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(54) A collapsible and extendible file assembly

(57) A collapsible and extendible file assembly is formed from card or other semi-rigid bendable material. It comprises an outer casing 1 with an opening front panel 3 provided with foldable struts 9 which fold on crease lines 9' and when folded out prop a box-like part of the casing 1 comprising panels 5, 7, 8 apart from the front panel 3 thus allowing compartments 31 to open and hang down. The compartments 31 are for the storage of documents and are demarcated longitudinally by dividers 18 attached at each end to a respective concertina panel 20 attached to rear panel 7 of the box-like part.

To be accompanied when published by Figure 7 of the drawings.

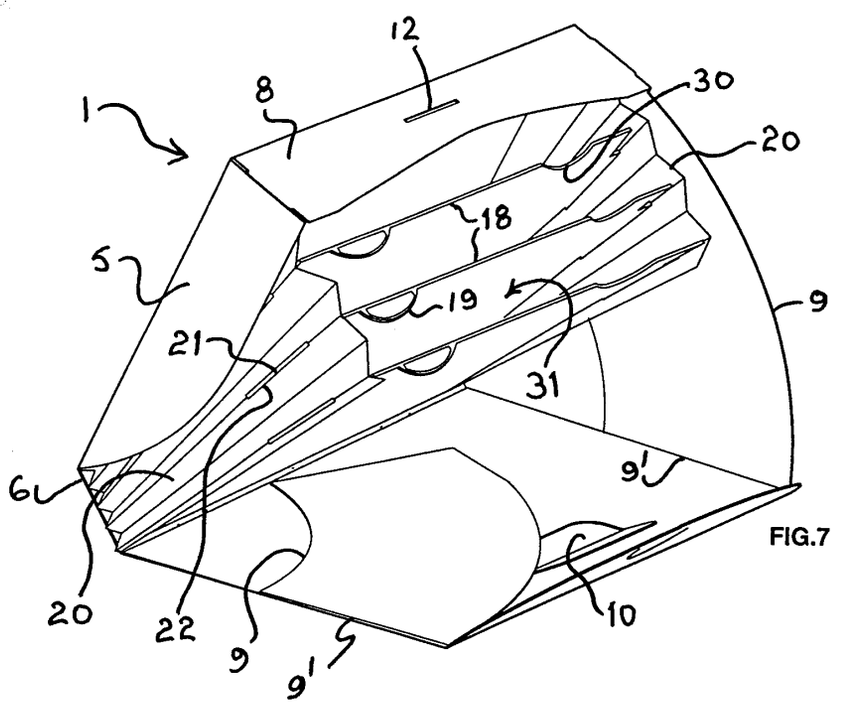

FIG.7

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Description

[0001] This invention relates to a collapsible and extendible file assembly which can be used to store papers, documents or literature in easily accessible compartments and can be collapsed into a compact and portable storage file. The invention also concerns a flat pack assembly adapted to be assembled in to the collapsible and extendible file assembly as aforesaid.

[0002] According to the invention there is provided a collapsible and extendible file assembly characterised in that it comprises easily accessible storage compartments defined at least in part by a plurality of compartment demarcating means movable relatively one to another and holdable in a compartment open position by a plurality of pivotable rigid strut panel arrangements to dispose the file in an operating condition having an open operating size, the arrangement being such that the file can be substantially reduced in size in comparison with its operating size by folding down said strut panel arrangements and collapsing the compartments by relative movements of a number of said demarcating means thus creating a compact and partable storage file.

[0003] The design may vary in size to store different paper sizes. For example A4, A3 or A2 sizes.

[0004] Preferably, the file assembly comprises components which may be formed from sheet material. The sheet material can include any suitable sheet material and may include a board material.

[0005] Advantageously the file assembly may be assembled without any additional fittings.

[0006] At least one of said pivotable rigid strut panel arrangements may comprise a first foldable panel pivotally attached to a second foldable panel. Said first panel may be attached to said second panel by a pivotable link comprising a tab and a slot fit.

[0007] Said plurality of compartment demarcating means may be a plurality of divider panels, and a number of said divider panels may be connected to an outer casing of the file assembly by means of a ratchet projection which locates said number of divider panels by means of slots therein receiving the ratchet projection.

[0008] Preferably, said plurality of compartment demarcating means are supported by at least one collapsible supporting arrangement extending between aforesaid compartments.

[0009] The file may have an outer casing comprising at least one side closure flap and a top panel, and the outer casing may have a corner structure formed by inserting a tab on the side closure flap into a slot on the top panel using a press fit locking tongue and slot location.

[0010] If desired, the file may have a carrying handle adapted for use when the file is in the compact portable state, said handle being created by folding sheet material back on itself.

[0011] The file may have a foldable access flap which interlocks with a or said top panel via a tab and a slot, whereby the interlocking arrangement may close the file assembly.

[0012] The file may have a base panel having an area for housing a descriptive label for differentiating files when the file assembly is in its compact storage position.

[0013] A said compartment demarcating means or divider panel may have a recess, for example a finger recess, to enable a user to grip a document when stored in a compartment demarcated at least in part by said demarcating means or divider panel.

[0014] A plurality of said compartment demarcating means or divider panels may each have a projecting tab which is movable from an upright projecting position to a folded down position, said tabs being staggered from demarcating means or divider panel to demarcating means or divider panel.

[0015] The file may have a front panel connected to a back panel via a spine, and said spine may have a plurality of slots which may each define a said ratchet projection, said ratchet projections extending through respective slots provided at a base of each of a plurality of said divider panels, thereby retaining those divider panels to said spine.

[0016] In a preferred embodiment said compartment demarcating means may be a plurality of divider panels (or aforesaid divider panels) supported by a plurality of concertina panels, the arrangement being such that the file can be substantially reduced in size in comparison with its operating size by folding down said strut panel arrangements and collapsing the concertina panels causing the divider panels to move relatively one to another closer together to collapse the compartments.

[0017] The file may have the or an outer casing which is openable and closeable, the arrangement being such that the compartments collapse automatically as the outer casing is closed. Said outer casing can comprise a plurality of casing panels folded from a single sheet of material, at least certain ones of said casing panels being connected or connectable together by attachment means, said compartment demarcating means being connected by attachment means to a or the collapsible support arrangement connected by attachment means to an aforesaid outer casing panel. At least one of said attachment means may be a slot and tab or flap connection and/or a connection comprising moulded or press stud components.

[0018] If desired a connection comprising moulded or press stud components may be used instead of the or an aforesaid ratchet projection and slots connection.

[0019] The or each collapsible concertina panel may be connected to a or the outer casing by means of flaps (which may be opposed flaps) from which said divider panels suspend when the file is in an open state. Said divider panels may be connected to the collapsible concertina by means of a locking tab and slot arrangement.

[0020] A or the back panel of the file may be provided with sets of arcuate slots defining arcuate tongues, one

set being adjacent one side edge of the back panel and another set being adjacent an opposite side edge of the back panel, aforesaid tongues in each set extending away from each other towards a top and a bottom of the file assembly, and said concertina panels have slots through which the tongues extend to hold said concertina panels to the back panel.

[0021] Preferably a flat pack may be provided, said flat pack being adapted to be assembled into a collapsible and extendible file assembly as disclosed above.

[0022] An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

Figure 1 is an exploded view showing a file assembly in accordance with the invention, a casing component being shown in a flat blank condition and in a partially assembled state folded from the blank;

Figure 2 is a detail view showing a ratchet system locating the dividing panels;

Figure 3 is a detail view showing how concertina panels fit to the outer case;

Figures 4, 6, 7 and 8 are perspective views illustrating how the file can be operated or used;

Figure 5 is a detail view showing how the casing can be locked;

Figure 9 is a perspective view of the file in a closed position; and

Figures 10 and 11 show an alternative strut panel arrangement.

[0023] A file assembly shown in Figure 1 has a foldable outer casing 1 formed from a single blank 2 with a front panel 3, an access flap 4, two side closure flaps 5, a base panel 6, rear panel 7, top panel 8 and two support panels 9.

[0024] With reference to Figures 1 to 9 the front panel 3 contains a handle 10 which is created by folding sheet material back on itself, for use when the file is in the compact portable state.

[0025] The foldable access flap 4 is arranged to interlock with the top panel 8 via a tab 11 and slot 12, the engagement thus closing the file (Figures 4 and 5).

[0026] The outer casing corner structure is formed by inserting a tongue or tab 13 on the side closure flaps 5 into a slot 14 in an end flap 8a at a fold-crease between the end flap and the top panel 8 provided with said end flap which in use is folded at substantially a right-angle to the top panel; the tab 13 and slot 14 providing a press fitting locking tongue and slot or holding arrangement (see Figure 1).

[0027] The two foldable support panels 9 provide struts which can lock the outer casing 1 into an open position (see Figure 8) and fold away flat when the outer casing is closed (see Figures 4 to 6). Although the support panels 9 can fold or hinge at crease-lines 9', the panels otherwise have sufficient rigidity to hold the casing 1 in the open position.

[0028] Figure 9 shows the base panel 6 has an area to house a descriptive label 15 which can be colour coded to differentiate files when the file assembly is in its storage/stacking position.

[0029] Figure 2 illustrates a ratchet system 16 which locates into slots 17 in a variable number of dividing panels 18 to create storage compartments 31 (Figs. 7 and 8). Each dividing panel 18 forms at least in part a compartment demarcating means. The dividing panels 18 also use a finger recess 30 to enable the user to grip the file contents, and a punched-out index system 19 which can be either upright or folded and staggered from divider to divider if required.

[0030] The dividing panels are supported on each side by concertina panels 20 using a locking tab 21 and slot 22 arrangement. The concertina panels are created using a number of collapsible creases and with reference to Figure 3 connect to the rear panel 7 of the outer casing via slots 23 which are held by opposing flaps 24 in the rear panel 7.

[0031] With reference to Figures 10 and 11 an alternative strut or support panel arrangement 9a is shown in which a panel 26 is linked to a panel 27 using a tab 28 and slot fit 29 which allows the linked panels to fold as an integral part of the outer casing; both the panels 26 and 27 being foldable across the front and rear panels 3 and 7 (see Figure 10) by virtue of the hinging link 28, 29 and by virtue of being hinged at crease-lines 32 and 33 to the front panel 3 and to the respective side closure flap 5.

[0032] Accordingly, the collapsible storage system includes a configuration that is simple to manufacture and can include a variety of sizes and compartment variations.

[0033] The file can be provided in flat-pack form for the user to assemble with reference to a simple instruction leaflet. Alternatively, the product may easily be assembled by the manufacturer if deemed necessary.

[0034] Many of the features such as the foldable access flap 4, ratchet system 16 and concertina locking tab 23 and slot 24 may be substituted by moulded or press-stud components.

[0035] If desired, one or more of the divider panels 18 may each be substituted by some other form of compartment demarcating means, for example one or more strips, strands, filaments or threads, or textile fabric or other sheet material, or net or reticular material. The concertina panels 20 each form a collapsible support for the plurality of compartment demarcating means and may each be substituted by some other foldable, flexible or collapsible support system co-operating with or connected to one or more of the compartment demarcating

means. Or said concertina panels 20 or other alternative substitute support system therefor may be omitted.

[0036] A variety of materials may be used to manufacture the product for example plastic sheet, card, corrugated card, metal and mesh. The file can also be produced in various different colours, finishes and textures, which may be applied by a printing technique or may integrate with the material.

Claims

1. A collapsible and extendible file assembly characterised in that it comprises easily accessible storage compartments (31) defined at least in part by a plurality of compartment demarcating means (18) movable relatively one to another and holdable in a compartment open position by a plurality of pivotable rigid strut panel arrangements (9;9a) to dispose the file in an operating condition having an open operating size, the arrangement being such that the file can be substantially reduced in size in comparison with its operating size by folding down said strut panel arrangements (9;9a) and collapsing the compartments (31) by relative movement of a number of said demarcating means (17) closer to one another thus creating a compact and portable storage file.

2. A collapsible and extendible file assembly as claimed in claim 1, characterised in that at least one of said pivotable rigid strut panel arrangements (9a) comprises a first foldable panel (26) pivotally attached to a second foldable panel (27)

3. A collapsible and extendible file assembly as claimed in claim 2, characterised in that said first panel (26) is attached to said second panel (27) by a pivotable link comprising a tab (28) and a slot (29) fit.

4. A collapsible and extendible file assembly as claimed in any one preceding claim, characterised in that said plurality of compartment demarcating means are a plurality of divider panels (18), and a number of said divider panels are connected to an outer casing (10) of the file assembly by means of a ratchet projection (16) which locates said number of divider panels by means of slots (17) therein receiving the ratchet projection.

5. A collapsible and extendible file assembly as claimed in any one preceding claim, characterised in that said plurality of demarcating means (18) are supported by at least one collapsible supporting arrangement (20) extending between aforesaid compartments (31).

6. A collapsible and extendible file assembly as claimed in any one preceding claim, characterised in that said plurality of compartment demarcating means are a plurality of divider panels (18) or said divider panels (18) supported by a plurality of concertina panels (20), the arrangement being such that the file can be substantially reduced in size in comparison with its operating size by folding down said strut panel arrangements (9;9a) and collapsing the concertina panels (20) causing the divider panels (18) to move relatively one to another closer together to collapse the compartments (31).

7. A collapsible and extendible file assembly as claimed in any one preceding claim, characterised in that it further comprises an outer casing (1) which is openable and closeable, the arrangement being such that said compartments (31) collapse automatically as said outer casing is closed.

8. A collapsible and extendible file assembly as claimed in claim 7, characterised in that said casing (1) comprises a plurality of casing panels (3, 4, 5, 6, 7, 8) folded from a single sheet of material, at least certain ones (4, 5, 8) of said casing panels being connected or connectable together by attachment means, said compartment demarcation means (18) being connected by attachment means to a or the collapsible support arrangement (20) connected by attachment means to an aforesaid casing panel (7).

9. A collapsible and extendible file assembly as claimed in claim 8, characterised in that at least one of said attachment means is a slot and tab or flap connection (11, 12, 13, 14, 21, 22, 23, 24) and/or a connection comprising moulded or press stud components, and/or a collapsible and extendible file assembly as claimed in claim 4, characterised in that a connection comprising moulded or press stud components is used instead of said ratchet projection (16) and slots (17) connection.

10. A flat pack adapted to be assembled into a collapsible and extendible file assembly as claimed in any one proceeding claim.

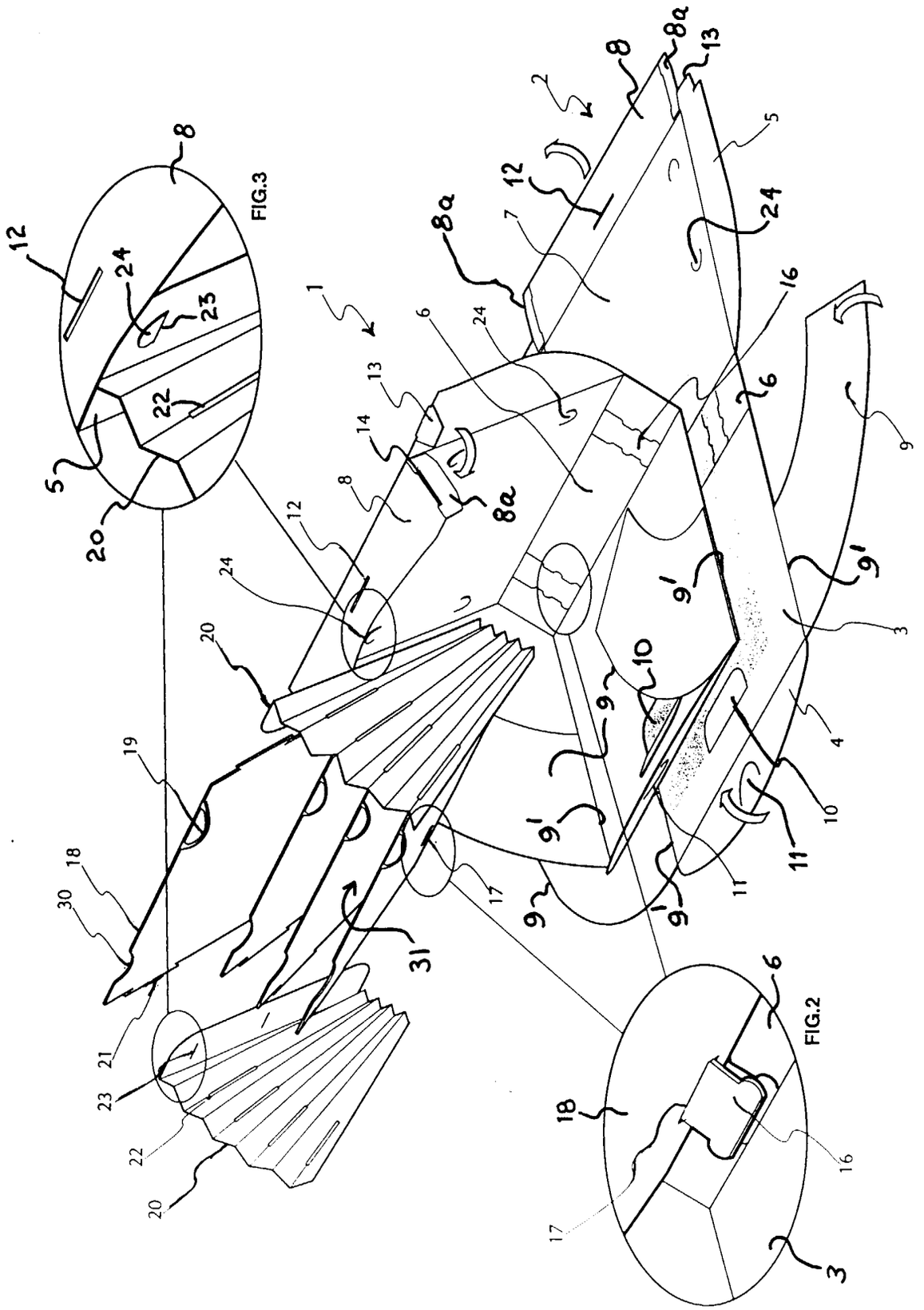


FIG.1.

FIG.2

FIG.3

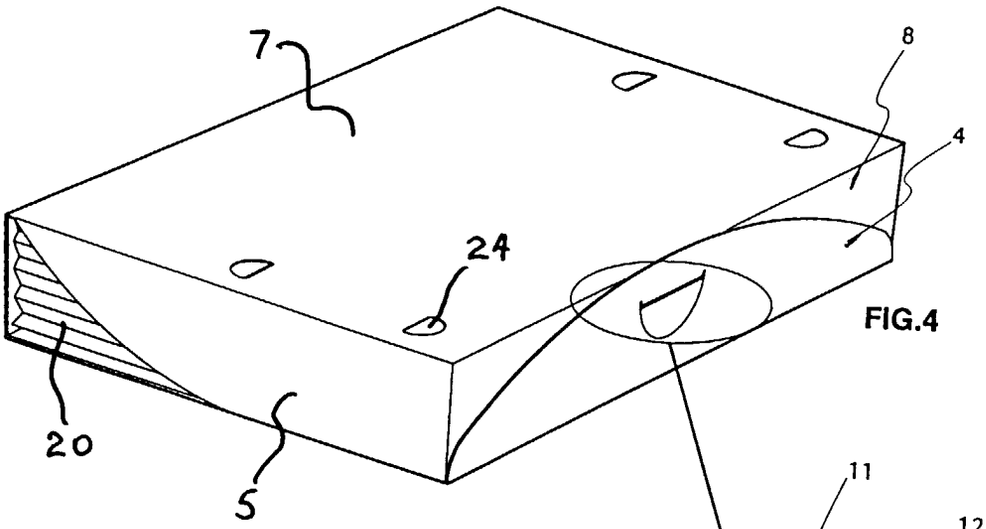


FIG.4

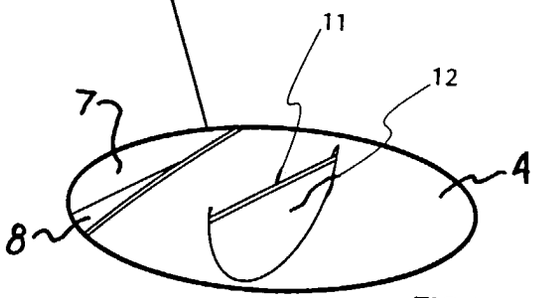


FIG.5

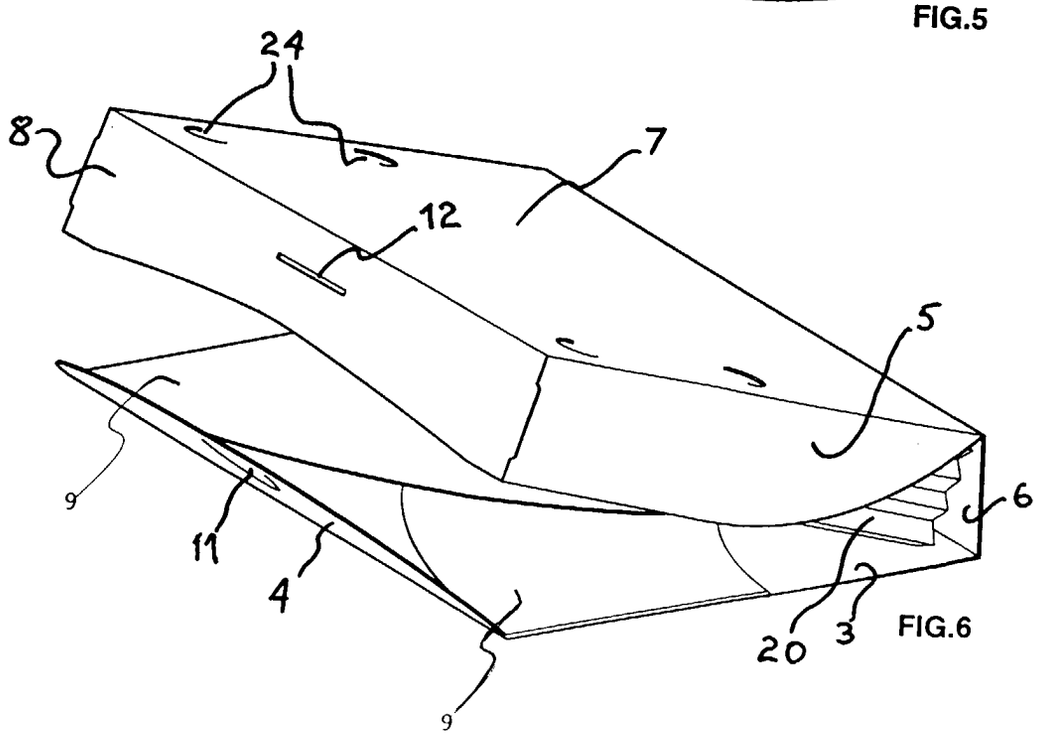
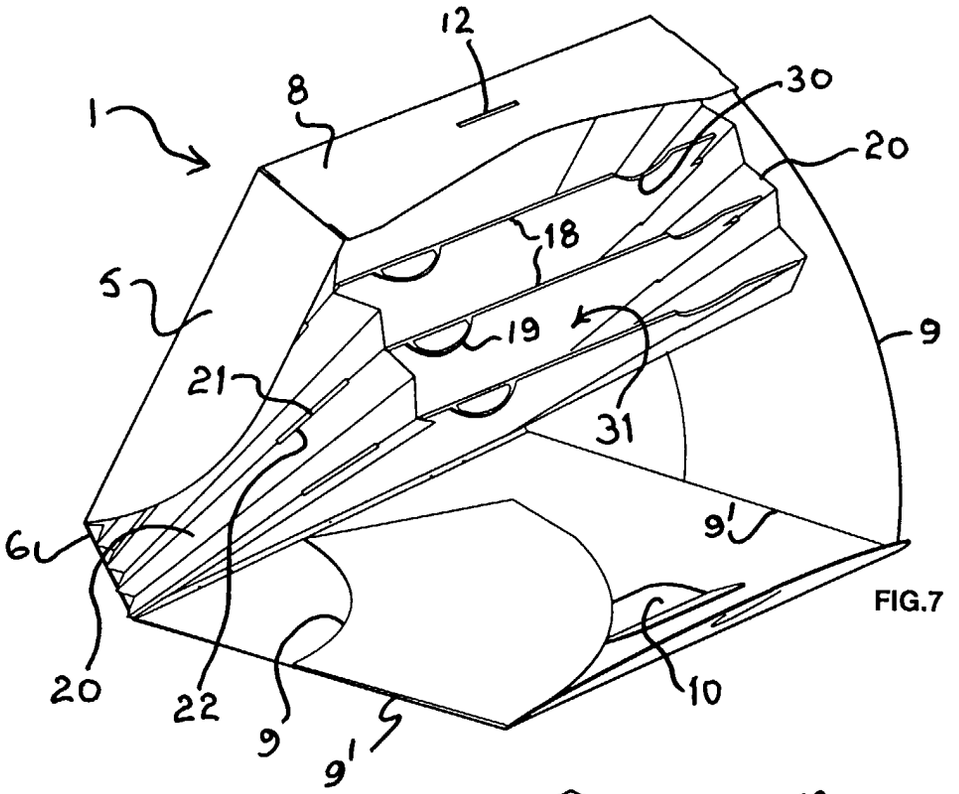


FIG.6


12
8
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19
9
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31
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6
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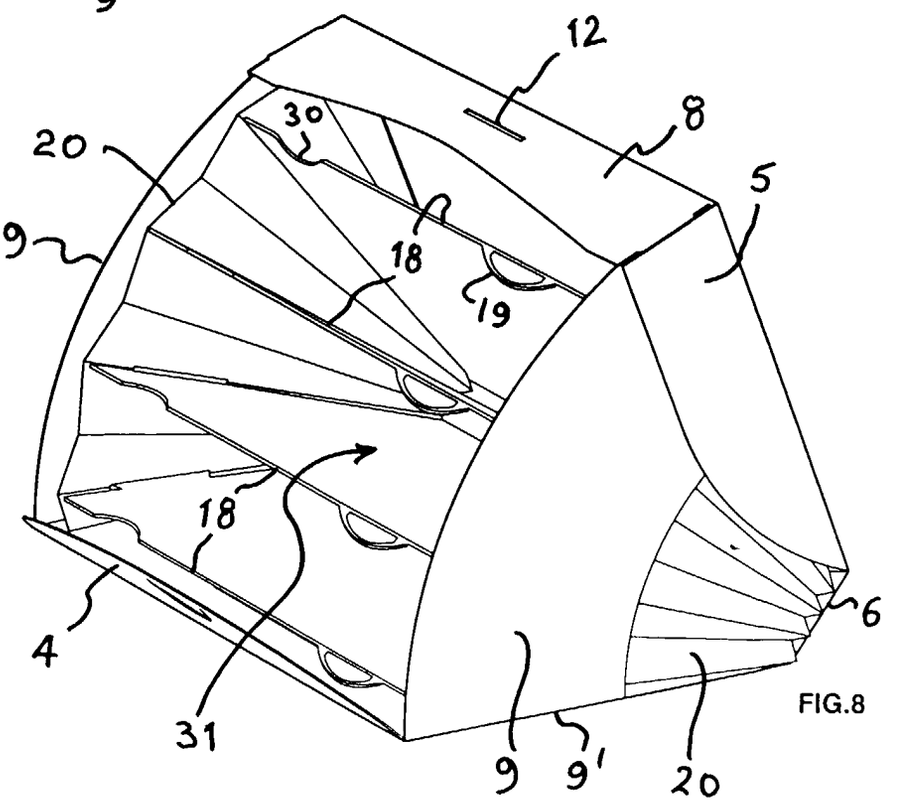
22
9
9'
10

FIG.7


12
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31
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9'
20

FIG.8

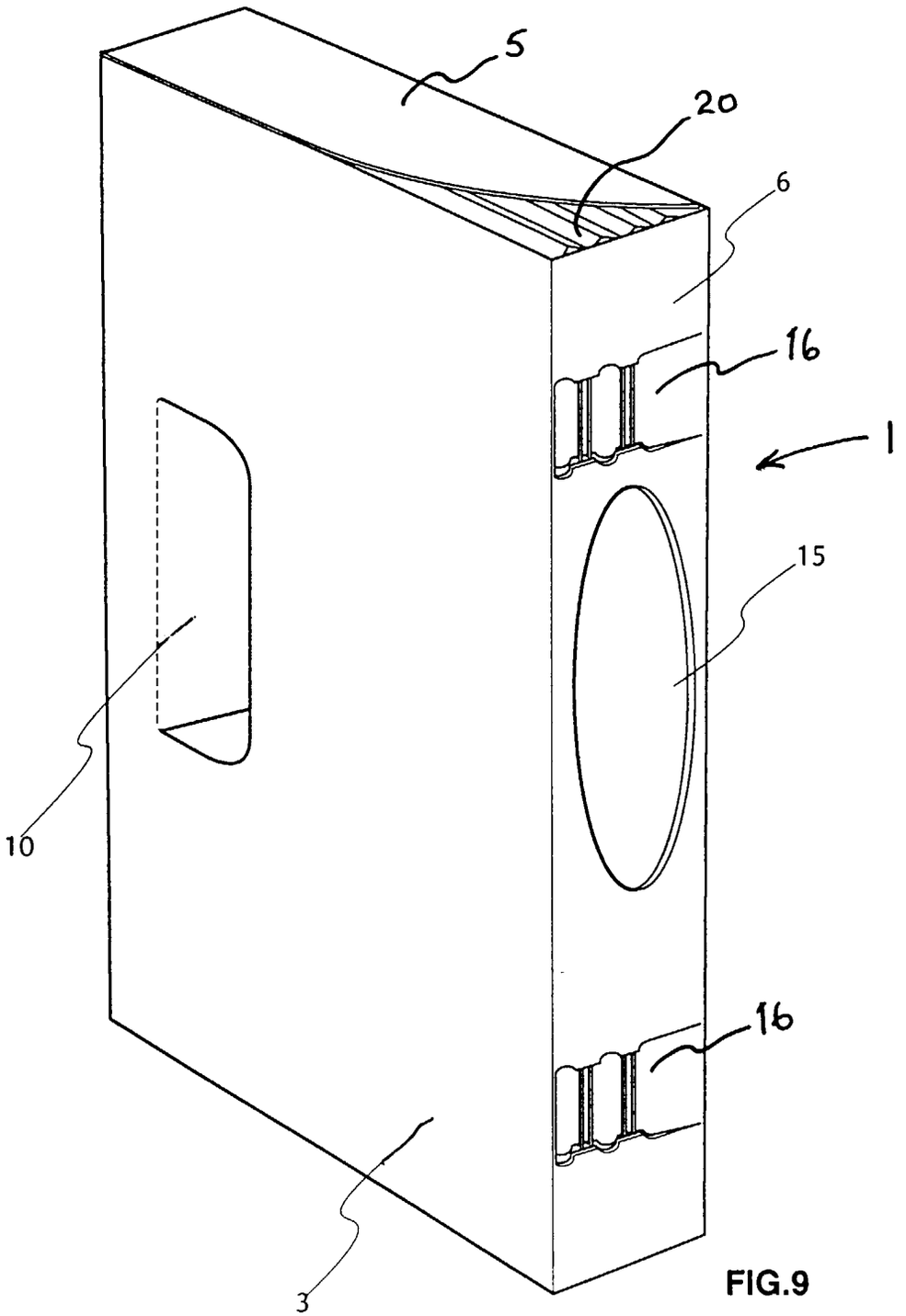
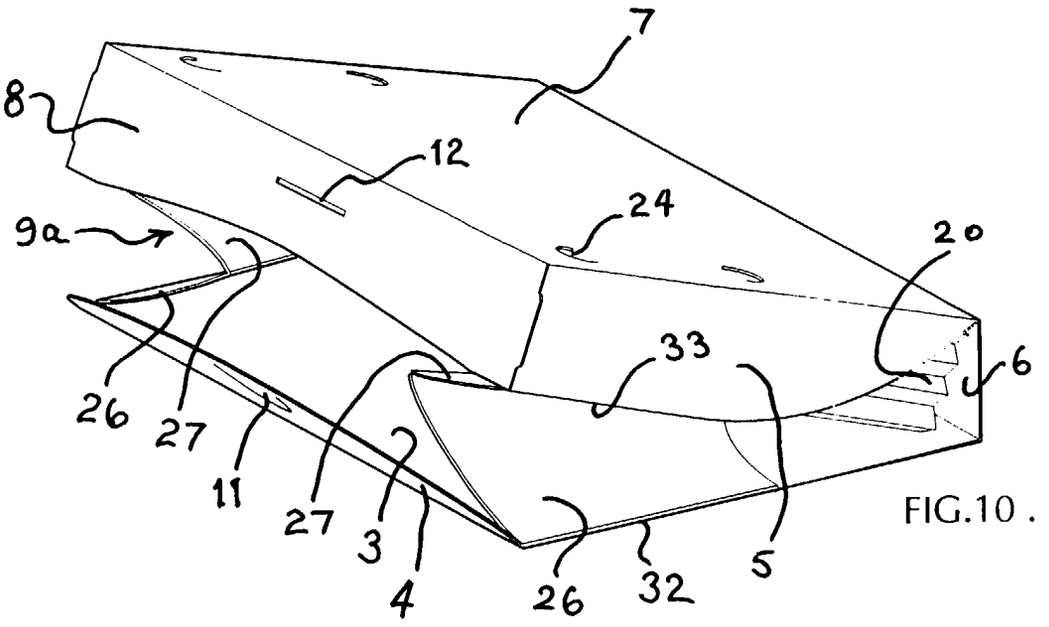


FIG.9


7
8
12
24
9a
20
33
6
26
27
11
27
3
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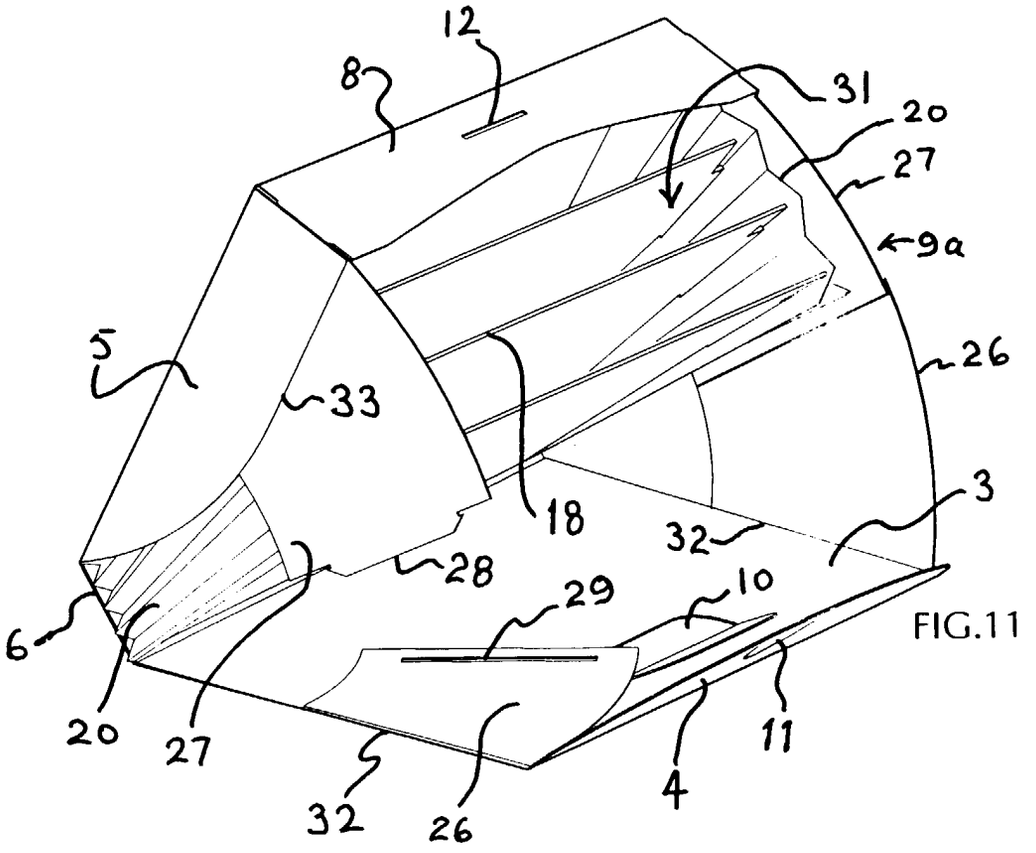
26
32
5

FIG.10 .


12
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18
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11

FIG.11

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 99 30 0087

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 Y	US 2 190 707 A (J.M.FELDMAN) 20 February 1940 * the whole document *	1,6,7 8,9	B42F7/08
Y	US 4 717 023 A (GEORGE OPREAN) 5 January 1988 * the whole document *	8,9	
A	US 1 444 811 A (JOHN P.TARBOX) 13 February 1923		
A	GB 100 773 A (CHINNERY) * the whole document *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)
B42F A45C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	31 May 1999	Loncke, J

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 4717023 A	05-01-1988	NONE	
US 1444811 A	13-02-1923	NONE	
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