with a laminated (coated) mouth section produced in accordance with the invention.

Figure 3; shows a woven bag (case) woven according to the prior art.

Figure 4; shows a woven bag (case) with a laminated (coated) mouth section produced in accordance with the developed method.

Figure 5; shows a semi finished state (tubular) of the woven bag with a laminated (coated) mouth section produced in accordance with the method of the invention.

[0011] The parts in the figures are individually enumerated and the corresponding terms of reference numbers are as follows:

| | |
|---------------------------------------|----|
| Bag (Prior art) | T' |
| Bag | T |
| Mouth | A |
| Bottom section/base | B |
| Overlocking | O |
| Semi finished bag (Tubular structure) | Y |

(continued)

Laminate (coating)

L

Detailed Description of the Invention

[0012] The exemplary illustrations of the net type, knitted or woven bags (T') in the known state of the art are shown in Figure 1 and Figure 3. In the prior art (T'), the mouth (A) part of the bag is strengthened by using the overlocking (O) method. The bags (T'), that have been reinforced with the said method, are strengthened with a second process following the process of being cut in suitable measurements and by producing a bag (T') by sealing at least one side of the said bag. For this reason, the production period and cost of the reinforced bags (T') reinforced by using the overlocking (O) method increase.

[0013] The net type, knitted or woven bags (T) (cases), produced according to the method of the present invention, can be seen in Figure 2 or Figure 4. The production method for the bags (cases) that have been improved comprises the following steps;

- The threads (strips) forming the bag (T) is woven in order to establish a tubular structure (Y) (a pipe-like structure) (illustrated in figure 5);
- The hot melt, glue and similar liquid and adhesive structured laminate (L) is applied in certain intervals to the tubular structure (Y) in vertical strips; being vertical according to the longitudinal axis of the said tubular structure (Y);
- The tubular structure (Y) is cut all along the longitudinal edge of the laminate (L) established;
- The pieces formed by cutting the tubular structure (Y), form the bag (T) by sealing at least one side of the tubular structure (Y) which stands vertically according to the longitudinal axis of the said tubular structure (Y)

[0014] A laminated (L) (coated) section is established according to the developed production method by using a coating material (preferably hot melt) at certain intervals to coat over the tubular structure (Y) used in the production of a bag (T). Following this process, the tubular structure (Y) is cut so that a mouth section (A) is left out of a laminated (L) (coated) bag (T) and a half open knitted/woven structure (not shown in the drawings) with the cut out laminated (L) section is obtained. The bottom or base part (B) of the obtained structure is sealed with a known method (preferably sealed by stitching) and thus a laminated bag (T) is obtained. After the laminate (L) becomes solid and turns into a block structure a high endurance laminate (coating) (L) is obtained for the bag (T).

[0015] With the production carried out according to the developed method, as the laminate (L) can be applied quickly to the tubular structure (Y), the steps of forming the tubular structure (Y), applying the laminate (L), and the confectionary processes (cutting of the structure (Y)

and sealing of one side (B)) can be performed continuously in a production method. Thus the fast and economical production of the bag (T) is ensured.

[0016] The weaving threads (strips) forming the tubular structure (Y) and/or the laminate (L) according to the developed production method can comprise polyethylene, polypropylene, high density polyethylene and/or low density polyethylene.

[0017] While fast and continuous bag (case) production is provided via the developed method, low costing bags with reinforced mouth areas are being obtained with this said method. Thus difficulties such as the high costs of reinforced bags reinforced through taught stitching named overlocking in the known state of the art can be overcome by using this developed method.

Claims

1. A net type, knitted or woven bag (T) production method, comprising weaving yarns **characterized in that;**

- The threads forming the bag (T) is woven in order to establish a tubular structure (Y);
- The hot melt, glue and similar liquid and adhesive structured laminate (L) is applied in certain intervals to the tubular structure (Y) in vertical strips; being vertical according to the longitudinal axis of the said tubular structure (Y);
- The tubular structure (Y) is cut so as to form the mouth section (A) of the laminated (L) bag (T) all along the longitudinal edge of the laminate (L) established.;
- The pieces formed by cutting the tubular structure, (Y), form the bag (T) by sealing at least one side of the tubular structure (Y) which stands vertically according to the longitudinal axis of the said tubular structure (Y)

2. A production method for a bag (T) according to Claim 1, **characterized in that;** the laminate (L) comprises a hot melt.

3. A production method for a bag (T) according to Claim 1 **characterized in that;** the laminate (L) comprises polyethylene.

4. A production method for a bag (T) according to Claim 1 **characterized in that;** the laminate (L) comprises polypropylene.

5. A production method for a bag (T) according to Claim 2 **characterized in that;** the laminate (L) comprises a high density polyethylene.

6. A production method for a bag (T) according to Claim 2 **characterized in that;** the laminate (L) comprises

low density polyethylene.

7. A production method for a bag (T) according to Claim 1 **characterized in that**; the said threads comprise polyethylene. 5
8. A production method for a bag (T) according to Claim 1 **characterized in that**; the said threads comprise polypropylene. 10
9. A production method for a bag (T) according to Claim 7 **characterized in that**; the said threads comprise high density polyethylene.
10. A production method for a bag (T) according to Claim 7 **characterized in that**; the said threads comprise low density polyethylene. 15
11. A knitted or woven bag (T) comprising weaving yam, **characterized in that** it is produced according to the methods described in claims 1-10. 20

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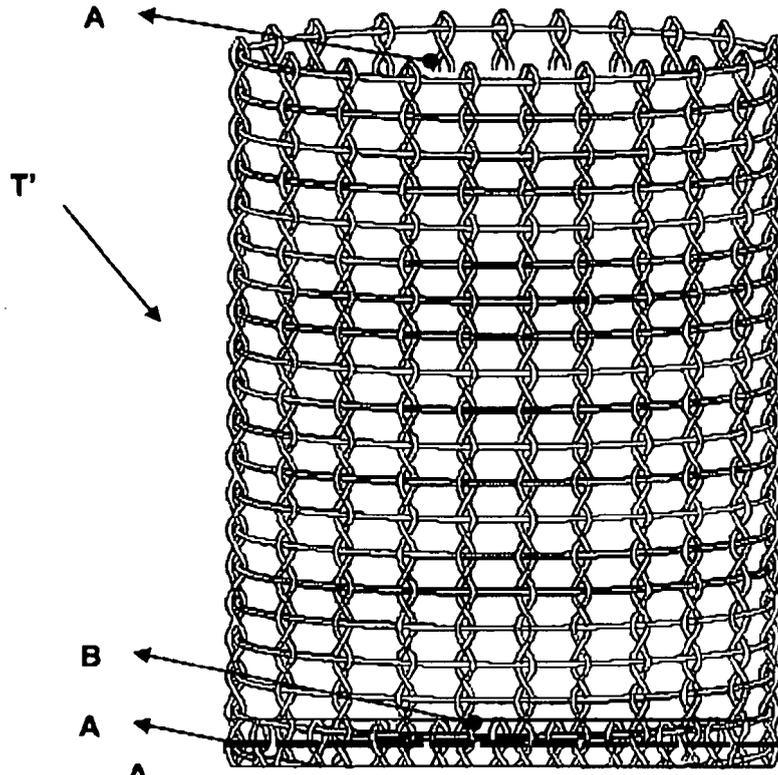


Figure 1

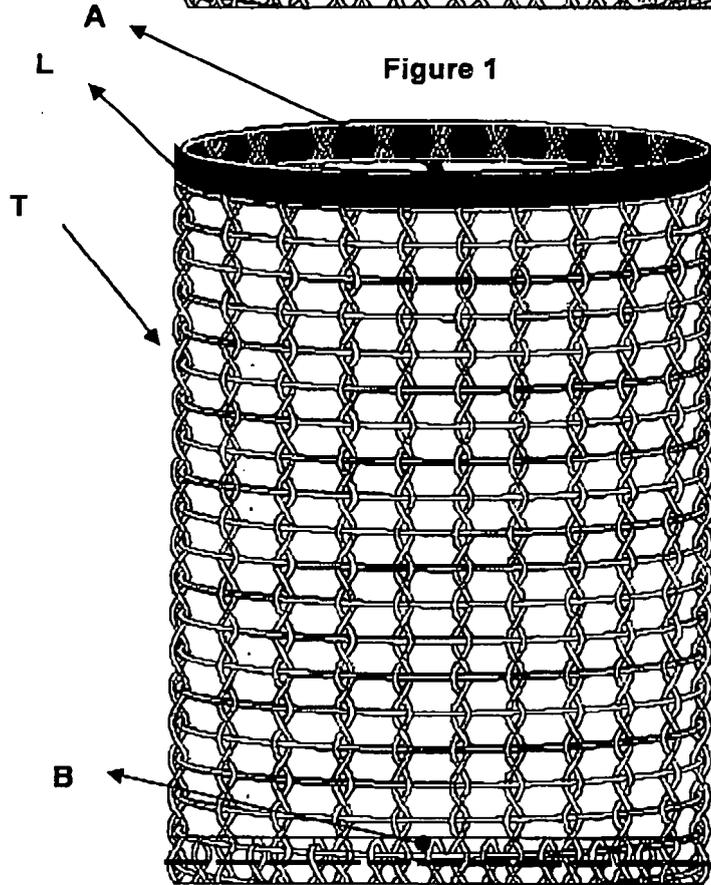


Figure 2

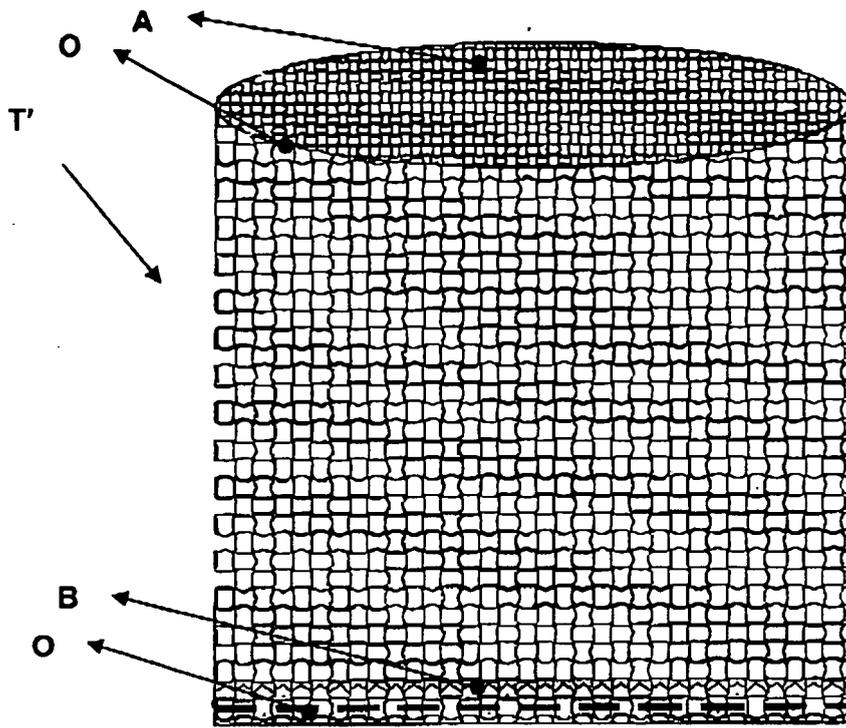


Figure 3

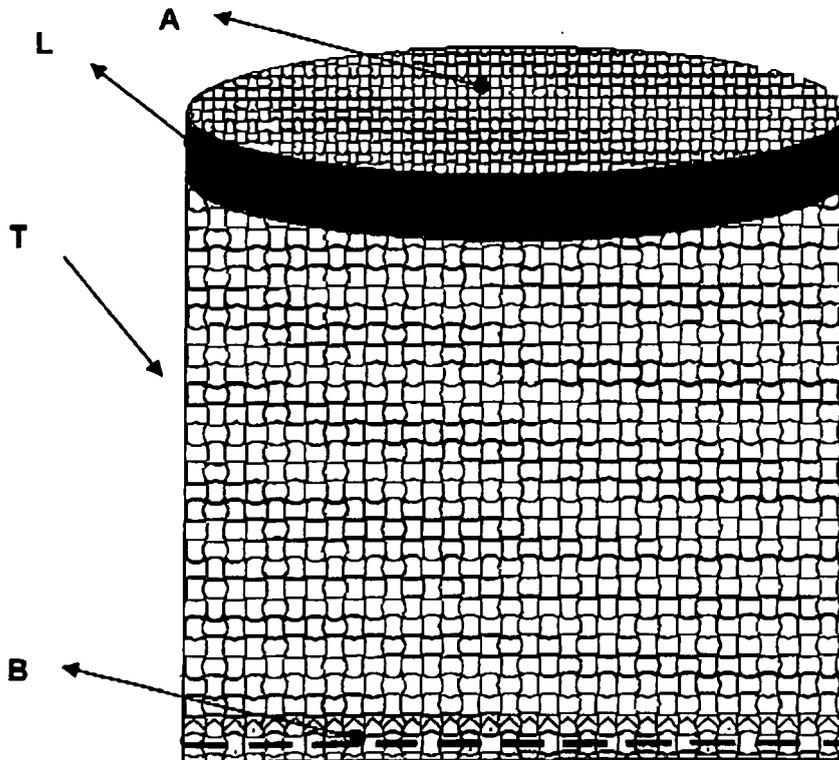


Figure 4

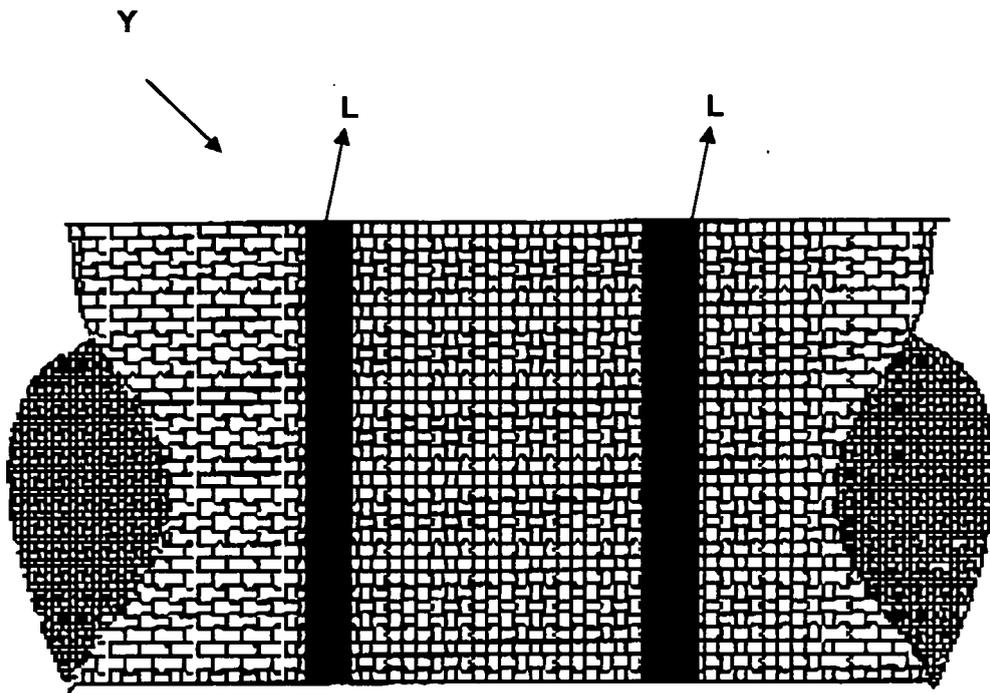


Figure 5



EUROPEAN SEARCH REPORT

Application Number
EP 12 00 2583

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
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| The present search report has been drawn up for all claims | | | |
| Place of search Munich | | Date of completion of the search 10 July 2012 | Examiner Cazacu, Corneliu |
| CATEGORY OF CITED DOCUMENTS | | T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document | |
| X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document | | | |

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 12 00 2583

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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