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(71) Applicant: **INTER-FOLIA Sp. z o.o.**
95-200 Pabianice (PL)

(72) Inventor: **Wadowski, Dariusz Piotr**
95-200 Pabianice (PL)

(74) Representative: **Rozga, Blazej**
Kancelaria Patentowa
Ul. Banachiewicza 66
91-162 Łódź (PL)

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(54) **METHOD FOR PRODUCING A REINFORCEMENT OF PUNCHED FRAGMENT OF PLASTIC POCKET FOR DOCUMENTS**

(57) The method of producing reinforced perforated edge of plastic pocket used to hold paper documents designed for attaching to a binder or file holder, characterized by the fact that the pocket for documents and the

strip of perforated margin are made from one piece of polypropylene film. The edge strip of the foil - the margin contains sealed coloured or colourless piece of film.

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Description

[0001] The subject of the invention is the method for producing a reinforcement of punched part - the margin of plastic pocket, which is used in the manufacturing of plastic pocket used to hold documents in office work.

[0002] The well-known Polish utility models No. RWU 63173 and No. RWU.68113 - pocket for documents, concern the ways of documents storing and do not relate to the technology of producing plastic pockets for storing and protecting mostly paper documents in binders and file holders.

[0003] The patent application US2003165644 relating to the way of attachment of documents protected by the pocket shows that separate stiffening element of the margin is attached by the heat-activated adhesive and additionally sealed to a sheet of the transparent pocket.

[0004] Whereas the pocket for the paper documents according to the patent application WO9834797 and the patent EP1007373 has a perforated part of the margin made as a separate part of the pocket welded with a transparent cover. Also the description of the application No. WO0238369 shows that the perforated strengthening strip is attached to one of the edges of the transparent pocket.

[0005] So far, the technology used to produced plastic pocket for documents consisted in inserting mostly white film strip into the strip of the perforated margin to provide reinforcement of the margin and then welding of strengthening element with transparent cover. The known joining solutions do not provide durable connection and they high resistance of plastic margin of the pocket attached to the binder.

[0006] The technology according to the invention has not been used so far and the method applied in the invention has not been described in the patent and scientific literature.

[0007] The essence of the invention is the method of producing a reinforced punched part of plastic pocket for paper documents, designed for attaching in a binder or a file holder, where a pocket for documents and a punched margin strip are made from one piece of polypropylene film. The edge of the film strip can be coloured - dyed in the process of film casting. Then the innovating inward folding of the margin takes place, at the same time the reinforcement of the perforated part of the pocket for document is formed. The perforated margin strip is made in any colour or is colourless.

[0008] The solution eliminates additional product item, which is the strengthening strip inserted into pocket margin in so far known solutions, with adequate durability and resistance of the pocket for documents. The product will be made of one kind of material and of one piece of film. A strip of coloured or colourless film first will be sealed directly into the film ribbon prepared, then folded and welded to form a coloured or colourless reinforcement of perforated edge of transparent or orange peel plastic pocket.

[0009] The method according to the invention consists in durable and quick joining of one piece of film by means of welding technique using adequate half-products and specific order as well as parameterisation of the particular operations. An important assumption of the technology to be implemented is to retain proper resistance of the product, especially the perforated part, and its functional properties ie. possibility to improve documents segregation and identification by colour sorting of documents stored in the pockets - different groups of documents stored in the pockets with different colour of the perforated edge.

[0010] This solution is simpler than the known solutions, which involve the insertion of a reinforcing coloured strip, mainly white, or colouring the pocket on the line for welding.

[0011] As a result of application the technology according to the invention, a cheaper product with enhanced functionality is obtained.

[0012] The subject of the invention is shown in the embodiment in the form of a description of production method of the strengthened perforated part of the plastic pocket for documents and in the form of four illustrative drawings, in which fig. 1 shows the folding of the edge of the coloured and colourless film in a general view, fig. 2 illustrates the film folding in the half-sleeve form in a general view, fig. 3 shows a film prepared for welding, perforating and cutting in a general view, fig. 4 is a general view of a finished pockets for documents.

[0013] The technology for producing plastic punched pocket for documents is as follows: determining the percentage composition of two types of polypropylene granulate which form the outer and the inner layers of the film is the first step of the procedure. Besides the base material ie. homopolymer (inner layer) and copolymer (outer layer), other additives will be used to modify film quality as well as dye. Individual components or components mixture will be delivered to the dispenser containers, from which automatically, in specified amounts will be charged to the heating and mixing systems.

[0014] The next step is the plasticization of polypropylene granulate mixtures, which consists in heating of the polypropylene mixtures to the liquid state. The liquid polypropylene will be pressed into the pouring head and then poured out on to the cooling roller in the form of a liquid film ribbon. The film ribbon will be given the required initial parameters ei. thickness, total width, width of coloured strips. A film ribbon with coloured longitudinal strips, shown in fig. 1, will be poured out onto the cooling roller and formed by vacuum generated by the vacuum pumps. It consists of coloured or colourless part 1, which is the part of the perforated margin as well as colourless film 2. Fig. 1 also shows the way of folding of coloured or colourless edge of the film to the appropriate width, to form coloured or colourless margin. In further proceeding, the film ribbon is folded exactly in half of its width. A film ribbon with a folded and pressed edge and a margin forms a half-sleeve. Its width corresponds to the width of

the finished product - the pocket. Fig. 2 illustrates the method of folding a film strip into a half-sleeve.

[0015] In the new technology, an additional strengthening strip will be replaced by a folded edge of the film (margin), which meets all the durability parameters at the pocket punching point. 5

[0016] Thus prepared layered sleeve of the film will be welded to form a pocket closed along longer side and the lower transverse part and open in the upper part. Fig. 3 illustrates the film ribbon after folding prepared for welding, punching and cutting. The film ribbon consists of coloured or colourless part 1 of the perforated margin and colourless film 2. 10

[0017] Multi-hole punching tools in a continuous cycle produce round and oval holes along the folded sleeve margin. 15

[0018] The punching will be run symmetrically between places welded crosswise.

[0019] The punching of the margin is applied to insert the pocket with documents into the different types of binders or file holders. 20

[0020] The film ribbon after assembling procedure - folding, welding and punching, will be subjected to cutting into single pockets procedure.

[0021] The general view of the finished plastic pocket for documents is shown in fig. 4, in which the pocket consists of coloured or colourless part 1, being part of the perforated margin with the holes for attaching into the file holder 3, and colourless film 2. The film elements were brought together by two parallel longitudinal welds 4 and one crosswise weld 5. 25 30

[0022] The finished pockets can be marked - stamped. Thermal stamping -marking devices will allow to stamp on the plastic sleeve any mark identifying product, e.g. company logo. Thermal imprint can be performed in colourless technology or using special colouring tapes in any colour. 35

Claims 40

1. The method for producing punched part of a foil pocket for documents designed for attaching into binder or file holder, **characterized by** the fact that the pocket for documents and the strip of perforated margin are made from one piece of polypropylene film. 45
2. The method according to the claim 1, distinguished by that it comprises on the edge of the film strip coloured or colourless part of the film - margin. 50
3. The method according to the claim 1, distinguished by that the perforated margin of the pocket is made in any colour or is colourless. 55

Fig. 1

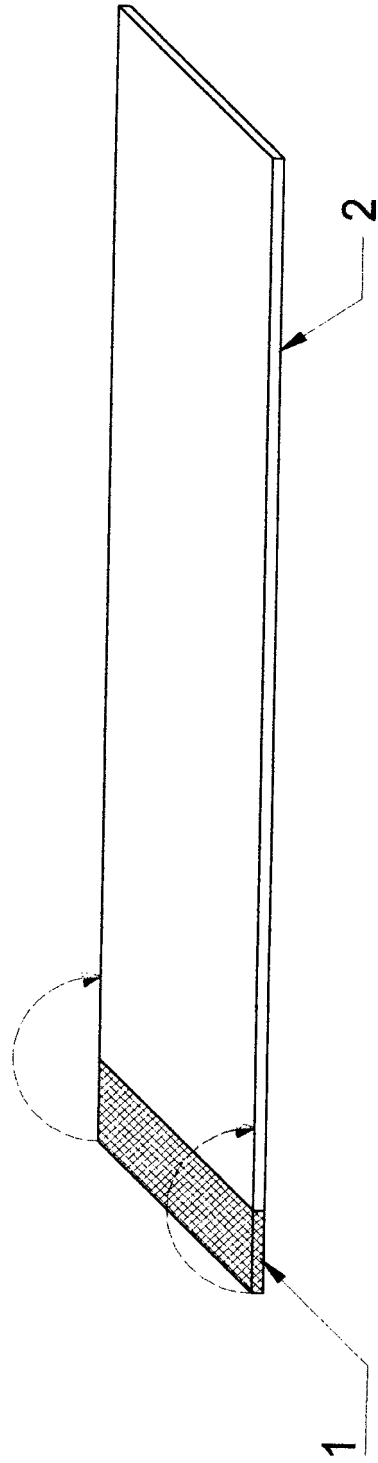


Fig. 2

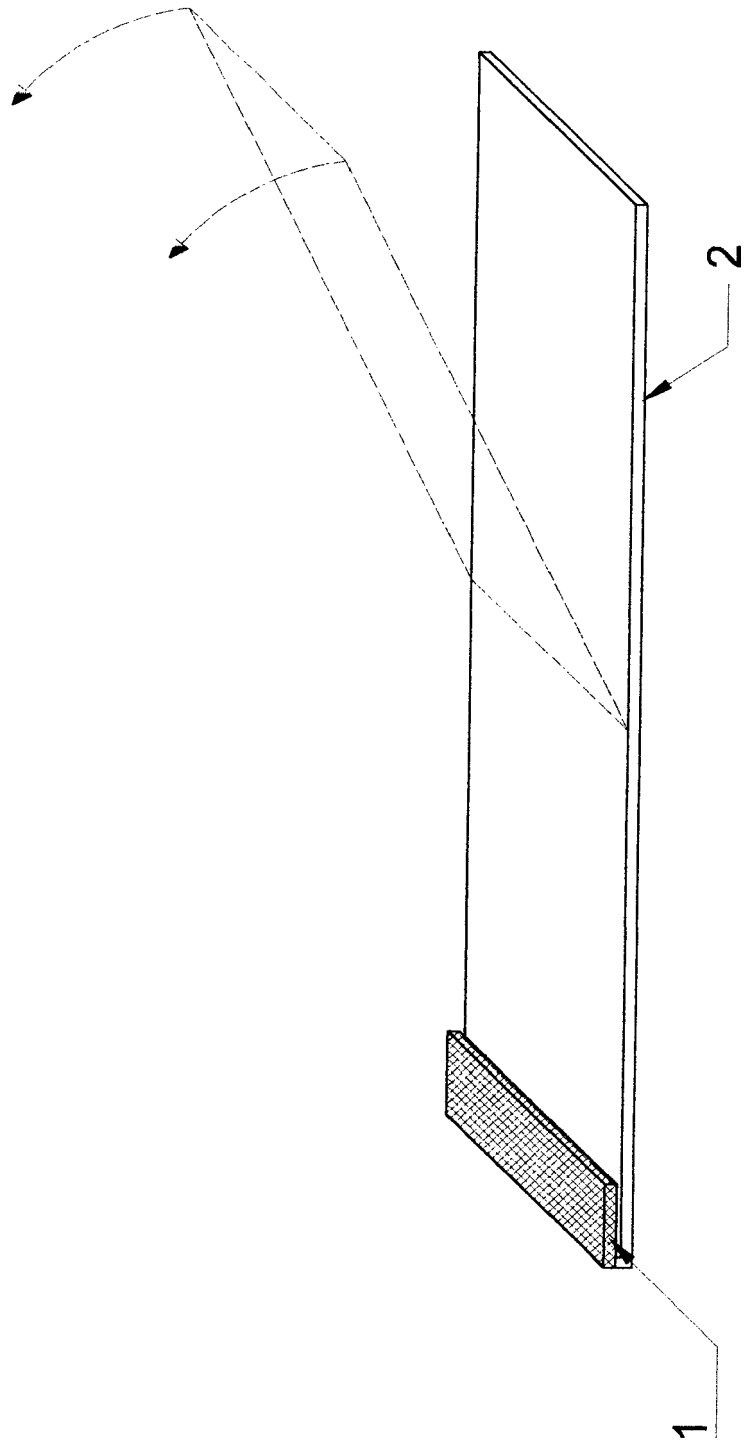


Fig. 3

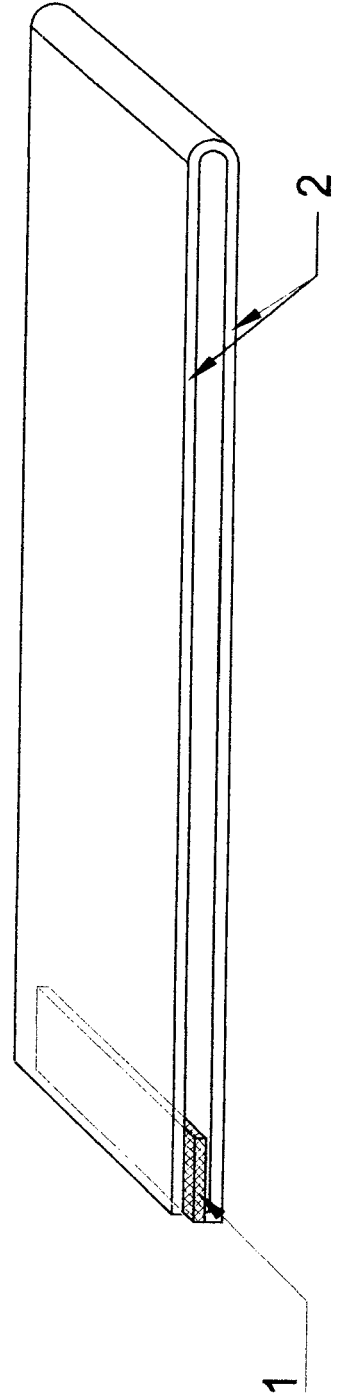
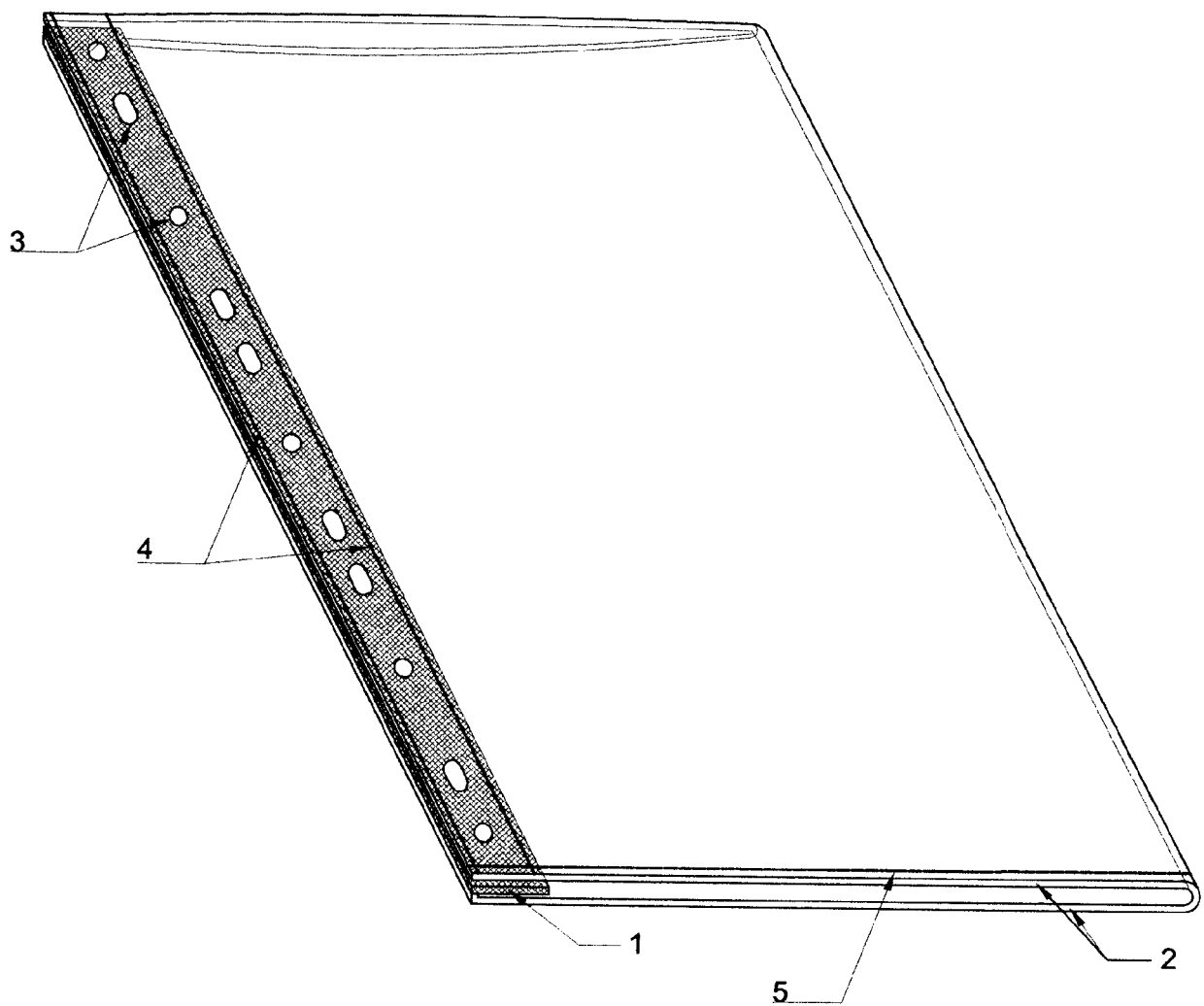


Fig. 4





EUROPEAN SEARCH REPORT

Application Number
EP 17 46 0035

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 366 928 A1 (BEAUTONE CO LTD [TW]) 3 December 2003 (2003-12-03) * paragraphs [0013], [0022]; claims 7,16; figures 1-8 *	1-3	INV. B42F7/02
X	US 4 784 508 A (SHANNON BRIAN M [US]) 15 November 1988 (1988-11-15) * claim 9; figure 1 *	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			B42F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 12 March 2018	Examiner Callan, Feargel
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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The members are as contained in the European Patent Office EDP file on
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12-03-2018

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EP 1366928	A1	03-12-2003	NONE

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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