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(54) A manufacturing process of folders used as document holders

(57) A manufacturing process of folders (10) used as document holders.

The copyholder or fileholder folders (10) are made of recycled plastic material, whilst the bending areas (30) of the folder (10), obtained on the sides of the folder back (20), are manufactured through an extrusion

phase followed by a calendering phase.

In addition to the extrusion, two castings of soft plastic material are coextruded, inserted and amalgamated with the rigid plastic material to form two lines in order to ease the bending (30) of the folder (10) and to form two elastic hinges.

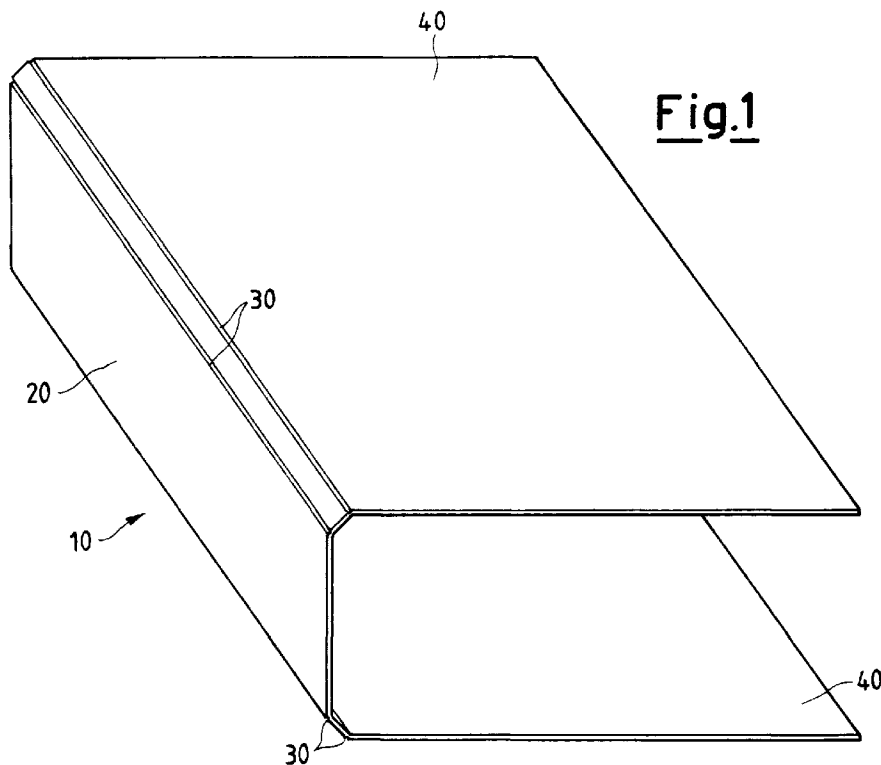


Fig.1

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Description

The present invention refers to a manufacturing process of fileholder folders for documents.

Currently, the plastic materials are very much used in the preparation and in the binding of catalogues, brochures, booklets, fileholders, covers, folders, copyholders for documents and for other stationery material.

In particular, the fileholders and the copyholders of documents are generally made of paperboard (the so called "pressboard") or of plasticized paperboard, realised for ornament or protection purposes; in such cases, the material is cut according to a die cut piece having defined dimensions (usually, a rectangle is obtained with dimensions suitable to hold letter size documents); then, the so obtained die cut piece is bent along two or more lines parallel to the shorter side of the rectangle in order to realise the folder back. The bending is realised through a traditional creasing process of the die cut paperboard. However, such a manufacturing process has several disadvantages; first of all, due to the fact that the fileholder folders are frequently opened and closed, the material is subject to quick wear and breaking in correspondence to the creasing lines, where, in addition, dust and soil are collected. Finally, such an operation deforms, because of time wear, the entire die cut paperboard, causing the undesired result of producing twists and bends of the covers.

Then, a purpose of the present invention is to disclose a manufacturing process of the document folders, which overcomes the above mentioned disadvantages, or to disclose a manufacturing process of the document folders, which realises a product suitable to last without breakings or deformations due to wear.

Another purpose of the present invention is to realise the above mentioned process in a simple and inexpensive way, in order to use it within an existing system, without any need to use complex or particularly expensive technologies.

Said purposes are obtained through a manufacturing process of the document folders according to claim 1, herein mentioned for reference.

Conveniently, the manufacturing process of the documents folders, according to the present invention, comprises the use of recycled plastic material and an extrusion phase, completed by a calendaring phase, instead of the creasing phase.

In addition to the extrusion, two soft plastic material castings are coextruded, inserted and amalgamated with the rigid plastic material to form two lines in order to ease the folder bending and to form two, more elastic, hinges.

Such operations are performed to realise two or more (than two) lines parallel to the shorter side of the die cut piece; the material can be bent along said lines in order to realise the folder back.

Further purposes and advantages of the present invention shall become clear from the following descrip-

tion and from the accompanying drawings, provided as a non limiting example, in which:

- Figure 1 is a perspective view of a document folder realised according to the process of the present invention;
- Figure 2 is a sectional perspective view of a portion of the die cut piece used to obtain the document folder of Figure 1.

With reference to said Figures, numeral 10 generally indicates a document folder, numeral 20 indicates the back of the folder 10, whilst numeral 40 indicates the two cover surfaces, which define the space wherein the documents are placed.

Further, numeral 30 indicates a plurality of bending lines, which are obtained on a die cut piece, which has been subjected to the manufacturing process of the present invention.

The die cut piece of the folder 10 is shaped to realise the cover 40 and the back 20. A die cut piece of plastic material (polyolefins, halogenated polymers, polyesters, polyamides, copolymers) of defined size is used to manufacture a fileholder and/or copyholder folder (10) for documents; usually the die cut piece has a rectangular shape with such dimensions as to obtain the two surfaces of the cover 40 of the folder 10 (suitable to hold, inside, the documents which usually have a standard size) and the folder back 20.

In one preferred, non limiting embodiment of the present invention, the plastic material is made of recycled plastic material. The creasing lines 30, along which the bendings are obtained, may be two parallel lines, also parallel to the shorter side of the rectangular die cut piece, said lines are spaced by a defined distance which is the width of the folder back 20 and, therefore, the thickness of the folder 10.

Alternatively, the creasing lines 30 can be four, in a two by two arrangement, with a more gradual shape of the corners of the folder back 20.

The creasing of the lines 30 is obtained by means of a traditional extrusion process of the die cut piece of recycled plastic material, whereby a section bar, or a similar product, is obtained with a cross section shape having the same shape of the opening through which the plastic material has been put through; obviously to achieve such a result, it will be necessary that the plastic material is in such conditions that it has a plasticity level suitable to complete the process. In addition to the extrusion, two castings of soft plastic material are coextruded, inserted and amalgamated with the rigid plastic material to form two parallel lines 30.

This will ease the bending of the folder 10 and will form two, more elastic hinges, in comparison with traditional folders 10; in a non limiting example of the preferred embodiment, said elastic hinges may be coloured with the same or different colours, in order to differentiate and make unique the product in respect to the known

folders 10.

A further traditional calendering process completes the manufacturing operations; the main purpose is to provide the material with a continuous sheet shape, with its final dimensions, with the requested surface finish and with those characteristics of handling and stiffness, which are essential features of thin sheet laminated materials.

The features of the manufacturing process of folders (which is the subject of this invention) are clear, as well as the resulting advantages.

In particular these advantages are:

- quickness, accuracy and stability of the process;
- easiness of application due to the use of traditional equipment, according to known methods;
- low costs in comparison to the known art. Finally, it is understood that several changes can be introduced in the manufacturing process of document folders of the present invention without leaving the innovation principles of the invention, as well as it is understood that, in the embodiment of the invention, the materials, the shapes and the dimensions of the shown details may be different according to needs and that they may be substituted by technically equivalent materials, shapes and dimensions.

Claims

1. A manufacturing process of folders (10) for document holders, each of said folders (10) is made of at least one, substantially rectangular, die cut piece of plastic material, which is realised in order to obtain a cover (40), comprising at least two facing elements and a back (20), said cover (40) and said back (20) are obtained by bending said die cut piece along at least one creasing line (30) parallel to the shorter side of said die cut piece, characterised in that said creasing line (30) is obtained through the following manufacturing phases:
 - extrusion of at least one portion of said die cut piece, in order to realise a section bar, or the like, with a cross section shape having the shape of said creasing line (30) in the required position;
 - subsequent calendering of said portion of the die cut piece to complete the manufacturing process, in order to give the material the required dimensions and a continuous sheet shape with a surface finish and stiffness.
2. A process according to claim 1, characterised in that subsequently and additionally to said extrusion of at least a portion of said die cut piece and immediately before said calendering operation, a manufacturing phase is executed wherein at least two castings of soft plastic material are coextruded, inserted and amalgamated with rigid plastic material, and said castings form at least two parallel lines (30), positioned in correspondence to at least two of said creasing lines (30), in order to ease the bending of said folder (10) and to form at least two elastic hinges.
3. A process according to claim 2, characterised in that said elastic hinges are coloured with the same colour.
4. A process according to claim 2, characterised in that each one of said elastic hinges is coloured with a different colour, in order to differentiate and make unique said folder (10).
5. A process according to claim 1, characterised in that said die cut piece is made of recycled plastic material.
6. A process according to claim 1, characterised in that there are four of said creasing lines (30), parallel to each other and parallel to the shorter side direction of said die cut piece, said lines are coupled in a two by two arrangement such that the distance between said two close lines (30) is less than the width of said folder back (20), each pair of the close lines (30) is provided at a corresponding end of said folder back (20).
7. A folder (10), used as a document holder, comprising at least a substantially rectangular die cut piece made of plastic material and realised to obtain a cover (40), having at least two facing elements and a back (20), said cover (40) and said back (20) are obtained by bending said die cut piece along at least one creasing line (30) parallel to the shorter side direction of said die cut piece, characterised in that said creasing line (30) is obtained through the following manufacturing phases:
 - extrusion of at least one portion of said die cut piece, in order to realise a section bar, or the like, with a cross section shape having the shape of said creasing line (30) in the required position;
 - a manufacturing phase wherein at least two castings of soft plastic material are coextruded, inserted and amalgamated with rigid plastic material, and said castings form at least two parallel lines (30), positioned in correspondence to at least two of said creasing lines (30), in order to ease the bending of said folder (10) and to form at least two elastic hinges;
 - subsequent calendering of said portion of the die cut piece to complete the manufacturing process, in order to give the material the re-

quired dimensions and a continuous sheet shape with a surface finish and stiffness.

8. A folder (10) according to claim 7, characterised in that said elastic hinges are coloured with the same colour. 5
9. A folder (10) according to claim 7, characterised in that each one of said elastic hinges is coloured with a different colour, in order to differentiate and make unique said folder (10). 10
10. A folder (10) according to claim 7, characterised in that there are four of said creasing lines (30), parallel to each other and parallel to the shorter side direction of said die cut piece, said lines are coupled in a two by two arrangement such that the distance between said two close lines (30) is less than the width of said folder back (20), each pair of the close lines (30) is provided at a corresponding end of said folder back (20). 15
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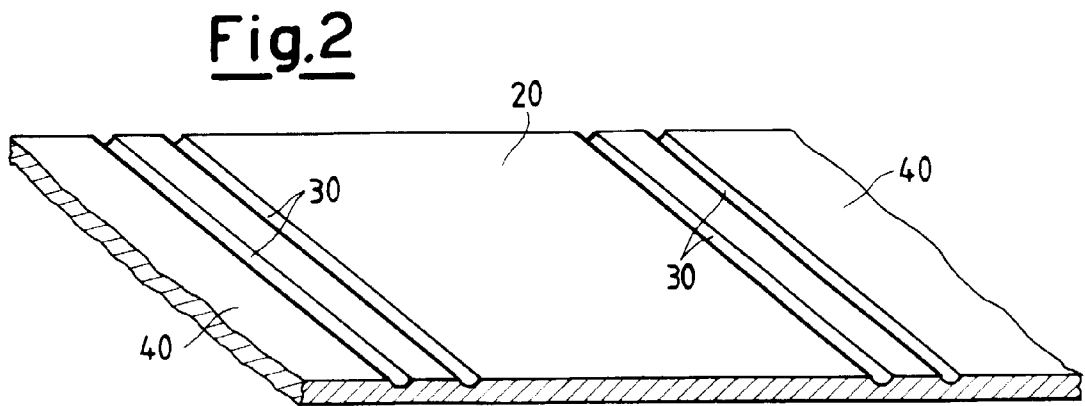
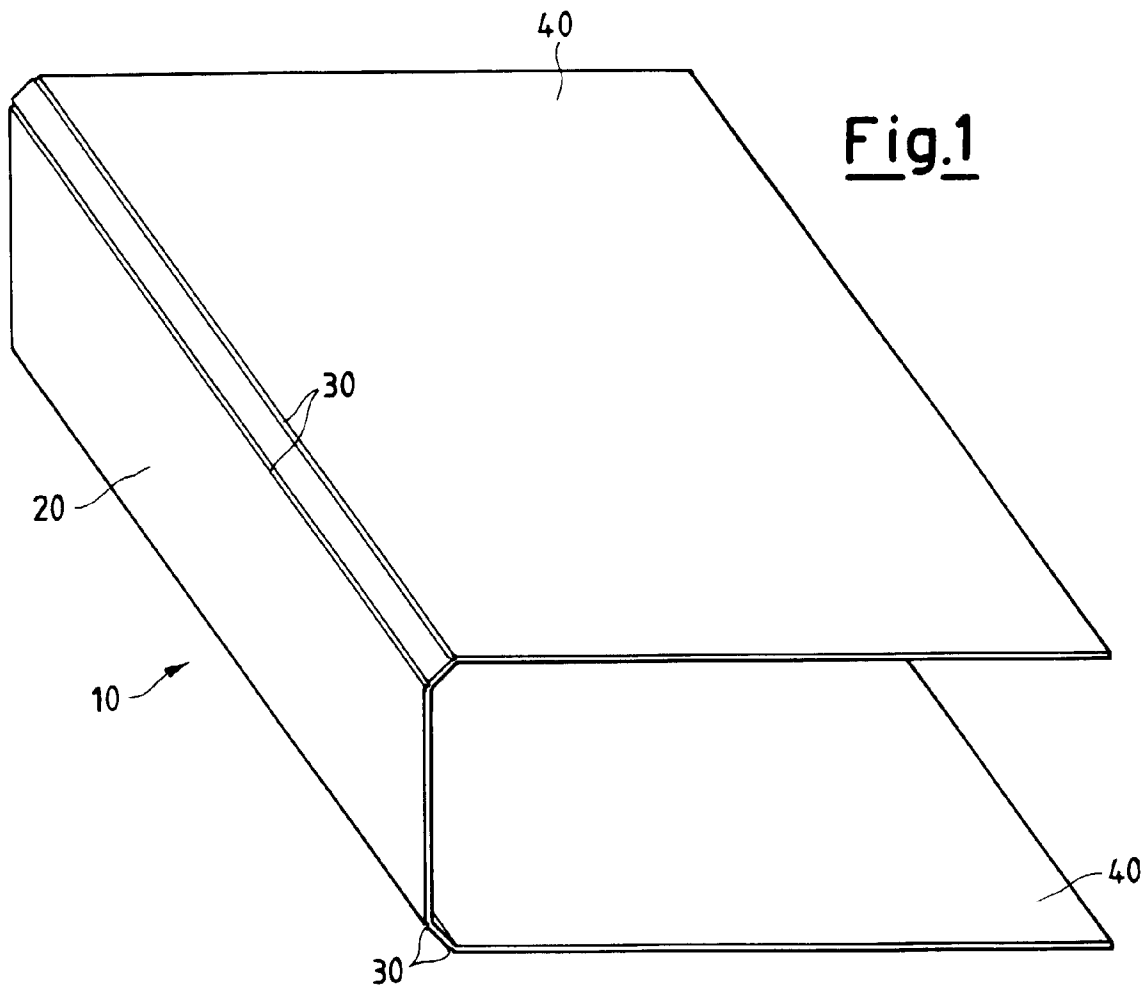
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EUROPEAN SEARCH REPORT

Application Number
EP 98 20 1098

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	GB 1 054 185 A (WALTER LENNARTZ)	1	B42C7/00
Y	* the whole document *	2,6,7,10	B42F13/00
Y	DE 33 04 480 C (KING JIM) 16 February 1984 * the whole document *	2,7	
X	FR 2 683 485 A (DOTTEL) 14 May 1993 * page 6, line 9 - line 19; figure 5 *	1	
Y	GB 1 214 477 A (FOULEY PLASTICS) 2 December 1970 * the whole document *	6,10	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B42C B42F B42D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 16 June 1998	Examiner Loncke, J
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