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(71) Applicant: **KIMBERLY-CLARK WORLDWIDE, INC.** [US/US]; 2300 Winchester Road, Neenah, Wisconsin 54956 (US).

(72) Inventors: **NAYLOR, Katherine, Staun**; Kimberly-Clark Worldwide, Inc., 2300 Winchester Road, Neenah, Wisconsin 54956 (US). **ZENKICH, Ramona**; Kimberly-Clark Worldwide, Inc., 2300 Winchester Road, Neenah, Wisconsin 54956 (US). **SCHROEDER, Kristi, Jo**; Kimberly-Clark Worldwide, Inc., 2300 Winchester Road, Neenah, Wisconsin 54956 (US).

(74) Agent: **SULLIVAN, Michael J.** et al.; Kimberly-Clark Worldwide, Inc., 2300 Winchester Road, Neenah, Wisconsin 54956 (US).

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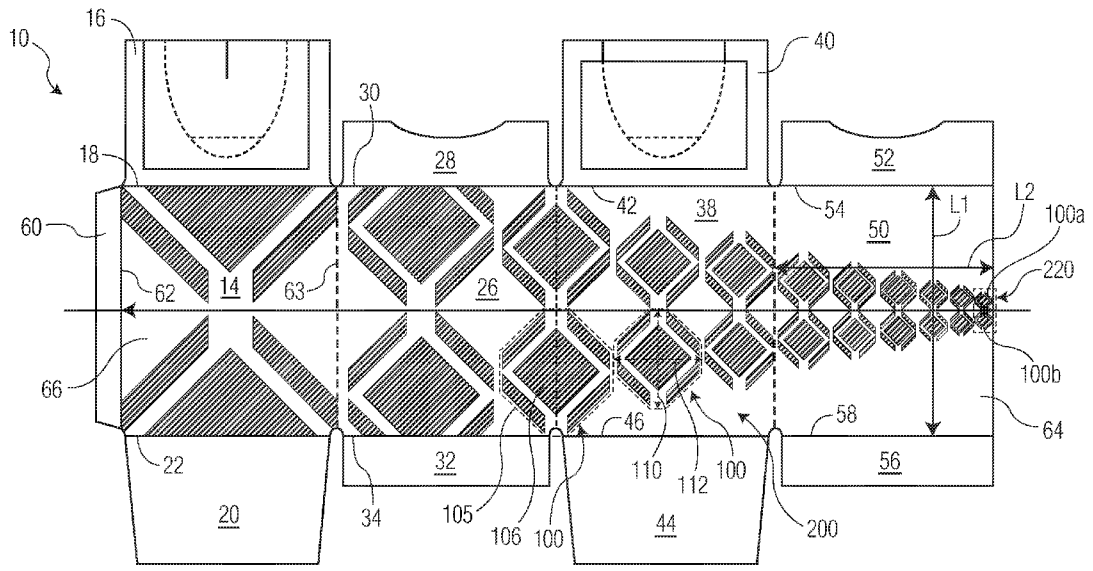

FIG. 1

(57) Abstract: The present invention provides graphic cartons, particularly graphic cartons for storing and dispensing tissue products, such as facial tissue, having graphics that morph and transform to provide a 360 degree viewing experience for the consumer. In certain instances the 360 degree viewing experience may be achieved by printing a plurality of design elements on each face of the carton where the scale of the design elements varies between each of the faces such that each face is different and creates an effect of motion when the carton is rotated and viewed by the consumer.

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GRAPHIC TISSUE CARTON

BACKGROUND

Packaging for consumer products often serves multiple purposes. For example, the packaging may describe the product located within the packaging, communicate the manufacturer of the product, and provide a convenient method for transporting multiple products. Additionally, packaging may provide navigational cues to assist consumers in finding their products quickly and easily.

Packaging may also provide a decorative function to consumers. This is particularly desirable with tissue cartons, which are often displayed within the home. To satisfy consumer needs for decorative tissue cartons manufacturers quite commonly apply decorative printing to those panels of the tissue carton which are intended to remain after the carton has been opened. In certain instances the decorative panels may be further enhanced by providing brand identification and product information on removable panels or overwraps meant to be discarded upon opening.

However, despite the consumer desire for aesthetically appealing carton graphics, most packaging for personal care articles, particularly tissue cartons, has a familiar shape, color, and look. Often there is a tension between the need for an aesthetically appealing graphic and the desire to attract the consumer's attention to the product and the desire to assist the consumer in selecting the proper product type. Further, the need to produce packaging at high rates of speed and at low cost often limits the variety and creativity of the graphics. In other words, the need for aesthetics must be weighed against the need for easy consumer navigation and low cost manufacturing. Some past efforts to address this balance have included simple and bold graphics printed on all sides of the carton in a uniform manner. In other instances colors and patterns have been used as a navigation tool by associating certain product attributes with a particular carton graphic or color. While such packaging has had some success, there remains a need for cartons having improved graphics, particularly graphics that increase consumer engagement and interaction, and which satisfy consumer needs for cartons that serve a decorative function.

SUMMARY

Accordingly, a primary object of the present invention is to overcome the aforementioned shortcomings associated with the prior art by providing a visually appealing tissue carton that can be easily fabricated using presently available high speed machinery. A further object of the present invention is to provide a tissue carton that encourages consumer engagement and interaction and that also has sufficient visual appeal to be decorative.

In one embodiment the present invention provides a carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension is substantially similar amongst the panels, a first design element disposed on each of the first, second, third and fourth panels wherein the scale of the first design element relative to the panel height varies between at least two contiguous panels.

In another embodiment the present invention provides a carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension (L1) is substantially similar amongst the panels, a first design element having a major and a minor axis disposed on each of the first, second, third and fourth panels, and the major axis having a length (AL), wherein the ratio of AL to L1 is from about 1:6 to about 1:3 for the first design element disposed on the first panel, the ratio of AL to L1 for the first design element disposed on the second panel is different than the ratio of AL to L1 for the first design element disposed on the first panel, and the ratio of AL to L1 for the first design element disposed on the third panel is different than the ratio of AL to L1 for the first design element disposed on the second panel.

In another embodiment the present invention provides a carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension is substantially similar amongst the panels, a first design element having a major and a minor axis disposed on each of the first, second, third and fourth panels, wherein the ratio of the major axis length (AL) of the first design element disposed on the first panel to the panel height (L1) is greater than the ratio of AL to L1 for the first design element disposed on the second panel, which is greater than the ratio of AL to L1 for the first design element disposed on the third panel.

In yet another embodiment the present invention provides a cubic carton having a vertical axis and four continuous side panels separated from one another by fold lines, each of the side panels having a height dimension that is substantially equal and a first design element having a shape selected from the group consisting of geometric shapes, organic shapes and abstract shapes disposed on each of the panels, wherein the first design element has a major and a minor axis and the length of the major axis relative to the height dimension varies between the design elements disposed on at least three continuous side panels and wherein rotation of the carton about the vertical axis creates an effect selected from the group consisting of morphing, motion, zooming and depth.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is top plan view of a carton blank useful in the present invention;

FIG. 2 is a folded carton resulting from folding the blank of FIG. 1;

FIGS. 3A – 3C illustrate various design elements useful in the present invention;

FIG. 4 illustrates a pattern useful in the present invention; and

FIGS. 5A – 5D illustrate various patterns applied to a carton sidewall according to the present invention.

DEFINITIONS

As used herein the term "major axis" means the axis formed between the two furthest perimeter points across the area of a design element, wherein the axis intersects a midpoint of the design element. The major axis generally has a length, which may be abbreviated herein as AL.

As used herein the term "minor axis" means the axis formed between the two closest perimeter points across an area of a design element, wherein the axis intersects a midpoint of the major axis. Generally the length of the minor axis is less than the length of major axis.

As used herein the term "orientation" means the angle formed between a reference line drawn parallel to a side edge of a panel and the design element major axis. The reference line will be considered 0 degrees. The range of possible angles is from −90 degrees to 90 degrees, relative to the reference line.

As used herein the term "irregular shape" means that the two sides of a design element defined by the major axis are not equal in area, or the two sides of an element defined by the minor axis are not equal in area.

As used herein the term "irregular pattern" means that the spacing between design elements within a given carton panel or between two contiguous panels of a carton is not consistent as measured from the points created at the intersection of major axis and minor axis of the relevant design elements.

As used herein the term "uniform pattern" means that the spacing between design elements within a given carton panel or between two contiguous panels of a carton are consistent as measured from the center point created by the intersection of major axis and minor axis of the relevant design element.

As used herein the term "design element" means a graphic element disposed on a carton, such as the surface of a panel, having an area defined by a visibly distinctive outer most perimeter, which may be formed by a continuous or a discontinuous line. In certain embodiments a design element may comprise one or more sub-elements, the shape of which may be the same or different than the shape of the design element. For example, with reference to FIG. 1, the design element 100 has an outer most perimeter 105 (denoted by dotted line) which provides the element 100 with an octagonal shape. The

design element 100 includes a sub-element 106 which is generally diamond shaped. In certain embodiments the outer most perimeter of the design element may be defined by a transition between the panel background and the element itself. For example, with reference to FIG. 1, the panel 26 comprises a solid background color and the perimeter 105 of a design element 100 is defined by the transition from a first color or pattern defining the element 100 to the solid background color of the panel 26. Identifying the perimeter for purposes of the invention can be achieved by physically or virtually inscribing a closed figure around the design element in the transition region. It is not necessary that the area of a design element (or, e.g., other dimensional features such as the major and minor axis) be measured precisely, as long as a consistent measurement technique is employed for all measured design elements.

Design elements are typically a visual representation of an element intended to provide a decoration to a carton. Examples of design elements include, for example, colors, patterns, designs, images (e.g. photographs, drawings, or other renderings), characters, and branding. For any embodiment disclosed herein (including any alternative embodiments), any surface of the carton, including any panel, can include one or more design elements of any size, shape, or configuration, disclosed herein or known in the art, in any combination. Design elements may be formed using any one of a number of techniques known in the art including, for example, printing, etching, engraving, cutting, embossing, debossing and coating.

As used herein the term “discrete” when referring to a design element means that the element is visually unconnected from other design elements. A non-limiting example of a discrete design element is illustrated in FIG. 1 where pattern 200 comprises a plurality of similarly shaped discrete design elements 100 that are visually separated from one another.

As used herein the term “overlay” generally refers to a second design element covering one or more portions of a first design element, but not the entirety of the first design element, such that the covered portions of the first design element are not visible to a consumer.

As used herein the term “pattern” generally refers to the arrangement of two or more design elements. Within a given pattern the design elements may be visually similar shapes or they may be different, further the design elements may be the same relative size or may be different sizes. For example, in one embodiment, a single design element may be repeated in a pattern, but the design elements may be different within the pattern. A non-limiting example of a pattern 200 is illustrated in FIG. 1 where the pattern 200 comprises a plurality of discrete similarly shaped design elements 100 disposed on each of the four panels 14, 26, 38, 50, and where the length of the design element major axis 110 decreases viewing the pattern 200 from left most panel 14 to right most panel 50.

As used herein the term "motif" generally refers to a recurring arrangement of one or more design elements within a pattern. The recurrence of the design element may not necessarily occur within a panel, for example, in certain embodiments the design element may be a discrete design element extending across two adjacent panels separated from one another by a fold line. A non-limiting example of a motif is illustrated in FIG.1 where the motif 220 comprises a pair of similarly shaped and sized design elements 100a, 100b, the major axis 110 of which are substantially aligned. The motif 220 is repeated across each of the four panels 14, 26, 38, 50 where the length of the design element major axis 110 decreases viewing the pattern from left most panel 14 to right most panel 50.

As used herein the term "consumer" refers to any person or entity that may purchase a consumer product or a stream of products or otherwise use a product or a stream of products. The consumer may also be the end user of the consumer products.

DETAILED DESCRIPTION

The present invention provides graphic cartons, particularly graphic cartons for storing and dispensing tissue products, such as facial tissue. In certain embodiments the cartons have a pattern formed from design elements, the scale of which are relative to the panel changes from one panel to the next. In this manner the pattern may morph and transform as the carton is rotated about an axis. The patterns are visually aesthetic and provide a 360 degree viewing experience for the consumer. In certain instances the 360 degree viewing experience may be achieved by printing a plurality of design elements on each of panel of the carton where the scale of the design elements varies between each of the panels such that each panel is different and creates an effect of motion when the carton is rotated about an axis and viewed by the consumer. These and other embodiments to the present invention will now be discussed in further detail with reference to the attached figures.

FIG. 1 is a top plan view of a blank 10 for a carton in accordance with one embodiment of the present invention. The outside surface of the blank 10, or the resulting carton's exterior surface is illustrated. In one embodiment, the blank is foldable into a facial tissue carton suitable for housing a plurality of facial tissue sheets. The blank can be sized to form either upright cartons or flat cartons. Additionally, the blank and the resulting container can be used to house other suitable sheet materials. The blank 10 includes a first panel 14, a first panel top flap 16 disposed at a first end 18 of the first panel and a first panel bottom flap 20 disposed at a second end 22 of the first panel. Blank 10 further includes a second panel 26 connected to first panel 14, a second panel top flap 28 disposed at a first end 30 of the second panel and a second panel bottom flap 32 disposed at a second end 34 of the second panel. The blank 10 still further includes a third panel 38 connected to second panel 26, a third panel top flap 40 disposed at a first end 42 of the third panel and a third panel bottom flap 44 disposed at a second

end 46 of the third panel. The blank 10 still further includes a fourth panel 50 and a fourth panel top flap 52 disposed at a first end 54 of the fourth panel and a fourth panel bottom flap 56 disposed at a second end 58 of the fourth panel. Finally, the blank 10 includes a tab 60 connected to a third end 62 of either the first panel 14 or the fourth panel 50. Tab 60 is utilized to secure the fourth section decorative panel 50 to the first section decorative panel 14 in constructing a container that can be made from the blank 10. To form the container, the blank is folded along a plurality of lines 63 illustrated by the dashed line.

One skilled in the art will appreciate that the blank illustrated in FIG. 1 is merely one means of forming a six sided cubic carton useful in the present invention and that other blanks may be useful. Non-limiting examples of alternative blanks are illustrated in US Patent Nos. 2,840,267, 2,890,791 and 3,243,078, and US Publication No. 2003/0205613. Generally any blank that when folded yields a six sided cubic carton having four contiguous side panels may be used in the present invention.

With reference now to FIG. 2, which illustrates a perspective view of a carton 12 that may be formed from the blank 10 illustrated in FIG. 1. The first, second, third and fourth panels (only the first and second panels 14, 26 illustrated in the perspective view) form a sidewall of the carton having a continuous decorative surface 66 that can receive vector or graphic art in, for example, printed form, to maximize a visual effect to a consumer. Shown are the first decorative panel 14 and the second decorative panel 26, the first section top flap 16, and the third section top flap 40. The top flaps form a container top 90 and the bottom flaps form a container bottom (not illustrated). In the folded carton 12, decorative panels 14 and 26 are folded along a fold line 63 so as to be in side fold continuity across an edge 78, and by this it is meant that there is a continuity of material (which is used to create or form the continuous decorative surface described previously). The continuous decorative surface 66, is particularly well suited for receiving commercially suitable decoration, such as image, print, indicia, graphics, color, an embossed area, a debossed area, and/or coating(s).

With continued reference to FIG. 2 the carton 12 sidewalls 64 have a height (L1) and a width (L2), which may be substantially similar amongst each of the sidewalls or may differ. Further, while it may be preferred that L1 be greater than L2, L2 may be greater than L1 or L2 and L1 may be equal. Generally the sidewall 64 height (L1) is equal amongst each of the sidewalls 64 and provides the carton 12 with a height (H1). The carton 12 may also have a longitudinal axis of rotation (A), such that when the carton is rotated about the axis, such as indicated by the arrow, the pattern 150 disposed on continuous decorative surface 66 is visible by a consumer. For example, when the carton 12 is rotated about the longitudinal axis of rotation (A) the pattern 150 appears as a series of design elements that increase regularly in size. Providing a carton printed with graphics in this manner creates consumer interest and engagement with the carton and provides for a satisfying sensory experience.

In the embodiment illustrated in FIGS. 1 and 2 the pattern 150 is formed from a repeating arrangement of discrete design elements 100 where each of the design elements 100 have a clearly delineated boundary 105; however, in other embodiments the design elements that make up a pattern may not be so constrained. With reference again to FIGS. 1 and 2, the design element 100 has an outer most perimeter 105 (denoted by dotted line) which provides the element 100 with a generally octagonal shape. The design element 100 includes a sub-element 106 which is generally diamond shaped. In certain embodiments the outer most perimeter of design element may be defined by a transition between the panel background and the element itself. For example, with reference to FIG. 1, the panels 26, 38 comprise a solid background color and the perimeter 105 of a design element 100 is defined by the transition from a first color or pattern defining the element 100 to the solid background color of the panels 26, 38. While the illustrated pattern comprises a design element consisting of two visually related shapes, it is envisioned that any number of symbols or indicia may be used to create the desired visual affect and appeal to the consumer. Further, in certain embodiments, the design element includes text which provides a written indication of a quality or attribute of the consumer product or package that may be associated therewith. In other embodiments, text may be omitted altogether and the product attributes may be communicated to the consumer solely with the use of a particular shape.

In certain instances it may be desirable to market an array of products where each of the products have a unique product attribute. In such instances it may be useful to provide different patterns to each of the variants so as to communicate the difference to a consumer. For example, one variant may be a lotion treated tissue and the pattern may comprise design elements in the shape of a drop and the second variant may be an anti-viral tissue and the pattern may comprise design elements in the shape of a cross. However, the particular symbol may be illustrated in any number of ways, including other geometric shapes, insofar as they are differentiable from one another to communicate the fact that the contents of two cartons are different from one another.

With reference to FIG. 1, the blank 10 is printed with a pattern 200 comprising a plurality of discrete similarly shaped design elements 100 disposed on each of the four panels 14, 26, 38, 50. Each of the design elements 100 have a major and minor axis 110, 112. As the pattern is viewed from right most panel 50 to left most panel 14, generally in the direction of the arrow, the length of the design element major axis 110 increases. The increase is such that design elements increase in size in a regular fashion and only a portion of the design elements are capable of being printed on a portion of the panels. In this manner the length of the design element major axis (abbreviated herein as “AL”) may be related to height (L1) of the panel such that the ratio of the dimensions increases regularly from less than 1:1 to greater than 1:1 as the pattern is viewed from right most panel to left most panel. Further, the dimensions

of the design elements may be altered across each of the panels such that the ratio of the design element major axis length to the panel height (L1) is not the same for any given panel of the carton.

When folded the blank of FIG. 1 may for the carton of FIG. 2 which comprises first, second, third and fourth interconnected panels (only the first and second panels 14, 26 illustrated in the perspective view), each panel has a length (L1) and a width (L2) where the length dimension provides the carton with a height (H1). Preferably at least the length (L1) or width (L2) of the panels is substantially similar amongst the panels. The carton 12 further comprises a first design element 100 disposed on each of the first, second, third and fourth panels. A design element is considered to be disposed on a given panel when more than 50 percent of the design element area is located on the given panel. The scale of the first design element 100, which may be expressed as the length of the elements major axis 110 relative to the at least one substantially similar panel dimension, here the height of the panel (L1), varies between at least two contiguous panels.

In certain embodiments, such as that illustrated in FIG. 1, the design elements 100 may be further arranged and scaled such that the scale of the first design element 100 disposed on the first panel 14, relative to the panel height (L1), is greater than the scale of the first design element 100 disposed on the second panel 26, which is greater than the scale of the first design element 100 disposed on the third panel 38, which is greater than the scale of the first design element 100 disposed on the fourth panel 50.

In certain embodiments the carton panels may comprise a first color and the pattern may comprise a second contrasting color where the pattern is printed onto the carton surface. The printed pattern may be printed with any conventional printing method, such as flexo print or roto gravure printing. The printed pattern may be advantageously printed with an ink sufficiently colored to be visibly discernable from the carton panel, which generally defines the background for the pattern. Any colored ink may be used, including, but not limited to black or colors such as, for example, pink, violet, green, purple, blue, yellow, gold, silver, or any combination of different colors.

The surface coverage of the pattern on the panel may vary. It may however be desirable to provide a pattern, such as a printed pattern, having a surface coverage ranging from about 2 to about 60 percent, such as from about 5 to about 50 percent and more preferably from about 10 to about 40 percent, of the total surface of the carton panel that it is printed on.

One skilled in the art will appreciate that a wide variety of design elements may be useful in the present invention. Design elements are typically visual representation of an element intended to provide a decoration to a carton. Examples of design elements include, for example, colors, patterns, designs, images (e.g. photographs, drawings, or other renderings), characters, and branding. In certain instances

the design elements may be geometric shapes, such as square, octagons, pentagons, diamonds, triangles, circles, and the like. In other instances the design element may be an organic shape that is illustrative of a natural object such as a leaf, a flower, a snowflake, or the like. In still other instances the design element may be an abstract shape, which may be derived from an actual object but not be immediately recognizable as such by a consumer.

Three illustrative design elements are shown in FIGS. 3A-3C. The design element 100 of FIG. 3A is a regular closed geometric shape – a pentagon – having a major axis 110 and minor axis 112. The outer perimeter of the design 100 of FIG. 3A is defined by a continuous line providing the element 100 with an outer perimeter 105 and a closed shape.

Generally design elements useful in the present invention, such as that illustrated in FIG. 3A, will have a major axis 110 and a minor axis 112. In one embodiment, the ratio of the length of the major axis 110 to the length of the minor axis 112 can be in the range of 1 to about 3 or in the range of 1 to about 4 or more. For example, the ratio of the length of the major axis 110 to the length of the minor axis 112 can be 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, or 5. Measuring the length of axis can be accomplished via direct measurement, via microscopic analysis, by measuring the distance between the two furthest perimeter points across the area of a design element.

In another example embodiment, referring to FIG. 3B, a design element 100 may have at least two visually distinct design elements, a first design element 104, which in FIG. 3B includes, for example a discrete, discontinuous octagonal shaped element, and a second design element 106, which in FIG. 3B is in the form of a discrete diamond shape having a continuous perimeter. The first design element 104 can include any shape, design, or combination of shapes and designs (as previously disclosed), and can be included with other design elements. Similarly, the second design element 106 can include any shape, design, or combination of shapes and designs. However, the first design element 104 can be visually distinct from the second design element 106. For example, the first design element can be a relatively large, open, two-dimensional geometric or decorative shape, compared to a second design element 106 that can be a relatively thin, wavy, curvilinear shape. In general, visually distinct design elements are design elements that can be visually distinguished as discrete, separate design elements based on overall size and shape. For illustration purposes, a first design element 104 can comprise an organic shape, such as a follower, and a second design element 106 can comprise a geometric shape, such as a circle, and these two design elements could be considered visually distinguishable. In other instances, the first 104 and second 106 design elements may comprise similar shapes, but still be visually distinguishable. For example, the first design element 104 can generally comprise a circle and

a second design element 106 can comprise a circle that is about one-fourth the size of the first design element 104, and these two design elements could be considered visually distinguishable.

In one embodiment, the area of the first design element 104 can be at least about two times larger than the area of the second design element 106. One of ordinary skill in the art would recognize that an area of the design element could be determined by utilizing a visual image and a computing system to mathematically calculate the area. As shown in FIG. 3B, the first design element 104, an octagon, is visually distinct from the second design element 106, a diamond, in both size and shape. The design elements disclosed herein are representative only, and virtually any design element can be utilized for either the first or second design elements.

A third embodiment of a design element 100 useful in the present invention is shown in FIG. 3C. The design element 100 is a closed design element having a continuous line defining its outermost perimeter 105. Like the design elements illustrated in FIGS. 3A and 3B, the design element 100 has a major and minor axis 110, 112. Because the two sides of a design element 100 defined by the major and minor axis 110, 112 are not equal in area the element is said to have an irregular shape.

In still other instances, such as illustrated in FIG. 4, the design element 100 may comprise a plurality of design elements where a first design element 104 overlays a second and a third design element 106, 108. The design element 100 has major axis 110 and minor axis 112 and an outer perimeter 105 defined by a continuous line that provides the element with a closed shape. The first, second and third design elements vary in size relative to one another and the third design element has a different shape relative to the first and second design elements.

With continued reference to FIG. 4 the design elements are arranged into motifs 220 that form a larger pattern 200. For example, two design elements 100a, 100b are arranged vertically to form a motif 220. The motif 220 is repeated to form a pattern 200. Each motif 220 comprises a pair of design elements 100 that are substantially similar in terms of size, shape and composition. The motifs are repeated with the size of the design elements changing in each iteration. In this manner, when viewing the pattern 200 from right to left the size of the design elements, and in-turn the motifs, increases in a regular fashion from relatively small to relatively large. The elements become so large that the entire element is not visible within the field of view.

As further illustrated in FIG. 4 the pattern 200 may comprise design elements 100 that are regularly spaced apart from one another throughout the pattern 200, however, the invention is not so limited and the pattern may be an irregular pattern. Generally, where a regular pattern, such as that illustrated in FIG. 4, is applied to a carton according to the present invention the spacing between design elements within a given carton panel, or between two contiguous panels of a carton, is consistent as

measured from the center point created by the intersection of major axis and minor axis of the relevant design element.

Regardless of the specific shape of the design element and whether it comprises a single design element or two or more elements, it is generally preferred that the carton comprises a plurality of design elements arranged in a pattern where the scale of the design elements are varied both relative to one another and to at least one dimension of the carton panel. For example, in certain embodiments the carton may be generally cubic having four substantially similarly sized panels, each having a length from about 12 to about 14 cm and a width from about 10 to about 12 cm. A pattern comprising a plurality of similarly shaped design elements is disposed on the carton such that each of the panels is provided with at least one design element. The length of the design element major axis may range from about 1 to about 10 cm. To create visual interest, the scale of the design element relative to the panel changes from one panel to the next is such that the size of elements differs between two immediately adjacent panels. In this manner the design element major axis may increase from the first panel to the next immediately adjacent panel and the relative scale of the panel height (L1) to the element major axis length (AL) may decrease. For example, the ratio of the panel height (L1) to the length of the design element major axis (AL) may be about 1:10 on a first panel and about 1:6 on a second, immediately adjacent panel.

For example, as shown in FIG. 5A the pattern 200 is applied to a carton having first, second, third, and fourth panels 14, 26, 38, 50 separated from one another by fold lines 63. The pattern 200 consists of a repeated motif 220 of a pair of design elements 100a, 100b vertically aligned with one another. Each of the design elements 100 comprise a first design element 104 and a second design element 106. The second design element 106 is a discrete closed element having a diamond shape and is entirely disposed within the first element 104. In the illustrated embodiment the first and second design elements 104, 106 are distinct geometric shapes, but are visually related. Further, each design element 104, 106 has a major and a minor axis wherein the length of the major axis 110 of the first design element 104 is greater than the length of the major axis of the second design element 106. The major axis 110 of the first design element 104 is varied, relative to the length of the panels (L1) as the pattern is viewed from the right most panel 50 to the left most panel 14. In this manner the ratio of the element major axis length to the length of the panel (L1) is increasing as the consumer views the panels from right to left. The length of the element major axis is increased to such an extent that an entire element cannot be printed on a given panel and the ratio of element major axis length to the length of the panel (L1) is about 1:1. On the other hand, on the right most panel the ratio of element major axis length to the length of the panel (L1) is about 1:12.

With reference to FIG. 5B, the pattern 200 comprises a plurality of visually distinct design elements, such as a first design element 100a, a second design element 100b, a third design element 100c, a fourth design element 100d and fifth design element 100e. The design elements 100a-100e are arranged in various motifs to create the pattern 200. Two particular motifs 220a, 220b are designated. Each motif 220a, 220b comprises a plurality of substantially identical design elements 100c, 100e vertically aligned within one another and arranged in columns.

In the illustrated embodiment the first design element 100a comprises a first design element 104 in the form of a diamond having an outer perimeter 105 and major axis 110a and minor axis 112a. The design element 100a further comprises a second design element 106 in the form of a star disposed entirely within the first design element 104. The ratio of the first design element 100a major axis 110a length to the length of the panel (L1) is about 4:3 and the element is disposed substantially on the first panel 14. Generally, as used herein a design element is substantially on a given panel if more than 50 percent of the element's visible surface area is disposed on the given panel.

Continuing to the third panel 38 of FIG. 5B a second element 100b is disposed. The second element 100b comprises a first design element 104 in the form of a diamond having an outer perimeter 105 and major axis 110b. The design element 100b further comprises a second design element 106 in the form of a star disposed entirely within the first design element 104. The ratio of the second design element 100b major axis 110b length to the length of the panel (L1) is about 3.5:6. The third panel 38 further comprises a third design element 100c, which is similar to the second design element 100b in terms of the shape of the first and second design elements, but the elements have a different scale – both relative to one another and to the length of the panel (L1). The ratio of the third design element 100c major axis 110c length to the length of the panel (L1) is about 1:3.

With continued reference to FIG. 5B, particularly the fourth panel 50, which comprises third and fourth design elements 100d, 100e. The third design element 110d is composed of three design elements overlaying one another and has a major axis 110d, where the ratio of the major axis 110d length to the length of the panel (L1) is about 1.5:6. The fourth design element 110e consists of a single design element having a major axis 110e, the length of which is less than the first through fourth design elements 1100a-100d and ratio to the length of the panel (L1) is about 0.5:6.

Turning now to FIG. 5C, yet another embodiment of the present invention is illustrated. In the illustrated embodiment the pattern 200 comprises a plurality of similarly shaped hexagonal design elements 100 the scale of which, relative to the length of the panel (L1), increase and then decrease, when viewing panels 14, 26, 38, 50 from left to right. For example, design element 100a having an outer perimeter 105 and being disposed on panel 14 has a major axis 110a and the ratio of the major axis

length to the length of the panel (L1) is about 1:6. The ratio of the major axis 110b length to the length of the panel (L1) of the design element 100b disposed on the second panel 26 is about 1:2. The largest design element 100c is disposed substantially equally on second and third panels 26, 38 and the ratio of the major axis 110c length to the length of the panel (L1) is greater than 1. Continuing to view the panels from left to right the size of the design elements decrease with the design element 100d disposed on the fourth panel 50 having a major axis 110d. The ratio of the major axis 110d length to the length of the panel (L1) of the design element 100d is about 1:3.

Still another embodiment of the present invention is illustrated in FIG. 5D. The pattern 200 comprises a plurality of design elements 100 all having organic shapes, some comprising a single element, such as the design element 100b, others comprising two or three design elements 100a, 100c. The relative scale of the design elements changes as the pattern 200 is viewed from left to right – initially decreasing, then increasing, and then decreasing again. This affect is obtained by altering the length of the element major axis 110, such that the ratio of the major axis length to the length of the panel (L1) is initially about 2:3 (element 100a disposed on the first panel 14), decreases to about 1:6 (element 100b disposed on the second panel 26), increases to greater than about 1 (element 100c disposed substantially on the third panel 38) then decreases to about 2:3 (element 100d disposed on the fourth panel 50).

While the invention has been described in detail with respect to the specific embodiments thereof, it will be appreciated that those skilled in the art, upon attaining an understanding of the foregoing, may readily conceive of alterations to, variations of, and equivalents to these embodiments. Accordingly, the scope of the present invention should be assessed as that of the appended claims and any equivalents thereto and the foregoing embodiments:

In a first embodiment the present invention provides a carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension is substantially similar amongst the panels, a first design element having a major axis disposed on each of the first, second, third and fourth panels wherein the ratio of the length of the major axis to the panel height varies between at least two contiguous panels.

In a second embodiment the present invention provides the carton of the first embodiment wherein the length of the first design element major axis disposed on the first panel (AL1) is greater than the length of the first design element major axis disposed on the second panel (AL2), which is greater than the length of the first design element major axis disposed on the third panel (AL3), which is greater than the length of the first design element major axis disposed on the fourth panel (AL4).

In a third embodiment the present invention provides the carton of the first or second embodiments further comprising a second design element disposed on at least one of the contiguous panels. In certain embodiments the first and second design elements are substantially similar shapes selected from the group consisting of geometric shapes, organic shapes and abstract shapes, each having a major and a minor axis and wherein the length of the major axis of the first design element is greater than the length of the major axis of the second design element.

In a fourth embodiment the present invention provides the carton of any one of the foregoing embodiments wherein the ratio of AL1 to the panel height (L1) is from about 2:1 to about 1:2 and the ratio of AL4 to L1 is from about 1:4 to about 1:6.

In a fifth embodiment the present invention provides the carton of any one of the foregoing embodiments wherein the first panel comprises a plurality of first design elements, the second panel comprises a second plurality of first design elements that is greater than the number of design elements disposed on the first panel, the third panel comprises a third plurality of first design elements that is greater than the number of design elements disposed on the second panel and the fourth panel comprises a fourth plurality of first design elements that is greater than the number of design elements disposed on the third panel.

In a sixth embodiment the present invention provides the carton of any one of the foregoing embodiments wherein the first design element is selected from the group consisting of geometric shapes, organic shapes and abstract shapes.

In a seventh embodiment the present invention provides the carton of any one of the foregoing embodiments wherein the first design element has a major and a minor axis and wherein the major axis of each of the first design elements are substantially parallel to one another.

In an eighth embodiment the present invention provides the carton of any one of the foregoing embodiments wherein at least three of the contiguous panels comprise a plurality of first design elements arrayed in rows.

In a ninth embodiment the present invention provides the carton of any one of the foregoing embodiments wherein at least three of the contiguous panels comprise a plurality of first design elements and the arrangement of the first design elements on a given panel varies between at least two of the panels.

In a tenth embodiment the present invention provides the carton of any one of the foregoing embodiments wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements are equally spaced apart from one another.

In an eleventh embodiment the present invention provides the carton of any one of the foregoing embodiments wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements overlaying one another.

In a twelfth embodiment the present invention provides the carton of any one of the foregoing embodiments wherein the first, second, third and fourth panels are paperboard and the panels are separated from one another by a fold lines.

In a thirteenth embodiment the present invention provides the carton of any one of the foregoing embodiments further comprising a top panel having a dispensing opening disposed thereon and a plurality of folded tissue products disposed in the carton.

WHAT IS CLAIMED IS:

1. A carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension is substantially similar amongst the panels, a first design element having a major axis disposed on each of the first, second, third and fourth panels wherein the ratio of the length of the major axis to the panel height varies between at least two contiguous panels.

2. The carton of claim 1 wherein the length of the first design element major axis disposed on the first panel (AL1) is greater than the length of the first design element major axis disposed on the second panel (AL2), which is greater than the length of the first design element major axis disposed on the third panel (AL3), which is greater than the length of the first design element major axis disposed on the fourth panel (AL4).

3. The carton of claim 1 wherein the length of the first design element major axis disposed on the first panel (AL1) is less than the length of the first design element major axis disposed on the second panel (AL2), which is less than the length of the first design element major axis disposed on the third panel (AL3), which is less than the length of the first design element major axis disposed on the fourth panel (AL4).

4. The carton of claim 1 wherein the length of the first design element major axis disposed on the first panel (AL1) is greater than the length of the first design element major axis disposed on the second panel (AL2), which is substantially equal to the length of the first design element major axis disposed on the third panel (AL3), which is greater than the length of the first design element major axis disposed on the fourth panel (AL4).

5. The carton of claim 2 further comprising a second design element having a major axis disposed on at least one of the contiguous panels.

6. The carton of claim 3 wherein the first and second design elements are substantially similar shapes selected from the group consisting of geometric shapes, organic shapes and abstract shapes, and wherein the length of the major axis of the first design element is greater than the length of the major axis of the second design element.

7. The carton of claim 2 wherein the ratio of AL1 to the panel height (L1) is from about 2:1 to about 1:2 and the ratio of AL4 to L1 is from about 1:4 to about 1:6.

8. The carton of claim 2 wherein the first panel comprises a plurality of first design elements, the second panel comprises a second plurality of first design elements that is greater than the number of design elements disposed on the first panel, the third panel comprises a third plurality of first design elements that is greater than the number of design elements disposed on the second panel and the fourth panel comprises a fourth plurality of first design elements that is greater than the number of design elements disposed on the third panel.

9. The carton of claim 1 wherein the first design element is selected from the group consisting of geometric shapes, organic shapes and abstract shapes.

10. The carton of claim 1 wherein the first design element has a major and a minor axis and wherein the major axis of each of the first design elements are substantially parallel to one another.

11. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements arrayed in rows.

12. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements and the arrangement of the first design elements on a given panel varies between at least two of the panels.

13. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements are equally spaced apart from one another.

14. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements overlaying one another.

15. The carton of claim 1 wherein the first, second, third and fourth panels are paperboard and the panels are separated from one another by a fold line.

16. The carton of claim 1 further comprising a top panel having a dispensing opening disposed thereon and a plurality of folded tissue products disposed in the carton.

17. A carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension (L1) is substantially similar amongst the panels, a first design element having a major and a minor axis disposed on each of the first, second, third and fourth panels, wherein the ratio of the major axis length of the first design element disposed on the first panel (AL1) to L1 is greater than the ratio of the major axis length

of the first design element disposed on the second panel (AL2) to L1, which is greater than the ratio of the major axis length of the first design element disposed on the third panel (AL3) to L1.

18. The carton of claim 17 wherein the ratio of AL1 to L1 is from about 2:3 to about 2:1 and the ratio of AL3 to L1 is from about 1:6 to about 1:2.

19. The carton of claim 17 wherein the shape of the first design element is selected from the group consisting of geometric shapes, organic shapes and abstract shapes, and each of the first design elements have a substantially similar shape.

20. A cubic carton having a vertical axis and four continuous side panels separated from one another by fold lines, each of the side panels having a height dimension that is substantially equal and a first design element having a shape selected from the group consisting of geometric shapes, organic shapes and abstract shapes disposed on each of the panels, wherein the first design element has a major and a minor axis and the length of the major axis relative to the height dimension varies between the design elements disposed on at least three continuous side panels and wherein rotation of the carton about the vertical axis creates an effect selected from the group consisting of morphing, motion, zooming and depth.

21. The carton of claim 20 wherein the major axis of each of the first design elements are substantially parallel to one another.

22. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements arrayed in rows.

23. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements and the arrangement of the first design elements on a given panel varies between at least two of the panels.

24. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements are equally spaced apart from one another.

25. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements overlaying one another.

26. The carton of claim 20 wherein the first, second, third and fourth panels are paperboard and the panels are separated from one another by a fold line.

27. The carton of claim 20 further comprising a top panel having a dispensing opening disposed thereon and a plurality of folded tissue products disposed in the carton.

AMENDED CLAIMS
received by the International Bureau on 26 June 2019 (26.06.2019)

WHAT IS CLAIMED IS:

1. A carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension is substantially similar amongst the panels, a first design element having a major axis disposed on each of the first, second, third and fourth panels wherein the ratio of the length of the major axis to the panel height varies between at least two contiguous panels.

2. The carton of claim 1 wherein the length of the first design element major axis disposed on the first panel (AL1) is greater than the length of the first design element major axis disposed on the second panel (AL2), which is greater than the length of the first design element major axis disposed on the third panel (AL3), which is greater than the length of the first design element major axis disposed on the fourth panel (AL4).

3. The carton of claim 1 wherein the length of the first design element major axis disposed on the first panel (AL1) is less than the length of the first design element major axis disposed on the second panel (AL2), which is less than the length of the first design element major axis disposed on the third panel (AL3), which is less than the length of the first design element major axis disposed on the fourth panel (AL4).

4. The carton of claim 1 wherein the length of the first design element major axis disposed on the first panel (AL1) is greater than the length of the first design element major axis disposed on the second panel (AL2), which is substantially equal to the length of the first design element major axis disposed on the third panel (AL3), which is greater than the length of the first design element major axis disposed on the fourth panel (AL4).

5. The carton of claim 2 further comprising a second design element having a major axis disposed on at least one of the contiguous panels.

6. The carton of claim 5 wherein the first and second design elements are substantially similar shapes selected from the group consisting of geometric shapes, organic shapes and abstract shapes, and wherein the length of the major axis of the first design element is greater than the length of the major axis of the second design element.

7. The carton of claim 2 wherein the ratio of AL1 to the panel height (L1) is from about 2:1 to about 1:2 and the ratio of AL4 to L1 is from about 1:4 to about 1:6.

8. The carton of claim 2 wherein the first panel comprises a plurality of first design elements, the second panel comprises a second plurality of first design elements that is greater than the number of design elements disposed on the first panel, the third panel comprises a third plurality of first design elements that is greater than the number of design elements disposed on the second panel and the fourth panel comprises a fourth plurality of first design elements that is greater than the number of design elements disposed on the third panel.

9. The carton of claim 1 wherein the first design element is selected from the group consisting of geometric shapes, organic shapes and abstract shapes.

10. The carton of claim 1 wherein the first design element has a major and a minor axis and wherein the major axis of each of the first design elements are substantially parallel to one another.

11. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements arrayed in rows.

12. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements and the arrangement of the first design elements on a given panel varies between at least two of the panels.

13. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements are equally spaced apart from one another.

14. The carton of claim 1 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements overlaying one another.

15. The carton of claim 1 wherein the first, second, third and fourth panels are paperboard and the panels are separated from one another by a fold line.

16. The carton of claim 1 further comprising a top panel having a dispensing opening disposed thereon and a plurality of folded tissue products disposed in the carton.

17. A carton comprising first, second, third and fourth contiguous panels, each panel having a height and a width dimension, wherein the height dimension (L1) is substantially similar amongst the panels, a first design element having a major and a minor axis disposed on each of the first, second, third and fourth panels, wherein the ratio of the major axis length of the first design element disposed on the first panel (AL1) to L1 is greater than the ratio of the major axis length

of the first design element disposed on the second panel (AL2) to L1, which is greater than the ratio of the major axis length of the first design element disposed on the third panel (AL3) to L1.

18. The carton of claim 17 wherein the ratio of AL1 to L1 is from about 2:3 to about 2:1 and the ratio of AL3 to L1 is from about 1:6 to about 1:2.

19. The carton of claim 17 wherein the shape of the first design element is selected from the group consisting of geometric shapes, organic shapes and abstract shapes, and each of the first design elements have a substantially similar shape.

20. A cubic carton having a vertical axis and four continuous side panels separated from one another by fold lines, each of the side panels having a height dimension that is substantially equal and a first design element having a shape selected from the group consisting of geometric shapes, organic shapes and abstract shapes disposed on each of the panels, wherein the first design element has a major and a minor axis and the length of the major axis relative to the height dimension varies between the design elements disposed on at least three continuous side panels and wherein rotation of the carton about the vertical axis creates an effect selected from the group consisting of morphing, motion, zooming and depth.

21. The carton of claim 20 wherein the major axis of each of the first design elements are substantially parallel to one another.

22. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements arrayed in rows.

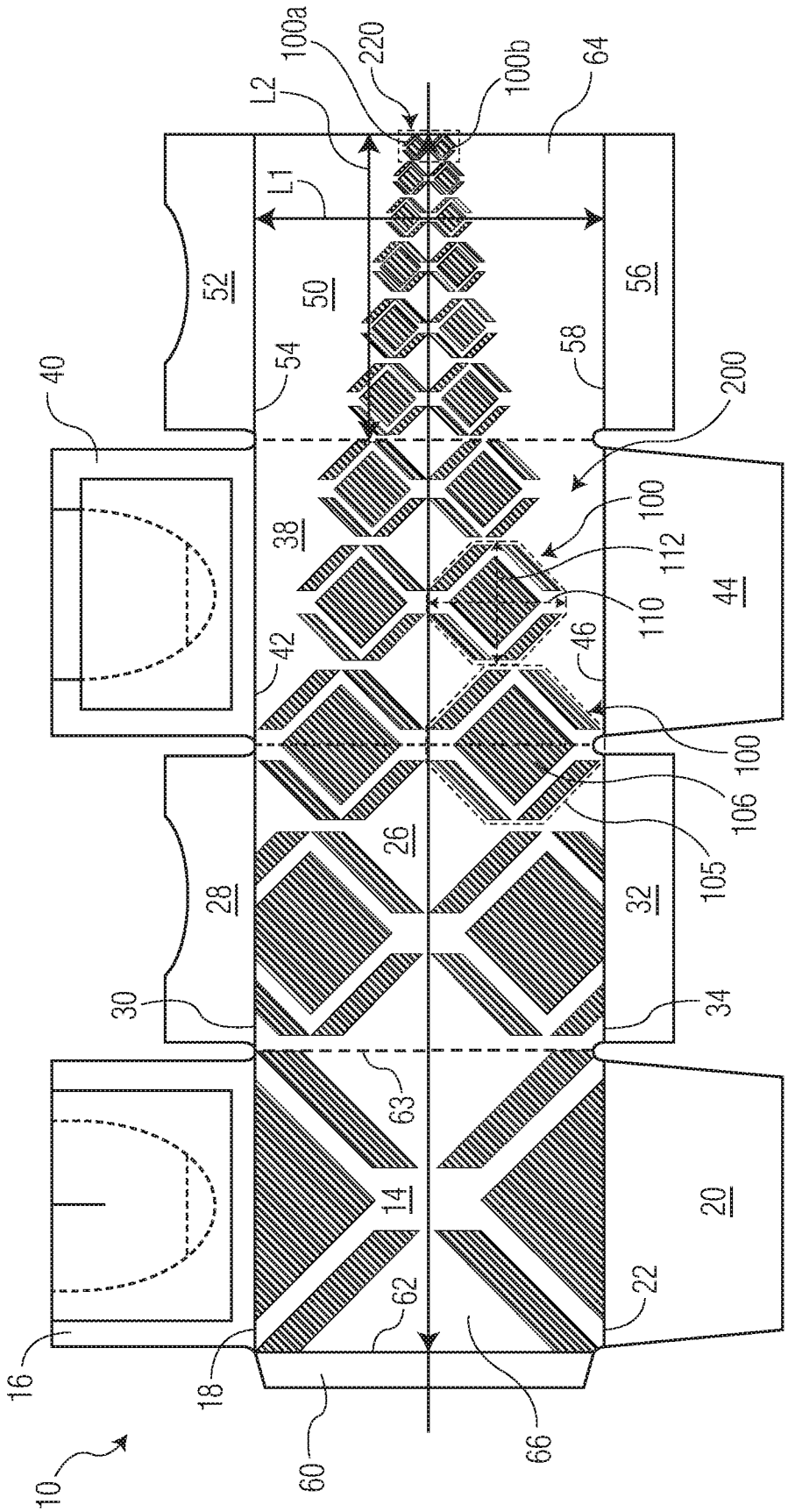
23. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements and the arrangement of the first design elements on a given panel varies between at least two of the panels.

24. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements are equally spaced apart from one another.

25. The carton of claim 20 wherein at least three of the contiguous panels comprise a plurality of first design elements and each of the plurality of first design elements overlaying one another.

26. The carton of claim 20 wherein the first, second, third and fourth panels are paperboard and the panels are separated from one another by a fold line.

27. The carton of claim 20 further comprising a top panel having a dispensing opening disposed thereon and a plurality of folded tissue products disposed in the carton.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220
100b
64
L2
L1
52
50
56
54
58
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100
112
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44
42
46
100
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22
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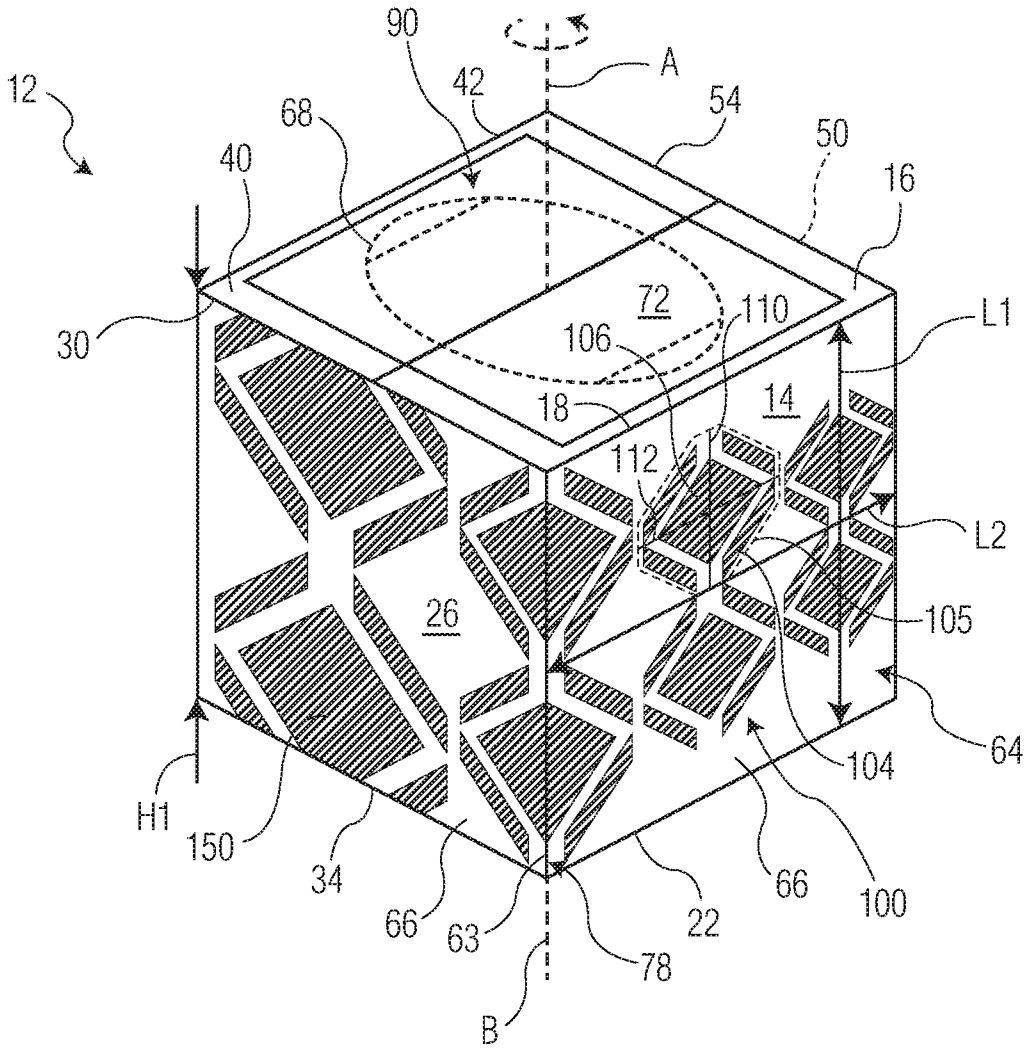
66
10

FIG. 1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A
42
54
50
16
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110
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L1
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14
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L2
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104
H1
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63
22
66
100
78
B

FIG. 2

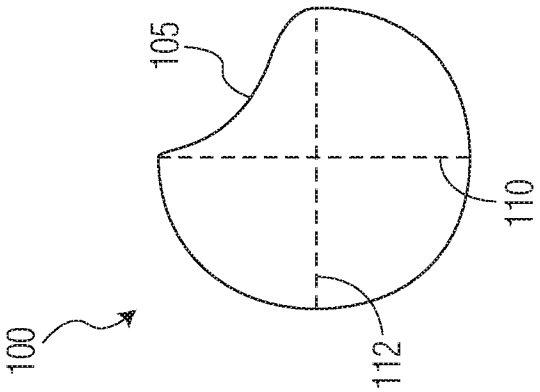


FIG. 3C

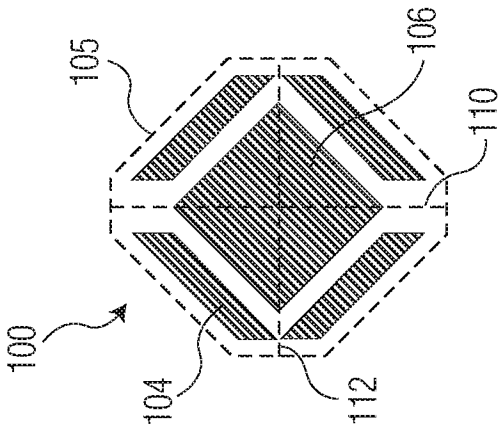


FIG. 3B

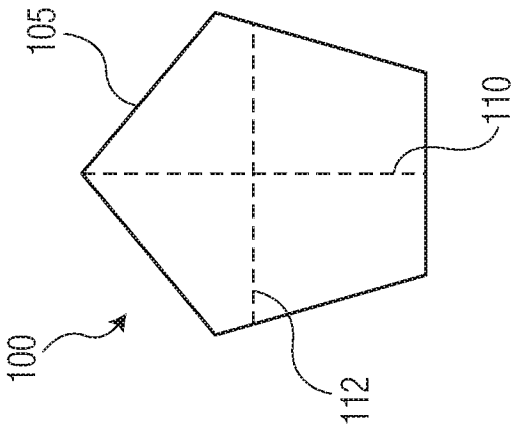


FIG. 3A

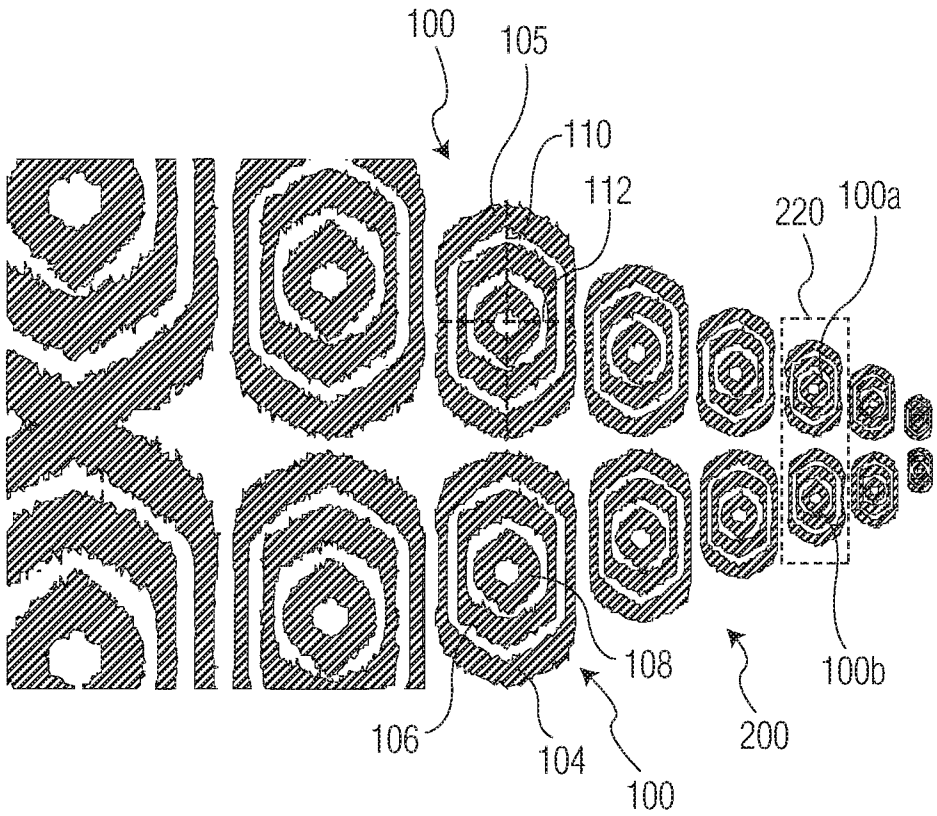


FIG. 4

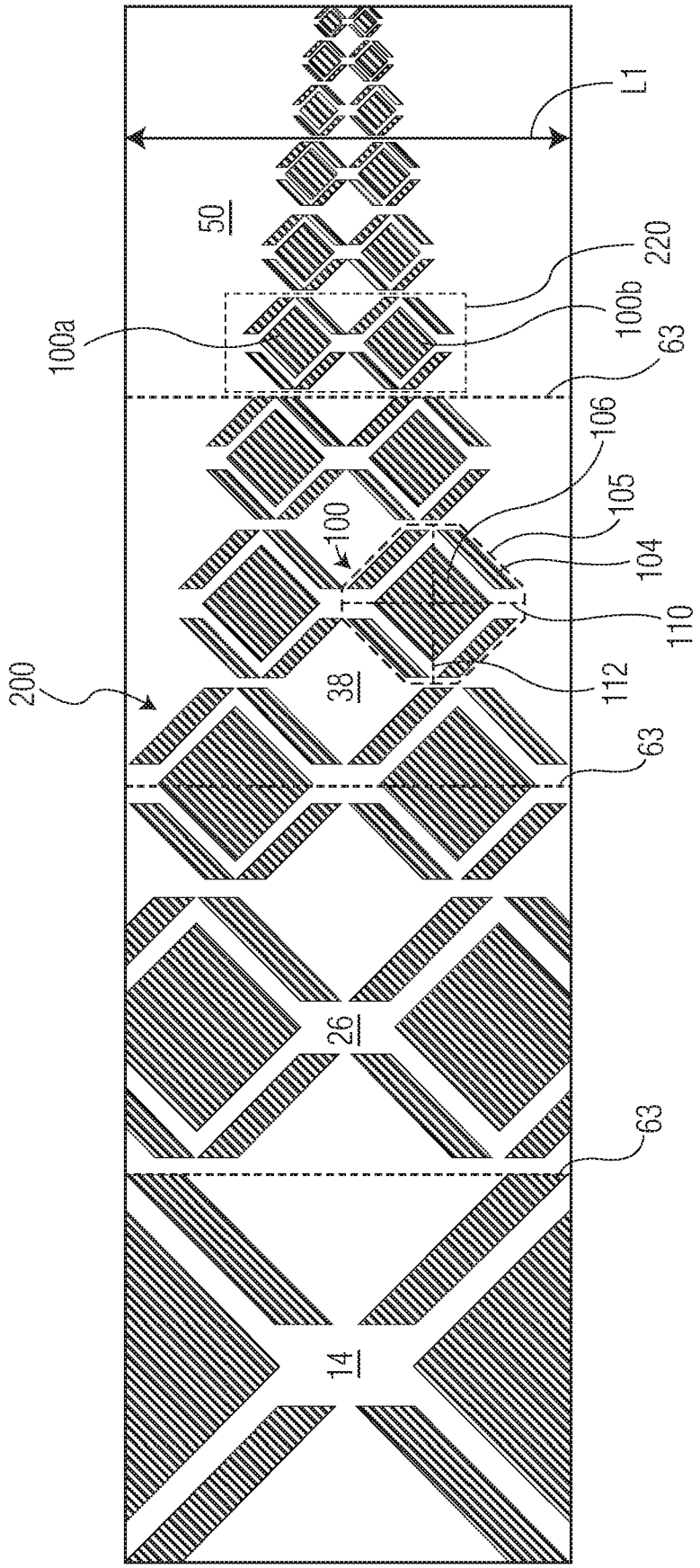
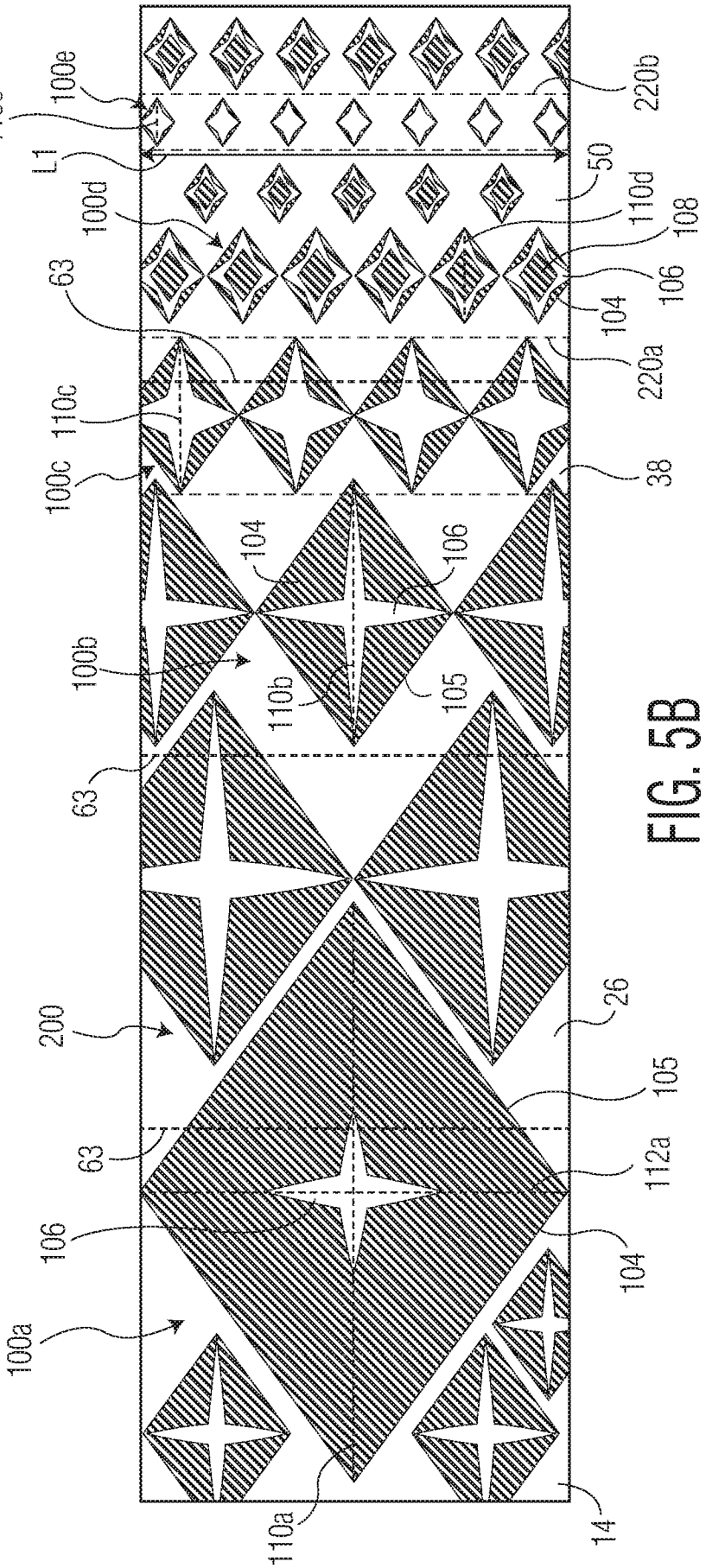


FIG. 5A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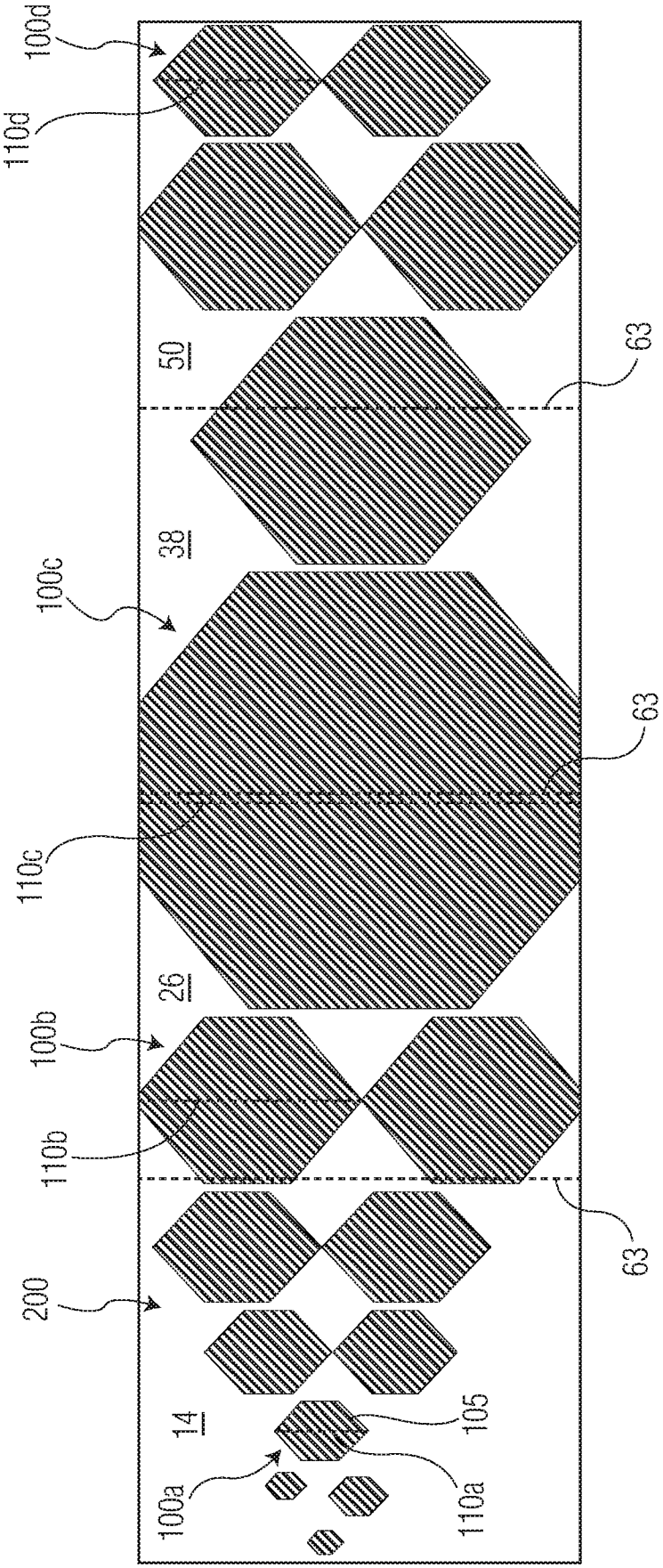
100e
L1
220b
50
100d
110d
108
63
106
104
220a
110c
100c
38
104
106
100b
110b
105
63
200
26
105
63
112a
106
104
100a
110a
14

FIG. 5B


100d
110d
50
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38
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110c
63
26
100b
110b
63
200
14
105
100a
110a

FIG. 5C

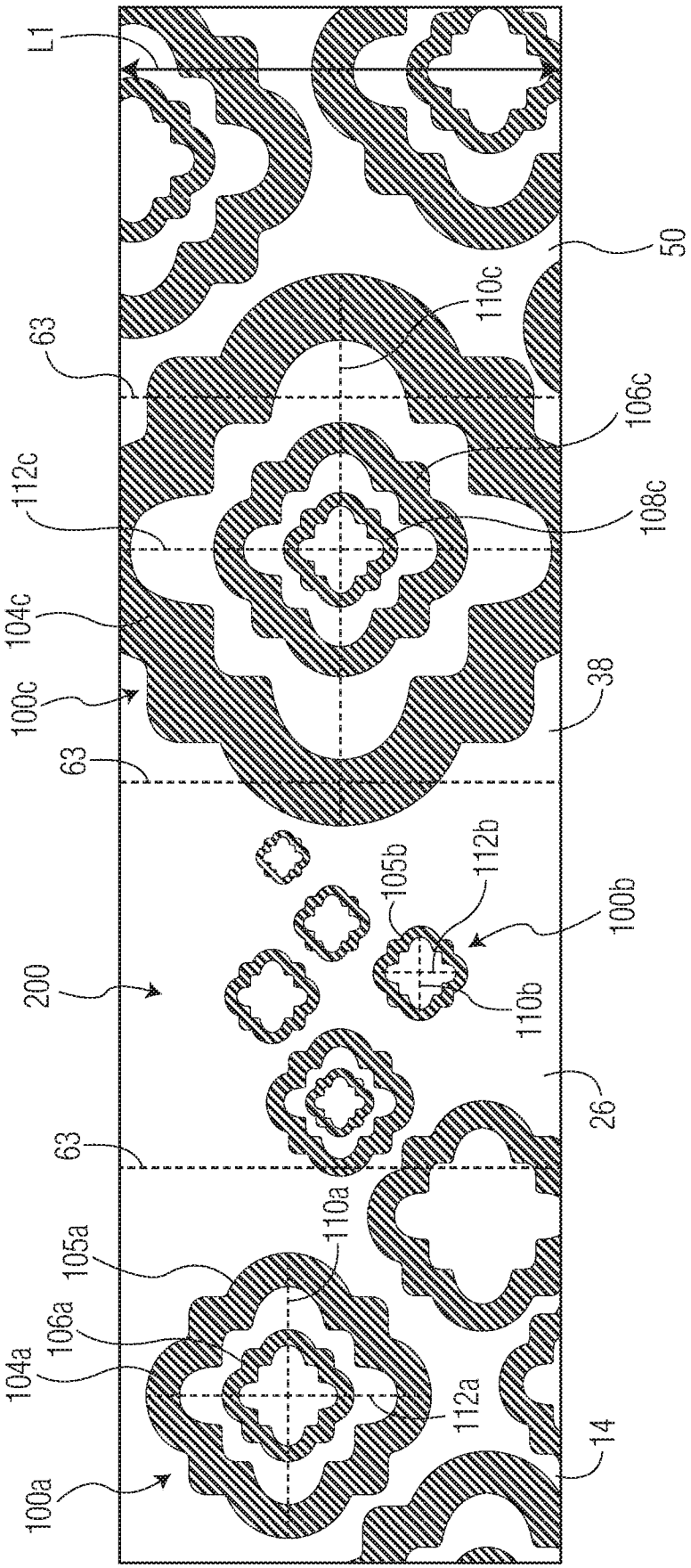
L1
50
63
110c
106c
112c
108c
104c
100c
38
63
105b
112b
100b
200
110b
26
63
110a
105a
106a
104a
112a
14
100a

FIG. 5D

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2018/048532

A. CLASSIFICATION OF SUBJECT MATTER

B65D 5/42 (2006.01) *A47K 10/20 (2006.01)* *A47K 10/42 (2006.01)* *B65D 83/08 (2006.01)*

According to International Patent Classification (IPC)

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D, A47K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

FAMPAT, WIPO GLOBAL DESIGN DATABASE: Box, carton, blank, panel, side wall, design, decoration, colour, pattern, motif, image, photo, drawing, character, brand, graphical, geometrical, organic, irregular, asymmetrical, abstract, vary, differ, scale, size, length, height, ratio, dimension, adjacent, contiguous, next, neighbouring, rotation, morphing, transform, moving, motion, zoom, depth, 设计, 装饰, 颜色, 图案, 主题, 图片, 照片, 字, 品牌, 图像, 几何形状, 自然形状, 抽象,长度, 高度, 比, 不同, 纸盒, 纸箱, 纸板箱, 纸巾盒, 面板, 坯件, 侧板, 侧壁 and related search terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US D722265 S (KATOPO, J., ET AL.) 10 February 2015 claim and figure 1	1-19 20-27
A	JP 2009-149370 A (OJI NEPIA CO LTD ET AL.) 9 July 2009 abstract, figures 1-6 of the machine translation	-
A	JP 2010-235162 A (ASAHI PRINTING CO LTD) 21 October 2010 figure 2 of the machine translation	-

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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Intellectual Property Office of Singapore
51 Bras Basah Road
#01-01 Manulife Centre
Singapore 189554

Email: pct@ipos.gov.sg

Authorized officer

Lee Yi Chau

IPOS Customer Service Tel. No.: (+65) 6339 8616

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/US2018/048532

Note: This Annex lists known patent family members relating to the patent documents cited in this International Search Report. This Authority is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US D722265 S	10/02/2015	US D749946 S CA 153011 S	23/02/2016 25/04/2014
JP 2009-149370 A	09/07/2009	NONE	
JP 2010-235162 A	21/10/2010	NONE	