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(54) ONE-PIECE MAILING DOCUMENT

EINSTÜCKIGER BRIEF

LETTRE D'UNE PIECE

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(73) Proprietor: **Document Management Solutions
Limited
High Ongar, Essex CM5 9NL (GB)**

(72) Inventor: **MORRIS, Robert
Caerphilly
Mid Glamorgan CF83 2RZ (GB)**

(74) Representative: **Freeman, Jacqueline Carol
WP Thompson
55 Drury Lane
London WC2B 5SQ (GB)**

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Description

[0001] The present invention relates to a document for mailing and in particular to a one-piece mailing document.

[0002] Such one-piece mailing documents are traditionally sold as flat blanks and text is printed on one or both faces. The document is then folded and sealed in such a way that any confidential text is inside, out of view, and the name and address of the recipient is either on the outside or otherwise visible through a clear window. Thus the one-piece mailing document provides an integral envelope - document combination.

[0003] For the purpose of sealing such documents, narrow strips of a thin layer of adhesive are laid down around the periphery of the document in a suitable pattern so that when the document is folded, opposing strips contact each other and bond. The adhesive may be a permanent or non-permanent adhesive and may seal by contact, by pressure, by heat or by other means.

[0004] Perforations are built into the document a predetermined distance from the edges inside the adhesive strips so that the sealed edges can be torn off to open the document to read the content inside.

[0005] Such one-piece mailing documents are suitable for communicating confidential information such as details of an employee's pay, or bank card pin numbers because the printing, folding and sealing steps can be automated without human intervention. The need to tear off the edges to open the document makes it clear to a recipient if it has been opened or tampered with.

[0006] However tearing off the edges can be unsatisfactory since it is slow, produces waste which can be a nuisance at a post desk for example, and the opened document has untidy edges and is smaller than the standard sizes for documents, which makes it unsatisfactory for further processing such as filing or scanning. In addition, tearing of the edges cannot always be done cleanly and can result in damage to the document. For these reasons such one-piece mailing documents are not widely used other than for security applications.

[0007] The inventor has recognised a need in the marketplace for one-piece mailing documents which can be opened more easily, for example by peeling open the seal. Document US-A-4749124 discloses a blank form according to the preamble of claim 1.

[0008] According to the present invention there is provided a blank form for a one-piece mailing document, the blank comprising a paper substrate having a peripheral border area adjacent its edges, a pattern of adhesive located in the border area and wherein a barrier layer is interposed between the paper substrate and the adhesive pattern.

[0009] The barrier layer prevents the adhesive penetrating the paper substrate. The adhesive nonetheless bonds the two parts of the blank together when the document is folded and forms a secure seal, but the seal can be peeled apart without damaging the paper substrate.

[0010] In one embodiment the barrier layer is formed by printer's varnish in the border area and the adhesive is applied substantially overlaying the varnish. The varnish may be applied by a printing process.

5 **[0011]** Preferably two layers of varnish are applied in the peripheral border area before the adhesive pattern is laid down.

[0012] In a second embodiment the paper is coated with a layer of liquid silicone in the border area which is then dried and overlaid with the pattern of adhesive.

10 **[0013]** Perforations may be provided in the blank at the edge of the border area so that the border area can be detached to open the sealed document. However a document formed from a blank according to the invention can also be opened by peeling the two sections apart since under shearing pressure the adhesive layer will detach from the barrier layer without damaging the document itself.

15 **[0014]** According to a second aspect of the invention there is provided a method of making a blank form for a one-piece mailing document, the method comprising applying a barrier layer to a paper substrate in a border area at the peripheral edges of the paper, and subsequently applying an adhesive pattern overlaying the barrier layer.

20 **[0015]** For a better understanding of the present invention, and to show how the same may be carried into effect, reference will now be made to the accompanying drawings, in which:

30 Figure 1 is a plan view of a blank form according to one embodiment of the present invention;

Figure 2 is a plan view of a blank form according to a second embodiment of the invention.

35 **[0016]** Both figures illustrate a blank form 1 comprising a paper sheet 2 with a die cut window area 6, over which is laid a transparent window film 5. The invention is equally applicable to a form without a window. The form 1 is a "V" fold form but the invention is equally applicable to "Z" and "C" fold forms. A peripheral border area 3, adjacent each of the four edges, is coated with a thin layer of an impermeable barrier. The barrier may be formed of printer's varnish which is deposited over the paper in this border area by a printing process. Processes to print varnish on documents are known. For example printer's varnish is used to improve the appearance of high quality documents by making them appear "glossy". It may also be used to make the document more hard wearing or to seal a document to prevent ink rubbing off or running or spreading. Printer's varnish can typically be applied using the same printing techniques and apparatus used for applying ink. Hence conventional methods of applying varnish include litho-printing and offset-litho printing techniques.

40 **[0017]** The varnish is then cured, i.e. dried, and a pattern of adhesive is applied over the varnish in the areas shown at 4. A line of perforations 7 is laid down just inside

the border area 3 in this example although perforations are not necessary for this invention.

[0018] A type of printer's varnish known as U-V varnish is particularly suitable for the invention because it only dries to the touch when exposed to ultra-violet light. Such varnish is dried by ultra-violet light before the pattern of adhesive is applied over the varnish in the area shown at 4 in both figures.

[0019] Either gloss or matt varnish may be used and gloss varnish generally allows the seal to be unpeeled more easily. Preferably a double layer of varnish is applied.

[0020] Alternatively the barrier may be formed by a thin layer of liquid silicone instead of varnish. This is also cured before adhesive is applied.

[0021] A variety of other materials may be suitable as a barrier provided they stick to or bind strongly with the paper substrate and prevent the adhesive being in direct contact with the surface of the paper.

[0022] The adhesive is preferably a contact adhesive which is activated when two pieces of adhesive are brought together as when the form is folded and pressure is applied. A suitable such adhesive is available from producers such as National Starch & Chemical Co. in the UK or Henkel AG & Co. of Germany. However the adhesive could be any type such as pressure or heat seal adhesive. For example suitable pieces may be formed of patterns of strips or spots of adhesive on paper sheets to be brought together.

[0023] Preferably the adhesive pattern is formed with small gaps to facilitate the expulsion of air from within the folded document.

[0024] Pressure may be applied by hand or the paper may be put through a machine to apply a more even or higher pressure or to increase productivity. The invention prevents the sheets sealing together permanently even under a high pressure. The folded and sealed document can thus be peeled apart to open it. This means that the opened document is intact and thus retains its original size, since it is not necessary to tear away the border areas to open the document. The opened document thus has clean straight edges instead of the ragged ones produced by tearing which makes the document easier to handle and file.

[0025] Crease lines or perforations 9 may be provided to make folding the form 1 so that the adhesive patterns match accurately when the form is folded.

[0026] Figure 2 shows a blank form according to the invention which is suitable to be used for confidential information. In this embodiment means are incorporated into the blank so that a user can easily detect whether the sealed document has been tampered with, i.e. if any attempt has been made to open it. These comprise paper cut lines 8 made in the peripheral border 3. They are effectively invisible in the blank form and when the document is in the sealed state. However when the seal is peeled apart the paper will separate along at least some of the cut lines and make it virtually impossible to reseal

the document intact. Thus any recipient will immediately see that the document has been tampered with and is alerted that confidential information may have been obtained without authorisation.

[0027] Such paper cut lines may for example comprise lines in the shape of a diamond as shown in Figure 2 at 8 but a variety of suitable shapes or configurations will be evident to a skilled person. Other examples would be tongue shapes or V shapes.

[0028] The cut lines 8 may not go all the way through the paper but may alternatively form a crimp in the paper weakening it in that area, or allowing adhesive to contact the paper substrate.

Claims

1. A blank form (1) for a one-piece mailing document, the blank comprising:
 - a paper substrate (2) having a peripheral border area (3) adjacent its edges;
 - a pattern (4) of adhesive located in the border area; **characterised in that**
 - a barrier layer is interposed between the paper substrate and the adhesive pattern.
2. A blank form according to claim 1, wherein the barrier layer is formed by printer's varnish in the border area and the adhesive is applied substantially overlaying the varnish.
3. A blank form according to claim 2, wherein the varnish is applied by a printing process.
4. A blank form according to claim 3, wherein the varnish is UV varnish.
5. A blank form according to claim 4, wherein the varnish is cured by UV light before adhesive is applied.
6. A blank form according to claim 2, 3, 4 or 5, wherein two layers of varnish are applied in the peripheral border area before the adhesive pattern is laid down.
7. A blank form according to claim 1, wherein the barrier layer comprises a layer of liquid silicone in the border area which is then dried and overlaid with the pattern of adhesive.
8. A blank form according to any one of the preceding claims comprising perforations at the edge of the border area so that the border area can be detached to open the document after sealing.
9. A blank form according to any one of the preceding claims, wherein the barrier layer prevents the adhesive penetrating the paper substrate and the adhe-

sive bonds two parts of the blank together when the document is folded and forms a secure seal and the seal can be peeled apart without damaging the paper substrate.

10. A method of making a blank form for a one-piece mailing document, the method comprising applying a barrier layer to a paper substrate in a border area at the peripheral edges of the paper and subsequently applying an adhesive pattern overlaying the barrier layer.

Patentansprüche

1. Blankoformular (1) für einen einstückigen Brief, wobei das Formular Folgendes umfasst:

einen Papierträger (2) mit einem Umfangsrandbereich (3) angrenzend an seine Kanten;
eine Struktur (4) aus Klebstoff, die sich in dem Randbereich befindet; **dadurch gekennzeichnet, dass** eine Sperrschicht zwischen dem Papierträger und der Klebstoffstruktur eingefügt ist.

2. Blankoformular nach Anspruch 1, bei dem die Sperrschicht durch Drucklack in dem Randbereich gebildet wird, und der Klebstoff so aufgebracht wird, dass er im Wesentlichen den Lack überlagert.
3. Blankoformular nach Anspruch 2, bei dem der Lack durch ein Druckverfahren aufgebracht wird.
4. Blankoformular nach Anspruch 3, bei dem der Lack UV-Lack darstellt.
5. Blankoformular nach Anspruch 4, bei dem der Lack durch UV-Licht ausgehärtet wird, bevor Klebstoff aufgebracht wird.
6. Blankoformular nach Anspruch 2, 3, 4 oder 5, bei dem zwei Lackschichten in dem Umfangsrandbereich aufgebracht werden, bevor die Klebstoffstruktur niedergelegt wird.
7. Blankoformular nach Anspruch 1, bei dem die Sperrschicht eine Schicht aus flüssigem Silikon in dem Randbereich aufweist, die anschließend getrocknet wird, und auf die die Struktur aus Klebstoff gelegt wird.
8. Blankoformular nach einem der vorhergehenden Ansprüche, das Perforierungen an der Kante des Randbereichs aufweist, so dass der Randbereich abgetrennt werden kann, um das Dokument nach Verschließen zu öffnen.

9. Blankoformular nach einem der vorhergehenden Ansprüche, bei dem die Sperrschicht verhindert, dass der Klebstoff den Papierträger durchdringt, und der Klebstoff zwei Teile des Formulars aneinander bindet, wenn das Dokument gefaltet wird, und eine sichere Dichtung bildet, und die Dichtung auseinander gezogen werden kann, ohne den Papierträger zu beschädigen.

10. Verfahren zum Herstellen eines Blankoformulars für einen einstückigen Brief, wobei das Verfahren umfasst, eine Sperrschicht auf einen Papierträger in einem Randbereich an den Umfangskanten des Papiers aufzubringen und anschließend eine Klebstoffstruktur aufzubringen, die die Sperrschicht überlagert.

Revendications

1. Imprimé de blanc de courrier (1) pour un document d'expédition postale formé d'une seule pièce, le blanc de courrier comportant :

un support en papier (2) ayant une zone de bordure périphérique (3) adjacente par rapport à ses bords ;

un tracé (4) d'adhésif situé dans la zone de bordure ; **caractérisé en ce qu'**une couche de barrière est intercalée entre le support en papier et le tracé d'adhésif.

2. Imprimé de blanc de courrier selon la revendication 1, dans lequel la couche de barrière est formée par du vernis d'imprimerie dans la zone de bordure et l'adhésif est appliqué de manière à sensiblement recouvrir le vernis.
3. Imprimé de blanc de courrier selon la revendication 2, dans lequel le vernis est appliqué par un procédé d'impression.
4. Imprimé de blanc de courrier selon la revendication 3, dans lequel le vernis est du vernis ultraviolet.
5. Imprimé de blanc de courrier selon la revendication 4, dans lequel le vernis est durci au moyen d'une lumière ultraviolette avant l'application de l'adhésif.
6. Imprimé de blanc de courrier selon les revendications 2, 3, 4 ou 5, dans lequel deux couches de vernis sont appliquées dans la zone de bordure périphérique avant la pose du tracé d'adhésif.
7. Imprimé de blanc de courrier selon la revendication 1, dans lequel la couche de barrière comporte une couche de silicone liquide dans la zone de bordure qui est ensuite séchée et recouverte par le tracé

d'adhésif.

8. Imprimé de blanc de courrier selon l'une quelconque des revendications précédentes, comportant des perforations au niveau du bord de la zone de bordure de telle sorte que la zone de bordure peut être détachée pour ouvrir le document après scellement. 5
9. Imprimé de blanc de courrier selon l'une quelconque des revendications précédentes, dans lequel la couche de barrière empêche l'adhésif de pénétrer dans le support en papier et l'adhésif colle deux parties du blanc de courrier ensemble quand le document est plié et constitue un scellement sûr et le scellement peut être décollé sans abîmer le support en papier. 10 15
10. Procédé permettant de réaliser un imprimé de blanc de courrier pour un document d'expédition postale formé d'une seule pièce, le procédé comportant l'application d'une couche de barrière sur un support en papier dans une zone de bordure au niveau des bords périphériques du papier et par la suite l'application d'un tracé d'adhésif recouvrant la couche de barrière. 20 25

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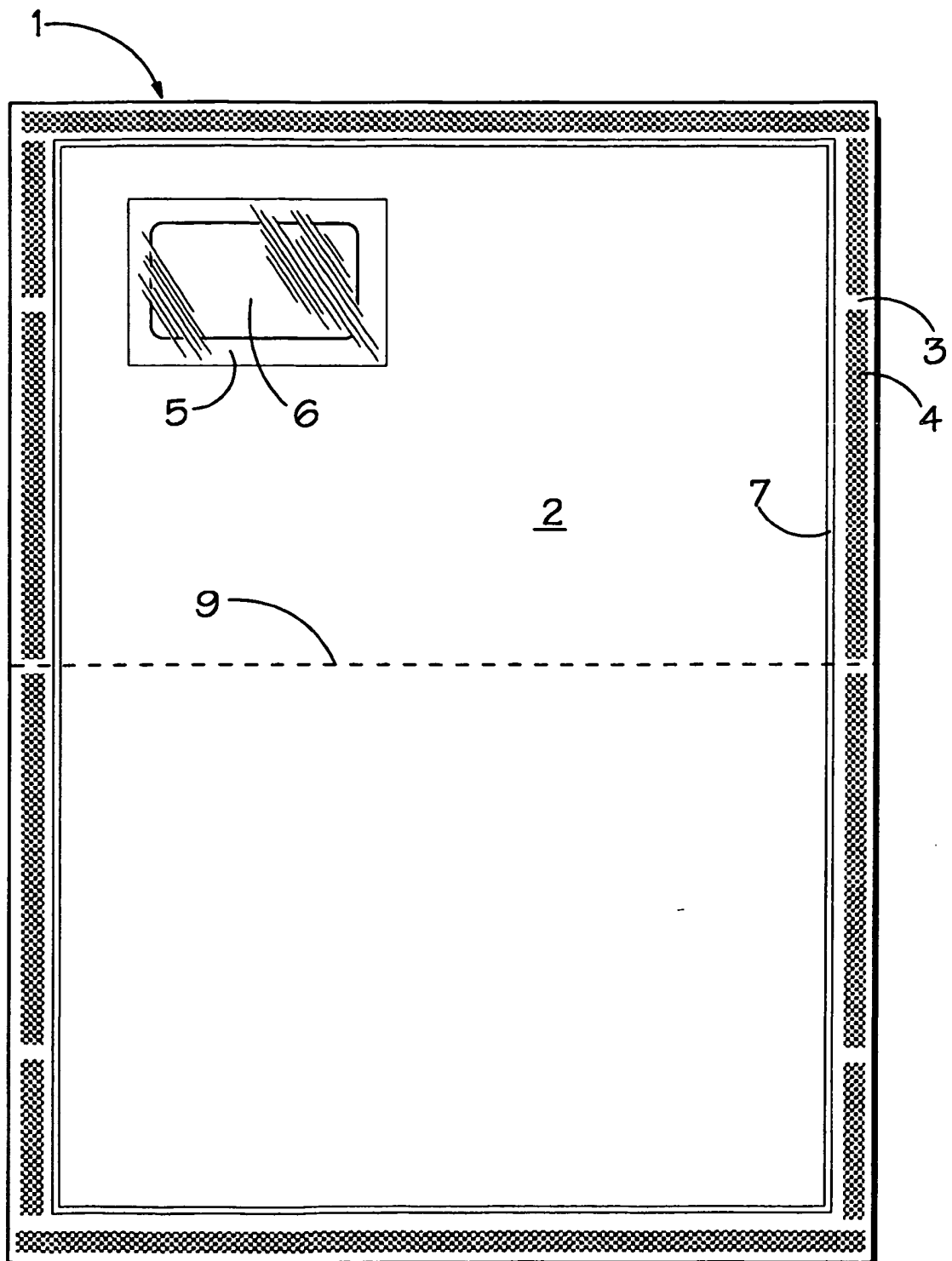


FIG.1.

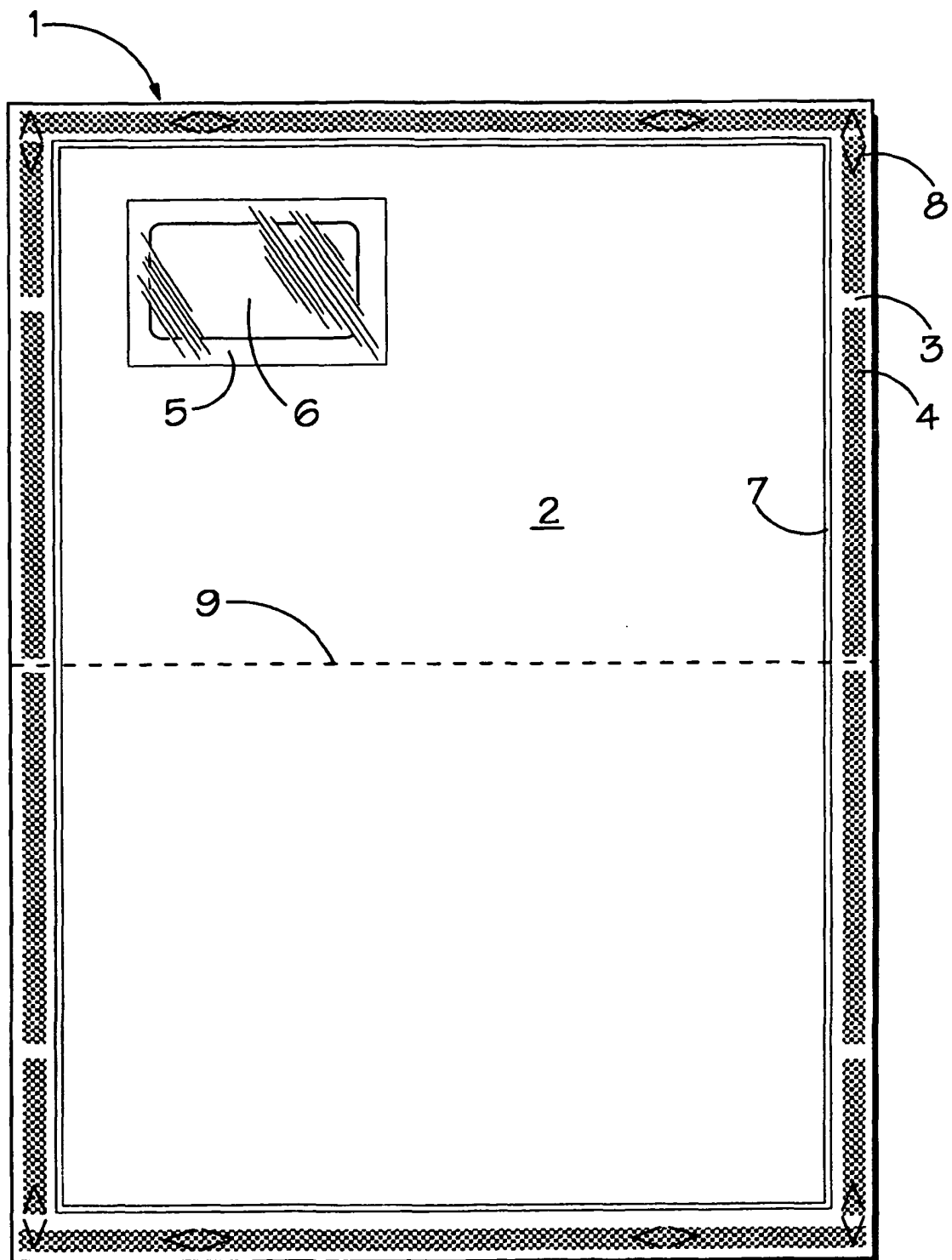


FIG.2.

REFERENCES CITED IN THE DESCRIPTION

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