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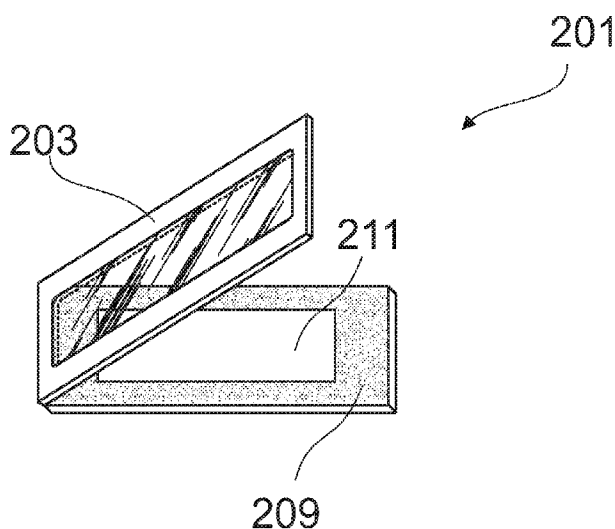
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(54) Title: LABEL PROTECTOR AND PROCESS OF MANUFACTURE THEREOF

Fig. 7



(57) Abstract: Label protector and a process of manufacture thereof, which can be used for protecting identification means for displaying; advertising; signalling; labelling and other applications. The problem to be solved is to obtain an instant display label protector with a hermetic enclosure and respective protection against external agents, but with a very simple constructive arrangement, aesthetical appearance, resistance against bad weather and shocks, versatile and low-costing. In one aspect the problem is solved by a label protector basically comprising a foldable plate with a groove, an adhesive coating and a peelable protective film; and additionally including a silk screened layer. In another aspect the problem is solved by a process of manufacture the label protector.

WO 2009/007791 A1

Description

LABEL PROTECTOR AND PROCESS OF MANUFACTURE THEREOF

Technical Field

- [1] The present invention relates to a label protector and a process of manufacture thereof, which can be used for protecting identification means for displaying; advertising; signalling; labelling and other applications.

Background Art

- [2] Identification tags, label protectors and process of manufacture thereof are well known in the prior art. Several examples are described in BRMU8301090-4, GB1527263, GB2357059A, GB2382810A, US2671678, US2783172, US3077683, US3148468, US3153868, US3486257, US3586160, US3854229, US4028824, US4446183, US4699833, US4744161, US4779367, US4865352, US4951970, US5083979, US5139836, US5283093, US5659987, US6098329 and US7195689.

Disclosure of Invention

Technical Problem

- [3] The identification tags, label protectors and processes of manufacture thereof that are known in the prior art have, nevertheless, several disadvantages. For instance, label protectors such as those embodiments described in US6098329, besides requiring complex thermoforming techniques with expensive custom made mould, do not generally provide a hermetic enclosure and respective protection against external agents such as water, chemicals and the like.

Technical Solution

- [4] To solve the related technical problems and other disadvantages not mentioned herein, certain embodiments of the present invention are directed to a label protector characterized by comprising a generally transparent plate with an outside section having a generally linear groove in the midsection of the plate; an inside section having a front half face, a back half face and a straight fold line between the front half face and the back half face, wherein the straight fold line extends on the inside section along the outside section groove; and wherein the front half face and the back half face are capable of being folded to form an inner region between the front half face and the back half face; an adhesive coating with an under side, an upper side and a peelable protective film, wherein the under side is adhered to at least part of the inside section of the generally transparent plate; and, the peelable protective film covers the upper side, whereby after removing the peelable protective film it is possible to place a label over at least part of the inside section and fold the front half face and the back half face

to a fastened position enclosing the inner region between the front half face and the back half face. The adhesive coating can be a double sided adhesive tape, but other adhesive coatings can be used.

[5] The label protector further comprises a silk-screened layer between the inside section of the transparent plate and of the under side of the adhesive coating, covering at least part of the inside section of the transparent plate.

[6] Another exemplary embodiment of the present invention is directed to a process of manufacturing a label protector comprising the steps of laminating the under side of an adhesive coating over the inside section of a generally transparent lamina, maintaining the peelable protective film on the upper side of the adhesive coating; pre-cutting a set of grooves in the outside section of the translucent lamina and in the same step cutting the lamina in separate plates, whereby each groove is essentially in the midsection of each plate.

Advantageous Effects

[7] The present invention has several advantages over the prior art. Firstly, when the inner region between the front half face and the back half face of the plate are folded together with the adhesive coating, a label placed therein is enclosed in an essentially hermetic enclosure, protected against external agents. The pre-cut groove in the midsection of the plate allows a user to fold the protector with their own hands, without any special machinery. Therefore, this invention provides an instant display label protector with a very simple constructive arrangement, with an aesthetical appearance, resistance against bad weather and shocks, versatile and low-costing.

[8] Furthermore, through this invention, it is possible to improve the finishing of the label protector and, in addition, design personalized ornamental patterns. This can be advantageously obtained by silk-screening a layer with the desired ornamental pattern between the plate and the adhesive coating; or by directly silk-screening the adhesive coating with the desired ornamental pattern between. As the label is generally an opaque means and the plate is a transparent means, when one displaces manually the label over the plate, it is very hard to displace it aligned, because the visual impact of the nonalignment is amplified by the different colours of the plate and of the label. As this invention allows silk-screening an opaque means over the transparent lamina, the undesired problem of non-alignment can be solved because when the colour of the opaque means is equal or similar to the colour of the label, the non-alignment appearance is diminished.

[9] What is more, the invention can also result in an instant label protector that is substantially rigid. In some applications, it is very desirable or even indispensable the use of substantially rigid tags. In such cases the user needs to have a mobile label printer that may print on rigid labels, which is very expensive; or needs to order a pre-

fabricated metal or similar tag, with the information pre-printed. Through this invention the user overcomes this problem, because the instant display label protector can be made of a substantially rigid material, and the information may be printed on site with a common mobile printer or even written by hand, what allows higher versatility.

[10] The process of manufacturing the label protector is also very advantageous because it does not require complex steps or heavy machinery for producing the label protectors in large scales. Furthermore, by pre-cutting the groove and cutting the lamina and separating the plates in the same step, it is possible to significantly reduce the production time.

[11] These and other features, aspects and advantages of the present invention will become better understood with reference to the following description and appended claims.

Description of Drawings

[12] The accompanying drawings are not intended to be drawn on scale. In the drawings, each identical or nearly identical component that is illustrated in various figures is represented by a like numeral. For purposes of clarity, not every component may be labelled in every drawing.

[13] Fig. 1 is a perspective view of a label protector plate according to one embodiment of the invention.

[14] Fig. 2 is an enlarged side view of the cross section of the plate groove.

[15] Fig. 3 is an enlarged side view of the cross section of the label protector comprising the plate with an adhesive coating and a peelable protective film.

[16] Fig. 4 is a perspective view of the label protector, wherein a small part of the peelable protective film is peeled off.

[17] Fig. 5 is a perspective view of the label protector, wherein half of the peelable protective film is peeled off and a label is positioned on the back half face of the inside section of the plate.

[18] Fig. 6 is a perspective view of a label protector of another embodiment of the invention, with a silk-screened layer.

[19] Fig. 7 is a perspective view of the label protector, including a label, wherein the label protector is partially folded.

[20] Fig. 8 is a perspective view of the label protector, wherein the label protector is folded.

Mode for Invention

[21] This invention is not limited in its application to the details of construction and the arrangement of components set forth in the following description or illustrated in the

drawings. The invention is capable of other embodiments and of being practiced or carried out in various ways. Also, the phraseology and terminology used herein are for the purpose of description and should not be regarded as limiting. The use of 'including', 'comprising', or 'having', 'containing', 'involving', and variations thereof herein, is meant to encompass the items listed thereafter and equivalents thereof as well as additional items.

[22] The present invention is directed to a label protector and a process of manufacture thereof.

[23] Fig. 1 shows a perspective view of a label protector (101) according to the present invention, which comprises a generally transparent plate (102) with an outside section (103) having a generally linear groove (104) in the midsection of the plate (102). The inside section (105), which is on the opposite side of the outside section (103), is divided into a front half face (106) and a back half face (107) by a fictitious straight fold line (108) for illustration purposes. The fictitious straight fold line (108) extends on the inside section (105) along the outside section (103) groove (104) and shows the axis on which the front half face (106) and the back half face (107) are folded to form an inner region between the front half face (106) and the back half face (107).

[24] Fig. 2 shows an enlarged side view of the cross section of the plate (102) groove (104). The groove shown on Fig. 02 has an inverted 'V' shape. Other shapes may be used, such as an inverted 'U' shape, what would depend on the method of cutting and knife used for making the groove and the desired application. The function of the groove (104) is to maintain the plate (102) as a single integral piece that is capable of being manually folded.

[25] Fig. 3 shows an enlarged side view of the cross section of the plate (102) with the adhesive coating (109) over the inside section (105) of the plate (102). The adhesive coating (109) can be a double-sided adhesive tape, but other adhesive coatings can be used within the scope of the invention. The adhesive coating has an under side, an upper side and a peelable protective film (110), wherein the under side is adhered to at least part of the inside section (105) of the generally transparent plate (102); and, the peelable protective film (110) covers the upper side, whereby after removing the peelable protective film (110) it is possible to place a label over at least part of the outside section (105), and/or over the upper side of the adhesive coating (109), and fold the front half face (106) and the back half face (107) to a fastened position enclosing the inner region between the front half face (106) and the back half face (107).

[26] Fig. 4 is a perspective view of an embodiment of a label protector (101) according to the invention, wherein a small part of the peelable protective film (110) is peeled off.

[27] Fig. 5 is a perspective view of an embodiment of a label protector (101) according to

the invention, wherein half of the peelable protective film (110) is peeled off and a label (111) is positioned on the back half face (107) of the outside section (103) of the plate (102), over the upper side of the adhesive coating (109).

- [28] Fig. 6 is a perspective view of another embodiment of a label protector (201) according to the invention, with a silk-screened layer (212) covering at least part of the generally transparent plate (202). The silk-screened layer (212) improves the finishing of the label protector (201) and in addition may provide personalized ornamental patterns such as a logo or a design. Part of the inside section (205) of the plate (202) front half face (206) is not covered by the silk-screened layer (212), forming a window (213) whereby the information contained on a label (211) positioned on the back half face (207) is viewed when the label protector (201) is being closed as depicted in Fig. 7 or closed as shown in Fig. 8. In Figs. 6, 7, 8, the window (213) is generally rectangular, because most of the standard labels sold in the market are rectangular; however, other shapes can be obviously formed. The possibility of silk-screening is very desirable, because of its low cost and flexibility in printing a desired ornamental pattern.
- [29] The plate can be made of many suitable transparent materials that allow the user to read the information that is on the label. Preferred materials can be plastic materials that are essentially transparent such as polyvinylchloride, polycarbonate, polyethylene, polymethyl methacrylate, or polyester. A specially preferred material is the polyethylene terephthalate glycol (PETG), besides providing very good clearness, good resistance against sunlight and impact, and having moderate to high stiffness, it also provides the possibility of pre-cutting the groove with a good finishing, but without necessarily using thermoforming techniques. Furthermore, these aforementioned qualities are obtainable even in thin plates, with a thickness lower than about 0.75mm.
- [30] In one embodiment of the invention, the front half face and the back half face have at least one hole each, which allows the passage of a fastening clamp or other means for fastening the folded label protector to the object to be identified. These holes can be made prior to folding the label protector. Alternatively, after folding the tag, one or more holes can be made by the user by means of a manual drilling tool for instance. Although there are many suitable transparent materials that have the main features for the purposes of this invention, the use of PETG is very advantageous in this situation, because these kind of thin plates are more easily manually perforated, and maintain a good finishing even with a manual perforation, what is generally difficult to obtain with other materials. Therefore, in one embodiment of the present invention, the use of a PETG plate provides a cost effective and improved solution when compared to other materials. Alternatively, the essentially transparent plastic material can contain pigmented materials in order to provide a desired tonality or ornamental design. Other

alternative ways for attaching the label protector to the object to be identified are also within the scope of the invention. For instance, a small magnet, an additional adhesive coating, a hook-and-loop fastener or a tie-pin can be attached to the outside section of the plate, on the rear of the back of the back half face; as well as one or more rivets, bolts or screws, can be used.

[31] In Figures 1 to 8 shown in this specification, the plate (102) (202) has a generally rectangular shape, with a transversal midsection groove (104) (204), wherein the length of the transversal midsection groove (104) (204) is smaller than the length of the perpendicular side of the folded label protector (101) (201). Although other formats are within the scope of the invention, it is specially preferred to have this or similar configurations because it has been noted that when the length of the transversal midsection groove (104) (204) is bigger than the length of the perpendicular side of the folded label protector (101) (201), the label protector tends to unfold more easily, probably due to a memory effect of the plate (102) (202) and/or of the adhesive coating (109) (209), and particularly when using a double sided adhesive tape as the adhesive coating (109) (209). Generally, when the plate (102) (202) is folded, the region within the straight fold line (108) (208) and the groove (104) (204) vertex cracks, therefore it is more likely that this memory effect is due to the adhesive coating (109) (209) bonding, which is specifically significant when the adhesive coating (109) (209) is a double sided adhesive tape. In this aspect, the use of PETG is also preferred, because as it is possible to use thinner plates, with a deeper groove, the crack occurs essentially linearly along the folding axis, resulting in less or no memory effect forcing the opening of the folded label protector (101) (201).

[32] Another exemplary embodiment of the present invention is directed to a process of manufacturing a label protector (101) (201) comprising the steps of laminating the under side of a adhesive coating (109) (209) over the inside section (105) (205) of a generally transparent lamina, maintaining the peelable protective film (110) (210) on the upper side of the adhesive coating (109) (209); pre-cutting a set of grooves in the outside section (103) (203) of the translucent lamina and in the same step cutting the lamina in separated plates (102) (202), whereby each groove (104) (204) is essentially in the midsection of each plate (102) (202). By pre-cutting the groove and cutting the lamina and separating the plates in the same step, it is possible to significantly reduce the production time. The adhesive coating (109) (209) can be, for instance, a double-sided adhesive tape.

[33] In another embodiment of the process of manufacturing a label protector (201), an ornamental pattern can be silk-screened over at least part of the inside section of the translucent lamina before laminating the adhesive coating.

[34] Having thus described several aspects of at least one embodiment of this invention, it

is to be appreciated that various alterations, modifications, and improvements will readily occur to those skilled in the art. Such alterations, modifications, and improvements are intended to be part of this disclosure, and are intended to be within the scope of the invention. Accordingly, the foregoing description and drawings are by way of example only.

Claims

- [1] **01.** A label protector characterized by comprising
a generally transparent plate with
an outside section having a generally linear groove in the midsection
of the plate; an inside section having a front half face and a back half
face; and wherein the front half face and the back half face are
capable of being folded to form an inner region between the front
half face and the back half face;
an adhesive coating with an under side, an upper side and a peelable
protective film,
wherein the under side is adhered to at least part of the inside section
of the generally transparent plate; and the peelable protective film
covers the outer side, whereby after removing the peelable protective
film it is possible to place a label over at least part of the inside
section and fold the front half face and the back half face to a
fastened position enclosing the inner region between the front half
face and the back half face.
- [2] **02.** A label protector according to claim 01, wherein the adhesive coating is a
double-sided adhesive tape, covering at least part of the inside section of the
transparent plate.
- [3] **03.** A label protector according to claim 01, wherein an ornamental pattern is
silk-screened between the inside section of the transparent plate and of the
adhesive coating, covering at least part of the inside section of the transparent
plate.
- [4] **04.** A label protector according to claim 01, wherein the plate is made of an es-
sentially transparent plastic material such as polyvinylchloride, polycarbonate,
polyethylene, polymethyl methacrylate, or polyester.
- [5] **05.** A label protector according to claim 01, wherein the plate is made of poly-
ethylene terephthalate glycol (PETG).
- [6] **06.** A label protector according to claim 01, wherein the essentially transparent
plastic contains pigmented materials.
- [7] **07.** A label protector according to claim 01, wherein the front half face and the
back half face have at least one hole each, which allows the passage of a
fastening clamp for fastening the folded tag to the object to be identified.
- [8] **08.** A label protector according to claim 01, wherein the plate has a generally
rectangular shape, with a transversal midsection groove.
- [9] **09.** A label protector according to claim 08, wherein the length of the transversal

midsection groove is smaller than the length of the perpendicular side of the folded label protector.

- [10] **10.** A process of manufacturing a label protector characterized by comprising laminating the under side of an adhesive coating over the inside section of a generally transparent lamina, wherein the adhesive coating has a peelable protective film on the upper side of the adhesive coating;
pre-cutting a set of grooves in the outside section of the translucent lamina and in the same step cutting the lamina in separate plates, whereby each groove is essentially in the midsection of each plate.
- [11] **11.** A process of manufacturing a label protector according to claim 10, wherein the adhesive coating is a double-sided adhesive tape.
- [12] **12.** A process of manufacturing a label protector according to claim 10, wherein an ornamental pattern is silk-screened over at least part of the inside section of the translucent lamina before laminating the adhesive coating.

Fig. 1

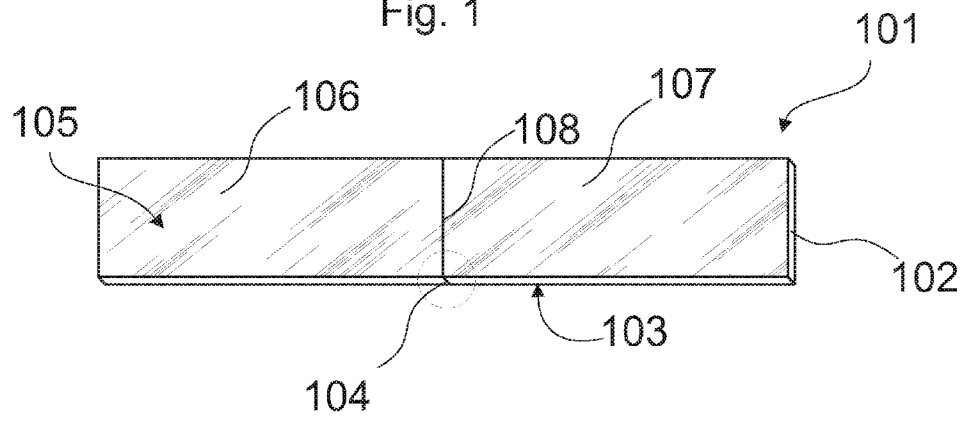


Fig. 2

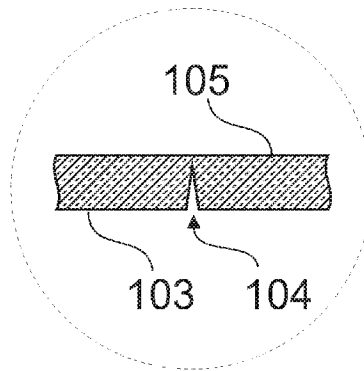


Fig. 3

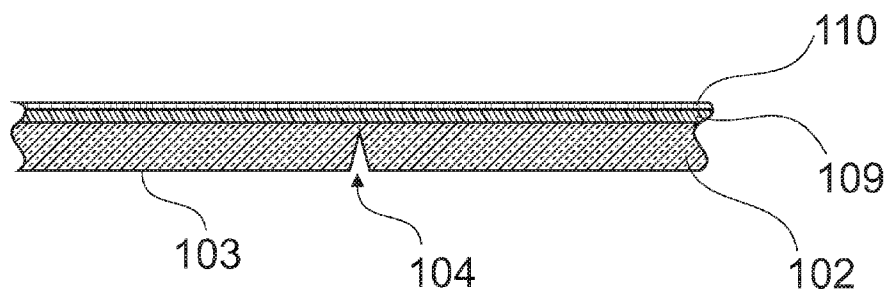


Fig. 4

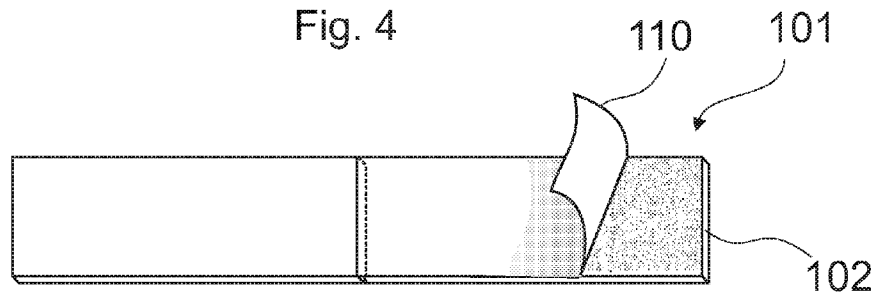


Fig. 5

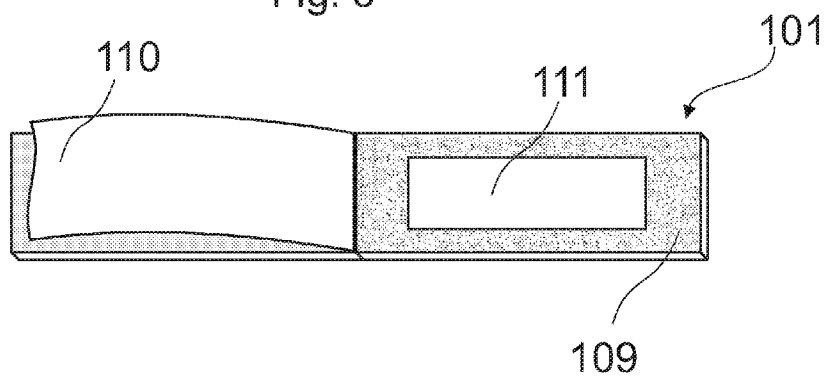


Fig. 6

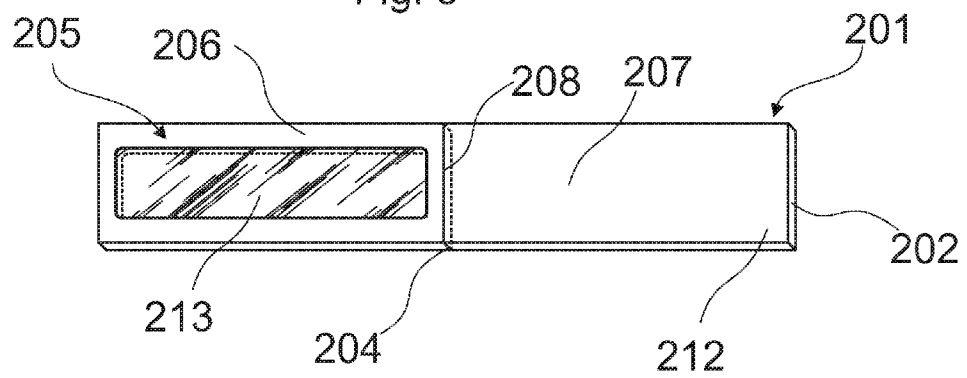


Fig. 7

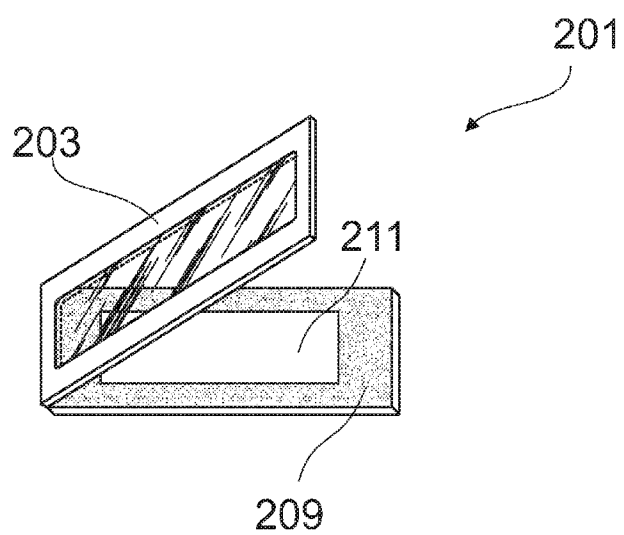
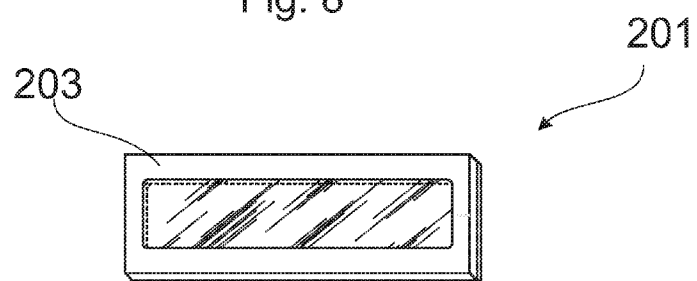


Fig. 8



INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER

IPC⁸: **G09F 3/20** (2006.01); **G09F 3/10** (2006.01)

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)

IPC⁸: G09F

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, WPI, X-FULL

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/151098 A1 (RUTSKY) 13 July 2006 (13.07.2006) <i>figs 1-7,11; page 1, paragraph [0020] - page 2, paragraph [0023]; page 2, paragraph [0027] - page 3, paragraph [0028].</i>	1,2,8-11
Y	--	3-7,12
X	US 2 682 721 A (HARRIS) 6 July 1954 (06.07.1954) <i>figs 3-6; column 1, line 44 - column 2, line 39.</i>	1,2,8,9
Y	RO 105745 B1 (MASE PLASTICE VIITORUL ET AL.) 30 November 1992 (30.11.1992) <i>abstract.</i>	3,12
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☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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"&" document member of the same patent family

Date of the actual completion of the international search
20 May 2008 (20.05.2008)Date of mailing of the international search report
9 June 2008 (09.06.2008)Name and mailing address of the ISA/ AT
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Dresdner Straße 87, A-1200 ViennaAuthorized officer
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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 2007/052773

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 518 787 A (KONKOL) 21 May 1996 (21.05.1996) <i>figs 1,2; column 3, lines 46-67.</i>	4-6
Y	WO 2000/011636 A2 (CYRK, INC.) 2 March 2000 (02.03.2000) <i>fig 1; page 2, lines 21-33.</i>	7

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
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