A polycarbonate material for retrofit or “like item” replacement of a fuel dispenser pump skirt, riser, and/or valance and related methods is described herein. In one embodiment, a substantially clear polycarbonate material is used that is capable of supporting graphics that are printed on the material’s second surface (i.e., that surface opposite the first surface that is directly exposed to damage) thereby protecting the graphics from scratching and similar types of damage.
FIG. 1
PRIOR ART
FUEL DISPENSER SKIN/PANEL AND RELATED METHODS

FIELD OF THE INVENTION

[0001] The invention relates generally to a retrofit skin or a “like item” replacement, and specifically to an apparatus and methods for improving a fuel pump dispenser by providing a polycarbonate material retrofit skin or a “like item” replacement for the fuel dispenser pump skirt, riser, and/or valance.

BACKGROUND OF THE INVENTION

[0002] A wide variety of devices for dispensing fuel such as gasoline (regular/unleaded), diesel, and propane exist. Although manufactures typically incorporate into each type of fuel dispensing device features unique for the device’s intended purpose or application, generally most fuel dispensing devices are constructed of metal panels with associated graphics that are damaged relatively easily by environmental factors, automobiles, persons dispensing fuel, and vandals. Such damage is unsightly and costly to repair, fix, and/or maintain. Accordingly, such metal fuel dispensing devices can benefit from a design that improves the appearance and durability of the fuel pump dispenser while reducing the cost associated with at least the manufacture, maintenance, and shipping of such devices.

SUMMARY OF THE INVENTION

[0003] The invention provides for, among other things, improved appearance and durability, as well as a reduced cost associated with at least the manufacture, maintenance, and shipping of the fuel pump dispenser by providing a polycarbonate material retrofit skin or “like item” replacement for a fuel dispenser pump skirt, riser, and/or valance.

[0004] In this regard, the polycarbonate material retrofit skin or “like item” replacement is impact resistant and highly impervious to the various types of damage, including denting, scratching, and/or defacing, generally associated with the metal panels typically used on fuel dispensing devices.

[0005] Furthermore, in one embodiment, a substantially clear polycarbonate material can support graphics that are printed on the skin’s or panel’s second surface, i.e., that surface opposite the first surface directly exposed to damage, thereby protecting the graphics from scratching and other types of damage.

[0006] A polycarbonate skin may be placed over an existing damaged fuel dispenser panel and utilize at least some of the existing mounting hardware (i.e., screws, fasteners, etc.) to mount to the fuel dispenser in a retrofit design method. In an alternative application, a damaged panel may be removed from the fuel dispenser and exchanged with a “like item” polycarbonate panel in a replacement design method.

[0007] For the purpose of summarizing the invention certain objects and advantages have been described herein. It is to be understood that not necessarily all such objects or advantages may be achieved in accordance with any particular embodiment of the invention. Thus, for example, those skilled in the art will recognize that the invention may be embodied or carried out in a manner that achieves or optimizes one advantage or group of advantages as taught herein without necessarily achieving other objects or advantages as may be taught or suggested herein.

These and other embodiments will become readily apparent to those skilled in the art from the following detailed description of the preferred embodiments having reference to the attached figures, the invention not being limited to any particular preferred embodiment(s) disclosed.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 shows a prior art fuel dispenser including a pump skirt, risers, and valance.

[0009] FIGS. 2-4 show various polycarbonate fuel pump skirts adapted for retrofit over existing fuel dispensing pump skirts.

[0010] FIGS. 5-6 each illustrate a polycarbonate valance adapted to replace an existing fuel dispensing valance.

[0011] FIG. 7 shows a polycarbonate riser adapted for retrofit over an existing fuel dispensing riser.

DETAILED DESCRIPTION

[0012] Embodiments of the present invention will now be described with references to the accompanying Figures, wherein like reference numerals refer to like elements throughout. The terminology used in the description presented herein is not intended to be interpreted in any limited or restrictive manner, simply because it is being utilized in conjunction with a detailed description of certain embodiments of the invention. Furthermore, various embodiments of the invention (whether or not specifically described herein) may include novel features, no single one of which is solely responsible for its desirable attributes or which is essential to practicing the invention herein described.

[0013] FIG. 1 shows one example of a prior art device 5 for dispensing fuel such as gasoline (regular/unleaded), diesel, and propane. The operation and connectivity of the various fuel dispensing device’s mechanical and electrical elements are well known in the art. Such fuel dispensing devices 5, at least in regard to a gasoline dispenser, may be adapted to dispense single or multiple grade fuel products. A major portion of the fuel dispensing device’s structure (that portion of the device that supports or houses the primary fuel dispensing elements) is typically constructed of a heavy gauge metal and includes a pump skirt (bottom portion) 10, valance (top portion) 20, and right and left risers (middle portions) 15 connecting the pump skirt 10 to the valance 20. Other features such as a customer interface (graphic display screen and/or touch pad) to facilitate fuel selection, cross-merchandising opportunities, payment transaction, and receipt and/or coupon production may be provided.

[0014] In addition to providing a support or housing function, the metal panels typically provide a surface for the application of color schemes and/or graphics such as the dispensed fuel’s brand name, accepted credit cards, fueling instructions, and assorted advertisements, to name a few. Such color schemes are typically powder coated on the metal while the graphics may be applied to the outside of the metal skin (first side surface application) in a variety of ways including being silk-screened directly on the metal surface and/or to the powder coated surface, and baked or ultraviolet...
cured to facilitate proper adhesion of the graphics to the applied color or metal. Alternatively, the graphics may be applied directly to the metal surface and/or powder coated surface through a peel-and-stick type application.

[0016] Within the fueling station surroundings, the metal panels 10, 15, 20 of fuel dispensers 5 are susceptible to many potentially damaging factors. In this regard, environmental factors, automobiles, persons dispensing fuel, and vandals may damage the metal skins relatively easily. Such damage is generally unsightly and costly to repair, fix, and/or maintain.

[0017] Historically, repair of the damaged metal panel was facilitated by: (1) replacement application (i.e. removal and exchange of the damaged metal panel with a new “like item” metal part from the manufacturer); or (2) retrofit application, where a thin gauge metal skin with graphics pre-allied was slipped over the original metal panel (like a sleeve) to provide a new clean aesthetically pleasing appearance.

[0018] As shown in FIGS. 2-7, the invention described herein provides for an improved fuel pump dispenser by providing a polycarbonate or similar material retrofit skin or “like item” replacement panel for the fuel dispenser pump skirt, riser, and/or valance. As the polycarbonate material is designed as a retrofit for replacement for an existing fuel dispenser panel the shape, size, and mounting configuration of the polycarbonate material will vary depending on the model fuel dispenser and panel type (pump skirt, riser, or valance). For example, FIGS. 2 and 3 each show a polycarbonate pump skirt. However, the pump skirt of FIG. 3, is much larger than the pump skirt shown in FIG. 2 as it is configured to retrofit a fuel dispenser pump skirt that extends upward to encircle three fuel dispensing nozzle supports.

[0019] In regard to either the fuel dispenser riser or pump skirt, preferably, a polycarbonate skin is placed over the existing damaged fuel dispenser panel and utilizes at least some of the existing mounting hardware (i.e., screws, fasteners, etc.) to mount to the fuel dispenser in a retrofit design method. Alternatively, a damaged valance panel is preferably removed from the fuel dispenser and exchanged with a “like item” polycarbonate panel in a replacement design method. Although preferred applications for the polycarbonate material are indicated above, persons of ordinary skill in the art will understand that the polycarbonate material may be constructed as either a retrofit or replacement application for either the pump skirt, riser, and/or valance.

[0020] In a preferred embodiment, the invention utilizes a relatively thin polycarbonate material. Due to its impact resistant nature the material is more dent resistant than the metal panels typically available on fuel dispensers. In this regard, the polycarbonate material acts much like an automobile bumper bouncing back to its original form after impact to reduce dents and similar types of damage. As indicated above, other materials exhibiting these properties may be used in lieu of polycarbonate.

[0021] In one embodiment, a substantially clear polycarbonate material is used that is capable of supporting information such as graphics, texts, etc., that is applied/printed on the material’s second side surface (i.e., that surface opposite the first side surface that is directly exposed to damage) thereby protecting the graphics from scratching and similar types of damage. In an alternative embodiment, the graphics may be applied/printed on the substantially clear polycarbonate material’s first side surface; however, the scratch resistant benefit of printing on the second side surface would be negated.

[0022] Other embodiments (whether clear or substantially clear or transparent or translucent, or even opaque) could provide other of the benefits of the invention, independent of whether graphics or other information is presented on the polycarbonate element. In addition, even “clear” embodiments could be tinted or otherwise treated to provide a desired coloring or other effect to the polycarbonate element. Among those other benefits of the invention are, without limitation, the lower costs for fabrication/shipping, less (and less expensive) maintenance and repair, etc.

[0023] The invention also can be utilized in new fuel dispensing units, by simply using the polycarbonate or similar skin elements in lieu of the conventional metal or other skin elements.

[0024] Other benefits of using a polycarbonate material as a retrofit or replacement skin/panel material for the fuel dispenser pump skirt, riser, and/or valance include lower manufacturing and shipping costs due to the polycarbonate’s lower material cost and weight when compared to traditional metal fuel dispenser panels.

[0025] The apparatus and methods of the present invention have been described with some particularity, but the specific designs, constructions and steps disclosed are not to be taken as delimiting the invention. Obvious modifications will make themselves apparent to those of ordinary skill in the art, all of which will not depart from the essence of the invention and all such changes and modifications are intended to be encompassed within the appended claims.

What is claimed is:

1. A substantially clear polycarbonate material having a first side surface and a second side surface, wherein the polycarbonate material is constructed for retrofit or replacement of a portion of an existing fuel dispenser.

2. The polycarbonate material of claim 1, wherein the portion of the existing fuel dispenser is a pump skirt.

3. The polycarbonate material of claim 1, wherein the portion of the existing fuel dispenser is a riser.

4. The polycarbonate material of claim 1, wherein the portion of the existing fuel dispenser is a valance.

5. The polycarbonate material of claim 1, wherein information is applied to the second side surface of polycarbonate material.

6. A method for retrofitting or replacing a portion of an existing fuel dispensing, comprising the steps of: providing the clear polycarbonate material of claim 1; and retrofitting or replacing a portion of an existing fuel dispenser with the clear polycarbonate material.

7. The method of claim 6, wherein the step of retrofitting or replacing a portion of an existing fuel dispenser further includes the step of retrofitting or replacing a dispenser pump skirt.

8. The method of claim 6, wherein the step of retrofitting or replacing a portion of an existing fuel dispenser further includes the step of retrofitting or replacing a dispenser riser.
9. The method of claim 6, wherein the step of retrofitting or replacing a portion of an existing fuel dispenser further includes the step of retrofitting or replacing a dispenser valance.

10. The method of claim 6, further including the step of applying information to the second side surface of the polycarbonate material.

11. A replacement cover portion for a gasoline pump, including a polycarbonate element having a first surface and a second surface, said polycarbonate element including connection means to permit attachment to an existing fuel dispenser.

12. A polycarbonate skin element for a fuel dispenser, including a skin element formed from polycarbonate, said skin element being configured to cover at least a portion of the fuel dispenser, said skin element having an exposed first surface configured to form at least a portion of the exterior of the assembly after the skin element is assembled with the fuel dispenser.

13. The skin element of claim 12, in which said skin element is at least substantially clear, and said skin element includes a second surface configured to be positioned interior from said first exterior surface after the skin element is assembled with the fuel dispenser.

14. The skin element of claim 13, further including graphic elements positioned further interior of said second interior surface, so that said graphics are visible from said first exterior surface side of said skin element.