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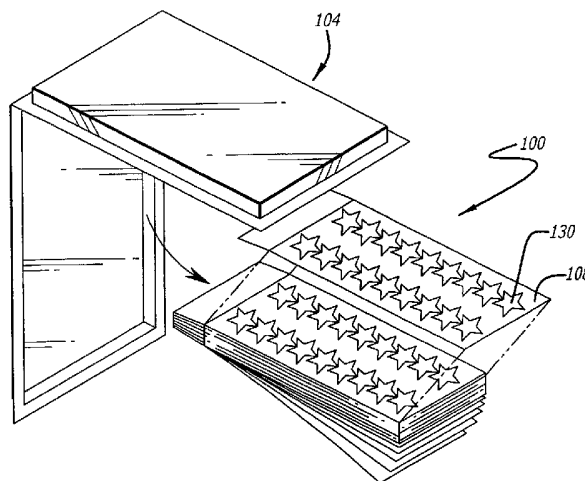
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- (71) Applicant (for all designated States except US): **AVERY DENNISON CORPORATION** [US/US]; 150 N. Orange Grove, Pasadena, CA 91103 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **WIEN, Thomas, Milgram** [US/US]; 3734 Cote Marin, Newport Beach, CA 92660 (US).
- (74) Agents: **LARSON, Douglas, N.** et al.; Oppenheimer Wolff & Donnelly LLP, Suite 3800, 2029 Century Park East, Los Angeles, CA 90067-3024 (US).
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(54) Title: LABEL PAD CONSTRUCTION



(57) Abstract: A label sheet pad construction (100) including a plurality of label sheets (108) stacked and bound together with glue (120) along stacked edges thereof. Each of the label sheets has a backing sheet (150) having a release coating (154) and a face sheet (160) realisably adhered with adhesive (164) to the backing sheet (150). A header (170) cut line through the face sheet (160) and an opposite face sheet body portion (174) forms a face sheet header portion (174) adjacent to the edge (112) and a face sheet matrix (190), both disposed in the face sheet body portion. The matrix (190) is preferably not removed by the manufacturer. The top label sheets (108) can be peeled off of the pad and the label(s) thereon removed, either before the sheet is peeled off or after, by peeling the labels off of the release coating (154) of the backing sheet (150). No stiff backing sheet is needed whereby the bottom label sheet defines the bottom of the pad.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## **LABEL PAD CONSTRUCTION**

### **BACKGROUND OF THE INVENTION**

**[0001]** Labels are produced in a variety of shapes and sizes for a variety of uses. They are produced in a sheet form or a roll form. The labels can include a face paper, adhesive on the face paper and a liner or a backing sheet to carry the face paper and the adhesive. The liner is typically coated with a release coating to allow the removal of the face paper with the adhesive from the backing and to be applied to a desired surface.

**[0002]** Avery Dennison Corporation of Pasadena, California, produces label products that can be passed through laser and ink jet printers, copiers, typewriters and dot-matrix printers. However, the oldest of its product lines is made for handwriting. A typical Avery product package holds loose sheets of labels. The sheets vary in size from three by four inches to four by six inches. The labels are die cut in the face sheet, and the matrix around the labels is removed by the manufacturer. While having the matrix removed provides easy access to the labels for the user, it can cause "label lift" if the label sheet is left on a desk (or other surface) among other papers or comes into contact with other objects.

### **SUMMARY OF THE INVENTION**

**[0003]** To remedy problems experienced with the prior art loose sheet label products, the present invention provides the labels in a novel label sheet pad form. The label sheets of this label sheet pad construction each can comprise face paper, adhesive on the face paper, and backing paper with a release coating that carries the face paper with the adhesive. Each of the sheets is die cut through the face paper to the backing paper so that a header strip is formed at the top of the sheet and so that one or more labels are thereby formed. The labels are surrounded by a matrix of the face paper, which unlike the above-described prior art label sheets, is preferably not removed from the backing paper before the

product is sold to the consumer. Rather, the matrix remains on the face paper. And the header strip helps keep the sheets and the final pad flat.

**[0004]** The individual die-cut label sheets are stacked and bound to each other to make a pad; specifically, glue is applied to one end of the label sheets to bind them together, such as is done with writing pads as are often provided to customers in hotel rooms. Thereby, the label sheets are held together, and the pad can be left on top of a desk or in a drawer without any need for a protective cover or a box and with the label sheets not getting lost. The pad can be easily held in the user's hand, and the labels easily accessed by simply removing the top sheet from the pad, while the rest of the labels stay intact on the pad, and peeling off the label(s) from the sheet; or peeling the labels directly off of the pad top sheet.

**[0005]** In a preferred embodiment the matrix is not removed by the manufacturer. And where the labels are white (or very lightly colored), a preferred label sheet construction for the pad provides (blue) background printing around the perimeters of the labels. This helps the user to recognize the label shape and size easily so he selects the desired label pad either from his work area or even when originally purchasing the pad. It also makes it easier to locate and remove the individual labels from their label sheet.

**[0006]** The user purchases a packaged label pad of the present invention and unpackages the pad from its packaging when he arrives at his home or office. The label is peeled off from the top sheet of the pad and applied via its lower adhesive surface to a desired surface such as a sheet, a file or a three-dimensional object. If another label is then needed, it is similarly peeled off and applied to its desired surface. As soon as all of the labels of the top sheet have been removed, the top sheet is peeled off of the pad and disposed of. The pad is very durable, as demonstrated by tests whose results are set forth later in this disclosure. In fact, the pad has endurance similar to memo pads, even though the subject label pads do not have stiff cardboard backing like the memo pads have, and the memo pads do not have the die cutting which the label pads have.

[0007] Other objects and advantages of the present invention will become more apparent to those persons having ordinary skill in the art to which the present invention pertains from the foregoing description taken in conjunction with the accompanying drawings.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0008] FIG. 1 is a perspective view of a first label sheet pad of the present invention shown being removed from packaging and a top label sheet thereof being peeled off;

[0009] FIG. 2 is a top plan view of the pad of FIG. 1;

[0010] FIG. 3 is an enlarged perspective view of a portion of the pad of FIG. 1, showing a label thereof being peeled off by a user;

[0011] FIG. 4 is a perspective view showing the peeled off label of FIG. 3 being applied by the user to a desired surface;

[0012] FIG. 5 is an enlarged cross-sectional view taken on line 5-5 of FIG. 2;

[0013] FIG. 6 is a perspective view of a second label sheet pad of the present invention shown being removed from packaging and a top label sheet thereof being peeled off;

[0014] FIG. 7 is an enlarged cross-sectional view taken on line 7-7 of FIG. 6;

[0015] FIG. 8 is a perspective view of a third label sheet pad of the present invention shown being removed from packaging and a top label sheet thereof being peeled off;

[0016] FIG. 9 is a top plan view of the third label sheet pad of FIG. 8;

[0017] FIG. 10 is an enlarged view of a portion of the top label sheet of FIG. 8 showing a perforated rectangle of the sheet, which contains a label, being torn off of the sheet by a user;

[0018] FIG. 11 is an enlarged cross-sectional view taken on line 11-11 of FIG. 9;

[0019] FIG. 12 is a top plan view of a fourth label sheet pad of the present invention;

**[0020]** FIG. 13 is a top plan view of a fifth label sheet pad of the present invention;

**[0021]** FIG. 14 is a top plan view of a sixth label sheet pad of the present invention;

**[0022]** FIG. 15 is a top plan view of a seventh label sheet pad of the present invention;

**[0023]** FIG. 16 is a top plan view of an eighth label sheet pad of the present invention;

**[0024]** FIG. 17 is a top plan view of a ninth label sheet pad of the present invention;

**[0025]** FIG. 18 is a top plan view of a tenth label sheet pad of the present invention;

**[0026]** FIG. 19 is a top plan view of an eleventh label sheet pad of the present invention;

**[0027]** FIG. 20 is a top plan view of a twelfth label sheet pad of the present invention;

**[0028]** FIG. 21 is a top plan view of a thirteenth label sheet pad of the present invention;

**[0029]** FIG. 22 is a top plan view of a fourteenth label sheet pad of the present invention;

**[0030]** FIG. 23 is a top plan view of a fifteenth label sheet pad of the present invention;

**[0031]** FIG. 24 is a top plan view of a sixteenth label sheet pad of the present invention;

**[0032]** FIG. 25 is a top plan view of a seventeenth label sheet pad of the present invention;

**[0033]** FIG. 26 is a top plan view of an eighteenth label sheet pad of the present invention;

**[0034]** FIG. 27 is a plan view of a pad of the invention at an intermediate manufacturing process step;

**[0035]** FIG. 28 is a plan view showing how a larger intermediate pad is divided into smaller pads of a smaller desired size; and

**[0036]** FIG. 29 is a schematic view showing manufacturing process steps of label sheets of the invention.

#### **DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION**

**[0037]** Referring to the drawings, a number of embodiments of the present invention are illustrated. FIG. 1 shows a first label sheet pad of the invention generally at 100 being removed from its retail packaging 104. Although the packaging 104 is illustrated as clamshell packaging, other packaging, such as blister pack with backing card, or a plastic bag, as would be apparent to those skilled in the art from this disclosure can be used as needed. FIG. 2 shows a top plan view of the pad of FIG. 1. The pad 100 includes a plurality of label sheets 108 stacked and bound together at an edge thereof 112 with a thin layer of glue or other adhesive (as shown in FIG. 5 for example at 120). The edge 112 is preferably a top sheet edge, but alternatively can be a side or bottom edge. Each label sheet may have a plurality of labels 130 which are easily removed from the label sheet by label cut lines 180. FIG. 3 shows the user U removing a label 130 from the label sheet 108. The top sheet 108 of the pad 100 can then be peeled off of the pad by the user after the labels 130 have been removed from the top sheet. Alternatively, the top sheet 108 can be removed from the pad 100 and the labels 130 peeled off of the removed sheet. The removed labels 130 are then adhered to a desired surface 140 by the user U, as depicted in FIG. 4.

**[0038]** Referring to FIG. 5 which shows a cross-sectional view of the label pad, the label sheets 108 are constructed with a backing sheet 150 having a release coating 154 and a face sheet 160 adhered to the release coating with an adhesive layer 164. A header cut line 170 and one or more label cut lines 180 are formed through the face sheet 160 to the backing sheet 150. The header cut line 170 is

cut parallel to the edge 112 of the sheet, which will be the glue edge, and is spaced approximately one-half inch from the edge and extends the full width (or length) of the sheet. The header cut line 170 separates the sheet into a (top) header portion 174 and a body portion in which the labels 130 and face sheet matrix 190 are formed. The header portion 174 advantageously helps keep the sheets 108 and the pad 100 flat. Advertising and/or instructional indicia 200 can be printed on the header portions 174, as shown in FIGS. 12-26. The header 174 is preferably 1/2 inch wide, or can be between 1/4 and one inch. It should be proportional to the size of the pad 100 and the information (indicia 200) to be printed on it. Thus, the size should allow for good printing detail and visual appeal.

**[0039]** FIG. 6 shows a perspective view of a second label sheet pad of the present invention shown being removed from packaging 104 and a top label sheet thereof being peeled off. The pad 100 includes a plurality of label sheets 108 stacked and bound together at an edge thereof 112 with a thin layer of glue or other adhesive as has been previously described. The label cut lines 180 form the perimeters of the labels 130 and the face sheet matrix 190 surrounding the labels. The matrix 190 is preferably not removed from the backing sheet 150 by the manufacturer but rather remains on the sheet and thus forms part of the pad 100 as provided to the intended user. An enlarged cross section taken on line 7-7 of FIG. 6 is shown in FIG. 7.

**[0040]** FIGS. 8-11 illustrate another embodiment of the label pad of the present invention. A label sheet 100 is shown which has horizontal and vertical perforation lines 240 through the entire sheet, dividing the sheet into separable rectangular sheet portions 244, each including a label 130. In this embodiment, each rectangular sheet portion 244 can be removed from the label sheet by tearing at the perforation lines as is shown by the user U in FIG. 10.

**[0041]** Indicia 220 can be printed on the labels 130 by the manufacturer. Such indicia 220 will typically be alpha-numeric and might include a price (e.g., \$1), the words "Sale" or "Make Offer" or mailing label indicia, such as the word "From" with a series of lines on which the sender can write his address. Referring to FIG. 12,



the "Price Marker Label" is targeted for price marking where the user writes the price on the labels for each individual item. It can be used for garage sales, fundraising functions and the like.

**[0042]** A manufacturing process for the label sheet pads 100 of the present invention will now be described. The permanent and removable adhesive label stock 300 used for the pads of the present invention is preferably a standard layflat construction provided by Avery Dennison Fasson Roll North America Division of Painesville, Ohio, and having a white face sheet 160, adhesive 120 and liner sheet 150. The face sheet 160 and backing sheet 150 can be fifty-pound basis weight, and the adhesive can be chosen based on permanent or removable label performance. No special top coatings need to be applied to the face of the label stock to enhance the print performance of writing instruments. The width of the roll 320 depends on the converting press used and the specific product design, with nine inches being a typical width.

**[0043]** Rolls 320 of the label stock are placed onto the press and converted pursuant to the following steps. The background printing and labels 130 are flexo printed on the press. When the material has a white face, the background colors and label shapes are flexo printed on the press during the converting process. In some cases where a considerable amount of ink is laid down on the face, it is important that the label tape construction have layflat characteristics built into it. These characteristics can be the same as that of today's laser label constructions. Laser engraved print cylinders are preferably used to print the background colors and shapes with the correct print registration. This is because laser engraved cylinders allow the manufacturer to achieve accurate print registration on the press at high press speeds (on the order of three hundred plus feet per minute) and minimize press set up time. Laser engraved cylinders are an existing tool used in the industry when special and precise registration of printing is required.

**[0044]** The labels 130 are die cut and a 1/32 inch cut and tie configuration 360 is created depending on the label and pad size, as illustrated in FIG. 27. Preferred widths of the pads are 1.5 and 3.0 inches and the lengths are 4.0, 4.75 and 5.0 inches. The width of the master strip 380, as pictured in FIG. 27, is nine inches

(corresponding to the width of the roll) and the length of the master strip depends on the label size and layout. For the example of FIG. 27, six 1.5 by 4.75 inch sheets are used to create a 1.5 by 4.75 inch pad. The master strip 380 is held together by the 1/32 inch cut and tie configuration 360; this configuration holds the pads together for gluing speed and efficiency. Also shown in FIG. 27, are sheeted edge 382, slit edge 384, padded edge 386, machine direction arrow 390, 1.5 inch dimension 392, and 9.0 inch dimension 396.

**[0045]** The material is then sheeted at intervals depending on the label and pad size. The master strips 380 thereby created are counted and placed in stacks of thirty (for example) master strips. After the labels are converted on the press in the die cutting, printing, slitting and sheeting steps, the master strips of labels are placed into the padding machine for gluing.

**[0046]** In the padding equipment the top edges of the master strips are roughened to increase the hot melt adhesive bond and are then glued together along the stack-aligned (top) edges. The hot melt adhesive 120 can have a synthetic resin base such as that supplied by Brackett padding equipment manufacturer. The caliper (thickness) of the hot melt adhesive applied to the top edge 112 of the label sheet is preferably 0.02164 inch +/- 0.006 inch.

**[0047]** After the master strips 380 have been padded, they are separated into single pads by manually pulling them apart along the perforated lines 360 or by cutting them using a guillotine, corner cutter or other type of cutting device. Pulling the pad apart along the perforated lines 360 will leave a slight roughness along the edge. However, by using ties which are 1/32 inch and cuts which are 1/4 to 1/2 inch or larger the edge roughness will be minimal and nearly invisible. A balance must be achieved such that the strip of label sheet maintains sheet integrity passing through the sheeting and padding processes and having cleaner edges. The single pads are then packaged in the desired packaging 104, such as clamshell, blister pack, or clear polypropylene bag (see FIG. 1).

**[0048]** For a three-inch wide label, the sheet size out of the press will be nine by four inches (or 9.0 x 4.75 or 9.0 x 5.0 inches, depending on the label design). The

individual three by four inch label sheets are held together in cut and tie form, as shown in FIG. 28 at 398. It is easier to glue the larger sheets to make the pads than to make the pads with the smaller size sheets. After the large sheets are padded, the individual pads are separated by hand (or machine) by folding the pads back and forth at the cut and tie areas. Alternatively, the pads can be separated using a corner cutter or guillotine, as previously mentioned.

**[0049]** FIG. 29 illustrates in simple form how the large sheets which are to be padded are produced. It shows that labels are printed (if needed) at station 400 on the web from the label roll 320 material. The labels are die cut at subsequent station 420 and the web sheeted to produce the large sheets, as shown in FIG. 28, for example, at 424.

**[0050]** The following Table shows the results of pad strength tests conducted with dryer settings of cool air and no heat and a drop height of thirty inches, and tumbled for five and ten minutes as set forth in the right two columns. As can be seen, the pads easily passed the tumble or free fall tests.

<b>Product</b>	<b>5 Minute Tumble Test</b>	<b>10 Minute Tumble Test</b>
Avery Pad – Chicopee 30 sheets/pad	No damage to labels. Corners of couple of sheets were bent. Some scratches observed on the backing of the last sheet.	Minor damage to the corners of the padded side. Minor scratches on the backing of the last sheet on the pad.
Avery Gel Pad – Brackett 50 sheets/pad	No damage to labels. Corners of couple of sheets were bent. The top sheet separated ¼” on one corner. Some scratches on the backing of the last sheet.	Minor damage to the corners of the bound edge. Top sheet separated. Scratching of the backing observed. No real damage to the labels.
3M Post-it Pad 100 sheets/pad	No damage to the pad. The backing sheet had bent 1/8” on one corner and 1” on another corner.	Pad damaged, beginning to split in the middle. Over 20 sheets damaged including the backing.
Wire-Bound Notebook	Pad was damaged. The wire had bent and off-centered the pad about halfway through.	Did not test.
Memo Pad	No damage to the pad. Minor bent corners observed at the corners of padded edge.	No real damage to the pad. Same as 5 min. test.

**[0051]** The significant pad strength as set forth above is due to a combination of the thickness and the stiffness combined/bound in the form of the pad 100. The present label sheets 108 are significantly thicker than the prior art loose sheets – – 7.4 mils compared to 7.1 mils on the average. The label sheet thickness can be 7.3 mils on average with a range of 7.0 to 7.5 mils or wider. The stiffness in the machine direction averages 16.0 Taber Stiffness Units with a range of 14.5 to 17.7. By choosing different raw materials, face or liner, the total stiffness can be adjusted to be higher (or lower). And the stiffness is slightly greater for the sheets of the invention compared to the prior art sheets – – 12.7 compared to 12.5. Binding the sheets 108 at the edge 112 creates a compact product look, keeps the sheets together and increases the overall durability of the product. Not matrix stripping the sheets also strengthens or stiffens the pads 100.

**[0052]** The following are examples of proposed pad sizes and weights: foil stars, five sheets, 1.5 x 4.75 inches, 28.5 grams; file folder labels, twenty-one sheets, 3.0 x 4.0 inches, 53.6 grams; and white multipurpose (M-P) labels, twenty-five sheets, 3.0 x 4.0 inches, 61.1 grams. As can be understood, the weights of the pads 100 vary depending on the number of sheets 108, etc. The number of label sheets 108 in the pad 100 can range from twenty to fifty or higher, for example. The number of sheets 108 used to form the pad 100 is essentially determined by the number of labels the consumers use based on the application. If fewer than twenty sheets are used, the pad may be too thin and not give the appearance of a pad. The pad sizes and weights can vary depending on the size of the individual labels, the number of labels per single sheet and the number of sheets per pad.

**[0053]** Many different label and sheet constructions are possible pursuant to this invention. And examples thereof are shown in FIGS. 12-26 and discussed below.

**[0054]** A 3/4 by 15/16 inch price marker label sheet is shown in FIG. 12 generally at 500. It has a preferred length dimension 504 of 4.75 inches and a preferred width dimension 510 of 3.0 inches.

**[0055]** Four different 3/4 inch dot labels (assorted and preprinted garage sale) are shown at 520, 530, 540 and 550 in FIGS. 13-16, respectively. Each has a preferred height or length dimension 560 of 5.0 inches.

**[0056]** FIG. 17 shows generally at 570 a 2.25 by 4.25 inch multipurpose label sheet with allowed 1/32 inch bleed area for matrix printing. It has preferred dimensions 574 and 576 of 3.0 and 5.0 inches, respectively.

**[0057]** A 0.5 by 0.75 inch (10-up) multipurpose label sheet with 1/32 inch bleed area for matrix printing is illustrated generally at 600 in FIG. 18. Preferred dimensions of 4.75, 1.50 and 0.50 inches correspond to reference numerals 604, 608 and 612, respectively.

**[0058]** FIGS. 19 and 20 show white and assorted file folder label sheets with 1/32 inch bleed at 620 and 624. Dimensions of 4.0 and 3.0 inches are depicted by reference numerals 628 and 632.

**[0059]** A "To: and From: Mailing Labels" sheet is shown generally at 640 in FIG. 21. The sheet has preferred dimensions 644 and 648 of 5.0 and 3.0 inches.

**[0060]** A fifteen foil star label sheet is shown generally at 660 in FIG. 22. Preferred dimensions 664, 668 and 672 are 4.75, 1.50 and 0.50 inches, respectively.

**[0061]** Sheets of twelve ring hole reinforcement labels are illustrated in FIGS. 23 and 24 at 680 for assorted colored labels and at 690 for white labels with 1/16 inch bleed, respectively. Dimensions 692, 694 and 696 of 4.75, 1.5 and 0.5 inches are the same for both.

**[0062]** Sheet 710 in FIG. 25 includes three 1.0 by 2.75 inch multipurpose labels with 1/32 inch bleed. Dimensions 714 and 718 are 4.0 and 3.0 inches, respectively. Label sheet 720 in FIG. 26 has the same length and width dimensions as sheet 710 but has two 1.5 by 2.75 inch multipurpose labels.

**[0063]** The construction of these pads, including the use of stiff liner sheets, advantageously means that an additional stiff backing sheet is not needed for the pad to maintain pad stability and avoid curl. The pad thickness is sufficient to

make the pad stable, to maintain layflat and to allow for heavy printing with water-based inks. The layout and size of the labels 130 on the sheets 108 help provide easy access to the labels 130 and provide a layflat sheet and/or pad. Foil labels can be used instead of paper labels. In principle the manufacturing process will be the same for any padded labels. However, the use of different label material, face paper, backing paper or film or foil requires an appropriate die to cut the labels cleanly without heavily marking or cutting through the backing.

**[0064]** While the specification describes particular embodiments of the present invention, those of ordinary skill can devise variations of the present invention without departing from the inventive concept. For example, the label sheets are not limited to a paper face and a paper liner. Additionally, while a preferred padding machine uses hot melt adhesive, other machines/methods to make the present pads can use emulsion adhesives. Also, the scope of the invention includes any combination of the elements from the different species, embodiments, functions, methods and/or subassemblies disclosed herein, as would be within the skill of the art.

**WHAT IS CLAIMED IS:**

1. A label sheet assembly, comprising:

a plurality of label sheets, each of the sheets having a backing sheet and a face sheet releasably adhered to the backing sheet, at least one cut line through the face sheet to the backing sheet, the at least one cut line defining at least one label and at least a portion of face sheet matrix surrounding at least a portion of the label, each of the label sheets having a sheet edge;

the label sheets are assembled in a stack with each of the sheet edges being stack aligned;

the stack-aligned sheet edges collectively defining a stack-edge surface;

glue on the surface holding the sheets together in a label sheet pad, a bottommost sheet of the pad defining a bottommost surface of the pad;

wherein a topmost of the sheets of the pad can be peeled off of the rest of the pad; and

wherein each of the labels can be peeled off of its respective label sheet and applied to another surface by adhesive on a back surface of the label.

2. The assembly of claim 1 wherein each of the label sheets is 7.4 mils thick.

3. The assembly of claim 1 wherein the labels are foil stars, the pad is approximately 1.5 x 4.75 inches and the pad weighs approximately 28.5 grams.

4. The assembly of claim 1 wherein the labels are file folder labels, the pad is approximately 3 x 4 inches and the pad weighs approximately 53.6 grams.

5. The assembly of claim 1 wherein the labels are white M-P (multi-purpose) labels, the pad is approximately three by five inches and the pad weighs approximately 61.1 grams.

6. The assembly of claim 1 wherein the plurality of label sheets in the pad comprises between five and twenty-five sheets.

7. The assembly of claim 1 wherein there are between one and fifty labels on each of the sheets, and generally from twenty to fifty sheets on each pad.

8. The assembly of claim 1 wherein each of the label sheets has a header cut line through the face sheet to the backing sheet spaced from the sheet edge wherein a header portion of the face sheet is defined between the header cut line and the sheet edge.

9. The assembly of claim 8 wherein the header cut line separates the face sheet into the header portion and a body portion, the body portion including the at least one label and the matrix.

10. The assembly of claim 1 wherein the pad is a unitary self-contained structure and no stiff non-label back sheet is attached to the pad.

11. The assembly of claim 1 wherein each of the label sheets includes a release coating on the backing sheet and adhesive sandwiched between the release coating and the face sheet.



12. The assembly of claim 1 wherein the glue is a hot melt adhesive having a synthetic resin base.

13. The assembly of claim 1 wherein the glue has a thickness of 0.2164 ± .006 inch.

14. The assembly of claim 1 wherein the at least one label includes a plurality of labels, the least one cut line includes a plurality of cut lines, each of the cut lines defining a perimeter of a respective one of the labels.

15. The assembly of claim 1 wherein the face sheet includes background printing around a perimeter of the label.

16. The assembly of claim 1 wherein the label sheets include printing on the matrix and no printing on the at least one label.

17. The assembly of claim 16 wherein the face sheet is a paper sheet.

18. The assembly of claim 1 wherein the label sheet has a thickness between 7.0 mils and 7.5 mils.

19. The assembly of claim 1 wherein the label sheet has a thickness of 7.3 mils.

20. The assembly of claim 1 wherein each of the label sheets has a stiffness in the machine direction of 14.5 to 17.7 Taber Stiffness Units.

21. The assembly of claim 1 wherein each of the label sheets has a stiffness in the machine direction of 16 Taber Stiffness Units.

22. The assembly of claim 1 wherein each of the labels is a reinforcement ring.

23. The assembly of claim 1 wherein each of the labels has preprinted indicia thereon.

24. A label sheet construction, comprising:

(1) a label sheet including:

(a) a sheet edge;

(b) a backing sheet;

(c) a face sheet releasably adhered to the backing sheet;

(d) a header cut line through the face sheet to the backing sheet, the header cut line dividing the face sheet into a header portion between the sheet edge and the header cut line and a body portion on an opposite side of the cut line; and

(e) at least one cut line through the face sheet to the backing sheet and in the body portion, the at least one cut line defining at least one label and at least a portion of face sheet matrix surrounding at least a portion of the label; and

(2) glue on the sheet edge and adapted to at least in part hold the label sheet with a stack of similar label sheets in a label sheet pad.

25. The construction of claim 24 wherein the edge is a top edge, and the header cut line extends across the entire face sheet.

26. The construction of claim 25 wherein the header cut line is a die cut line.

27. The construction of claim 24 wherein the glue is a hot melt adhesive having a synthetic resin base.

28. The construction of claim 24 wherein the label sheet further includes background printing around a perimeter of the label and no printing on the label.

29. The construction of claim 28 wherein the face sheet is a paper sheet.

30. The construction of claim 24 wherein the at least one label comprises a reinforcement ring.

31. The construction of claim 24 further comprising at least one longitudinal and/or lateral perforation line through the label sheet to at least in part define a rectangle about individual ones of the labels.

32. The construction of claim 24 wherein each of the labels has preprinted indicia thereon.

33. A label sheet pad construction method, comprising:

providing a roll of label sheet web having a backing sheet and a face sheet releasably adhered to the backing sheet;

cutting through the face sheet to the backing sheet to define a plurality of labels and a plurality of matrices;

sheeting the web into sheets;  
stacking the sheets into a stack; and  
gluing aligned edges of the stack of sheets into a label sheet pad.

34. The method of claim 33 further comprising before the gluing, cutting the face sheet to the backing sheet to form a header cut line which forms a face sheet header portion along the edge.

35. The method of claim 34 wherein the label cutting and the header cutting are conducted together in a die cutting step.

36. The method of claim 33 further comprising printing indicia on the header portion.

37. The method of claim 36 wherein the printing is before the cutting.

38. The method of claim 33 wherein the pad defines a master pad, and after the gluing, separating the master pad into a plurality of smaller pads.

39. The method of claim 38 further comprising before the stacking, perforating the sheets to define edges of the small pads.

40. The method of claim 39 wherein the separating includes pulling the master pad along at least one perforation line to separate the master pad into the smaller pads.

41. The method of claim 38 wherein the separating includes cutting the master pad to form the smaller pads.

42. The method of claim 38 further comprising cutting header lines in the face sheet to form header portions at the edges.

43. The method of claim 42 wherein the label cutting and the header line cutting are in a simultaneous die cutting process.

44. The method of claim 42 wherein the label cutting and the header line cutting are at different times.

45. The method of claim 38 further comprising retail packaging the smaller pads.

46. The method of claim 38 wherein each of the sheets of each of the smaller pads includes at least one of the labels and at least one of the matrices.

47. The method of claim 33 wherein the gluing includes roughening the edges and then applying hot melt adhesive to the roughened edges.

48. The method of claim 33 wherein the labels comprise hole reinforcement rings.

49. The method of claim 33 further comprising before the sheeting, printing on the face sheet around label perimeters to form background printing.

50. The method of claim 49 wherein the labels around whose perimeters the background is printed are white or near white.

51. The method of claim 49 wherein the printing is flexo printing.

52. The method of claim 51 wherein the flexo printing uses at least one laser engraved print cylinder.

53. The method of claim 33 wherein the label sheet is a label paper sheet and the face sheet is a face paper sheet.

54. The method of claim 33 wherein the labels are foil star labels.

55. The method of claim 33 wherein the labels are file folder labels.

56. The method of claim 33 wherein the labels are To/From Mailing Labels.

57. The method of claim 33 further comprising printing indicia on the labels.

58. The method of claim 33 further comprising forming perforation lines through the web to define rectangles about individual ones of the labels on the sheets.

59. The method of claim 33 further comprising printing colors on the labels.

60. A label sheet, comprising:

a backing sheet;

a face sheet releasably adhered to the backing sheet;

at least one cut line through the face sheet to the backing sheet and defining at least one label and at least a portion of face sheet matrix surrounding at least a portion of the at least one label;

the at least one label being white or light colored and having no printing thereon;

background printing on the matrix and around at least a portion of a perimeter of the at least one label; and

the at least one label being peelable off of the backing sheet by a user.

61. The label sheet of claim 60 wherein the backing sheet comprises a paper backing sheet.

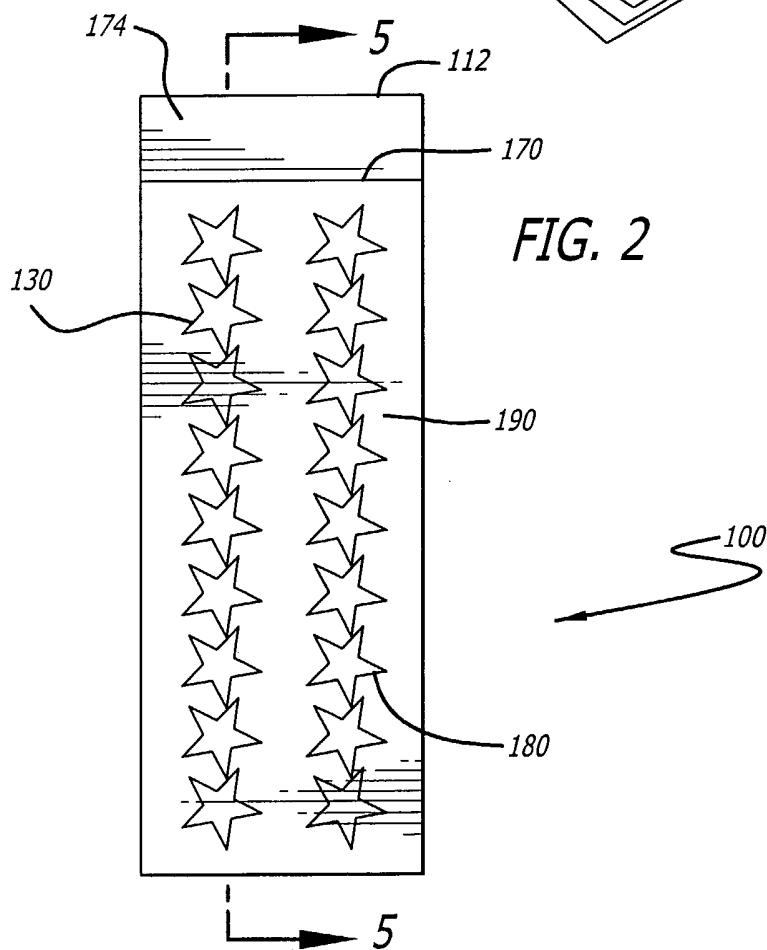
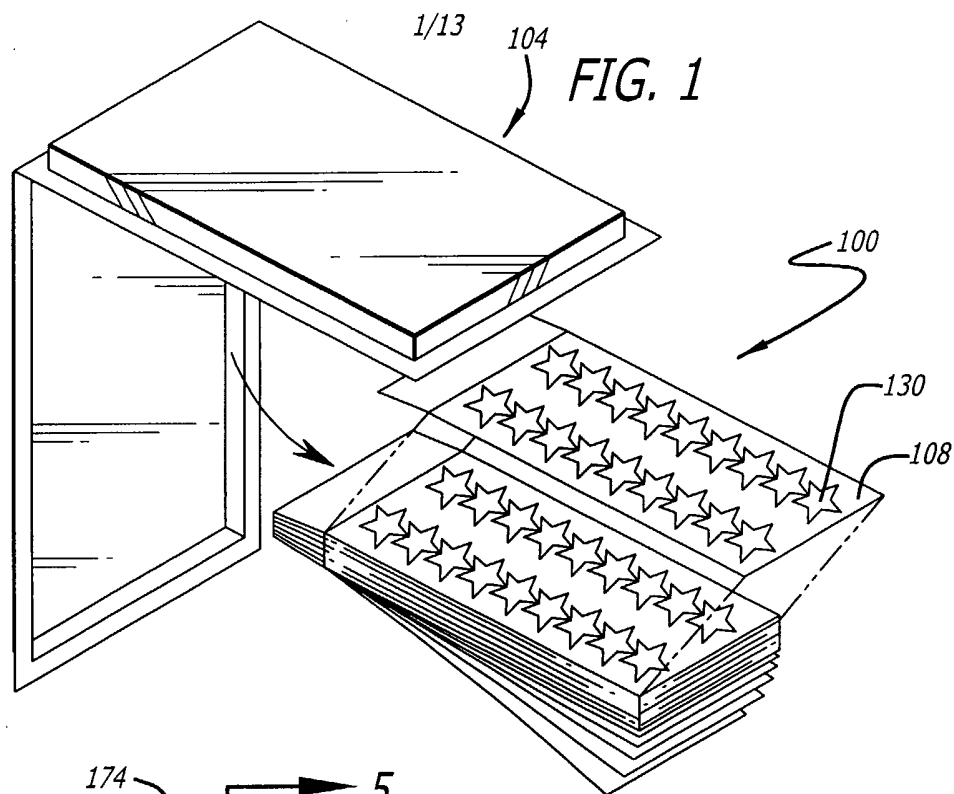
62. The label sheet of claim 61 wherein the background printing is with water-based ink.

63. The label sheet of claim 61 wherein the background printing makes the label shape and size easily recognizable by the user.

64. The label sheet of claim 63 wherein the labels are white.

65. The label sheet of claim 60 wherein the face sheet comprises a paper face sheet.





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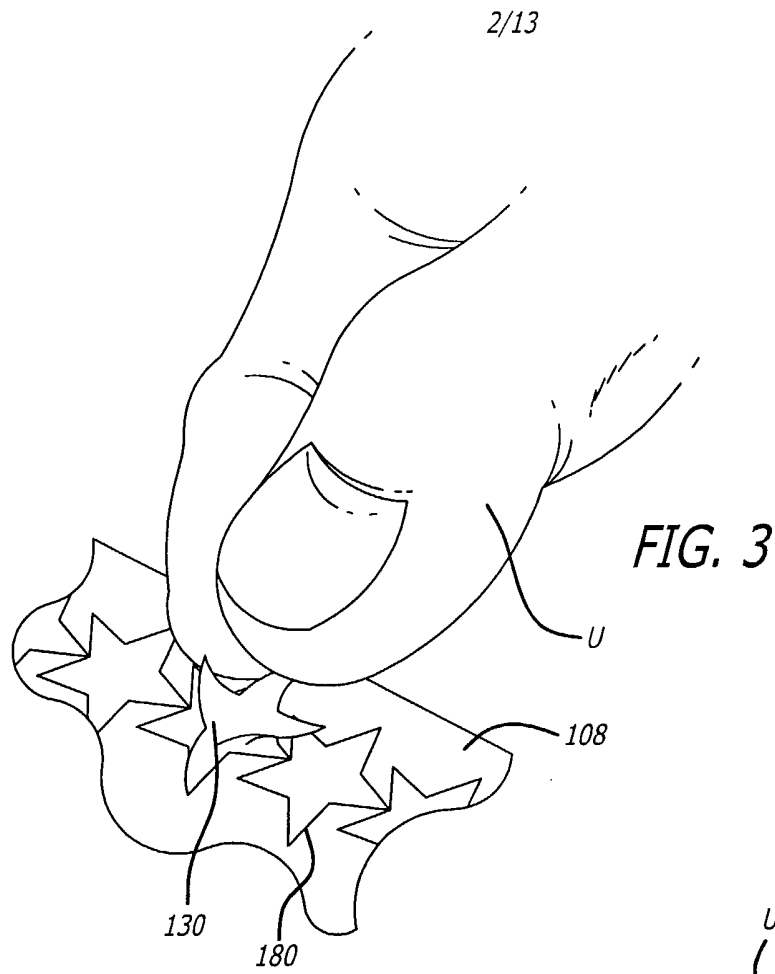
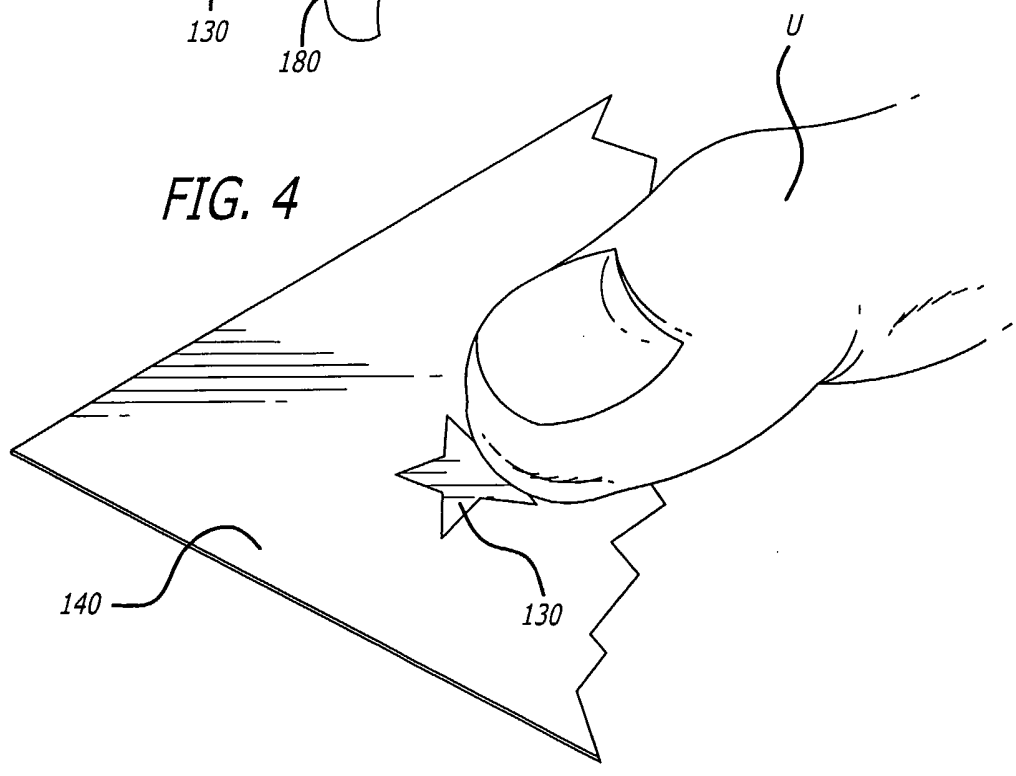
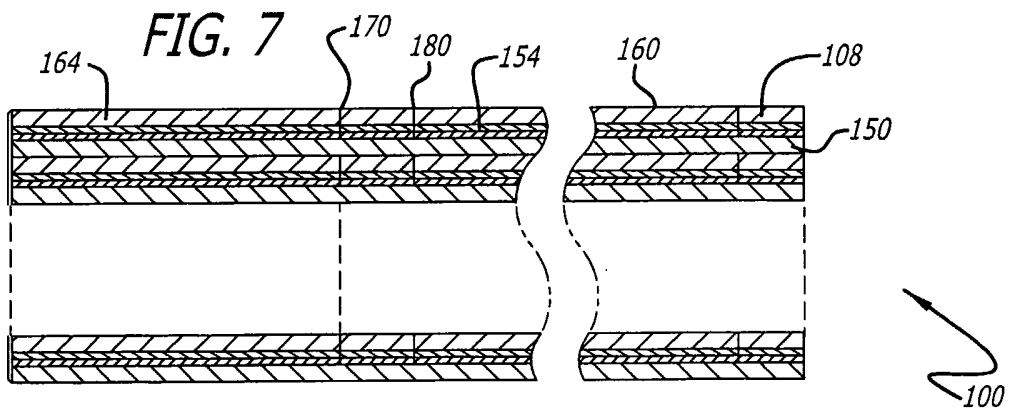
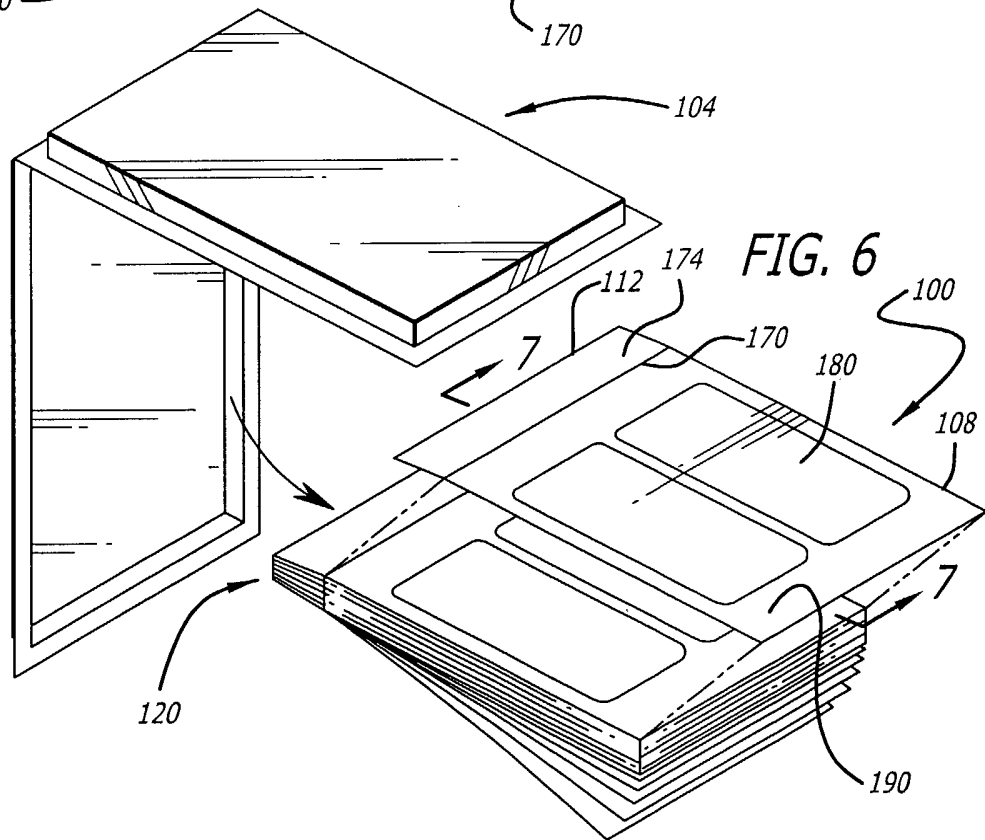
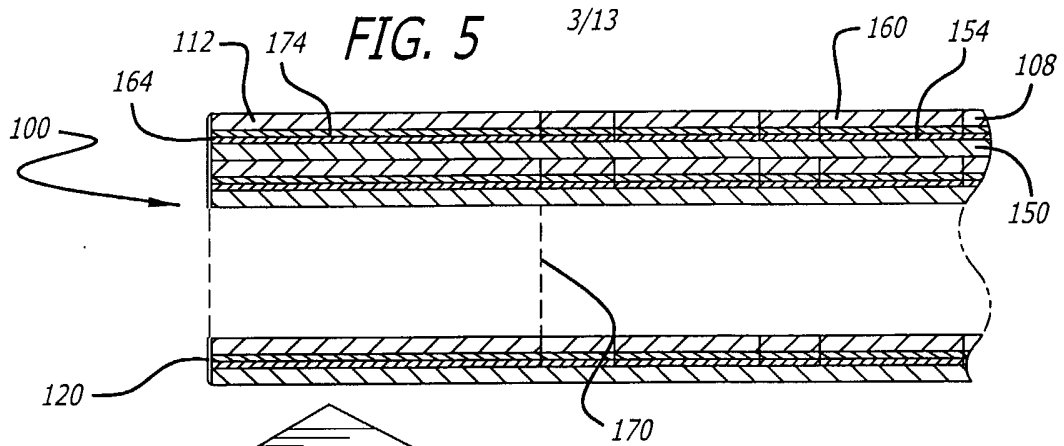
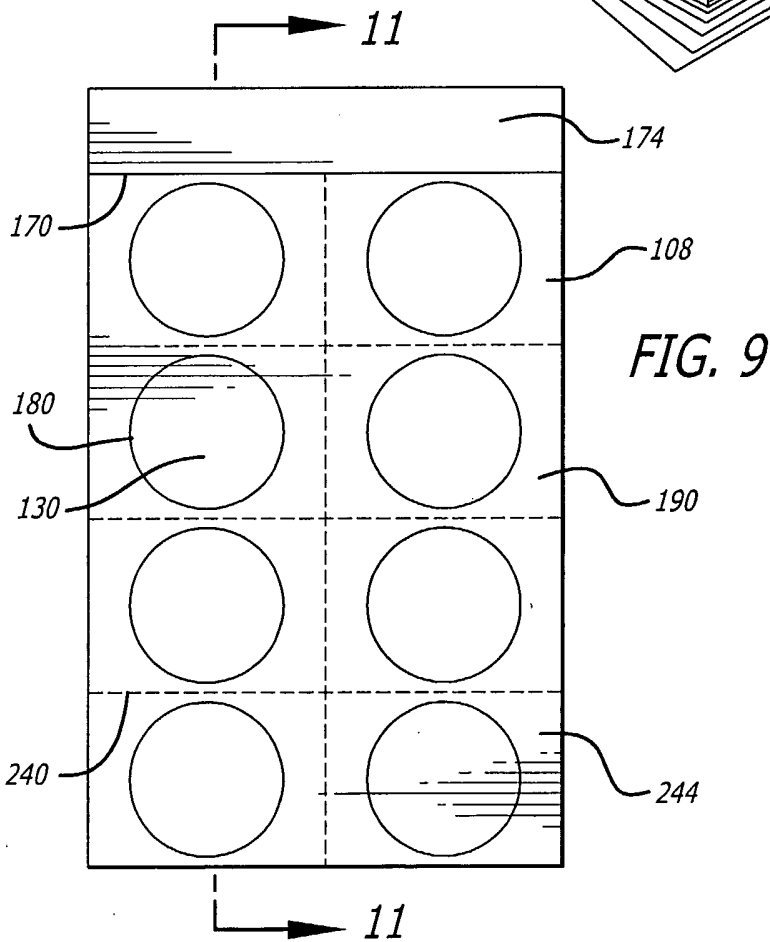
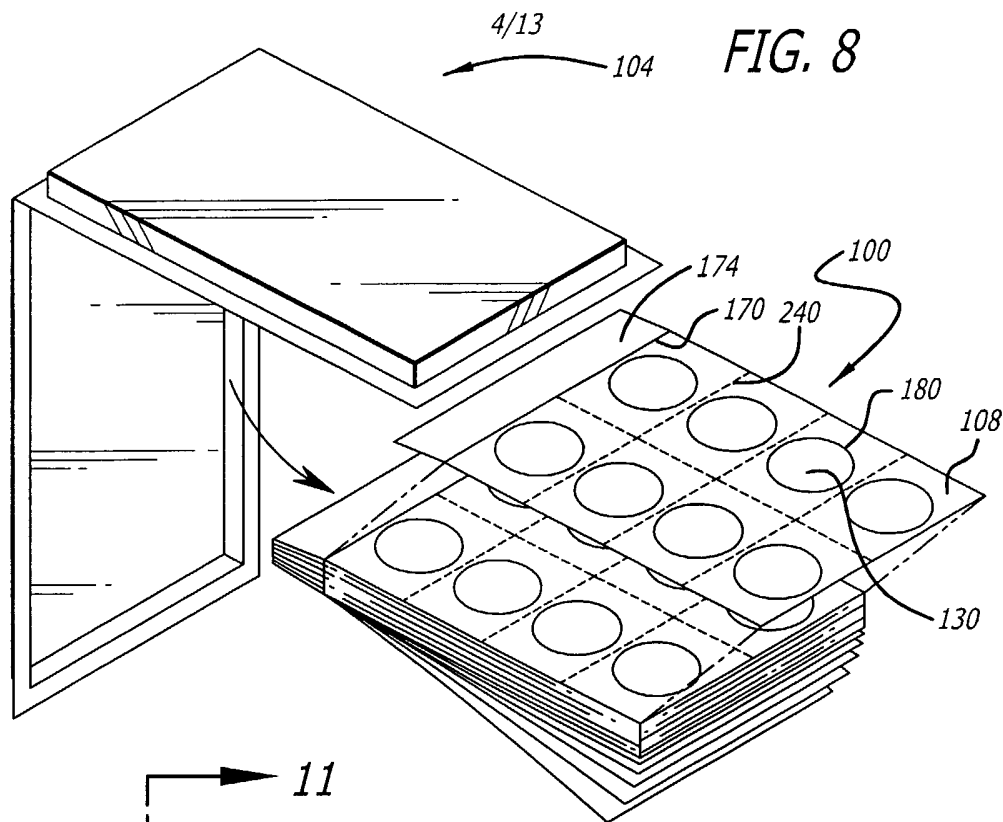
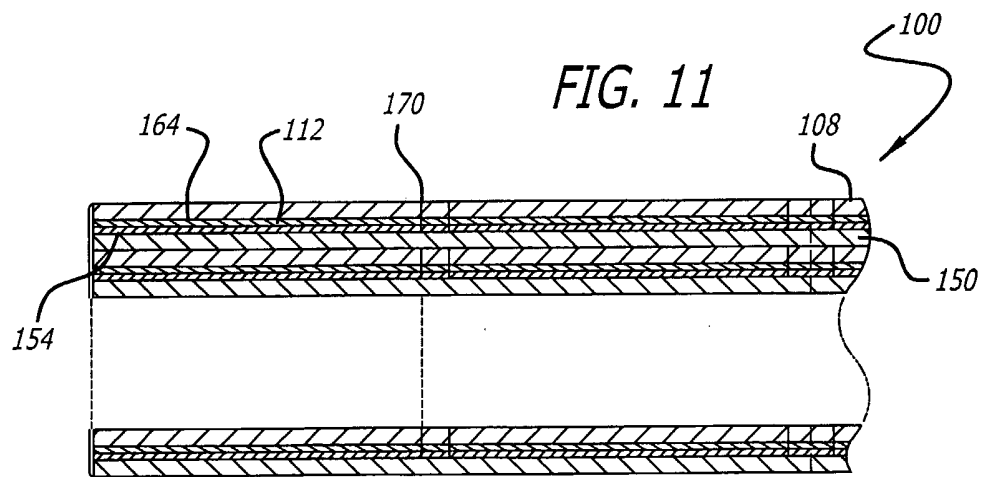
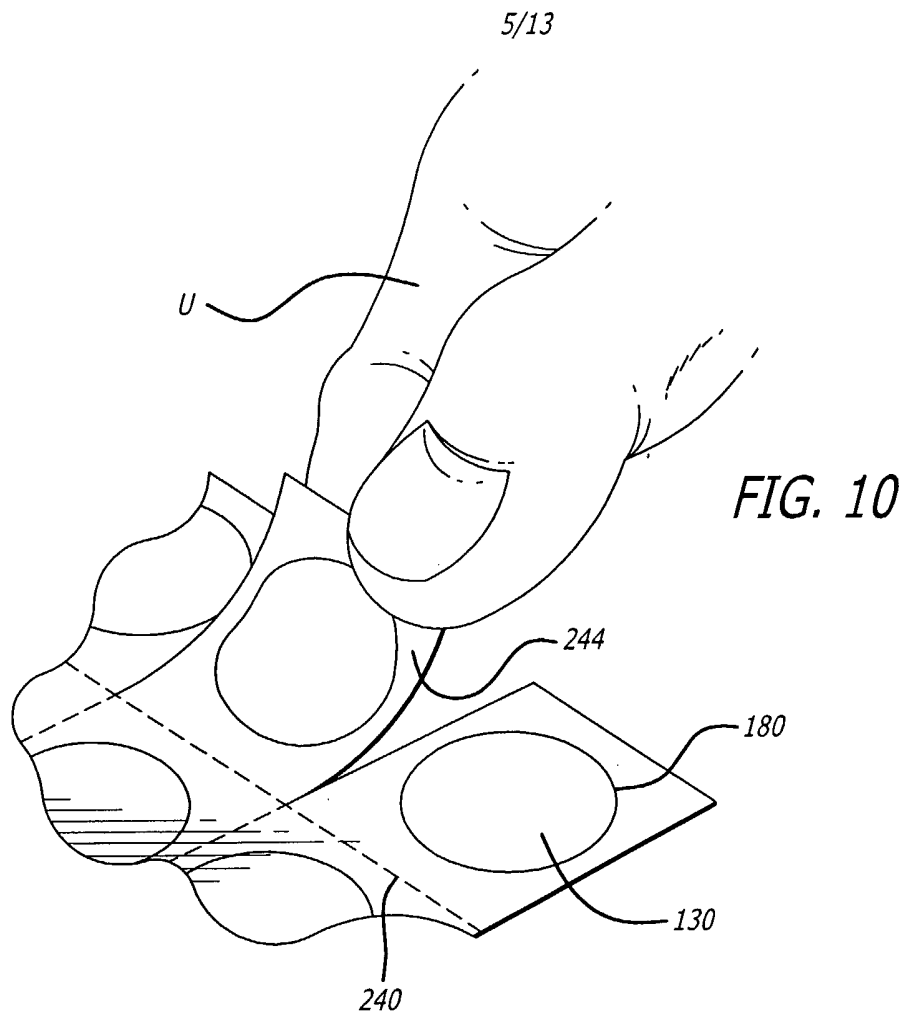


FIG. 4

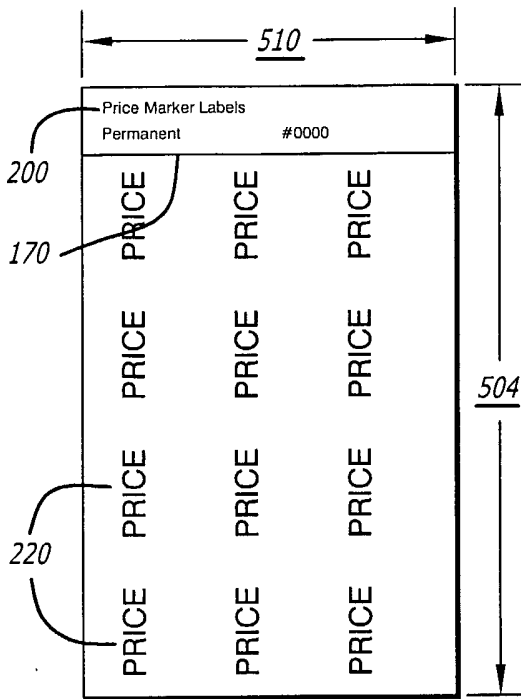








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500

FIG. 12

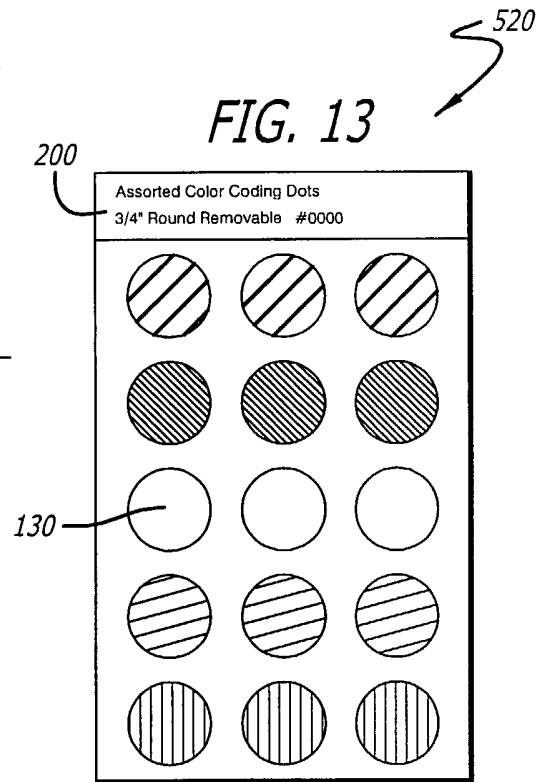


FIG. 13

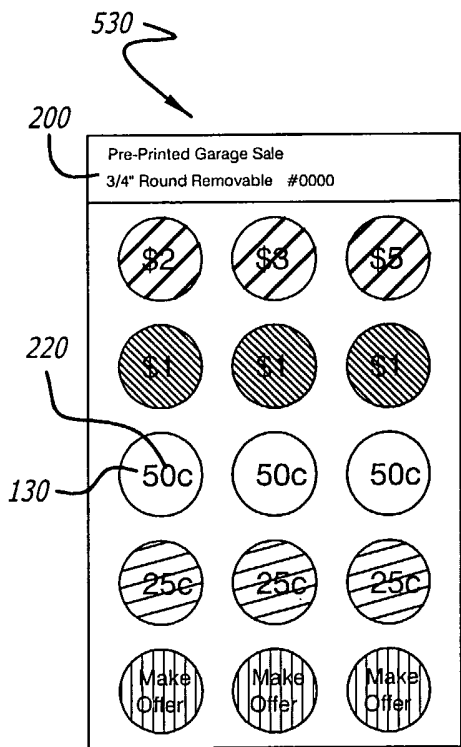


FIG. 14

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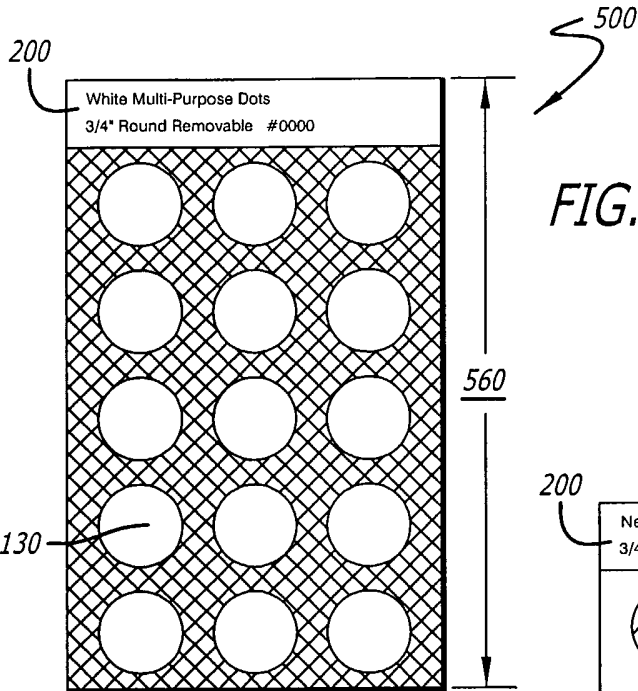


FIG. 15

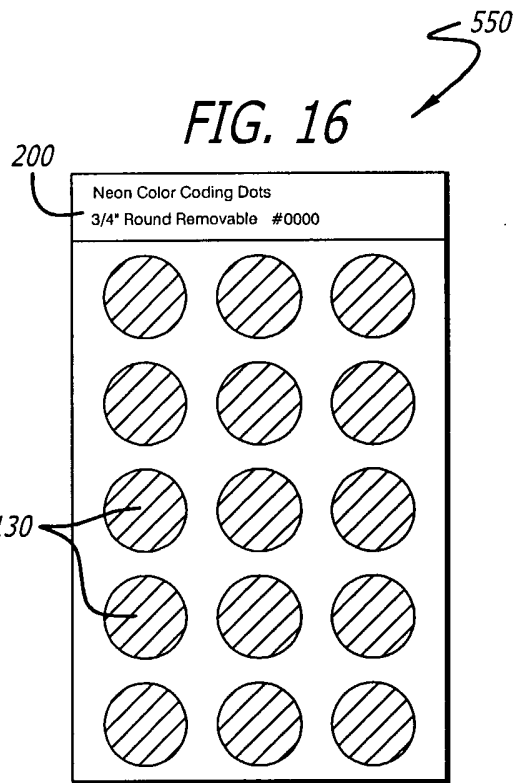


FIG. 16

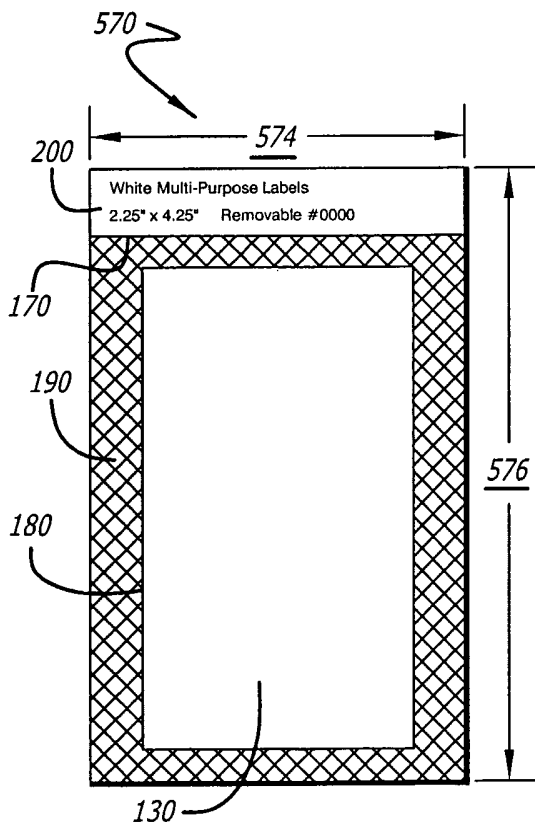


FIG. 17

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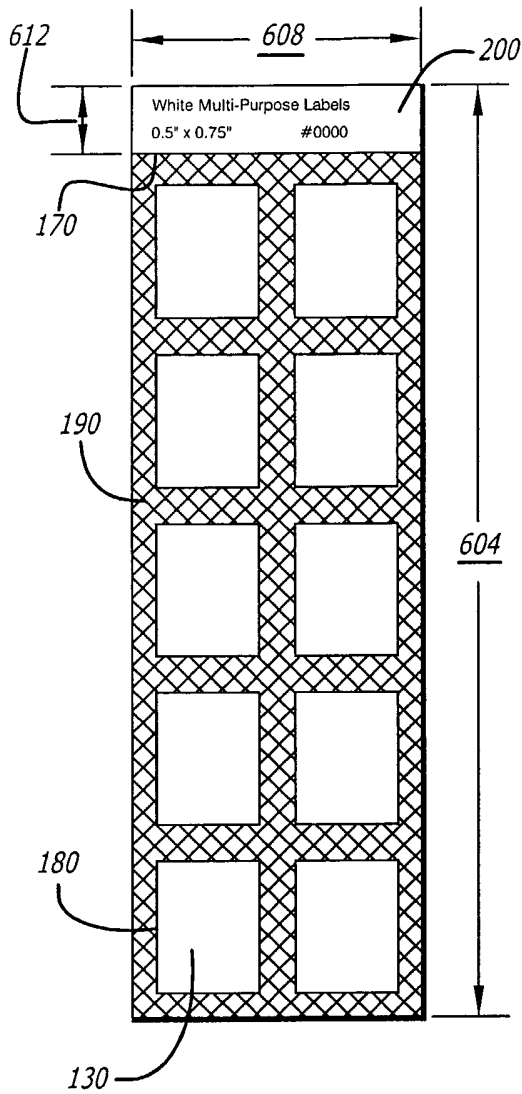


FIG. 18

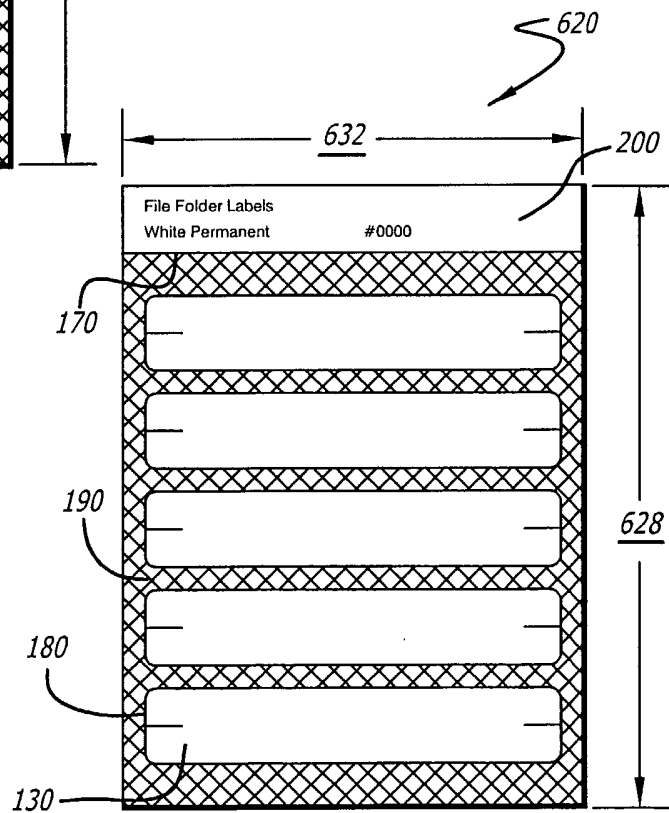
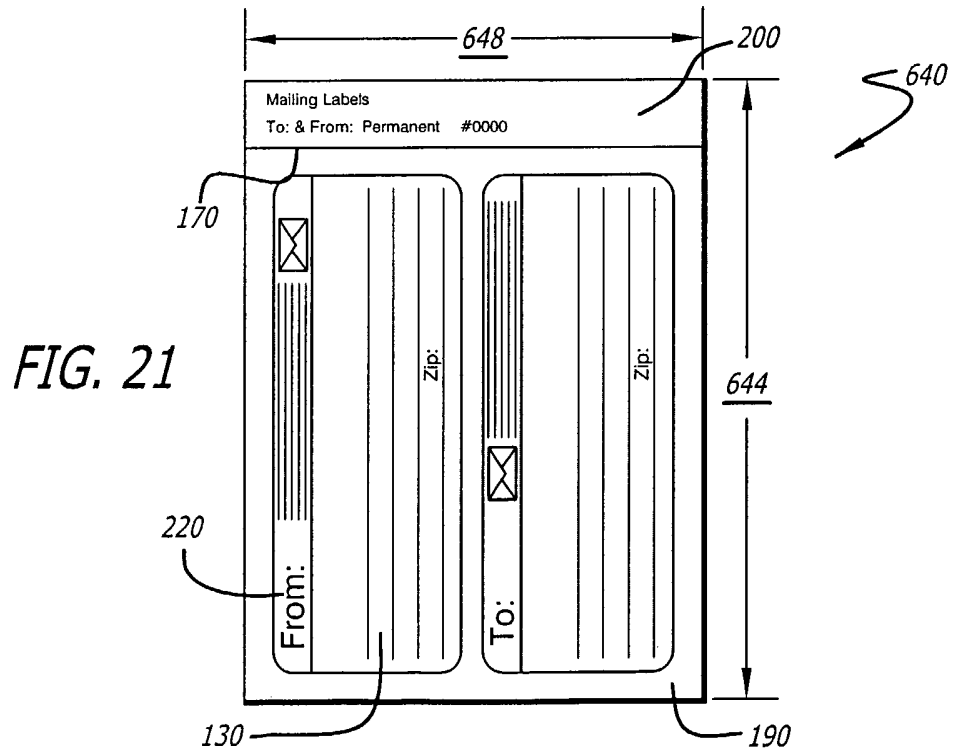
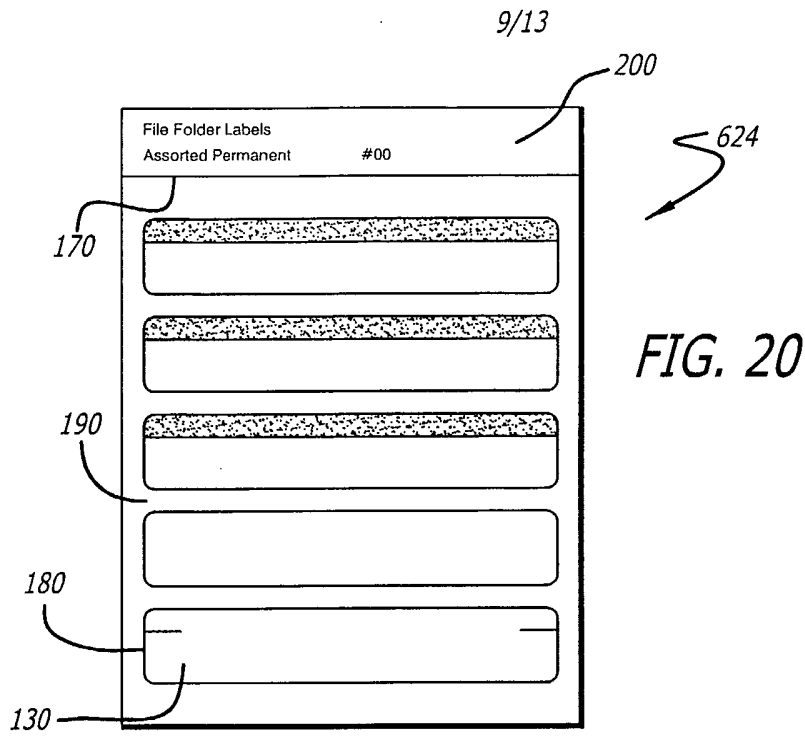


FIG. 19





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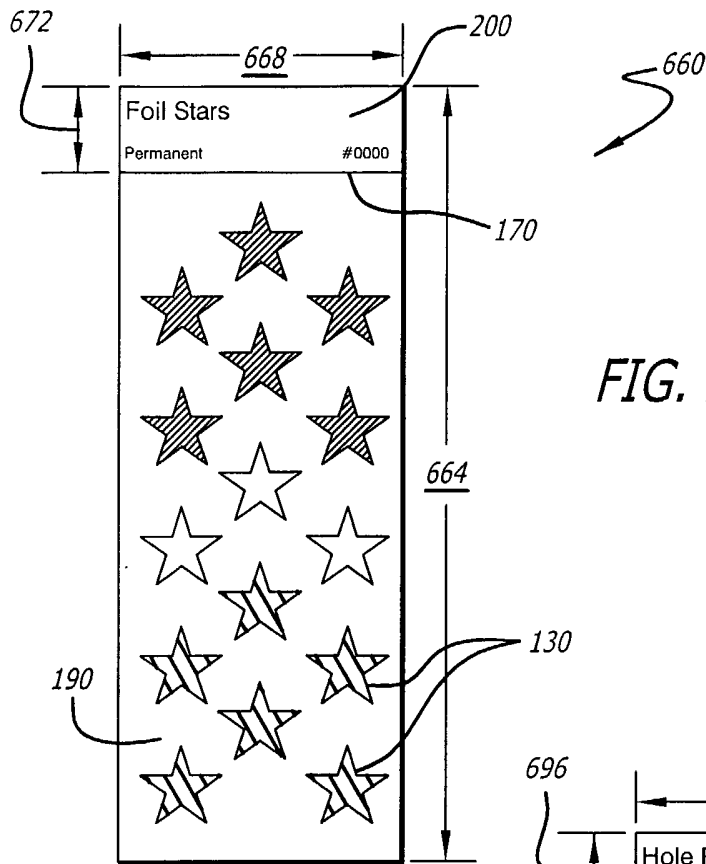
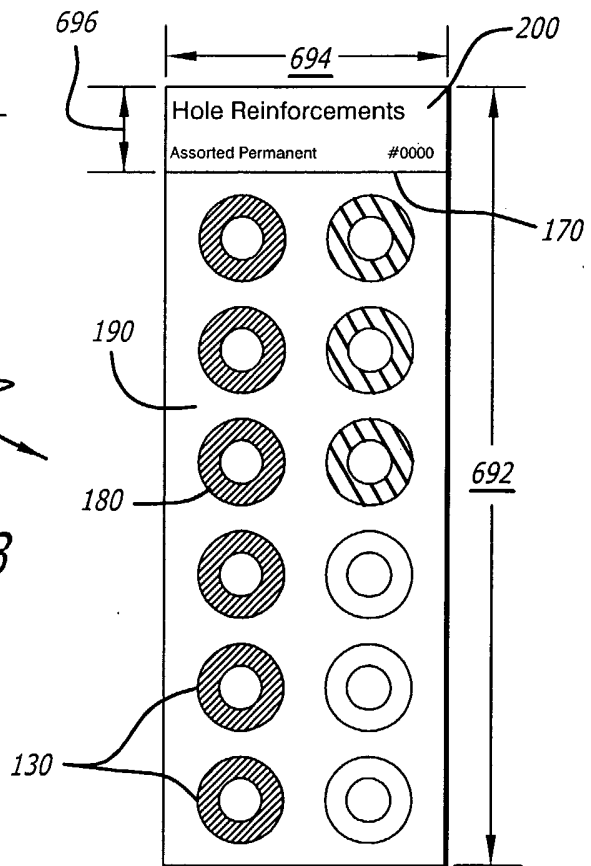
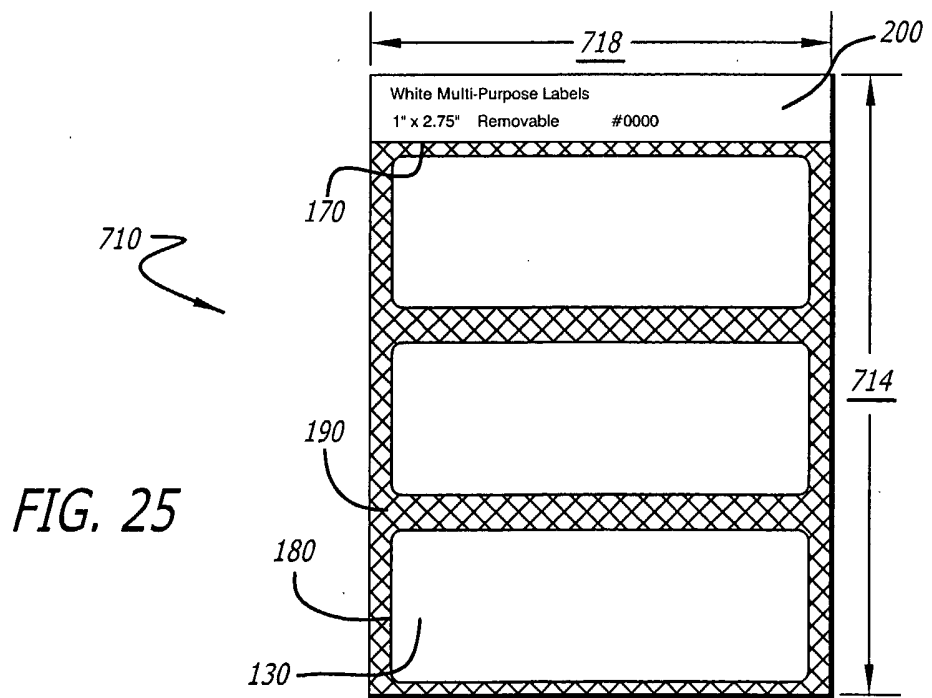
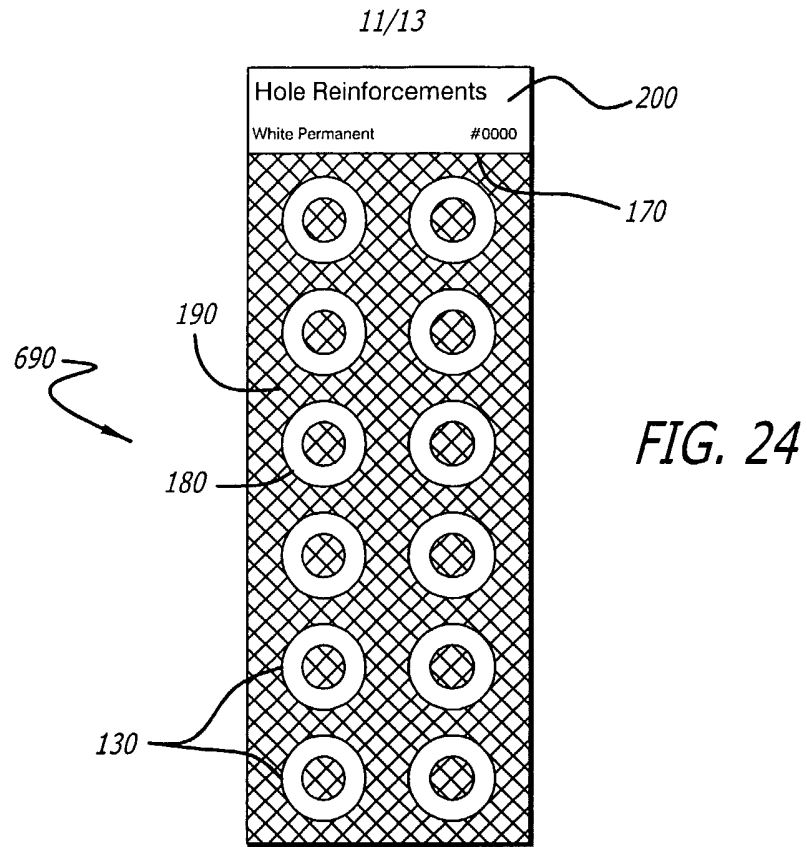


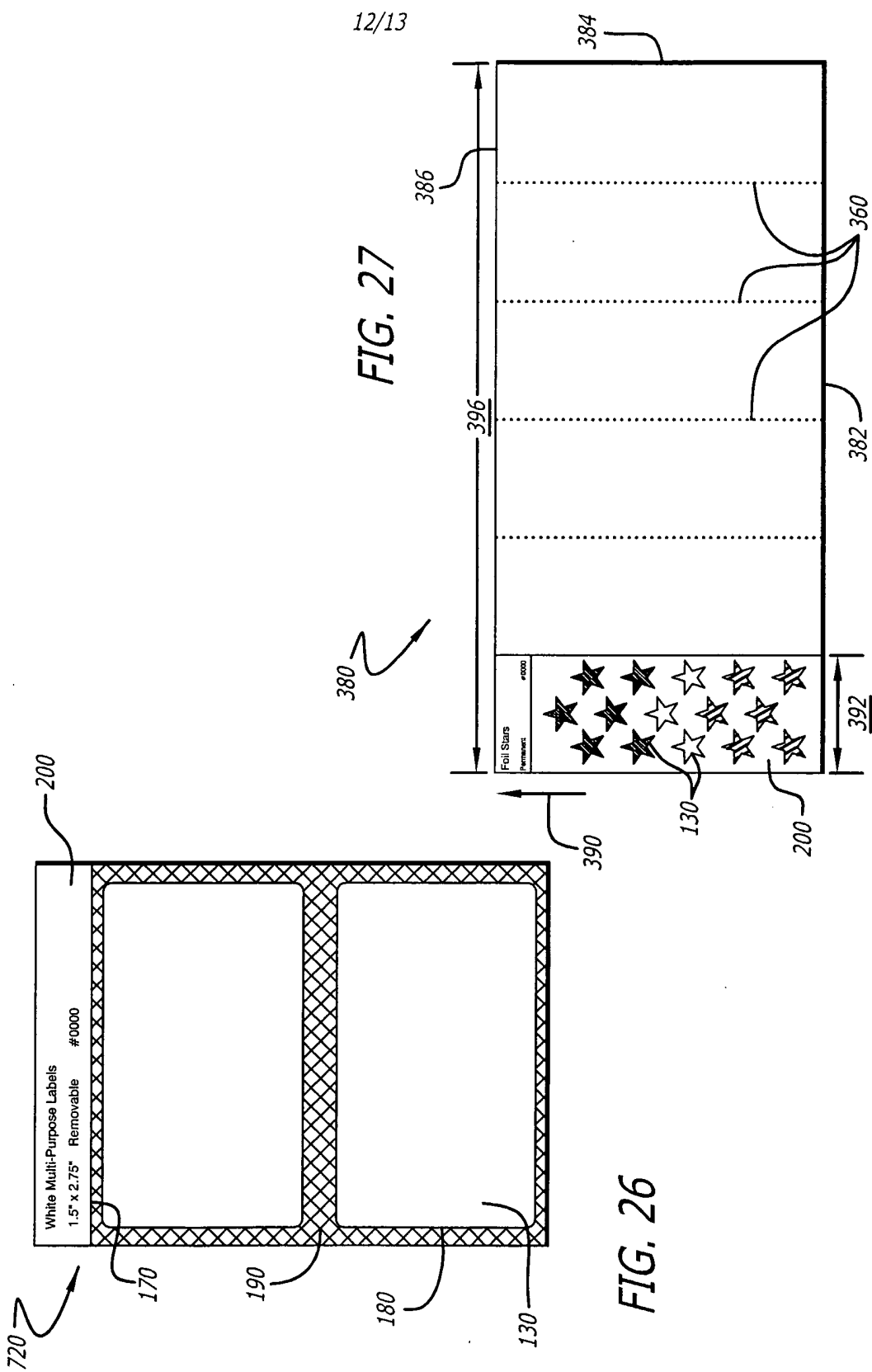
FIG. 22

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FIG. 23







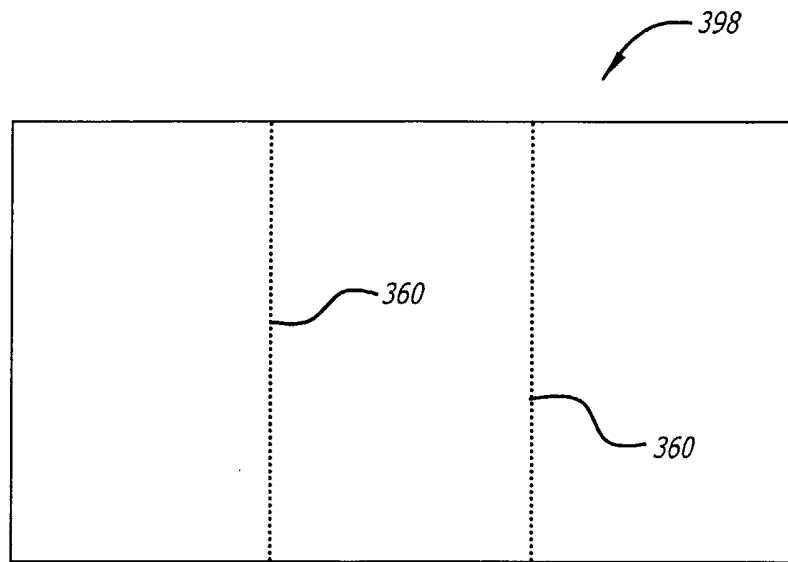


FIG. 28

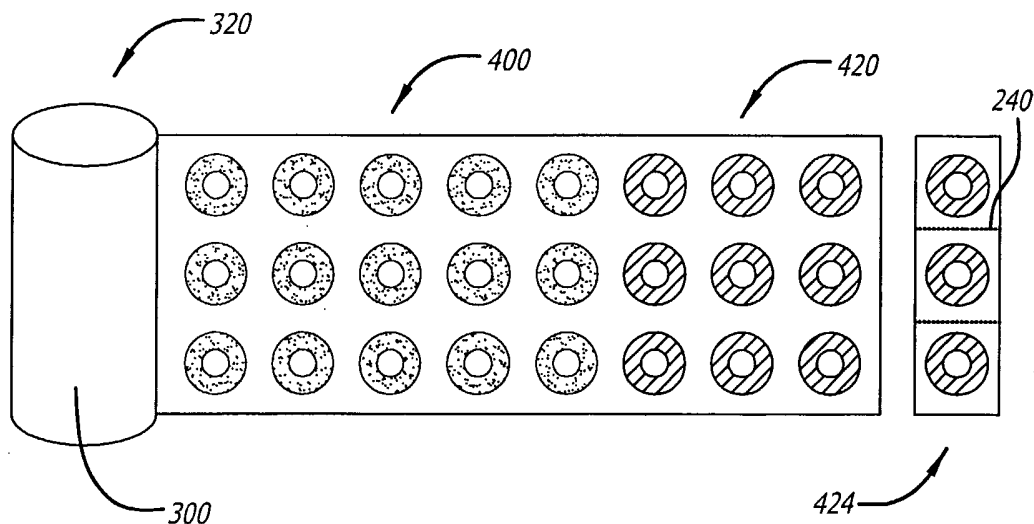


FIG. 29

**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US02/18690

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : B42D 15/00; B32B 31/00, 31/12, 31/08, 31/10, 3/10, 7/06; B65D 27/06  
 US CL : 283/81, 98, 101; 428/43, 40.1, 42.1, 42.2, 43, 78

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
 U.S. : 283/81, 98, 101; 428/43, 40.1, 42.1, 42.2, 43, 78

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,842,722 A (CARLSON) 01 December 1998, Fig. 13-15	1-65
Y	US 4,696,706 A (GRIFFIN et al) 29 September 1987, Fig. 3-7	1-65
Y	US 4,876,131 A (ASHBY et al) 24 October 1989, Fig. 1-3	1-65
Y, P	US 6,217,078 B1 (ROTH et al) 17 April 2001, Fig. 1 and 2	1-65
Y, P	US 6,394,499 B1 (HANEFELD et al) 28 May 2002, Fig. 1-3	1-65
Y	US 6,135,507 A (HAMBY et al) 24 October 2000, Fig. 1-6	1-65
Y, E	US 6,413,603 B1 (HORTON et al) 02 July 2002, Fig. 1 and 2	1-65

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

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search: 19 September 2002 (19.09.2002)  
 Date of mailing of the international search report: 02 OCT 2002

Name and mailing address of the ISA/US: Commissioner of Patents and Trademarks, Box PCT, Washington, D.C. 20231, Facsimile No. (703)305-3230  
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 Signature: *Shelia Ver...*, Paralegal Staff Unit, Group 000