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(54) **CONTINUOUS BAND FOR THE PRODUCTION OF BAGS FOR FRUIT AND VEGETABLE PRODUCTS AND SIMILAR PRODUCTS**

(57) The continuous band is formed by a continuous plastic sheet, wherein rectangular plastic plates are established in correspondence with each one of the sectors thereof, in longitudinal alignment, corresponding to the later production of the bags; said rectangular plates are positioned such that once the corresponding heat-seals have been formed, these rectangular plates are posi-

tioned on opposite sides of the bag formed which, once filled with the product to be packed, adopts the form of a box or basket.

The continuous band will have the corresponding die-cut windows closed by fragments of net heat-sealed to the continuous layer of plastic.

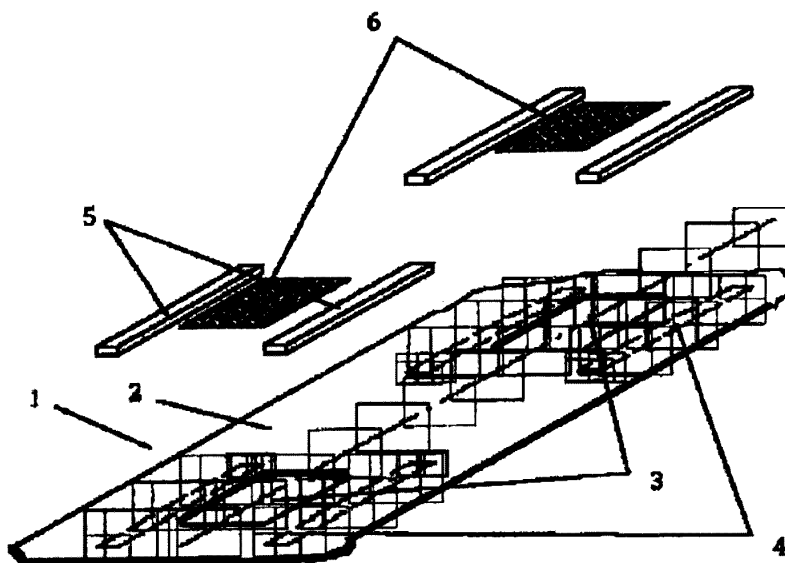


Figure 1

Description

[0001] Continuous band for the manufacturing of bags for fruit and vegetable products and the like.

Technical field of the invention.

[0002] The present invention relates to a continuous band, which has been especially designed for the manufacturing of bags for fruit and vegetable products and the like, by longitudinal heat-sealing of said band through its longitudinal edges, to turn it into a continuous tube, and by transversal cutting and sealing parallel to said cut, for the production of the unitary bags, closing and making independent thereof.

[0003] The object of the invention is to achieve a continuous band which incorporates two rectangular plates of plastic material and a series of windows and, where applicable, perforations, wherefrom it is possible to obtain, by the joining of its edges by heat-sealing, a bag, two of the sides whereof are rigid, and which adopts a form similar to a tray or basket once filled with the product to be packed and which has one or more perforations, in order to obtain maximum mechanical resistance of the bag, a correct aeration of the products, an optimum protection of the products contained therein against squashing, a greater capacity for printing on the bag and faster manufacturing speed of the bag and in its filling.

Background of the invention.

[0004] Certain fruit and vegetable products, such as tomatoes, cherries, oranges, etc., have been sold for a long time in paper or cardboard baskets or wooden or plastic boxes which, in many cases, are protected and wrapped in perforated or non-perforated plastic bags which allow aeration of the product, direct display of the product, its protection against squashing and facilitate their storage or display in the display stand and shelves of the point-of-sale.

[0005] Said baskets or boxes have to be filled with said products manually or by machines with low manufacturing speeds. Furthermore, these baskets or boxes have to be wrapped in plastic bags. The packaging process of the fruit and vegetable products in said baskets or boxes is slow and the materials have a high cost.

Description of the invention.

[0006] The continuous band for the manufacturing of bags proposed by the invention, is a novel technological advance in this field and is based on the use of a continuous band which is designed to be closed over itself, by the joining of its longitudinal edges by a heat-seal parallel to said longitudinal edges, to configure a continuous tube that can be fragmented in a plurality of sectors corresponding to the respective bags, said continuous band has one or more windows and, where applicable, perfo-

rations of the same or a different size. Said continuous band is a continuous plastic sheet, of a width equal to that of the continuous band. Two rectangular plates of plastic material are joined to said continuous plastic sheet in correspondence with each one of the sectors of the continuous plastic sheet provided for the production of a bag, the longitudinal axes of which are parallel to the longitudinal axis of the continuous plastic sheet.

[0007] In a preferred embodiment of the invention the distance between the longitudinal axes of the two rectangular plastic plates is half the width of the continuous plastic sheet.

[0008] In another preferred embodiment of the invention the length of the rectangular plastic plates is less than the length of the sectors provided for the production of a bag minus the width of said rectangular plates. In another preferred embodiment, the rectangular plastic plates are joined to the continuous plastic sheet by heat-sealing or gluing. The material of the rectangular plastic plates may be polypropylene or polystyrene.

[0009] Likewise, in correspondence with each one of the sectors of the continuous plastic sheet, it is possible to establish at least one window, which is closed with the collaboration of a fragment of net, formally and dimensionally adapted to said window and fixed by heat-sealing to the periphery of said windows, such that the windows does not overlap with the rectangular plastic plates.

[0010] Furthermore, when only one window is established in the continuous plastic sheet this may be centred with respect to the longitudinal axis of said continuous plastic sheet and it is possible to establish small perforations on both sides thereof, without net, which do not coincide with the position of the rectangular plates.

[0011] The net which closes the window may be a continuous strip of net which runs longitudinally along the continuous plastic sheet.

Description of the figures.

[0012] To complement the description being made and in order to aid towards a better understanding of the characteristics of the invention, in accordance with a preferred example of embodiment thereof, a set of drawings is attached as an integral part of said description wherein, with illustrative and non-limiting character, the following has been represented:

- Figure 1. shows a perspective exploded view of a continuous band for the manufacturing of bags for fruit and vegetable products and the like.
- Figure 2. Shows a perspective view of the continuous band of figure 1, duly finished.
- Figure 3. Shows two perspective views of a bag produced wherein the form of basket or tray that the bag takes on once filled with product and the heat-seals performed can be seen.
- Figure 4. Shows a duly finished continuous band wherein the central windows are closed by

a fragment of net and a series of perforations on both sides of the central window.

Figure 5. Shows a duly finished continuous band wherein the central windows are closed by a strip of net which runs longitudinally along the continuous plastic sheet.

List of references.

[0013]

- 1 Continuous band
- 2 Continuous plastic sheet
- 3 Window
- 4 Position of the rectangular plastic plates
- 5 Rectangular plastic plate
- 6 Fragment of net
- 7 Bag
- 8 Longitudinal heat-seal
- 9 Transversal heat-seal
- 10 Perforations
- 11 Strip of net

Preferred embodiment of the invention

[0014] In light of the figures, especially 1 and 2, it can be observed how the continuous band [1] for the manufacturing of bags, object of the present invention, comprises a continuous plastic sheet (2), with a width coinciding with that of the continuous band (1) and consequently of a width greater than double the width of the bag to be produced. Groupings of windows (3) and, where applicable, perforations (10) both produced by die-cutting, are established along the continuous plastic sheet (2) and positions (4) of the rectangular plastic plates (5), preferably one grouping for each bag (7) to be produced from said continuous band; there is at least one window (3) centred on what must be the upper face of the bag, and optionally a series of perforations (10) which, without the need for them to be closed by fragments of net, collaborate in the aeration of the product packed. The position of the rectangular plastic plates (5) of each grouping shall be suitable so that on manufacturing the bag they are placed on the sides of the bag where there is no heat-seal.

[0015] The continuous plastic sheet (1) shall be joined by its longitudinal edges by a longitudinal heat-seal (8) and by a double line of transversal heat-seal (9) to form the bag.

[0016] The fragments of net (6) which close the respective windows (3) are fixed by heat-sealing.

[0017] The rectangular plastic plates can be fixed to the continuous plastic sheet by the heat-sealing of its edges to the continuous plastic sheet or by gluing.

[0018] In another preferred embodiment the windows are closed by a strip of net (11) which runs longitudinally along the plastic sheet and which is fixed to said sheet by transversal heat-seals (9).

[0019] In the aforementioned embodiments, the resulting bag, once filled with the chosen fruit or vegetable product, adopts a form of tray or basket wherein two of its sides are formed by two rectangular plastic plates (4), the material of which may be polypropylene or polystyrene, which offer optimum resistance to prevent the squashing of the packed product. In any of the aforementioned cases, the resulting bags offer large areas for graphic printing alluding to the products contained therein.

Claims

1. Continuous band for the manufacturing of bags for fruit and vegetable products and the like, of the type wherein said band is designed to be closed over itself, by the joining of its longitudinal edges by heat-sealing, to configure a continuous tube that can be fragmented in a plurality of sectors corresponding to respective bags, said continuous band has one or more windows and, where applicable, perforations of the same or a different size, **characterized in that** it is formed from a continuous plastic sheet, of width equal to said continuous band, a continuous plastic sheet whereto two rectangular plates of plastic material are joined in correspondence with each one of the sectors thereof provided for the production of a bag, the longitudinal axes of which are parallel to the longitudinal axis of the continuous plastic sheet.
2. Continuous band for the manufacturing of bags for fruit and vegetable products and the like according to claim 1, wherein the distance between the longitudinal axes of the two rectangular plates is half the width of the continuous plastic sheet.
3. Continuous band for the manufacturing of bags for fruit and vegetable products and the like according to claims 1 and 2, wherein the length of the rectangular plates is less than the length of the sectors provided for the production of a bag minus the width of said rectangular plates.
4. Continuous band for the manufacturing of bags for fruit and vegetable products and the like according to claims 1 - 3, wherein the plates are joined to the continuous plastic sheet by heat-sealing or gluing.
5. Continuous band for the manufacturing of bags for fruit and vegetable products and the like according to any of claims 1 - 4, wherein the material of the rectangular plates is polypropylene or polystyrene.
6. Continuous band for the manufacturing of bags for fruit and vegetable products and the like according to any of claims 1 - 5, wherein at least one window is established in correspondence with each one of

the sectors of the continuous plastic sheet, which is closed with the collaboration of a fragment of net, formally and dimensionally adapted to said window and fixed by heat-sealing to the periphery of said window, such that the position and size of the window does not overlap with the rectangular plates. 5

7. Continuous band for the manufacturing of bags for fruit and vegetable products and the like according to claim 6, wherein, when a single window with its corresponding net is established in each sector of the continuous plastic sheet, said window is positioned centred with respect to the longitudinal axis of the continuous plastic sheet, and small perforations are established on both sides thereof, without net, which do not coincide with the position of the rectangular plates. 10 15

8. Continuous band for the manufacturing of bags for fruit and vegetable products and the like according to claim 7, wherein the net which closes the window is a continuous strip of net which runs longitudinally along the continuous plastic sheet. 20

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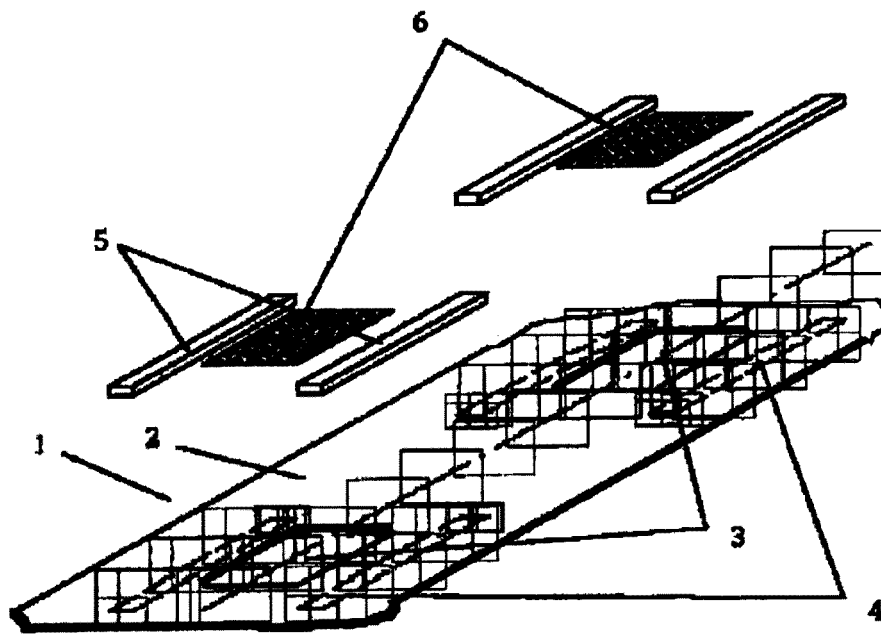


Figure 1

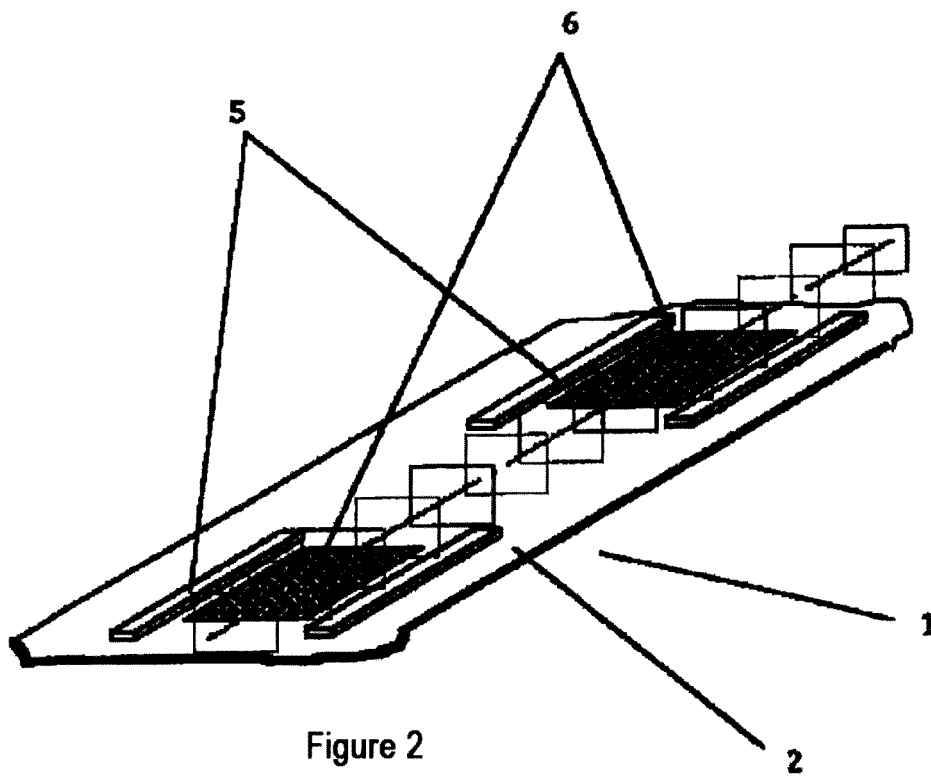


Figure 2

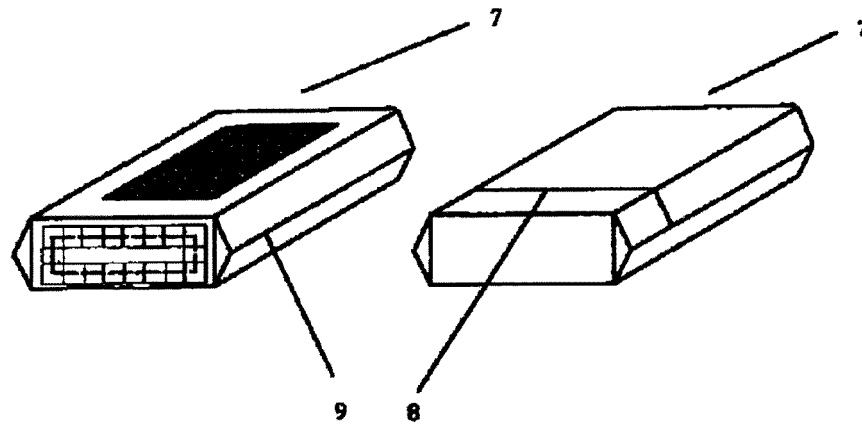


Figure 3

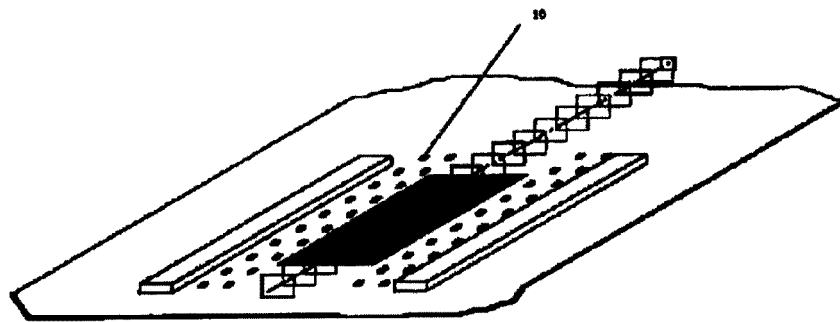


Figure 4

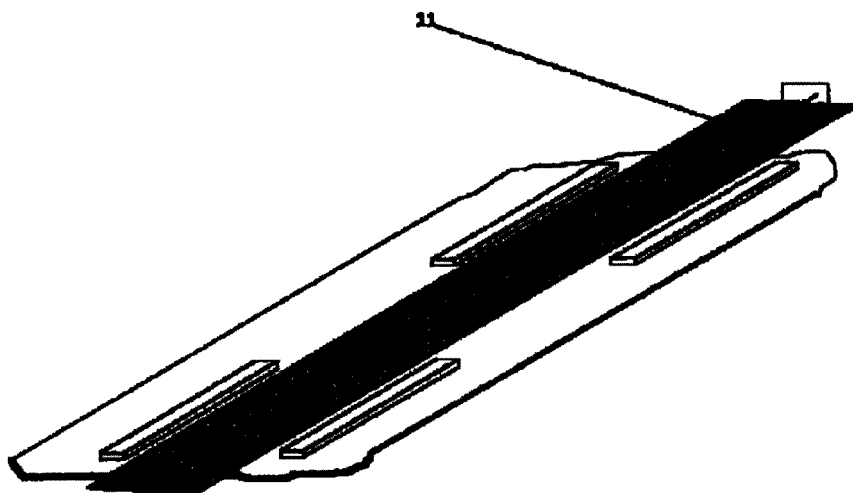


Figure 5

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2013/000019

A. CLASSIFICATION OF SUBJECT MATTER

See extra sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2008040826 A1 (CRISTOBAL MESEGUER) 10/04/2008, Page 8, line 16 - page 11, line 4; figures	1-8
A	JP 2005170396 A (FUJIMORI KOGYO) 30/06/2005, Figures 4 - 9; abstract from DataBase EPODOC extraído of EPOQUE	1-8
A	ES 2164515 B1 (PUIG AGUILELLA) 01/05/2003, Abstract; figures	1-8
A	ES 2204271 B1 (CRISTOBAL MESEGUER) 01/08/2005, Abstract; figures	1-8
A	1051505 U (CRISTOBAL MESEGUER) 16/08/2002, column 3, line 1 - column 4, line 28; figures	1-8

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance.	
"E" earlier document but published on or after the international filing date	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

Date of the actual completion of the international search
17/04/2013Date of mailing of the international search report
(18/04/2013)

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INTERNATIONAL SEARCH REPORT

International application No.

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C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ES 2239920 A1 (SEINEC) 01/10/2005, Abstract; figures	1-8

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

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International application No.

PCT/ES2013/000019

Information on patent family members

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Form PCT/ISA/210 (patent family annex) (July 2009)

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International application No.

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B65D33/02 (2006.01)

B65D33/04 (2006.01)