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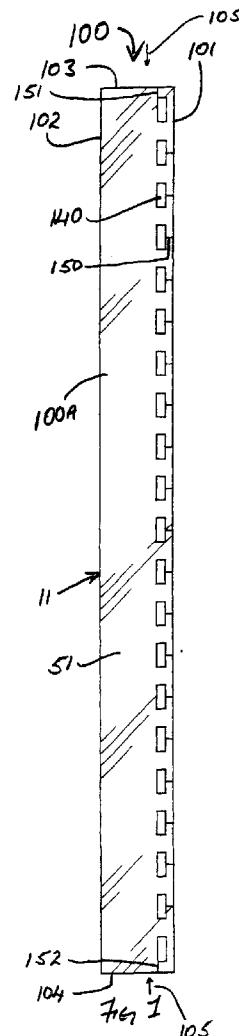
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(54) **A page attachment and/or reinforcement device**

(57) A page attachment and/or reinforcement device comprises a laminate strip 100 comprising a first and second sheets of material releasably stuck together in register by a layer of adhesive, the second sheet being peelable from the first sheet to leave the adhesive on the first sheet. A plurality of holes 140 are formed in the strip along one edge 101, and a respective slit 150, 151 or 152 extends from each hole 140 to an edge of the strip.



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Description

[0001] This invention relates to a page attachment and/or reinforcement device.

[0002] So-called loose leaf binders or lever arch files are well known. They essentially comprise a pair of relatively strong covers hinged together, and a retaining mechanism which allows pages to be inserted or removed from between the covers. Each page has two or more holes punched at intervals along one edge of the page, these holes being positioned so as to engage correspondingly spaced elements of the retaining mechanism such that the pages, when in place, are wholly protected by and retained between the covers.

[0003] Repeated movement of the page to and fro relative to the open covers inevitably results in the holes in the page becoming bigger or, more adversely, the page in the vicinity of the holes tears thus allowing the page to fall loose from one or more of the elements of the retaining mechanism.

[0004] It is well known to provide so-called reinforcement elements for the holes. A reinforcement element comprises a material of relatively stronger and thicker construction when compared with the paper of the page. The reinforcement, in plan view, is substantially circular with a coaxially disposed circular hole therein. One face of the element comprises adhesive which enables the element to adhere to the page. Thus, either before or after the page is torn in the vicinity of a hole, the element is placed in position so that the circular hole of the element and the hole in the paper are in register.

[0005] A disadvantage of this arrangement is that an element is required for each hole in the page and the application of the element or elements onto the page is cumbersome and time consuming.

[0006] In another type of arrangement, a plurality of pages has a plurality of holes punched along one edge thereof. By means of a well known binding device, a binding element is threaded through the holes. The element provides a means whereby the pages are held together in the form of a book, the pages being moveable relative to the element to enable the collection of pages to be read in the manner of a book.

[0007] Again, as indicated earlier, a disadvantage of this arrangement is that the constant movement of the pages as they are turned inevitably results in some of the holes being enlarged and/or torn to the extent that the page begins to fall away from the element.

[0008] Heretofore, the only solution known for enabling the page with the damaged holes to be correctly reinstated in the binding was to remove the page, cut the page near the edge so as to remove the paper with the damaged holes therein, re-apply the holes to the paper and, by careful and difficult manipulation of the element, re-thread the pages back into position.

[0009] Apart from the difficulty of re-threading the page, it is often the case that some of the text printed near the original holes will be lost or will be punched

away when a new set of holes is created. Furthermore, the newly punched page will have a width less than the original width and will thus be out of alignment with the remaining pages.

[0010] It is an object of the present invention to provide a device which overcomes or mitigates these problems.

[0011] The invention, therefore, provides a page attachment and/or reinforcement device comprising at least a first sheet of material having a plurality of holes spaced along a notional line substantially parallel to one edge of the sheet.

[0012] The invention will be understood in greater detail from the following description of preferred embodiments thereof given by way of example only and with reference to the accompanying drawings, in which:

Fig. 1 is an obverse plan view of a first embodiment of a device according to the invention;

Fig. 2 is an obverse plan view of a second embodiment of a device according to the invention;

Fig. 3 is an obverse plan view of a third embodiment of a device according to the invention;

Fig. 4 is an obverse plan view of a fourth embodiment of a device according to the invention;

Fig. 5 is an obverse plan view of a fifth embodiment of a device according to the invention;

Fig. 6 is a perspective reverse and enlarged view of part of the device of Figs. 1 and 4 of the drawings showing the laminate structure;

Fig. 6a is a side view of the device of Fig. 6 of the drawings;

Fig. 6b is an enlarged view of part of the device of Fig. 6a of the drawings;

Fig. 7 is a perspective reverse and enlarged view of part of the device of Figs. 2 and 5 of the drawings showing the laminate structure;

Fig. 7a is a side view of the device of Fig. 7 of the drawings;

Fig. 7b is an enlarged view of part of the device of Fig. 7a of the drawings;

Fig. 8 is a plan view of the edge of a page having damaged perforations therein;

Fig. 9 shows the page of Fig. 8 in combination with the device of Fig. 1 of the drawings;

Fig. 10 shows the combination of Fig. 9 in a spiral binder;

Fig. 11 is a plan view of the edge of a page having damaged perforations therein;

Fig. 12 shows the page of Fig. 11 with the perforations removed;

Fig. 13 shows the page of Fig. 12 in combination with the device of Fig. 2 of the drawings;

Fig. 14 shows the combination of Fig. 13 in a spiral binder;

Figs. 15 - 19 are close-up perspective views of the sequence of events in mating the combination of Fig. 9 or Fig. 13 of the drawings with a binding element to provide a bound page;

Fig. 20 is a plan view showing the device of Fig. 2 in use with a substrate other than paper;

Fig. 21 is a perspective view of Fig. 20 of the drawings;

Fig. 22 is a plan view of the device of Fig. 3 with a binder;

Fig. 23 is a perspective view of Fig. 22;

Fig. 24 is a perspective view of the combination of the device and binder of Fig. 23 in a lever arch file;

Fig. 25 is a plan view of a sixth embodiment of the invention;

Fig. 26 is a cutaway view of part of the device of Fig. 25 showing the laminate structure;

Figs. 27-29 illustrate how the device of Fig. 25 is used to retain a damaged page in a two-ring lever arch file; and

Figs. 30 and 31 are modifications to the embodiment of Fig. 25.

[0013] Referring now to the drawings and, in particular, to Figs. 1, 6, 6a and 6b, there is shown a first embodiment of a device 100 according to the invention. The device 100 comprises an elongate laminate strip 100A comprising a first strip-like element 11 in register with, and releasably adhered to, a second strip-like element 12. The first element 11 has an obverse face 51 and a reverse face 52 and is made of a sheet material which is significantly more rigid (though still flexible) and resistant to tearing than ordinary printer or typewriter paper. The element 11 is preferably made of a plastics

sheet material, preferably uPVC, preferably transparent, and has a thickness of preferably between 175µm and 275µm, most preferably about 250µm. The reverse face 52 is coated with a suitable layer of adhesive 70 such as a water based acrylic adhesive. The second element 12 has an obverse face 21 and a reverse face 22 and is made of a sheet material which constitutes a peel-to-remove backing strip 12 having a thickness of preferably between 50µm and 125µm, most preferably 100µm. The element 12 is preferably a high flow liner or a polyurethane coated liner or a film which, through the action of the adhesive 70, forms a laminate with the first element.

[0014] The strip 100A has first and second substantially parallel longitudinal edges 101, 102 and first and second transverse edges 103, 104. A plurality of holes 140 are provided at intervals along the strip 100A, along a notional line 105 running substantially parallel to and spaced apart from the edge 101. The number, shape and spacing of these holes 140 depends on the nature and type of binder intended for use with the device 100. In the present example, each of the holes 140 is a rectangle whose longitudinal axis is aligned parallel to the edge 101. For a device 100 having the length of an A4 sheet of paper, the number of holes 140 is approximately twenty.

[0015] The strip 100A also includes a plurality of slits 150, each extending between, and in communication with, a respective hole 140 and the edge 101. In the case of the holes 140 located at each longitudinal end of the device 100, the slit 150 may be absent. Instead, in the case of the hole 140 nearest the edge 103, a slit 151 may be provided which extends between, and is in communication with, the hole 140 and the edge 103. Similarly, in the case of the hole 140 nearest the edge 104, a slit 152 may be provided which extends between, and is in communication with, the hole 140 and the edge 104.

[0016] Referring now to Figs. 2 and 7 of the drawings, there is shown a second embodiment of a device 200 according to the invention. The device 200 is identical in all respects to the device 100 except as follows. The second element 12 comprises two sub-elements 12a and 12b. This may be achieved after the manufacture of the device 100 by scoring the second element 12 with a sharp blade so as to provide a division line 12c which runs from the edge 103 to the edge 104 along the inner edges of the holes 140 so that the holes 140 lie entirely, or substantially entirely, between the dividing line 12c and the edge 101.

[0017] In Fig. 3 of the drawings, there is shown a third embodiment of a device 300 according to the invention. The device 300 comprises the first element 11 only as described with respect to Fig. 1 of the drawings. The element 11 does not have any adhesive.

[0018] However, the element 11 additionally includes a plurality of holes 301 disposed along the length of the element 11 along a second notional line which is substantially parallel to the notional line 105 (Fig. 1) and on

the opposite side thereof to the edge 101. The holes 301 may be of any desired shape, configuration and size and may be disposed relative to each other along the length of the device 300 as desired. The purpose of the holes 301 is to enable the device 300 to be releasably bound into a folder such as a so-called lever arch folder. Such folders are well known and do not need to be described here save to say that they are available in a variety of types and so require a different number of holes 301 to be present at differing intervals depending on the type used.

[0019] In Fig. 4 of the drawings, there is shown a fourth embodiment of a device 400 according to the invention, which is the same as the device 100 (Figs. 1, 6, 6a, 6b) in its construction and further comprises the holes 301.

[0020] In Fig. 5 of the drawings, there is shown a fifth embodiment of a device 500 according to the invention. The device 500 is the same in construction as the device 200 (Figs. 2, 7, 7a, 7b) and further comprises the holes 301 which are on the opposite side of the division line 12c to the edge 101.

[0021] Reference is now made to Figs. 8 and 9 of the drawings, where the use of the device 100 is shown.

[0022] A part of a page 520 (Fig. 8) which is retained in a so-called spiral binder 610 (Fig. 10) has a side or longitudinal edge 511, a top edge 512 and a bottom edge 513. The edge opposite the edge 511 is not shown.

[0023] In order to enable the page 520 to be retained in the binder 610, the page 520 is provided along the edge 511 with a plurality of holes 40 equal in number to, and having substantially the same shape and spacing as, the holes 140 along the edge of the strip 100A. The holes 40 are located near the edge 511. If the holes 40 are substantially all intact, then the page 520 will be successfully retained in place by the binder 610 which is threaded through the holes 40.

[0024] However, where the holes 40, or a substantial number of them, are damaged, as will be observed in Fig. 8 of the drawings, the binder 610 will not be able to accurately retain the page 520 in place and, at best, the page 520 will be loose and skewed relative to the other pages and, at worst, fall from the binder 610.

[0025] If, then, the second element 12 is removed from the device 100 in the manner of a peel-to-remove element, the adhesive 70 is exposed on the element 11. If the device 100 without the second element 12 is now offered to the page 520 such that the top edge 103 and the top edge 512 are in register, the bottom edge 104 and the bottom edge 513 are in register, and the edge 101 and the edge 511 (or what remains of it) are in register, then respective holes 140 will be in register with respective holes 40. When thus in the correct alignment, the device 100 with exposed adhesive 70 is pressed onto the page 520 thereby providing a repair and reinforcement for the page 520. The resulting combination (Fig. 9) may now be offered to the binder 610 in a manner described later in the specification.

[0026] Referring now to Figs. 11-13 of the drawings, the use of the device 200 is shown. Again, as previously described, a page 520 with damaged perforations 40 is shown. As will be observed in Fig. 11 the inner edge of each hole 40 lies on a notional line 44 which is substantially parallel to the edge 511. If the page 520 is now cut substantial along this notional line 44 or on a line substantially parallel to and to the left of the notional line 44, as viewed in Fig. 11 of the drawings, the paper to the right of the line 44 and associated holes 40 are removed from the page 520. The page 520 will now have a straight edge 44 (Fig. 12) and have a width less than when the page 520 had the holes 40.

[0027] If the sub-element 12b of the second element 12 is now removed from the device 200 and the first element 11 (together with the in-place sub-element 12a) and the thus exposed adhesive 70 is offered to the page 520 such that the line 12c and the edge 44 (previously the notional line 44) of the page 520 are in register and the element 11 is applied to the paper, there is now provided a combination 505 (Fig. 13) which has substantially the dimensions of the original sized page 520. In essence, therefore, the sub-element 12b (which functions as a peel-to-remove strip) is removed to expose the adhesive 70 thereunder which is placed on the paper 520. A similar arrangement to that described with respect to the device 100 pertains except that the sub-element 12a remains in place to provide a cover for what would otherwise be exposed adhesive 70. The resulting combination may now be offered to the binder 610 in a manner described later in the specification.

[0028] It will be appreciated that, in the case of the device 200, it can function in the manner described with respect to the device 100 if both sub-elements 12b and 12c are removed. The advantage of the device 200 over the device 100 is that the former is then more versatile.

[0029] The device 400, as has been described above, is the same as the device 100 save that the former has holes 301. The device 400 is used to repair/reinforce a page in an identical fashion to that described with respect to the device 100. Similarly, the manner of use of the device 500 to repair/reinforce a page is essentially the same as that of the device 200.

[0030] Figs. 15-19 show how the devices 100, 200, 400 and 500 with attached page may be offered to a spiral binder 610. For convenience, the description with respect to the device 100 and associated page 520 of Fig. 8 of the drawings will be described. It will be appreciated that the devices 200, 400 and 500 function in a similar fashion. Thus, in Fig. 15, there is shown the spiral binder 610 which has already in place a number of pages 700.

[0031] It is desired to bind the page 520 having the device 100 attached thereto (the device combination as shown in Fig. 9 of the drawings). It is assumed that the slits 151 and 152 are present but it will be appreciated that the binding action can be successfully completed in the absence of the slits 151, 152. For ease of descrip-

tion, each spiral of the binder 610 is labelled. Thus, in Figs. 15-19, there are shown spirals 611, 612, 613 and 614.

[0032] As a first step, the edges 103, 512 are offered axially to the spiral 611. It will be appreciated that where the devices 100 and 400 are used, it would be necessary to cut a slit in paper which might be present at the slits 151, 152. As the page 520 is offered to the first spiral 611, the slit 151 opens or is opened to allow the spiral to occupy the hole 140 associated therewith (Fig. 15). The page 520 now assumes a flat orientation as shown in Fig. 16.

[0033] Material 141, 142 on either side of the next adjacent slit 150 is manipulated in a direction transverse to the plane of the device 100 so as to effectively enlarge the associated slit 150, thereby enabling the spiral 612 to enter the hole 140. To assist, the page 520 may be moved in the direction of the arrow 550 so that all of the materials 142 can be caused to engage with their respective spirals 612, 613, etc. When thus engaged, the page 520 is moved in the direction of the arrow 551 to enable all of the materials 142 to engage with their respective spirals 612, 613, etc. As shown in Fig. 19, each of the spirals 611, 612, 613, etc. is threaded through a respective hole 140 thus enabling the page 520 to be rebound in the binder 610 as shown in Figs. 10 and 14.

[0034] There is now provided a page 520 with a device 100 (or 200, 400 or 500), the result of which is a combination which is much stronger when compared with the binder 610 having the page 520 but without the device 100.

[0035] The device 200 may be used to advantage to hold other substrates besides pages. For example, as will be observed in Figs. 20 and 21, by removing the sub-element 12b, an object in the form of, for example, a metal washer 800 could be attached to the adhesive 70. Such samples could be incorporated into a spiral binder with other objects or pages making it very convenient for a reader to refer to actual samples in the same book as the text relating thereto.

[0036] Depending on the size of object, the length of the device 200 could be reduced as required. Thus, as will be observed in Fig. 21 of the drawings, the device 200 has only two holes 140.

[0037] If the device 400 or 500 is used, the pages attached thereto could be housed in a so-called lever arch binder 900 of the kind shown in Fig. 24.

[0038] With particular reference to Figs. 23 and 24, and considering now the device 300, the device 300 is offered to the binder 610 as was previously described with respect to the device 100. As will be observed, the device 300 is now bound with other pages 700 in the binder 610. It will be recalled that the device 300 is without adhesive 70 and does not carry an attached page. The provision of the holes 301 now enable the device 300 to be placed between the jaws 81 of the lever arch file 900 thereby allowing the binder 610 and associated pages 520 to be releasably retained in the lever arch file

900 (Fig. 24). This arrangement can be very convenient in that an entire book of pages 520 retained together by a binder 610 can be housed in a lever arch file 900 either alone or with other similarly bound books or individual pages.

[0039] Figs. 25 and 26 show a device 600 according to a sixth embodiment of the invention for use with a two-ring lever arch file. In these figures, and in Figs. 27 to 29, the same reference numerals as were used in the previous embodiments are used for the same or equivalent parts of the present embodiment.

[0040] In principle, the device 600 is the same as the device 200, with the following differences. Since the device 600 is for use with a two-ring lever arch file there are only two holes 140, which are round, and the length of the strip 100A is only slightly longer than the distance between the two holes. Also, the division line 12c is moved away from the edge 101 slightly so that it does not intersect the holes. Finally, since there are no holes intermediate the holes 140 there are no slits 150 extending to the edge 101, and only the slits 151 and 152 are present.

[0041] The device is used in a similar way to the device 200 to repair a page 520 (Fig. 27) with torn holes 40. First the torn edge 511 is cut back to remove the torn holes to present a straight edge 44, Fig. 28. Now the sub-element 12b is removed and the exposed adhesive 70 on the element 11 pressed against the page 520 with the dividing line 12c in register with the edge 44 to form the composite shown in Fig. 28. The thus repaired and reinforced page may now be inserted in the lever arch file 950, Fig. 29, by manoeuvring the device 600 such that the rings 952 enter the holes 40 along the slits 151, 152.

[0042] If desired, and as shown in dashed lines in Fig. 28, the device 600 may be used to repair a damaged page 520', without removing the torn holes at the edge of the page, by removing both sub-elements 12a and 12b and sticking the element 11 onto the page with its holes 140 in register with the torn holes.

[0043] Fig. 30 shows a modification of the device 600 in which the slits 151, 152 are replaced by slits 150 leading to the edge 101. Fig. 31 shows a further modification in which the slits 151, 152 are omitted altogether, this being possible because of the nature of lever arch files which allow the insertion of pages at any point.

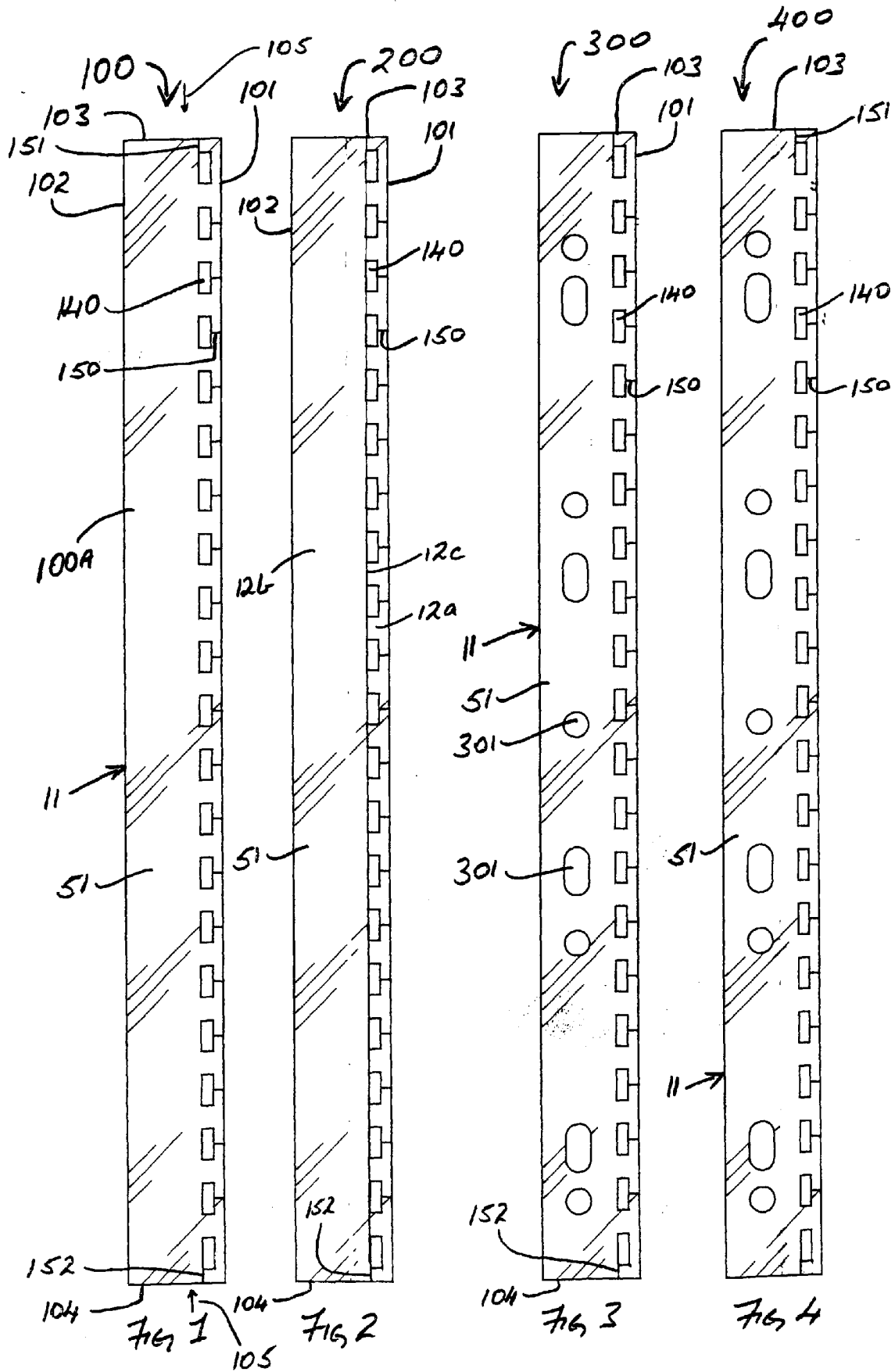
[0044] It will be appreciated that in the preceding embodiments, where a hole 140 or 301, or a slit 150, 151 or 152, as the case may be, is formed in a part of the device from which the element 12 or part thereof is removed before the device is used, it is only necessary to form the hole or slit in the element 11.

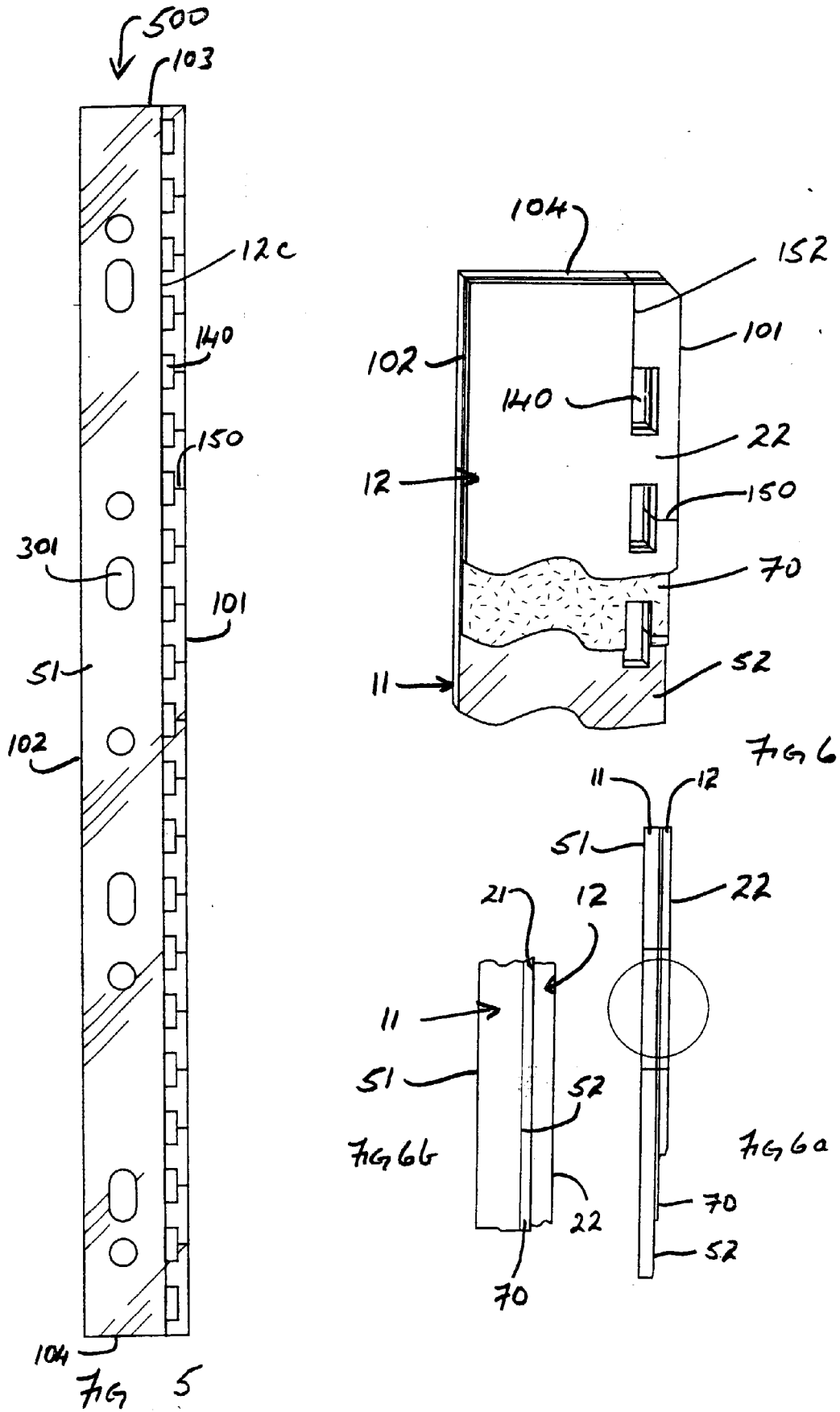
Nevertheless, for ease of manufacture, it is preferable to form the hole or slit through both the elements 11 and 12.

[0045] The invention is not limited to the embodiments described herein which may be modified or varied without departing from the scope of the invention.

Claims

1. A page attachment and/or reinforcement device comprising at least a first sheet of material having a plurality of holes spaced along a notional line substantially parallel to one edge of the sheet. 5
2. A device as claimed in claim 1, further including a plurality of slits in the sheet each extending from a respective hole to an edge of the sheet, at least the slits associated with the holes, if any, intermediate the end holes of the plurality of holes extending to the said one edge. 10
3. A device as claimed in claim 1 or 2, further including a second plurality of holes spaced along a second notional line substantially parallel to the first notional line and on the opposite side thereof to the said one edge of the sheet. 15
4. A device as claimed in claim 1, wherein the device comprises a laminate of the first sheet and a second sheet releasably stuck together in register by a layer of adhesive, the second sheet being peelable from the first sheet to leave the adhesive on the first sheet, and the said holes being formed at least through the first sheet. 20
5. A device as claimed in claim 4, wherein the second sheet is divided into two parts along a line substantially parallel to the said one edge of the sheet, the holes being formed through both sheets and lying substantially entirely between the dividing line and the said one edge. 30
6. A device as claimed in claim 4, further including a plurality of slits formed at least in the first sheet and each extending from a respective hole to an edge of the first sheet, at least the slits associated with the holes, if any, intermediate the end holes of the plurality of holes extending to the said one edge. 35
7. A device as claimed in claim 6, wherein the second sheet is divided into two parts along a line substantially parallel to the said one edge of the sheet, the holes and slits being formed through both sheets and lying substantially entirely between the dividing line and the said one edge. 40
8. A device as claimed in claim 4 or 6, further including a second plurality of holes formed at least in the first sheet and spaced along a second notional line substantially parallel to the first notional line and on the opposite side thereof to the said one edge of the sheet. 45
9. A device as claimed in claim 8, wherein the second sheet is divided into two parts along a line substantially parallel to the said one edge of the sheet, the first plurality of holes and the slits, if present, being formed through both sheets and lying substantially entirely between the dividing line and the said one edge, and the second plurality of holes lying on the opposite side of the dividing line to the said one edge. 50
10. A device as claimed in claim 2 or 6 or any preceding claim directly or indirectly dependent on claim 2 or 6, wherein the slits associated with the end holes extend to an edge transverse the said one edge of the sheet or sheets. 55
11. A device as claimed in claim 10, wherein there are only two holes which therefore constitute the end holes.
12. A device as claimed in any preceding claim, wherein the first, or the first and second sheets, are strips of material of which the said one edge is one longitudinal edge.





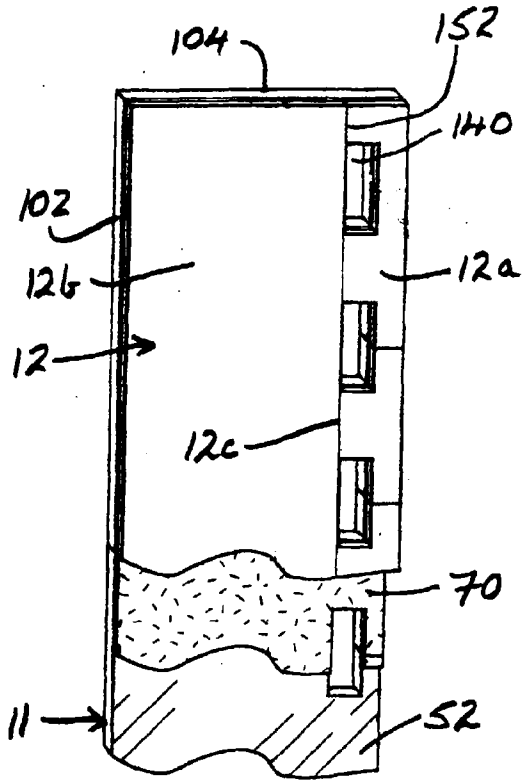


FIG 7

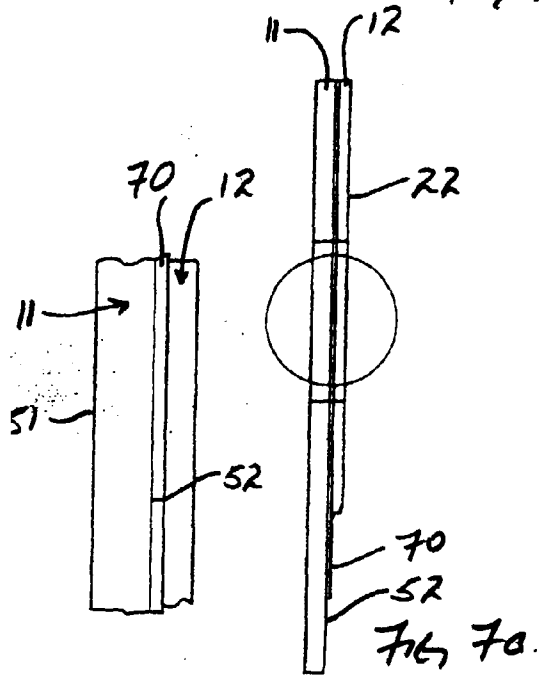


FIG 7b

FIG 7a

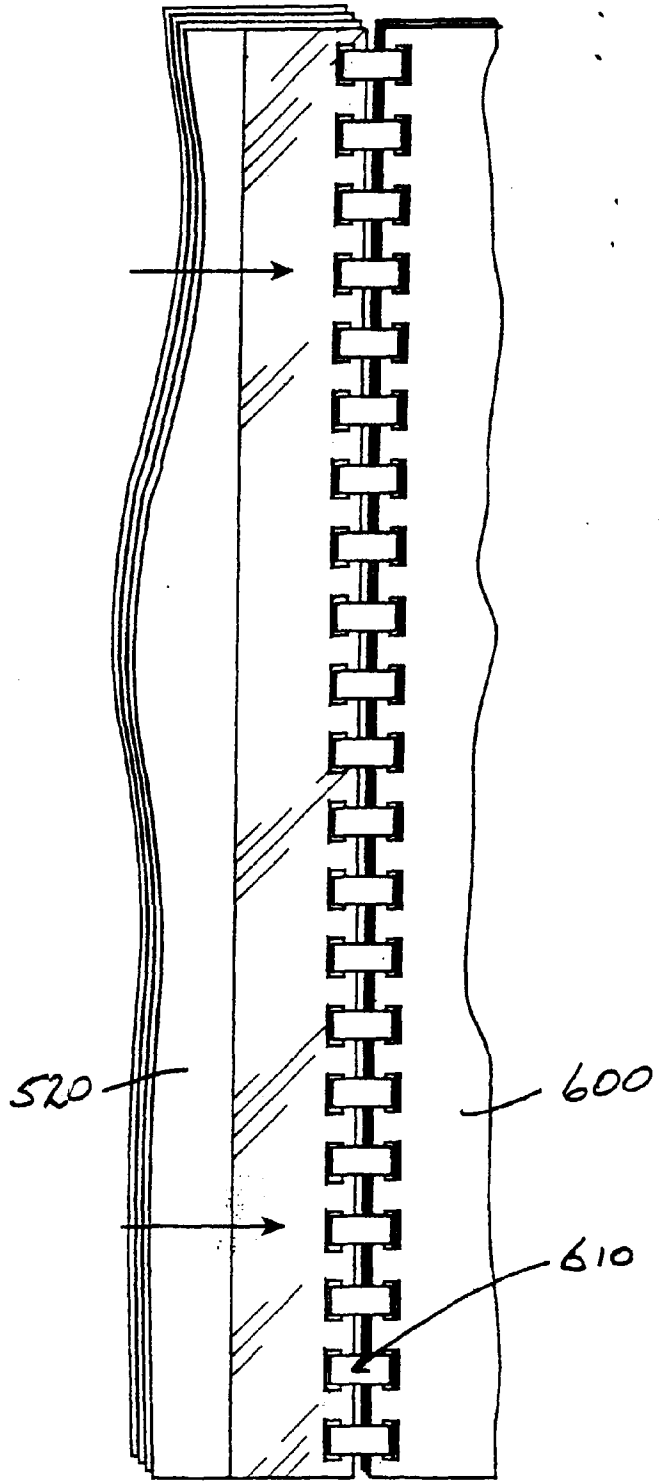
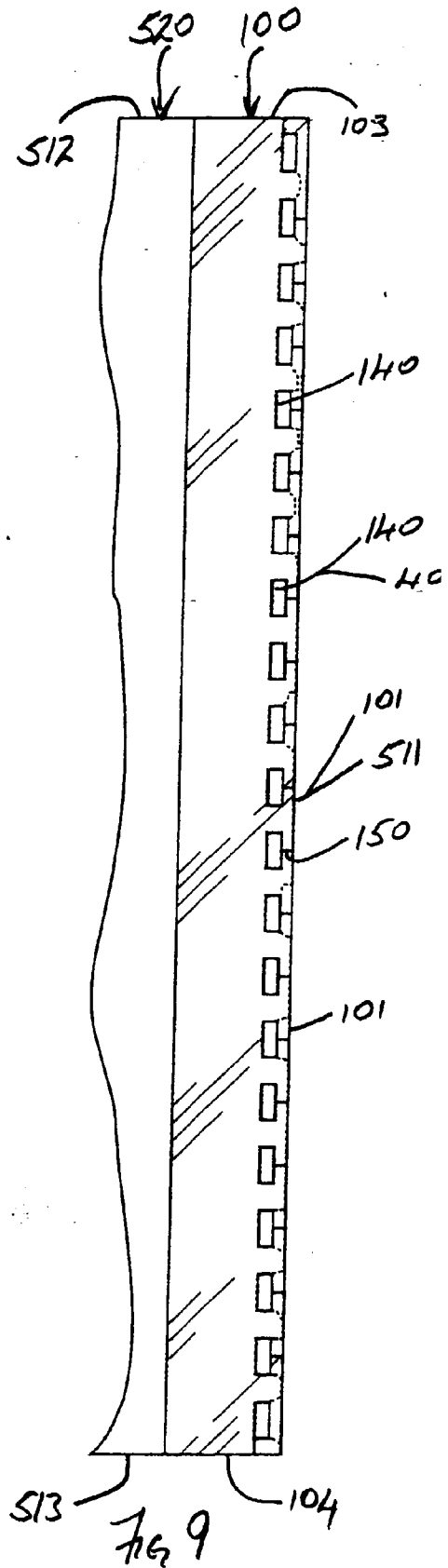
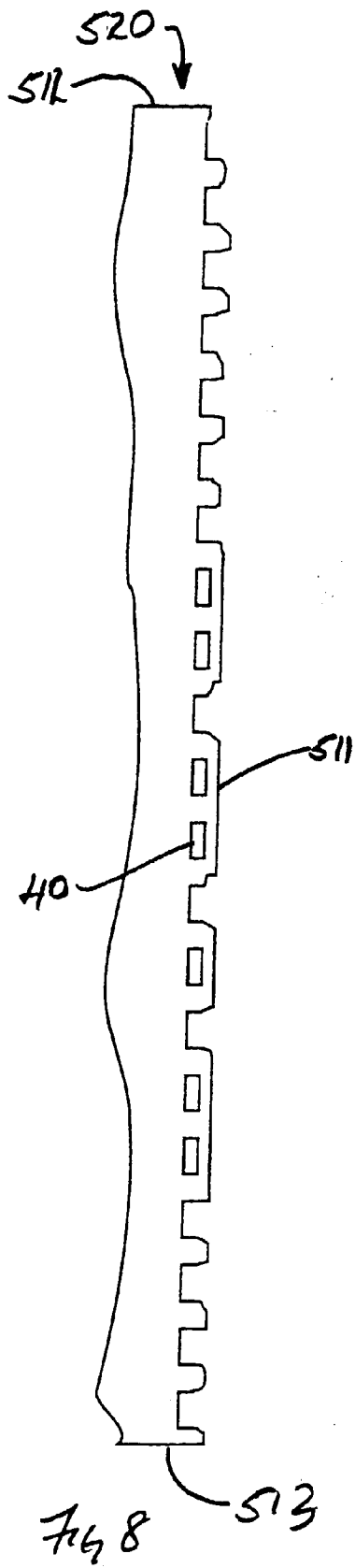


FIG 10



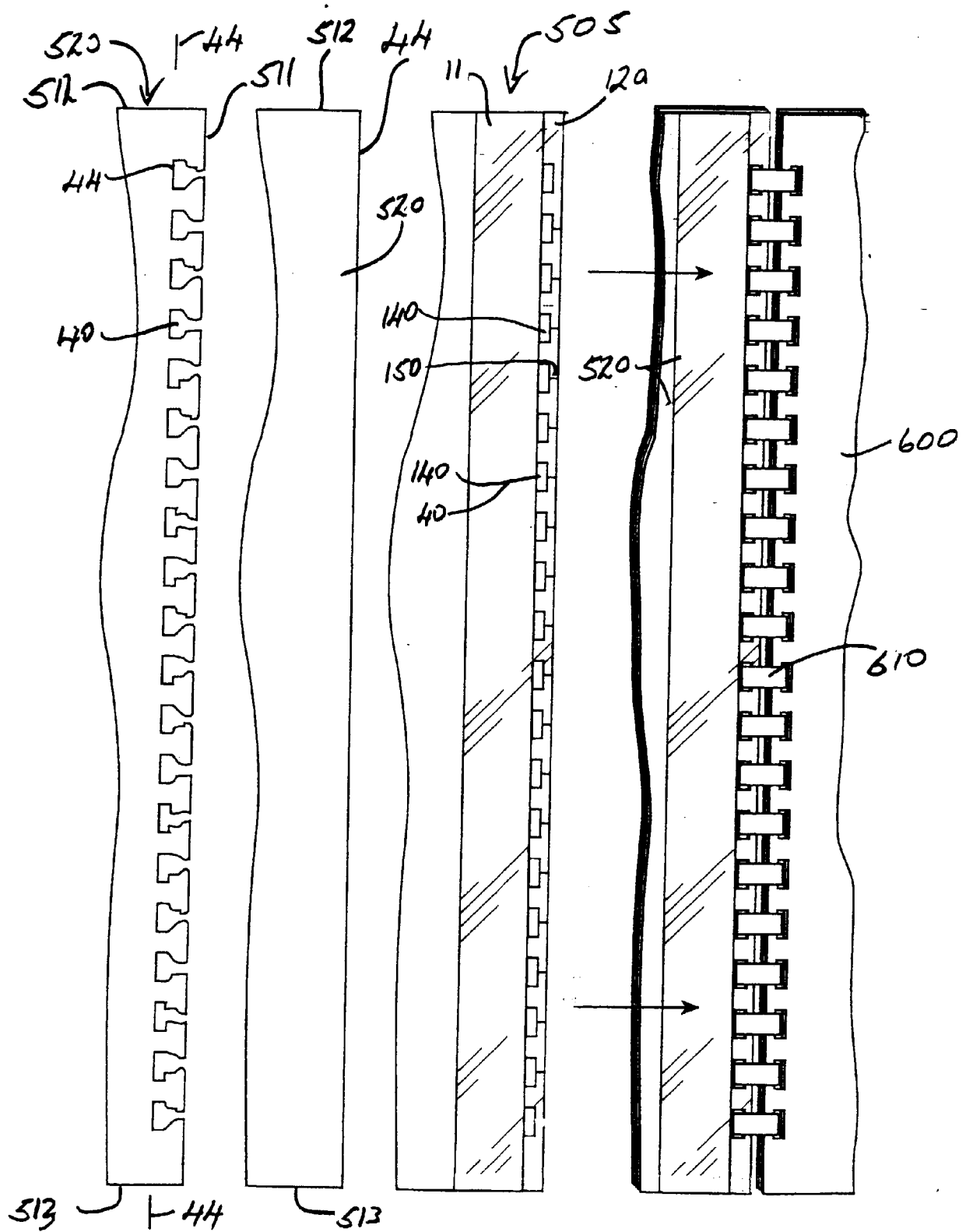
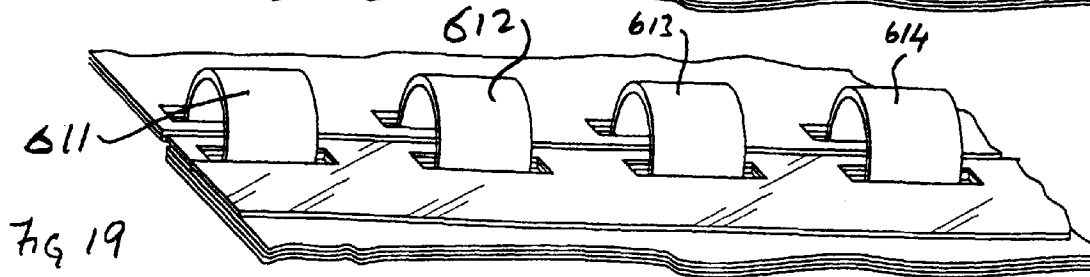
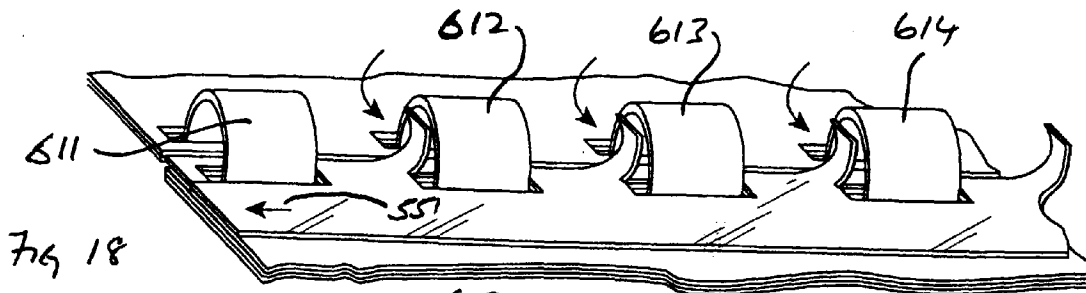
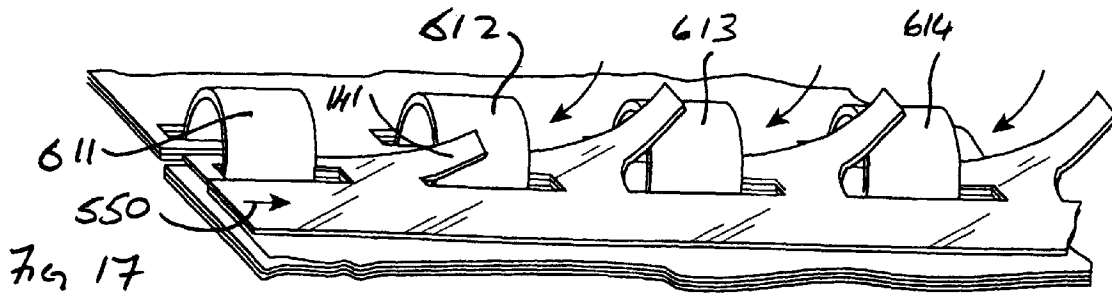
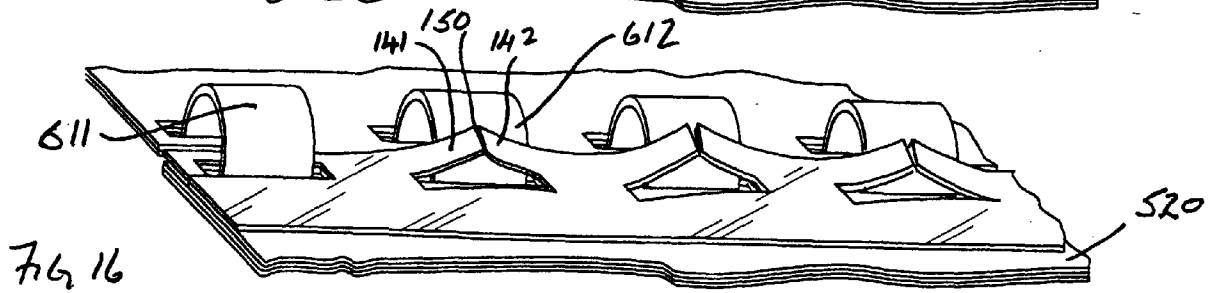
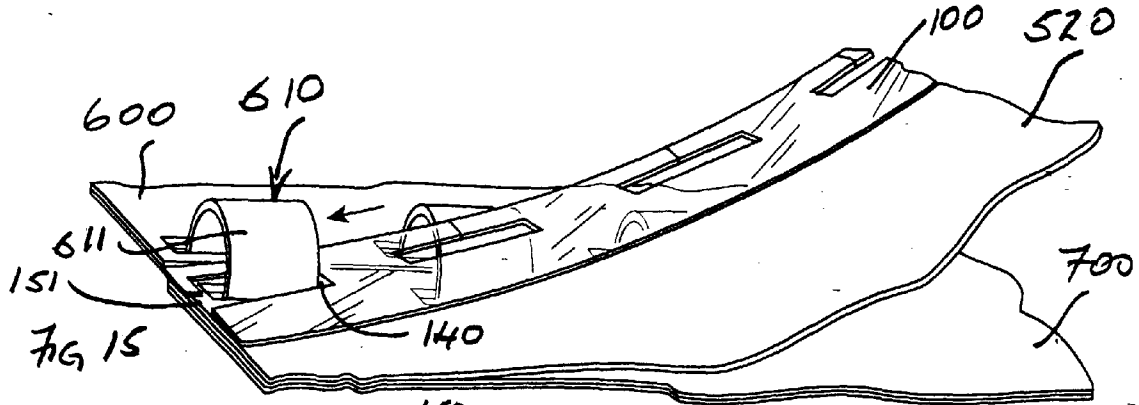


Fig 11

Fig 12

Fig 13

Fig 14



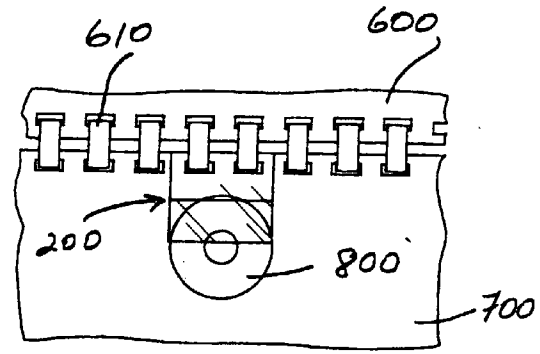


FIG 20

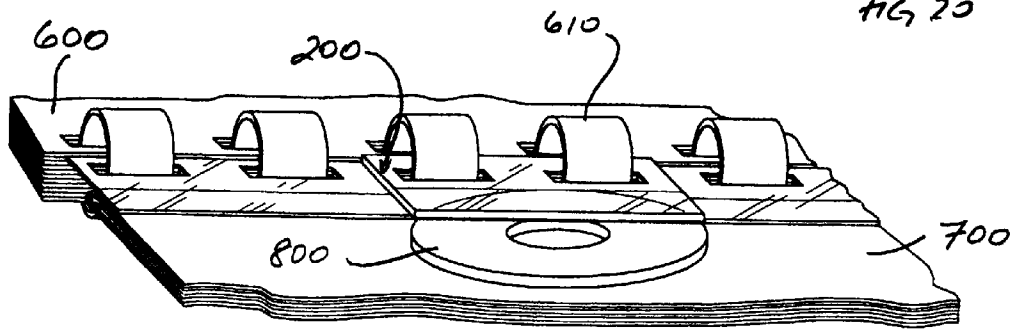


FIG 21

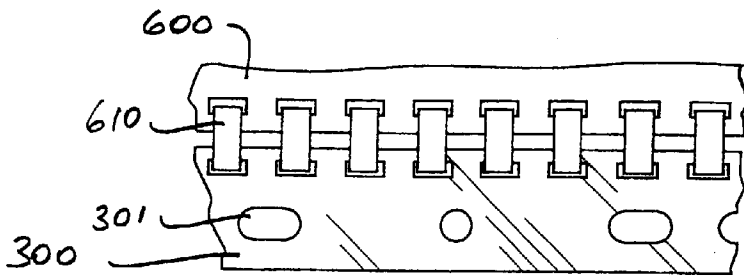


FIG 22

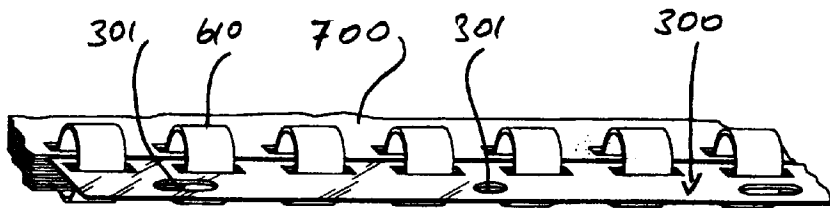


FIG 23

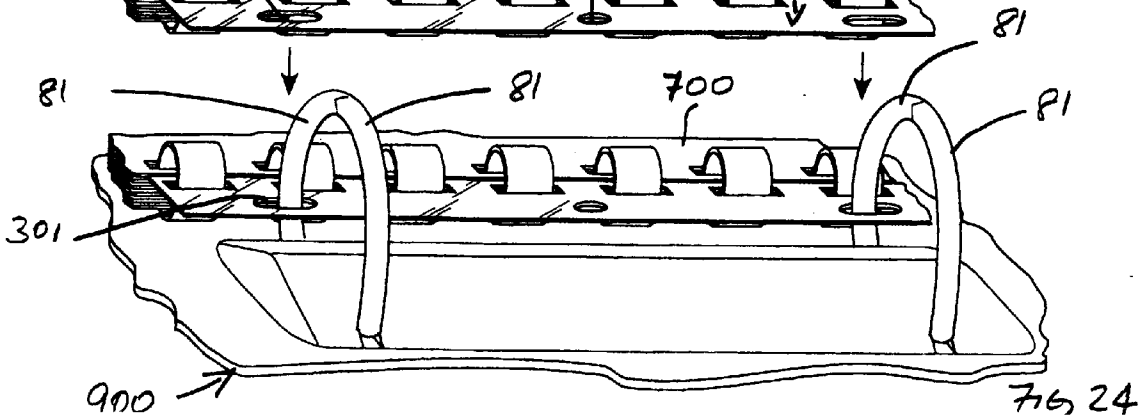


FIG 24

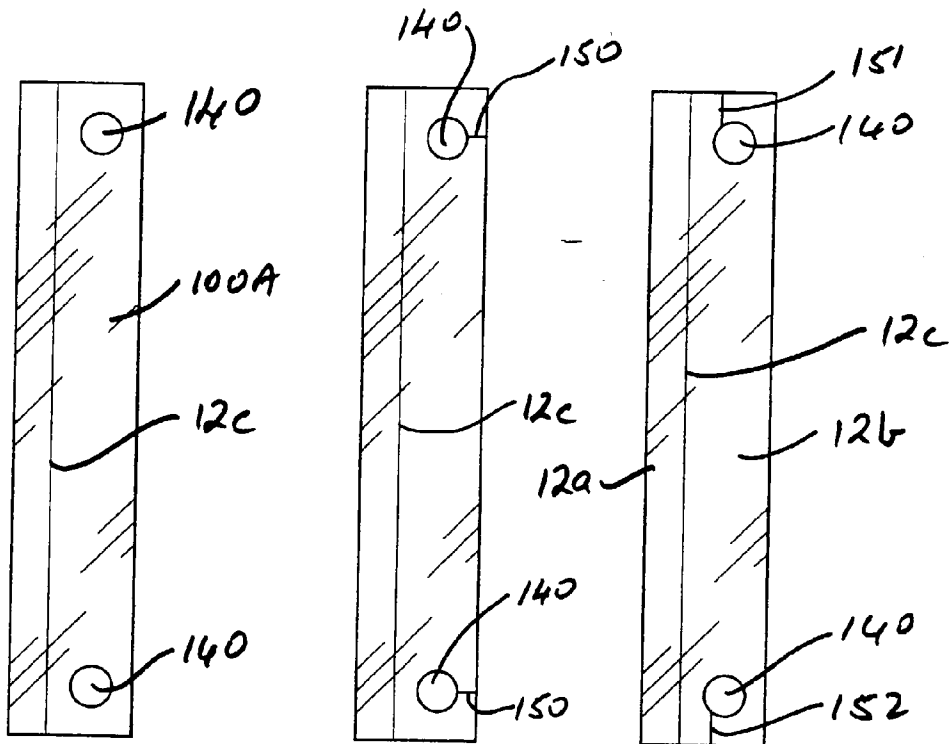


Fig 31

Fig 30

Fig 25

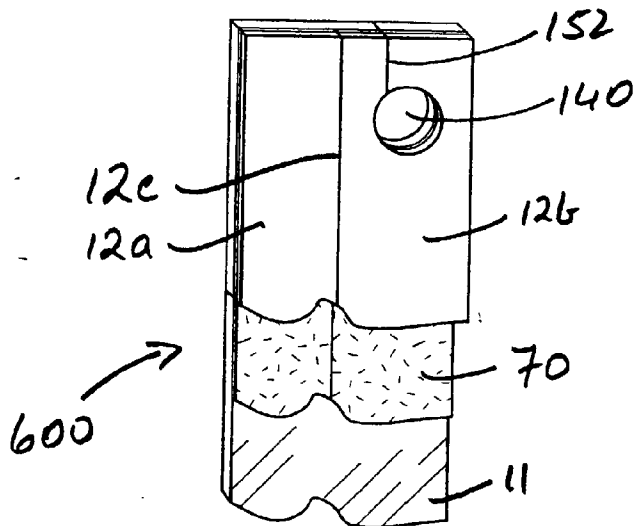
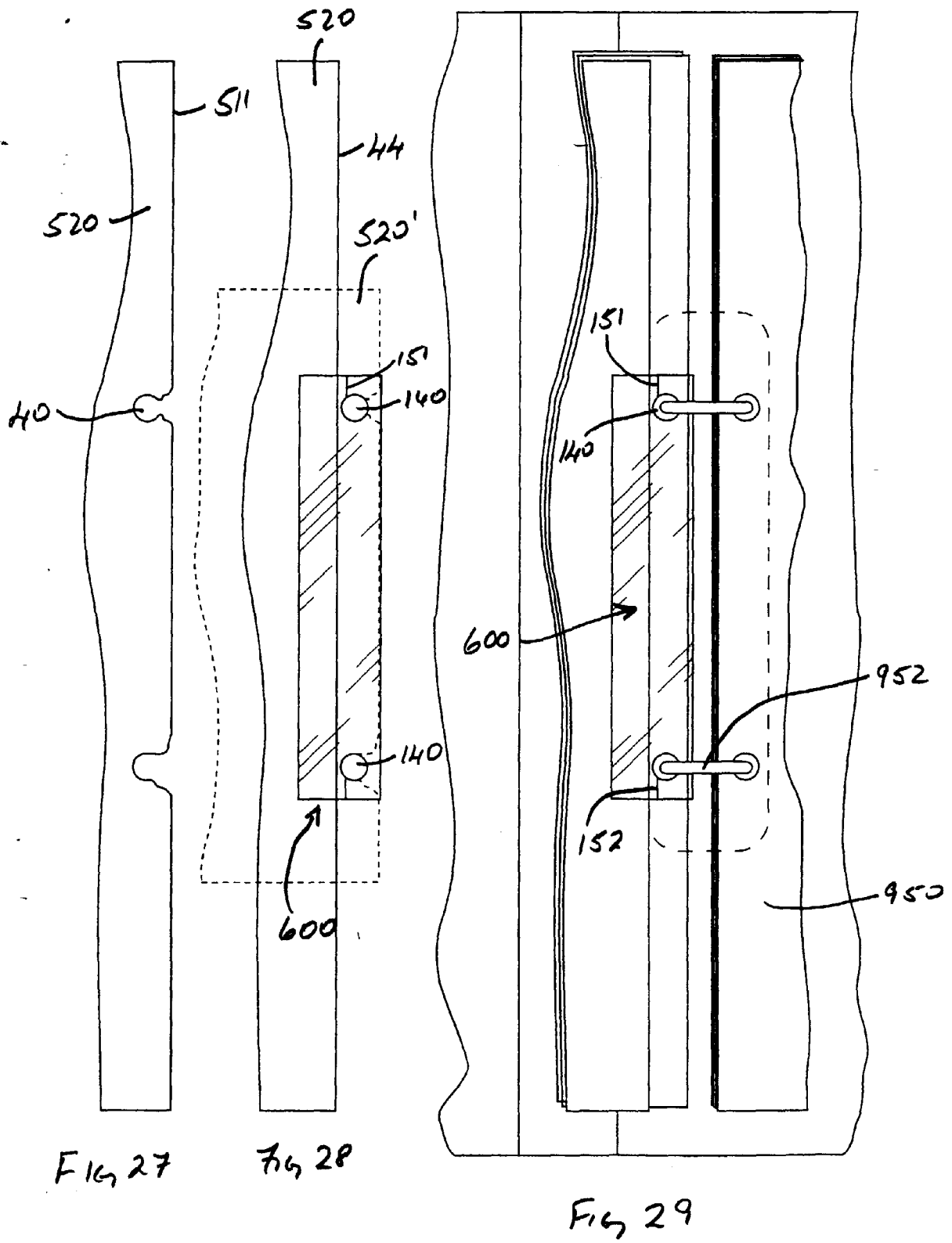


Fig 26





European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 65 0048

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	US 5 590 972 A (SHOBIN) 7 January 1997 (1997-01-07) * column 4, line 17 - column 6, line 35; figures 1-7 *	1-12	B42F3/00
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B42F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22 September 1999	Examiner Evans, A
<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</p> <p>& : member of the same patent family, corresponding document</p>			

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

EP 99 65 0048

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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22-09-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5590972 A	07-01-1997	NONE	

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