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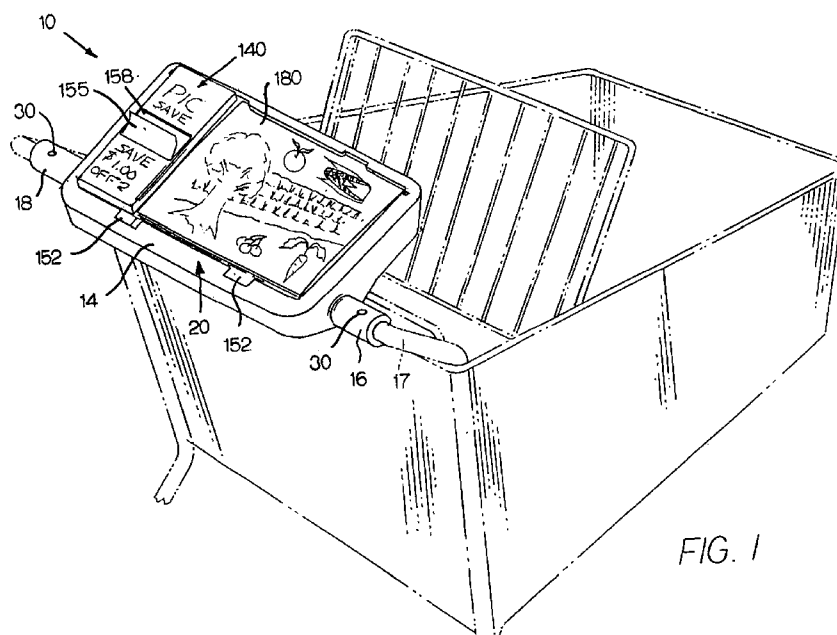
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(54) Title: SHOPPING CART DEVICE



(57) Abstract: A display mounted on a shopping cart handle allows shoppers to, *inter alia*, find information, to obtain coupons, to refer to in-store audio or video programs, and/or to obtain additional targeted shopper related information.



SHOPPING CART DEVICE

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CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This international patent application claims priority to and benefit from currently pending U.S. Patent Application Serial No. 13/112,644 filed May 05, 2011, entitled Shopping Cart Device.

TECHNICAL FIELD

[0002] The present invention is directed generally to one or more aspects of a device that may be mounted on a shopping cart. More particularly, various inventive methods and apparatus disclosed herein relate to a device that may be mounted on a shopping cart to provide one or more shopping related visual materials to shoppers.

SUMMARY

[0003] The present disclosure is directed to one or more aspects of a device that can be mounted on a shopping cart. The device may enable the display of print advertising or other visual materials to shoppers while they are shopping in a store. For example, in some embodiments the device may receive visual material that includes a check-in barcode that contains store identification data. A shopper may utilize a mobile electronic device to read the check-in barcode and enable the shopper to electronically check-in to that store and/or to access additional targeted shopper related information via the mobile electronic device. In some embodiments, the device has a display area which may receive a card, a magazine, or a sheet dispenser for dispensing sheet materials such as coupons. The magazine may have several "flip-up" pages that may contain information such as advertisements, in-store specials, store directories, recipes, schedules of in-store TV or radio programs, and the like. The sheet dispenser may include recipes, coupons for products described in the magazine, or other visual materials that the shopper might want to take. Other types of display materials may also be received on the device.

[0004] Generally, in one aspect, a device for providing visual information on a shopping cart is provided and includes a body defining a display area including a backplate having a perimeter and a lip surrounding at least a portion of the perimeter. The body is removably attached to a shopping cart handlebar of the shopping cart. Left and right handles are rigidly secured to and project leftwardly and rightwardly beyond the body, respectively. A display card is removably mounted on the backplate, with at least a portion of the display card extending under the lip. The display card includes shopper related information, a check-in barcode, and instructions related to utilization of the check-in barcode. The check-in barcode contains store identification data enabling identification of the retail store and the instructions inform a shopper that scanning the check-in barcode with a personal electronic device will provide the shopper with additional information corresponding to the shopper related information and targeted specifically to the shopper.

[0005] In some embodiments the lip has front, back, left, and right sides and defines a plurality of opposed discontinuities, the opposed discontinuities including at least a first pair of opposed discontinuities being located on the front and back sides, respectively. In some versions of those embodiments the opposed discontinuities further include at least a second pair of opposed discontinuities being located on the left and right sides, respectively. In some versions of those embodiments the backplate is connected to the lip at a plurality of tabs and, between the tabs, there are gaps between the backplate and the lip.

[0006] In some embodiments the display card is removably mounted on the backplate utilizing at least one adhesive strip.

[0007] In some embodiments the shopper related information includes in-store specials. In some versions of those embodiments the additional information includes in-store specials targeted specifically to the shopper.

[0008] Generally, in another aspect a shopping cart and personal electronic device combination is provided. The shopping cart includes a device for providing visual information attached to a handle thereof, the device including: a body defining a display area having a backplate with a perimeter, handles rigidly secured to and projecting outwardly beyond the body, and an informational sheet removably mounted on the backplate, the informational sheet including a check-in barcode thereon and shopper related information thereon. The personal electronic device has at least one camera that is selectively utilized to scan the check-in barcode. After scanning the check-in barcode the personal electronic

device provides additional information related to the shopper in conjunction with the shopper related material already displayed on the informational sheet.

[0009] In some embodiments the informational sheet is a single display card.

[0010] In some embodiments the informational sheet is an outermost page of a magazine comprising a plurality of pages bound along a spine. In some versions of those embodiments the device includes a lip spaced apart from the backplate and the magazine extends into space between the backplate and the lip.

[0011] In some embodiments the lip has front, back, left, and right sides and defines a plurality of opposed discontinuities including at least a first pair of opposed discontinuities being located on the front and back sides, respectively.

[0012] In some embodiments after scanning the check-in barcode the personal electronic device substantially instantaneously provides the additional information.

[0013] In some embodiments the shopper related information includes in-store specials. In some versions of those embodiments the additional information includes in-store specials targeted specifically to the shopper. In some versions of those embodiments the additional information includes recipes targeted specifically to the shopper.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1 shows one embodiment of a device made in accordance with the present invention mounted on the handlebar of a shopping cart;

[0015] FIG. 2 is a front perspective view of the device of FIG. 1;

[0016] FIG. 3 is a view taken along the line 3-3 of FIG. 2;

[0017] FIG. 4 is a view taken along the line 4-4 of FIG. 2;

[0018] FIG. 5 is a view taken along the line 5-5 of FIG. 2;

[0019] FIG. 6 is a view taken along the line 6-6 of FIG. 2;

[0020] FIG. 7 is a view taken along the line 7-7 of FIG. 2;

[0021] FIG. 8 is a rear view of the device of FIG. 2;

[0022] FIG. 9 is a broken-away side perspective view of the device of FIG. 2;

[0023] FIG. 10 is a broken-away front perspective view of the device of FIG. 2;

- [0024] FIG. 11 is a side perspective view of the device of FIG. 2 with a magazine mounted on the device;
- [0025] FIG. 12 shows a single "flip-up" page of the magazine of FIG. 11;
- [0026] FIG. 13 is a side perspective view of the magazine of FIG. 11;
- [0027] FIG. 14 shows the sheet dispenser of FIG. 1;
- [0028] FIG. 15 shows one of the sheets of FIG. 14;
- [0029] FIG. 16 shows the sheet dispenser of FIG. 14 in the open position;
- [0030] FIG. 17 shows an alternative embodiment of a sheet dispenser for use on the device of FIG. 2;
- [0031] FIG. 18 shows a sheet being removed from the sheet dispenser of FIG. 17;
- [0032] FIG. 19 shows an embodiment of one of the sheets of FIG. 17;
- [0033] FIG. 20 shows an alternate embodiment of a device mounted on a shopping cart;
- [0034] FIG. 21 is a side sectional view showing the device of FIG. 20;
- [0035] FIG. 22 shows an alternate embodiment of a device mounted on a shopping cart; a mobile electronic device of a shopper is also shown;
- [0036] FIG. 23 shows the mobile electronic device displaying a check-in screen for checking into a physical store.
- [0037] FIG. 24 shows the mobile electronic device displaying targeted shopper related information.

DESCRIPTION

[0038] FIGS. 1-10 show an example of a device 10 for providing visual information on a shopping cart. This device 10 is mounted on the shopping cart handlebar, and, in this particular embodiment, it holds a coupon dispenser 140 (shown in FIGS. 14 and 17), and a magazine 180 (shown in FIG. 13). It could alternatively hold other items, such as a display card 221, shown in FIG. 20. Looking at FIG. 2, it can be seen that the device 10 includes a main body 11, which defines a central display area 20, and a right handle 16 and a left handle 18 rigidly attached to and projecting outwardly from the main body 11. (In this particular embodiment, the device 10 is molded as a single unit, so the handles 16, 18 are attached to the main body 11 as part of the molding process.) The display area 20 includes a flat, rectangular backplate 12 and a rectangular frame 14, which surrounds the periphery of the backplate 12. Of course, other shapes could also be used, including ovals, squares, pentagons, hexagons, other polygons, stars, or various other shapes. The frame 14 includes a

lip 22, which is spaced above the backplate 12 and extends around the periphery of the backplate 12. The lip 22 allows an advertising or display card, magazine, or coupon dispenser to be tucked between the backplate 12 and frame 14 and to be securely held in place. The frame 14 can also have advertising material or other print adhered to it or printed on it. In this embodiment, the handles 16, 18, are textured, having a rougher surface than the frame 14 in order to facilitate gripping the handles. However, the body 11 could also be textured. The handles 16, 18 could also have advertising material printed or adhered on them.

[0039] Looking again at FIG. 1, it can be seen that the handles 16, 18 will be gripped by the shopper in order to push the shopping cart, putting the display area in a good position for being viewed by the shopper.

[0040] The lip 22 generally extends around the entire periphery of the backplate 12. However, as shown in FIG. 2, there are several pairs of opposed discontinuities 24 in the frame 14, which facilitate the insertion of advertising materials onto the backplate 12. In this embodiment, there are two pairs of discontinuities 24A, 24B located on the front and back of the frame 14 and one pair 24C located on the sides near the back. The discontinuities 24A are located in from the left side of the frame 14 about one-fourth of the width of the entire backplate 12. Similarly, the discontinuities 24B are located in from the right side about one-fourth of the width of the entire backplate 12. It is preferred that the discontinuities in the front and rear frame 14 be located in from their respective sides a distance between one-eighth and one-third of the width of the entire backplate. There is no lip (or only a very shallow lip) 22 at the discontinuities 24. The frame 14 is connected to the backplate 12 at tabs 28, and between the tabs 28 there are gaps 26 between the frame 14 and the backplate 12, where there is no connection between the frame 14 and the backplate 12. In this particular embodiment, the tabs 28 are located at some of the discontinuities 24, but the tabs could be located at other places instead of or in addition to being located at the discontinuities. (See FIGS. 4 and 6 for more detail of the tabs and discontinuities.) The discontinuities 24 make it easier to install items such as a sheet dispenser, magazine page(s), display cards, etc, and the gaps 26 allow for water drainage, as will be discussed in detail later.

[0041] In this particular embodiment, the backplate 12 and frame 14 are connected together only by the tabs 28 that extend outwardly from the backplate 12 in the same plane as the backplate 12, and that merge with the bottom of the outer edge of the frame 14 at some of the discontinuities 24A, 24B.

[0042] Also, in this embodiment, there is a pair of opposed small discontinuities 24C toward the top of the right and left sides of the frame 14. These particular discontinuities 24C make it easier to install a display card 221 (shown in FIG. 20), which covers the entire backplate 12. Such a display card (or other object to be installed) is slid downwardly through the small discontinuities 24C and beneath the lip 22.

[0043] FIG. 3 is a section through the left side of the body 11, showing the frame 14, the backplate 12, the lip 22, and a gap 26.

[0044] FIG. 4 is a section through the rear discontinuity 24A showing the tab 28 which connects the backplate 12 to the frame 14. This view also shows the discontinuity 24C and the lip 22.

[0045] FIG. 5 is a section through the rear part of the frame 14, showing the lip 22, the discontinuity 24C, the backplate 12, and a gap 26.

[0046] FIG. 6 is a section through the front discontinuity 24B, showing the lip 22, the tab 28, the frame 14, and the backplate 12.

FIG. 7 is a section view through the front part of the frame 14, showing the lip 22, the gap 26, the frame 14, and the backplate 12. It should be noted that the gaps 26 in the forward part of the frame as shown in this figure provide a place for water to drain so that when the shopping cart is exposed to the rain, the water will flow down over the backplate 12 and drain out through the front gaps 26.

[0047] Referring to FIGS. 1, 2, 8, and 11, the handles 16, 18, are rigidly attached to and project outwardly from the right and left sides of the body 11. Both handles 16, 18 have a C-shaped cross section defining an opening 19 that allows them to wrap partially around the handlebar of a standard shopping cart when installed. The distance between the ends of the C-shaped opening 19 is slightly smaller than the diameter of the shopping cart handlebar 17, and the inside diameter of the cross section is slightly larger than the diameter of the shopping cart handlebar 17 so that the handles 16, 18 open up slightly and then snap into place over the cart handlebar 17. To install the device 10, the installer removes the old handle (if there is one), aligns the handles 16, 18 with the handlebar 17 of the shopping cart, and simply presses the handles 16, 18, downwardly onto the shopping cart handlebar 17. The handles 16, 18, flex sufficiently that the opening 19 opens wide enough to allow the handles 16, 18, to snap into place over the handlebar 17, with the opening 19 returning to its original size once the handles 16, 18, have snapped into place.

[0048] In other embodiments, the handles 16, 18 need not necessarily snap around the handlebar; alternatively, they could be designed so they would simply rest on top of the handlebar and be secured via screws, clasps, or any other known mounting means. Alternatively, the device 10 may be installed directly over the existing handle on the shopping cart, without having to remove it to expose the handlebar 17. Once the device 10 is snapped into place, it may then be screwed onto or otherwise secured to the handlebar 17, if desired.

[0049] To facilitate the securing of the device 10 to the handlebar 17, the device 10 has holes or partial holes (indentations) 30, shown in FIGS. 1, 2 and 8. The holes or indentations 30 may be through the handles 16, 18 or through the backplate 12 or both. Holes or indentations 30 are countersunk to ensure that the screws (or other fasteners) do not project above the backplate 12 or above the handle surface. Partial holes or indentations 30 could be used instead of through holes in order to guide self-tapping screws into the shopping cart handlebar 17. The screws (or other fasteners) secure the device 10 to the handlebar 17. When the device 10 is mounted on the shopping cart as shown in FIG. 1, the display area 20 of the device 10 is preferably at an acute angle to the horizontal to make it easy for the shopper to see the visual materials mounted on the display area 20. The handles 16, 18 define an imaginary horizontal plane which intersects the edges of the opening 19, and the display area 20 is at an acute angle to that plane. The angle preferably is between 5 and 70 degrees, and most preferably at approximately 20 degrees to the horizontal as shown in FIG. 1.

[0050] In this embodiment, as best shown in FIG. 8, there are also several platforms 32 which extend from the rear surface of the device 10 creating more support on the handlebar 17 of the shopping cart. Each platform 32 has a concave arcuate bottom surface, which allows it to wrap partially around the handlebar 17.

[0051] FIGS. 20 and 21 show another embodiment of a device 210 made in accordance with the present invention. This embodiment differs from the previous embodiment in the manner in which it mounts on the shopping cart handlebar 217. In this embodiment, the shopping cart handlebar defines two small bars 217A, 217B, and the device's handlebars connect in a "clamshell" fashion, clamping over the small bars 217A, 217B, which again defines a horizontal plane. FIG. 21 shows the right handle 216. It has a top piece 216A, and a bottom piece 216B. In this embodiment, each half of the handle 216 contains two concave arcuate surfaces which fit around the handlebars 217A, 217B. In this embodiment, a screw 215 is fitted through the hole or indentation 30 to rigidly connect upper and lower halves of

the handle 216. Of course, other fastening devices may be used in place of the screw 215. The left handle 218 mounts in the same manner.

[0052] FIGS. 14 and 16 show one embodiment of a sheet dispenser 140 made in accordance with the present invention. The sheet dispenser 140 includes a housing 142 defining a top wall 144 and a bottom wall 146. The top wall 144 has a top surface 145 at a first elevation and a side surface 148 extending downwardly from the top surface 145 and defines a cavity 150 between the top wall 144 and the bottom wall 146, which houses a plurality of sheets 158, which have the same shape and are stacked directly on top of each other. The top wall 144 has a flange 152 projecting outwardly from the side surface 148 at a substantially lower elevation than the first elevation; the flange 152 extends in a direction generally parallel to the top surface 145 and to the bottom wall 146, and generally perpendicular to the side surface 148. The flange 152 projects outwardly from the side surface 148 along front, rear, left and right side portions, surrounds the periphery of the cavity, and forms the outermost edge of the housing 142. The flange 152 fits beneath the lip 22, while the bottom wall 146 rests on the backplate 12, as will be explained in more detail later.

[0053] In this embodiment, the entire housing 142 is made as one piece of clear plastic material which flexes on the right side to form a hinge 160. On the left side, the flange portion 152 and the edge of the bottom wall 146 have flexible flaps 156, which interlock as shown in FIG. 14 to hold the housing in the closed position. The dispenser 140 may open (as in FIG. 16) and close (as in FIG. 14). When in the closed position (as in FIG. 14), these flaps 156 act as a locking mechanism.

[0054] There is an opening 154 in the top surface 145 for the removal of sheets 158 stored in the cavity 150. The opening 154 is large enough to permit a human finger to fit into it and wide enough to permit the full width of the sheets to pass through without buckling. The sheets 158 may be coupons, recipes, or any other visual or textual information that the shopper may want to take from the cart. These sheets 158 are made of polypropylene or some other synthetic polymeric material that is both flexible and waterproof. Water can escape the cavity 150 through the space between the flange 152 of the top wall 144 and the bottom wall 146, and can continue through the gap 26 out of the device 10 altogether.

[0055] The sheet dispenser may hold a large number of sheets, maybe 20 or more. In this particular embodiment, each sheet 158 in the stack is an elongated, rectangular member, having an elongated direction and being folded back on itself twice along folds 159 that are perpendicular to the elongated direction. The lower layers 158B and 158C extend

substantially the full length of the cavity 150, while the top layer 158A extends only part of the length of the cavity, terminating at an end 155, which is aligned with the opening 154. In order to remove a sheet 158 from this dispenser 140, the user need only reach into the cavity end 150 through the opening 154 and pull on the sheet 158 until the sheet slides out of the cavity 150 through the opening 154. The sheet 158 will unfold as it is pulled out. The next sheet 158 in the stack is left in proper position to be similarly removed.

[0056] It is also envisioned that the sheets 158 may be provided pre-packaged in the sheet dispenser. When it is time to insert more coupons or other sheets, instead of refilling the sheet dispenser, the user simply disposes of the sheet dispenser 140 and installs a new sheet dispenser full of sheets. This saves the trouble of installing additional sheets into the empty dispenser. However, if the user wanted to put additional sheets into the dispenser, this could be done by separating the interlocking flaps 156 by pulling up on the flange portion 152 of the top wall 144 and pulling down on the corresponding edge of the bottom wall 146, inserting sheets 158 into the cavity 150, and re-closing by re-interlocking the flaps as is best shown in FIG. 14.

[0057] FIG. 17 shows another embodiment of a sheet dispenser 240. Like the previous embodiment, this sheet dispenser 240 includes a bottom wall 246 as well as a top wall 244 having a top surface 245, a side surface 248, and a flange portion 252. It also includes a sheet removal opening 254. However, in this embodiment, the opening 254 is "T"-shaped. (Obviously, other shapes of openings could be used instead.) As shown in FIG. 18, the T-slot is wide enough to receive a human finger. In order to extract a sheet 258, the user inserts a finger into the central leg of the "T" and slides the sheet 258 forward, causing the sheet 258 to buckle enough in the width-wise direction to be gripped between thumb and forefinger, and thereby be removed.

[0058] This embodiment, unlike the previous sheet dispenser 140, does not have flaps 156 for potential interlocking and closure; however it is also made of one piece of flexible, strong material (preferably plastic, though other materials could be used) and includes a live hinge 260 as in the previous embodiment. However, in this embodiment, the flange 252 of the top wall 244 is adhered to the bottom wall 246 using a heat-sealing process, which retains the housing in the closed position. Alternatively, other forms of adhesives could be used. The heat seal would not necessarily have to extend around the entire periphery of the dispenser 240; preferably the lower edge would be left unsealed to allow for water to drain out as in the previous embodiment. This embodiment is better suited to be used as a disposable, pre-packaged sheet dispenser than to being refilled.

[0059] Installation of an embodiment of the sheet dispenser 140 or 240 into the device 10 will now be described. FIG. 11 shows the device 10 prior to installation of the sheet dispenser. A magazine 180 (which will be described in detail later) has already been installed on the right side of the device 10, and the sheet dispenser 140 should be aligned for installation on the left side of the device. Such placement can be seen in FIG. 1. Of course, the magazine 180 could be placed on the left, and the sheet dispenser 140 could be installed on the right, and other combinations, such as a dispenser and a card could be used as well.

[0060] To install this sheet dispenser 140, the top edge (the rear side portion) of the flange 152 is slid leftwardly under the upper (rear) lip 22 through the discontinuity 24A at the rear of the device, and the bottom edge (the front side portion) of the flange 152 is slid leftwardly under the lower (front) lip 22 through the discontinuity 24A at the front of the device and is pushed to the left until the left edge of the flange 152 (the left side portion) is under the left lip 22, so that the front, rear, and left side portions of the flange 152 are underneath the lip 22, while the bottom wall 146 of the sheet dispenser rests on the backplate 12. As a final step, the right edge of the flange 152 (the right side portion) may be tucked underneath the magazine 180. Even if it is not tucked, however, the sheet dispenser 140 will not slide rightwardly out of device 10, because its top right corner will abut the edge of the discontinuity 24A. Thus, the sheet dispenser 140 is secured on all four sides. As a result, the sheet dispenser 140 or 240 is not easily dislodged in normal use, but it can be removed from the device whenever necessary to insert a new dispenser containing a new pack of sheets. In addition, the back of the sheet dispenser 140 could be adhered to the device 10 with adhesive (not shown), if desired.

[0061] In this embodiment, the top page of the magazine 180 is advertising a particular product, and the sheets 158 are coupons which provide a discount for the same product. Thus, this device permits the store to provide fixed, in-store advertising and removable coupons for the same product on the shopping cart, which is very convenient for the shopper. In some embodiments the top page of the magazine 180 may optionally include a store check-in barcode, such as a QR code, as described herein. Also, in some embodiments the sheet dispenser 140 may additionally or alternatively include a store check-in barcode. The check-in barcode may be provided on the body of the sheet dispenser 140 and/or on sheets 158 that are retained by the sheet dispenser 140.

[0062] When a person is shopping, he will see the magazine 180 advertising the product (or service) and can pull out a coupon for that product (or service) to be used as he is checking out at the cash register. Of course, the sheets 158 do not necessarily have to be

coupons which match the magazine 180. The sheets 158 could also be announcements, recipes, schedules of in-store TV or radio, or any other graphics or text.

[0063] FIG. 13 shows one embodiment of a magazine 180 designed to be inserted into the device 10, as shown in FIGS. 1 and 11. The basic components of the magazine 180 are a rear sheet 182, a spine 186, a live hinge 188, and a top page or plurality of pages 184. Live hinges are thin sections of flexible material, such as plastic, that connect two segments (in this instance the spine 186 and the pages 184) of a part (in this instance the magazine 180) to keep them together and allow the magazine 180 to be opened and closed. The rear sheet 182 is flat and bendable and extends slightly beyond the pages 184 on its bottom edge so that its bottom edge may be tucked under the bottom lip 22 in the device 10 while the edges of the pages 184 are free of the lip 22 and can be opened and closed freely.

[0064] As shown in FIG. 12, the pages 184 are made of paper or card stock that has been laminated. The paper or card stock may be made of wood fibers, but it preferably is made of a synthetic polymeric material, such as polypropylene, that is waterproof so it is not necessary to have a complete seal around it. There is a main paper 185 parallel to and spaced apart from an upper paper 186, leaving a space in which the plastic laminate material forms a hinge 188.

[0065] The pages 184 are bound to the rear sheet 182 at the spine 186, as shown in FIG. 13. In this embodiment, the pages 184 and rear sheet 182 are stapled together with staples 190. However, the pages could alternatively be glued, stitched, clamped, or bound by other known means to the rear sheet 182. The binding is thin enough that it can fit under the top lip 22 to help secure the magazine 180 to the device 10. It should be noted that the pages 184 shown in FIGS. 11-13 are blank, but the magazine actually contains pages of printed information, which may include text and pictures, as shown in FIG. 1. The information in the magazine could include advertisements, shopping tips, in-store specials, a store directory, a schedule of in-store TV or radio programs, recipes, a check-in barcode, and/or other information.

[0066] In order to make it easier to flip the pages 184 of the magazine, each page includes a live hinge 188, as described above. The pages bend at the thinner, more flexible laminate strip portion 188 rather than at the thicker, more rigid card portions. The spine 186 itself contains cardstock, paper, or other stiffening material to create a solid surface to attach staples (or other fastening devices) 186, and to create a stronger grip when the spine 186 is installed under the top lip 22 of the device 10. The live hinge 188 is firmly secured to the printed portion of the page, and it provides a place for the pages to bend or fold easily. In this

embodiment, the rear page 182 further contains an extended flap 192 of the cardstock above the stapled spine 186. The cardstock (and the whole back page) may or may not be laminated. If it is not laminated, it should be made of a waterproof material. This flap 192 folds back over the top of the spine 186, creating extra thickness to facilitate a strong connection between the magazine 180 and the device 10 as the spine 186 is tucked under the rear lip 22.

[0067] The laminate may be vinyl, polyester, polypropylene, nylon, or the like, and it is preferable for the laminate to be clear in order to readily view the material on the paper or cardstock. The magazine 180, the sheet dispenser 140, the sheets 158, and the device 10 are waterproof, as shopping carts are frequently exposed to the various weather elements.

[0068] FIG. 11 shows the magazine 180 after it is inserted into the device 10. The flap 192 has been folded over the spine 186, and the spine 186, covered with the flap 192, has been inserted under the rear lip 22. The bottom edge of the rear sheet 182 has been inserted under the front lip 22. The bottom edges of the pages 184 terminate short of the front lip 22, so that the pages 184 can be flipped up to view. The pages 184 fit neatly into the recessed central display area 20 defined by the frame 14 and backplate 12. In this embodiment, the magazine does not fill the entire width of the backplate 12 in order to leave room for additional advertising materials. In this case, the additional space to the left of the magazine 180 is being used for the sheet dispenser 140 as shown in FIG. 1. However, the magazine 180 could extend across the entire width of the frame, if desired. Optionally, the magazine 180 may include a check-in QR code. In some embodiments where additional space adjacent the magazine 180 is provided, it may be utilized for the display of a check-in QR code. Optionally, the check-in code may be provided on a removable sheet such as, for example, a removable laminated paper or card stock. The removable laminated paper or card stock may be attached utilizing, for example, one or more of the attachment methods and/or apparatus described herein (*e.g.*, adhesive, utilization of retaining lip).

[0069] Also, one or more adhesive strips (not shown) may be used to secure the rear of the magazine 180 and/or coupon dispenser 140 to the device 10. The adhesive strip can be placed on the central portion of the rear face of the rear sheet 182 of the magazine or on the back surface of the sheet dispenser 140, adhering it to the backplate 12. The adhesive strip may conveniently be provided on the back of the magazine 180 or sheet dispenser 140 with a peel-off cover strip that can simply be removed when one is installing the magazine 180 or sheet dispenser onto the device 10.

[0070] Except for the portions of the pages 184 that are bound along the spine 186 and that lie under the rear lip 22, the remainder of each page 184 is free to be flipped open, and the full surface area of each page up to the spine can be accessed from the front of the device 10 while the magazine is fixed on the backplate.

[0071] FIG. 1 shows the magazine 180 inserted alongside a sheet dispenser 140. In this embodiment, the sheet dispenser 140 is mounted with its right flange beneath the rear page of the magazine 180.

[0072] A major advantage of this device is that it allows for interactivity between advertisers and customers. For example, shoppers can see an advertisement for an item on a magazine or card mounted on the device 10 and then pick up a corresponding coupon from the sheet dispenser also mounted on the device 10. Shoppers can use store directories and maps on a magazine or card mounted on the device 10 to locate goods (or services) more conveniently. Additionally, this product offers the opportunity for interactivity between the display on the shopping cart and other materials in the store, such as in-store TV or radio programs. For example, an in-store TV may have a program on cooking a particular recipe every hour at ten minutes after the hour. Shoppers can learn about this segment and when to watch it by reading an in-store TV schedule printed in the magazine portion of the display 10, then watch the corresponding program, and, if interested, take the recipe from the sheet dispenser and purchase the required ingredients all in one trip to the store. Alternatively, an in-store radio or television program may refer the shopper to his on-cart display device 10 for recipes, coupons, in-store specials, instructions, or other types of information.

[0073] Turning now to FIG. 22, similar magazine and display structure may be utilized to display various other types of information. For displaying such related information a device 310 may be mounted on a shopping cart handlebar 317 of a shopping cart 320 as illustrated. A mobile electronic device 350 of a shopper 1 is also shown and may be used in combination with the display structure. In the depicted embodiment, the shopping cart handlebar 317 defines two small bars and the device's handlebars 316, 318 connect in a "clamshell" fashion, clamping over the shopping cart handlebar 317. Each of the device's handlebars 316, 318 contains two concave arcuate surfaces which fit around the shopping cart handlebar 317. A screw is fitted through the hole or indentation in each of the handlebars 316, 318 to rigidly connect upper and lower halves of the device's handlebars 316, 318. Of course, other fastening devices may be used in place of the screw. Also, in alternative embodiments the device 310 may be alternatively removably or fixedly coupled to the shopping cart handlebar

317. For example, in some embodiments the device 310 may be integrally molded with the shopping cart handlebar 317.

[0074] The display device 310 includes a magazine or other type frame 314 that supports a display card 321 having a QR type check-in barcode 338 on an outward facing side thereof. A magazine and/or a sheet dispenser may additionally or alternatively be provided in combination with the display device 310 and may optionally include the QR check-in barcode 338. Instructions 339 are provided adjacent the check-in barcode 338 that provide graphic and/or written instructions to a shopper. The display instructions 339 generally inform the shopper to scan the check-in barcode 338 utilizing a mobile electronic device. The display card 321 may be removably supported on the frame 314 utilizing, for example, one or more of an adhesive, clips, a retaining lip sized to fit around all or portions of the periphery of the display card 321, screws, zip ties, and/or other retention apparatus and/or methods. The display card 321 may be periodically replaced to, *inter alia*, change information thereon, for aesthetic purposes, and/or to change the check-in barcode 338.

[0075] A hand 1 of a shopper is also depicted in FIG. 22 holding a cell phone 350 adjacent to the check-in barcode 338. The shopper has just utilized the cell phone 350 to scan the check-in barcode 338 and an image 538 of the check-in barcode 338 is still visible on the screen of the cell phone 350. In some embodiments the cell phone 350 may scan the check-in barcode 338 by utilizing a camera of the cell phone 350 to temporarily capture one or more images of the check-in barcode 338 and analyzing the check-in barcode 338 within the image(s). In other embodiments the cell phone 350 may capture one or more images of the check-in barcode 338 and send the image(s) to a server for analysis. As described in detail herein, once the shopper has scanned the check-in barcode 338, the shopper will be checked-in to the physical store in which the shopping cart is located.

[0076] The cell phone 350 may contain software that enables a shopper to check-in to a store as described in detail herein. For example, a shopper may open an application installed on the cell phone 350 for checking into a physical store that directs the cell phone 350 to a check-in screen such as the embodiment of the check-in screen illustrated in FIG. 23. In FIG. 23 an image 538 of the check-in barcode 338 is visible in a viewfinder area of the screen of the cell phone 350. The image 538 may be visible when a shopper is holding the cell phone 350 such that a camera thereof has the check-in barcode 338 in its field of view at a sufficiently close distance to capture and/or read contents thereof. The image 538 may optionally remain visible for an amount of time to provide the shopper with verification that

the check-in barcode 338 was scanned by the mobile phone 350. Instructions 539A and 539B are provided above and below, respectively, the viewfinder area of the mobile phone 350 and instruct the shopper how to scan the check-in barcode 338. Optionally, video, images, and/or audio may be provided from the cell phone 350 to additionally or alternatively instruct the shopper how to scan the check-in barcode 338.

[0077] As shown in FIG. 22, the display card 321 may be mounted in frame 314 and utilized in various fashion to relay related shopper information such as coupons, recipes, advertisements, shopping tips, in-store specials, a store directory, and the like. Single or multi-page magazines may be provided in combination with the QR code 338 in order to deliver more specific shopper targeted information. Thus, a shopper may scan the QR code 338 and the mobile device 350 may provide, in combination with the display card 321, additional targeted shopper related information. For example, shopper history may be utilized to supplement the information on the display card 321 with targeted cooking instructions for known items the shopper previously purchased, as well as specials and coupons for items in addition to those already displayed on the display card 321. The specials and coupons provided via the mobile device 350 may be targeted to that particular shopper and/or to the particular store the shopper is in. For example, specials may be provided to the shopper via mobile device 350 and targeted to the shopper based on purchasing history of the shopper and/or demographics of the shopper. Also, for example, the shopper information on the display card 321 may be generic to multiple locations of a certain store (*e.g.*, regional sales promotions) and shopper information provided to the shopper via mobile device 350 may be tailored to current sales of a specific location of that store.

[0078] Targeted shopper related information may be provided by the mobile device 350 in response to scanning the QR code 338 and may represent additional shopper related information over that provided by the display card 321. The targeted shopper related information may be based on, for example, shopping history of the shopper, demographic data supplied by the shopper, and/or current promotions data supplied by a store and/or marketing company. For example, as shown in FIG. 24, a targeted advertisement screen 541 may be displayed to the shopper having an advertisement that is specifically tailored to the shopping history of that shopper. Advertisement screen 541 may be displayed for a given amount of time before transitioning to another screen similar to screen 541, but with other

shopper tailored and/or store tailored information in combination with the shopper related information of display card 321.

[0079] Check-in barcode 338 is depicted herein as a Quick Response (QR) barcode. However, one or more check-in barcodes having other configurations may be implemented in certain embodiments of the methods and apparatus described herein and implementation of the other configurations in alternatively configured methods and apparatus is contemplated without deviating from the scope or spirit of the claimed invention. For example, one or more Semacode barcodes, High Capacity Color Barcodes, ShotCode barcodes, Aztec barcodes, matrix barcodes, and/or other barcodes having an optical machine-readable representation of data may be utilized. Also, although a cell phone 350 is depicted herein, one of ordinary skill in the art, having had the benefit of the present disclosure, will recognize and appreciate that other mobile electronic devices such as, for example, a tablet computer or PDA may be utilized to scan the check-in barcode 338.

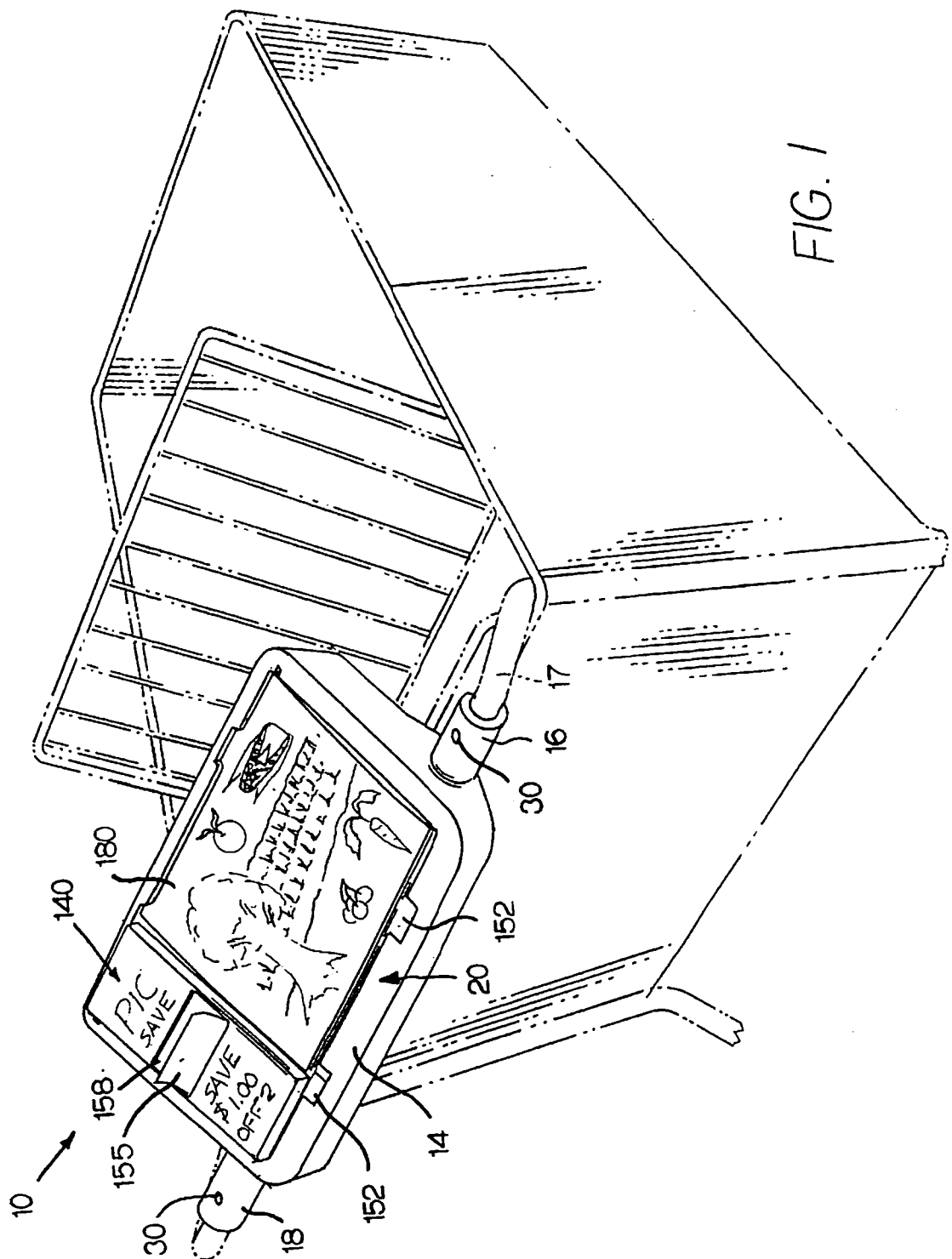
[0080] It will be obvious to those skilled in the art that modifications may be made to the embodiments described above without departing from the scope of the present invention. What is claimed is:

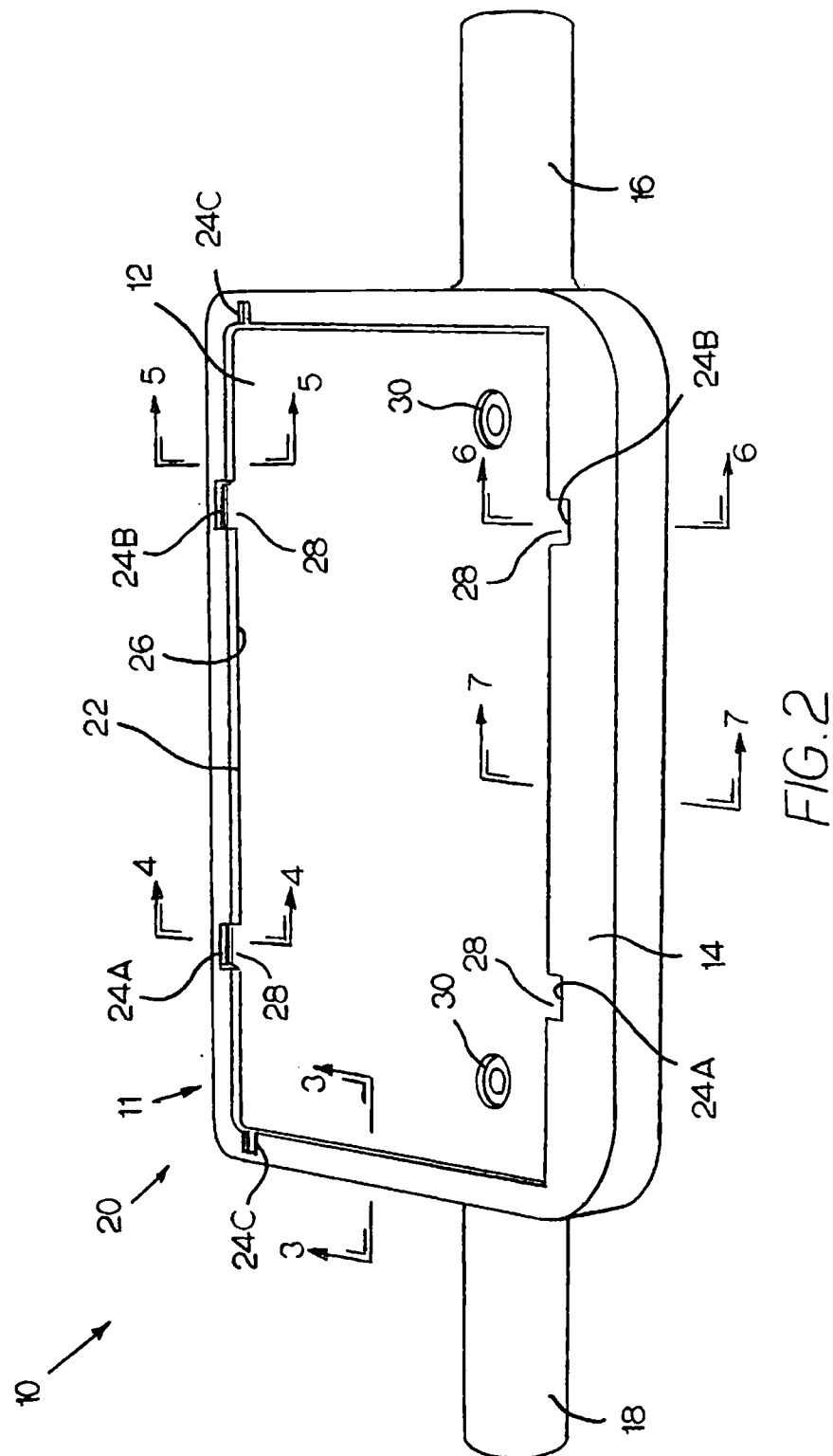
I Claim:

1. A device for providing visual information on a shopping cart, comprising:
a body defining a display area including a backplate, said body being removably attached to a shopping cart handlebar of said shopping cart;
a display card removably mounted on said backplate, with at least a portion of said display card extending under said lip, said display card comprising shopper related information, a check-in barcode, and instructions related to utilization of said check-in barcode;
wherein said check-in barcode contains store identification data enabling identification of said retail store; and
wherein said instructions inform a shopper that scanning said check-in barcode with a personal electronic device will provide said shopper with additional information corresponding to said shopper related information and targeted specifically to said shopper.
2. The device of claim 1, wherein said backplate has a perimeter and a lip surrounding at least a portion of said perimeter.
3. The device of claim 2, wherein said lip has front, back, left, and right sides and defines a plurality of opposed discontinuities, said opposed discontinuities including at least a first pair of opposed discontinuities being located on said front and back sides, respectively.
4. The device of claim 3, wherein said opposed discontinuities further include at least a second pair of opposed discontinuities being located on said left and right sides, respectively.
5. The device of claim 4, wherein said backplate is connected to said lip at a plurality of tabs, and wherein, between said tabs, there are gaps between said backplate and said lip.
6. The device of claim 1, wherein said display card is removably mounted on said backplate utilizing at least one adhesive strip.

7. The device of claim 1, wherein said shopper related information includes in-store specials.
8. The device of claim 7, wherein said additional information includes in-store specials targeted specifically to said shopper.

9. A shopping cart and personal electronic device combination, comprising:
a shopping cart having a device for providing visual information attached to a handle thereof, said device including: a body defining a display area having a backplate with a perimeter, and an informational sheet removably mounted on said backplate, said informational sheet comprising a check-in barcode thereon and shopper related information thereon;
a personal electronic device having at least one camera, wherein said camera is selectively utilized to scan said check-in barcode, and wherein after scanning said check-in barcode said personal electronic device provides additional information related to the shopper in conjunction with said shopper related material already displayed on said informational sheet.
10. The combination of claim 9, wherein said informational sheet is a single display card.
11. The combination of claim 9, wherein said informational sheet is an outermost page of a magazine comprising a plurality of pages bound along a spine.
12. The combination of claim 11, wherein said device includes a lip spaced apart from said backplate and wherein said magazine extends into space between said backplate and said lip.
13. The combination of claim 9, wherein said lip has front, back, left, and right sides and defines a plurality of opposed discontinuities, said opposed discontinuities including at least a first pair of opposed discontinuities being located on said front and back sides, respectively.
14. The combination of claim 9, wherein after scanning said check-in barcode said personal electronic device substantially instantaneously provides said additional information.
15. The combination of claim 9, wherein said shopper related information includes in-store specials.
16. The combination of claim 15, wherein said additional information includes in-store specials targeted specifically to said shopper.
17. The combination of claim 15, wherein said additional information includes recipes targeted specifically to said shopper.





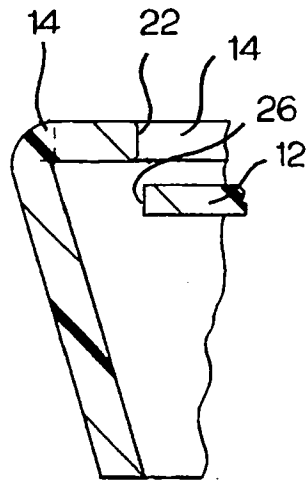


FIG. 3

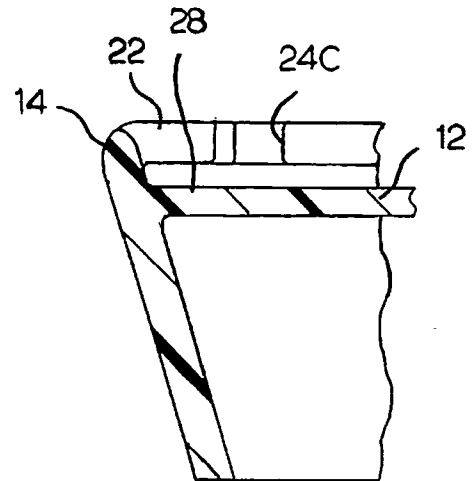


FIG. 4

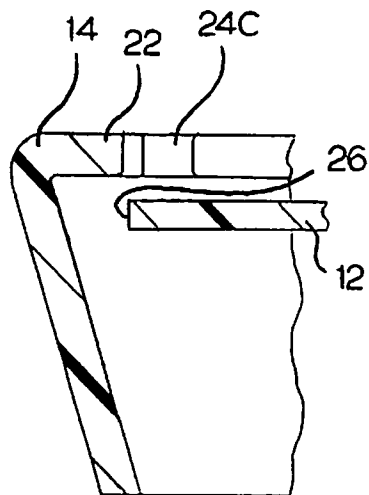


FIG. 5

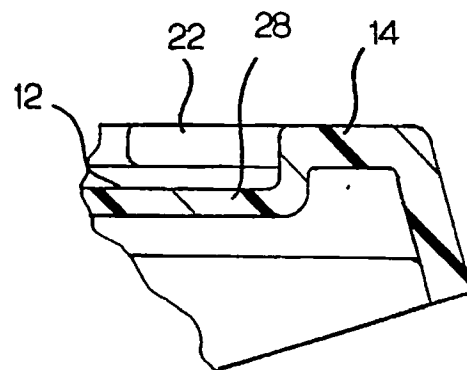


FIG. 6

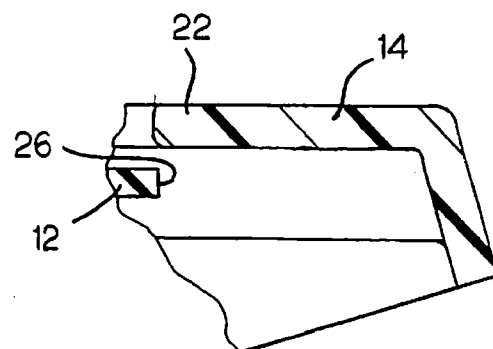


FIG. 7

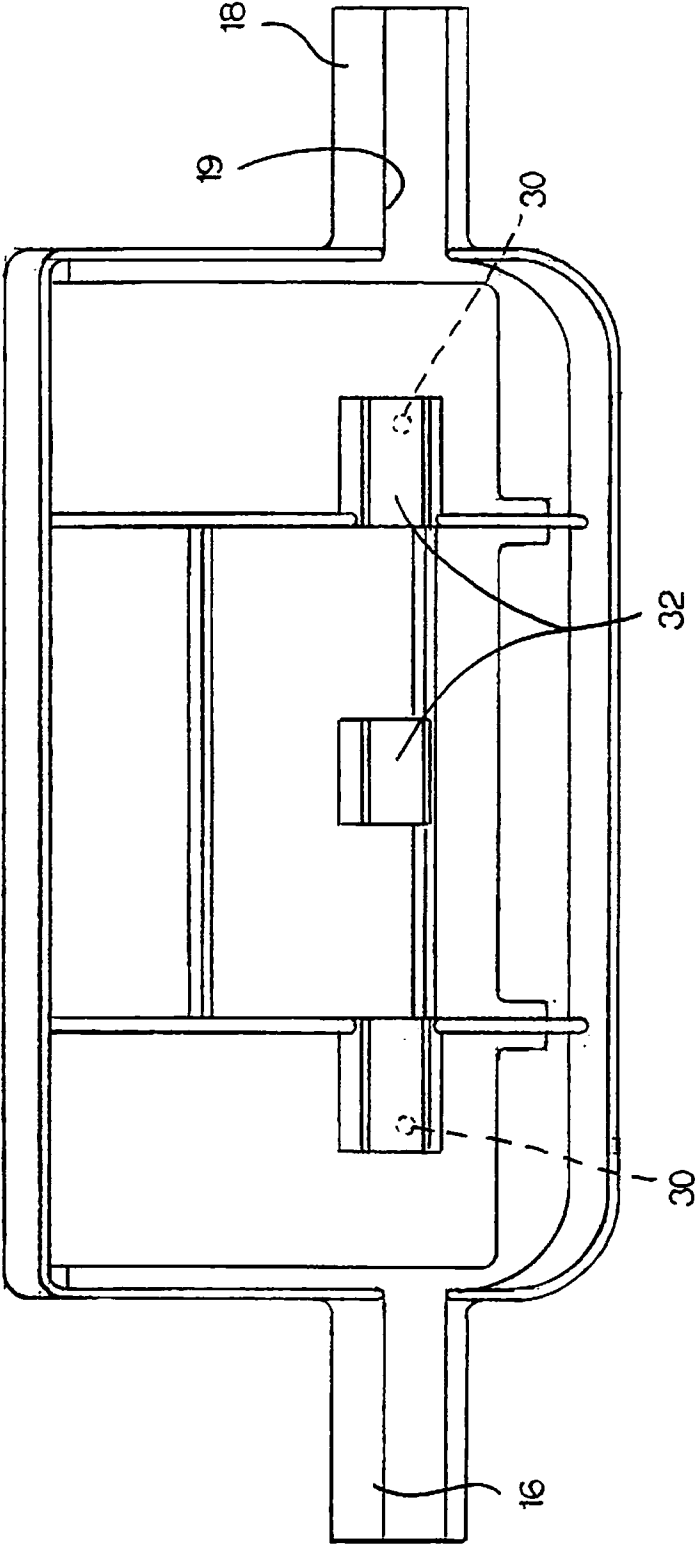


FIG. 8

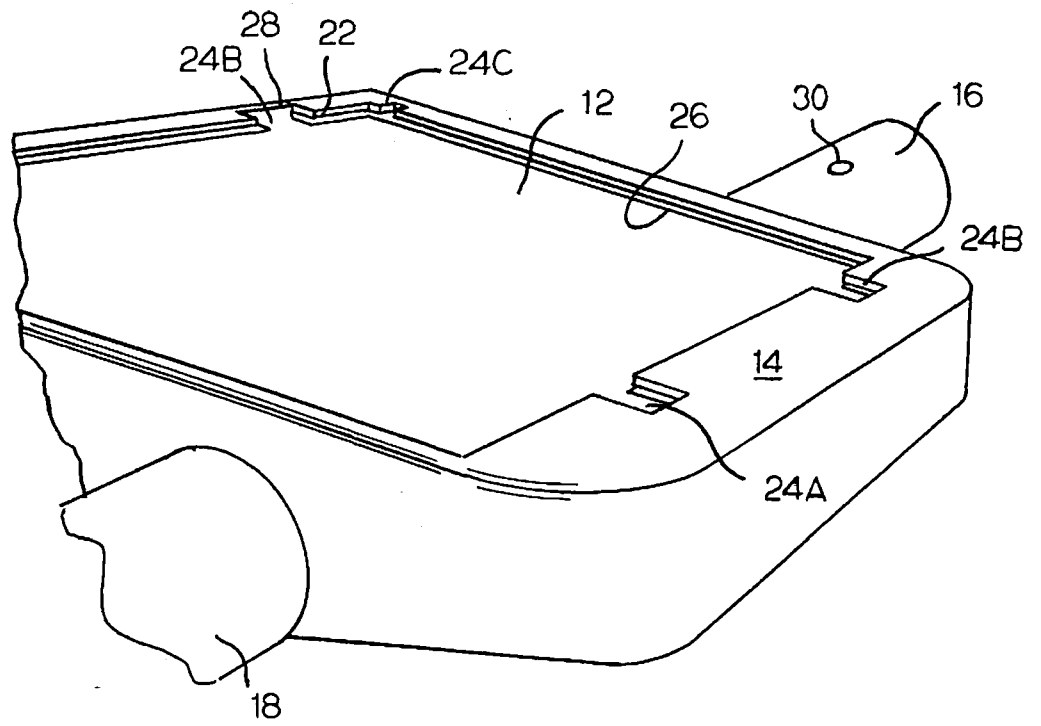


FIG. 9

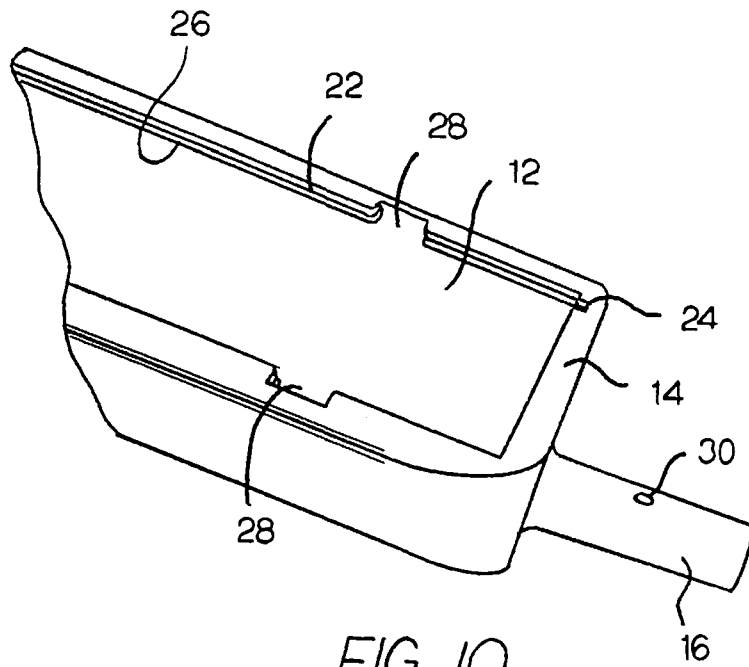
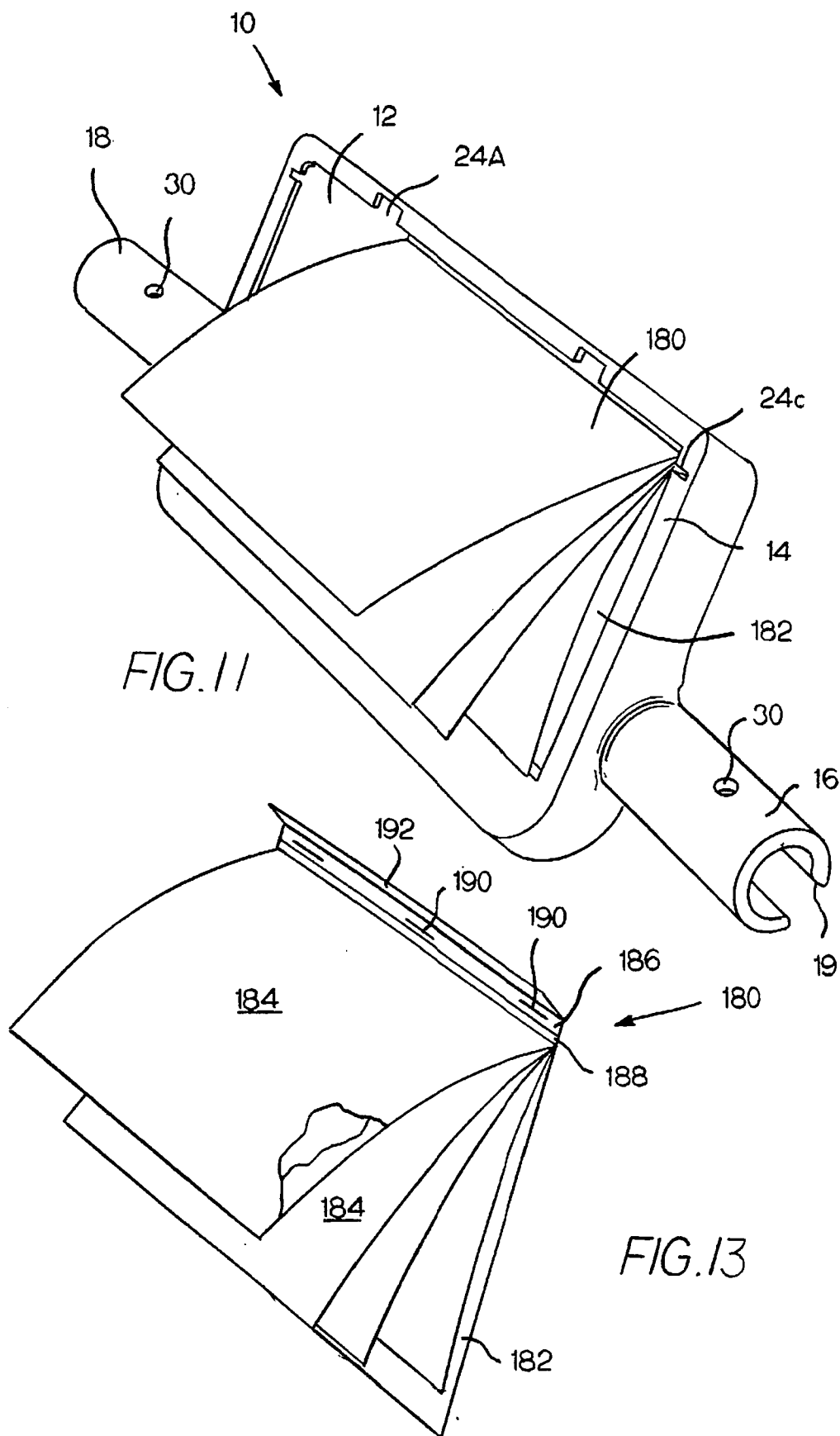


FIG. 10



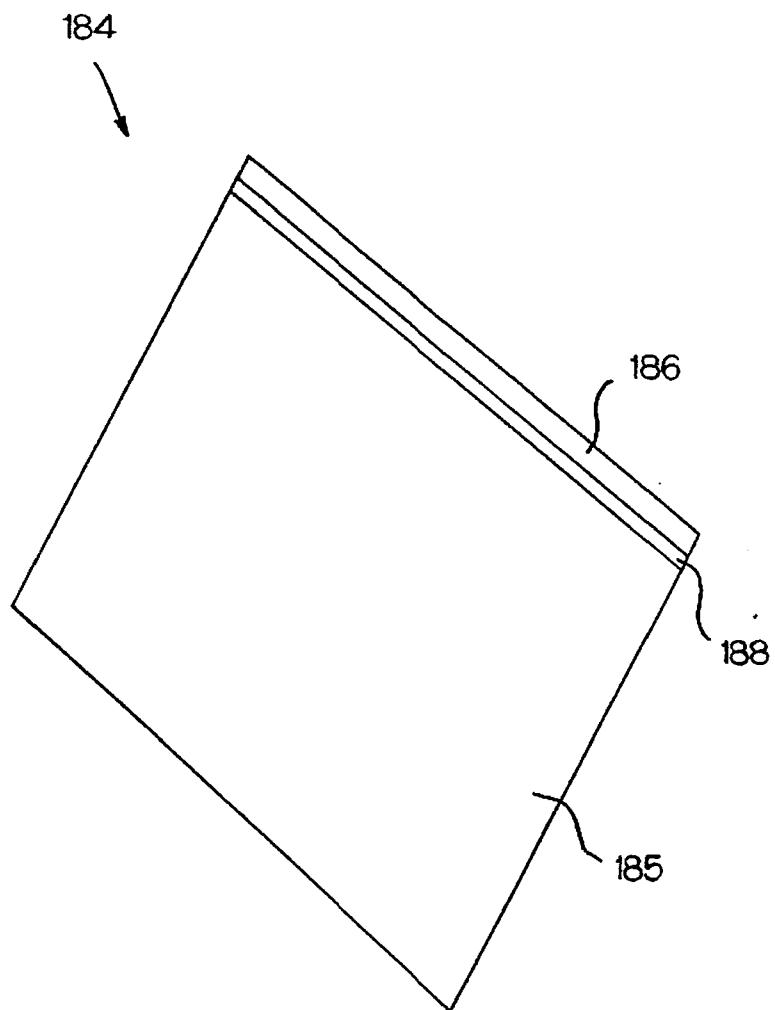
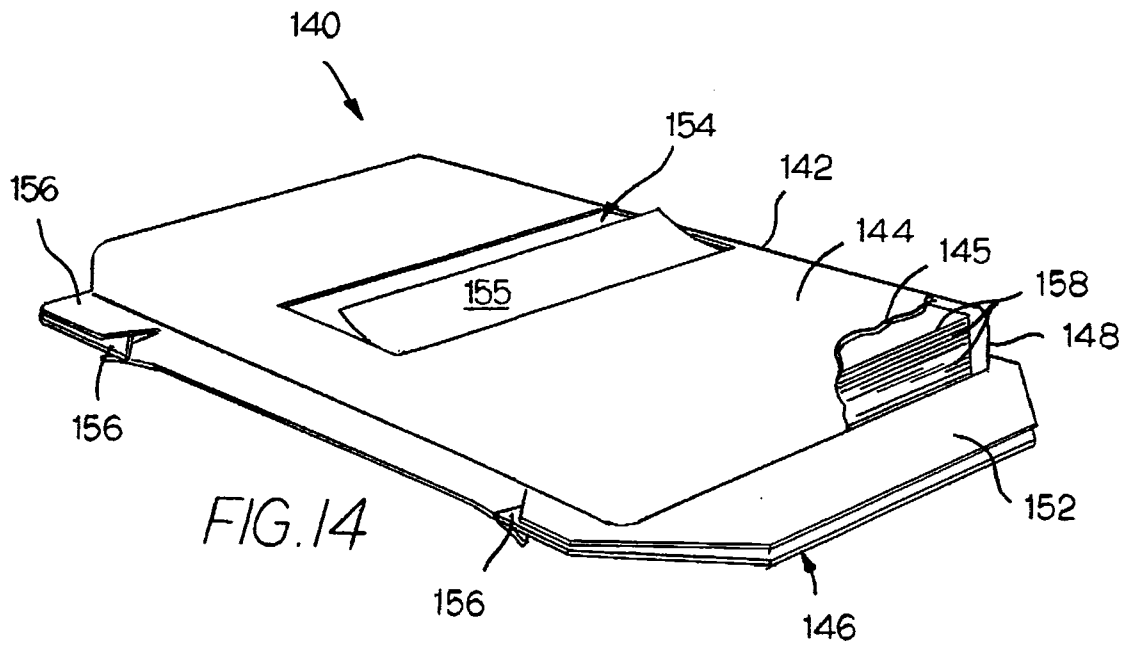
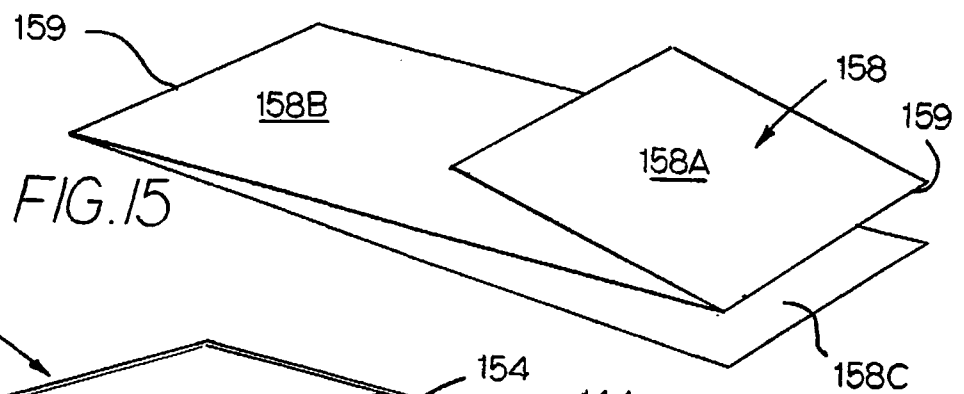
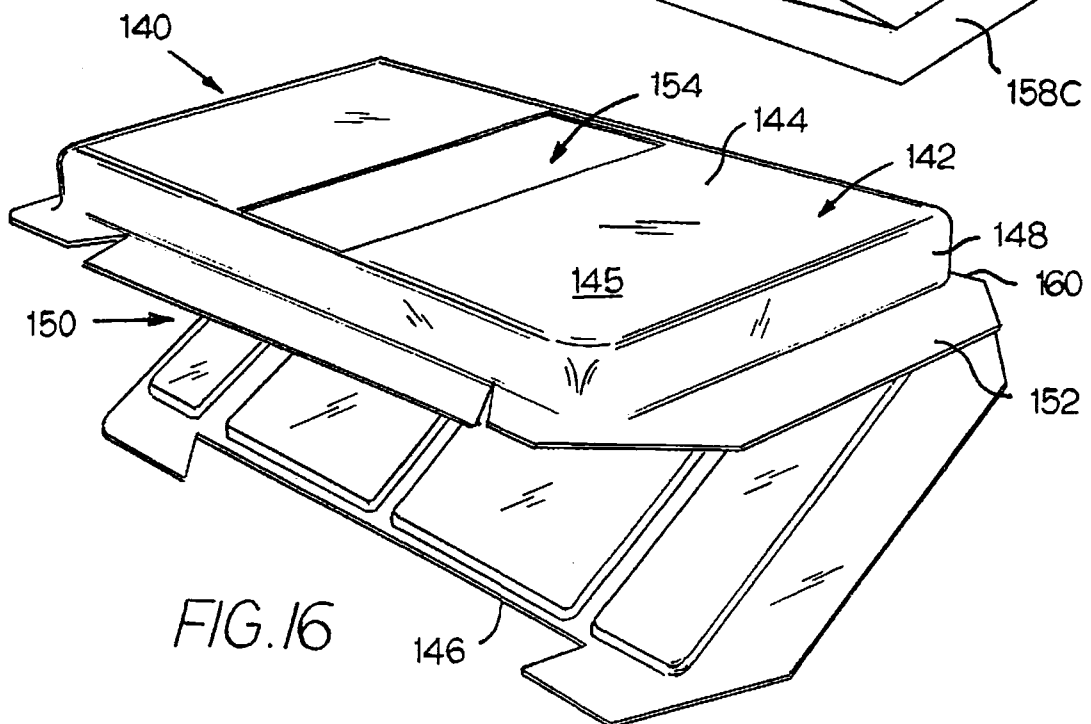


FIG. 12



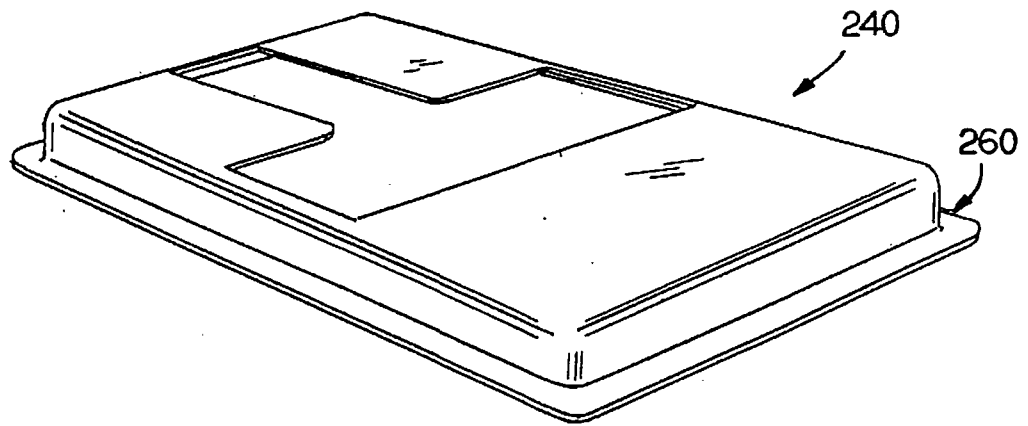


FIG. 17

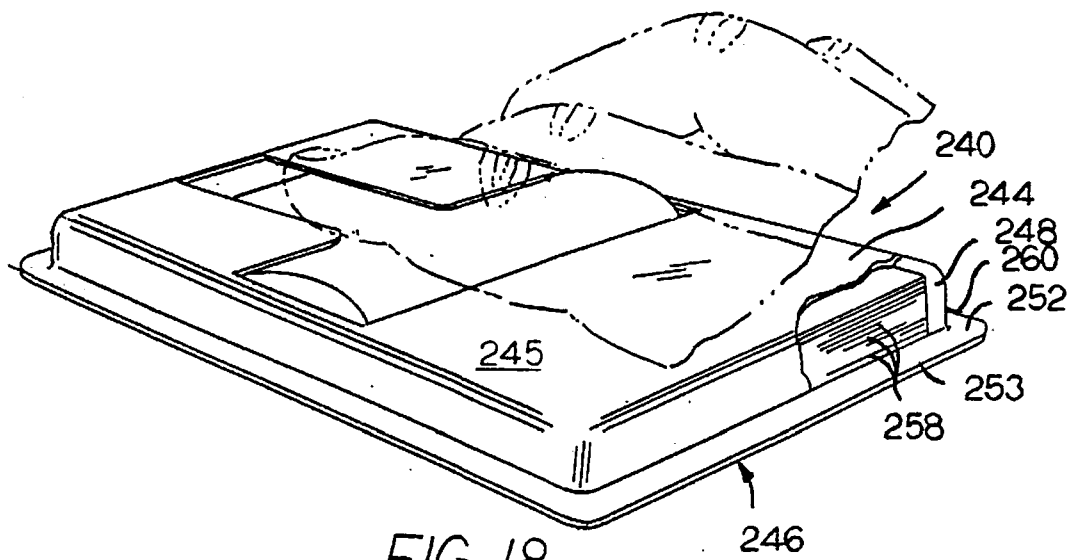


FIG. 18

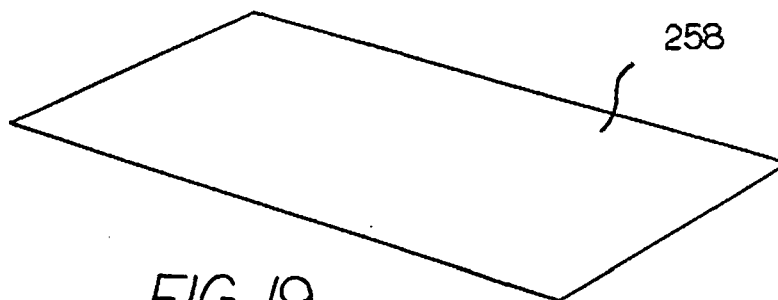
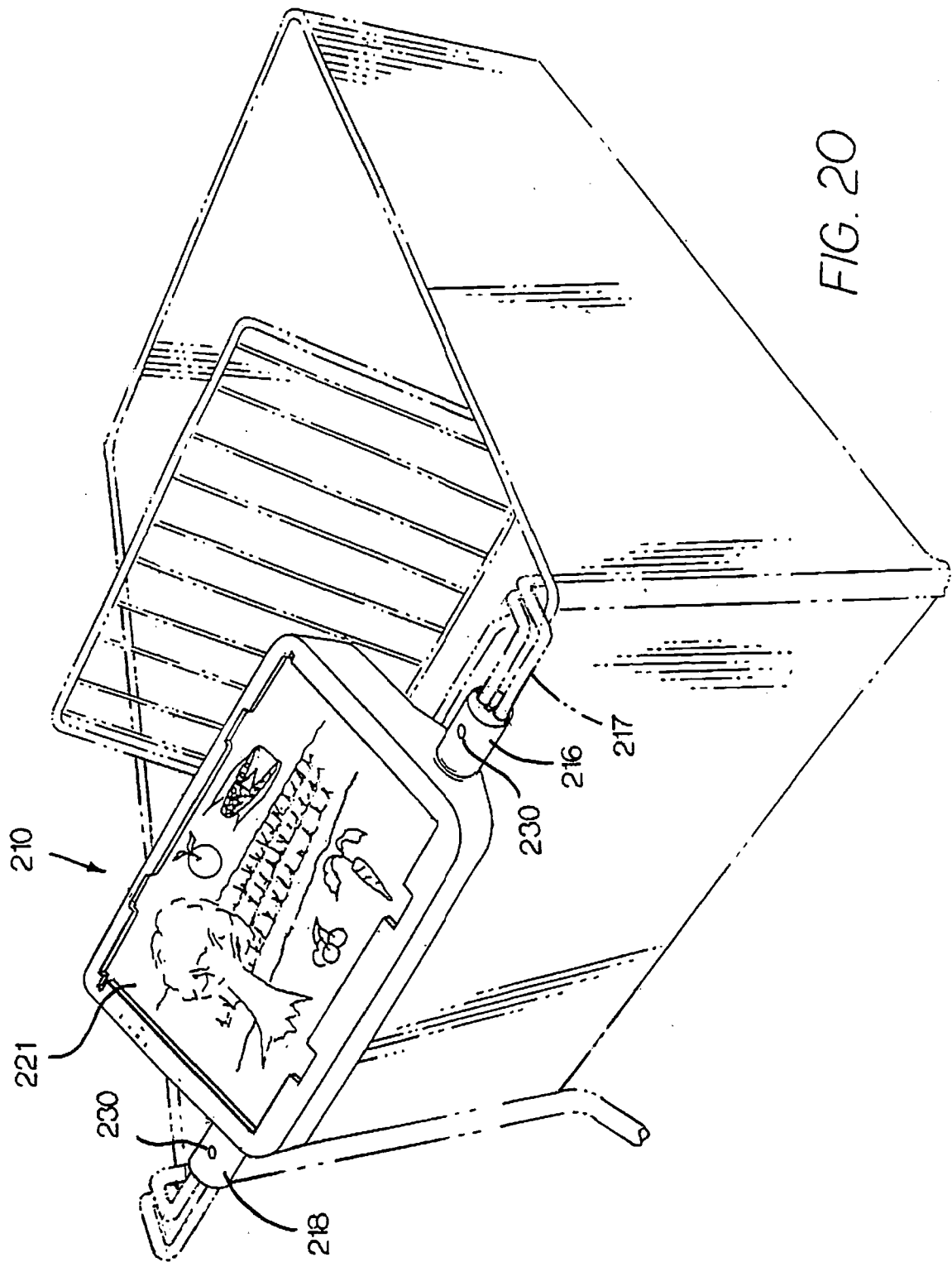


FIG. 19



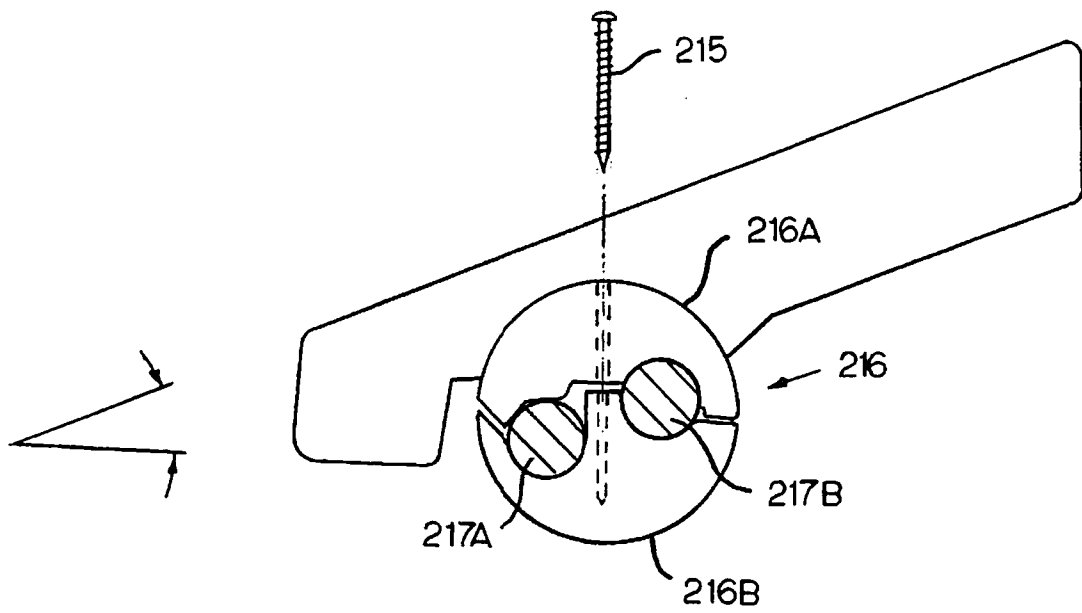


FIG. 21

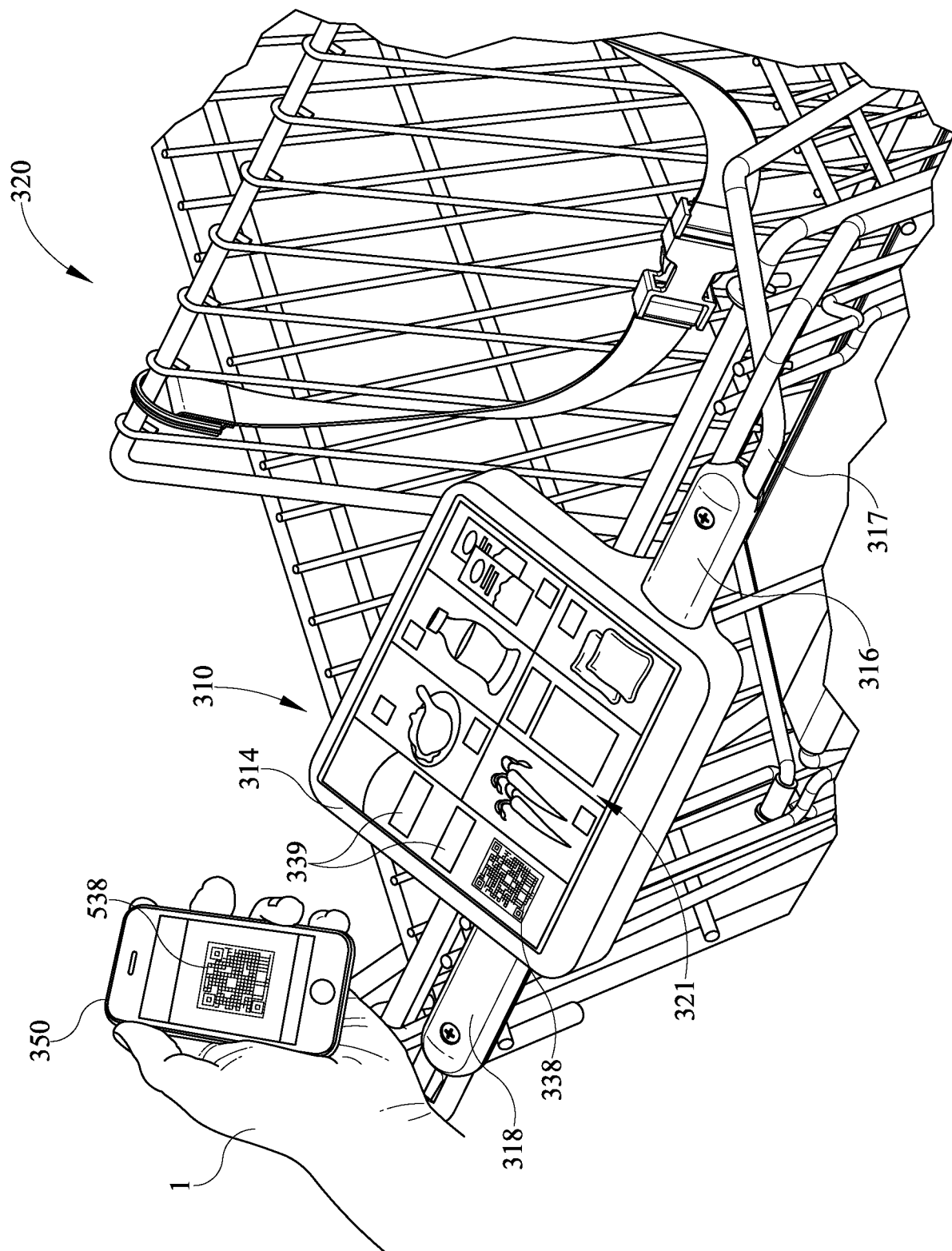


FIG. 22

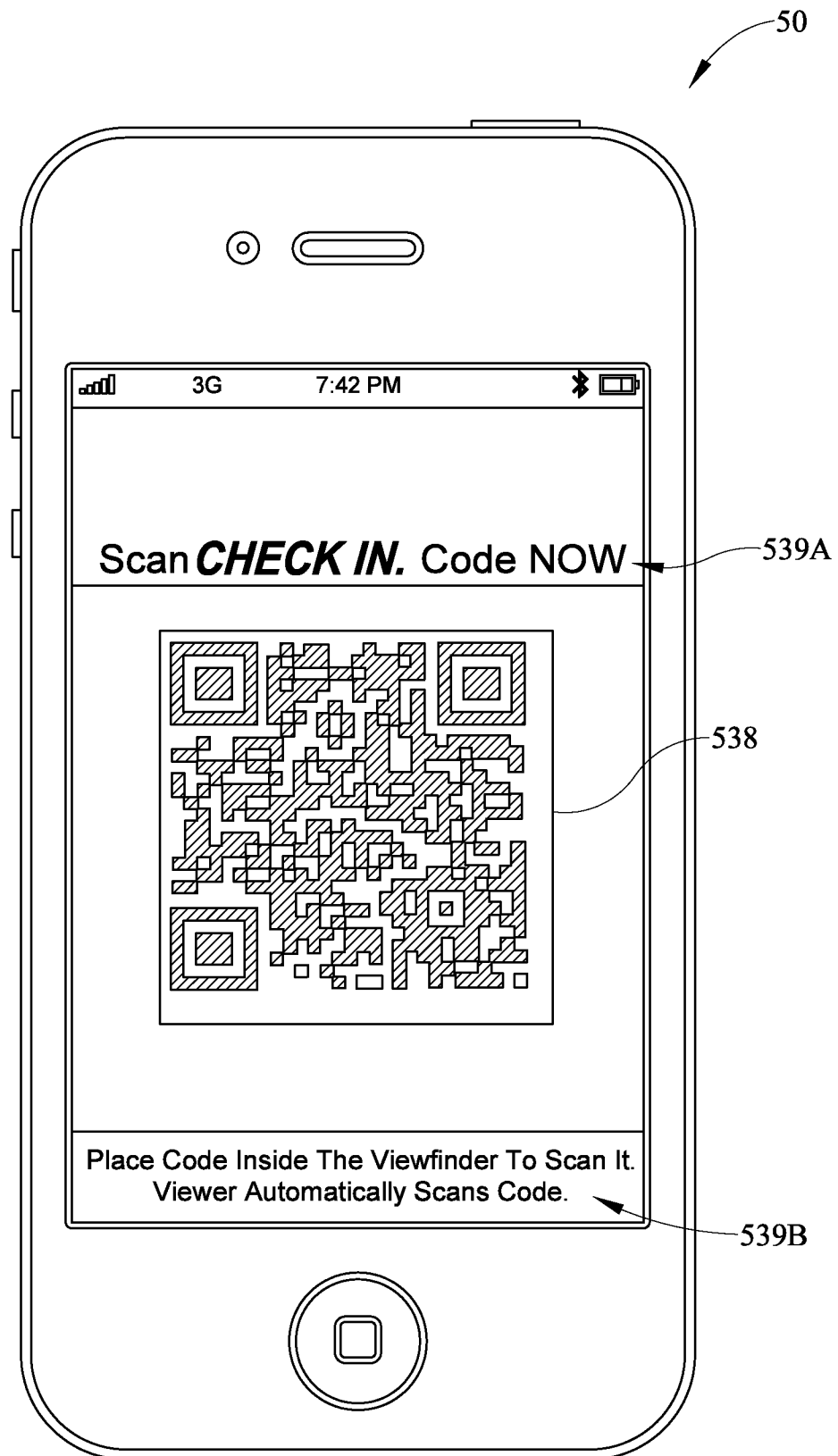


FIG. 23



FIG. 24