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GB 2531423 A JP 2013114255 A

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(54) Title of the Invention: **Greeting card with 90-degree pop-up structure**
Abstract Title: **Pop-up greeting card with struts extending through or attached to pop-up panels**

(57) A pop-up greeting card 100 comprising at least two greeting card panels 14A,14B attached along a fold line F1; two or more pop-up panels 12A,12B attached to one of the panels 14A,14B and one or more struts 16 extending through or attached to two or more pop-up panels 12A,12B. The card 100 has a closed, flat stacked position and an open position where the two or more pop-up panels 12A,12B are in a fully upright position. The two or more pop-up panels 12A,12B may be parallel to one another. Each strut 16 may contain at least one pair of opposing notches 18 along the length thereof and a pop-up panel 12A,12B may be contained within said at least one pair of opposing notches 18. Struts 16 may be of differing lengths and the number of pairs of notches 18 may vary between two or more struts 16. The struts 16 may not be attached to the greeting card panels 14A,14B. A pop-up greeting card 100 having a card body and a pop-up structure 12 having a plurality of panels 12A,12B is also disclosed. Said card 100 is operative between a first and second position.

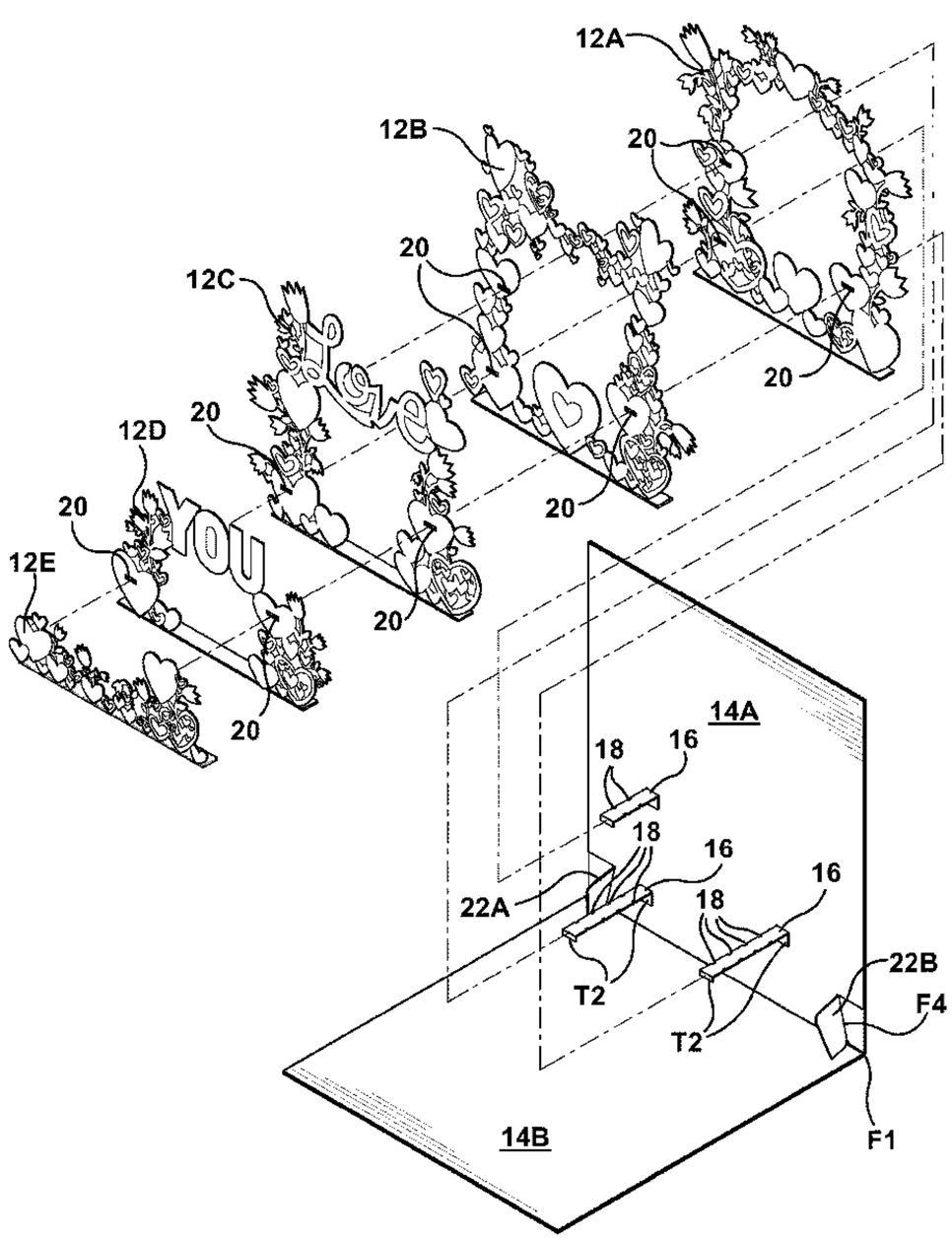

Fig. 6

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At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

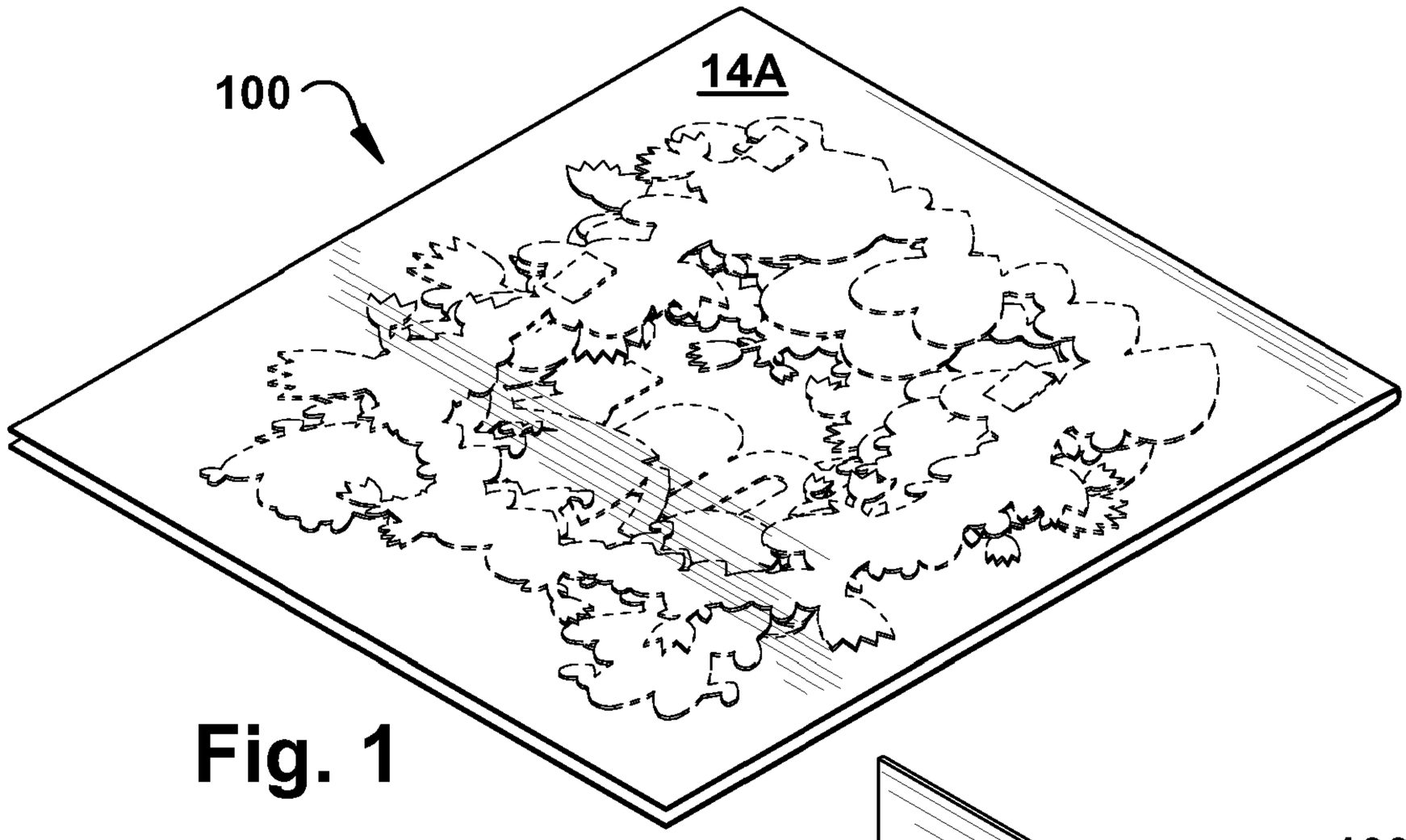

Fig. 1

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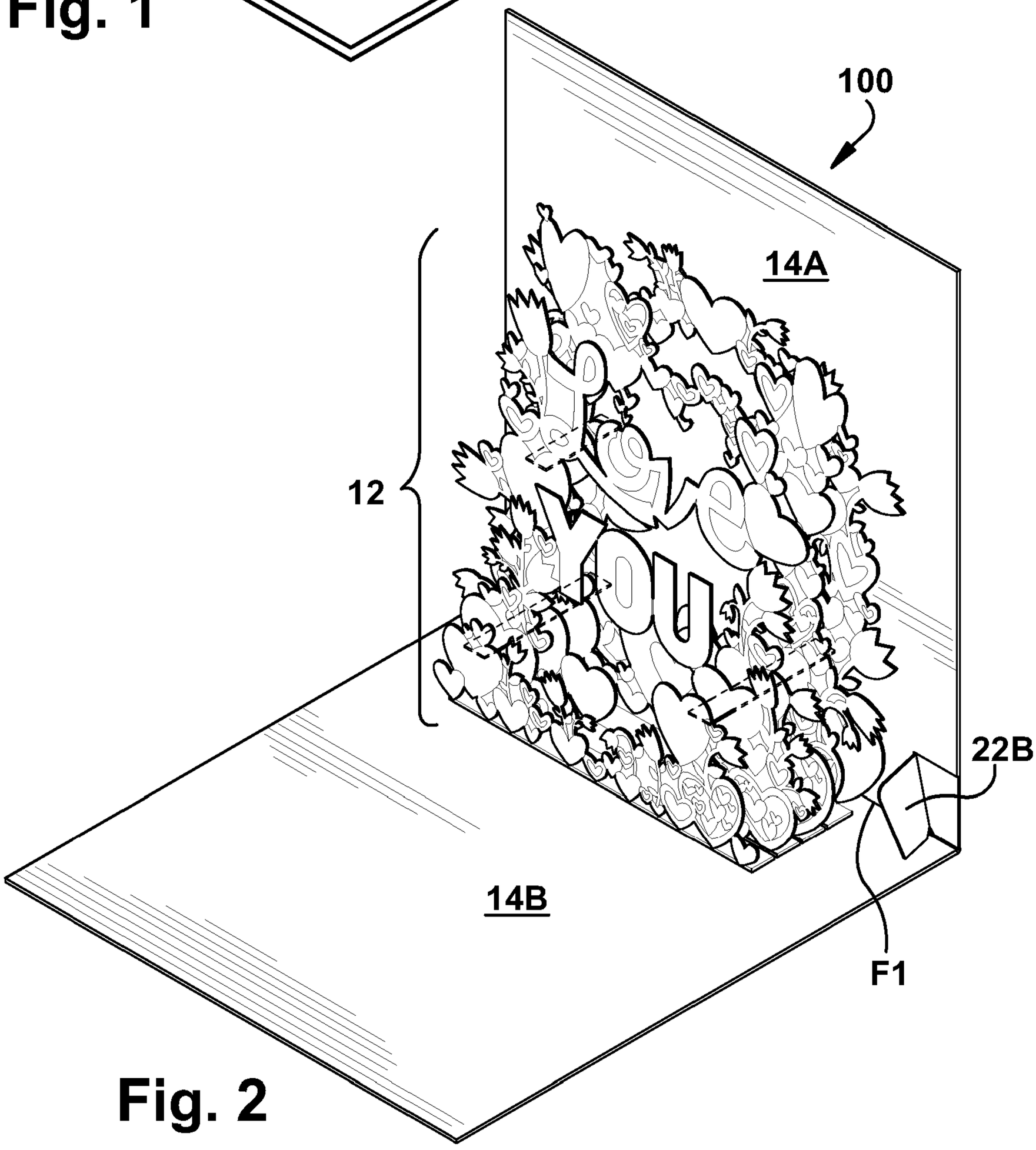

Fig. 2

Fig. 3

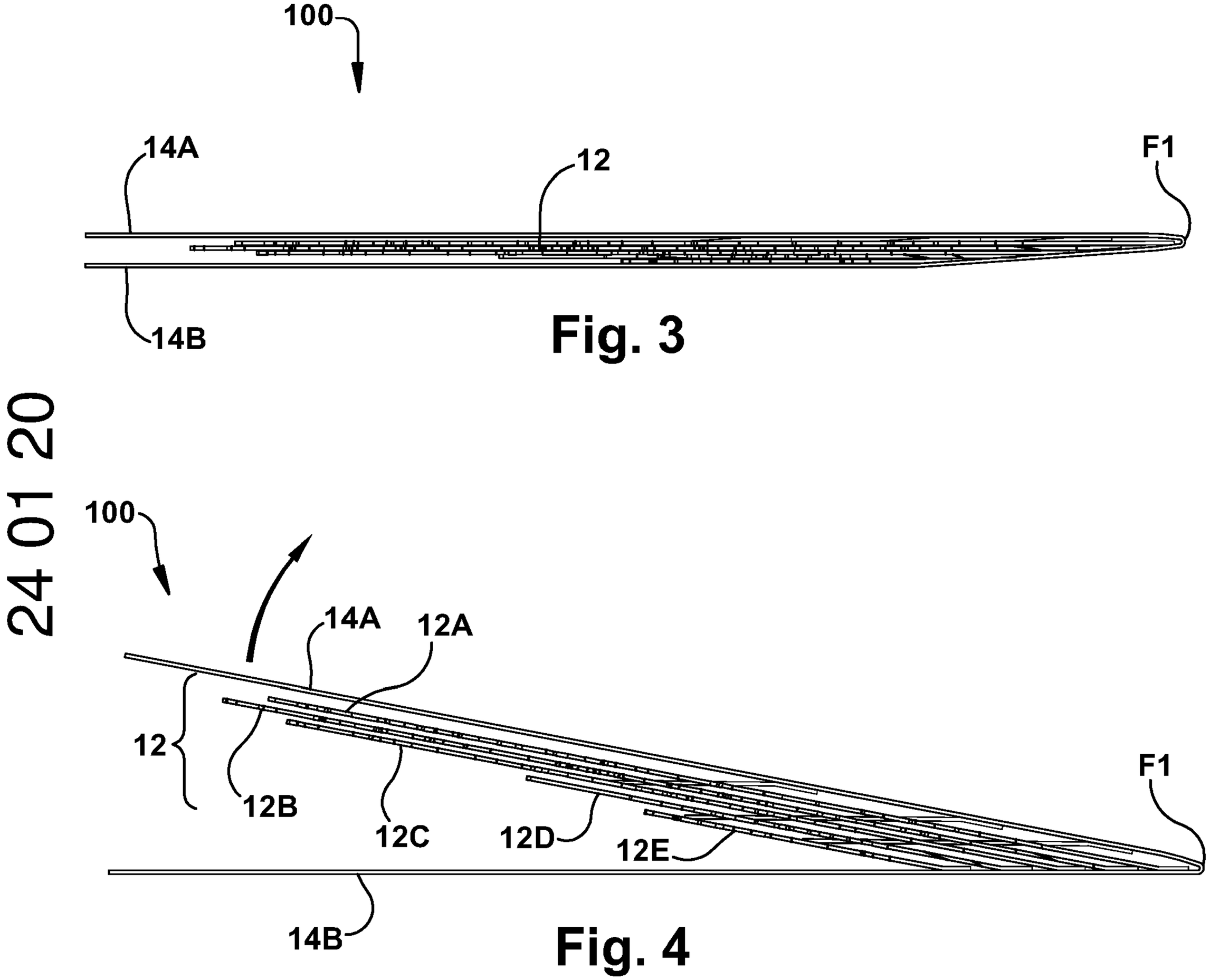

Fig. 4

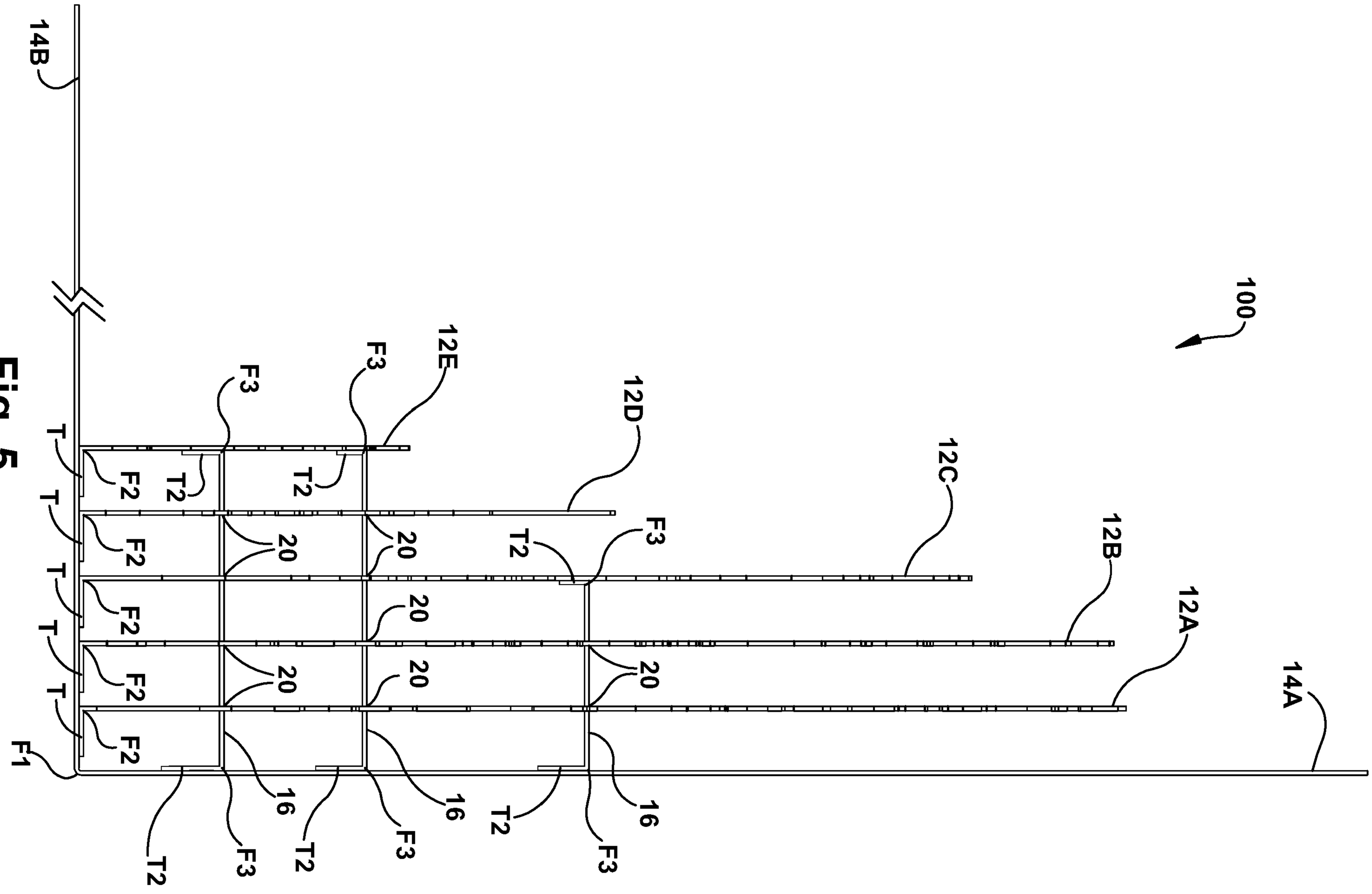

Fig. 5

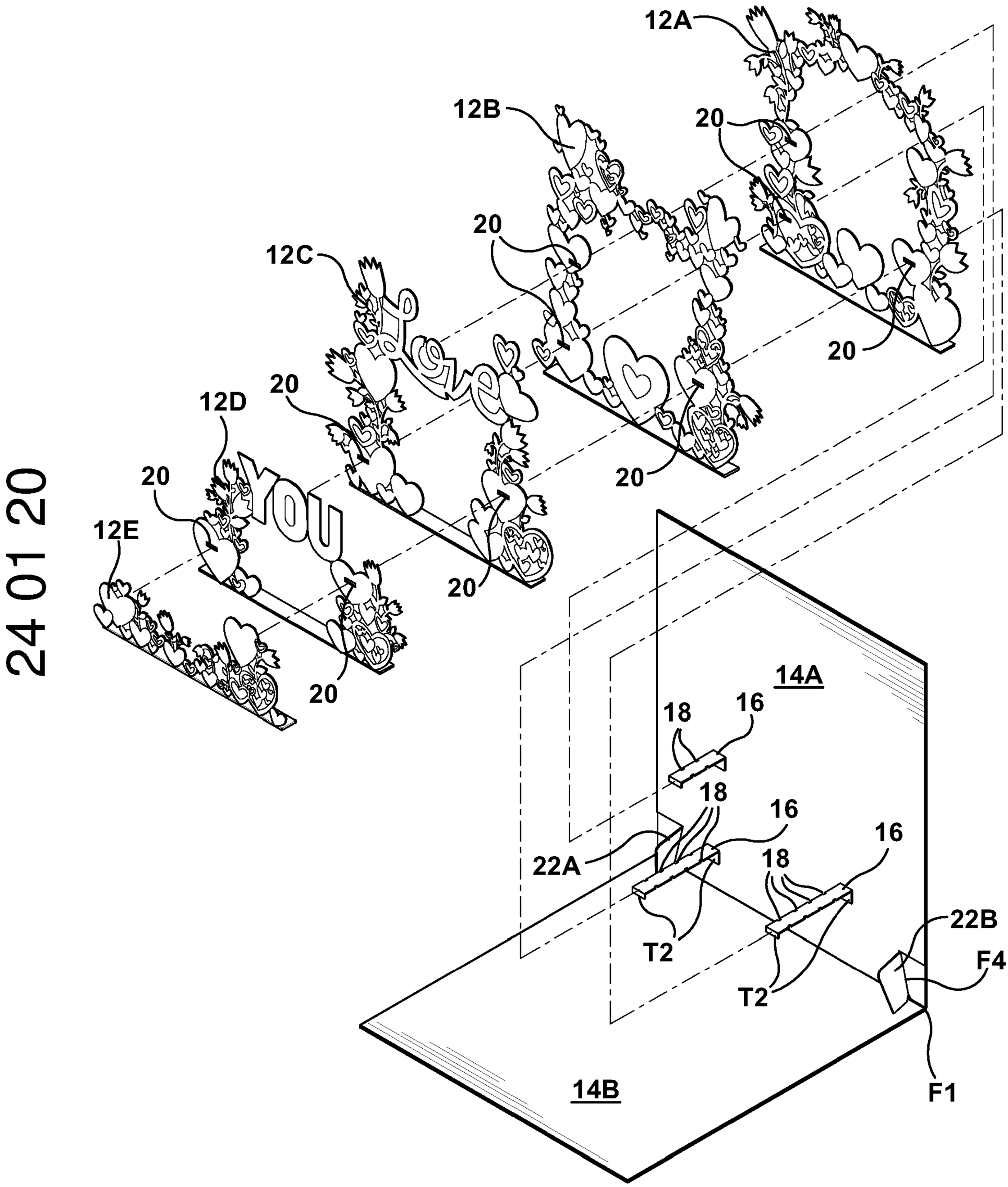

Fig. 6

UNITED STATES PATENT APPLICATION

TITLE OF THE INVENTION

GREETING CARD WITH 90-DEGREE POP-UP STRUCTURE

RELATED APPLICATIONS

There are no applications related to this application.

FIELD OF THE INVENTION

The present invention is in the field of social expression products such as greeting cards. More specifically, this invention is directed to a greeting card having multiple 90-degree pop-up panels with a unique support mechanism.

SUMMARY OF THE INVENTION

In one embodiment, the pop-up greeting card of the present disclosure and related inventions includes at least two greeting card panels attached along a fold line, two or more pop-up panels attached to one of the at least two greeting card panels, and one or more struts extending through or attached to two or more pop-up panels. When the greeting card is in a closed position, the two or more pop-up panels are in a flat stacked arrangement between the at least two greeting card panels and when the greeting card is in an open position, the two or more pop-up panels are in a fully upright position.

In another embodiment, the pop-up greeting card includes a greeting card body, a pop-up structure comprising a plurality of panels attached to the greeting card body, and at least one strut which connects at least two of the plurality of panels in the pop-up structure. The at least one strut is not attached to the greeting card body.

In another embodiment, the pop-up greeting card includes a greeting card body, a pop-up structure which includes a plurality of panels and one or more struts which connect one or more of the plurality of panels. The pop-up structure is operative to move between a first position wherein the plurality of panels and one or more strut of the pop-up structure are folded in a stacked, parallel arrangement between the greeting card body and a second position wherein the plurality of panels of the pop-up structure are unfolded into a fully upright position, each of the

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plurality of panels being parallel to each other panel and the one or more struts being perpendicular to each of the plurality of panels of the pop-up structure.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the greeting card of the present invention, in a closed position.

FIG. 2 is a perspective view of the greeting card of FIG. 1, in an open position.

FIG. 3 is a right side view of the greeting card of FIG. 2.

FIG. 4 is a right side view of the greeting card of FIG. 3, in a slightly open position.

FIG. 5 is a right side view of the greeting card of FIG. 1.

FIG. 6 is an exploded view of the greeting card of FIG. 1.

DETAILED DESCRIPTION OF PREFERRED AND ALTERNATE EMBODIMENTS

The greeting card **100** of the present disclosure and related inventions contains a 90-degree pop-up structure **12** which contains multiple panels **12A**, **12B**, etc., which pop-up when the greeting card **100** is opened.

The greeting card body contains two greeting card panels **14A**, **14B**. A first greeting card panel **14A** is attached to a second greeting card panel **14B** along a fold line **F1**. In one embodiment, the greeting card **100** is positioned in a vertical configuration where the fold line **F1** connects the bottom or lower edge of the first greeting card panel **14A** to a top or upper edge of the second greeting card panel **14B**. The greeting card **100** opens in an upward direction by moving the first or upper greeting card panel **14A** away from the second or lower greeting card panel **14B** by pivoting the first or upper greeting card panel **14A** about the fold line **F1**. In other embodiments, the greeting card may be vertically oriented with two panels attached along a side edge (and open by pivoting the first or left side panel away from the second or right side panel along the fold line). The greeting card body may be made of paperboard, cardboard, or any other suitable material.

A pop-up structure **12** is contained between the two greeting card panels **14A**, **14B** of the greeting card **100**. The pop-up structure **12** contains two or more panels **12A**, **12B**, **etc**. In one embodiment, each of the two or more panels of the pop-up structure **12** is attached to a tab

member **T** along a horizontal fold line **F2**. Each tab member **T** is folded along the horizontal fold line **F2** such that the tab member **T** is perpendicular to the pop-up panel to which it is attached. The tab members **T** of each panel are then connected to the second or lower panel of the greeting card body **14B** via glue or any other attachment mechanism. Each pop-up panel is pivotable about the fold line **F2** between the tab member **T** and pop-up panel. In one embodiment, each panel etc. of the pop-up structure **12** is in a parallel configuration with every other panel of the pop-up structure **12**. Each pop-up panel can be of different sizes, shape and outlines. The panels of the pop-up structure **12** may each contain decorative effects, including but not limited to: intricate designs with various cutouts, decorative printing, material finishings (such as foil, glitter, etc.) and/or other such effects. The designs may spell out words or phrases or contain various shapes and sizes and an overall scene. Each pop-up panel of the pop-up structure **12** is located at varying distances away from the fold line **F1** bisecting the two greeting card panels **14A**, **14B**. In one embodiment, each pair of adjacent pop-up panels are spaced apart from one another at a specified, consistent distance. In other embodiments, each pair of adjacent pop-up panels may be spaced apart at a distance which is different from the distance which exists between two other adjacent pop-up panels. Together the two or more pop-up panels of the pop-up structure **12** create a three-dimensional scene similar to a diorama. The parallel, spaced apart arrangement and the different heights and widths of each of the two or more pop-up panels creates a depth effect to the decorative scene. The first or upper greeting card panel **14A** may additionally contain printing or other embellishments thereon which are a part of the overall decorative scene. Each pop-up panel is operative to move between a first position wherein they are in a flat or prone position, as shown in **FIGS. 2** and **3**, and a second position wherein they are fully upright, as shown in **FIGS. 1** and **5**. The pop-up panels move simultaneously between the first and second positions by opening the greeting card **100**. This is accomplished by means of one or more struts 16 which are described in further detail below.

The panels of the pop-up structure **12** are interconnected by means of one or more struts **16**. The struts **16** are operative to move the two or more pop-up panels between the first and second positions upon a user opening the greeting card **100**. The struts **16** interconnect the pop-up panels such that opening the greeting card **100** causes all of the pop-up structure **12** to move from the first (**FIGS. 2** and **3**) to second (**FIGS. 1** and **5**) positions in unison. Each strut **16** is a

relatively planar element having pairs of notches **18** on opposing edges thereof, as shown in **FIG. 6**. Each notch **18** is a small square-shaped cutout. The struts **16** may have varying lengths and may interact with all of the panels contained in the pop-up structure **12** or fewer than all of the panels or a sub-group of panels contained in the pop-up structure **12**. In one embodiment, the struts **16** are not attached to the greeting card **100** itself but only to other panels in the pop-up structure **12**. To interconnect various panels of the pop-up structure **12**, a strut **16** extends through or attaches to each connected panel. One or more panels of the pop-up structure **12** contain one or more slots or apertures **20** thereon through which a strut **16** may pass through, as shown in **FIG. 6**. The slots or apertures **20** have a width dimension which is less than the width dimension of the struts **16** such that when the strut **16** is inserted through a pop-up panel, the panel sits within one pair of opposing notches **18** on the strut **16**. The notches **18** help to maintain the panel in its appropriate upright position but also allow some movement to enable the panel to be folded into a flat position. The number of struts **16** needed depends on the number and configuration of panels in the pop-up structure **12**. The number of pairs of notches **18** and the distance between said pairs of notches **18** depends on which panels are to be connected and the distance between said panels. Therefore, the struts **16** may be of different lengths and may contain a different number of pairs of notches **18** along the length thereof. Each strut **16** contains one or more tab members **T2** which are attached the strut **16** along a fold line **F3**. The tab member **T2** gets folded along the fold line **F3** such that the tab **T2** is in a perpendicular position with reference to the strut **16**. A strut **16** gets inserted through one or more panels to interconnect at least two panels and maintain the positioning of said panels within the pop-up structure **12**. Since the struts **16** are able to intersect one or more panels of the pop-up structure **12**, it prevents the need to attach each and every panel of the pop-up structure **12** to one another or to attach each and every panel directly to a greeting card panel **14A**, **14B**. This allows for the use of fewer struts **16** or connection mechanisms between panels of the pop-up structure **12** and greeting card panels **14A**, **14B**.

When the greeting card **100** is in the first or closed (folded) position, the struts **16** and the panels of the pop-up structure **12** are in a stacked parallel arrangement between the two greeting card panels **14A**, **14B**, as shown in **FIG. 3**. When the greeting card **100** is in the second or open (unfolded) position, the struts **16** are perpendicular to the panels of the pop-up structure **12**, as

shown in **FIG. 5**. A u-shaped tab member may be used to attach the greeting card (first or upper panel **14A**) to the rearmost panel (panel closest to the first or upper panel **14A** of the greeting card **100**) of the pop-up structure **12**.

The greeting card **100** may additionally include a pair of locking tabs **22A**, **22B** which are operative to hold the greeting card **100** in an open position with the pop-up structure **12** in its fully upright position. In one embodiment, the locking tabs **22A**, **22B** are integral with the first or upper greeting card panel **14A** at the lower edge thereof, as shown in **FIG. 6**. A cut in the first or upper greeting card panel **14A**, combined with a fold line **F4**, allows the locking tabs **22A**, **22B** to be moved away from the first or upper greeting card panel **14A**. To do so, the locking tabs **22A**, **22B** are each folded along the fold line **F4** so that the locking tabs **22A**, **22B** are in a perpendicular position with respect to the first or upper greeting card panel **14A**. The locking tabs **22A**, **22B** then operate as a kickstand or locking mechanism which allows the greeting card **100** to remain in an open position thereby displaying a fully upright pop-up structure **12**.

The foregoing embodiments of the present invention have been presented for the purposes of illustration and description. These descriptions and embodiments are not intended to be exhaustive or to limit the invention to the precise form disclosed, and obviously many modifications and variations are possible in light of the above disclosure. The embodiments were chosen and described in order to best explain the principle of the invention and its practical applications to thereby enable others skilled in the art to best utilize the invention in its various embodiments and with various modifications as are suited to the particular use contemplated. It is intended that the invention be defined by the following claims.

CLAIMS

1. A pop-up greeting card comprising:

at least two greeting card panels attached along a fold line;

two or more pop-up panels attached to one of the at least two greeting card panels;

one or more struts extending through or attached to two or more pop-up panels;

wherein when the greeting card is in a closed position, the two or more pop-up panels are in a flat stacked arrangement between the at least two greeting card panels and when the greeting card is in an open position, the two or more pop-up panels are in a fully upright position.

2. The pop-up greeting card of claim 1, wherein the two or more pop-up panels are parallel to one another.

3. The pop-up greeting card of claim 1 or 2, wherein each strut contains at least one pair of opposing notches along the length thereof.

4. The pop-up greeting card of claim 3, wherein a pop-up panel is contained within the at least one pair of opposing notches.

5. The pop-up greeting card of any preceding claim, wherein the one or more struts may be of differing lengths.

6. The pop-up greeting card of any preceding claim, wherein the number of pairs of notches may vary between two or more struts.

7. The pop-up greeting card of any preceding claim, wherein the one or more struts are not attached to the at least two greeting card panels.

8. A pop-up greeting card comprising:

a greeting card body;

a pop-up structure comprising a plurality of panels attached to the greeting card body;

at least one strut which connects at least two of the plurality of panels in the pop-up structure;

wherein the at least one strut is not attached to the greeting card body.

9. The pop-up greeting card of claim 8, wherein the at least one strut contains a pair of opposing notches along the length thereof.

10. The pop-up greeting card of claim 8 or 9, wherein the at least one strut intersects at least one of the plurality of pop-up panels.

11. The pop-up greeting card of any of claims 8 to 10, wherein the at least one strut contains a tab at one end thereof, wherein a fold line separates the strut and tab.

12. The pop-up greeting card of claim 11, wherein the tab on the at least one strut is attached to at least one of the plurality of pop-up panels.

13. The pop-up greeting card of any of claims 8 to 12, wherein the plurality of panels of the pop-up structure are arranged in a parallel arrangement to one another.

14. The pop-up greeting card of any of claims 8 to 13, wherein the pop-up structure is operative to move between a first or closed position wherein the pop-up structure is folded flat between the greeting card body and a second or open position wherein the pop-up structure is fully upright.

15. A pop-up greeting card comprising:

a greeting card body;

a pop-up structure comprising:

a plurality of panels;

one or more struts which connect one or more of the plurality of panels;

wherein the pop-up structure is operative to move between a first position wherein the plurality of panels and one or more strut of the pop-up structure are folded in a stacked, parallel arrangement between the greeting card body and a second position

wherein the plurality of panels of the pop-up structure are unfolded into a fully upright position, each of the plurality of panels being parallel to each other panel and the one or more struts being perpendicular to each of the plurality of panels of the pop-up structure.

16. The pop-up greeting card of claim 15, wherein the plurality of panels contain various cut-out portions.

17. The pop-up greeting card of claim 15 or 16, wherein each of the plurality of panels takes on a different shape.

18. The pop-up greeting card of any of claims 15 to 17, wherein the one or more struts extends through at least one of the plurality of panels in the pop-up structure.

19. The pop-up greeting card of any of claims 15 to 18, wherein the one or more struts contains one or more opposing struts along a length thereof.

20. The pop-up greeting card of any of claims 15 to 19, wherein the one or more struts do not attach to the greeting card body.

Intellectual Property Office

Application No:	GB1915684.3	**Examiner:**	Hari Fletcher
Claims searched:	1-7 & 15-20	**Date of search:**	30 March 2020

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-7 & 15-20	GB2531423 A (BOGDANSKI). See whole document.
X	1-4, 6, 7, 15 & 17-20	JP2013114255 A (TAKADA). See whole document.

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^{X} :

Worldwide search of patent documents classified in the following areas of the IPC

B42D; G09F

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC

International Classification:

Subclass	Subgroup	Valid From
B42D	0015/04	01/01/2006
B42D	0015/02	01/01/2006
G09F	0001/06	01/01/2006