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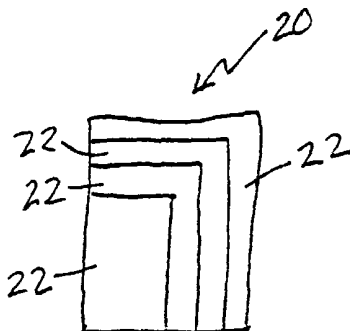
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(54) Title: PRINTABLE CASCADING PAGES



(57) Abstract: A set of stock sheets that can be printed upon and modified to result in a set of cascading pages. The stock sheets are preferably a uniform size, or at least can easily be run through a printer. Tearable lines of separation extend across the sheets, separating a removable portion from a remainder portion. Once the sheets have been printed upon, the sizes of the sheets can be modified by separating the removable portions from the remainder portions along the tearable lines. The tearable lines are offset from sheet to sheet, thereby resulting in a set of pages varying in size, such as cascading pages.

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PRINTABLE CASCADING PAGES

BACKGROUND OF THE INVENTION

Field of the Invention

This invention is directed to a set of printable pages, preferably but not necessarily of a uniform size, that can be printed upon and subsequently modified to result
5 in a set of printed pages of cascading sizes.

Description of Related Art

Pages of paper or other sheet-like materials are typically arranged in a logical order when bound or otherwise assembled together. Subdivisions of the bound arrangement are often set apart from one another through the use of cascading pages, for example, pages
10 of various sizes arranged in increasing or decreasing order by size in at least one dimension from the front to the back of the bound arrangement. Material organized in this manner simplifies the presentation of material for the reader, but conventional processes of organizing material in this manner can be quite difficult, particularly for a typical person who desires to produce a professional-looking bound arrangement of printed cascading
15 pages.

Most printers can print on various sizes of paper. However, the hassle of finding a variety of sizes of paper and formatting a printer to accommodate each size of paper can deter many amateur publishers from attempting to print text, designs, or other type of printed matter on various sizes of paper to subsequently be arranged in a cascading format.
20 Alternatively, printing on a set of uniformly sized pages and subsequently measuring and cutting the pages to create a cascading set of pages can be equally frustrating.

Accordingly, a need exists for a new and improved set of sheets of material that can be easily printed and then assembled into a set of cascading pages.

SUMMARY OF THE INVENTION

25 This invention relates to a set of sheets of a uniform size or non-uniform sizes that can be printed upon and subsequently modified to result in a set of printed pages of cascading sizes. The pages are sheets of paper or other material that can accept print. Each of the sheets that is to be subsequently modified has at least one tearable line of separation

extending across the surface of the sheet, such as from one edge to another edge. The tearable line of separation can extend from one edge of the sheet to an adjacent edge or to an opposite edge or to another portion of the same edge. The tearable line of separation is not necessarily straight, but can curve or turn. The tearable line of separation defines a removable portion of the sheet. The removable portion can span an entire length of the sheet, an entire width of the sheet, a corner of the sheet and/or an inner portion of the sheet.

In one embodiment, the tearable line of separation includes a number of sections, each section having a micro-perforated line connected to a die-cut line. The micro-perforated line is particularly desirable in the non-linear sections of the tearable line of separation. The tearable line, having both die-cut lines and micro-perforated lines, is durable enough to withstand bends and turns when routed through a printer, yet weak enough to allow easy separation.

In another embodiment, the tearable line of separation on each sheet can be offset relative to the tearable lines of separation on the other sheets. Alternatively, each sheet can have a number of tearable lines of separation offset to one another, and the user can determine, after printing, along which tearable line each sheet should be separated and, thus, the order in which the pages should cascade.

In another embodiment, at least one of the sheets can include a window, or a hole, within the sheet. Furthermore, each of the sheets can include a window, varying in size and/or location from sheet to sheet.

Once the sheets have been printed upon and the tearable lines of separation have been torn to render the desired shapes and/or sizes of the pages, if desired, the set of pages can be bound together along one edge. For example, the pages can have holes along one edge for easy insertion into a ring-binder. The printable cascading pages of the present invention can be designed and constructed in a wide range of sizes for a number of different uses.

It is therefore an object of the present invention to provide a set of sheets, preferably but not necessarily uniformly sized, that can be printed upon and subsequently individually modified in size.

It is another object of the present invention to provide a tearable line for a set of printable cascading pages that has sufficient structural strength, for example for routing through a printer, yet is configured for easy separation that forms a clean edge.

The foregoing and other features and advantages of the present invention will become further apparent from the following detailed description of the presently preferred embodiments, read in conjunction with the accompanying drawings. The detailed description and drawings are intended to illustrate the present invention rather than limit the scope of the present invention as defined by the appended claims and equivalents of the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention can be better understood with reference to the following drawings. In the drawings, like reference numerals designate corresponding parts throughout the several views. Moreover, it should be noted that the drawings are not necessarily to scale, emphasis instead being placed upon clearly illustrating principles of the present invention.

Fig. 1 illustrates a perspective view of one embodiment of a set of printable cascading pages;

Fig. 2 illustrates a perspective view of another embodiment of a set of printable cascading pages;

Fig. 3 illustrates a front view of yet another embodiment of a set of printable cascading pages;

Fig. 4 illustrates a front view of still another embodiment of a set of printable cascading pages;

Fig. 5 illustrates a front view of one embodiment of a set of page designs used to create a set of printable cascading pages;

Fig. 6 illustrates a front view of another embodiment of a single page design used to create a set of printable cascading pages;

Fig. 7 illustrates a front view of yet another embodiment of a single page design used to create a set of printable cascading pages;

Fig. 8 illustrates a front view of still another embodiment of a single page design used to create a set of printable cascading pages;

Fig. 9 illustrates a front view of yet another embodiment of a single page design used to create a set of printable cascading pages;

5 Fig. 10 illustrates a partial, enlarged view of two tearable lines defining a removable portion of one page;

Fig. 11 illustrates an exploded front view of one embodiment of a set of printable cascading pages having a window in various locations from page to page;

10 Fig. 12 illustrates a front view of one embodiment of a single page design used to create a set of printable cascading pages having a window in various locations from page to page;

Fig. 13 illustrates an exploded front view of one embodiment of a set of printable cascading pages having a window in various sizes from page to page; and

15 Fig. 14 illustrates a front view of one embodiment of a single page design used to create a set of printable cascading pages having a window in various sizes from page to page.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

20 Figs. 1-4 illustrate different preferred embodiments, each of a set of printable cascading pages 20 in accordance with the present invention. As generally shown in Figs. 1-4, a set of cascading pages 20 includes a number of individual sheets 22 of paper or other printable materials arranged in order by size, typically from smallest to largest.

Referring generally to Figs. 5-9, the individual sheets 22 in this invention include any type of material that can be fed into and run through a printer, such as a laser printer or an ink jet printer. In one embodiment, all of the sheets 22 are initially of one
25 uniform size. The uniform size is preferably a rectangle, thereby having two edges 24, 26 of equal length along a top and a bottom of the sheet and two edges 28, 30 of equal length along a right side and a left side of the sheet, the four edges 24, 26, 28, 30 thereby defining a perimeter of the sheet 22. In another embodiment, the sheets 22 can vary in size initially.

30 Common sizes of paper generally fed through printers are 8.5 inches by 5.5 inches, 8.5 inches by 11 inches, 8.263 inches by 11.688 inches (A4 size), and 8.5 inches by

14 inches. Another suitable size includes 8.5 inches by 12 inches. The set of cascading pages 20 may comprise any other size of paper or sheet material that can be fed through a printer. The sheets 22 are preferably but not necessarily constructed of any paper, paper composite, non-metal and/or metal material suitable for printing purposes. More specifically, other suitable materials for constructing the sheets 22 include fabric, smudgeproof stock, litho stock, cast coated stock, tag stock, fluorescent stock, foils, computer printable polyester, vinyl, satin cloth, Tyvek™ material, flexible plastic, book papers, laminated release liner sheets, photo quality papers and/or photo quality film. Furthermore, various portions of the sheets 22 can be different colors, thereby resulting in different colored edges, depending on the location of a tearable line 32, described below.

As used throughout this specification and in the claims, the term *printable surface* relates to a surface of any type of matter upon which a person or machine can draw, print, color, paint, photocopy, write, emboss, or make any other type of mark or graphic. Laser printers, ink jet printers, impact printers, thermal transfer printers, direct thermal printers, typewriters, or any other suitable graphic printing devices are preferred but not necessary for use with printable surfaces according to this invention.

Figs. 5-9 illustrate five different embodiments of sheets 22 that can be used to create various sized, or cascading, sets of pages 20. Once the sheets 22 are run through a printer or otherwise printed upon, a removable portion 34 can then be separated from a remaining portion 36 of each sheet 22. The removable portion 34 of each sheet 22 is separated from the remaining portion 36 by directing a force to the tearable line of separation 32. Tearable lines of separation include die-cut lines, perforated lines, micro-perforated lines, slits or any combination of these types of separation, or any suitable sheet structure that forms a weakened structural area and thus enables separation.

A preferred type of tearable line 32 is a line that includes repeating sections of a die-cut line 38 aligned with a micro-perforated line 40, as shown in Fig. 10. This type of tearable line 32 has enough structural strength in the micro-perforated line 40 section to maintain the structural integrity or cohesiveness of the sheet 22 as the sheet 22 is handled and passes through a printer, yet has enough structural weakness in the die-cut line 38 section to enable easy and clean separation of the removable portion 34 from the remaining

portion 36 of the sheet 22 when such separation is desired. The lengths of the die-cut lines 38 and the micro-perforated lines 40 may vary depending on intended use, but a preferred length of the die-cut lines 38 is in a range of between about 0.5 cm and about 4.0 cm, more preferably between about 0.75 cm and about 2.0 cm. A preferred length of the micro-perforated lines 40 is in a range of between about 0.1 cm and about 2.0 cm, more preferably between about 0.3 cm and about 1.0 cm. The term *micro-perforations* refers to a line of perforations having approximately 20 or more cuts per centimeter, or approximately 50 or more cuts per inch. Relatively longer micro-perforated lines 40, preferably longer than about 0.75 cm, and/or relatively shorter die-cut lines 38, preferably shorter than about 1.5 cm, are suitable as tearable lines that form curves and/or angles, thereby providing greater durability and maintaining structural integrity of the sheet 22 until a user separates the sheet 22 along the tearable line 32. Likewise, relatively shorter micro-perforation lines 40, preferably shorter than about 0.75 cm, and/or relatively longer die-cut lines 38, preferably longer than about 1.5 cm, are suitable as tearable lines 32 with straight edges, thereby providing clean-cut edges and easy separation. Micro-perforation lines 40 are particularly suitable for defining corners, as shown in Fig. 10, whereas, depending upon the design, die-cut lines 38 may not provide enough structure to maintain corners intact during certain processes, for example when the sheet 22 is routed through a printer. However, a laminate of sheet 22 and a release liner having die-cut line 38 within only the sheet 22 and not through the release liner, provides enough structure to maintain corners intact.

In one embodiment, the tearable line of separation 32 extends across the printable surface of the sheet 22 from one of the edges 24, 26, 28, 30 to another one of the edges 24, 26, 28, 30 of the sheet 22, or to another portion of the same edge. For example, the tearable line of separation 32 can extend from the top edge 24 to the bottom edge 26, as shown in Fig. 5, thereby defining a removable portion 34 that spans the entire length of the sheet 22, to create a set 20 of cascading pages 22 similar to the set 20 shown in Fig. 1. Alternatively, the tearable line of separation 32 can extend from the right side edge 28 to the left side edge 30, as shown in Fig. 6, thereby defining a removable portion 34 that spans the entire width of the sheet 22, to create a set 20 of cascading pages 22 similar to the set 20 shown in Fig. 2. Another alternative includes extending the tearable line of separation 32

from the top edge 24 to the bottom edge 26, and another tearable line of separation 32 from the right side edge 28 to the left side edge 30, as shown in Fig. 7, to create a set 20 of cascading pages 22 similar to the set 20 shown in Fig. 3. Yet another alternative includes extending the tearable line of separation 32 from the top or bottom edge 24, 26 to one of the side edges 28, 30, as shown in Fig. 8, thereby defining a removable portion 34 that includes a corner of the sheet 22, to create a set 20 of cascading pages 22 similar to the set 20 shown in Fig. 4. Still another alternative includes extending the tearable line of separation 32 from one of the edges, such as the right side edge 28, to the same edge 28, as shown in Fig. 9, thereby defining a removable portion 34 that includes a portion of only one edge of the sheet 22.

Since cascading pages are typically arranged from smallest to largest, the size of the removable portion 34 of each sheet 22 typically decreases from the first to the last sheet. Consequently, the size of the remaining portion 34 of each sheet 22 typically increases from the first to the last sheet. All of the lines of separation 32 shown in Figs. 5-8 are straight lines, but the lines of separation 32 can also be non-linear, as shown in Fig. 9.

In one embodiment, each sheet 22 can have one tearable line 32 with the locations of the tearable lines 32 offset from one another from sheet to sheet, as shown in Fig. 5. In this embodiment, the sheets 22 are preferably collated by size, with the sheet 22 having the largest removable portion 34 and smallest remaining portion 36 in the front and the sheet 22 having the smallest removable portion 34 and largest remaining portion 36 in the back. Furthermore, this embodiment includes sheets 22 having more than one tearable line 32, such that the two or more tearable lines 32 are not parallel to one another. For example, a set of cascading pages 20 in which the pages 22 increase in size along both the length and the width can have a tearable line 32 extending from the top edge 24 to the bottom edge 26 and another tearable line 32 extending from the left side 30 to the right side 28, with both of these tearable lines 32 in different locations on each sheet 22.

In another embodiment, rather than every sheet 22 in the set 20 having one tearable line 32, each sheet 22 can be identical, with a plurality of tearable lines 32 offset from one another, as shown in Figs. 6, 8 and 9. Once printed upon, the pages 22 can be separated along a most suitable tearable line of separation 32 for each page 22 and then

arranged in cascading order. The most suitable tearable line 32 is typically the tearable line 32 with the most appropriate placement with respect to the location of printing on the page 22 and the order in which the page 22 falls with respect to the other pages 22. In this embodiment, the tearable lines 32 are parallel to one another, or if non-linear, approximately follow the same contour as one another. The distance between adjacent tearable lines 32 can vary depending on the size of the sheet 22 and the number of different-sized sheets 22 in the set 20, but is typically between about 0.25 inch and about 2.0 inches. Furthermore, this embodiment includes sheets 22 having multiple sets of tearable lines 32. For example, the sheet 22 shown in Fig. 7 includes two sets of parallel tearable lines 32. The sheet 22 in Fig. 7 can be modified to form many different sized sheets 22 through the separation of various combinations of these tearable lines 22.

In yet another embodiment of the present invention, the set of cascading pages 20 can include a window 42, or hole, in at least one of the sheets 22. Preferably, each of the sheets 22, except for possibly the last sheet, has a window 42. The location and/or size of the window 42 can vary from sheet to sheet. For example, as shown in Fig. 11, the window 42 on each sheet 22 can be located higher or lower than the window 42 in adjacent sheets 22. The locations of windows 42 on adjacent sheets 22 can overlap, but need not overlap. Fig. 12 illustrates a sheet 22 from which the set of pages 20 of Fig. 11 can be created merely by separating various different portions of the tearable lines 32 located on the surface of the sheet 22. An example of windows 42 varying in size from sheet to sheet is shown in Fig. 13. Typically, the size of the window 42 decreases from the front page 22 to the back page 22, as shown in Fig. 13, but can alternatively vary in any other order. Fig. 14 illustrates a sheet 22 from which the set 20 of pages 22 of Fig. 13 can be created merely by removing different ones of the nested removable portions 34. The windows 42 in this embodiment can be any suitable shape, including circular, polygonal, or any other non-circular shape.

The set 20 of cascading pages 22 of the present invention is suitable for a wide number of uses, including marketing materials, educational materials, and various other presentation materials. Prior to assembling the set 20, the individual sheets 22 can be fed into and run through a printer. When more than one set 20 of pages 22 is used to

complete a project, the individual sets 20 can be compiled either with one complete set behind another complete set, or with the individual sheets 22 of both sets arranged together in the order that the sheets 22 in a single set 20 would be arranged.

Once the sheets 22 have been printed upon, the sheets 22 can be modified by separating the removable portions 34 from the remaining portions 36 of individual sheets 22 along appropriate tearable lines 32. The resulting pages 22 can be arranged in an order logical to the user and can be bound together along one of the edges 24, 26, 28, 30, as shown in Fig. 2. Additionally, holes 44 can be added to sheets 22 either prior to removing the removable portions 34, as shown in Fig. 6, or after the sheets 22 have been modified. For example, the holes 44 enable a user to store the set 20 of pages 22 in a ring-binder. The holes 44 can be circular or any other suitable shape. In one embodiment, circular holes 44 have a diameter in a range of between about 0.2 cm and 2 cm, preferably between about 0.3 cm and 1.5 cm, more preferably between about 0.4 cm and 1.2 cm. Additional reinforcement around the ring binder holes 44 can be provided with a support strip 46 or another suitable support backing, adhered to either a first side 48 or a second side 50 of each sheet 22, extending along an edge 24, 26, 28, 30 of the sheet 22 and covering the area surrounding the holes 44, as shown in Fig. 6. Materials suitable for the support strip 46 include a MYLAR® material, a TYVEK® material, a TESLIN® material, a polypropylene material, a polyester material, a paper material, a synthetic paper material and a metal material.

While in the foregoing specification this invention has been described in relation to certain preferred embodiments thereof, and many details have been set forth for purpose of illustration, it will become apparent to those skilled in the art that the invention is susceptible to additional embodiments and that certain of the details described herein can be varied considerably without departing from the basic principles of the invention. Therefore, to particularly point out and distinctly claim the subject matter regarded as the invention, the following claims conclude the specification.

WE CLAIM:

1. In a plurality of stock sheets which can be printed upon and compiled to form a set of cascading pages, the improvement comprising:
 - a first stock sheet of the stock sheets having a first tearable line of separation extending across a surface of the first stock sheet;
 - a second stock sheet of the stock sheets having a second tearable line of separation extending across a surface of the second stock sheet; and
 - the first tearable line of separation offset relative to the second tearable line of separation.
2. The plurality of stock sheets of Claim 1, wherein the first tearable line of separation extends from a first edge of the first stock sheet to a second edge of the first stock sheet.
3. The plurality of stock sheets of Claim 2, wherein the first edge of the first stock sheet is opposite the second edge of the first stock sheet.
4. The plurality of stock sheets of Claim 2, wherein the first edge of the first stock sheet is adjacent the second edge of the first stock sheet.
5. The plurality of stock sheets of Claim 1, wherein the first tearable line of separation extends from a first edge of the first stock sheet, away from the first edge along a surface of the first stock sheet, and back to the first edge of the first stock sheet.
6. The plurality of stock sheets of Claim 1, wherein the first tearable line of separation is parallel to the second tearable line of separation.
7. The plurality of stock sheets of Claim 1, wherein the first stock sheet and the second stock sheet are of a uniform size.

8. The plurality of stock sheets of Claim 1, wherein the first tearable line of separation is positioned along a straight line.

9. The plurality of stock sheets of Claim 1, wherein the first tearable line of separation is non-linear.

10. The plurality of stock sheets of Claim 1, wherein the first stock sheet and the second stock sheet each comprise a window.

11. The plurality of stock sheets of Claim 10, wherein a size of the window varies between the first stock sheet and the second stock sheet.

12. The plurality of stock sheets of Claim 10, wherein a location of the window varies between the first stock sheet and the second stock sheet.

13. The plurality of stock sheets of Claim 1, wherein the first tearable line of separation comprises a plurality of sections, each of the sections having a micro-perforated line connected to a die-cut line.

14. The plurality of stock sheets of Claim 13, wherein the micro-perforated line defines a non-linear portion of the first tearable line of separation.

15. A plurality of stock sheets, each of the stock sheets comprising:
a tearable line of separation extending across a surface and defining a removable portion of each of the stock sheets, and the tearable line of separation of one stock sheet offset relative to an other stock sheet of the stock sheets.

16. The plurality of stock sheets of Claim 15, further comprising a uniform length and a uniform width among each of the stock sheets.

17. The plurality of stock sheets of Claim 15, wherein the removable portion of each of the stock sheets spans an entire length of the stock sheet.

18. The plurality of stock sheets of Claim 15, wherein the removable portion of each of the stock sheets spans an entire width of each of the stock sheets.

19. The plurality of stock sheets of Claim 15, wherein the removable portion of each of the stock sheets includes a corner of each of the stock sheets.

20. The plurality of stock sheets of Claim 15, wherein the removable portion of each of the stock sheets includes a portion along one edge of each of the stock sheets.

21. The plurality of stock sheets of Claim 15, wherein at least one of the stock sheets further comprises a window.

22. A plurality of sheets of material, comprising:

a first sheet of material having a first printable surface and a first tearable line extending across the first printable surface from a first edge of the sheet to a second edge of the sheet and defining a first removable portion;

a second sheet of material having a second printable surface and a second tearable line extending across the second printable surface from a third edge of the sheet to a fourth edge of the sheet and defining a second removable portion; and

the first tearable line offset with respect to the second tearable line.

23. The plurality of sheets of material of Claim 22 wherein the first tearable line is parallel to the second tearable line.

24. The plurality of sheets of material of Claim 23 wherein the first tearable line and the second tearable line are offset by a distance of between about 0.25 inch and about 2.0 inches.

25. The plurality of sheets of material of Claim 22 wherein the first tearable line is non-linear and the second tearable line follows a contour of the first tearable line.

26. The plurality of sheets of material of Claim 22 wherein the first removable portion comprises a larger surface area than the second removable portion.

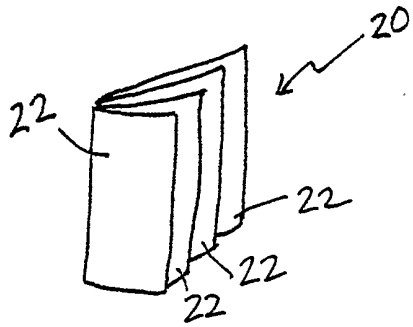


Fig. 1

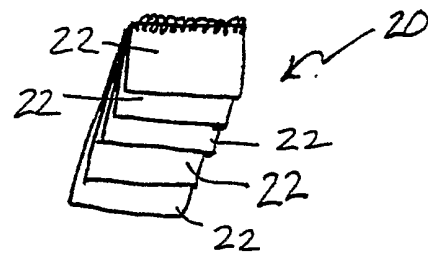


Fig. 2

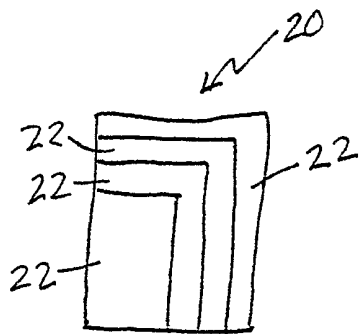


Fig. 3

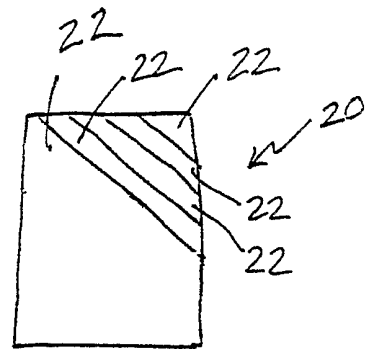


Fig. 4

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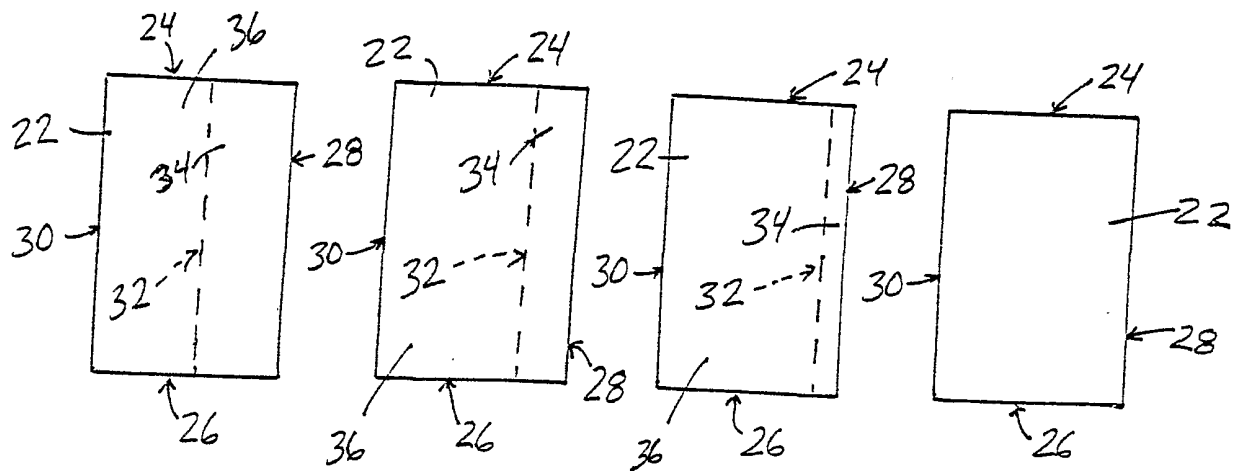


Fig. 5

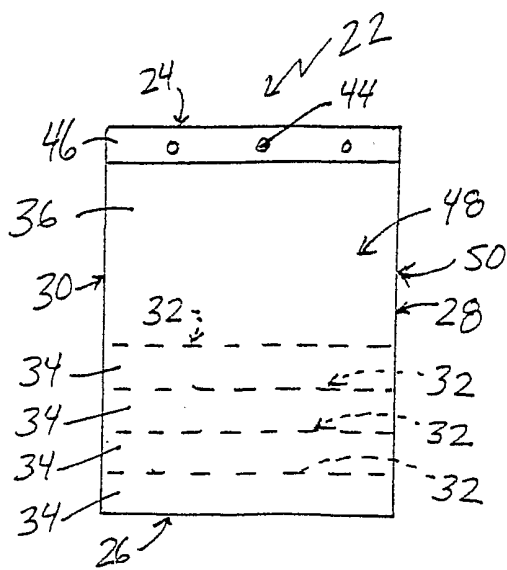


Fig. 6

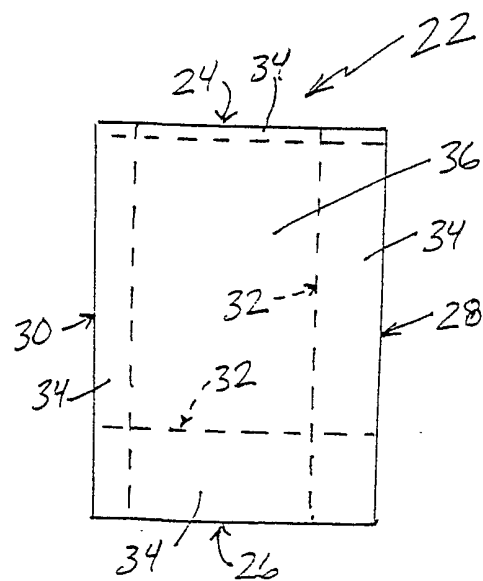


Fig. 7

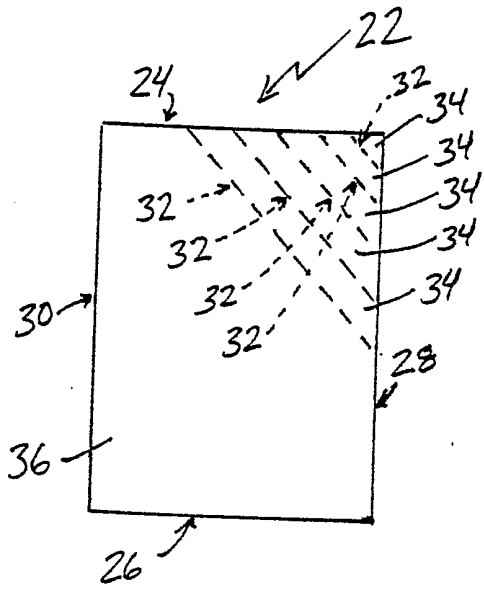


Fig. 8

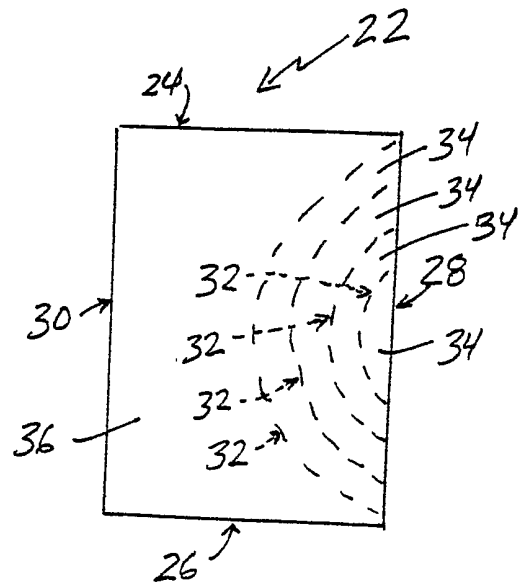


Fig. 9

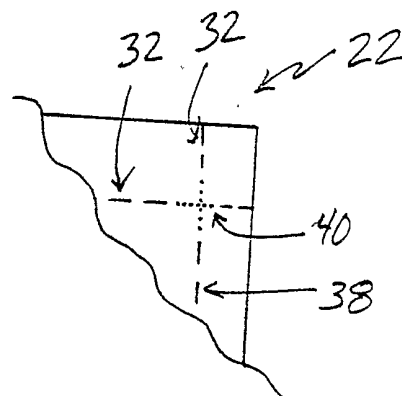


Fig. 10

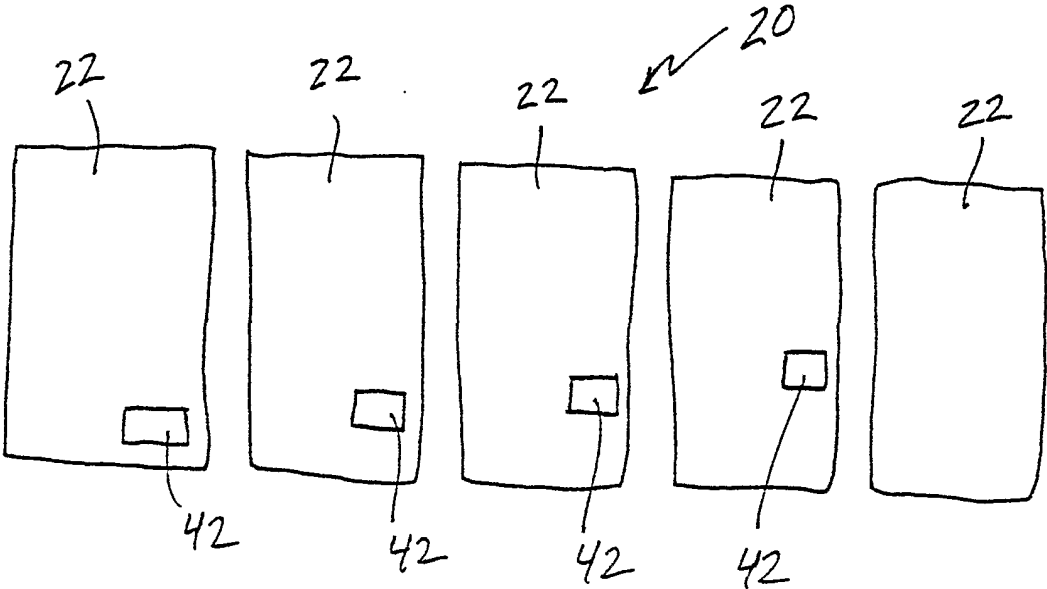


Fig. 11

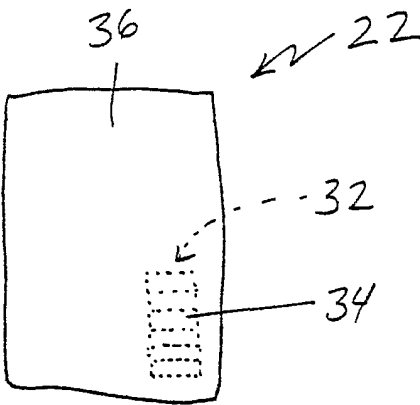


Fig. 12

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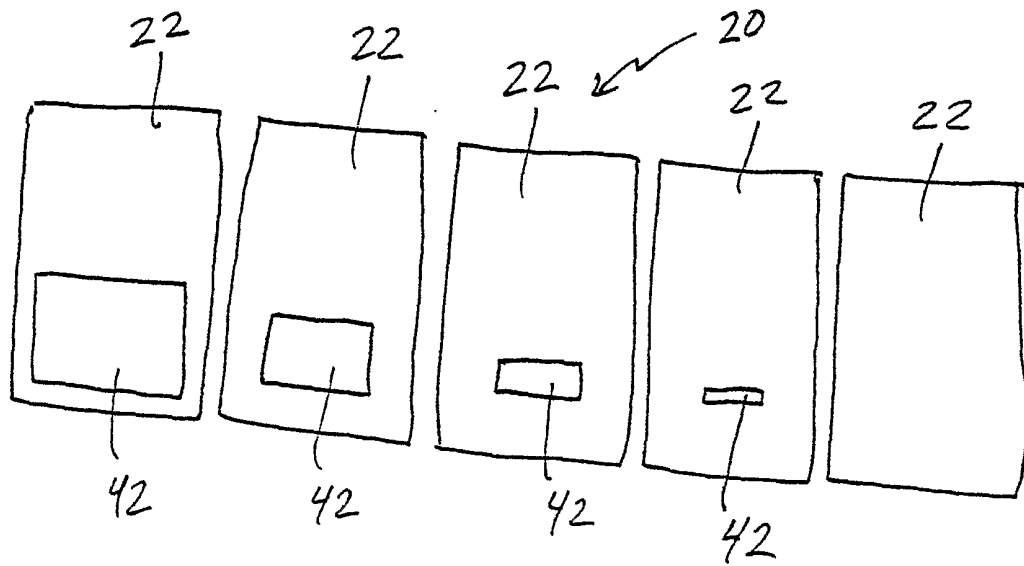


Fig. 13

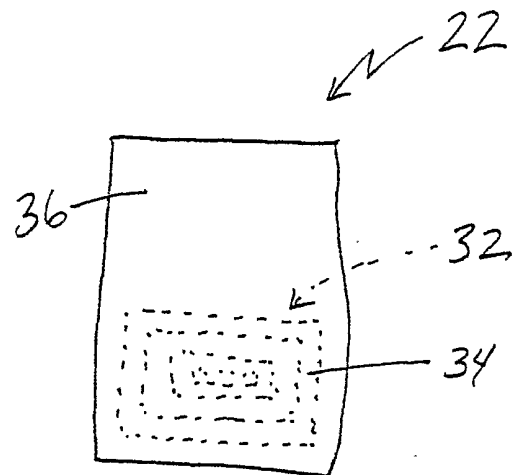


Fig. 14