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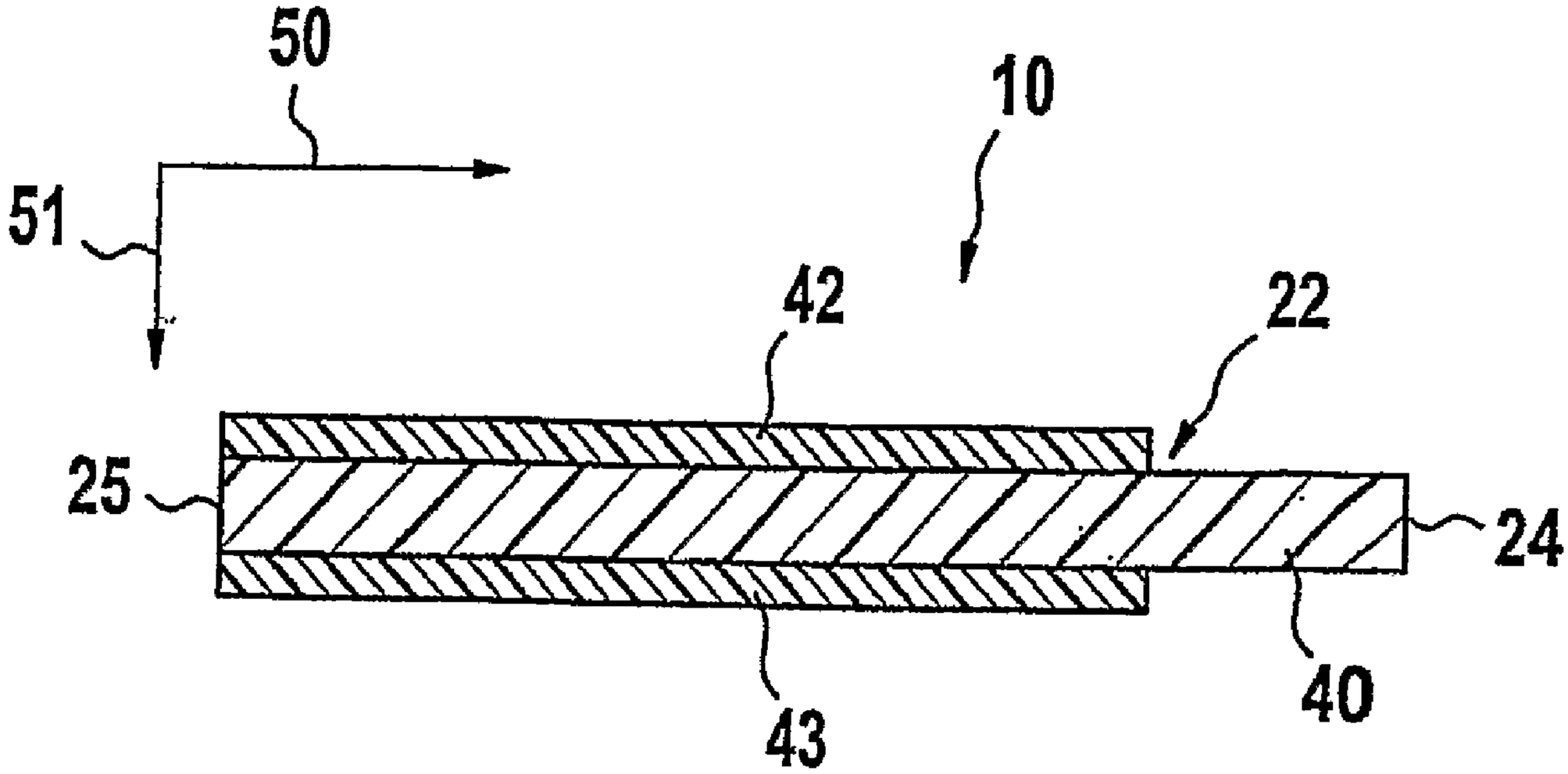
(72) Inventeur/Inventor:
SENGE, CARSTEN, DE

(73) Propriétaire/Owner:
BUNDESDRUCKEREI GMBH, DE

(74) Agent: RIDOUT & MAYBEE LLP

(54) Titre : FEUILLE INTERCALAIRE POUR DOCUMENT D'IDENTIFICATION DU TYPE LIVRE, DOCUMENT D'IDENTIFICATION DU TYPE LIVRE, ET PROCEDE DE PRODUCTION D'UN TEL DOCUMENT

(54) Title: INLAY SHEET FOR A BOOK-LIKE IDENTIFICATION DOCUMENT, BOOK-LIKE IDENTIFICATION DOCUMENT, AND METHOD FOR THE PRODUCTION OF A BOOK-LIKE IDENTIFICATION DOCUMENT



(57) Abrégé/Abstract:
The invention relates to an inlay sheet (10) for a booklike identification document, an identification document and a corresponding method for the production of an inlay sheet. The inlay sheet can be joined to the other parts of the book along one side via a seam in a hinge area (22). The inlay sheet comprises at least one layer made of thermoplastic elastomer (40, 140, 142, 340, 340', 340'') and at least one other layer (42, 43, 142, 143, 144, 145, 242, 243, 244, 245, 242', 243', 244', 245'). The at least one other layer extends in the direction of the inlay sheet plane (50) essentially from the side (25,25') facing the seam to the hinge area and the at least one layer made of thermoplastic elastomer extends into the hinge area. The layers forming the inlay sheet are laminated to each other.

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(71) Anmelder *(für alle Bestimmungsstaaten mit Ausnahme von US)*: **BUNDESDRUCKEREI GMBH** [DE/DE]; Oranienstrasse 91, 10969 Berlin (DE).

(72) Erfinder; und

(75) Erfinder/Anmelder *(nur für US)*: **SENGE, Carsten** [DE/DE]; Scharnhorststrasse 22, 24105 Kiel (DE).

(74) Anwälte: **MÜLLER, Cornelia** usw.; HAAR & SCHWARZ-HAAR, Lessingstrasse 3, 61231 Bad Nauheim (DE).

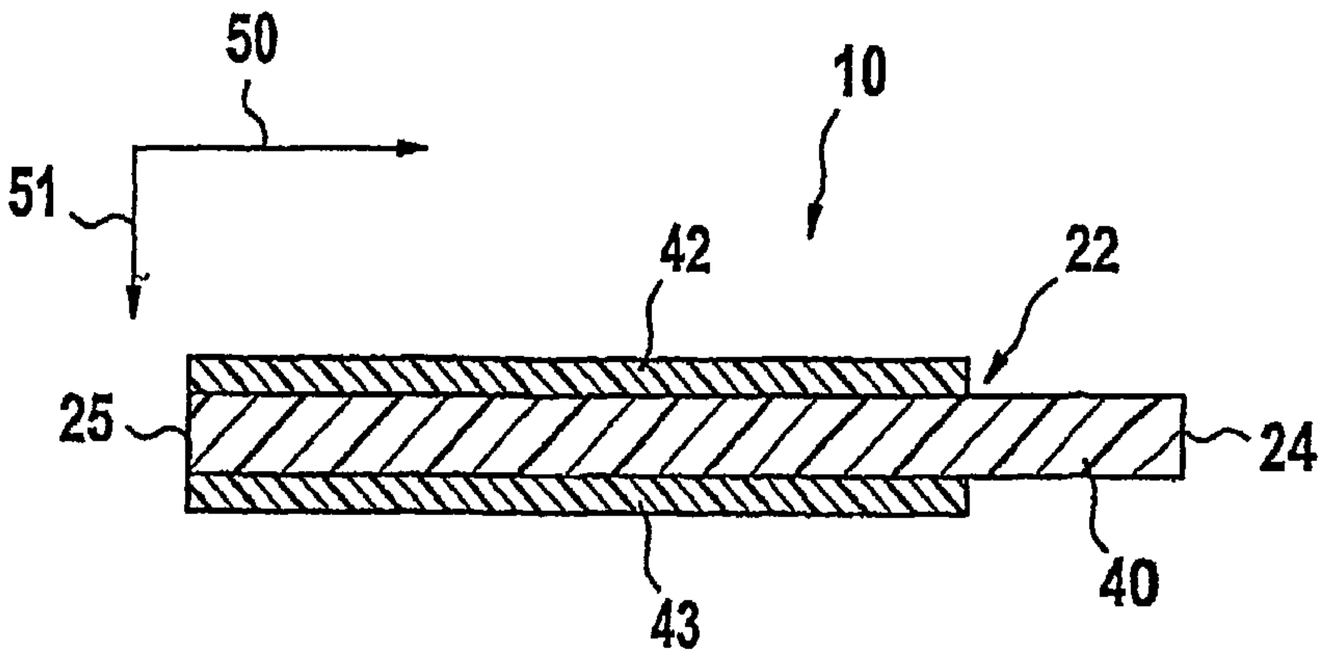
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(54) **Title:** INLAY SHEET FOR A BOOKLIKE IDENTIFICATION DOCUMENT, BOOKLIKE IDENTIFICATION DOCUMENT AND METHOD FOR THE PRODUCTION OF A BOOKLIKE IDENTIFICATION DOCUMENT

(54) **Bezeichnung:** EINLAGEBLATT FÜR EIN BUCHARTIGES IDENTIFIKATIONSDOKUMENT, BUCHARTIGES IDENTIFIKATIONSDOKUMENT UND VERFAHREN ZUR HERSTELLUNG EINES BUCHARTIGEN IDENTIFIKATIONSDOKUMENTS



(57) **Abstract:** The invention relates to an inlay sheet (10) for a booklike identification document, an identification document and a corresponding method for the production of an inlay sheet. The inlay sheet can be joined to the other parts of the book along one side via a seam in a hinge area (22). The inlay sheet comprises at least one layer made of thermoplastic elastomer (40, 140, 142, 340, 340', 340") and at least one other layer (42, 43, 142, 143, 144, 145, 242, 243, 244, 245, 242', 243', 244', 245'). The at least one other layer extends in the direction of the inlay sheet plane (50) essentially from the side (25,25') facing the seam to the hinge area and the at least one layer made of thermoplastic elastomer extends into the hinge area. The layers forming the inlay sheet are laminated to each other.

(57) **Zusammenfassung:** Es wird ein Einlageblatt (10) für ein buchartiges Identifikationsdokument, ein Identifikationsdokument und ein entsprechendes Verfahren zur Herstellung eines Einlageblattes vorgeschlagen, wobei das Einlageblatt mit einer Naht in einem Scharnierbereich (22) entlang einer Seite mit den übrigen Buchteilen verbindbar ist. Das Einlageblatt besteht aus mindestens einer Schicht aus einem thermoplastischen Elastomer (40, 140, 142, 340, 340', 340") und mindestens einer weiteren Schicht (42, 43, 142, 143, 144, 145, 242, 243, 244, 245, 242', 243', 244', 245'). Die mindestens eine weitere Schicht erstreckt sich in Richtung der Einlageblattebene (50) im Wesentlichen von der der Naht gegenüberliegenden Seite (25, 25') bis zu dem Scharnierbereich und die mindestens eine Schicht aus dem thermoplastischen Elastorner erstreckt sich in den Scharnierbereich hinein. Die Schichten, die das Einlageblatt bilden, sind miteinander laminiert.

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Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

Inlay sheet for a book-like identification document, book-like identification document, and method for the production of a book-like identification document

State of the art

The invention relates to an inlay sheet for a book-like identification document, a book-like identification document, and a method for the production of a book-like identification document according to the preamble of the independent claims.

Book-like identification documents generally consist of a plastic or cardboard or linen cover and data pages made of paper and/or plastic. The data pages are fastened to the cover or the inner face of the cover by means of a seam. The data pages include a personal data page where the most important personal data and the picture of the holder of the identification document are located. Additional data pages can contain additional entries relating to the holder of the identification document or empty areas for future entries, for example, visas.

The data pages may be made of a variety of materials and may have a variety of thicknesses.

In the following, identification documents will be understood to mean, for example, passports, book-like identification papers or drivers licenses, temporary identification documents, and the like.

Multi-layer identification cards with intermediate layers made from a thermoplastic elastomer, for example thermoplastic polyurethane, are already known from document EP 0 430 282 A2.

The problem of plastic-containing data pages not exhibiting satisfactory bending properties arises repeatedly. Repeated bending leads initially to cracks in the laminated pages and finally to breakage of the page, particularly in the area of the seam or at a location where different materials merge into one other. In the worst case, the broken data page separates from the book-like identification document.

Inlay sheets for book-like identification documents that consist of multiple layers but which, at least in part, do not adhere to one another in the seam area, are described in document EP 0 917 966 B1 as a solution to this problem.

Advantages of the invention

The inlay sheet according to the invention with the features of the independent claim has the advantage over this that all layers of the inlay sheet are firmly attached to one another and therefore exhibit high stability and security against forgery. Moreover, the inlay sheet exhibits excellent bending properties, and cracks in the document and, consequently, breaks in the page, in particular in the area of the seam, are prevented. It is furthermore possible to personalize such inlay sheets in the customary fashion, and to laser data into these data pages. Such data can be image data, letters and numbers, and codes, for example a bar code. Moreover, it is possible to provide various security features in the inlay sheet, such as tilt images or holograms, as well as other security features known from the ID-1 area.

The basic idea of the invention consists of an inlay sheet for a book-like identification document which can be connected to the other parts of the book by a seam in a hinge area along one side and which consists of at least one layer of a thermoplastic elastomer and at least one additional layer, where the one or more thermoplastic elastomer layers are extended into the hinge area and the one or more additional layers are only extended up to the hinge area.

Analogous advantages can also be mentioned for the book-like identification document according to the invention with the inlay sheet according to the invention.

In addition, a method according to the invention for production of an inlay sheet for a book-like identification document with the features of the independent claim is specified, which describes a simple and cost-effective method for production of such an inlay sheet. It is particularly advantageous that all layers are attached to one another by lamination, consequently resulting in high strength and security against forgery being achieved for the inlay sheet produced by the method.

Further advantageous developments and improvements of the subject matters specified in the independent claims are possible by means of the measures listed in the dependent claims.

To achieve high stability, it is advantageous to make the thermoplastic elastomer layer thicker in the hinge area than in the other areas. It is particularly advantageous to choose the thickness in the hinge area of the layer made of at least one thermoplastic elastomer such that the total thickness in the hinge area is equal to the total thickness in the other areas of the inlay sheet. This ensures a stepless transition between the hinge area and the other areas of the inlay sheet, thus largely avoiding strain concentrations in this area during bending. It is also advantageous when at least two additional layers are placed on one side of the thermoplastic elastomer layer, with these extending different distances

toward the hinge area. This avoids a breaking edge and an increased concentration of strain in the transition area between the hinge area and the other areas of the inlay sheet during bending.

It is particularly advantageous to offset the layers by at least 500 µm, particularly advantageous by at least 1 mm. It is furthermore advantageous for strength if the thickness of the thermoplastic elastomer layer is in the range between 400 µm and 800 µm, preferably between 500 µm and 800 µm, in the hinge area.

For inlay sheets that are to be provided with microchips and non-contact data transmission, it is advantageous to embed the transponder coils in the thermoplastic elastomer layer, because this material flows around the coil well, and the coil is spring-mounted in this layer, thereby preventing damage to the coil. It is especially advantageous in this regard to embed the coil outside of the hinge area in the thermoplastic elastomer layer.

Especially advantageous further developments of the method according to the invention for producing the inlay sheet consist of placing two additional layers on the same side either above or below the thermoplastic elastomer layer and tacking these layers together before lamination and/or tacking together the one or more thermoplastic elastomer layers.

This prevents shifting of the layers during lamination. Tacking together in this regard is understood to mean point welding or melting of the layers, with these weld points preferably being outside the area of the future data pages. In this case, these weld points are later cut off, for example when die cutting the data pages, and are no longer visible in the finished document. For a data page in the customary passport page format, for example, two to four tacking points are used for this purpose.

Another advantageous embodiment of the method according to the invention consists in placing at least one additional layer essentially on areas of the thermoplastic elastomer layer which are not as thick as the reinforced areas of the thermoplastic elastomer layer. This ensures that after production of the inlay sheet according to the invention, the thermoplastic elastomer layer is thicker in the hinge area than in the other areas of the inlay sheet. If, when at least two additional layers are to be placed on one side of the one or more thermoplastic elastomer layers, one arranges the upper layer in advantageous manner such that it extends a little over the reinforced area, this ensures that after production the two or more additional layers extend different distances along one side of the one or more thermoplastic elastomer layers toward the hinge area, preventing too great a concentration of strain during bending and the formation of a breaking edge. It is especially advantageous and cost-effective to produce multiple units during production of an inlay sheet such as this by, for example, producing two or four inlay sheets together on

one sheet and then die cutting the inlay sheets out of the sheet after lamination. During this process, the areas in which the layers of the inlay sheets are tacked together from the finished inlay sheet are advantageously separated from the finished inlay sheet.

Drawings

Example embodiments of the invention are presented in schematic fashion using drawings and explained in more detail in the following description. Figure 1 shows a schematic top view of inlay sheets according to the invention. Figure 2 shows a schematic side view of a book-like identification document according to the invention schematically in a half-open state. Figure 3 shows a schematic cross-section through an inlay sheet according to the invention. Figures 4 and 5 show schematic cut-outs from cross-sections through inlay sheets according to the invention, and Figure 5 shows two schematic top views of cut-outs from an inlay sheet according to the invention. Figures 6, 7 and 8 show steps in the method for producing an inlay sheet for a book-like identification document using schematic cross-sections.

Figure 1 a shows an inlay sheet 10 according to the invention for an identification document, for example a passport or identification document or the like. Data on the holder of the identification document are arranged on inlay sheet 10, for example, the

name 12, address 13, or a individual-specific identity number 14, e.g., an ICAO line. In addition, the passport photograph 11 of the holder of the identification document is positioned to one side, in this case the right side, of such an inlay sheet. The inlay sheet has a hinge area 22, in which the path of the seam is indicated by dashed line 20. This seam is used to connect the inlay sheet with the other parts of the identification document.

The hinge area 22 is the area of the inlay sheet in which bending of the inlay sheet takes place after being stitched together with the remaining parts of the passport. It extends approximately 5 mm, and at least 3 mm, to the left and right of the seam.

The inlay sheet has side edges 24 and 25 parallel to the seam, with side edge 25 being positioned on the side opposite to the side where the seam is located. In addition, security features are located on the inlay sheet 10 intended as a data sheet for a book-like identification document, illustrated in this case using guillochen. In addition, copier protection elements, microtext, luminescent pigments, holograms, watermarks, and the like can be used.

Figure 1 b shows another embodiment of an inlay sheet 10 according to the invention which has a two-page design. The hinge area 22, which the seam runs through in the

finished identification document, is located in the middle of the two data pages and is shown here using dashed line 20. An two-page inlay sheet such as this has two opposing edges 25 and 25'. The other components of such an inlay sheet which are illustrated using Figure 1 a are left out of Figure 1 b for the sake of clarity. After being stitched into the identification document, a two-page inlay sheet produces four pages, i.e., two front and two back pages, while the one-page inlay sheet illustrated in Figure 1 produces two pages (one front and one back page).

An inlay sheet generally consists of a number of paper and/or plastic layers that offer both high security against forgery and protection for the individual-related data arranged on the inlay sheet.

An inlay sheet such as this is also referred to as a personalization page. In addition to name or address and an individual-related number, the data entered into the personalization page can also contain the date of birth, place of birth, a signature, or other individual-related data. The data contained on the inlay sheet can be printed and/or lasered on. When lasered on, the data are written into the finished laminated sheet using a laser. During this process, the laser intensity is controlled such that discolorations occur in the interior of the data sheet, that is in a paper or plastic layer, so that the data written by laser become visible. Outer plastic layers are not damaged by this process and remain

smooth. In another example embodiment, the laser power can be adjusted such that the top layer of the inlay sheet is also altered during the writing process, creating a tangible microrelief. Moreover, an optically active relief which interacts with the printed or laser induced lettering under it can be placed in the top layer of the inlay sheet.

Figure 2 shows a side view of a book-like identification document according to the invention. The outer jacket or cover 30 made of paper and/or paper and/or plastic can be seen. Both the inlay sheet 10 according to the invention and additional book pages 32 are arranged in the cover 30, with the inlay sheet 10 and additional book pages 32 being attached to cover 30 by means of a seam. The seam, which is not shown here, is located in hinge area 22 of inlay sheet 10. In the example embodiment of an identification document according to the invention that is shown, a one-page inlay sheet is positioned before the remaining data pages of the identification document. The inlay sheet can also be located between the additional data pages 32 of the book-like identification document. In a further example embodiment, a two-page inlay sheet as shown in Figure 1 b can also be used in an identification document according to the invention.

Figure 3 shows a schematic cross-section of an inlay sheet according to the invention. The inlay sheet 10 comprises a middle layer made of a thermoplastic elastomer 40 and two additional layers 42, 43 located respectively above and below it. The additional

layers consist of high-temperature stable plastic. The cross-section is taken along the line A-A shown in Figure 1 a. The additional upper and lower layers 42, 43 extend in the direction of extension of inlay sheet 50 from side edge 25, which is located opposite from the seam, up to the hinge area 22. The two additional layers do not, however, extend into hinge area 22. Only the middle thermoplastic elastomer layer 40 extends from the side edge 25 located opposite the seam through the hinge area 22 to side edge 24, which is located at hinge area 22.

Thermoplastic polyurethane (TPU) can be advantageously used as a thermoplastic elastomer, although other thermoplastic elastomers can also be used. The entire group of thermoplastic polyurethane, the group of thermoplastic copolyesters, and the group of thermoplastic polyether block amides are available for this purpose. For example, polycarbonate (PC), polyethersulfone (PES), polyetheretherketone (PEEK), polyphenylene oxide (PPO), polyphenylene sulfide (PPS), polyethylene terephthalate (PET), polybutylene terephthalate (PBT), polyoxymethylene (POM), polysulfone (PSU), polyetherimide (PEI), or polyamide (PA) can be used as a high-temperature stable plastic. The high-temperature stable plastics can be used individually or in combination as additional layers 42, 43.

Additional example embodiments for an inlay sheet according to the invention are shown in Figures 4 and 5 using cut-outs from cross-sections along line A-A in Figure 1 a. Figure 4 shows a thermoplastic elastomer layer 140 located in the middle of the inlay sheet body and pairs of additional layers 144 and 142, and 145 and 143, with each pair located on one side and on top of this layer. The thermoplastic elastomer layer 140 is thicker in hinge area 22 such that inlay sheet 10 has the same thickness in the hinge area 22 along direction 51, vertical to the planar surface of the sheet 50, as in the remaining areas of the inlay sheet. The pairs of additional layers 142 and 144, and 143 and 145, have both members of each pair located on the same side of the thermoplastic elastomer layer 140 and both members of each pair extending the same distance up to the hinge area 22. That is, the additional layers located on one side of the thermoplastic elastomer layer end at one and the same edge. This design, where the inlay sheet has the same thickness in the hinge area and the remaining areas, ensures greater security against forgery and increased strength of the inlay sheet in the hinge area 22.

In the example embodiment shown in Figure 5 a, which again shows a thermoplastic elastomer layer 240 in a central position and pairs of additional layers 242 and 244, and 245 and 243, located on top and on each side of it, with the additional layers that are located on one side of the thermoplastic elastomer layer extending different distances up to the hinge area 22. Therefore, the members of each pair of additional layers 242 and

244, and 243 and 245, located on the same side of the thermoplastic elastomer layer do not have a common end edge. This is advantageous in order to prevent the strain during bending from becoming too strongly concentrated at a common edge.

The distance d between two parallel edges 242a and 244a of associated additional layers 242 and 244, and the distance d between the parallel edges 245a and 243a of associated additional layers 245 and 243 is greater than 500 μm, preferably greater than 1 mm. The two parallel edges 242a and 244a of this example embodiment are also shown in top view in Figure 5 b. Analogous to Figure 1, seam 20 is located in hinge area 22 of the finished identification document. This is indicated using a dashed line in Figure 5 b.

Moreover, edge 242a of the upper additional layer 242 is shown with a solid line, and edge 244a of the additional layer below it is shown with a dotted line. Edges 242a and 244a run parallel to one another and parallel to the edge 24 of inlay sheet 10 which is located closest to the seam.

Figure 5 c shows a further example embodiment for the paths followed by the edges of the additional layers, with the edges and the seam area labeled analogously to Figure 5 b. In this case, edges 242a' and 244a' follow paths which are not parallel to one another and also not parallel to the edge of the inlay sheet, but are instead shaped similar to the arms

of an isosceles triangle, with the vertex located approximately in the middle of edge 24. At the same time, layers 242 and 244 which are located on the same side of the thermoplastic elastomer layer have edges 242a' and 244a' which are shaped in the form of the arms of isosceles triangles with vertex angles pointing in opposing directions, so that the upper layer extends further to the hinge area in the outer areas located distant from its vertex and the lower layer extends further to the hinge area in the area around its vertex. In addition to distributing the strain during bending, this embodiment offers an additional security feature if this edge arrangement is, for example, visually noticeable.

The same additional advantage is offered by an example embodiment shown in Figure 5 d. In this case, edges 242a" and 244a" are essentially parallel to one another and to edge 24 of the inlay sheet. They are, however, designed with a wave-like form. Other forms, such as zigzag forms, for example, are also possible.

The middle distance d' designates the distance that the equivalent mid-lines such as those shown in Figure 5 a show as distances d.

In an additional example embodiment, a transponder coil can be embedded in the thermoplastic elastomer layer, with said coil being used for non-contact transmission data for a microchip located in the inlay sheet and being electrically connected with said

microchip. In a preferred example embodiment, the transponder coil is embedded in an area outside of the hinge area of the thermoplastic elastomer layer.

In additional example embodiments of the invention, multiple thermoplastic elastomer layers can also be provided within an inlay sheet according to the invention. In this case, the thermoplastic elastomer layers are separated from one another by intermediate layers. Moreover, even more than two additional layers can be provided on each side of the thermoplastic elastomer.

It is advantageous if the one or more thermoplastic elastomer layers have a layer thickness of between 400 µm and 800 µm in the hinge area, preferably between 500 µm and 800 µm. Additional layers made of high-temperature plastic can have layer thicknesses between 20 µm and 500 µm, preferably between 100 µm and 500 µm, most preferably between 300 µm and 500 µm. In the remaining area of the inlay sheet not belonging to the hinge area, the thickness of the one or more thermoplastic elastomer layer is between 20 µm and 300 µm, preferably between 50 µm and 200 µm. The thickness in this regard is the extension of the layers along direction 51, at right angles to the planar surface 50 of the inlay sheet according to the invention.

Figures 6, 7 and 8 will now be used below to describe the method according to the invention for producing an inlay sheet for a book-like identification document. Figures 6 and 7 first show the production of the thermoplastic elastomer layer, which is thicker in the hinge area as compared to the remaining areas. The method steps illustrated using Figures 6, 7 and 8 are shown in schematic cross-section. Moreover, the method relates to a one-page inlay sheet produced in the form of double units. It can also be used analogously for two-page inlay sheets or for single or multiple-units.

Figure 6 a shows how additional thermoplastic elastomer layers 340' and 340" are positioned above and below thermoplastic elastomer layer 340. These additional thermoplastic elastomer layers 340' and 340" are positioned in the area where the hinge area is to be created with reinforcement. Figure 6 b shows the immediate placement of the three thermoplastic elastomer layers 340, 340', and 340" on one another.

To improve fixation, these layers can be tacked to one another.

Figure 7 shows a schematic cross-section of an additional example embodiment for a thermoplastic elastomer layer 340. The thermoplastic elastomer layer 340 is produced as a formed part by extrusion.

As described previously above, a transponder coil may also be embedded in a thermoplastic elastomer layer in an example embodiment, with said transponder coil allowing non-contact data transmission. A coil of this type can, for example, be applied to a thermoplastic elastomer layer by printing, spraying, or other application methods. In a further method step, an additional thermoplastic elastomer layer is laminated on top, so that both thermoplastic elastomer layers with the transponder coil embedded between them form the thermoplastic elastomer layer 340, as shown in Figure 7.

The further method steps for production of the inlay sheet according to the invention will now be described using Figure 8. First, the additional layers 242, 244, 245 and 243 for the first unit and additional layers 242', 244', 245' and 243' for the additional unit are arranged one on top of the other in the desired order, as shown in Figure 8 a. In a preferred example embodiment, the members of the pairs of additional layers 242 and 244, and 245 and 243, as well as 242' and 244', and 245' and 243', located on each side of the thermoplastic elastomer layer are tacked on top of one another to prevent shifting of the layers in question relative to one another. This is shown in Figure 8 b. In doing so, each additional layer 242, 242', 243 and 243' which will be on the outer surface of the future inlay sheet extends a little past the other additional member of the associated pair of additional layers on the edge where the future hinge area will be attached. In the method step illustrated below using Figure 8 c, the thermoplastic elastomer layer is

arranged between the other layers in such manner that the other layers extend over the areas where the thermoplastic elastomer layer 340 is thinner. The additional layers 242, 244, 245, 243, 242', 244', 245' and 243' are not positioned in the central reinforced area, which is to form the future hinge area of the thermoplastic elastomer inlay sheet according to the invention. Only the overhanging portion of each outer additional layer lies on top of the reinforced area of the thermoplastic elastomer layer. In a preferred example embodiment, the layers arranged on top of one another can be tacked to one another first.

In the following, all layers are laminated. The permanent fusion of the layers to one another also leads to the initially overlapping ends of outer layers 242, 243, 242' and 243' being attached to the other layers in such fashion that a smooth surface is created these areas. The laminated semi-finished product for the inlay sheet according to the invention is shown in Figure 8 d.

In a further method step, the surfaces intended for the inlay sheet according to the invention are then die cut out of the semi-finished product shown in Figure 8 d or the two units separated from one another in another manner.

In the example embodiment shown here, the collective processing of two units, each for a one-page inlay sheet, creates two individual units, as shown in Figure 8 e, each of which has only one thermoplastic elastomer layer 240 and 240' in a hinge area 22.

To produce an identification document according to the invention, the inlay sheet is now arranged together with the remaining data pages and the cover in such a way that all pages are in the correct sequence. The inlay sheet is positioned in such a way that the hinge area is located in the future seam area.

After the document components have been fixed, they are stitched together.

The seam subsequently follows a path in the hinge area of the inlay sheet, that is, in the area that only consists of thermoplastic elastomer. Still further method steps up to finished production of the identification document can then be added.

For one, the data pages and the cover can be cut to the specified dimensions. Moreover, a protective layer, made for example of plastic or linen, can be affixed to the cover and can show additional printing. Moreover, a fold line is provided along the seam so the book can also be folded at the location specified. In the case of a one-page inlay sheet design,

the hinge area 22 extends a little beyond the bend or seam area on one side, as shown in Figure 2.

Claims

1. An inlay sheet (10) for a book-like identification document, having a hinge area (22), which is joinable to the other parts of a book with a seam along one side in the hinge area (22), and which comprises at least one layer of a thermoplastic elastomer (40, 140, 240, 340, 340', 340") and at least one additional layer (42, 43, 142, 143, 144, 145, 242, 243, 244, 245, 242', 243', 244', 245'), the inlay sheet having a side edge opposite the hinge area, wherein the at least one additional layer extends essentially from the side edge (25, 25') opposite the hinge area up to the hinge area, and the at least one layer of a thermoplastic elastomer extends into the hinge area, characterised in that a transponder coil is embedded, outside the hinge area, in at least one of the at least one layers of thermoplastic elastomer.

2. An inlay sheet as claimed in claim 1, characterised in that the at least one layer of thermoplastic elastomer is of a greater thickness in the hinge area than in the other areas.

3. An inlay sheet as claimed in claim 2, characterised in that the thickness of the at least one layer of thermoplastic elastomer in the hinge area is chosen such that the overall thickness in the hinge area is equal to the overall thickness in the other areas of the inlay sheet.

4. An inlay sheet as claimed in any one of claims 2 to 3, characterised in that arranged on one side of the at least one layer of thermoplastic elastomer there are at least two additional layers, which in each case have a seam side edge running essentially parallel to the seam, wherein the seam side edge of the first additional layer (244, 245, 244', 245') bordering directly on the layer of thermoplastic elastomer extends less far towards the hinge area than the at least one second additional layer.

5. An inlay sheet as claimed in claim 4, characterised in that the first additional layer extends at least 500 μm, preferably at least 1 mm (d, d') less far towards the hinge area than the at least one second additional layer.

6. An inlay sheet as claimed in claim 4 or 5, characterised in that at least the first additional layer or the second additional layer has an wavy or zigzag edge (242a", 244a") in the direction of the hinge area.

7. An inlay sheet as claimed in any one of claims 1 to 6, characterised in that the at least one additional layer comprises plastic that is resistant to high temperatures.

8. An inlay sheet as claimed in any one of claims 1 to 7, characterised in that in the hinge area, the at least one layer of thermoplastic elastomer has a layer thickness between 400 μm and 800 μm, preferably between 500 μm and 800 μm.

9. A book-like identification document with an inlay sheet as claimed in any one of claims 1 to 8, wherein the inlay sheet is sewn into the book-like identification document, with the seam attaching the inlay sheet to the other parts of the book-like identification document being arranged in the hinge area.

10. The book-like identification document as claimed in claim 9 comprising a passport, ID pass, visa or immunization record.

11. A method for the production of an inlay sheet (10) for a book-like identification document which comprises at least one layer of a thermoplastic elastomer (40, 140, 240, 340, 340', 340") and at least one additional layer (42, 43, 142, 143, 144, 145, 242, 243, 244, 245, 242', 243', 244', 245') and which has a hinge area (22) within which is located a seam that is formed when the inlay sheet is attached to

the other parts of the book-like identification document, the inlay sheet having a side edge opposite the hinge area, wherein the at least one additional layer is arranged above or below the at least one layer of the thermoplastic elastomer, in such a way that it extends essentially from the side edge (25, 25') opposite the seam up to the hinge area, and that the at least one layer of the thermoplastic elastomer extends into the hinge area,

characterised in that the at least one additional layer is connected to the at least one layer of a thermoplastic elastomer through lamination, and that a transponder coil is embedded, outside the hinge area, in at least one of the at least one layers of thermoplastic elastomer.

12. A method as claimed in claim 11, characterised in that a first additional layer and at least one second additional layer is arranged above or below the at least one layer of the thermoplastic elastomer on a same side as a first additional layer, and before lamination the first additional layer and the at least one second additional layer are tacked together, and/or together with the at least one layer of thermoplastic elastomer.

13. A method as claimed in claim 11, characterised in that the layer of thermoplastic elastomer includes a reinforced area, the at least one additional layer arranged essentially on areas of the at least one layer of thermoplastic elastomer which have a lesser thickness compared with the reinforced area of the layer of thermoplastic elastomer, wherein the at least one second additional layer projects somewhat beyond the area of lesser thickness into the reinforced area.

14. A method as claimed in claim 12, characterised in that the first additional layer and the at least one second additional layer are arranged on areas of the at least one layer of thermoplastic elastomer which have a lesser thickness compared with reinforced areas of the layer of thermoplastic elastomer, wherein the at least one

second additional layer projects beyond the area of the lesser thickness into the reinforced area.

15. A method as claimed in any one of claims 11 to 14, characterised in that two or more inlay sheets are produced together on one sheet, wherein two inlay sheets respectively border on one another with the hinge area, wherein the inlay sheets are punched out of said sheet after lamination.

Fig. 1a

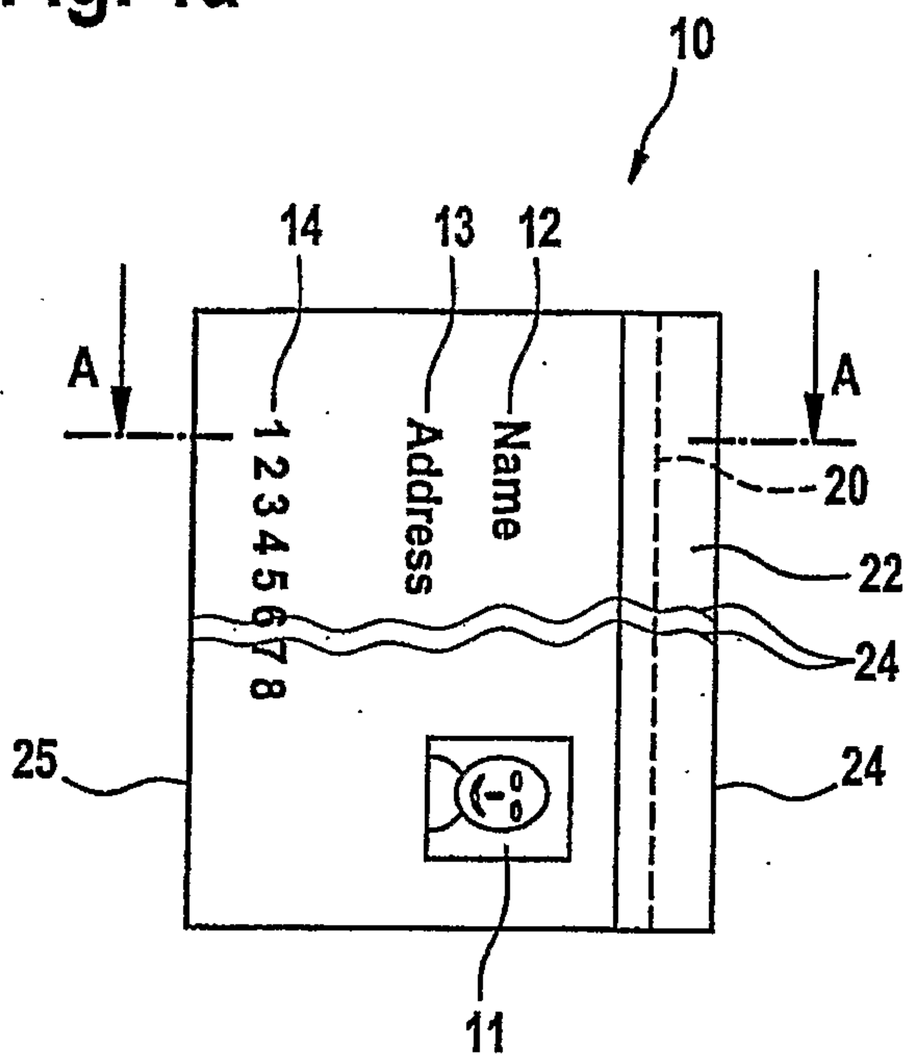


Fig. 1b

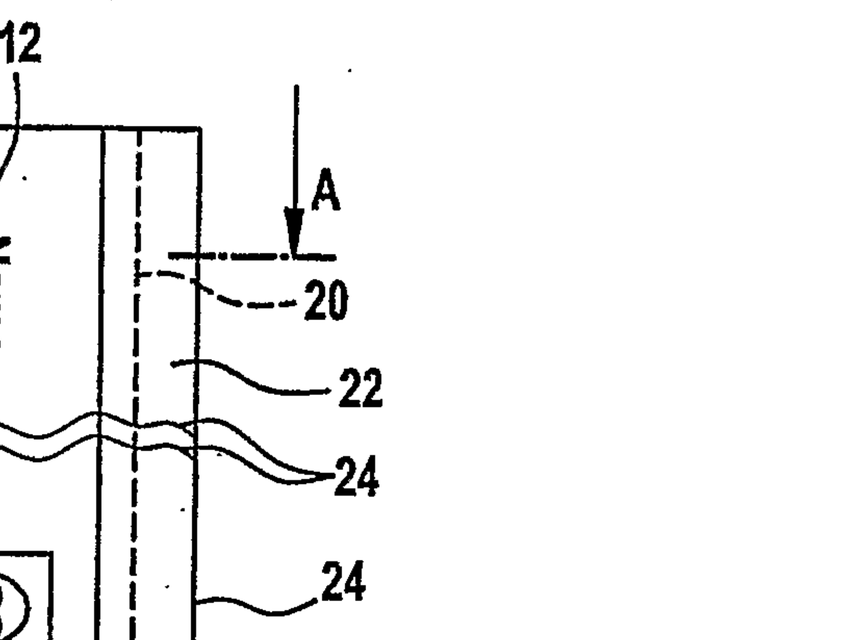


Fig. 2

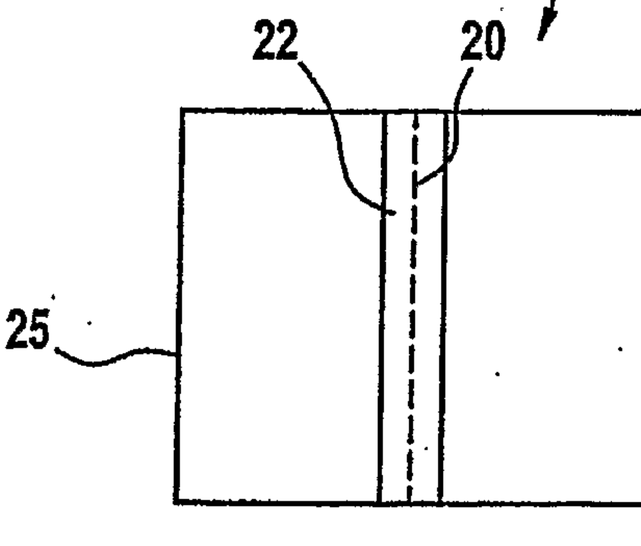


Fig. 3

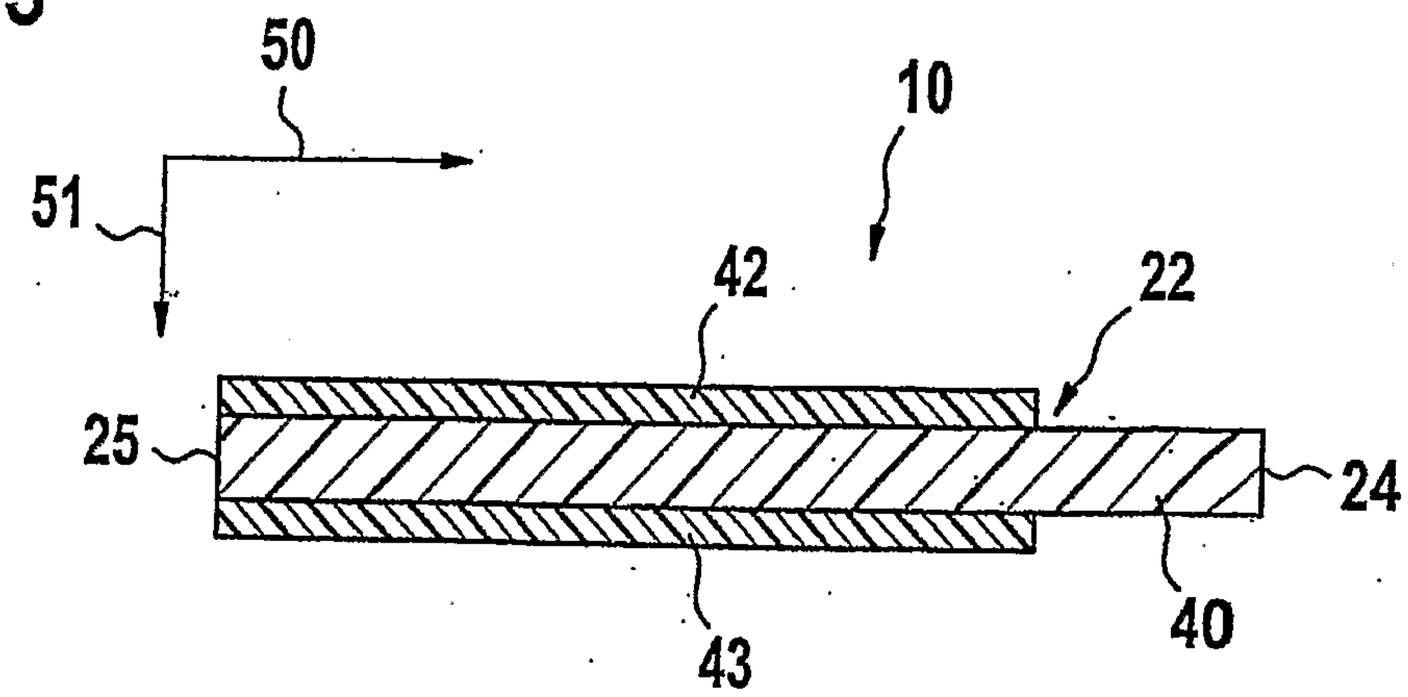


Fig. 4

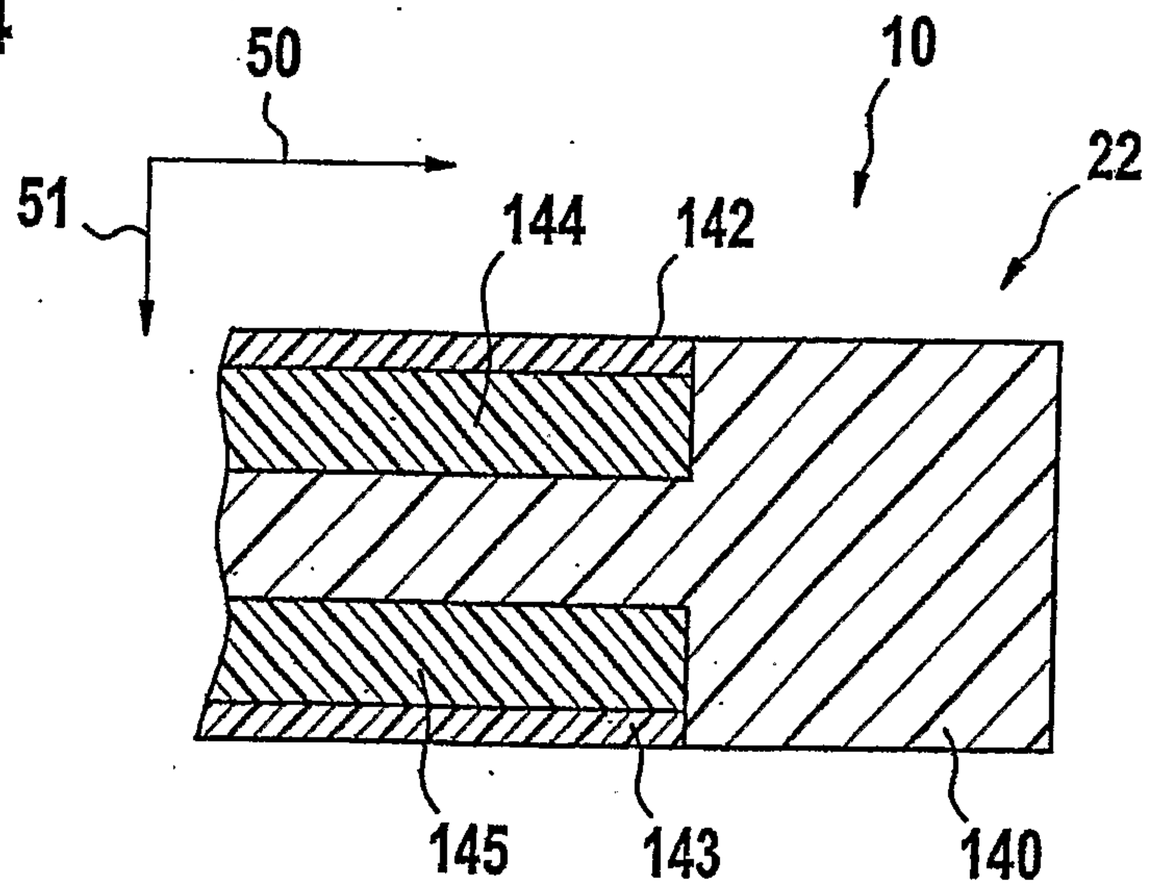


Fig. 5a

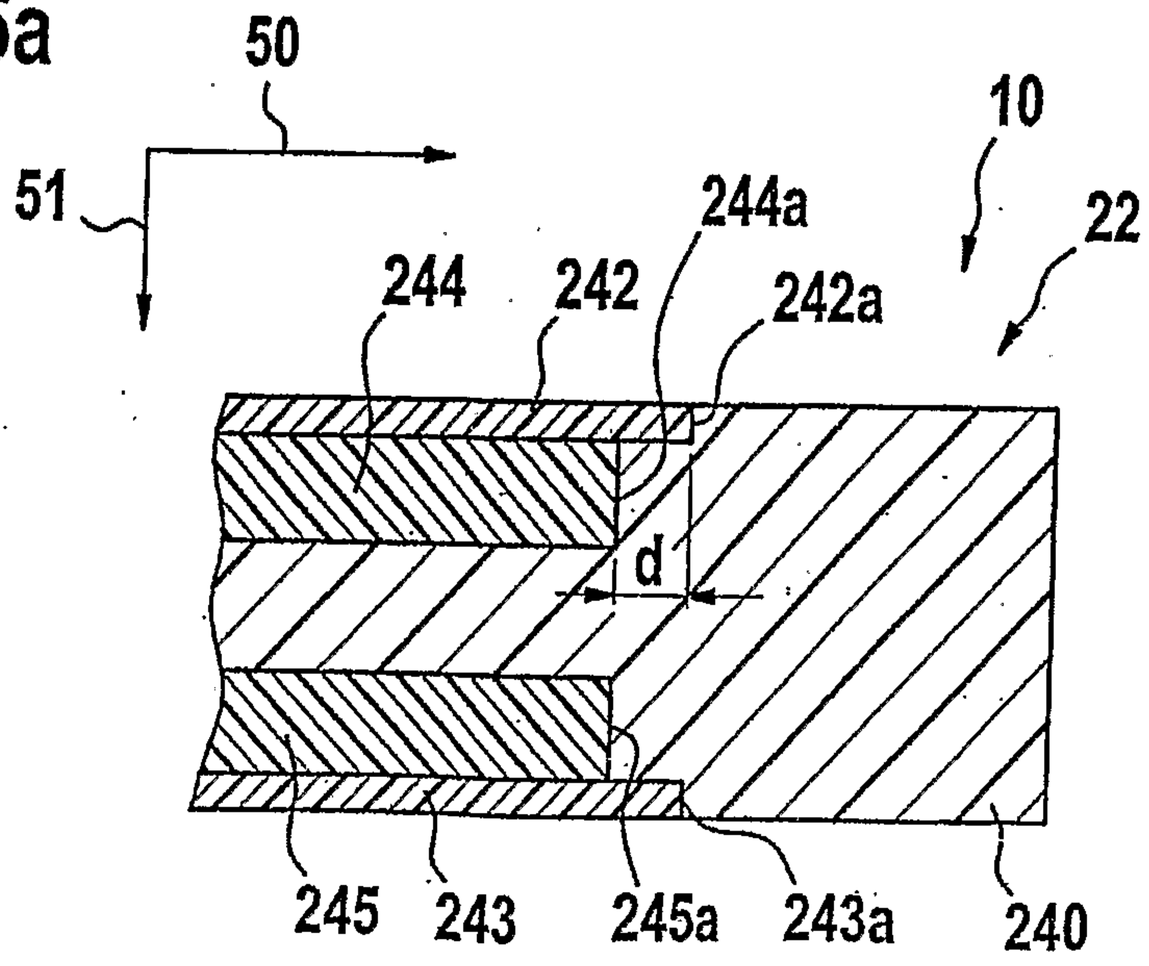


Fig. 5b

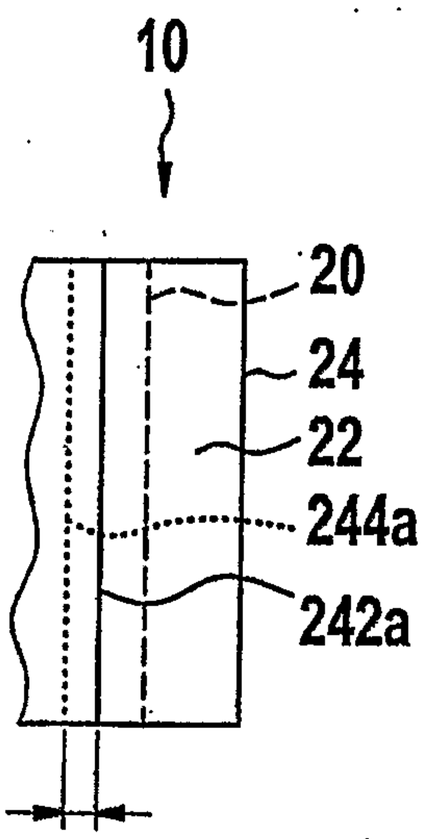


Fig. 5c

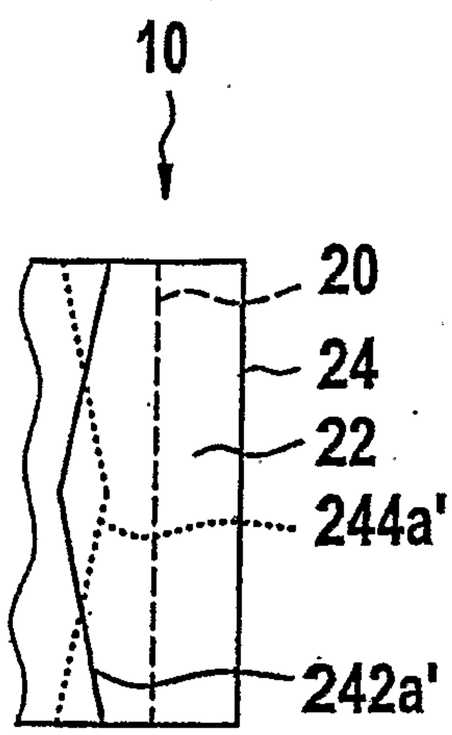


Fig. 5d

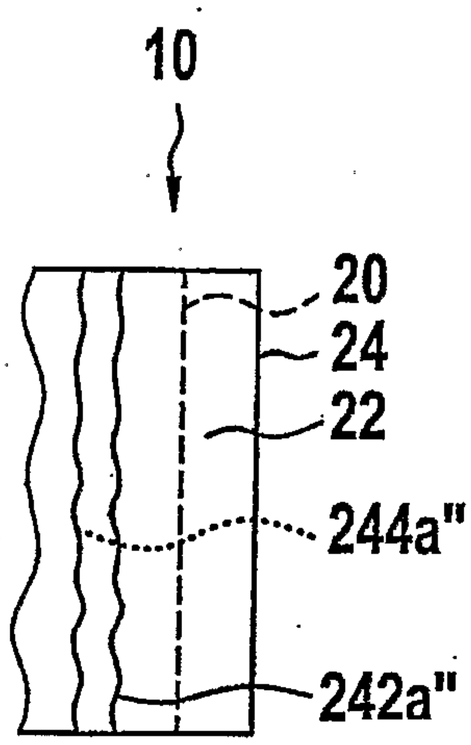


Fig. 6a

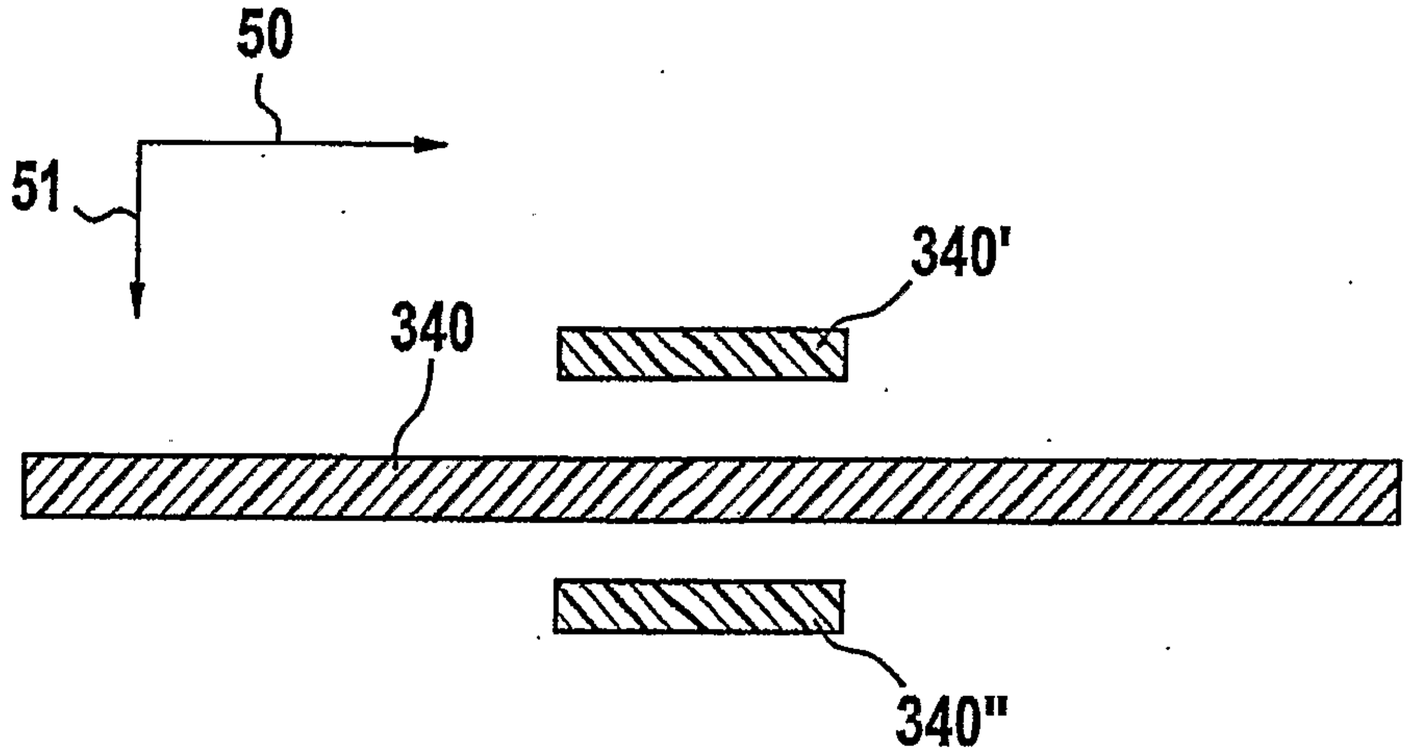


Fig. 6b

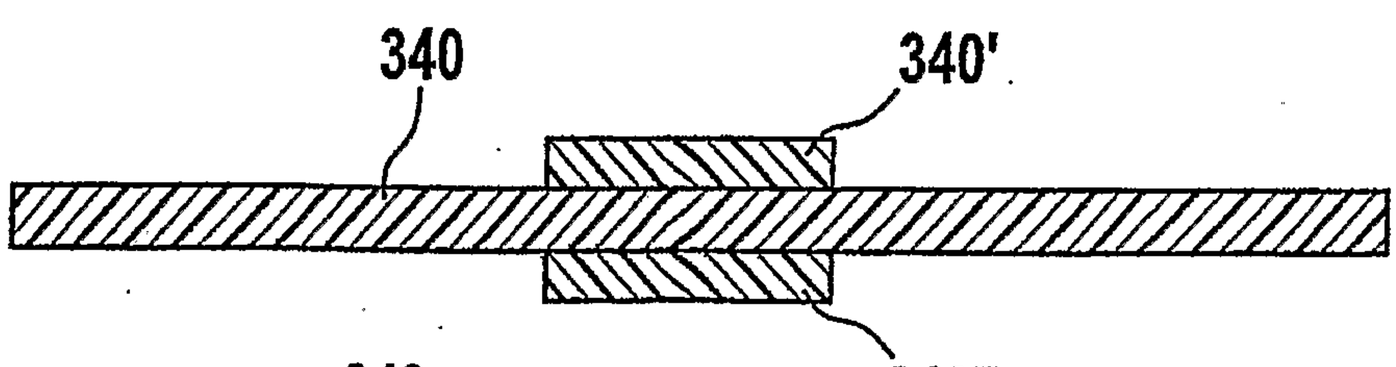


Fig. 7

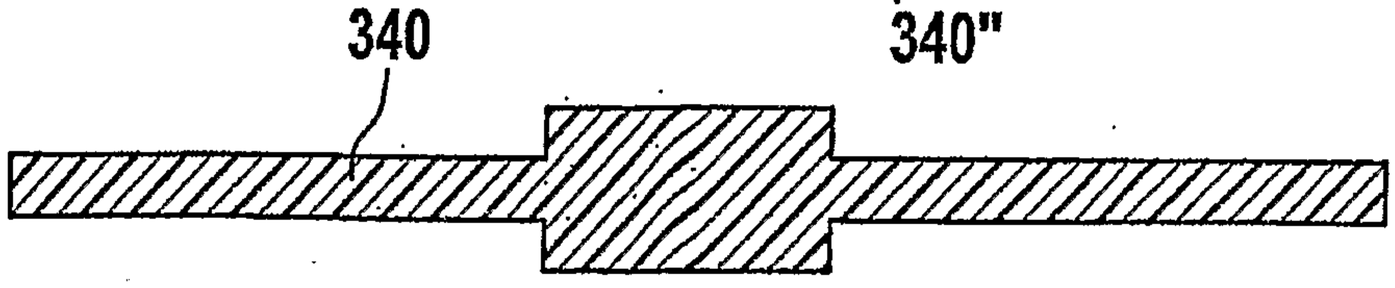


Fig. 8a

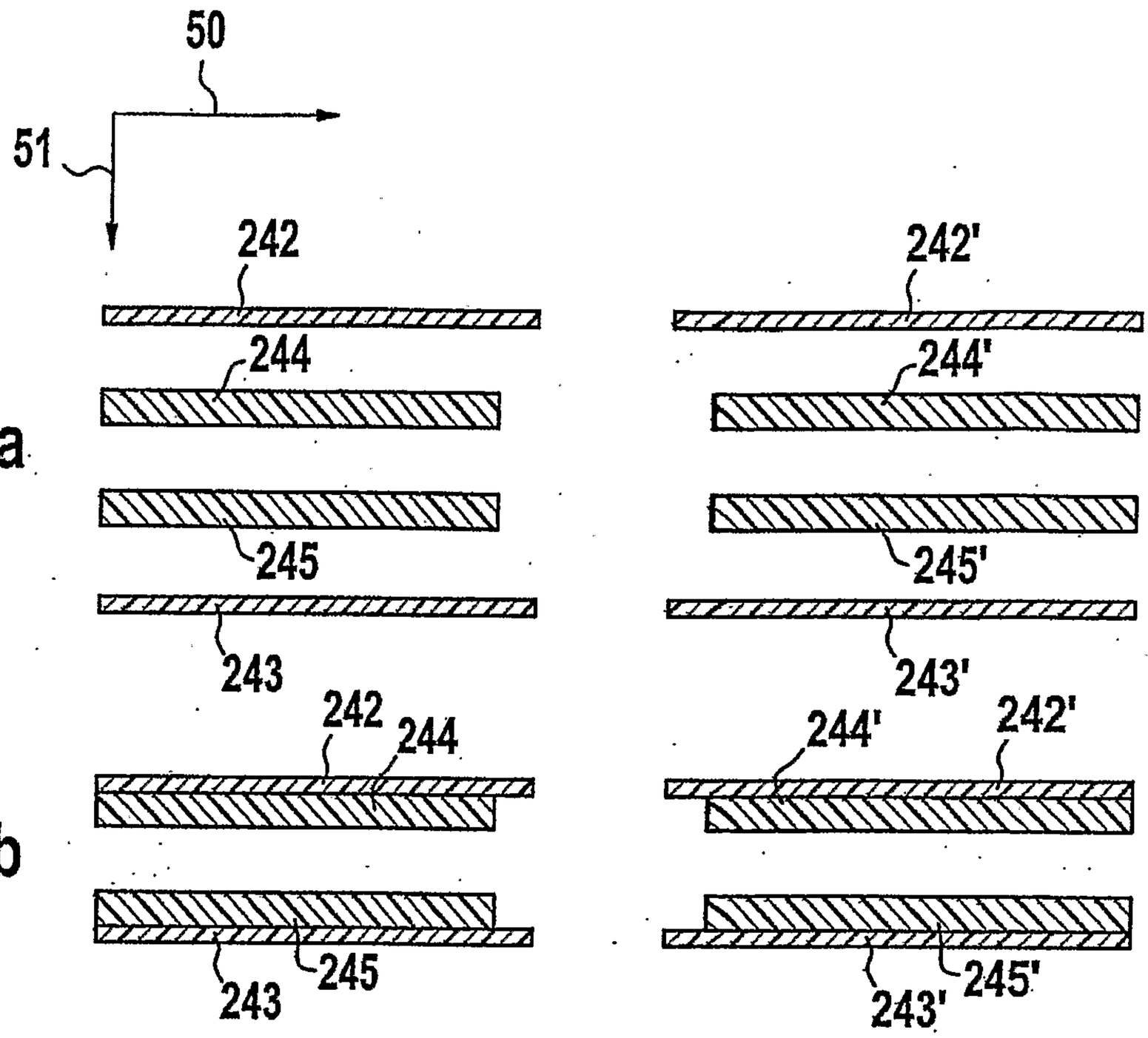


Fig. 8b

Fig. 8c

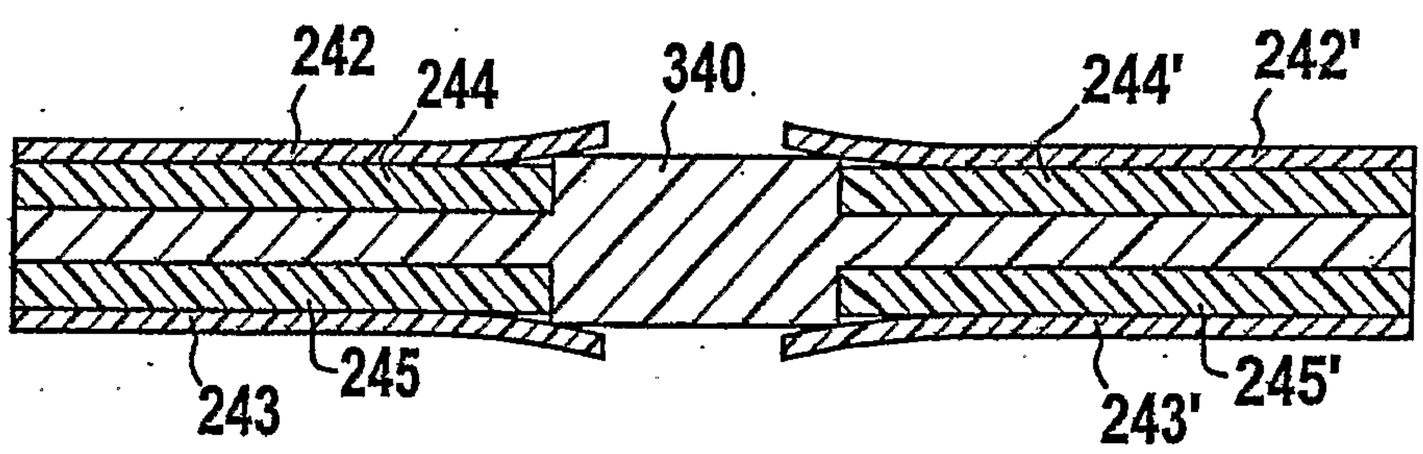


Fig. 8c

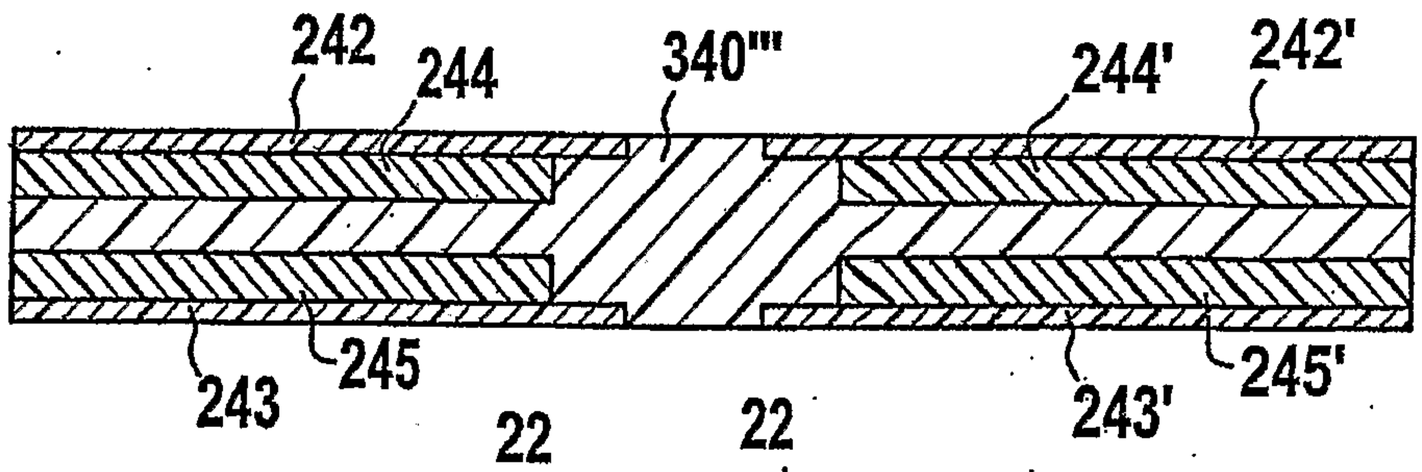
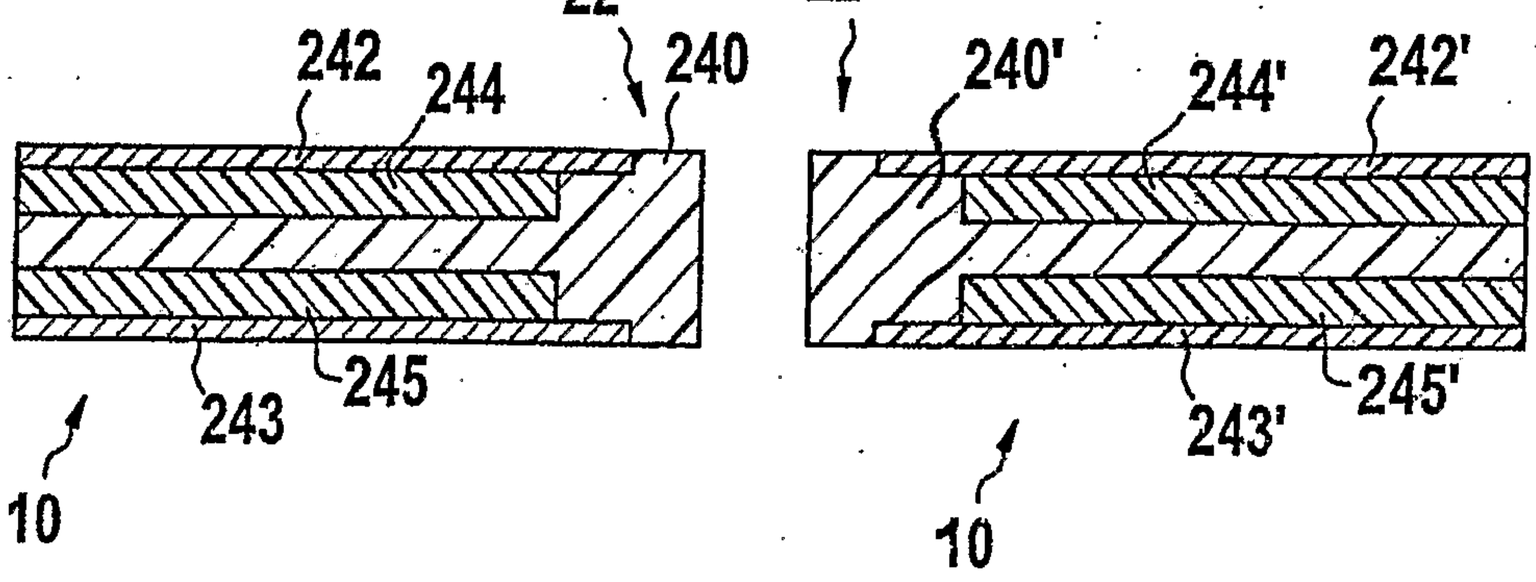
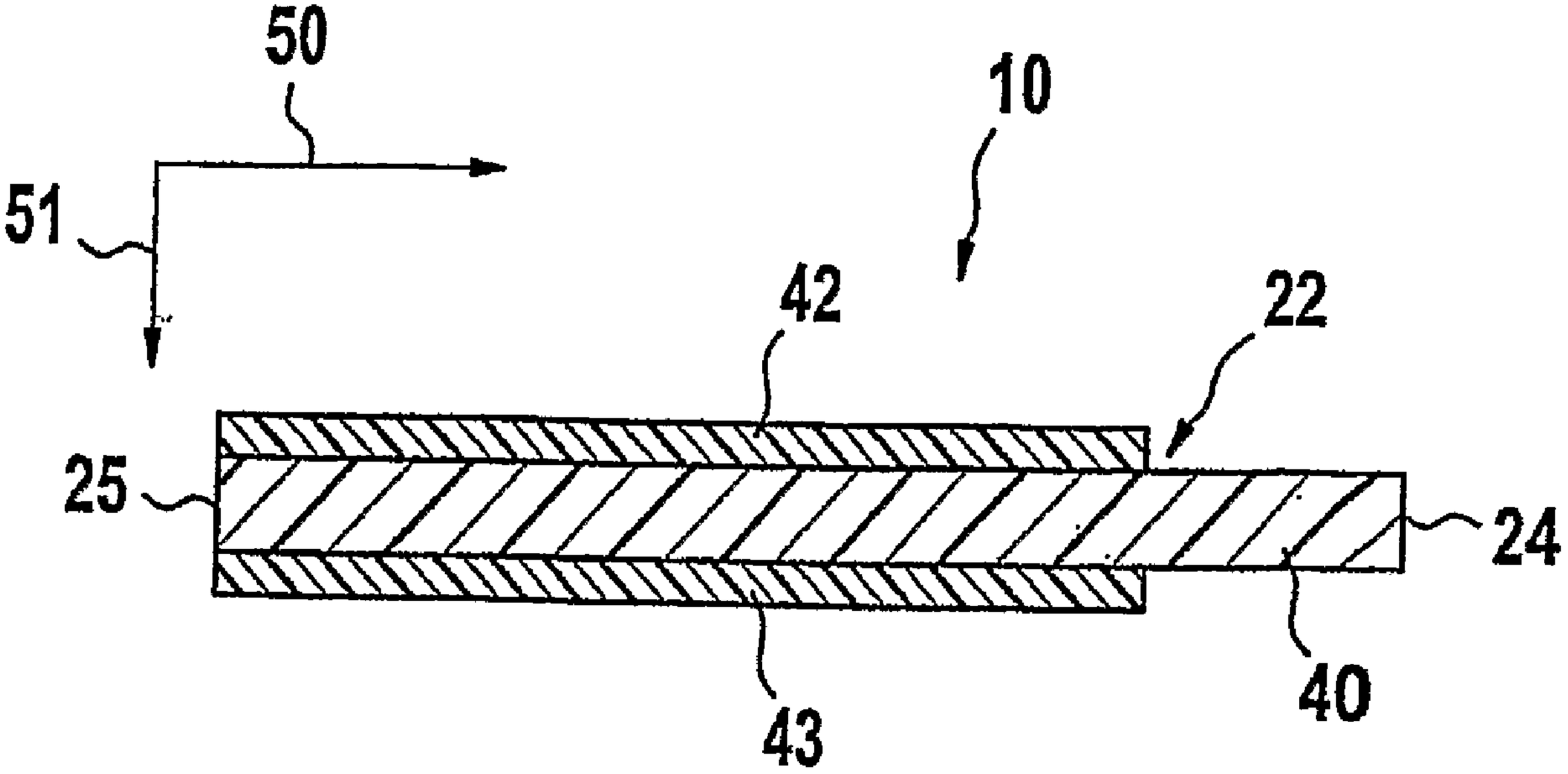


Fig. 8d




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