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(54) Method for manufacturing cardboard boxes, and box obtained with this method

Verfahren zur Herstellung von Kartonbehältern und so hergestellter Behälter

Procédé pour fabriquer des boîtes de carton et boîtes ainsi fabriquées

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(73) Proprietor: **PAPER, S.A.**
08292 Esparreguera (Barcelona) (ES)

(72) Inventor: **Teixidor Casanovas, Pedro**
08292 Esparreguera (Barcelona) (ES)

(74) Representative: **Ponti Sales, Adelaida et al**
Oficina Ponti
C. Consell de Cent, 322
08007 Barcelona (ES)

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EP 0 649 735 B1

Description

The present invention refers to a method for manufacturing cardboard boxes, and to a box obtained with this method.

BACKGROUND OF THE INVENTION

A method for manufacturing cardboard boxes, which is described in Spanish Patent application no. 9300188 (PAPER, S.A.), publication number ES 2067382, starts from separate sheets, with lugs on the sides and flaps at the ends facing each other two by two. These sheets are applied onto the external faces of a mandrel, along which the various steps of the method are carried out to provide a rectangular prismatic body whose bases are provided with open flaps and whose edges are reinforced by folded lugs glued to the sides of the body, beside the edges.

In addition to achieving reinforced boxes capable of withstanding the stresses to which they will be subjected during utilization, the method object of the afore-said patent provides other advantages which are, in summary: the possibility of some sides of the box being of different quality and thickness than the others, or presenting fibres running in different directions in order to withstand stresses in any direction.

Despite these advantages, various tests carried out with this type of box have shown that it is possible to increase their strength and thus extend their field of utilization.

DESCRIPTION OF THE INVENTION

Thus, in order to increase the strength of the boxes manufactured using the method described, the new method constituting the object of the present invention has been developed.

The method of the invention is characterized in that the lugs which project from the sides of the sheets are applied and joined together over chamfered edges provided on the mandrel. These chamfered edges are situated between two adjacent sides of the mandrel.

At least one of the pairs of sheets from which the box is obtained presents prolongations from the respective lugs. These prolongations are applied and joined to an adjacent zone of the sheet, immediately beside the chamfered edges upon which the lugs in question are applied.

In one possible embodiment, all the sheets from which the box is obtained present prolongations from their respective lugs. These prolongations are applied and joined to a zone of the sheet immediately adjacent to the chamfered edges upon which the lugs in question are applied.

The box obtained with the method described is provided with chamfered edges (or chamfers) between its sides and on which are superimposed and glued the folded lugs of the adjacent sheets, forming two cant

edges between each pair of sheets.

At least one of the superimposed lugs forming the chamfered edges of the box presents a prolongation folded and glued onto the adjacent side, beside the chamfered edges.

It is further envisaged that each of the superimposed lugs which form the chamfered edges of the box present corresponding prolongations folded and glued onto the adjacent side, beside the chamfered edges.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of all that has been set forth in this specification, there are attached some drawings in which, solely by way of example, a practical case of embodiment of the method and the corresponding box is shown.

In said drawings Figure 1 is a schematic cross-section showing the moulding core and a pair of sheets with their lugs prior to application against the chamfered edges of the moulding core; Figure 2 is a similar view showing another pair of sheets with their lugs extended, on the point of being applied and glued to the lugs of the first two sheets; Figure 3 is a view similar to the previous two, showing the lugs which form each chamfered edge glued together; Figure 4 is a view similar to that of Figure 3, but in this example two of the sheets have their corresponding prolongations folded and glued to the adjacent sheets; Figure 5 is a view very similar to that of Figure 4, but in this case it is the other two sheets which present the corresponding prolongations to their lugs; Figure 6 is a view similar to those of Figures 4 and 5, showing a version in which all the sheets present lugs with prolongations folded and glued to the adjacent sides; Figure 7 is a perspective view showing one of the chamfered edges of the box obtained according to the method of the invention.

DESCRIPTION OF A PREFERRED EMBODIMENT

The method for manufacturing of boxes consists, according to the representation shown in the drawings, in applying successively two pairs of sheets -1- and -2- against the sides of a moulding core -3- provided with chamfered edges -4- situated between sides -5- of the moulding core. The sheets -1- have some lugs -6- on both sides, while the sheets -2- have similar lugs -7-. Optionally, the lugs -6- and -7- have prolongations -6a- and -7a-, respectively.

It is envisaged that at least the lugs -6, 7- and, optionally, their prolongations -6a, 7a-, together with the zones of the sheets -1, 2- immediately adjacent to the respective lugs, be glued. Then the application of these lugs and, optionally, their prolongations, against the chamfered edges -4- of the moulding core -1- and against the sides -5- of same is carried out, using counter-moulds, rollers or any other similar mechanism (not shown). Finally the body obtained is removed from the moulding core -1-, and constitutes the box, whose par-

ticular feature consists in it being provided with reinforced chamfered edges -8-, formed by the lugs -6, 7- glued together, which alternate with sides -9- (Figure 7).

If the lugs -6, 7- have prolongations -6a, 7a-, the sides -9- will also be reinforced by said prolongations glued beside the chamfered edges -8-.

In any case, between the chamfered edges -8- of the box are formed pairs of cant edges -8a- which lend the box a great stiffness, so that it withstands the compression stresses to which it will be subjected during utilization.

Claims

1. A method for manufacturing cardboard boxes, which consists in starting from separate sheets (1, 2) with lugs (6, 7) on the sides and flaps at the ends, facing each other two by two; these sheets are applied onto the external faces of a long mandrel (3) having a cross-section equivalent to that of the boxes to be obtained and along which the various steps of the method are carried out to provide a prismatic body whose bases are provided with open flaps and whose edges are reinforced by folded lugs glued to the cant edges of the sides of the body, characterized in that the lugs (6, 7) which project from the sides of the sheets (1, 2) are applied and joined together over chamfered edges (4) provided on the mandrel (3) to form a chamfer (8) and two cant edges (8a) between each pair of sheets; these chamfered edges are situated between two adjacent sides (5) of the mandrel (3).
2. A method as claimed in claim 1, characterized in that at least one of the pairs of sheets (1, 2) from which the box is obtained presents prolongations (6a) from the respective lugs (6), said prolongations being applied and joined to a zone of the adjacent sheet, immediately beside the chamfered edges (4) upon which the lugs in question are applied.
3. A method as claimed in claim 1, characterized in that all the sheets (1, 2) from which the box is obtained present prolongations (6a, 7a) from their respective lugs (6, 7), said prolongations being applied and joined to a zone of the adjacent sheet, immediately beside the chamfered edges (4) upon which the lugs in question are applied.
4. A cardboard box, made from separate sheets (1, 2) with lugs (6, 7) on the sides and flaps at the ends, facing each other two by two; these sheets being formed to provide a prismatic body whose bases are provided with open flaps and whose side edges are reinforced by folded lugs glued to the edge portions of the sides of the body, characterized in that the lugs (6, 7) which project from the sides of the sheets (1, 2) are joined together so as to form chamfers (8) along the sides (9) of the box and in

that the chamfers (8) along the sides (9) of the box, on which are superimposed and glued the folded lugs (6, 7) of the adjacent sheets, form two cant edges (8a) between each pair of sheets.

5. A box according to claim 4, characterized in that at least one of the superimposed lugs (6) forming the chamfered edges (8) of the box presents a prolongation (6a) folded and glued onto the adjacent side, beside the chamfered edges (8).
6. A box according to claim 4, characterized in that all the superimposed lugs (6, 7) which form the chamfered edges (8) of the box present corresponding prolongations (6a, 7a) folded and glued onto the adjacent side, beside the chamfered edges.

Patentansprüche

1. Verfahren zum Herstellen von Pappbehältern, welches von separaten Blättern (1, 2) mit Ansätzen (6, 7) auf den Seiten und Klappen an den Enden, welche einander jeweils zu Zweit gegenüberstehen, ausgeht; wobei diese Blätter auf die äußeren Flächen einer langen Aufspanneinrichtung (3), die einen Querschnitt, der gleich dem der zu erzeugenden Behälter ist, aufweist und an der die verschiedenen Schritte des Verfahrens zur Erzeugung eines prismenhaften Körpers, dessen Basen mit offenen Klappen versehen sind, und dessen Ränder durch gefaltete Ansätze verstärkt sind, welche an die Kantränder der Seiten des Körpers geklebt sind, ausgeführt werden, dadurch gekennzeichnet, daß die Ansätze (6, 7), die von den Seiten der Blätter (1, 2) vorstehen, über abgeschrägte Ränder (4), die auf der Aufspanneinrichtung (3) vorgesehen sind, zur Bildung einer Abschrägung (8) und zweier Kantränder (8a) Zwischen jedem Paar von Blättern angelegt und verbunden werden; wobei diese abgeschrägten Ränder zwischen zwei benachbarten Seiten (5) der Aufspanneinrichtung (3) liegen.
2. Verfahren nach Anspruch 1, dadurch gekennzeichnet, daß zumindest eines der Paare von Blättern (1, 2), aus denen der Behälter hergestellt wird, Verlängerungen (6a) von den jeweiligen Ansätzen (6) aufweist, wobei die Verlängerungen an eine Zone des benachbarten Blatts unmittelbar neben den abgeschrägten Rändern (4), an die die in Frage stehenden Ansätze angelegt werden, angelegt und damit verbunden werden.
3. Verfahren nach Anspruch 1, dadurch gekennzeichnet, daß alle Blätter (1, 2), aus denen der Behälter hergestellt wird, Verlängerungen (6a, 7a) von ihren jeweiligen Ansätzen (6, 7) aufweisen, wobei die Verlängerungen an eine Zone des benachbarten Blatts unmittelbar neben den abgeschrägten Rändern (4), an die die in Frage stehenden Ansätze

angelegt werden, angelegt werden und damit verbunden werden.

4. Kartonbehälter, hergestellt aus separaten Blättern (1, 2) mit Ansätzen (6, 7) auf den Seiten und Klappen an den Enden, welche einander jeweils zu zweit gegenüberstehen; wobei diese Blätter derart gestaltet sind, daß sie einen prismenhaften Körper bilden, dessen Basen mit offenen Klappen versehen sind und dessen Seitenrandabschnitte durch gefaltete Ansätze verstärkt sind, die an die Randabschnitte der Seiten des Körpers geklebt sind, dadurch gekennzeichnet, daß die Ansätze (6, 7), welche von den Seiten der Blätter (1, 2) vorstehen, zur Bildung von Abschrägungen (8) entlang der Seiten (9) des Behälters verbunden sind, und daß die Abschrägungen (8) entlang der Seiten (9) des Behälters, auf denen die gefalteten Ansätze (6, 7) der benachbarten Blätter überlagert und verklebt sind, Kantränder (8a) zwischen jedem Paar von Blättern bilden.
5. Behälter nach Anspruch 4, dadurch gekennzeichnet, daß zumindest einer der überlagerten Ansätze (6), welche die abgeschrägten Ränder (8) des Behälters bilden, eine Verlängerung (6a) aufweist, die auf die benachbarte Seite neben den abgeschrägten Rändern (8) gefaltet und geklebt ist.
6. Behälter nach Anspruch 4, dadurch gekennzeichnet, daß alle überlagerten Ansätze (6, 7), welche die abgeschrägten Ränder (8) des Behälters bilden, entsprechende Verlängerungen (6a, 7a) aufweisen, die auf die benachbarte Seite neben den abgeschrägten Rändern geklebt sind.

Revendications

1. Procédé pour fabriquer des boîtes en carton, qui consiste à commencer à partir de feuilles séparées (1, 2) avec des talons (6, 7) sur les côtés et des rabats aux extrémités, en regard les uns avec les autres deux à deux, ces feuilles sont appliquées sur les surfaces extérieures d'un long mandrin (3) ayant une section transversale équivalente à celle des boîtes à obtenir et le long duquel les diverses étapes du procédé sont effectuées pour fournir un corps prismatique dont les bases sont munies de rabats ouverts et dont les bords sont renforcés par des talons pliés collés aux bords en arête des côtés du corps, caractérisé en ce que les talons (6, 7) qui s'avancent à partir des côtés des feuilles (1, 2) sont appliqués et joints ensemble sur des bords chanfreinés (4) prévus sur le mandrin (3) pour former un chanfrein (8) et deux bords en arête (8a) entre chaque paire de feuilles, ces bords chanfreinés sont situés entre deux côtés adjacents (5) du mandrin (3).
2. Procédé selon la revendication 1, caractérisé en ce qu'au moins une des paires de feuilles (1, 2) à partir desquelles la boîte est obtenue présente des prolongements (6a) à partir des talons (6) respectifs, lesdits prolongements étant appliqués et joints à une zone de la feuille adjacente immédiatement à côté des bords chanfreinés (4) sur lesquels les talons en question sont appliqués.
3. Procédé selon la revendication 1, caractérisé en ce que toutes les feuilles (1, 2) à partir desquelles la boîte est obtenue présentent des prolongements (6a, 7a) à partir de leurs talons (6, 7) respectifs, lesdits prolongements étant appliqués et joints à une zone de la feuille adjacente, immédiatement à côté des bords (4) chanfreinés sur lesquels les bords en question sont appliqués.
4. Boîte en carton, réalisée à partir de feuilles séparées (1, 2) avec des talons (6, 7) sur les côtés et des rabats aux extrémités, en regard les uns les autres deux à deux, ces feuilles étant mises en forme pour fournir un corps prismatique dont les bases sont munies de rabats ouverts et dont des bords latéraux sont renforcés par des talons pliés collés aux parties des bords des faces du corps, caractérisée en ce que les talons (6, 7) qui s'avancent à partir des côtés des feuilles (1, 2) sont joints ensemble de manière à former des chanfreins (8) le long des côtés (9) de la boîte, et en ce que les chanfreins (8) le long des côtés (9) de la boîte, sur lesquels sont superposés et collés les talons pliés (6, 7) des feuilles adjacentes, forment deux bords en arête (8a) entre chaque paire de feuilles.
5. Boîte selon la revendication 4, caractérisée en ce qu'au moins un des talons superposés (6) formant les bords chanfreinés (8) de la boîte présente un prolongement (6a) plié et collé sur le côté adjacent, à côté des bords chanfreinés (8).
6. Boîte selon la revendication 4, caractérisée en ce que tous les talons superposés (6, 7) qui forment les bords chanfreinés (8) de la boîte présentent des prolongements correspondants (6a, 7a) pliés et collés sur le côté adjacent, à côté des bords chanfreinés.



