



US008910998B1

(12) **United States Patent**
Devathi

(10) **Patent No.:** **US 8,910,998 B1**
(45) **Date of Patent:** **Dec. 16, 2014**

(54) **SYSTEMS AND METHODS FOR ALTERING THE COLOR, APPEARANCE, OR FEEL OF A VEHICLE SURFACE**

(71) Applicant: **Srinivas S. Devathi**, Austin, TX (US)

(72) Inventor: **Srinivas S. Devathi**, Austin, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/227,859**

(22) Filed: **Mar. 27, 2014**

(51) **Int. Cl.**
B60J 10/00 (2006.01)
B60J 11/00 (2006.01)
B21D 53/88 (2006.01)
F17C 13/00 (2006.01)
B62D 65/08 (2006.01)

(52) **U.S. Cl.**
CPC **B60J 11/00** (2013.01); **B21D 53/88** (2013.01); **F17C 13/00** (2013.01); **B60J 10/0088** (2013.01)
USPC **296/136.07**; 53/131.1; 53/411; 427/238; 427/294

(58) **Field of Classification Search**
USPC 53/131.1, 284.7, 403, 411, 467; 156/145, 212, 213; 296/136.02, 296/136.07; 427/230, 238, 294, 295, 350; 428/31, 34–36.92
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,584,518 A * 5/1926 Drake 150/166
2,020,255 A * 11/1935 Copeman 428/440
2,807,356 A * 9/1957 Blum 206/335
4,294,483 A * 10/1981 Ferris 296/136.02
4,635,996 A * 1/1987 Hirose 296/136.07

4,810,540 A * 3/1989 Ellison et al. 428/31
4,964,667 A * 10/1990 Reis et al. 296/95.1
5,042,836 A * 8/1991 Swanson 280/770
5,056,817 A * 10/1991 Fuller 280/770
5,158,324 A * 10/1992 Flesher 280/770
5,242,206 A * 9/1993 Heck 296/136.02
5,246,516 A * 9/1993 Rias 156/202
5,342,666 A * 8/1994 Ellison et al. 428/46
5,350,000 A * 9/1994 Wang 150/166
5,429,406 A * 7/1995 Huang 296/95.1
5,664,825 A * 9/1997 Henke et al. 296/136.02
5,738,403 A * 4/1998 Tyson 296/136.02
5,804,297 A 9/1998 Colvin et al.
5,890,525 A * 4/1999 Shores 150/166
6,017,079 A * 1/2000 Warner 296/136.07
6,030,702 A 2/2000 Matsui et al.
6,044,881 A * 4/2000 Welch et al. 150/166
6,056,347 A * 5/2000 D'Adamo 296/136.02
6,439,644 B1 * 8/2002 Jester 296/136.02

(Continued)

FOREIGN PATENT DOCUMENTS

CA 2236759 12/1998
CN 102126870 A 7/2011

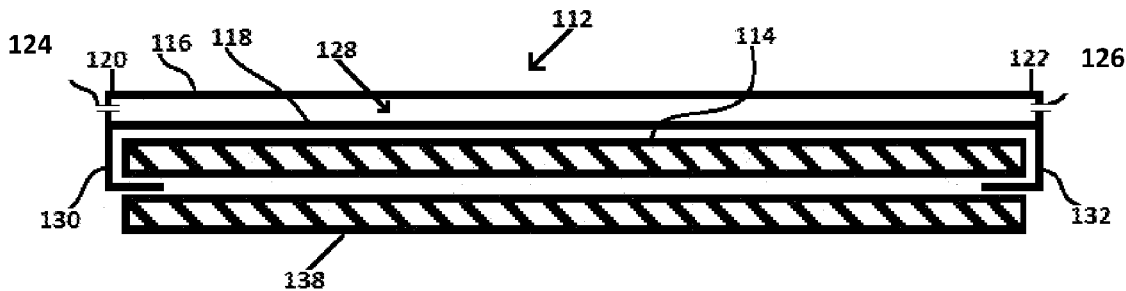
(Continued)

Primary Examiner — Glenn Dayoan
Assistant Examiner — Paul Chenevert
(74) *Attorney, Agent, or Firm* — Hulseley Calhoun, PC

(57) **ABSTRACT**

Systems and methods for altering the appearance and/or texture of a vehicle surface include installing a vest relative to a vehicle surface such that an exterior side of the vest, spaced from the vehicle surface, defines a fluid-tight space between the vehicle surface and the exterior side of the vest. Visual media can be provided into and from the fluid-tight space using one or more ports, the exterior side being at least partially transparent or translucent such that the visible media within the fluid-tight space are visible through the exterior side of the vest, thereby allowing the repeatable alteration of the appearance of the surface.

23 Claims, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

6,491,335	B1 *	12/2002	Cohill	296/136.07
6,551,432	B1	4/2003	Spain et al.	
7,320,824	B2	1/2008	Ohgane et al.	
7,360,820	B2 *	4/2008	Tellez	296/136.02
7,640,698	B2 *	1/2010	Graham	52/2.17
7,677,637	B2 *	3/2010	Aydar et al.	296/136.07
7,740,912	B2 *	6/2010	Uhlianuk et al.	427/385.5
7,868,778	B2 *	1/2011	Kenwright	340/686.6
2005/0269738	A1 *	12/2005	Christen	264/236

2006/0103165	A1 *	5/2006	Ward	296/136.02
2007/0138829	A1 *	6/2007	Leyendecker et al.	296/136.02
2007/0278817	A1 *	12/2007	Dorsey	296/136.07
2011/0014297	A1	1/2011	Lee et al.	
2014/0065327	A1 *	3/2014	Kramer et al.	428/34

FOREIGN PATENT DOCUMENTS

CN	102671844	A	9/2012
EP	0 261 815	A2	8/1987
KR	1020030082106		10/2003

* cited by examiner

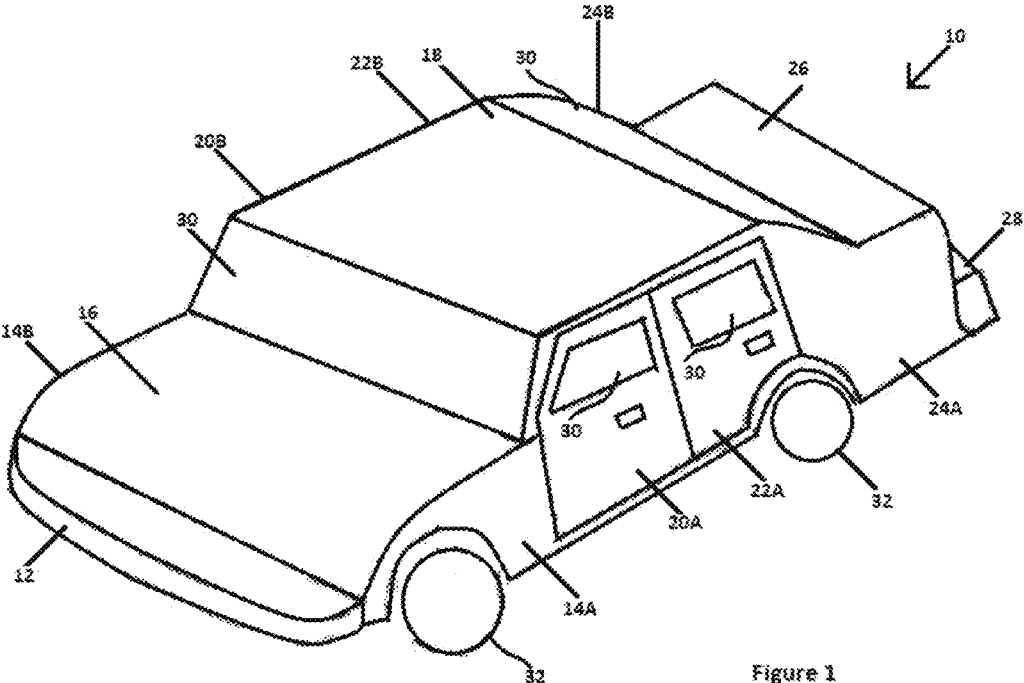


Figure 1

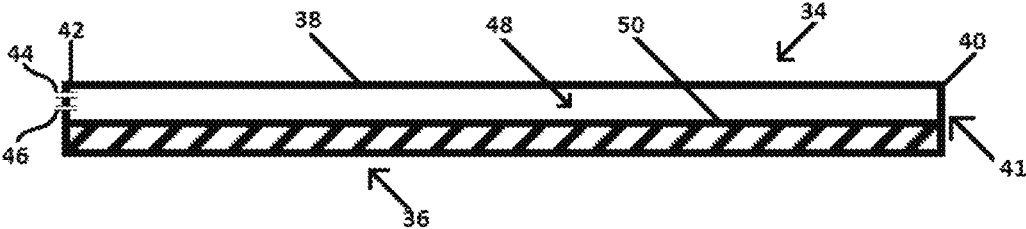


Figure 2

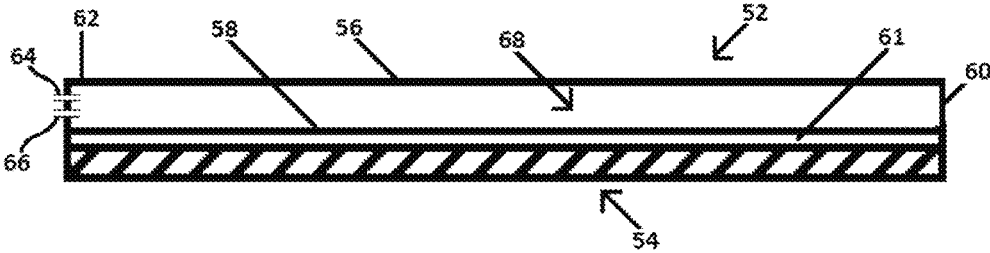
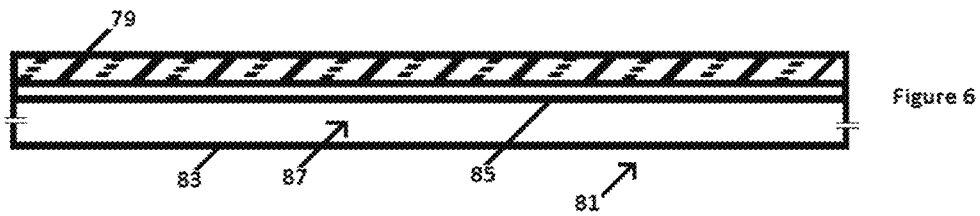
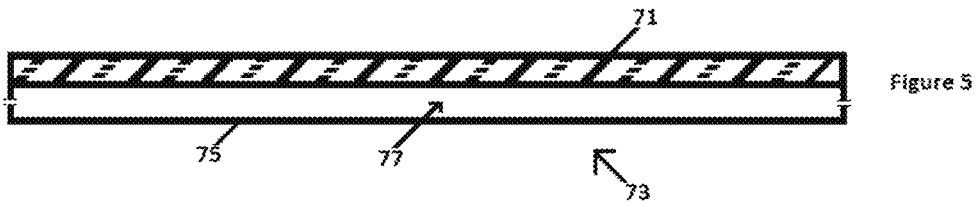
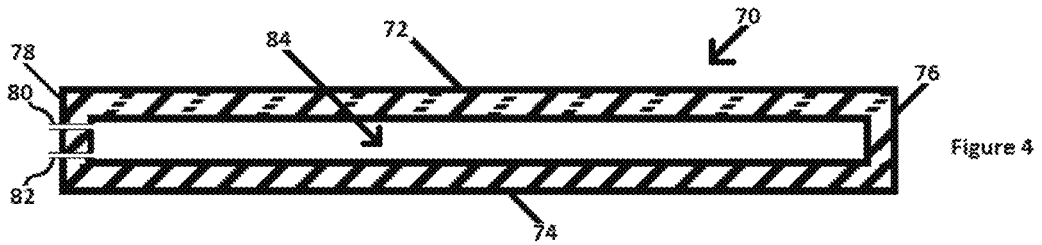


Figure 3



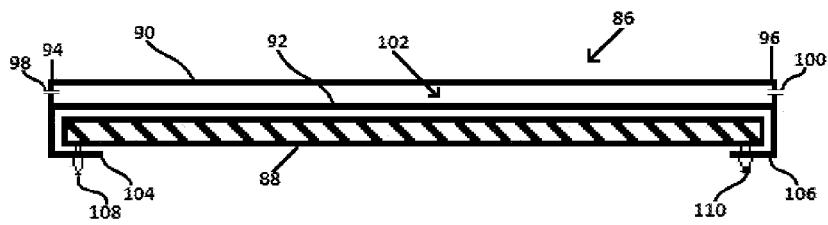


Figure 7

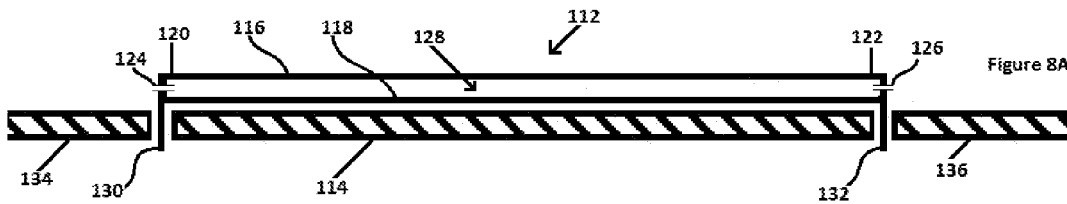


Figure 8A

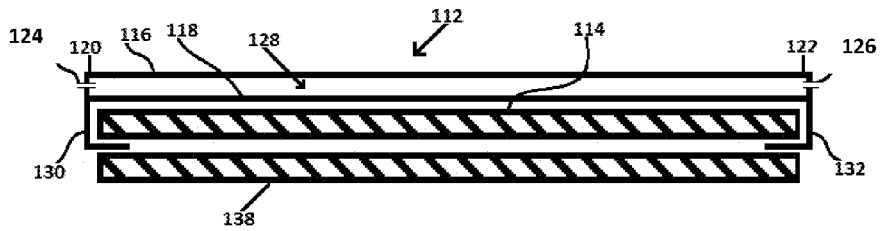


Figure 8B

1

SYSTEMS AND METHODS FOR ALTERING THE COLOR, APPEARANCE, OR FEEL OF A VEHICLE SURFACE

FIELD

Embodiments usable within the scope of the present disclosure relate, generally, to devices, systems, and methods usable to alter the visual appearance and/or feel (e.g., texture) of an object (e.g., a surface thereof), and more specifically, systems and methods usable to efficiently and cost-effectively change the color, visual appearance, and/or other characteristic of automobiles and/or other vehicles.

BACKGROUND

Conventionally, portions of the body of an automobile (e.g., pieces of metal framework, panels, and/or similar materials) are provided with a desired visual appearance (e.g., color, reflectiveness, a glossy/metallic sheen, etc.) through the application of paint to an exterior surface thereof. After application, the paint must be permitted to dry, which can be facilitated through the application of air and/or heat, or simply permitted to occur via the passage of time. Optionally, a protective, clear coating, such as a painted coating and/or an adhesive film, can be provided over the paint. When it is desired to change the color of a vehicle, the original paint must be removed (e.g., through solvents and/or physical/mechanical means), and the process must be repeated. Both the application of an original color to a vehicle, and the alteration of that original color, can be time-consuming and expensive processes. As such, after the initial purchase of a vehicle, individuals are inclined to repaint their vehicles only rarely. Many individuals refrain from repainting and/or customizing the exterior colors and/or other visual and/or tactile aspects of their vehicle entirely, and simply retain a single cosmetic appearance and/or texture throughout the life of the vehicle.

Due to the time required to paint an automobile and permit the paint to dry, the application of paint to cars and/or other vehicles can become a bottle-neck in the assembly process of vehicles, significantly increasing the overall manufacturing time required to produce a vehicle, while occupying machinery and/or space in a manner that can slow or limit the overall number of vehicles that can be manufactured simultaneously. For example, a typical process for manufacturing a painted vehicle includes manufacturing body portions of a vehicle at a press shop and/or body shop, producing what is termed a "body in whites," due to the materials (e.g., steel, aluminum, alloys, carbon composites, plastic, fiberglass, and/or other composite materials) that provide the body portions with a white and/or silver color. The body portions are subsequently transported to a paint shop, where they are dipped in a positively-charged protective dip intended to attract and/or absorb protective coats and sealants, then brushed. Subsequent to this step, the body portions are transported to a color shop, where manual or automated equipment can be used to paint each portion a selected color, typically using acrylic enamels or similar types of paint. Many large vehicle manufacturers consume an estimated 18,000 liters of paint per day or more through this process. The painted body portions must be dried, typically for multiple hours at high temperatures (e.g., approximately 140 degrees Fahrenheit), which slows the manufacturing process and associated throughput. It is estimated that approximately one third of the total capital investment in a facility for production of automobiles relates to painting vehicle body panels and other portions.

2

The application of multiple layers of pigmented paints to automobile body portions requires elaborate facilities, large spaces, and significant expense. For example, a sizeable area with sufficient floor space for one or multiple vehicles must be maintained, in a clean-room environment, to allow the spraying of paint and clear coat, and the baking and curing of these components. Additionally, disposal, drainage, evaporation, and/or runoff of many solvent-based paints and related solutions has become of increasing environmental concern and/or subject to one or more regulations.

Because the color of a vehicle can only be modified through time-consuming and costly procedures, consumers restrict purchases of vehicles to those having a preferred color, shifting the burden of this expense and inconvenience to manufacturers and dealers. Vehicle manufacturers and dealers must maintain a sizeable inventory of vehicles, of various models, each in multiple colors, increasing the cost of manufacture, as generally identical vehicles that differ only in cosmetic appearance must be constructed and stored for future purchase. This practice also creates a significant overhead expense in the form of large warehouses and dealership lots necessary to store a large number of vehicles, transportation costs required to move such vehicles, and the logistical difficulties inherent in moving and/or acquiring vehicles of a preferred color/appearance/texture at a given location not currently in stock at the request of a consumer.

A need exists for an efficient and cost-effective system and method for altering the color and/or visual appearance, and/or the tactile/texture/feel of a vehicle, or any other object or surface, thereby reducing lost time, reducing expense, increasing manufacturing productivity, and reducing or eliminating many of the difficulties inherent in maintaining and transporting inventories, while providing consumers with the ability to flexibly alter characteristics of their vehicle or any other surface, repeatedly.

SUMMARY

Embodiments usable within the scope of the present disclosure include systems and methods for altering the visible appearance and/or tactile experience/texture of a vehicle surface (e.g., a body portion/panel of a vehicle). While embodiments described herein focus on the application of the disclosed systems and methods to automobiles and/or other types of vehicles as one exemplary use, it should be understood that embodiments usable within the scope of the present disclosure could be used to alter the visual and/or tactile characteristics of any object or portion thereof.

In use an at least partially transparent and/or at least partially translucent object, hereafter termed a "vest," is provided into association with at least a portion of a surface (e.g., of a vehicle or other object). A vest can include an edge (e.g., the perimeter thereof) secured, directly or indirectly, to respective portions of the surface (e.g., the perimeter of the surface or another suitable portion), and an exterior side (e.g., extending between the shape defined by the edge) that is at least partially transparent and/or translucent, and spaced a distance from the surface to define an enclosed space (e.g., a fluid-tight space) between the surface and the exterior side, such that media (e.g., colored fluids and/or similar media) within the space can be visualized through the exterior side of the vest. The vest can include one or more ports (e.g., one-way valves, or bidirectional/multidirectional valves usable as an inlet and outlet ports, or other similar flow control means) for communicating between the fluid-tight space within the vest and a region exterior to the space. In use, the one or more ports can receive visible media into the space and to flow visible media

from the space, allowing repeated use of the space to display visible (e.g., colored) media therein through the exterior side of the vest. The space can have any dimensions without departing from the scope of the present disclosure; however in an embodiment, the space can be generally thin (e.g., ranging in thickness from one micron to five millimeters), intended for containing a thickness of a visible medium sufficient to impart a desired visual characteristic without requiring excessive time to flow visible media into and/or from the space.

While a vest can be formed from any generally durable material able to form an enclosed space capable of retaining a fluid, in an embodiment, the vest can be formed from polyester, acrylic, fiberglass, polyethylene, plastic, silicone, polypropylene, polystyrene, polyester, glass, fiber, thermoplastic, thermoset, latex, polymer fibers, polyvinyl chloride, polyethylene terephthalate, nylon, vinyl, thermoplastic materials, thermoset materials, phenolics, furane resins, amino resins, epoxy, alkyds, allyl plastics, amines, polyamides, polyethylene resins, polycarbonate, acrylic resin, cellulose acetate, cellulose nitrate, cellulose acetate butyrate, cellulose propionate, rubber, neoprene, Thiokol, nitrile, butyl rubber, silicone rubber, acetals, cellulose, fluoroplastics, ionomers, polyimide, polyolefins, polysulfone, composites, polythene, epoxides, polyurethane, synthetic rubber, synthetic plastic, synthetic resin, other similar materials, composite materials, or combinations thereof. In an embodiment, the interior of the vest (e.g., adjacent to the space) can include a hydrophobic coating adapted to facilitate removal of media from the space (e.g., by repelling an aqueous and/or liquid medium and/or preventing interactions between the medium and the vest). For example, in an embodiment, a durable, water-resistant vest could include a vest body formed from acrylic materials and/or allyl plastics, having a silicone coating both on the exterior and interior surfaces thereof. Vests intended to be subjected to extreme conditions (e.g., vests applied to aircraft, subjected to thermal transients of up to 1700 degrees Fahrenheit) can be provided with an insulative coating, energy-absorbing materials (e.g., paraffinic hydrocarbons or plastic crystals), or similar materials.

While various embodiments can include a single-layer vest, placed directly over a vehicle surface to define a space between the surface and the exterior side of the vest for containing a visible medium, as described above, in other embodiments a two-layered vest can be used. For example, a vest can include an interior side (e.g., extending between the edge of the vest) that is placed in contact with and/or immediately adjacent to a vehicle surface, while the exterior side of the vest is spaced from the interior side to define an enclosed space between the interior and exterior sides of the vest. A sealant (e.g., an adhesive, caulking, an industry-standard sealant, one or more welds, etc.) can be disposed between the interior side of the vest and the surface to prevent passage of materials between the vest and the surface. Any manner of elastomer, adhesive, and/or sealant known in the art can be used without departing from the scope of the present disclosure, including without limitation, thermoplastic and/or thermosetting adhesives, such as cellulose nitrate, acetate, acrylic, cyanoacrylate, vinyl, polyester, epoxy, phenolics, ureas, silicones, or combinations thereof.

By way of example, vests can be produced by extrusion, injection molding, use of calendaring machines, compression molding, transfer molding, blow molding, sheet molding, reaction injection molding, rotational molding, solvent molding, sheet forming, thermoforming, laminating, casting, vacuum molding, and/or other similar processes. Materials can also be machined, as needed, e.g., by filing, sawing, drilling, tapping, turning, milling, etc. In an embodiment, the

molding process can be used to apply a texture and/or decorative appearance to a vest, e.g., via a raised and/or depressed design, including without limitation, geometric patterns such as basket weave, pebble, leather-like, or fur-like textures. An alternate finish and/or texture could be applied to a vest using lacquers, enamels, overlays, and/or other types of coatings and/or treatments.

In an embodiment, the interior side of the vest and/or the surface itself can be provided with a neutral color (e.g., white) to facilitate visualization of media within the space, though in other embodiments, the color and/or characteristics of the interior side and/or surface can be selected to enhance, modify, and/or otherwise interact with the appearance generated by visible media within the space.

Embodied vests can be secured to a surface using a variety of methods, including, without limitation, welding, laser welding, ultrasonic welding, heat sealing, heat fusion, crimping, soldering, brazing, adhesives, pressure-sensitive adhesives, contact adhesives, hot adhesives, hot gas welding, infrared welding, receiving at least one fastener (rivets, etc.), compressively retaining the extension between the surface and an adjacent object (e.g., two abutting body portions of a vehicle or a body portion of a vehicle and a frame member). For example, an extension of the vest can protrude from the edge thereof, and the extension can be secured to the surface, such that attachment of the vest to the surface does not interfere with the enclosed space.

In addition to the single-layer and double-layered vests described above, in an embodiment, a surface could be provided with an integrated vest. For example, a body portion of a vehicle could include an at least partially transparent or translucent exterior (e.g., the exterior side of an integrated vest), that defines an enclosed space within a portion of the vehicle body portion into and from which media can be flowed. Combinations of the above embodiments can also be utilized, such as a vehicle with an at least partially transparent exterior having a single or double-layered vest installed behind the exterior layer for containing visible media.

In addition to modifying the color and/or visual appearance of a vehicle surface, vests can be used to alter the tactile experience/texture thereof. For example, the material of the vest, a coating thereon, and/or a surface treatment applied thereto can provide the vest with a desired external textural sensation (e.g., glossy, rubbery, silky, smooth, metallic, matte, bubbled, flakey, thorny, rough, stringy, etc.), such that interchanging the vest and/or modifying the coating and/or surface treatment thereof can allow the texture of the surface to be repeatedly altered.

In use, a vest can be provided into association with a vehicle surface, e.g., through any of the methods and/or embodiments described above, to define a fluid-tight space between the exterior side of the vest and the surface. A visible medium can then be provided into the space (e.g., through a port). In various embodiments, a vehicle with which a vest and a first medium have already been installed/associated can be provided for subsequent alteration of the color/texture thereof. Visible media can include any substance flowable into and from the space that provides a visible characteristic, such as a desired color, to the vest. While conventionally, a surface, such as a body portion of a vehicle, is painted, and various paint-like substances could be used as a visible medium, unlike conventional paint, the visible medium provided into the enclosed space can remain in a liquid and/or fluid state (e.g., without drying). In an embodiment, the visible medium can be adapted to remain flowable at ambient temperatures and pressures and/or over a significant range of conditions, such as temperatures ranging from -37 degrees

Fahrenheit to 150 degrees Fahrenheit. For example, the visible medium can include propylene glycol, glycerol, and/or other “antifreeze” components adapted to remain in a liquid state over a broad range of temperatures. Additionally, it should be noted that visible media are not limited to liquids; colored gasses, suspensions, slurries, and/or emulsions containing solid materials, (e.g., glitter, sand, powder, metallic flakes, etc.), flowable solids (sand, beads, etc.), oils, resins, waxes, polymers, and the like, and any combinations thereof, can be provided into and removed from the enclosed space, as desired.

When it is desired to remove the first medium (e.g., to provide a different medium into the vest to generate a different visible appearance), one or more conduits can be engaged with one or more ports associated with the vest, and a suction pressure can be generated at a port to remove the first medium from the space. In an embodiment, an intermediate medium (e.g., water, a wash fluid, a paint thinner/remover, a hydrophobic fluid, etc.) can be injected into the space to displace any remaining quantities of the first medium and/or to alter the first medium to facilitate removal thereof. A suction pressure can be generated to remove the intermediate medium, and in an embodiment, a gas (e.g., hot air or another gas) can be injected into the space to dry the space. A second medium can then be provided into the space via a conduit/port.

Embodiments usable within the scope of the present disclosure thereby enable a vehicle surface to be provided with a reusable enclosed space into which visible media can be provided and removed, enabling the visual appearance of the vehicle to be changed repeatedly and efficiently, and in a cost-effective manner.

BRIEF DESCRIPTION OF THE DRAWINGS

In the detailed description of various embodiments usable within the scope of the present disclosure, presented below, reference is made to the accompanying drawings, in which:

FIG. 1 depicts a perspective view of a vehicle incorporating an embodiment of a system usable within the scope of the present disclosure.

FIG. 2 depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

FIG. 3 depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

FIG. 4 depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

FIG. 5 depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

FIG. 6 depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

FIG. 7 depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

FIG. 8A depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

FIG. 8B depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure.

One or more embodiments are described below with reference to the listed Figures.

DETAILED DESCRIPTION OF THE EMBODIMENTS

Before describing selected embodiments of the present invention in detail, it is to be understood that the present invention is not limited to the particular embodiments

described herein. The disclosure and description herein is illustrative and explanatory of one or more presently preferred embodiments of the invention and variations thereof, and it will be appreciated by those skilled in the art that various changes in the design, organization, order of operation, means of operation, equipment structures and location, methodology, and use of mechanical equivalents may be made without departing from the spirit of the invention.

As well, it should be understood the drawings are intended to illustrate and plainly disclose presently preferred embodiments of the invention to one of skill in the art, but are not intended to be manufacturing level drawings or renditions of final products and may include simplified conceptual views as desired for easier and quicker understanding or explanation of the invention. As well, the relative size and arrangement of the components may differ from that shown and still operate within the spirit of the invention as described throughout the present application.

Moreover, it will be understood that various directions such as “upper”, “lower”, “bottom”, “top”, “left”, “right”, and so forth are made only with respect to explanation in conjunction with the drawings, and that the components may be oriented differently, for instance, during transportation and manufacturing as well as operation. Because many varying and different embodiments may be made within the scope of the inventive concept(s) herein taught, and because many modifications may be made in the embodiments described herein, it is to be understood that the details herein are to be interpreted as illustrative and non-limiting.

Embodiments usable within the scope of the present disclosure relate to systems and methods usable to alter the visible and/or tactile characteristics of a vehicle surface by providing at least a portion of the surface with a vest, as defined above, the vest defining an enclosed (e.g., fluid-tight) space between the exterior side of the vest and the surface into which visible media can be provided and removed, the media being visible through an at least partially transparent and/or translucent portion of the vest (e.g., an exterior side thereof). The tactile characteristics of the vehicle surface (as well as visible qualities) can be altered through the material of the vest, provision of a coating thereto, application of a texturizing process thereto, or combinations thereof. While various embodiments above and below are described with reference to systems for altering the appearance of a car/automobile (e.g., sedan, microcar, coupe, hatchback, sub-compact car, compact car, mid-size car, luxury car, full size car, convertible, passenger van, minivan, JEEP, sport utility vehicle, pickup truck, van camper, minibus, recreational vehicle, all-terrain vehicle, limousine, etc.) or other vehicle (e.g., bicycles, mopeds, motorcycles, three-wheeled vehicles, trucks, busses, trains, aircraft, helicopters, military vehicles, spacecraft, rockets, lawnmowers, ships, boats, motorboats, construction/earth moving equipment, go-carts, golf carts, or any other mode of transport), it should be understood that embodiments usable within the scope of the present disclosure could be used to alter the visible appearance of any surface. Exemplary applications of embodied systems could include clothing, shoes, and/or other garments and accessories, mannequins, interior and/or exterior walls of houses and other buildings and associated fixtures (e.g., cabinets, counters and other building infrastructure), vending machines (e.g., automatic teller machines, movie rental machines, machines for dispensing food and drink, etc.), electronic devices (e.g., laptop computers, tablets, cellular telephones, and other handheld devices), appliances (e.g., refrigerators, washers, dryers, etc.), furniture of all types, and any other surface. Futuristic vehicles and/or other surfaces

(e.g., aerial vehicles) can also be used in conjunction with embodiments described herein without departing from the scope of the present disclosure. Depending on the nature of the surface to which a vest will be installed, the design and characteristics of the vest can be modified. For example, a vest intended for use with an aircraft could be designed to withstand thermal gradients, air friction, and the like, while a vest intended for use with objects having prolonged exposure to sunlight could be designed with ultraviolet resistance and similar components to resist degradation.

Specifically, however, FIG. 1 depicts an automobile (10) (a sedan), having a number of body portions that form the exterior thereof. Conventionally, colored paint is applied to each body portion via a painting process, as described above; however, embodiments described herein can include one or more vests installed into association with each of the body portions of the vehicle to define an enclosed space into which visible media can be provided and removed, instead of the application of conventional paints and other related materials. The body portions of depicted automobile (10) include a front bumper (12), a left front panel (14A) opposite a right front panel (14B), a bonnet and/or hood (16), a roof (18), a left front door (20A) opposite a right front door (20B), a left rear door (22A) opposite a right rear door (22B), a left rear panel (24A) opposite a right rear panel (24B), trunk (26), and a rear bumper (28). Each of the body portions can have a vest installed in association therewith, such that the visible appearance thereof can be altered through the provision (e.g., injection) and/or removal of visible media from the enclosed spaces defined between each vest and each respective body portion. The tactile experience of each body portion can similarly be altered, e.g., through the installation of vests having desired textures.

FIG. 1 also depicts portions of the automobile (10) that are not typically painted, these portions including a plurality of windows (30), and the wheels (32) of the automobile (10). It should be understood that while traditional application of paint to such portions of a vehicle is not practical, in various embodiments usable within the scope of the present disclosure, certain visible media could be provided into association with the windows (30) and/or wheels (32), within the limits of the necessary functionality and movement of such portions and any applicable safety regulations. For example, a vest provided in association with a window could be provided with a tinted and/or glare-reducing medium, media that resist fogging of windows, media that resist formation of ice on windows, durable media that can resist impact and/or breakage of the window, and/or other similar media. In an embodiment, such media could include a thermally conductive medium able to receive and conduct current and/or heat for melting ice and/or snow on a window, evaporating moisture, and the like. In a similar manner, a vest having media therein could be used to insulate and/or reflect heat (e.g., for use during summer and/or in warm climates), or potentially to insulate and retain heat within a vehicle or other location (e.g., for use during winter or in cold climates).

While embodiments referenced herein are described with emphasis toward alteration of the visual appearance of a vehicle surface, in various embodiments, the provision of a vest and/or media within an enclosed space defined by the exterior side of the vest and the surface can provide additional durability and/or cushioning to a vehicle in the event of a collision. Further, the exodus of media from an impacted and/or damaged vest may potentially be useful in the performance of forensics and/or reconstruction following such a

collision. Additionally, as described above, provision of a vest to a surface can also be used to provide a desired texture and/or tactile characteristic.

It should be understood that while FIG. 1 depicts the automobile (10) as a sedan having thirteen body parts, each of which can have one or more vests installed in association therewith, each vest having a generally matching and/or complementary shape to the corresponding vehicle body part, an automobile could include any number of body portions of any shape and/or dimensions. Generally, a vest will be provided with a shape matching that of the underlying body portion, such that an enclosed space of generally uniform thickness (e.g., from one micron to five millimeters in thickness) is defined across the exterior of the automobile (10).

Referring now to FIG. 2, a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure is shown. Specifically, a vest (34) is shown installed in association with a surface (36) (e.g., a body portion of an automobile, such as that shown in FIG. 1). The depicted vest (34) is shown having an exterior side (38), and an edge (41), which when viewed from the side presents a first end (40) and a second end (42). The exterior side (38) and/or edge (41) can be partially or wholly transparent and/or translucent (e.g., to enable the visualization of media there-through). The exterior side (38) is spaced from the surface (36) to define a space (48) therebetween, into which visible media can be provided and removed. An inlet port (44) (e.g., a check valve, ball valve, butterfly valve, or similar one-way valve) and an outlet port (46) are shown positioned at the second end (42), for accommodating the flow of visible media into and from the space (48), though it should be understood that any number and type of openings (e.g., ports, valves, etc.) could be positioned at any location along the vest (34) without departing from the scope of the present disclosure (e.g., a single bidirectional or multidirectional valve could be used in place of separate one-way valves, and/or multiple valves could be used in tandem to facilitate more rapid filling and draining of media in the space (48)). In an embodiment, the exterior (50) of the surface (36) can be provided with a neutral coloration (e.g., white) to facilitate visualization of the media within the space (48) through the exterior side (38) of the vest (34). In other embodiments, however, the surface (36) can be provided with any desired color and/or feature, including those that produce a visible interaction with media within the space (48). In an embodiment, the vest (34) can be formed from high density polyester, acrylic, fiberglass, and/or similar materials having sufficient transparency/translucency and durability. The surface (36) (e.g., the exterior (50) thereof) can be provided with anti-rust and/or anti-corrosive coatings to protect the surface (36) from contact with media within the space (48).

The vest (34) can be secured relative to the surface (36) through a variety of means, as described above and below. For example, in an embodiment, adhesive could be provided about the edge (41) of the vest (34) thereby securing the vest (34) directly to the surface (36). Other embodied methods of securing vests relative to surfaces are depicted and described, for example, in FIGS. 7, 8A and 8B.

While FIG. 2 depicts an embodiment of a vest (34) that includes a single layer (e.g., the exterior side (38)) positioned over the surface (36) to define a space (48), FIG. 3 depicts a diagrammatic side view of an alternate embodiment of a vest (52) positioned in association with a surface (54) having an exterior side (56) spaced from the surface (54) and an interior side (58) generally adjacent thereto. A space (68) for containing a visible medium is defined between the exterior and interior sides (56, 58). As such, in an embodiment, the exte-

rior side (56) can be at least partially transparent and/or translucent, while the interior side (58) and/or the underlying surface (54) can have a neutral coloration to facilitate visualization of media within the space (68). The vest (52) is further shown having an edge, which when viewed from the side presents first and second ends (60, 62), with an inlet port (64) and an outlet port (66) shown positioned at the second end (62). In use, the interior side (58) of the vest (52) prevents contact between media within the space (68) and the underlying surface (54). In an embodiment, a sealant (e.g., an industry standard sealing material) can be provided within the gap (61) between the vest (52) and the surface (54) (e.g., between the interior side (58) and the surface (54)) for preventing the passage of materials between the vest (52) and surface (54), thereby protecting the surface (54) from corrosion, rust, and/or other forms of damage or deterioration that could be caused by the ingress of moisture and/or materials underneath the vest (52). In an embodiment, the vest could be made from low or medium-density polyester, polyethylene, acrylic, and/or other similar materials.

FIG. 4 depicts a diagrammatic side view of an embodiment of a system usable within the scope of the present disclosure in which a vest (70) is integrated within a surface (e.g., as part of a vehicle body or similar object). The depicted integrated vest (70) includes an at least partially transparent and/or translucent exterior side (72) opposite an interior side (74) to define a space (84) therebetween for containing visible media. The exterior and/or interior sides (72, 74) can be a portion of the object for which a visual appearance is altered. For example, an automobile can include a transparent exterior panel (e.g., formed from glass, fiberglass, plastic, or a similar transparent and/or translucent material), through which fluids or similar media can be visualized, thereby defining a space between this exterior panel and an interior body portion of the vehicle. While historically, car body portions have been made predominantly from sheet metal, attempts to reduce the overall weight of vehicles has led to use of plastic bumpers, rocker panels, fender extensions, windows, door moldings, and the like. Many cars have also included fiberglass materials. Developments in plastic resin technology allow for production of plastic materials having greater impact strength than fiberglass, such as polycarbonates. As such, the integrated vest (70) can include a variety of strong, lightweight materials that can be at least partially transparent and/or translucent to enable visualization of media therein.

The depicted vest (70) includes an edge, which when viewed from the side presents first and second ends (76, 78), with inlet and outlet ports (80, 82) positioned at the second end (78). In such an embodiment, the interior side (74) can have a neutral coloration to facilitate visualization of media within the space (84). While the materials used in the embodiment depicted in FIG. 4 can vary depending on the structural requirements of the surface (e.g., durability of a vehicle in the event of a collision, etc.), in an embodiment, transparent materials forming the exterior side (72) can include acrylic, fiberglass, composites, and/or other similar transparent and/or translucent materials. It should be understood that while the combination of the interior and exterior sides (72, 74) within the depicted portion of a surface is referred to as a “vest,” in the depicted embodiment, no vest separate and apart from the object to be altered, itself, is necessary—the depicted vest is integral with and is a part of the underlying object.

Combinations of the embodiments depicted above can also be used without departing from the scope of the present disclosure. For example, a single-layer vest could be installed to the underside of an at least partially transparent portion of

a vehicle to define an enclosed space within a body portion of the vehicle, the vest protecting other internal portions of the vehicle body from contact with media within the space. Alternatively, a double-layer vest could be provided behind an at least partially transparent portion of a vehicle body.

For example, FIG. 5 depicts a vest (73) installed beneath (e.g., over the interior side) of a surface (71), such as a transparent and/or translucent body portion of a vehicle, the vest (73) having an exterior side spaced from the surface (71) to define a space (77) therebetween, extending along the underside of the surface. As such, visible media within the space (77) can be visualized through the transparent surface (71). In an embodiment, the exterior side (75) of the vest can be neutrally colored and/or otherwise designed to facilitate visualization of media within the space (77). The vest (73), surface (71) or combinations thereof can include one or more inlet or outlet ports usable to communicate media into and from the space (77).

While FIG. 5 depicts a vest having a single layer installed beneath a surface, FIG. 6 depicts an embodiment in which a double-layered vest (81) is installed in association with the underside of an at least partially transparent and/or translucent surface (79). The depicted vest (81) includes an exterior side (83) spaced from an interior side (85) adjacent to the surface (79), such that a space (87) is defined between the sides (83, 85) of the vest (81). Visible media can be provided into and from the space, e.g., using inlet and outlet ports as described above, such that the media can be visualized through the at least partially transparent surface (79).

It should be noted that multiple vests could be installed in association with a single body portion of a vehicle, and/or a vest having multiple interior pockets/compartments could be used to provide the vehicle surface with multiple discrete regions that can each be altered differently, to enable creation of customized designs (such as through provision of differing media into each vest or compartment). For example, a custom design could be provided to a surface through the provision of a first desired color and/or texture to a first portion or region of a vest, and a second desired color and/or texture to a second region. Alternatively or additionally, use of differing visible media having different characteristics (density, viscosity, etc.) could be used to simulate the appearance of discrete regions within a vest. Custom designs could also be provided through the application of different characteristics to different body portions of a vehicle. For example, an “American Flag” design could be created through the provision of a red-colored medium to the hood, and trunk of a vehicle, a blue-colored medium to the doors thereof, and a white colored medium to the roof, or various other combinations and arrangements could be used.

Independent of the embodiment of vest used, in various embodiments, the interior of the vest can be provided with coatings to repel water and/or other fluids to facilitate eventual removal of media from the enclosed space and prevent undesired interaction between the vest and the media within. For example, silicone or a strongly hydrophobic composite, polymer, and/or other material can be used to coat the inner surface of the vest such that aqueous fluids or other fluids may “roll” across the inner surface of the vest without significantly interacting therewith. In addition to having properties of transparency and/or translucency, in various embodiments, the outer surface of the vest can be provided with various coatings and/or characteristics. For example, an outer finish can be applied to provide a desired textural sensation and/or a visual appeal—e.g., the outer finish of the vest could be glossy, rubbery, silky, smooth, metallic, matte, stringy (e.g., producing strands), bubbled, flakey, thorny, rough, and/or any

11

other desired texture or appearance (e.g., geometric basket weave, pebbled, etc.). Vests could also be constructed and/or treated to emulate the texture of fur, leather, Rexene, and/or other similar materials. Such exterior finishes could be provided through use of various manufacturing processes and/or by using one or more coatings. In an embodiment, the material and/or coating and/or exterior finish of the vest can be adapted to withstand extreme weather, moisture, wind, sunlight, heat, cold, and/or other ambient conditions. For example, vests can be provided with ultraviolet stabilizers (e.g., benzotriazole UV stabilizers, hindered amine UV stabilizers, benzoate UV stabilizers, and/or other similar components). In various embodiments, vests can include pigments, fillers (e.g., wood, flour, quartz, limestone, clay, metal powders), antioxidants, blowing agents, colorants, plasticizers, reinforcements, stabilizers, or combinations thereof. Coatings, finishes, and/or additives can be used to improve wear, scratch, and chemical resistance, and/or add aesthetic (e.g., visible and/or tactile) appeal. Exterior coatings/finishes could also include lacquers, enamels, and/or decorative overlays.

FIG. 7 depicts a diagrammatic side view of a vest (86) installed in association with a surface (88), illustrating one possible method of installation thereof. In the depicted embodiment, the vest (86) includes an at least partially transparent and/or translucent outer side (90), an inner side (92) positioned adjacent to the surface (88), and an edge, which when viewed from the side presents a first end (94) with an inlet port (98), and a second end (96) with an outlet port (100). An enclosed space (102) is defined between the inner and outer sides (90, 92), usable to contain media (injected and/or removed from the space (102) via the ports (98, 100)).

An extension (e.g., a flap and/or piece of material) is shown extending from the edge, which when viewed from the side presents a first portion (104) of the extension extending from the first end (94) and a second portion (106) extending from the second end (96). The extensions can allow interaction and/or manipulation of the vest (86) without intersecting and/or interfering with the enclosed space (102). For example, in the depicted embodiment, the extension is shown positioned along the underside of the surface (88) (e.g., folded, stretched, and/or otherwise adhered or associated with the underside). A first fastener (108) (e.g., a rivet, screw, nail, clip, clamp, clasp, button, staple, one or more adhesives, or other means of attachment) is shown securing the first portion (104) of the extension to the underside of the surface (88), while a second fastener (110) is shown securing the second portion (106) of the extension. Additional fasteners can be secured, as necessary, about the edge of the vest (86). It should be understood that while FIG. 7 depicts fasteners (108, 110) securing the vest (86) to the surface (88), any method of engagement, including adhesives, welding, frames, or the like, could be used without departing from the scope of the present disclosure. In an embodiment, a sealant can be provided between the vest (86) and the surface (88) (e.g., between the inner side (92) and the surface (88)) to prevent the ingress of materials between the vest (86) and surface (88). While FIG. 7 depicts an embodiment of a vest (86) having two layers (90, 92), similar to that shown in FIG. 3, it should be understood that the depicted method of installation can be used with other vest configurations described herein.

FIG. 8A depicts a diagrammatic side view of a vest (112) installed in association with a surface (114). The vest (112) is shown including an at least partially transparent outer side (116) opposite an inner side (118), to define an enclosed space (128) therebetween, and an edge, which when viewed from

12

the side presents a first end (120) with an inlet port (124) opposite a second end (122) with an outlet port (126). An extension is shown extending from the edge, which when viewed from the side presents a first portion (130) extending from the first end (120), and a second portion (132) extending from the second end (122). In the depicted embodiment, the first portion (130) of the extension is shown compressively retained between an end of the surface (114) and an abutting end of an adjacent surface (134), while the second portion of the extension (132) is shown compressively retained between an opposing end of the surface (114) and an abutting end of a second adjacent surface (136). For example, a vest can be secured in association with a body portion of a vehicle by retaining an extension thereof between adjacent portions of the vehicle that surround the vest on all sides, eliminating the need for additional fasteners; however, it should be understood that fasteners, adhesives, welding, etc., can be used in addition to compressive retention. Also, it should further be understood that combinations of fastening methods can be used, e.g., for different vests installed on different portions of a vehicle and/or other surfaces, as desired and/or practical.

FIG. 8B depicts a diagrammatic side view of the vest (112) of FIG. 8A, installed in association with the surface (114), illustrating an alternate configuration for attachment. Specifically, while FIG. 8A depicts an extension of the vest (112) compressively retained between the surface (114) and adjacent abutting surfaces (134, 136), FIG. 8B depicts the extension (130, 132) of the vest (112) wrapped about the ends of the surface (114), such that an adjacent abutting surface (138) (such as a frame) beneath the surface (114) can compressively retain the vest (112) in association with the surface (114) by retaining the extension between the surfaces (114, 138). In various embodiments, the abutting surface (138) could include one or multiple elements (e.g., a frame having one or multiple pieces) that overlap the extensions (130, 132) without necessarily extending across the full width of the surface (114) above.

As such, it should be understood that in various embodiments, a vest can be removed and replaced from a surface if desired, such as an automobile accident or incident of vandalism in which a vest is torn and/or otherwise damaged, extreme weather conditions that damage a vest and/or alter a medium therein in a manner that inhibits removal, malfunctioning inlet or outlet ports, or the like. Generally, by disengaging the extension of the vest from the associated surface, the vest can be removed, and a replacement vest can be installed.

In use, after installation of any embodied vest to any manner of surface, to define a space between the exterior side of the vest and the surface, a visible medium can be provided into the space (e.g., through an inlet port). While conventionally, a vehicle or similar surface is colored using paint, conventional paint is intended to dry and/or harden/solidify after application. Conversely, visible media used within the scope of the present disclosure can be adapted to remain in a generally fluid state in a variety of conditions. For example, a visible medium could include a colored fluid having low viscosity (e.g., high flowability), and be adapted to remain in a liquid state (without drying or solidifying) at most ambient temperatures and pressures. In an embodiment, antifreeze agents, including but not limited to propylene glycol and/or glycerol, could be used within visible media to allow the media to remain fluid in extreme cold and heat. Industry standard antifreeze solutions can allow a fluid to remain in a liquid state at temperatures ranging from -37 to 150 degrees Fahrenheit. In an embodiment, visible media can be recyclable and/or easily disposable (e.g., in a manner having no

environmental impact or minimal environmental impact). In an embodiment, visible media can include water glycol fluids and/or water-oil emulsions.

Visible media can be mixed and/or prepared on site or remotely, such that any possible color or shade in the palette could be created and provided into an enclosed space associated with a surface (e.g., by mixing media having primary colors in different quantities). The thickness of the enclosed space can also affect the shade and/or other facets of the appearance, such as by simulating the presence of multiple coats of paint using a thicker space. For example, a thin vest/space can be used to provide a surface with a generally light and/or pale color, while a thicker space could be used to provide a surface with a darker color. Additionally, it should be understood that usable visible media are not limited to colored liquids (or gasses); fluids can be mixed with other materials (e.g., fine particles such as glitter or sand or flakes of metal/minerals, oils, resins, beads etc.) to provide a space with a desired design or pattern. For example, a red color with golden lines could be provided to a body portion of a vehicle using a low viscosity red-colored liquid having oily (e.g., higher viscosity) gold liquid therein.

Similarly, visible media can include various additives to affect properties thereof, including additives that modify surface tension, improve flow/viscosity, improve the finished appearance, increase wet edge, improve pigment stability, improve temperature stability over larger ranges, control foaming, control skinning, and the like. Other types of additives can include catalysts, thickeners, stabilizers, emulsifiers, texturizers, adhesion promoters, ultraviolet stabilizers, flatteners (de-glossing agents), biocides, mineral controlling agents (e.g., for treating hard water), and the like. In various embodiments, properties common to conventional paint can be emulated using properties of the visible media, properties of the vest within which the media is contained, or combinations thereof. For example, any desired level of gloss, distinctiveness-of-image, hardness, abrasion resistance, weatherability (e.g., ultraviolet resistance), impact strength, thermal stability, chemical resistance, cleanability, adhesion, moisture resistance, and opacity can be obtained by modifying the properties of the visible media and/or the vest.

It should be readily understood that vests can be designed with internal or external features, compartments, and the like to enable custom designs (e.g., sport, university, or company logos, company or individual names, advertisements, etc.) to be provided to a vehicle or other surface. Vests could be adapted to contain lights (e.g., LEDs), display devices, or similar visual devices used in conjunction with visible media, the material of the vest protecting such devices from ambient conditions. Such devices could be adapted to function based on external conditions, such as the speed of a vehicle, application of the vehicle's brakes, etc. Stickers, laminates, labels, paints, and the like could be applied to the exterior of a vest, to be displayed in conjunction with the visible media therein (e.g., which could function as a backdrop and/or to enhance visibility of the overlaid item). In various embodiments, text and/or designs could be directly printed and/or applied to a vest during the manufacturing process thereof.

The ports through which media can be provided can include simple orifices (e.g., openings having a closure mechanism, such as flap), into which a pipe or other device can be inserted to rotate and/or otherwise displace the closure mechanism. The flap/closure mechanism can be biased toward a closed position such that the ports close subsequent to removal of a conduit or similar device therefrom. Various types of unidirectional valves (e.g., ball valves, check valves, etc.) known in the art can be used without departing from the

scope of the present disclosure. In an embodiment, one or more bidirectional valves could be used, e.g., both as inlet and outlet ports. The size/scale of the inlet and outlet ports can be selected based on the size and/or thickness of the vest and that of the enclosed space. For example, a micro valve (such as those used in connection with intravenous devices, blood transfusion devices, and/or other types of medical devices) could be used in connection with a vest having a generally small and/or thin space therein. Similarly, various micro-electro-mechanical valves or similar devices could be used to manage and/or control fluid flow into and/or from the vest—the field of Micro-Electro-Mechanical Systems [MEMS], is an emerging field from which numerous advanced and innovative options and designs for valves and ports can be derived. Any manner of uni-directional, bi-directional, and/or multi-directional flow control device can be used without departing from the scope of the present disclosure.

Additionally, it should be noted that while FIGS. 1 through 8B depict vests having a single inlet port and a single outlet port, the exemplary diagrammatic embodiments are solely illustrative, and any number (e.g., from 1 to 3, or more) of inlet and/or outlet ports can be present without departing from the scope of the present disclosure, e.g., to increase the rate of provision and/or removal of media from the vest. Similarly, as described above, in various embodiments, one or more bidirectional valves could be used as both inlet and/or outlet ports. Further, in various embodiments, a vest could be provided with multiple pockets/enclosed spaces, each having at least one inlet and outlet port in communication therewith, e.g., for facilitating creation of custom designs and/or patterns.

As such, embodiments usable within the scope of the present disclosure include systems and methods capable of repeatedly modifying the visual appearance and/or texture of an automobile, or another surface, by providing a vest into association with the surface, thereby defining a reusable space into and from which visible media can be provided.

While various embodiments usable within the scope of the present disclosure have been described with emphasis, it should be understood that within the scope of the appended claims, the present invention can be practiced other than as specifically described herein.

What is claimed is:

1. A system for altering the appearance of a vehicle surface, the system comprising:
 - a vest comprising an edge secured to the vehicle surface and an exterior side spaced from the vehicle surface to define a fluid-tight space between the exterior side of the vest and the vehicle surface, wherein the exterior side is at least partially transparent, at least partially translucent, or combinations thereof for enabling visualization of visible media in the fluid-tight space through the exterior side; and
 - at least one port communicating between the fluid-tight space and a region exterior to the fluid-tight space for receiving visible media into the fluid-tight space, removing visible media from the fluid-tight space, or combinations thereof.
2. The system of claim 1, wherein the vest further comprises an interior side adjacent to the vehicle surface and spaced from the exterior side, and wherein the fluid-tight space is defined between the exterior side and the interior side.
3. The system of claim 2, further comprising a sealant between the interior side of the vest and the vehicle surface for preventing passage of materials between the interior side of the vest and the vehicle surface.

15

4. The system of claim 1, further comprising a visible medium within the fluid-tight space, wherein the visible medium comprises a fluid adapted to remain flowable at temperatures ranging from negative 37 degrees Fahrenheit to 150 degrees Fahrenheit.

5. The system of claim 4, wherein the visible medium comprises a quantity of visible solid or viscous components sufficient to remain flowable in the visible medium and through said at least one port.

6. The system of claim 1, wherein said at least one port comprises a bidirectional valve, a multidirectional valve, at least two one-way valves, or combinations thereof.

7. The system of claim 1, wherein the vehicle surface comprises a body portion of a vehicle, and wherein the vest comprises a shape that matches that of the body portion of the vehicle.

8. The system of claim 1, wherein edge comprises an extension associated therewith, and wherein the extension is adapted for securing the vest to the vehicle surface by welding, laser welding, ultrasonic welding, heat sealing, heat fusion, crimping, soldering, brazing, adhesives, pressure-sensitive adhesives, contact adhesives, hot adhesives, hot gas welding, infrared welding, receiving at least one fastener, compressively retaining an extension extending from the edge of the vest between the vehicle surface and an adjacent object, or combinations thereof.

9. The system of claim 1, wherein the fluid-tight space comprises a thickness ranging from 1 micron to 5 millimeters.

10. The system of claim 1, wherein the vest is at least partially formed from polyester, acrylic, fiberglass, polyethylene, plastic, silicone, polypropylene, polystyrene, polyester, glass, fiber, thermoplastic, thermoset, latex, polymer fibers, polyvinyl chloride, polyethylene terephthalate, nylon, vinyl, thermoplastic materials, thermoset materials, phenolics, furane resins, amino resins, epoxy, alkyds, allyl plastics, amines, polyamides, polyethylene resins, polycarbonate, acrylic resin, cellulose acetate, cellulose nitrate, cellulose acetate butyrate, cellulose propionate, rubber, neoprene, Thiokol, nitrile, butyl rubber, silicone rubber, acetals, cellulose, fluoroplastics, ionomers, polyimide, polyolefins, polysulfone, composites, polythene, epoxides, polyurethane, synthetic rubber, synthetic plastic, synthetic resin, or combinations thereof.

11. The system of claim 1, wherein the vest comprises an interior adjacent to the fluid-tight space, and wherein the interior comprises a hydrophobic coating adapted to facilitate removal of visible media from the fluid-tight space.

12. The system of claim 1, wherein the vest comprises at least one interior barrier, protrusion, or recession on an interior thereof adapted to provide the vest with a plurality of regions, spaces, or combinations thereof, each having at least one port associated therewith and adapted to receive media therein, remove media therefrom, or combinations thereof.

13. The system of claim 1, wherein the vest comprises an exterior having a material, a coating, a treatment, or combinations thereof adapted to provide the vest, and thereby the vehicle surface, with a glossy texture, a rubbery texture, a silky texture, a smooth texture, a metallic texture, a matte texture, a stringy texture, a bubbled texture, a flakey texture, a thorny texture, a rough texture, a geometrically patterned texture, a pebble-like texture, a fur-like texture, a leather-like texture, or combinations thereof.

14. The system of claim 13, wherein the vest is removably associated with the vehicle surface for enabling changing of the vest to alter the texture of the vehicle surface, the appearance of the vehicle surface, or combinations thereof.

16

15. The system of claim 1, wherein the exterior side of the vest and the fluid-tight space comprise an integral portion of the vehicle surface.

16. A method for altering the appearance of a vehicle surface, the method comprising:

providing a vest in association with the vehicle surface, wherein the vest comprises an exterior side spaced from the vehicle surface to define a fluid-tight space between the exterior side of the vest and the vehicle surface, and wherein the exterior side is at least partially transparent, at least partially translucent, or combinations thereof; and

providing a first visible medium into the fluid-tight space through at least one port communicating between the fluid-tight space and a region exterior to the fluid-tight space.

17. The method of claim 16, wherein the step of providing the vest into association with the vehicle surface comprises positioning an interior side of the vest adjacent to the vehicle surface and spaced from the exterior side, and wherein the fluid-tight space is defined between the exterior side and the interior side.

18. The method of claim 16, wherein the step of providing the vest into association with the vehicle surface comprises securing an extension extending from an edge of the vest to the vehicle surface by welding, laser welding, ultrasonic welding, heat sealing, heat fusion, crimping, soldering, brazing, adhesives, pressure-sensitive adhesives, contact adhesives, hot adhesives, hot gas welding, infrared welding, receiving at least one fastener, compressively retaining an extension extending from an edge of the vest between the vehicle surface and an adjacent object, or combinations thereof.

19. The method of claim 16, wherein the step of providing the vest into association with the vehicle surface comprises spacing the exterior side of the vest from 1 micron to 5 millimeters from the vehicle surface.

20. The method of claim 16, further comprising:

removing the first visible medium from the fluid-tight space through said at least one port; and

providing a second visible medium into the fluid-tight space through said at least one port.

21. The method of claim 20, wherein the step of removing the first visible medium from the fluid-tight space comprises flowing a wash fluid through said at least one port into the fluid-tight space to displace the first visible medium, alter the first visible medium, or combinations thereof, and removing the wash fluid from the fluid-tight space through said at least one port.

22. The method of claim 20, further comprising the step of drying the fluid-tight space after removing the first visible medium therefrom by flowing a gas into the fluid-tight space.

23. A method for altering the appearance of a vehicle surface, the method comprising:

providing a vest into association with a vehicle surface, wherein the vest comprises an exterior side spaced from the vehicle surface to define a fluid-tight space between the exterior side of the vest and the vehicle surface, wherein the exterior side is at least partially transparent, at least partially translucent, or combinations thereof, and wherein a first medium is disposed within the fluid-tight space and visible through the exterior side;

engaging at least one conduit to at least one port associated with the vest;

generating a suction pressure via said at least one conduit to draw the first medium through said at least one port to remove the first medium from the fluid-tight space;

injecting an intermediate medium via said at least one
conduit through said at least one port and into the fluid-
tight space to displace the first medium, alter the first
medium, clean an interior of the vest, or combinations
thereof; 5
generating a suction pressure via said at least one conduit to
draw the intermediate medium through said at least one
port to remove the intermediate medium from the fluid-
tight space;
injecting a gas via said at least one conduit through said at 10
least one port and into the fluid-tight space to dry the
interior of the vest; and
injecting a second medium via said at least one conduit
through said at least one port and into the fluid-tight
space to at least partially fill the fluid-tight space, 15
wherein the second medium is visible through the exte-
rior side.

* * * * *

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: JACOB MATTIS
ATTORNEY AT LAW
919 CONGRESS AVE. #919
AUSTIN, TX 78701

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing
(day/month/year)

04 NOV 2014

Applicant's or agent's file reference

DEVA001WO

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.

PCT/US2014/046619

International filing date
(day/month/year)

15 July 2014

Applicant

DEVATHI, SRINIVAS S.

1. The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

How? Directly to the International Bureau of WIPO preferably through ePCT or on paper to, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. **With regard to any protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.
- no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

The applicant may **submit comments on an informal basis on the written opinion of the International Searching Authority** to the International Bureau. These comments will be made available to the public after international publication. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established.

Shortly after the expiration of **18 months from the priority date, the international application will be published** by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90bis.1 and 90bis.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for **entry into the national phase** before those designated Offices. In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months. For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Within **19 months from the priority date, the applicant may request that a supplementary international search be carried out** by a different International Searching Authority that offers this service (Rule 45bis.1). The procedure for requesting supplementary international search is described in the *PCT Applicant's Guide*, International Phase, paragraphs 8.006-8.032.

Name and mailing address of the ISA/
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Authorized officer

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
Telephone No. PCT OSP: 571-272-7774

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference DEVA001WO	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2014/046619	International filing date (<i>day/month/year</i>) 15 July 2014	(Earliest) Priority Date (<i>day/month/year</i>) 27 March 2014
Applicant DEVATHI, SRINIVAS S.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

the international application in the language in which it was filed.

a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. **Certain claims were found unsearchable** (see Box No. II).

3. **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

as suggested by the applicant.

as selected by this Authority, because the applicant failed to suggest a figure.

as selected by this Authority, because this figure better characterizes the invention.

b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/046619

<p>A. CLASSIFICATION OF SUBJECT MATTER IPC(8) - B60R 13/00 (2014.01) CPC - B60R 13/00 (2014.09) According to International Patent Classification (IPC) or to both national classification and IPC</p>																				
<p>B. FIELDS SEARCHED</p> <p>Minimum documentation searched (classification system followed by classification symbols) IPC(8) - B60R 13/00, 13/04; B65B 1/04, 1/28; G09F 19/00, 21/00, 21/04 (2014.01) CPC - B60R 13/00, 13/04; B65B 1/04, 1/28; G09F 19/00, 21/00, 21/04 (2014.09)</p> <p>Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 40/406; 141/100, 104; 296/21, 181.1; 434/81, 84, 105</p> <p>Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Orbit, Google Patents, Google Scholar.</p>																				
<p>C. DOCUMENTS CONSIDERED TO BE RELEVANT</p> <table border="1"> <thead> <tr> <th>Category*</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>X</td> <td>US 7,516,764 B1 (COBB) 14 April 2009 (14.04.2009) entire document</td> <td>1-3, 7, 16, 18</td> </tr> <tr> <td>Y</td> <td></td> <td>4-6, 8-15, 17, 19-23</td> </tr> <tr> <td>Y</td> <td>US 4,144,663 A (SAENGER et al) 20 March 1979 (20.03.1979) entire document</td> <td>4-6, 9, 11, 12, 17, 20-23</td> </tr> <tr> <td>Y</td> <td>US 5,636,669 A (PRICE) 10 June 1997 (10.06.1997) entire document</td> <td>8, 10, 15, 19</td> </tr> <tr> <td>Y</td> <td>US 3,709,770 A (HALE) 09 January 1973 (09.01.1973) entire document</td> <td>13, 14</td> </tr> </tbody> </table>			Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	X	US 7,516,764 B1 (COBB) 14 April 2009 (14.04.2009) entire document	1-3, 7, 16, 18	Y		4-6, 8-15, 17, 19-23	Y	US 4,144,663 A (SAENGER et al) 20 March 1979 (20.03.1979) entire document	4-6, 9, 11, 12, 17, 20-23	Y	US 5,636,669 A (PRICE) 10 June 1997 (10.06.1997) entire document	8, 10, 15, 19	Y	US 3,709,770 A (HALE) 09 January 1973 (09.01.1973) entire document	13, 14
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																		
X	US 7,516,764 B1 (COBB) 14 April 2009 (14.04.2009) entire document	1-3, 7, 16, 18																		
Y		4-6, 8-15, 17, 19-23																		
Y	US 4,144,663 A (SAENGER et al) 20 March 1979 (20.03.1979) entire document	4-6, 9, 11, 12, 17, 20-23																		
Y	US 5,636,669 A (PRICE) 10 June 1997 (10.06.1997) entire document	8, 10, 15, 19																		
Y	US 3,709,770 A (HALE) 09 January 1973 (09.01.1973) entire document	13, 14																		
<p><input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/></p>																				
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>“A” document defining the general state of the art which is not considered to be of particular relevance</td> <td>“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</td> </tr> <tr> <td>“E” earlier application or patent but published on or after the international filing date</td> <td>“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</td> </tr> <tr> <td>“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)</td> <td>“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</td> </tr> <tr> <td>“O” document referring to an oral disclosure, use, exhibition or other means</td> <td>“&” document member of the same patent family</td> </tr> <tr> <td>“P” document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			“A” document defining the general state of the art which is not considered to be of particular relevance	“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	“E” earlier application or patent but published on or after the international filing date	“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	“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)	“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	“O” document referring to an oral disclosure, use, exhibition or other means	“&” document member of the same patent family	“P” document published prior to the international filing date but later than the priority date claimed									
“A” document defining the general state of the art which is not considered to be of particular relevance	“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																			
“E” earlier application or patent but published on or after the international filing date	“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																			
“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)	“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																			
“O” document referring to an oral disclosure, use, exhibition or other means	“&” document member of the same patent family																			
“P” document published prior to the international filing date but later than the priority date claimed																				
<p>Date of the actual completion of the international search 26 September 2014</p>		<p>Date of mailing of the international search report 04 NOV 2014</p>																		
<p>Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201</p>		<p>Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774</p>																		

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: JACOB MATTIS
ATTORNEY AT LAW
919 CONGRESS AVE. #919
AUSTIN, TX 78701

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year)

04 NOV 2014

Applicant's or agent's file reference
DEVA001WO

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/US2014/046619

International filing date (day/month/year)

15 July 2014

Priority date (day/month/year)

27 March 2014

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

IPC(8) - B60R 13/00 (2014.01)

CPC - B60R 13/00 (2014.09)

Applicant
DEVATHI, SRINIVAS S.

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion

26 September 2014

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2014/046619

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - the international application in the language in which it was filed.
 - a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
 - on paper
 - in electronic form
 - b. (time)
 - in the international application as filed
 - together with the international application in electronic form
 - subsequently to this Authority for the purposes of search
4. In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2014/046619

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>4-6, 8-15, 17, 19-23</u>	YES
	Claims	<u>1-3, 7, 16, 18</u>	NO
Inventive step (IS)	Claims	<u>None</u>	YES
	Claims	<u>1-23</u>	NO
Industrial applicability (IA)	Claims	<u>1-23</u>	YES
	Claims	<u>None</u>	NO

2. Citations and explanations:

Claims 1-3, 7, 16, and 18 lack novelty under PCT Article 33(2) as being anticipated by Cobb.

Regarding claim 1, Cobb discloses a system for altering the appearance of a vehicle surface (abstract), the system comprising: a vest (shell 6; col. 2, lines 56-59) comprising an edge (as shown in figs. 1 and 2) secured to the vehicle surface (col. 2, lines 55-56) and an exterior side (outer surface of either panel 8 or 10 that is facing away from vehicle as shown in figs. 1-3) spaced from the vehicle surface to define a fluid-tight space (12) between the exterior side of the vest and the vehicle surface (col. 2, lines 59-62), wherein the exterior side is at least partially transparent (col. 2, lines 56-59), at least partially translucent, or combinations thereof for enabling visualization of visible media (paint 14) in the fluid-tight space through the exterior side (abstract); and at least one port (port allowing paint to be pumped straight into the body panel shell 6) communicating between the fluid-tight space (col. 3, lines 24-27) and a region (16) exterior to the fluid-tight space for receiving visible media into the fluid-tight space, removing visible media from the fluid-tight space, or combinations thereof (col. 2, line 66 to col. 3, line 3; fig. 4).

Regarding claim 2, Cobb discloses the system of claim 1, and Cobb discloses of wherein the vest further comprises an interior side (either panel 8 or 10) adjacent to the vehicle surface and spaced from the exterior side (col. 2, lines 55-56; figs. 1 and 2), and wherein the fluid-tight space is defined between the exterior side and the interior side (col. 2, lines 59-62).

Regarding claim 3, Cobb discloses the system of claim 2, and Cobb discloses of further comprising a sealant (11) between the interior side of the vest and the vehicle surface for preventing passage of materials between the interior side of the vest and the vehicle surface (col. 2, lines 56-59; fig. 3).

Regarding claim 7, Cobb disclose the system of claim 1, and Cobb discloses of wherein the vehicle surface comprises a body portion of a vehicle (abstract; figs. 1 and 2), and wherein the vest comprises a shape that matches that of the body portion of the vehicle (as shown in figs. 1 and 2).

Regarding claim 16, Cobb discloses a method for altering the appearance of a vehicle surface (abstract), the method comprising: providing a vest (shell 6; col. 2, lines 56-59) in association with a vehicle surface (col. 2, lines 55-56; figs. 1 and 2), wherein the vest comprises an exterior side (either panel 8 or 10 that is facing away from vehicle as shown in figs. 1 and 2) spaced from the vehicle surface to define a fluid-tight space (12) between the exterior side of the vest and the vehicle surface (col. 2, lines 59-62), and wherein the exterior side is at least partially transparent (col. 2, lines 56-59), at least partially translucent, or combinations thereof; and providing a first visible medium into the fluid-tight space through at least one port (port allowing paint to be pumped straight into the body panel shell 6) communicating between the fluid-tight space and a region exterior to the fluid-tight space (col. 3, lines 24-27).

Regarding claim 18, Cobb discloses the method of claim 16, and Cobb discloses of wherein the step of providing the vest into association with the vehicle surface comprises positioning an interior side of the vest (either panel 8 or 10) adjacent to the vehicle surface and spaced from the exterior side (col. 2, lines 55-56; figs. 1 and 2), and wherein the fluid-tight space is defined between the exterior side and the interior side (col. 2, lines 59-62).

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2014/046619

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Claims 4-6, 9, 11, 12, 17, and 20-23 lack an inventive step under PCT Article 33(3) as being obvious over Cobb in view of Saenger et al. (hereinafter referred to as Saenger).

Regarding claim 4, Cobb discloses the system of claim 1, but Cobb fails to disclose of further comprising a visible medium within the fluid-tight space, wherein the visible medium comprises a fluid adapted to remain flowable at temperatures ranging from negative 37 degrees Fahrenheit to 150 degrees Fahrenheit.

Saenger discloses a system for altering the appearance of a surface (abstract) and Saenger discloses of further comprising a visible medium (liquid petrolatum with dye) within the fluid-tight space (col. 4, lines 51-54), wherein the visible medium comprises a fluid adapted to remain flowable at temperatures ranging from negative 37 degrees Fahrenheit (col. 4, lines 51-54) to 150 degrees Fahrenheit (liquid petrolatum remains a liquid up to 150 degrees Fahrenheit) and further discloses that liquid petrolatum with dye completely and rapidly empties out of the cavity between the two rigid transparent plates (col. 4, lines 41-46).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use as the visible medium of Cobb the liquid petrolatum with dye as taught by Saenger in order that the flow into and out of the fluid-tight space rapidly and completely over a wide range of temperatures.

Regarding claim 5, the modified Cobb discloses the system of claim 4, but Cobb fails to disclose of wherein the visible medium comprises a quantity of visible solid or viscous components sufficient to remain flowable in the visible medium and through said at least one port. Saenger discloses of wherein the visible medium comprises a quantity of visible solid or viscous components (liquid petrolatum with dye) sufficient to remain flowable in the visible medium and through said at least one port (col. 4, lines 51-54) and further discloses that liquid petrolatum with dye completely and rapidly empties out of the cavity between the two rigid transparent plates (col. 4, lines 41-46). It would have been obvious to one of ordinary skill in the art at the time of the invention to use as the visible medium of Cobb the liquid petrolatum with dye as taught by Saenger in order that the flow into and out of the fluid-tight space rapidly and completely over a wide range of temperatures.

Regarding claim 6, Cobb discloses the system of claim 1, but Cobb fails to disclose of wherein said at least one port comprises a bidirectional valve, a multidirectional valve, at least two one-way valves, or combinations thereof.

Saenger discloses of wherein at least one port (7) comprises a bidirectional valve, a multidirectional valve, at least two one-way valves (15 and 16; col. 4, lines 6-21), or combinations thereof and further discloses that the two one way valves are used to control flow during filling and emptying cycles (col. 4, lines 6-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the system of Cobb two one way valves as taught by Saenger in order to control the flow of visible medium during filling and emptying cycles.

Regarding claim 9, Cobb discloses the system of claim 1, but Cobb fails to disclose of wherein the fluid-tight space comprises a thickness ranging from 1 micron to 5 millimeters.

Saenger discloses of wherein a fluid-tight space (4) comprises a thickness of about 6 millimeters (col. 5, lines 5-7) and further discloses that sun light will not penetrate the liquid when it fills the cavity having a width of about 6 mm (col. 5, lines 5-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the fluid-tight space of Cobb to comprises a thickness ranging from 1 micron to 5 millimeters, since where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and the fluid in the fluid tight space must be thick enough to prevent light reflected of the vehicle surface from showing through the fluid in the fluid-tight space.

Regarding claim 11, Cobb discloses the system of claim 1, and Cobb discloses of wherein the vest comprises an interior (side of panels 8 and 10 facing interior 12) adjacent to the fluid-tight space, but Cobb fails to disclose of wherein the interior comprises a hydrophobic coating adapted to facilitate removal of visible media from the fluid-tight space.

Saenger discloses of wherein a vest (plates 2 and 3 and cavity 4 there-between) comprises an interior (inner surfaces of plates 2 and 3) adjacent to a fluid-tight space (4), and wherein the interior must avoid any residual adhesion to facilitate removal of visible media (liquid petrolatum with dye) from the fluid-tight space (col. 4, lines 46-48) and further discloses that it is essential that the cavity between the two rigid transparent plates be completely and rapidly emptied of liquid (col. 4, lines 41-46).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the vest interior of Cobb hydrophobic coating adapted to facilitate removal of visible media from the fluid-tight space, since it was within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use and by facilitating the removal of the visible media the cavity between the two rigid transparent plates can be completely and rapidly emptied of liquid.

Regarding claim 12, Cobb discloses the system of claim 1, but Cobb fails to disclose of wherein the vest comprises at least one interior barrier, protrusion, or recession on an interior thereof adapted to provide the vest with a plurality of regions, spaces, or combinations thereof, each having at least one port associated therewith and adapted to receive media therein, remove media therefrom, or combinations thereof.

Saenger discloses of wherein a vest (sign comprising panels A-F; col. 5, lines 21-42; figs. 4 and 5) comprises at least one interior barrier (unnumbered barriers between panels as shown in fig. 4) on an interior thereof (as shown in fig. 4) adapted to provide the vest with a plurality of regions, spaces, or combinations thereof (A-F; col. 5, lines 21-53; figs. 4 and 5), each having at least one port associated therewith and adapted to receive media therein, remove media therefrom, or combinations thereof (col. 5, lines 49-53; figs. 4 and 5) and further discloses that this allows different coloring for different sections of the vest (col. 5, lines 31-33).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the vest interior of Cobb the barriers in order to provide the vest with a plurality of regions, spaces, or combinations thereof as taught by Saenger in order to allow different coloring for different sections of the vest.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2014/046619

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Regarding claim 17, Cobb discloses the method of claim 16, but Cobb fails to disclose of further comprising: removing the first visible medium from the fluid-tight space through said at least one port; and providing a second visible medium into the fluid-tight space through said at least one port.

Saenger discloses of removing a first visible medium (liquid) from a fluid-tight space (4) through a port (port of second conduit; col. 2, lines 6-9); and providing a second visible medium (liquid from reservoir) into the fluid-tight space through a port (port of second conduit; col. 1, line 66 to col. 2, line 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the method of Cobb the step of removing and providing visible medium as taught by Saenger in order to present a variety of colors to the vest.

Regarding claim 20, Cobb discloses the method of claim 16, but Cobb fails to disclose of wherein the step of providing the vest into association with the vehicle surface comprises spacing the exterior side of the vest from 1 micron to 5 millimeters from the vehicle surface. Saenger discloses of a step (fig. 2) of providing a vest (plate 2) into association with a surface (3) comprises spacing an exterior side (side of plate 2 facing away from plate 3 as shown in fig. 2) of the vest about 16 millimeters from the surface (col. 5, lines 5-7 and 14-15) and further discloses that sun light will not penetrate the liquid when it fills the cavity having a width of about 6 mm (col. 5, lines 5-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the fluid-tight space of Cobb to comprises a thickness ranging from 1 micron to 5 millimeters, since where the general conditions of the claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art and the fluid in the fluid tight space must be thick enough to prevent light reflected of the vehicle surface from showing through the fluid in the fluid-tight space.

Regarding claim 21, the modified Cobb discloses the method of claim 17, and Cobb discloses of a wash fluid (cleaning solution 27; col. 3, line 9), but Cobb fails to disclose of wherein the step of removing the first visible medium from the fluid-tight space comprises flowing a wash fluid through said at least one port into the fluid-tight space to displace the first visible medium, alter the first visible medium, or combinations thereof, and removing the wash fluid from the fluid-tight space through said at least one port.

Saenger discloses of wherein a step of removing a first visible medium (liquid) from a fluid-tight space (4) comprises flowing a wash fluid (air) through a port (port of first conduit) into the fluid-tight space to displace the first visible medium (col. 2, lines 6-9), alter the first visible medium, or combinations thereof, and removing the wash fluid from the fluid-tight space through a port (port of first conduit; col. 2, lines 2-6) and further discloses that in this manner the cavity is rapidly and completely filled and emptied with the liquid (col. 2, lines 9-13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the method of Cobb the step of removing the first visible medium from the fluid-tight space as taught by Saenger so that the cavity is rapidly and completely filled and emptied of the visible medium.

Regarding claim 22, the modified Cobb discloses the method of claim 17, but Cobb fails to disclose of further comprising the step of drying the fluid-tight space after removing the first visible medium therefrom by flowing a gas into the fluid-tight space.

Saenger discloses of a step of drying (cavity is completely emptied of liquid; col. 2, lines 9-13) a fluid-tight space (4) after removing a first visible medium (liquid) therefrom by flowing a gas (air) into the fluid-tight space (col. 2, lines 6-9).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the method of Cobb the step of drying the fluid-tight space after removing a first visible medium therefrom by flowing a gas into the fluid-tight space as taught by Saenger in order to remove residue of the first visible medium from the fluid tight space.

Regarding claim 23, Cobb discloses a method for altering the appearance of a vehicle surface (abstract), the method comprising: providing a vest (shell 6; col. 2, lines 56-59) into association with a vehicle surface (col. 2, lines 55-56; figs. 1 and 2), wherein the vest comprises an exterior side (outer surface of either panel 8 or 10 that is facing away from vehicle as shown in figs. 1 and 2) spaced from the vehicle surface to define a fluid-tight space (12) between the exterior side of the vest and the vehicle surface (col. 2, lines 59-62), wherein the exterior side is at least partially transparent (col. 2, lines 56-59), at least partially translucent, or combinations thereof, and wherein a first medium (paint 14) is disposed within the fluid-tight space and visible through the exterior side (abstract); engaging at least one conduit (36) to at least one port (port allowing paint to pass from conduit 36 into the gap 12) associated with the vest (col. 3, lines 10-21).

Cobb fails to disclose of generating a suction pressure via said at least one conduit to draw the first medium through said at least one port to remove the first medium from the fluid-tight space; injecting an intermediate medium via said at least one conduit through said at least one port and into the fluid-tight space to displace the first medium, alter the first medium, clean an interior of the vest, or combinations thereof; generating a suction pressure via said at least one conduit to draw the intermediate medium through said at least one port to remove the intermediate medium from the fluid-tight space; injecting a gas via said at least one conduit through said at least one port and into the fluid-tight space to dry the interior of the vest; and injecting a second medium via said at least one conduit through said at least one port and into the fluid-tight space to at least partially fill the fluid-tight space, wherein the second medium is visible through the exterior side.

Saenger discloses of generating a suction pressure (via pump 10) via a conduit (conduit branch 7b) to draw a first medium (liquid) through a port (conduit branch 7b port into cavity 4 as shown in fig. 3) to remove the first medium from a fluid-tight space (4; col. 4, lines 15-21); injecting an intermediate medium (air) via a conduit (conduit branch 7a) through said at least one port and into the fluid-tight space to displace the first medium, alter the first medium, clean an interior of the vest, or combinations thereof (col. 4, lines 21-23); generating a suction pressure via said at least one conduit to draw the intermediate medium through said at least one port to remove the intermediate medium from the fluid-tight space (col. 4, lines 10-13); injecting a gas (air) via said at least one conduit through said at least one port and into the fluid-tight space to dry the interior of the vest (col. 4, lines 10-13); and injecting a second medium (liquid) via said at least one conduit through said at least one port and into the fluid-tight space to at least partially fill the fluid-tight space (col. 4, lines 6-9), wherein the second medium is visible through an exterior side (col. 4, lines 2-4).

It would have been obvious to include in the method of Cobb the steps of generating suction pressure, removing a first medium, injecting an intermediate medium, removing the intermediate medium, injecting a drying gas, and injecting a second medium as taught by Saenger in order to change the visible medium in the vest.

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/US2014/046619

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Claims 8, 10, 15, and 19 lack an inventive step under PCT Article 33(3) as being obvious over Cobb in view of Price.

Regarding claim 8, Cobb discloses the system of claim 1, but Cobb fails to disclose of wherein edge comprises an extension associated therewith, and wherein the extension is adapted for securing the vest to the vehicle surface by welding, laser welding, ultrasonic welding, heat sealing, heat fusion, crimping, soldering, brazing, adhesives, pressure-sensitive adhesives, contact adhesives, hot adhesives, hot gas welding, infrared welding, receiving at least one fastener, compressively retaining an extension extending from the edge of the vest between the vehicle surface and an adjacent object, or combinations thereof.

Price discloses a system for altering the appearance of a vehicle surface (abstract and col. 3, lines 51-52) and discloses of wherein an edge (24) comprises an extension (56) associated therewith (col. 3, lines 29-32; figs. 4 and 5), and wherein the extension is adapted for securing the vest to the vehicle by receiving at least one fastener (62; col. 3, lines 34-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the vest of Cobb an extension and fastener as taught by Price in order to easily attach and remove the vest.

Regarding claim 10, Cobb discloses the system of claim 1, but Cobb fails to disclose of wherein the vest is at least partially formed from polyester, acrylic, fiberglass, polyethylene, plastic, silicone, polypropylene, polystyrene, polyester, glass, fiber, thermoplastic, thermoset, latex, polymer fibers, polyvinyl chloride, polyethylene terephthalate, nylon, vinyl, thermoplastic materials, thermoset materials, phenolics, furane resins, amino resins, epoxy, alkyds, allyl plastics, amines, polyamides, polyethylene resins, polycarbonate, acrylic resin, cellulose acetate, cellulose nitrate, cellulose acetate butyrate, cellulose propionate, rubber, neoprene, Thiokol, nitrile, butyl rubber, silicone rubber, acetals, cellulose, fluoroplastics, ionomers, polyimide, polyolefins, polysulfone, composites, polythene, epoxides, polyurethane, synthetic rubber, synthetic plastic, synthetic resin, or combinations thereof.

Price discloses of wherein the vest is at least partially formed from plastic (col. 2, lines 66-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to form the vest of Cobb from plastic as taught by Price since plastic is easily formed into complex shapes.

Regarding claim 15, Cobb discloses the system of claim 1, but Cobb fails to disclose of wherein the exterior side of the vest and the fluid-tight space comprise an integral portion of the vehicle surface.

Price discloses of wherein the exterior side of the vest and the fluid-tight space comprise an integral portion of the vehicle surface (col. 3, lines 52-62; fig. 1).

It would have been obvious to one of ordinary skill in the art at the time of the invention to configure the vest and the fluid-tight space of Cobb to be an integral portion of the vehicle surface as taught by Price in order that the alteration to the vehicle appearance by the vest can be made permanent.

Regarding claim 19, Cobb discloses the method of claim 16, but Cobb fails to disclose of wherein the step of providing the vest into association with the vehicle surface comprises seaming an extension extending from an edge of the vest to the vehicle surface by welding, laser welding, ultrasonic welding, heat sealing, heat fusion, crimping, soldering, brazing, adhesives, pressure-sensitive adhesives, contact adhesives, hot adhesives, hot gas welding, infrared welding, receiving at least one fastener, compressively retaining an extension extending from an edge of the vest between the vehicle surface and an adjacent object, or combinations thereof.

Price discloses of wherein the step of providing a vest (12) into association with the vehicle comprises seaming an extension (58) extending from an edge (24) of the vest to the vehicle surface by receiving at least one fastener (62; col. 3, lines 34-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the vest of Cobb an extension and fastener as taught by Price in order to easily attach and remove the vest.

Claims 13 and 14 lack an inventive step under PCT Article 33(3) as being obvious over Cobb in view of Hale.

Regarding claim 13, Cobb discloses the system of claim 1, but Cobb fails to disclose of wherein the vest comprises an exterior having a material, a coating, a treatment, or combinations thereof adapted to provide the vest, and thereby the vehicle surface, with a glossy texture, a rubbery texture, a silky texture, a smooth texture, a metallic texture, a matte texture, a stringy texture, a bubbled texture, a flakey texture, a thorny texture, a rough texture, a geometrically patterned texture, a pebble-like texture, a fur-like texture, a leather-like texture, or combinations thereof.

Hale discloses of a system for altering the appearance of a vehicle surface (abstract) and discloses of wherein a vest (24; col. 4, lines 56-57) comprises an exterior having a material (molded thermoplastic) adapted to provide the vest, and thereby the vehicle surface, with a rough texture (grained outer surface; col. 2, lines 55-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the vest of Cobb an exterior having a material adapted to provide the vest with a rough texture as taught by Hale in order to increase the aesthetic appeal of the vehicle.

Regarding claim 14, the modified Cobb discloses the system of claim 13, but Cobb fails to disclose of wherein the vest is removably associated with the vehicle surface for enabling changing of the vest to alter the texture of the vehicle surface, the appearance of the vehicle surface, or combinations thereof.

Hale discloses of wherein a vest (24) is removably associated with the vehicle surface (col. 2, lines 28-32) for enabling changing of the vest to alter the texture of the vehicle surface, the appearance of the vehicle surface, or combinations thereof (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in the vest of Cobb a removable vest as taught by Hale in order to provide a variety of options.

Claims 1-23 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Fw: Statement number 1232

Srinivas Devathi <SDevathi@satyainnovations.com>

Wed 5/2/2018 3:27 PM

To: Srinivas DS <srinivas@z3cars.com>;

FYI

From: Srinivas Devathi
Sent: Wednesday, July 15, 2015 4:30 AM
To: Andrew Cook; Debbie Condel
Cc: Bill Hulse; Travis Cooper
Subject: Re: Statement number 1232

Andrew,

The Indian national stage application is well on track. Just that it would take some more time as they have not implemented PPH yet.

I am looking forward to the PCT/WIPO publications. I believe they are due October 1st week. After which I am looking to get into national stage in other countries. I may have some work for you then. I have a couple quick questions.

- a) I believe a PCT report on the patent application comes due in the 16th month from priority date, which is the current month. Have you heard anything from them?
- b) Does the PCT / WIPO publication happen in one language (English) or in multiple world languages?

Thanks,
Srinivas

From: Andrew Cook <Andrew.Cook@hulseyioplaw.com>
Sent: Tuesday, July 14, 2015 11:12 AM
To: Srinivas Devathi; Debbie Condel
Cc: Bill Hulse; Travis Cooper
Subject: RE: Statement number 1232

Hi Srinivas,

Confirming receipt. I will look into this and get back to you first thing tomorrow morning.
Thank you for the reminder.

Has everything proceeded with regards to the Indian National Stage Application? Is there anything further that we can assist with?

Andrew

Andrew Cook, Manager

HULSEY HUNT P.C.



Intellectual Property Lawyers

A Gold Standard in IP for a Competitive Entrepreneurial World™

andrew.cook@hulseyiplaw.com

(O) 512-478-9190; (F) 512-478-9192

919 Congress Avenue, Suite 919, Austin, Texas 78701

From: Srinivas Devathi [mailto:SDevathi@satyainnovations.com]

Sent: Tuesday, July 14, 2015 6:37 AM

To: Debbie Condel

Cc: Andrew Cook; Bill Hulsey; Travis Cooper

Subject: Re: Statement number 1232

Andrew,

Here is another friendly reminder to pass me the corrected invoice. I am looking to clear some invoices within the next couple weeks.

Thanks,
Srinivas.

From: Srinivas Devathi

Sent: Wednesday, July 8, 2015 9:23 AM

To: Debbie Condel

Cc: Andrew Cook; Bill Hulsey; Travis Cooper

Subject: Re: Statement number 1232

Andrew / Bill,

I have not received the corrected invoice in regards to my matters. Could you please look into this matter and send out the corrected invoice?

I plan on making this payment next week.

Thanks,
DS.

From: Srinivas Devathi

Sent: Saturday, April 25, 2015 5:29 AM

To: Debbie Condel
Cc: Andrew Cook; Bill Hulsey; Travis Cooper
Subject: Fw: Statement number 1232

Debbie,

Here is the mail thread discussing my invoices and your firm confirming my outstanding balance as 1000\$. Please review and let me know if you have any questions. If not, kindly publish a corrected invoice showing 1000\$ balance.

Regards,
D.

From: Srinivas Devathi
Sent: Monday, March 16, 2015 5:03 AM
To: Travis Cooper; Debbie Condel
Cc: Andrew Cook
Subject: Fw: Statement number 1232

Mr. Cooper,

Here is the confirmation mail that my final balance with your firm is \$1000.

Thanks,
DS.

From: Andrew Cook <Andrew.Cook@hulseyjplaw.com>
Sent: Wednesday, February 25, 2015 1:08 PM
To: Srinivas Devathi; Travis Cooper
Cc: Debbie Condel
Subject: RE: Statement number 1232

Hi Srinivas,

I hope all is well. On consideration of the approaching closing of the month, our accountant has asked that I follow with you regarding the second payment. Are we able to close this off before the end of the month?

Kind Regards,

Andrew Cook, Manager

HULSEY HUNT P.C.



Intellectual Property Lawyers

A Gold Standard in IP for a Competitive Entrepreneurial World™

andrew.cook@hulseyiplaw.com

(O) 512-478-9190; (F) 512-478-9192

919 Congress Avenue, Suite 919, Austin, Texas 78701

From: Srinivas Devathi [<mailto:SDevathi@satyainnovations.com>]

Sent: Monday, February 02, 2015 3:48 AM

To: Andrew Cook; Travis Cooper

Cc: Debbie Condel

Subject: Re: Statement number 1232

Dear Andrew,

I have wired funds of \$1,089.50 today, to your bank account.
This makes my final balance to \$1000. I shall pay it off in few weeks.

At the moment there is no work (of mine) active at your firm. Please let me know when you hear back about the PCT application.

Thanks,
DS.

From: Andrew Cook <Andrew.Cook@hulseyiplaw.com>

Sent: Friday, January 23, 2015 5:14 PM

To: Srinivas Devathi; Travis Cooper

Cc: Debbie Condel

Subject: RE: Statement number 1232

Dear Srinivas,

Summarizing our conversation, the \$373 is credit on account remaining from the PCT fees paid in August (\$2,500 paid in advance less \$2,127 equals \$373. Please also find enclosed a copy of the fee sheet.

Accordingly, in payable amount to bring your account current is **\$2,089.50**

September invoice - \$1125 (A)

October final invoice [please confirm with Andrew] - \$1740 (B)

December hours invoice - \$337.50 (C)

$A+B+C = 3202.50\$$

My payments against the above bills - \$740 (D)

I still do not understand what that "Trust Application" \$373 is? You can remove deducting that amount from my bill.

Finally, $A+B+C-D = \$2462.50$

\$2462.50 - \$ 373 = \$2089.50

Have a great weekend.

Kind Regards,

Andrew



Andrew Cook
Manager and Technical Specialist

andrew.cook@hulseyiplaw.com

www.HulseyIPLaw.com

Austin, Texas Headquarters

919 Congress Avenue, Ste 919

Austin, Texas 78701

Silicon Valley
Office

2225 East Bayshore Rd, Ste
200

Palo Alto, California 94303

Little Rock Office

2800 Cantrell Rd, Ste 500

Little Rock, Arkansas 72202

Austin Office: 512-478-9190 / Little Rock Office: 501-374-1700

CONFIDENTIALITY NOTICE: This email is covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521 and is legally privileged. This communication may also contain material protected and governed by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). This e-mail is only for the personal and confidential use of the individuals to which it is addressed and contains confidential information. If you are not the intended recipient, you are notified that you have received this document in error, and that any reading, distributing, copying or disclosure is unauthorized.

If you have received this communication in error, please notify the sender immediately by the telephone number above and destroy the message.

From: Srinivas Devathi [<mailto:SDevathi@satyainnovations.com>]

Sent: Thursday, January 22, 2015 7:47 AM

To: Travis Cooper; Andrew Cook

Cc: Debbie Condel

Subject: Re: Statement number 1232

Dear Travis / Andrew,

I am waiting for your confirmation on this number / my final invoice balance.

Please confirm ASAP as that would help me decide on the next work activities to engage your firm.

Thanks,

DS.

From: Srinivas Devathi

Sent: Saturday, January 17, 2015 5:59 AM

To: Travis Cooper

Cc: Debbie Condel

Subject: Re: Statement number 1232

Travis,

I copied you on an e-mail thread where Andrew has brought down the October invoice to 1740\$. So, corrections need to be applied to this final invoice. As per me, here is the final calculation.

September invoice - \$1125 (A)
October final invoice [please confirm with Andrew] - \$1740 (B)
December hours invoice - \$337.50 (C)

$A+B+C = 3202.50\$$

My payments against the above bills - \$740 (D)
I still do not understand what that "Trust Application" \$373 is? You can remove deducting that amount from my bill.

Finally, $A+B+C-D = \$2462.50$
I will pay the above ASAP. Please confirm.

Thanks,
DS.

From: Travis Cooper <Travis.Cooper@hulseyjplaw.com>
Sent: Friday, January 16, 2015 12:42 PM
To: Srinivas Devathi
Cc: Debbie Condel
Subject: Statement number 1232

Mr. Devathi,
Please find attached your invoice based on the full amount and notwithstanding our current discussions.
We provide the following convenient methods of payment:

- (1) Wire Transfer: American Bank, N.A. of Austin, Texas:
 - a. Bank Routing Number: 114903284,
 - b. Account Number: 2110005041;
- (2) PayPal.com: Email address Payments@Hulseyjplaw.com;
- (3) Send the payment to the address below.

Should you have questions or concerns, please let us know.
We would appreciate your prompt attention and payment.

Sent on behalf of:

Debbie Condel
Accountant
HULSEY CALHOUN, P.C.
Accountant@hulseyjplaw.com
(O) 512-478-9190; (F) 512-478-9192
919 Congress Avenue, Suite 919
Austin, Texas 78701

This email is confidential and privileged and intended only for the recipient. If you received this in error, notify the sender and delete immediately.

This email has been scanned for email related threats and delivered safely by Mimecast.
For more information please visit <http://www.mimecast.com>

Debbie Condel**Accountant Office Manager, HULSEY, P.C.****Accountant@HULSEYIPLaw.com www.HULSEYIPLaw.com****(O) 512-478-9190; (F) 512-478-9192****919 Congress Avenue, Suite 919****Austin, Texas 78701**

Please do not send confidential, proprietary, or otherwise sensitive information via e-mail. E-mail is not a secure form of communication and may not be protected by the attorney client privilege. Communication via e-mail does not establish an attorney-client relationship. Any information in any e-mail message from me or my office is intended for general informational purposes and is not intended to be, and shall not be relied upon, as legal advice. No information in an e-mail is a substitute for a personal consultation with an attorney.

CONFIDENTIALITY NOTICE: This email is covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521 and is legally privileged. This communication may also contain material protected and governed by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). This e-mail is only for the personal and confidential use of the individuals to which it is addressed and contains confidential information. If you are not the intended recipient, you are notified that you have received this document in error, and that any reading, distributing, copying or disclosure is unauthorized.

If you have received this communication in error, please notify the sender immediately by the telephone number above and destroy the message.

Fw: My PCT application

Srinivas Devathi <SDevathi@satyainnovations.com>

Wed 5/2/2018 3:28 PM

To: Srinivas DS <srinivas@z3cars.com>;

FYI

From: Srinivas Devathi
Sent: Friday, July 31, 2015 9:49 AM
To: Bill Hulse
Cc: Andrew Cook
Subject: Re: My PCT application

Dear Bill,

Hope you are doing well. As it is end of July, I am eager and interested to know the status of my PCT application. Would you be kind enough to look into this matter, my PCT application and advise me on the status. I really look forward to getting your response today or at least over this weekend.

Best regards,
Srinivas.

Sent from my iPad

On Jul 29, 2015, at 2:43 PM, "Srinivas Devathi" <SDevathi@satyainnovations.com> wrote:

Dear Bill / Andrew,

I would like to get official status on my PCT application filed through your firm. As per the procedure, we should have got first communication from PCT office (a report of some kind I believe) in the 16th month from the priority date. This month (July 2015) is the 16th month and we are almost done with the month.

Have you received the PCT report / response? Secondly, what is the overall status of the PCT application?

Kindly respond at the earliest.

Regards,
Srinivas

Fw: DEVA001WO - International Search Report

Srinivas Devathi <SDevathi@satyainnovations.com>

Wed 5/2/2018 3:34 PM

To: Srinivas DS <srinivas@z3cars.com>;

 1 attachments (602 KB)

DEVA001WO_ISR.PDF;

FYI

From: Andrew Cook <Andrew.Cook@hulseyiplaw.com>
Sent: Wednesday, August 5, 2015 9:57 AM
To: Srinivas Devathi
Cc: Bill Hulsey; Jeff Hunt; Debbie Condel; Samantha Scobie
Subject: DEVA001WO - International Search Report

Good Morning Srinivas,

Per our conversation yesterday, please find enclosed a copy of the International Search Report as issued by the US Receiving Office. Please confirm receipt, and confirm that this is the report/documentation that you had requested. I have a meeting scheduled today with Debbie Condel (our accountant) regarding the corrected invoice, and I will give you an update as soon as complete.

Kind Regards,

Andrew

HULSEY HUNT & PARKS P.C.



Intellectual Property Lawyers

A Gold Standard in IP for a Competitive Entrepreneurial World™

andrew.cook@hulseyiplaw.com

(O) 512-478-9190; (F) 512-478-9192

919 Congress Avenue, Suite 919, Austin, Texas 78701

Fw: DEVA001WO - International Search Report

Srinivas Devathi <SDevathi@satyainnovations.com>

Wed 5/2/2018 3:35 PM

To: Srinivas DS <srinivas@z3cars.com>;

FYI

From: Srinivas Devathi
Sent: Wednesday, August 5, 2015 10:45 AM
To: Andrew Cook
Cc: Bill Hulse; Jeff Hunt; Debbie Condel; Samantha Scobie
Subject: Re: DEVA001WO - International Search Report

Dear Bill / Andrew,

I just reviewed this international search report and have the following concerns.

- a) This report was sent out in November of last year and I was not informed. Why is that? This is a very serious concern that I have. The window to respond or send communications back to PCT team, is two months from mailing date and that is long in the past now. The window is gone.
- b) They have cited other US applications in the search report, while USPTO having searched all US applications and world applications has already approved the patent. It seems odd.
- c) What is your opinion on the impact of this search report in other national stage applications? We have a check mark on novelty and industrial applicability. But 'No' on inventive step. This is also strange as we did not find anything even remotely similar to what we applied for.

Let me know your comments and I will call back Andrew on Friday same time to discuss.

Thanks,
Srinivas Devathi.

From: Andrew Cook <Andrew.Cook@hulseyioplaw.com>
Sent: Wednesday, August 5, 2015 9:57 AM
To: Srinivas Devathi
Cc: Bill Hulse; Jeff Hunt; Debbie Condel; Samantha Scobie
Subject: DEVA001WO - International Search Report

Good Morning Srinivas,

Per our conversation yesterday, please find enclosed a copy of the International Search Report as issued by the US Receiving Office. Please confirm receipt, and confirm that this is the report/documentation that you had requested. I have a meeting scheduled today with Debbie Condel (our accountant) regarding the corrected invoice, and I will give you an update as soon as complete.

Kind Regards,

Andrew

HULSEY HUNT & PARKS P.C.



Intellectual Property Lawyers

A Gold Standard in IP for a Competitive Entrepreneurial World™

andrew.cook@hulseyjplaw.com

(O) 512-478-9190; (F) 512-478-9192

919 Congress Avenue, Suite 919, Austin, Texas 78701

Fw: DEVA001WO - International Search Report

Srinivas Devathi <SDevathi@satyainnovations.com>

Wed 5/2/2018 3:37 PM

To: Srinivas DS <srinivas@z3cars.com>;

FYI

From: Srinivas Devathi
Sent: Friday, August 7, 2015 3:00 AM
To: Bill Hulsey
Cc: Andrew Cook; Jeff Hunt; Debbie Condel; Samantha Scobie
Subject: Re: DEVA001WO - International Search Report

Bill,

I have a discussion with Andrew today. Only if I know the final invoice amount, will I be able to assess my investment of his time in subsequent work.

So, can we get this taken care of today, instead of next week?

Further, I have a question for you. Why was I not informed about the PCT ISR - search report that came to you in November 2014? That is an incorrect report. If I was informed in November 2014, we could have immediately got it corrected. Apparently the report states the window for changes is two months. Now, can you advise how can we fix the report to be accurate? Because the report could have downstream effects as we enter into national stage. What is your strategy, advise, plan to fix the PCT - ISR search report now? Please advise.

Thanks,
Srinivas.

Sent from my iPad

On Aug 7, 2015, at 1:35 AM, "Bill Hulsey" <Bill.Hulsey@hulseyiplaw.com> wrote:

We will provide by the end of next week.

Thank you for your patience.

Bill HULSEY

Sent from my iPhone

On Aug 6, 2015, at 10:00, "Srinivas Devathi" <SDevathi@satyainnovations.com> wrote:

Andrew,

I have still not received the updated / final invoice. If I get the same, I will be able to comment on your time to be spent on the matter. I have been waiting for this for several months now. Please make this a priority and send this out today itself.

Srinivas.

Sent from my iPad

On Aug 5, 2015, at 9:15 PM, "Srinivas Devathi" <SDevathi@satyainnovations.com> wrote:

Dear Bill / Andrew,

I just reviewed this international search report and have the following concerns.

a) This report was sent out in November of last year and I was not informed. Why is that? This is a very serious concern that I have. The window to respond or send communications back to PCT team, is two months from mailing date and that is long in the past now. The window is gone.

b) They have cited other US applications in the search report, while USPTO having searched all US applications and world applications has already approved the patent. It seems odd.

c) What is your opinion on the impact of this search report in other national stage applications? We have a check mark on novelty and industrial applicability. But 'No' on inventive step. This is also strange as we did not find anything even remotely similar to what we applied for.

Let me know your comments and I will call back Andrew on Friday same time to discuss.

Thanks,
Srinivas Devathi.

From: Andrew Cook <Andrew.Cook@hulseyiplaw.com>

Sent: Wednesday, August 5, 2015 9:57 AM

To: Srinivas Devathi

Cc: Bill Hulsey; Jeff Hunt; Debbie Condel; Samantha Scobie

Subject: DEVA001WO - International Search Report

Good Morning Srinivas,

Per our conversation yesterday, please find enclosed a copy of the International Search Report as issued by the US Receiving Office. Please confirm receipt, and confirm that this is the report/documentation that you had requested. I have a meeting scheduled today with Debbie Condel (our accountant) regarding the corrected invoice, and I will give you an update as soon as complete.

Kind Regards,

Andrew

HULSEY HUNT & PARKS P.C.

<IMAGE001.PNG>

Intellectual Property Lawyers

A Gold Standard in IP for a Competitive Entrepreneurial World™

andrew.cook@hulseyiplaw.com

(O) 512-478-9190; (F) 512-478-9192

919 Congress Avenue, Suite 919, Austin, Texas 78701

Re: Attached: Engagement Letter

Srinivas Devathi

Mon 2/17/2014 11:40 PM

Sent Items

To: Jacob Mattis <Jacob.Mattis@hulseyiplaw.com>;

Dear Jacob,

The letter looks okay to be. I will swing by sometime tomorrow and get us started.

Here is my payment schedule.

I shall pay you 1000\$ to begin the search process. When that is complete and we are convinced on moving forward with non provisional application, I shall drop a check for 4000\$. And the final 4000\$ will be paid the day you file the patent. Let me know if this sounds good? We can get started.

Thanks,
DS

Sent from my iPad

On Feb 17, 2014, at 3:45 PM, "Jacob Mattis" <Jacob.Mattis@hulseyiplaw.com> wrote:

Dear DS,

After conferring with Mr. Hulsey and checking our firm's records, we do not currently represent any clients that would foreseeably present a conflict with our representation of you. We have also never performed any work for the four previous employers that you and I discussed.

Attached, please find a revised engagement letter presenting three items and their respective estimated costs: A patentability search (\$1000); a non-provisional application (\$7,000 - \$400 of which are governmental fees); and a request for prioritized examination (\$1,000 governmental fee). Per our discussion, the letter clarifies that no fees in excess of these amounts will be assessed without first obtaining your authorization to expand the scope of our engagement, and in the event that the firm voluntarily ceases to represent you, your retainer will be returned.

Best Regards,

Jacob

From: Srinivas Devathi [<mailto:SDevathi@satyainnovations.com>]

Sent: Sunday, February 16, 2014 8:44 PM

To: Jacob Mattis

Cc: Beau Horner; Paralegal-HulseyIP

Subject: Re: Attached: Engagement Letter

Greetings Jacob,

Thanks for sending the engagement letter. I need you to give me a new quotation for non provisional filing in the 'fast track' filing option. The uspto site says it is 1000\$ for micro inventor status. The preferred track will make determination within 12 months.

I have a few questions and concerns on the additional terms that you provided. I would like to discuss this with you. I can come into your office (Monday afternoon) or discuss over phone. Let me know your availability.

Regards,
DS

Sent from my iPad

On Feb 14, 2014, at 4:29 PM, "Jacob Mattis" <Jacob.Mattis@hulseyiplaw.com> wrote:

Dear Mr. Devathi,

Thank you for taking the time to visit our office this morning. We really enjoyed learning about your inventive concept. Discussing inventions that we and the "common man" may actually use on a regular basis is always exciting (compared to a complex oil tool or niche-based piece of software).

Attached, please find our firm's engagement letter, setting forth the three items (patent search, provisional application, utility application) that we discussed. Please initial the items you would like us to perform, and please don't hesitate to call or e-mail with any questions.

Best Regards,

Jacob Mattis

<image001.png>

Jacob Mattis

Licensed to Practice in Texas & before the U.S. Patent & Trademark Office
Senior Attorney, HULSEY-CALHOUN, P.C. Jacob.Mattis@HULSEYIPLaw.com
www.HULSEYIPLaw.com
(O) 512 478 9190 (F) 512 478 9192
919 Congress Avenue
Suite 919
Austin, Texas 78701

Please do not send confidential, proprietary, or otherwise sensitive information via e-mail. E-mail is not a secure form of communication and may not be protected by the attorney client privilege. Communication via e-mail does not establish an attorney-client relationship. Any information in any e-mail message from me or my office is intended for general informational purposes and is not intended to be, and shall not be relied upon, as legal advice. No information in an e-mail is a substitute for a personal consultation with an attorney.

CONFIDENTIALITY NOTICE: This email is covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521 and is legally privileged. This communication may also contain material protected and governed by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). This e-mail is only for the personal and confidential use of the individuals to which it is addressed and contains confidential information. If you are not the intended recipient, you are notified that you have received this document in error, and that any reading, distributing, copying or disclosure is unauthorized.

If you have received this communication in error, please notify the sender immediately by the telephone number above and destroy the message.

<2014-2-14 Engagement Letter SDevathi.docx>

<ADDITIONAL TERMS OF ENGAGEMENT.docx>

<2014-2-17 Engagement Letter SDevathi.docx>

Attached: Search Letter and References

Jacob Mattis <Jacob.Mattis@hulseyiplaw.com>

Wed 2/26/2014 4:11 PM

To: Srinivas Devathi <SDevathi@satyainnovations.com>;

Cc: Beau Horner <Beau.Horner@hulseyiplaw.com>; Paralegal-HulseyIP <paralegal@hulseyiplaw.com>;

 9 attachments (2 MB)

SDevathi Search Letter.docx; CA2236759A1.pdf; CN102671844A_translation.docx; EP0261815A2.pdf; SDevathi Search Letter.docx; US5804297.pdf; US6030702.pdf; US6551432B1.pdf; US7320824B2.pdf;

Dear Srivinas,

Attached, please find our search letter, along with electronic copies of each of the references cited in the letter. (One of the references we located is a Chinese patent, so a translation is attached in lieu of the actual patent document.)

If it would be convenient for you, we can print and mail hard copies of these documents, or hand you hard copies the next time we meet in person -- just let me know.

As I summarized in my previous e-mail, we didn't locate any references extremely similar to your proposed concept. Obviously, the general action of filling a space between two surfaces with a liquid exists in many forms, but we did not locate a reference that disclosed providing a thin, reusable space over a car body portion (or other vehicle surface) that can be filled with a decorative/visual substance, then emptied and re-filled.

Existing references do disclose the general concept of a layered structure, having a colored/decorative layer sandwiched between other layers of material (the upper layer being transparent), but these references generally related to adhesive films used on automobiles in place of conventional paint processes. So the very broad concept of paint between two layers, one of which is transparent, exists, but not the concept of creating a reusable space, fillable with paint, associated with a car body portion.

No search can be guaranteed to locate every reference of relevance -- a patent examiner may find one or more references that we did not, or interpret the references we located or other references similar to them more broadly than we did. But overall, the initial news looks good.

Once we receive a more detailed description of your inventive concept, (the parts you intend to use, materials, process, etc.), we will begin work on the application itself. [I am available to meet or by phone at your convenience.](#)

Best Regards,

Jacob

Jacob Mattis

Licensed to Practice in Texas & before the U.S. Patent & Trademark Office

Senior Attorney, HULSEY-CALHOUN, P.C. Jacob.Mattis@HULSEYIPLaw.com www.HULSEYIPLaw.com
(O) 512 478 9190 (F) 512 478 9192
919 Congress Avenue
Suite 919
Austin, Texas 78701

Please do not send confidential, proprietary, or otherwise sensitive information via e-mail. E-mail is not a secure form of communication and may not be protected by the attorney client privilege. Communication via e-mail does not establish an attorney-client relationship. Any information in any e-mail message from me or my office is intended for general informational purposes and is not intended to be, and shall not be relied upon, as legal advice. No information in an e-mail is a substitute for a personal consultation with an attorney.

CONFIDENTIALITY NOTICE: This email is covered by the Electronic Communications Privacy Act, 18 U.S.C. 2510-2521 and is legally privileged. This communication may also contain material protected and governed by the Health Insurance Portability and Accountability Act of 1996 (HIPAA). This e-mail is only for the personal and confidential use of the individuals to which it is addressed and contains confidential information. If you are not the intended recipient, you are notified that you have received this document in error, and that any reading, distributing, copying or disclosure is unauthorized.

If you have received this communication in error, please notify the sender immediately by the telephone number above and destroy the message.

-----Original Message-----

From: Srinivas Devathi [<mailto:SDevathi@satyainnovations.com>]
Sent: Tuesday, February 25, 2014 7:36 PM
To: Jacob Mattis
Subject: Re: Our next meeting

Hi Jacob,

I have no idea what you mean by 'south by southwest'. But, as long as we file a solid / strong patent by or around March 20th, I would be fine.

It would be great if we could meet along with Bill, this Thursday or Friday. Let me know.

Thanks,
DS

Sent from my iPad

> On Feb 25, 2014, at 5:42 PM, "Jacob Mattis" <Jacob.Mattis@hulseyiplaw.com> wrote:

>

> Dear Srinivas,

>

> A filing on or near March 20th is very doable. That's still nearly a month away, granted South by Southwest is coming up which will probably add a good bit of commute time getting into and out of the office that week. But if we have as much information and detail as you can provide on your process and the parts/materials you would contemplate using fairly soon, we'll get started on the application.

>

> I'll have our search letter to you before the end of the week and query Bill's availability. He travels a good bit, and his schedule fills quickly, but when we described your inventive concept to him, he really liked the idea. Working in a smaller law firm, serving a lot of solo inventors, small businesses, and start-up companies, we get to see a huge variety of ideas that you just don't see as readily in other work environments. Bill really enjoys getting to know our clients and their businesses.

>

> Regards,

>

> Jacob

>

>

> -----Original Message-----

> From: Srinivas Devathi [<mailto:SDevathi@satyainnovations.com>]

> Sent: Tuesday, February 25, 2014 5:21 PM

> To: Jacob Mattis

> Subject: Re: Our next meeting

>

> Hi Jacob,

> That is good news. I am glad we can proceed into the filing stage. Let me know when you have your search letter and results ready.

>

> I just have another question though. You seem to be very busy and swamped. Will we be able to achieve our target filing date of around March 20th?

> What are your thoughts?

>

> In the mean time I am writing up the stuff I have in a document (not much - just a few pages). I will bring it to you when we meet, to discuss the search results and next steps. Can we have Mr. Hulse in that discussion? He shared his interest to be in that discussion.

>

> Regards,

> DS

>

> Sent from my iPad

>

>> On Feb 25, 2014, at 3:49 PM, "Jacob Mattis" <Jacob.Mattis@hulseyioplaw.com> wrote:

>>

>> Dear Srinivas,

>>

>> Sorry to miss your call. Typing a quick message from my phone -- Caught up in a few meetings this week.

>>

>> Beau started your search and honestly, the news looks good. He hasn't found much that is on point. I'm going to poke around a little bit myself, but at least as far as cars are concerned, we're not finding anything on injecting paint between or under some kind of shell or coating on a car. We'll write up a formal search letter once we've reviewed everything we found.

>>

>> --Jacob

>>

>> -----Original Message-----

>> From: Srinivas Devathi [<mailto:SDevathi@satyainnovations.com>]

>> Sent: Tuesday, February 25, 2014 3:46 PM

>> To: Jacob Mattis

>> Subject: Our next meeting

>>

>> Hi Jacob,

>>

>> Hope you are doing well. And our patent search is going along well too.

>> I quickly wanted to follow up with you and know when should we meet?

>> To discuss search results and get into the filing process. Let me know via eMail or give me a call when you have a moment.

>>

>> Thanks,

>> DS

>> 503-858-4100

>>

>> Sent from my iPad

February 25, 2014

Srinivas Devathi
SDevathi@satyainnovations.com

Re: Patentability search for "Systems and Methods for Coloring and Changing the Color of a Vehicle"

Dear Mr. Devathi:

At your request, our firm has performed a search for existing references that may be relevant to the patentability of your invention, a system and method for repeatedly/reusably coloring a vehicle (e.g., coloring and changing the color of a vehicle), as disclosed to us.

Please be aware that while every effort to conduct a diligent search has been undertaken, it is not possible to guarantee that every reference of relevance has been located. A patent examiner or a third party may locate additional references not cited in this opinion. Please also be aware that while we believe the remarks expressed in this letter to be well grounded in law and fact, a patent examiner, court, or other third party may interpret your invention and/or the language of the references discussed herein in a different manner than what is expressed in this opinion.

I. SUMMARY

Based on the references located and our analysis thereof, patent protection is available for your systems and methods for coloring and changing the color of a vehicle.

Existing technologies focus on the material of automobile/vehicle bodies (e.g., flexible materials and/or materials designed to better retain paint), protective coatings and/or films to be placed over paint, pre-painted films to be applied to a portion of a vehicle body, methods for transferring paint sandwiched between layers of an adhesive substrate from a work surface to a vehicle, and similar methods.

As such, while the very general concept of paint positioned on a vehicle body, enclosed between two layers, is disclosed in existing patents and publications, the process of injecting paint or a similar substance between layers for the purpose of

providing a color/visual appearance to a vehicle, and later removing this substance and replacing it to provide an alternate appearance, does not appear to be disclosed. Existing methods that describe paint sandwiched between layers of material describe placing a protective material over pre-existing paint rather than injecting and removing paint from such structures.

II. BRIEF SUMMARY OF THE STANDARD FOR PATENTABILITY

For a patent to issue, the invention claimed in a patent application must be: 1) Useful; 2) Novel; and 3) Non-Obvious.

Nearly all inventions, save for abstract concepts, processes not tied to machines or that do not transform objects or data, and natural phenomena, are deemed useful.

An invention is novel if it not “anticipated” by an existing reference. Anticipation requires that an invention be shown identically in any single reference, i.e., all elements of a claimed invention, or an accepted equivalent thereof, must be present in the one document.

Obviousness is a somewhat subjective term of art that must be evaluated in each individual situation. An analysis to determine whether a claimed invention is obvious includes the steps of: determining the scope and content of the prior art; determining the differences between the subject matter sought to be patented and the prior art; determining the time at which the invention was made; determining the level of skill of a person having ordinary skill in the art to which the invention pertains; and evaluating whether the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.

Essentially, if a person skilled in the industry to which an invention pertains would have readily appreciated the ability to combine the teachings of multiple different references and/or his own knowledge to arrive at a claimed invention, that invention could be deemed obvious.

III. THE INVENTION

Conventionally, body portions of an automobile are provided with a desired visual appearance through the application of paint to an exterior surface thereof, which must then be allowed to dry. Optionally, a protective, clear coating, in the form of a painted coating or adhesive film, can be provided over the colored paint. When it is desired to change the color of a vehicle, the original paint must be removed, and the process must be repeated, which can be a time-consuming and expensive process. As such, individuals are inclined to repaint their vehicles only rarely.

The Systems and Methods for Coloring and Changing the Color of a Vehicle, as disclosed to us, while primarily focused on the automobile industry, could potentially be used effectively on any vehicle or surface. In brief summary, a “vest,” (e.g., a shell, coating, covering, etc.) is provided over each body portion of a vehicle. This vest can take the form of a single layer provided directly over the frame, or a double layer (e.g., providing an “envelope” over the frame). At discreet locations on the vest, small valves are positioned, usable to receive a substance (such as paint), which fills the space between the two layers of the vest (or between the vest and the frame if a single-layer vest is used). The lower layer of the vest and/or the vehicle frame can be colored a neutral color (such as white) to promote visibility of the paint color.

The paint, itself, need not be conventional paint. For example, because the enclosure formed by the vest is substantially liquid-tight, a colored liquid that does not dry or set in the manner of conventional paint could be used, and may be preferable to conventional paint. Similarly, water or another liquid with additives (glitter, metallic flakes, etc.) could be provided, as could flowable sand or other fluidized solids, emulsions, etc. – the substance is essentially filling the space created by the vest rather than adhesively adhering to the vehicle frame, so virtually any type of substance capable of filling the space can be used.

Drains can be provided in the vest (or the valves can be designed to function bi-directionally), such that when desired, the paint or other substance can be emptied from within the vest. A cleaning solution can be injected through the valves to wash/displace the paint, to dissolve the paint, and/or otherwise flush the first medium from within the vest, to enable a second medium to be injected therein to provide the vehicle with a different appearance.

As a result, a vehicle, once provided with this system, can be provided with a new visual appearance efficiently and inexpensively. While new vehicles can be manufactured having a vest installed, after-market installation of such systems can also be undertaken.

IV. THE SEARCH

The following references were determined to be relevant to the invention:

<u>Inventor/Applicant/Reference Name</u>	<u>Patent/Publication Number</u>	<u>Issue/Publication Date</u>
Spain et al.	US 6,551,432	Apr. 22, 2003
Sawatsky	CA 2,236,759	Dec. 6, 1998

	CN 102671884	Sep. 19, 2012
General Motors Corporation	EP 0261815	Aug. 28, 1987
Ohgane et al.	US 7,320,824	Jan. 22, 2008
Colvin et al.	US 5,804,297	Sep. 8, 1998
Matsui et al.	US 6,030,702	Feb. 29, 2000

US 6,551,432

Spain et al.

This U.S. Patent relates to systems and methods for transferring dry paint via a lamination process. A clear coat of paint and a colored coat are applied to a temporary flexible casting sheet and permitted to dry. The paint coats are then transferred to a plastic backing sheet (by providing an adhesive coat over the clear coat then applying the backing sheet). The plastic sheet is then thermoformed into the shape of a car body panel. The formed sheet is then bonded to the car body. The backing sheet has sufficient flexibility to absorb defects in the substrate so that the exterior paint layer appears free of defects.

While this patent discloses, generally, a multi-layer laminate structure that can be placed around an object, an intermediate layer of that structure including colored paint, the formation of a reusable space between layers of this laminate structure and/or between the laminate and the underlying substrate is not disclosed. This laminate is used as an alternative to conventional painting processes and is designed to be fixedly bonded to a vehicle panel to provide it with a desired appearance.

CA 2,236,759

Sawatsky

This Canadian patent relates to methods of forming frangible articles (dishes, etc.) having a protective and decorative plastic coating. Specifically, the coating can include an inner layer (for enhancing adhesion of subsequent coatings and containing glass or other frangible materials in the event of a broken dish), and a protective outer coating, designed to resist removal/damage when the article is washed. An intermediate layer of polyethylene copolymer can be provided to further retain particles of broken material. Any of the plastic layers can include color, iridescent/pearlescent additives, heat-responsive color-changing materials, I/R responsive materials, printing/tactile enhancements, and the like.

While this patent discloses, generally, a multi-layer structure that can be placed around an object, having a middle layer that could, in some embodiments, be

decorative, these surface coatings do not provide a space into which decorative materials can be injected and subsequently removed, but are instead fixably adhered to the article, providing, at best, a single decorative appearance.

CN 102671844 (translation)

This Chinese patent relates to a process for coating mobile phone plastic parts and/or cell phone cases. After cleaning an article, the primer thereof is coated to provide a uniform, continuous primer layer with a desired color. A topcoat is then applied/sprayed via an injector assembly to cover the primer layer and provide a uniform, continuous layer of paint that is permitted to cure.

While this patent discloses, generally, an article having a coating with a desired characteristic sandwiched between a framework of the article and an outer coating, the formation of a space between layers into which decorative materials can be injected and subsequently removed is not disclosed. This patent relates to conventional spraying of sequential coatings on to an article.

EP 0261815

General Motors Corporation

This published European Patent Application relates to methods for making automobile body panels in which a carrier film is pre-painted with metallic paint. The painted film is subsequently applied to an automobile body panel in a vacuum-forming process. In use, a layer of paint is applied to a plastic film, optionally with a clear coating applied on top of the paint. The underside of the plastic film is coated with a pressure-sensitive adhesive. The film is then heated until sufficiently pliable to be vacuum formed, and is subsequently placed over a substrate for a body panel in a vacuum-forming device. The device draws air from underneath the film, causing it to wrap and stick to the substrate without forming defects and air bubbles.

While this patent discloses, generally, the concept of placing a film over a vehicle panel for decorative purposes, the formation of a space between the panel and the film into which decorative materials can be injected and subsequently removed is not disclosed. This film is used as an alternative to conventional painting processes, a pre-painted film being fixedly and adhesively retained on the vehicle panel to provide it with a desired appearance.

US 7,320,824

Ohgane et al.

This U.S. Patent relates to a paint substitute film having a color coat with metallic pigments and orientation inhibitors for desirably orienting the pigments, a clear coat over the color coat, and an adhesive layer beneath the clear coat. In use, the film can be

applied to a complexly shaped component. The orientation inhibitors orient the metallic pigments such that light is diffused and does not undesirably affect the color of the paint.

While this patent discloses, generally, an article having a coating with a desired characteristic sandwiched between two other layers, the formation of a space between layers into which decorative materials can be injected and subsequently removed is not disclosed. The disclosed film is instead used as an alternative to conventional painting processes, a painted film being fixedly and adhesively retained on an underlying object to provide it with a desired appearance.

US 5,804,279

Colvin et al.

This U.S. Patent relates to an insulative coating that includes a flexible polymer binder with microcapsules interspersed therein, this material being designed for application to a substrate, such as an aircraft skin, concrete, roadways, buildings, electronic components, etc.

While this patent discloses, generally, a film-like coating placed over a substrate, that coating having additive components beneath the outer surface thereof, it does not disclose the formation of a space between a substrate and a film, or between two layers of film, into which decorative materials can be injected and subsequently removed. The disclosed film is used for enhanced insulation from thermal gradients and transients, rather than coloring/visual appearance.

US 6,030,702

Matsui et al.

This U.S. Patent relates to a protective sheet able to be adhered over incompletely cured paint on an automobile without causing deformation of the paint or the sheet. After use, the sheet can be easily peeled from the paint without adhesive remaining on the paint. The sheet includes a polypropylene film and a pressure-sensitive adhesive (polyisobutylene, etc.)

While this patent discloses, generally, a film-like coating placed over uncured/liquid paint, it does not disclose the formation of a space between a substrate and a film, or between two layers of film, into which decorative materials can be injected and subsequently removed. The disclosed sheet is used to protect uncured paint while the paint is permitted to cure, and is then intended for easy removal from the paint after curing thereof.

V. ANALYSIS

The Systems and Methods for Coloring and/or Changing the Color of a Vehicle, disclosed to us, generally include the following elements:

1. At least one transparent or translucent layer placed over a body portion of a vehicle to form a liquid-tight space;
2. One or more valves or comparable openings usable to receive a medium into the space;
3. One or more exit openings (or the valves themselves) usable to remove the medium from the space;
4. A visible medium providable into and removable from the space, the visible medium being visible through the transparent layer.

The cited references disclose multi-layer films and similar structures, at least one such layer being decorative, but do not disclose providing a vehicle with a reusable space into which visible media can be injected and removed.

VI. CONCLUSION

Based on the references discovered, it appears that patent protection is available for your Systems and Methods for Coloring and/or Changing the Color of a Vehicle, as disclosed to us; however, the scope of such protection will be limited to those features not expressly disclosed in the cited references. For example, an extremely broad patent covering the general concept of a decorative material sandwiched between other materials may not be patentable, but a patent focused on the creation of a reusable space associated with a vehicle body part appears distinct from the references discovered through this search.

We note that even though an invention may not be identically disclosed in a reference, a patent examiner may argue that the differences between a proposed invention and the body of existing references are obvious, in light of other existing references and/or the knowledge inherent in a person skilled in the industry to which the invention pertains. While we believe your invention to be non-obvious, please be aware that obviousness is a subjective determination, and it may be necessary to provide arguments and claim language in support of non-obviousness responsive to one or more rejections from the U.S. Patent and Trademark Office.

If you have any questions, or if it appears to you that we have not discussed or considered one or more significant features of your invention or the attached references, please provide us with an explanation, and we will remedy any deficiencies in our analysis.

We look forward to hearing from you after you have had a chance to review this opinion and the enclosed references.

Sincerely,

Jacob Mattis