



US 20060003912A1

(19) **United States**

(12) **Patent Application Publication**
Lindsay et al.

(10) **Pub. No.: US 2006/0003912 A1**

(43) **Pub. Date: Jan. 5, 2006**

(54) **KITS OF FOAM BASED CLEANING ELEMENTS**

(52) **U.S. Cl. 510/267**

(76) **Inventors: Jeffrey Dean Lindsay, Appleton, WI (US); Fung-Jou Chen, Appleton, WI (US); Julie Marie Bednarz, Neenah, WI (US)**

(57) **ABSTRACT**

Correspondence Address:
DORITY & MANNING, P.A.
POST OFFICE BOX 1449
GREENVILLE, SC 29602-1449 (US)

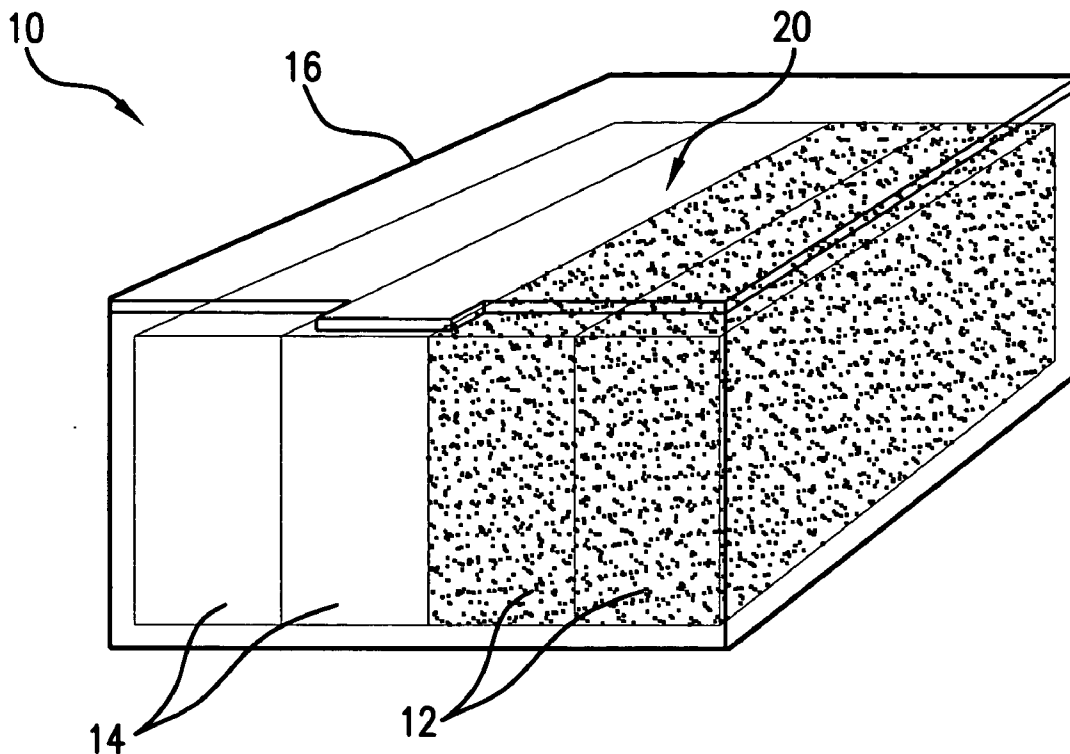
A kit for use in cleaning is provided. The kit includes a first cleaning element that is made at least partially of foam that has a first cleaning property. A second cleaning element is also included and is made at least partially of foam and has a second cleaning property. The first and second cleaning elements are configured for cleaning a surface. A first identifying feature is present that identifies the first cleaning element as having the first cleaning property, and likewise a second identifying feature is present that identifies the second cleaning element as having the second cleaning property. The cleaning properties of the first and second cleaning elements are different from one another.

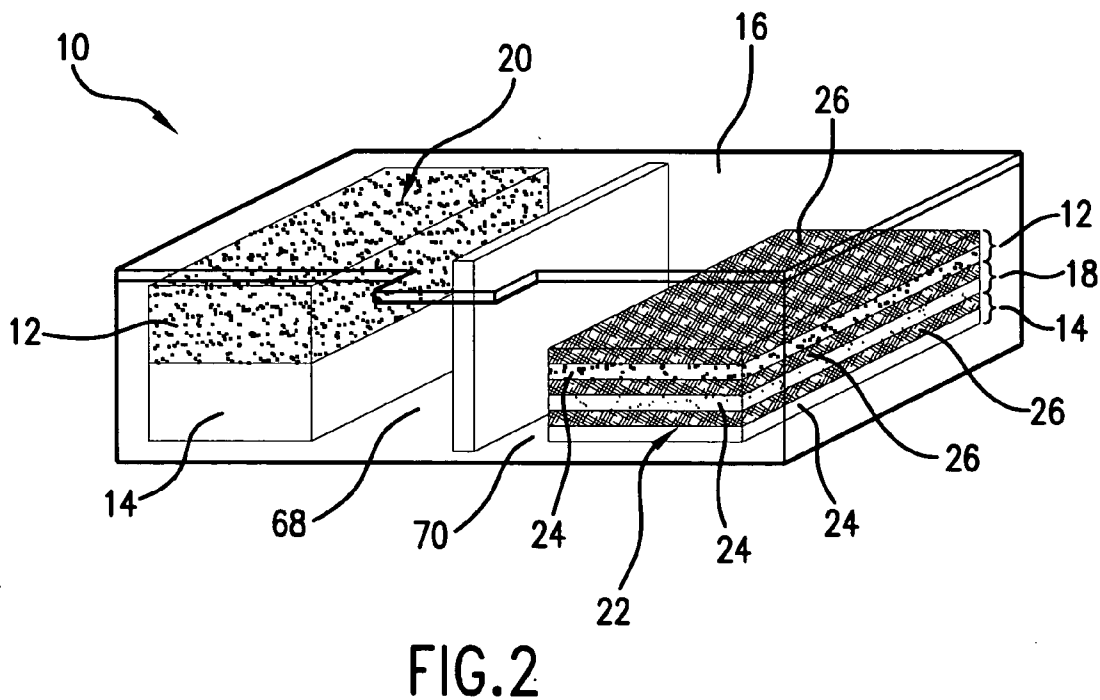
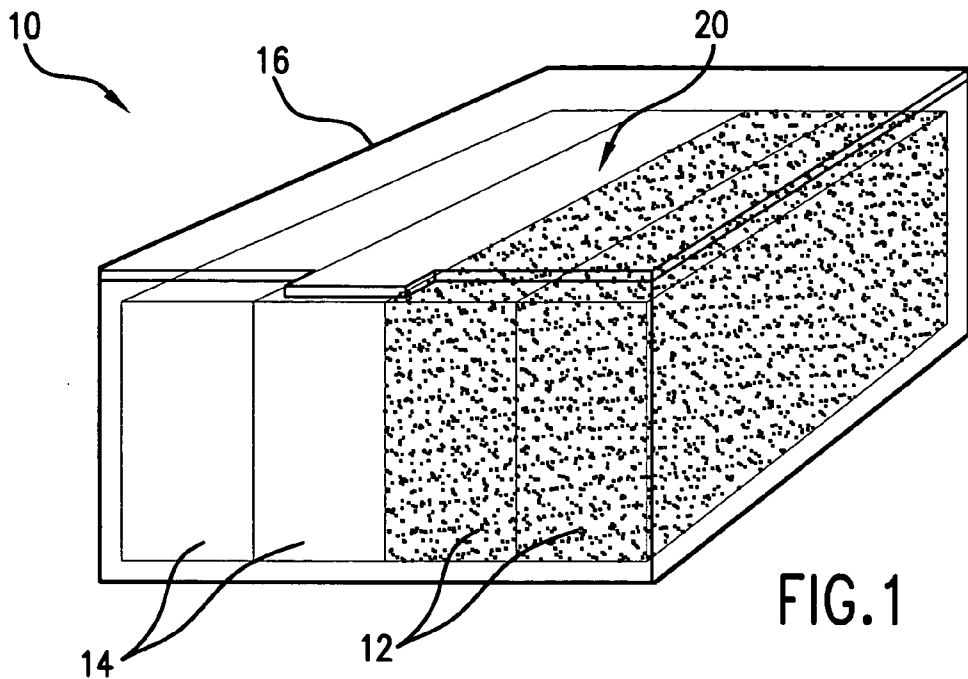
(21) **Appl. No.: 10/884,075**

(22) **Filed: Jul. 2, 2004**

Publication Classification

(51) **Int. Cl.**
C23G 1/06 (2006.01)





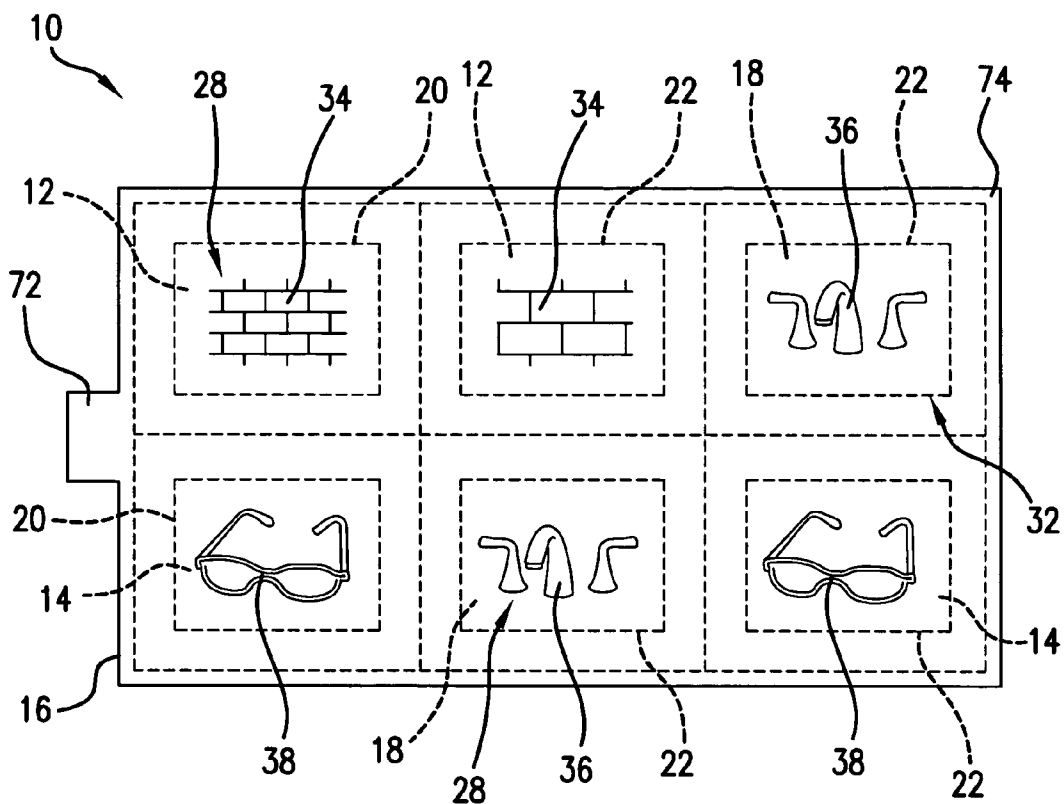


FIG. 3

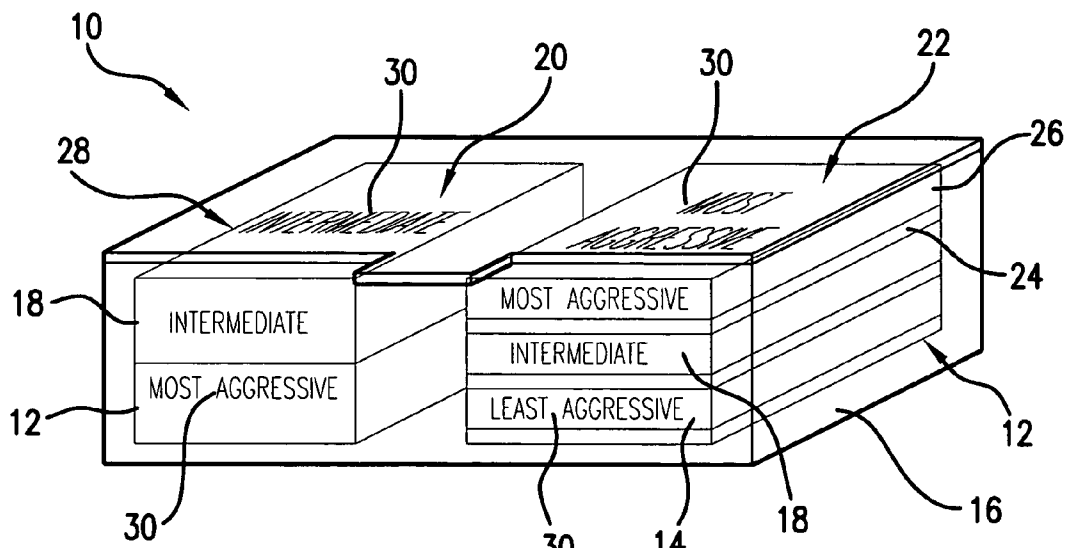


FIG. 4

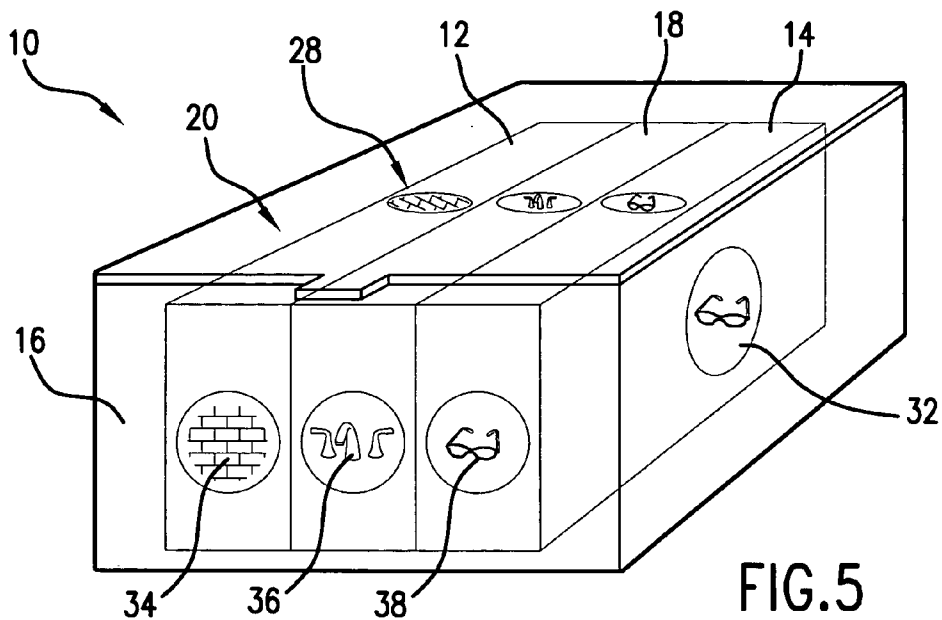


FIG. 5

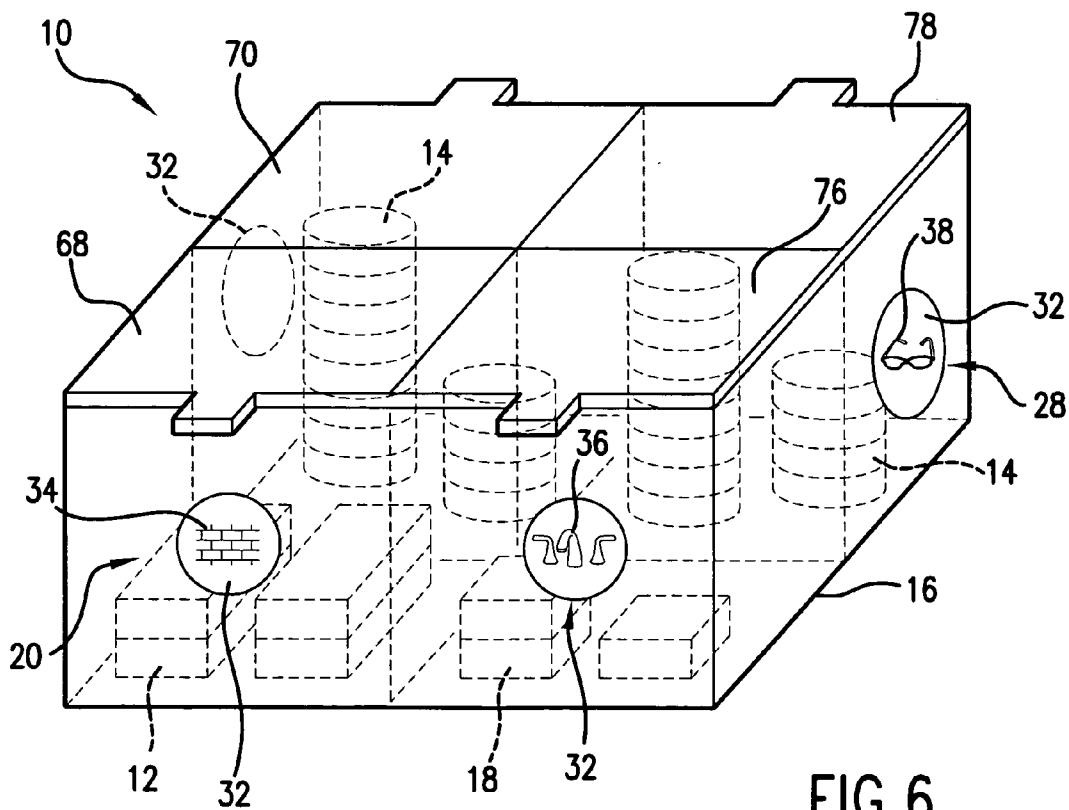


FIG. 6

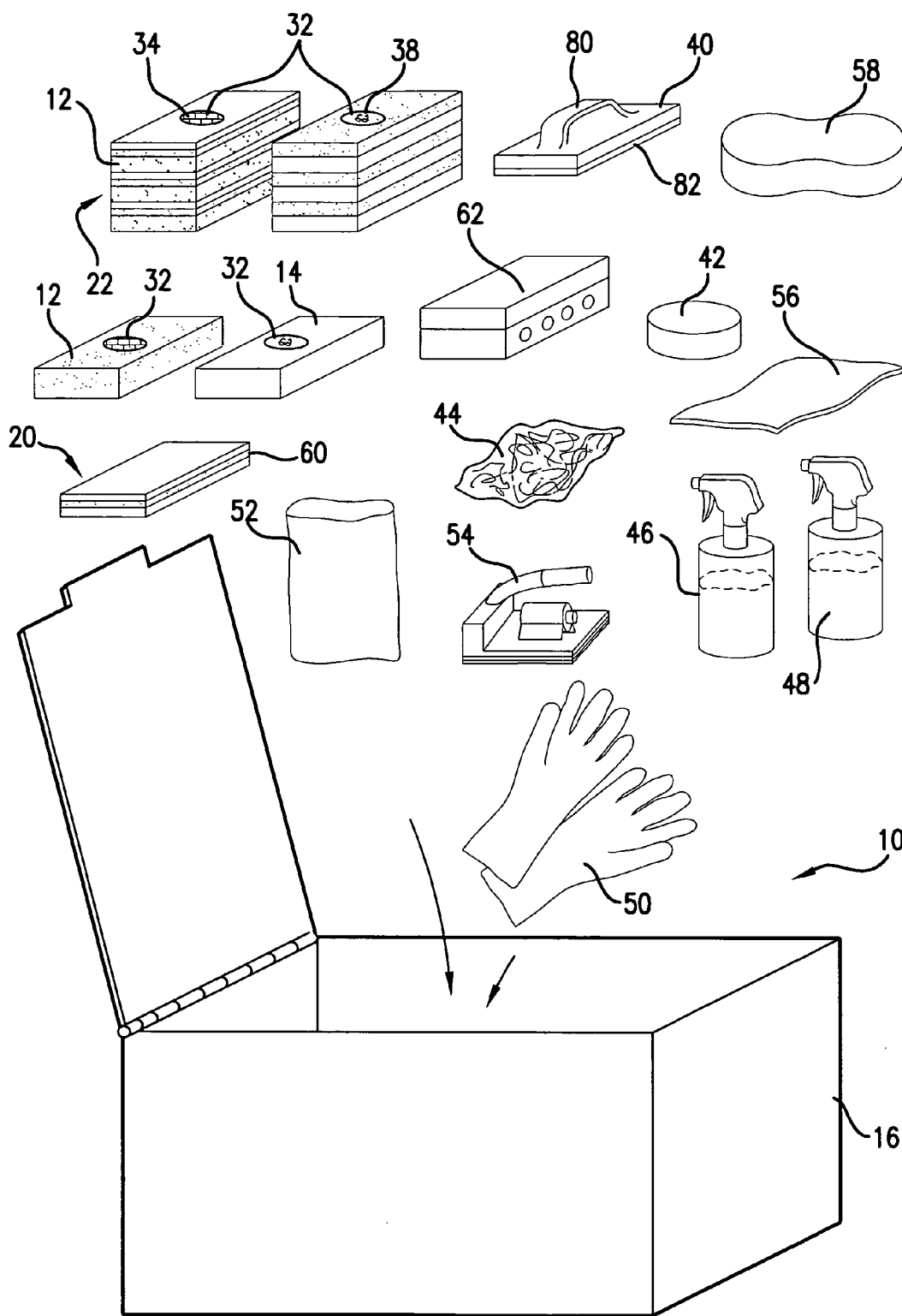


FIG. 7

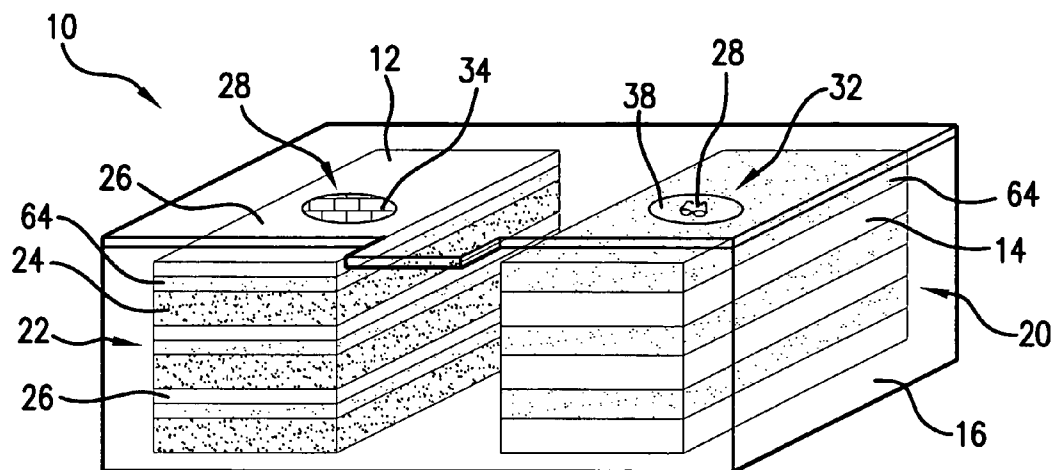


FIG. 8

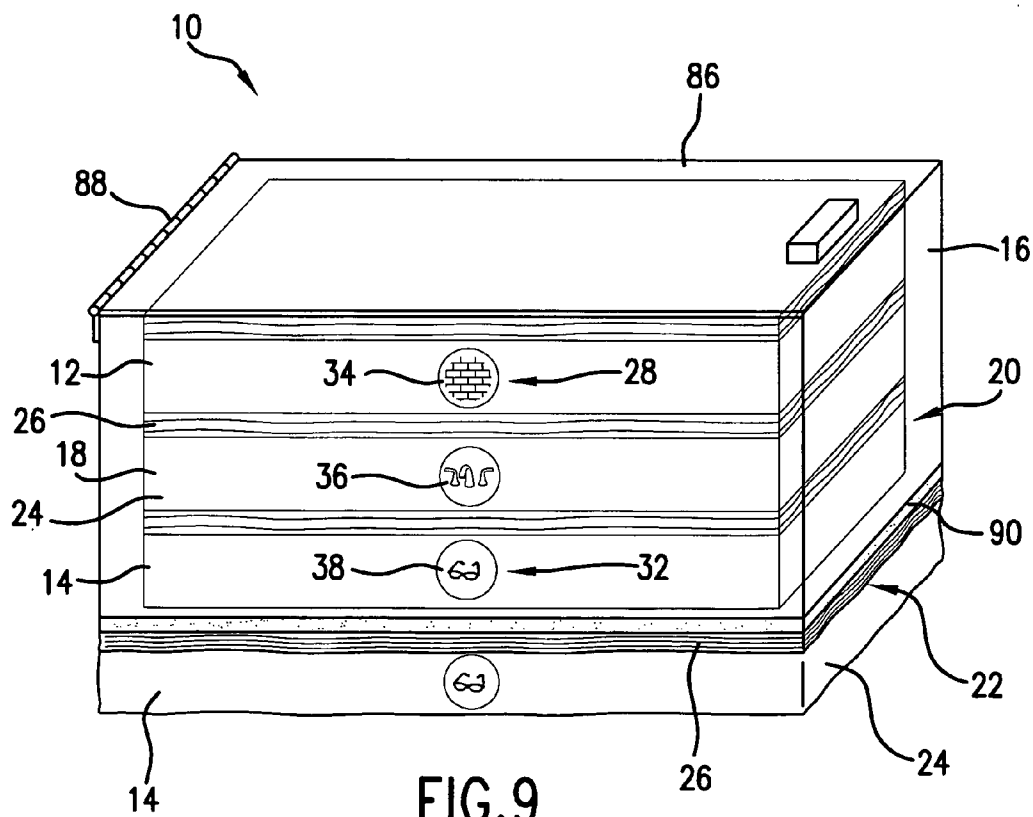


FIG. 9

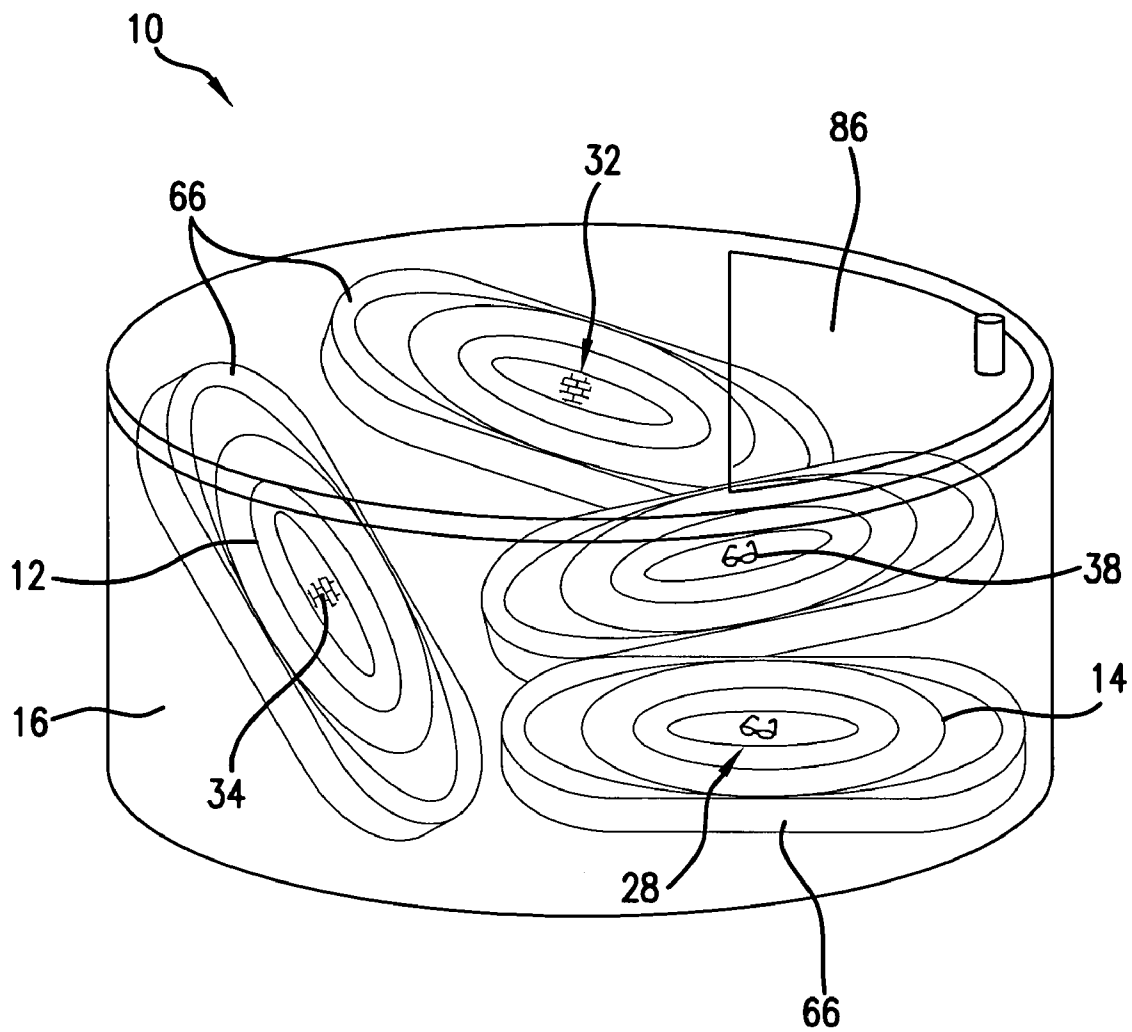


FIG. 10

KITS OF FOAM BASED CLEANING ELEMENTS

BACKGROUND

[0001] Cleaning applications employ cleaning products, such as towels, in order to remove dirt and other unwanted elements from surfaces. In some instances the cleaning product may be a urethane foam or a cellulose sponge which may be used in order to wipe a surface clean. The cleaning product may be configured with bristles or grit disposed thereon in order to aid in cleaning.

[0002] Cleaning products can be configured to work when in a dry state in order to clean the surface, or may be designed to work in a wet state so that the cleaning product is wet to some degree when cleaning the surface. A detergent may be used with the cleaning product in order to assist in breaking up dirt and other unwanted elements so that the surface may be cleaned. It is sometimes the case that dirt or other unwanted elements cannot be sufficiently removed from a surface even when a cleaning product is properly applied. Applying the cleaning product too aggressively may result in the surface being damaged, and may still not result in the removal of dirt or unwanted elements from the surface. Examples of difficult to clean materials include crayon on walls, scuff marks from shoes on floors, permanent magic marker markings on a variety of surfaces such as dry erase boards, stains on porcelain or ceramics including dentures, grease and oil spots on numerous surfaces, hard water spots and soap scum on tile, biofilms on metal and plastic surfaces, mildew and fungus growths on numerous surfaces, and other forms of dirt, grime, or other unwanted elements from various surfaces.

[0003] Blocks of melamine foam have been recognized as having useful cleaning properties when wetted with water and rubbed against certain surfaces to be cleaned, and have been marketed in several countries for such purposes. Melamine-based foam has an open-celled, microporous structure. Melamine-based foam is abrasive in that when rubbed across a surface, dirt and other unwanted elements will be removed. Particles of the melamine-based foam may break off due to this abrasive contact. Over time, the melamine-based foam will be worn down due to repeated abrasion with the surface to be cleaned and the unwanted elements present on this surface.

[0004] Other types of foams, such as phenolic foams, may be employed during cleaning procedures in order to perform various cleaning functions. Foam based cleaning products may also be configured as sheets instead of being simply provided as blocks of foam. For instance, a layer of cleaning foam, such as melamine-based foam or phenolic foam, may be attached to a flexible web to provide a wiping and scrubbing product that can conform to complex surfaces and provide good tactile control of applied pressure.

[0005] Unfortunately, the application of cleaning products that include cleaning foams to some surfaces may result in scratching or abrasion of the surface being cleaned. In this instance, certain types of surfaces such as plastic or glass will be damaged if a foam cleaning product that is too aggressive in removing unwanted materials is applied. Additionally, different types of stains, such as crayon or grease, may require a different type or level of aggressiveness of foam cleaning product in order to be removed. Further, some users of foam cleaning products may unknowingly apply the

foam cleaning product in an incorrect state resulting in decreased cleaning effectiveness or resulting in damage to the foam cleaning product or surface being cleaned. For example, a user may mistakenly clean with a foam cleaning product in a wet state when in fact the foam cleaning product was designed to clean in a dry state. Alternatively, a user may conduct dry cleaning with a foam cleaning product that was in fact intended for use during wet cleaning.

[0006] Presently provided is an improvement over known foam based cleaning products that allows for a user to identify certain properties of two or more foam based cleaning elements. In this regard the user will be able to select the appropriate cleaning element for a particular type of surface, stain, cleaning state, etc. Damage to particular surfaces will be reduced, cleaning effectiveness will be enhanced, and/or the life of the foam cleaning element will be extended when the correct type of foam cleaning element is employed.

SUMMARY

[0007] Various features and advantages of the invention will be set forth in part in the following description, or may be obvious from the description, or may be learned through practice of the invention.

[0008] The present invention provides for a kit for use in cleaning that includes both a first and second cleaning element. Each of the cleaning elements are made at least partially of foam and are each configured for cleaning a surface. The first cleaning element has a first cleaning property while the second cleaning element has a second cleaning property. A first identifying feature is provided that identifies the first cleaning element as having the first cleaning property. Likewise, a second identifying feature is provided that identifies the second cleaning element as having the second cleaning property. The cleaning properties of the first and second cleaning elements are different from one another.

[0009] Also provided for in accordance with the present invention is a kit for use in cleaning that includes a first cleaning element made at least partially of foam and configured for cleaning a surface. The first cleaning element is identifiable as having a first cleaning property. A second cleaning element is included and is also made at least partially of foam and configured for cleaning a surface. The second cleaning element is identifiable as having a second cleaning property. The cleaning properties of the first and second cleaning elements are different. A body is also included and is configured for holding the first cleaning element and the second cleaning element.

[0010] Also provided for in accordance with the present invention is a kit as discussed above where the cleaning property of the first and second cleaning elements that is different is the aggressiveness of the first and second cleaning elements in cleaning a surface. In this instance, the first cleaning element is configured for cleaning more aggressively than the second cleaning element. Alternatively, the present invention also provides for a kit as discussed above in which the cleaning property of the first and second cleaning elements that is different is the cleaning state of the first and second cleaning elements in cleaning a surface. In this regard, the first cleaning element is configured for

cleaning in a wet state while the second cleaning element is configured for cleaning in a dry state.

[0011] Also provided for in accordance with the present invention is a kit as discussed above that further includes a third cleaning element that is made at least partially of foam. The third cleaning element is configured for cleaning a surface and is identifiable as having a third cleaning property. The body, if included, is configured for holding the third cleaning element.

[0012] The present invention also provides for an exemplary embodiment of the kit as immediately discussed in which the cleaning property of the first, second and third cleaning elements that is different is the aggressiveness of the first, second and third cleaning element in cleaning a surface. In this regard, the first cleaning element is configured for cleaning more aggressively than the second and third cleaning elements, and the third cleaning element is configured for cleaning more aggressively than the second cleaning element.

[0013] Also provided for in accordance with the present invention is a kit as discussed above in which the first cleaning element is a cleaning wipe and the second cleaning element is a cleaning block. Further, in accordance with another exemplary embodiment, the cleaning wipe may include a melamine-based foam that is configured for contacting and cleaning a surface to be cleaned and a web that is attached to the melamine-based foam. The cleaning block may be a block of melamine-based foam and may have a thickness of at least 0.3 inches, 0.5 inches, or 1 inch, and may have a width of at least 1.5 inches and a length of at least 2 inches, 3 inches, 4 inches, or 5 inches.

[0014] The present invention also provides for a kit as discussed above that further includes indicia for identifying the cleaning properties of the first and second cleaning elements. The indicia may be embossments on the first and second cleaning elements, embossments on the body, labels on the first and second cleaning elements, and/or labels on the body.

[0015] The indicia can also comprise information printed directly on the cleaning elements, including printing on the foam, or can comprise coloring added to the foam. In addition to adding dyes or pigments during the foam manufacturing process, colors or patterns can be applied to the foam using ink jet printing, pad printing, flexographic printing, and other printing techniques, as well as topical application of coloring agents.

[0016] Further provided for in accordance with the present invention is a kit as discussed above in which the first and second cleaning properties are identifiable by a feature of the first and second cleaning elements. The cleaning properties may be identified by the color, size, shape, thickness, and/or the tactile characteristics of the first and second cleaning elements.

[0017] Also provided in accordance with the present invention is a kit as discussed above that further includes graphical symbols used for identifying the cleaning properties of the first and second cleaning elements.

[0018] Also provided for is a kit as previously discussed that further includes other cleaning components that may be held by the body. Other cleaning components that may be

included are, for instance, gripping elements configured to hold the first and second cleaning elements, an abrasive pad, steel wool, a spray bottle for holding a cleaning agent, a spray bottle for holding a lotus-effect agent, plastic gloves, nanoemulsions, antimicrobial agents such as silver-based means, odor-control agents, etc. Representative nanoemulsion agents can include antimicrobial oil-water nanoemulsions such as those describe in WO 01/49296, "Antimicrobial Compositions and Methods of Use," published Jul. 12, 2001 by J. R. Baker, Jr., et al., and WO 03/00243, "Antimicrobial Nanoemulsion Compositions and Methods," published Jan. 3, 2003 by T. Hamouda et al.

[0019] Also provided for in accordance with the present invention is a kit as previously discussed in which at least one of the first and second cleaning elements is partially made of a foam that is a melamine-based foam.

[0020] The present invention also includes an embodiment as previously discussed in which the body defines a first compartment into which the first cleaning element is located. The body likewise defines a second compartment into which the second cleaning element it located.

[0021] The present invention also provides for a kit for use in cleaning that includes a first cleaning element that comprises a block of melamine-based foam that may be laminated to a second layer of another material. The first cleaning element is configured for cleaning a surface and has a particular level of cleaning aggressiveness. A second cleaning element is included and may also comprise a block of melamine-based foam that may be laminated to a second layer of another material. Likewise, the second cleaning element is configured for cleaning a surface, and the second cleaning element has a particular level of cleaning aggressiveness that is less than that of the first cleaning element. A body that is configured for holding the first and second cleaning elements is provided. A first identifying indicia is located on the body and identifies the cleaning aggressiveness of the first cleaning element. Likewise, a second identifying indicia is located on the body and identifies the cleaning aggressiveness of the second cleaning element.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] A full and enabling disclosure of the present invention, including the best mode thereof, directed to one of ordinary skill in the art, is set forth more particularly in the remainder of the specification, which makes reference to the appended figures in which:

[0023] **FIG. 1** is a perspective view of a kit used in accordance with one exemplary embodiment of the present invention that distinguishes between first and second cleaning elements on the basis of color.

[0024] **FIG. 2** is a perspective view of a kit in accordance with one exemplary embodiment of the present invention that distinguishes between first, second and third cleaning elements on the basis of color.

[0025] **FIG. 3** is a top view of a kit in accordance with one exemplary embodiment of the present invention that distinguishes between first, second, and third cleaning elements on the basis of indicia located on a cover of the body.

[0026] **FIG. 4** is a perspective view of a kit in accordance with one exemplary embodiment of the present invention

that distinguishes between cleaning properties of the first, second, and third cleaning elements by making use of embossments on the elements.

[0027] FIG. 5 is a perspective view of a kit in accordance with one exemplary embodiment of the present invention that distinguishes between cleaning properties of the first, second and third cleaning elements by use of labels attached to the elements.

[0028] FIG. 6 is a perspective view of a kit in accordance with one exemplary embodiment of the present invention in which the cleaning properties of the first, second and third elements are distinguished by labels and by shape.

[0029] FIG. 7 is a perspective view of a kit in accordance with one exemplary embodiment of the present invention in which a variety of cleaning products in addition to the first and second cleaning elements may be held by the body of the kit and used for additional functionality during a cleaning procedure.

[0030] FIG. 8 is a perspective view of a kit in accordance with one exemplary embodiment of the present invention in which the first cleaning element is a cleaning wipe that has a visual indicating portion that alerts the user that a foam layer has been worn to a particular degree.

[0031] FIG. 9 is a perspective view of a kit in accordance with one exemplary embodiment of the present invention in which the body is configured to store the first and second cleaning elements and to hold the first and second cleaning elements on the outside so as to act as a handle in applying the first and second cleaning elements.

[0032] FIG. 10 is a perspective view of a kit used in accordance with one exemplary embodiment of the present invention that includes first and second cleaning elements configured as molded three dimensional foam pads.

[0033] Repeat use of reference characters in the present specification and drawings is intended to represent same or analogous features or elements of the invention.

DETAILED DESCRIPTION

[0034] Reference will now be made in detail to embodiments of the invention, one or more examples of which are illustrated in the drawings. Each example is provided by way of explanation of the invention, and not meant as a limitation of the invention. For example, features illustrated or described as part of one embodiment can be used with another embodiment to yield still a third embodiment. It is intended that the present invention include these and other modifications and variations.

[0035] It is to be understood that the ranges and limits mentioned herein include all ranges as located within, and also all values located under and above the prescribed limits. For instance, a range from 100 to 200 also includes ranges from 110 to 150, 170 to 190, and 153 to 162. Further, a limit of up to about 7 also includes a limit of up to about 5, up to about 3, and up to about 4.5.

[0036] The present invention provides for a kit 10, shown for instance in FIG. 1, that may be used for improved cleaning. The kit 10 includes a first cleaning element 12 with a first cleaning property and a second cleaning element 14 that has a second cleaning property different than the first

cleaning property. The differences between the cleaning properties may be, for instance, the aggressiveness of cleaning, the ability to clean in a wet or dry state, or the types of stains that may be removed by the first and second cleaning elements 12, 14. Both of the first and second cleaning elements 12, 14 are made at least partially of foam. The first cleaning element 12 is identifiable as having the first cleaning property, and the second cleaning element 14 is identifiable as having the second cleaning property so that a user may properly select and apply the appropriate cleaning element 12, 14 for a particular cleaning application. Identification of the cleaning properties for a particular cleaning element 12, 14 will result in the elimination of, or a reduction in, the chance of having a situation in which the cleaning element 12, 14 damages the surface being cleaned, is applied to clean an incorrect type of stain, or is applied to the surface in the wrong wet/dry state, etc.

[0037] FIG. 1 shows a body 16 that holds the first and second cleaning elements 12, 14. Here, elements 12 and 14 are cleaning blocks 20. The first and second cleaning elements 12, 14 have at least one different cleaning property. In this instance, the cleaning aggressiveness of the first cleaning element 12 is higher than the cleaning aggressiveness of the second cleaning element 14. The first cleaning element 12 may possibly damage certain types of surfaces when applied 30 thereto in order to remove various unwanted elements. This being the case, the second cleaning element 14 may instead be applied to those surfaces susceptible to being damaged in order to both clean the surface and to avoid any possibility of scratching or otherwise damaging the surface.

[0038] The user may distinguish between the cleaning properties of the first and second cleaning elements 12, 14 in a variety of manners in accordance with various exemplary embodiments of the present invention. As shown in FIG. 1, for instance, the color of the first and second cleaning elements 12, 14 indicates the appropriate level of cleaning aggressiveness of the particular element 12, 14. The first cleaning element 12 is colored blue in order to indicate a higher level of cleaning aggressiveness while the second cleaning element 14 is white in color in order to indicate a lesser level of cleaning aggressiveness. In accordance with other exemplary embodiments of the present invention, various color schemes may be used in order to indicate to the user various cleaning properties of the first and second cleaning elements 12, 14.

[0039] The first and second cleaning elements 12, 14 are packaged inside of the body 16 so as to allow for the sale of the entire kit as one unit and for the transport of the kit 10 to either a particular location in the user's house, automobile, business, etc., or to the location in which the user desires to perform the cleaning procedure. The body 16 may be flexible in nature or may be rigid in accordance with various exemplary embodiments of the present invention. The body 16 may have a reclosable seal in order to allow access to the first and second cleaning elements 12, 14 and in turn allow for a resealing of kit 10. Various types of body 16 configurations may be used in accordance with various exemplary embodiments of the present invention in order to store, transport, or display the kit 10 as known to one of ordinary skill in the art.

[0040] FIG. 2 shows an exemplary embodiment of the present invention in which the body 16 is rigid and defines

a first compartment 68 and a second compartment 70. The body 14 may be constructed so as to allow access to individual compartments 68, 70 or may be made so that access to both compartments 68, 70 must occur simultaneously. Again, the body 16 may be configured in a variety of manners. For instance, body 16 need not completely surround the first and second cleaning elements 12, 14 and may instead simply hold the first or second cleaning element 12, 14 thereon.

[0041] The color of the first and second cleaning elements 12, 14 in FIG. 2 identifies cleaning properties of the cleaning elements 12, 14. Again, the first cleaning element 12 is blue in order to indicate a higher level of cleaning aggressiveness while the second cleaning element 14 is white in order to indicate a lower degree of cleaning aggressiveness. The first and second cleaning elements 12, 14 are provided as both cleaning blocks 20 and cleaning wipes 22. As such, the user may select between cleaning with a block 20 or a wipe 22 depending on the particular situation. This may be, for instance, if a corner of a floor is desired to be cleaned. Here, it may not be possible for one to apply a cleaning block 20 in a tight spot in order to effectively clean the surface, and instead the user will choose a cleaning wipe 22 in order to more easily access the dirty area. Additionally, the user will select between the first and second cleaning elements 12, 14 based upon the desired degree of cleaning aggressiveness.

[0042] Also provided in the kit 10 shown in FIG. 2 is a third cleaning element 18 that is only provided as a cleaning wipe 22. The third cleaning element 18 is colored green and has a cleaning property that is different than both the first cleaning element 12 and the second cleaning element 14. Again, the cleaning property in question is the cleaning aggressiveness of the third cleaning element 18. In this instance, the third cleaning element 18 has an intermediate level of cleaning aggressiveness such that the third cleaning element 18 cleans more aggressively than the second cleaning element 14 but not as aggressively as the first cleaning element 12. Again, the user will be able to distinguish between the various levels of cleaning aggressiveness afforded by the cleaning elements 12, 14, 18 upon viewing the color of the particular cleaning wipe 22 or cleaning block 20. Although shown as being only a cleaning wipe 22, the third cleaning element 18 may also be provided in a cleaning block 20 form in accordance with other exemplary embodiments.

[0043] Kit 10 may have cleaning products grouped with a display analogous to the Mohr scale of mineral hardness that shows the particular types of surfaces that are suitable for each of the different grades of cleaning products. FIG. 3 shows an exemplary embodiment of the present invention in which the color of the cleaning elements 12, 14, 18 is not used in order to identify different cleaning properties of the elements 12, 14, 18. Instead, the kit 10 in FIG. 3 includes indicia 28 located on a cover 74 of the body 16. The cover 74 may be lifted up or removed by a user pulling on tab 72. Opening of cover 74 will allow access to the various cleaning blocks 20 and wipes 22 located in body 16. The indicia 28 located above the various cleaning blocks 20 and wipes 22 identify to the user various degrees of cleaning aggressiveness of the blocks 20 and wipes 22. For instance, the first cleaning element 12, provided as both a set of cleaning blocks 20 and cleaning wipes 22, is identified by a

graphical symbol in the shape of bricks 34 in order to indicate to the user that these particular cleaning elements 12 have the highest level of cleaning aggressiveness. Although identified by bricks 34, other graphical symbols such as cement or cast iron may be shown in order to indicate to the user that the first cleaning element 12 has the highest level of cleaning aggressiveness.

[0044] In one embodiment, the cleaning aggressiveness of two materials can be compared by determining the ability of the materials when dry to scratch a variety of plastic or metal surfaces of varying hardness, with the application of the material to the surface being done in a manner to simulate hand cleaning of a surface, with circular strokes having a radius of about 2 inches applied at a frequency of two orbits per second at a uniform pressure of about 2 psi applied over an area of about 1.5 inches by 1.5 inches for 10 seconds. The material capable of scratching harder surfaces is the more aggressive, according to the "dry plastic scratch test" or "dry metal scratch test," depending on which class of surfaces was tested. Alternatively, aggressiveness could be evaluated when the material is saturated with distilled water prior to attempting to scratch a surface, and the more aggressive material can be said to be more aggressive in terms of the "wet plastic scratch test" or "wet metal scratch test," depending on which class of surfaces was tested. Alternatively, a panel of 10 male and 10 female adult subjects, ages 20 to 30, can be used. The panelists are each given two cleaning materials and asked to remove crayon marks (red crayon from normal sized CRAYOLA® crayons) from a painted surface (e.g., drywall painted with primer followed by a white matte interior latex paint), and are then surveyed as to which of the materials was more aggressive. The process is repeated with 2 other panels of different panelists. If at least 13 of the panelists in each of the three panels agree that a first material was more aggressive than the second material, the first material is deemed to be more aggressive, in terms of the "panel test."

[0045] The second cleaning element 14 is also provided in the form of both cleaning blocks 20 and cleaning wipes 22. Again, the second cleaning element 14 has the lowest level of cleaning aggressiveness in kit 10 and is identified by a graphical symbol in the shape of eyeglasses 38. The second cleaning element 14 is thus identified as having the lowest level of cleaning aggressiveness and may be used in instances where the surface being cleaned is capable of being damaged by the cleaning procedure. Although shown as being identified by eyeglasses 38, the second cleaning element 14 may be identified by other graphical symbols in accordance with other exemplary embodiments of the present invention.

[0046] Also included in kit 10 is a third cleaning element 18 that is provided in only the form of cleaning wipes 22, although the third cleaning element 18 may be provided in the form of cleaning blocks 20 in accordance with other exemplary embodiments. The third cleaning element 18 has an intermediate level of cleaning aggressiveness such that the third cleaning element 18 cleans more aggressively than the second cleaning element 14 but not as aggressively as the first cleaning element 12. The indicia 28 on cover 74 identifies the third cleaning element 18 with a graphical symbol in the shape of a sink faucet 38. In accordance with other exemplary embodiments, other graphical symbols may be used in order to identify the third cleaning element 18.

For instance, instead of a sink faucet **38** other porcelain or chrome objects may be used in order to identify the level of cleaning aggressiveness of the third cleaning element **18**.

[0047] Words may be used in addition, to or alternatively, to graphical symbols in identifying the cleaning properties of the cleaning elements **12**, **14**, and **18**. FIG. 4 shows one such exemplary embodiment in which embossments **30** are made onto the various cleaning blocks **20** and cleaning wipes **22** contained in kit **10**. The embossments **30** are located on various parts of the cleaning blocks **20** and wipes **22** and may be provided in more than one in number. The embossments **30** identify the cleaning aggressiveness of the cleaning elements **12**, **14**, and **18** according to their relative cleaning aggressiveness to one another. The first cleaning element **12** is identified as being the most aggressive cleaning element while the second cleaning element **14** is identified as being the least aggressive cleaning element. The third cleaning element **28** is identified as being of an intermediate level of cleaning aggressiveness. The embossments **30** may be made in the cleaning blocks **20** or cleaning wipes **22** in any manner commonly known to one of ordinary skill in the art.

[0048] FIG. 5 shows another exemplary embodiment of kit **10** that again includes three cleaning elements **12**, **14**, and **18** that each exhibit a different level of cleaning aggressiveness. Here, the cleaning elements **12**, **14**, and **18** are provided only in the form of cleaning blocks **20**. Labels **32** are attached to the various cleaning blocks **20** in order to identify their particular level of cleaning aggressiveness. The labels **32** are provided with graphics in the form of bricks **34**, sink faucets **36**, and eyeglasses **38** that inform the user of the various levels of cleaning aggressiveness as previously discussed with respect to the kit **10** of FIG. 4. A single label **32** may be provided on each cleaning block **20**. Alternatively, multiple labels **32** may be placed onto one or more of the cleaning blocks **20**.

[0049] FIG. 6 shows another exemplary embodiment of kit **10** that again includes first, second, and third cleaning elements **12**, **14**, **18** that each have different levels of cleaning aggressiveness. The various levels of cleaning aggressiveness are identified in two ways in kit **10** of FIG. 6. First, labels **32** that include graphical symbols **34**, **36**, and **38** are located on body **16** in locations corresponding to compartments **68**, **70**, **76**, and **78** into which the elements **12**, **14**, and **18** are contained. Second, the shape of the cleaning elements **12**, **14**, and **18** also identifies to the user the appropriate level of cleaning aggressiveness.

[0050] As shown in FIG. 6, the first cleaning element **12** is provided in the form of cleaning blocks **20** that are rectangular in shape and are located in a first compartment **68** identified by bricks **34** in order to indicate that the first cleaning element **12** has the highest level of cleaning aggressiveness. A user may thus identify the cleaning element with the highest level of cleaning aggressiveness through either the graphical symbol **34** and/or the rectangular shape of the first cleaning element **12**. The second cleaning element **14** has the lowest level of cleaning aggressiveness and is in the form of cleaning blocks **20** located in a second compartment **70** and a fourth compartment **78** of the kit **10**. The second and fourth compartments **70** and **78** are identified by graphical symbols in the form of eyeglasses **38** in order to inform the user that the cleaning blocks **20** located therein have the

lowest level of cleaning aggressiveness. Additionally, the second cleaning element **14** is disk shaped. The shape and/or the graphical symbol **38** may be employed by the user in order to ascertain the cleaning aggressiveness of the second cleaning element **14**. The third cleaning element **18** is located in a third compartment **76** of kit **10** identified by a graphical symbol in the shape of a sink faucet **36**. The third cleaning element **18** is in the form of square shaped cleaning blocks **20** that along with the graphical symbol **36** may indicate to the user that the third cleaning element **18** has an intermediate level of cleaning aggressiveness. As such, one or more types of identifying indicia **28** or features may be employed in accordance with various exemplary embodiments of the present invention in order to allow the user to identify various properties of cleaning elements **12**, **14**, or **18** provided in kit **10**.

[0051] It is therefore the case that to distinguish between different properties of the first and second cleaning elements **12**, **14** indicia **28** such as embossments **30** or labels **32** may be provided. Additionally or alternatively, the coloring, size, shape, thickness, or other visible or tactile distinguishing features of the first and second cleaning elements **12**, **14** may be used in order to allow a user to distinguish between different cleaning properties.

[0052] The kit **10** may also be provided with non-foam cleaning products in order to expand the spectrum of cleaning conditions that can be dealt with by kit **10**. As shown in FIG. 7, a variety of cleaning products may be employed. First, foam based cleaning products such as the first and second cleaning elements **12**, **14** are provided in both a cleaning block **20** and cleaning wipe **22** form. Again, the first cleaning element **12** cleans with a higher level of cleaning aggressiveness than the second cleaning element **14**. Labels **32** that employ graphical symbols **34** and **38** allow for one to identify the particular level of cleaning aggressiveness of both the first and second cleaning elements **12**, **14**.

[0053] The cleaning elements **12**, **14** may be configured so as to clean relatively hard surfaces, while other items such as a cleaning fabric **56** made of microfibers, a sponge **58**, and a composite web **60** are provided in order to allow for the cleaning of softer surfaces. Additionally, cleaning products that clean more aggressively than the first and second cleaning elements **12**, **14** may be included in kit **10** and may be, for instance, steel wool **44** or an abrasive pad **42**. One such example of the construction of abrasive pad **42** may be as that disclosed in U.S. patent application Ser. No. 10/733,162 filed on Dec. 11, 2003 entitled "Disposable Scrubbing Product." The entire contents of United States Patent application Ser. No. 10/733,162 are incorporated by reference herein in their entirety for all purposes.

[0054] The kit **10** may also include a gripping element **40** that may be used with the cleaning blocks **20**, cleaning wipes **22**, or other cleaning products in kit **10**. For instance, one of the cleaning wipes **22** may be connected to an adhesive **82** located on gripping element **40** in order to attach the cleaning wipe **22** thereon. A handle **80** is provided on gripping element **40** and may be grasped by a user in order to move the cleaning wipe **22** across a surface to be cleaned. In this manner, the gripping element **40** will allow for a uniform application of force on cleaning wipe **22** in order to allow for a more even wearing of cleaning wipe **22** and movement of the surface being cleaned across cleaning wipe

22. Additionally, handle **80** allows for the user to avoid contact with the cleaning wipe **22** and the surface being cleaned.

[0055] Kit **10** may also include a spray bottle **46** filled with a cleaning agent, such as water, that may be applied to either the surface being cleaned or one or more cleaning articles in kit **10** in order to assist in cleaning. Another spray bottle **48** may be provided and may contain lotus-effect additives that may be sprayed onto a surface in order to protect the surface from contamination. A pair of plastic gloves **50** may also be included in kit **10** along with a plastic bag **52** that can be used in order to store used cleaning products or other items prior to their disposal.

[0056] One type of lotus-effect agent that may be employed is the Lotus Effect aerosol spray manufactured by BASF Corporation whose North American headquarters is located at 3000 Continental Drive-North, Mount Olive, N.J. 07828-1234. The lotus-effect agent creates a nanostructured surface upon application that is capable of repelling fluids, dirt, etc. A related lotus-effect agent that may be employed is marketed under the name LOTUS-EFFECT® and manufactured by Degussa Corporation located at 70 Mansell Court, Suite 100, Roswell, Ga. 30076. Another type of lotus-effect agent that may be employed is manufactured by Sto AG of Germany under the name LOTUSAN®™ that may be used in order to enhance paints and other surfaces. Sto AG of Germany has a United States subsidiary called Sto Corp. located at 6175 Riverside Drive, S.W., Building 1400 Suite 120, Atlanta, Ga. 30331.

[0057] Additionally or alternatively, a motorized gripping element **54** may be included in kit **10** in order to provide for vibration or oscillatory motion to an attached cleaning block **20** or cleaning wipe **22** to further assist in cleaning. The use of a motorized gripping element **54** may prove useful in cleaning hard to remove unwanted elements or when cleaning of a large surface is desired. Indicia **28** located on kit **10** may provide instructions to the user as to the use of the different cleaning elements **12, 14** and products in kit **10**.

[0058] The kit **10** may also be configured as shown in FIG. 9 in which the first and second cleaning elements **12, 14** are contained inside of a rigid body **16**. A lid **86** covers the interior of body **16** and may be water-tight in order to prevent fluid from either entering or escaping. A hinge **88** is provided in order to allow lid **86** to pivot with respect to body **16** and hence provided access to the first and second cleaning elements **12, 14**. The lid **86** may be closed after removal of the cleaning elements **12, 14** and may be maintained in the closed position by any suitable method commonly known in the art. For instance, hook and loop type fasteners, adhesives, or a snap-fit connection may be used in order to maintain lid **86** in the closed position.

[0059] The body **16** in FIG. 9 is also provided with an adhesive **90** on one end to retain the first or second cleaning element **12, 14** thereon. The user may then use body **16** as a handle in applying the cleaning element **12, 14** to a surface being cleaned. Such a configuration may provide for a more uniform pressure of cleaning element **12, 14** on the surface being cleaned and may also allow for the user to avoid contact with his or her hand on either the cleaning element **12, 14** or the surface being cleaned. Although shown as employing an adhesive **90**, it is to be understood that in accordance with other exemplary embodiments of the

present invention other mechanisms of attaching the first and second cleaning elements **12, 14** to body **16** may be employed. For instance, hook and loop type fasteners, mechanical fasteners, or gecko-type fasteners may be used in order to effect this attachment. Kit **10** may be configured so as to both store and hold cleaning elements **12, 14** in a manner as disclosed in United States patent application titled "Cleaning Product for Storing and Attaching Cleaning Blocks or Wipes," filed the same day as the present application and having inventors Fung-Jou Chen, Jeffrey Dean Lindsay, and Herb Velazquez. This application is incorporated by reference herein in its entirety for all purposes.

[0060] The body **16** of kit **10** may be made in any shape or size. For instance, the body **16** may be square shaped, round, cylindrical, or triangular. The body **16** need not be configured to completely surround the cleaning elements **12, 14** but may be configured so as to only hold the cleaning elements **12, 14**. FIG. 10 shows one exemplary embodiment of the present invention in which body **16** is circular in shape. The cleaning elements **12, 14** are located in the interior of body **16** and may be accessed through a lid **86** located on the top of body **16**. The cleaning elements **12, 14** are molded three dimensional foam pads produced by the molding techniques disclosed in U.S. Pat. No. 6,617,490, the entire contents of which are incorporated by reference herein in their entirety for all purposes. Again, the cleaning elements **12, 14** are provided with indicia **28** thereon in order to indicate various cleaning properties. The molded three dimensional foam pad **66** may include melamine foam **24** and may be molded by thermal techniques such as those disclosed in U.S. Pat. No. 6,608,118, the entire contents of which are incorporated by reference herein in their entirety for all purposes.

[0061] The body **16** may additionally or alternatively include hollow elements that are configured in order to receive fingers or hands of the user should the kit **10** be configured as a mitten or other such device. Alternatively, the hollow elements defined in body **16** may be configured for receiving cleaning agents, handles, or stiff inserts if so desired.

[0062] Surface treatment agents may be incorporated into the first and second cleaning elements **12, 14** or other cleaning products associated with kit **10** in order to help make the surface easier to clean following use. Typical surface treatment agents that may be incorporated include fluoropolymers, water, or dirt repellent agents.

[0063] The first and second cleaning elements **12, 14** may be configured as a sponge substitute as described in U.S. application Ser. No. 10/036,736 filed on Dec. 21, 2001 which published as United States Patent Application Publication No. U.S. 2003/0135181 on Jul. 17, 2003. In this instance, the first and second cleaning elements **12, 14** may be cleaning wipes **22** that are incorporated into the sponge substitute. Here, the cleaning wipe **22** may be attached to the sponge substitute such that a foam layer **24** of the cleaning wipe **22** is facing away from the sponge substitute.

[0064] The cleaning wipe **22** may include a foam layer **24** such as a melamine-based foam that is attached to a web **26**. The foam **24** generally has an open celled structure that when moved over a surface is capable of effectively cleaning dirt and other unwanted elements from the surface. The web **26** may act as a reinforcing layer in order to strengthen or

hold the melamine-based foam **24**, and/or may provide for water retaining properties which help to keep the melamine-based foam **24** wet should wet wiping with the cleaning wipe **22** be conducted. Alternatively or in addition, the web **26** may be adapted for scrubbing, and may comprise abrasive material (not shown) such as coarse polymeric filaments, meltblown shot, abrasive particles, hook-like protrusions such as those used in hook and loop mechanical fastening systems, and the like.

[0065] The web **26** may comprise a structure of fibers or filaments that are retained to one another by fiber-fiber bonding (e.g., hydrogen bonding), fiber entanglement, adhesive bonding, interfiber or interfilament friction, and the like. In accordance with one exemplary embodiment of the present invention, the web **26** can be a hydrophilic cellulosic fibrous web such as a wet-laid or air-laid paper web comprising predominately natural cellulosic fibers such as wood-based papermaking fibers, cotton, kenaf, bagasse, milkweed, etc., and mixtures thereof. In other embodiments, the web **26** may be a paper web comprising synthetic cellulosic fibers such as rayon. Alternatively, the web **26** can be a nonwoven fibrous web which has a structure of individual fibers or threads which are interlaid, but not in an identifiable manner as in a knitted fabric. The fibers in a nonwoven web are generally understood to be manmade fibers such as non-cellulosic polymeric fibers, typically based on synthetic polymers such as polyolefins, including webs made from meltspun processes (meltblowing, spinbonding, etc.). Alternatively, the web **26** need not include a fiber structure but may be, for instance, a film or foam in other exemplary embodiments.

[0066] As shown in FIG. 2, the cleaning wipe **22** includes a single layer of melamine-based foam **24** or another cleaning foam **24** attached to a single reinforcing layer shown as web **26**. The cleaning wipe **22** may be configured as that described in U.S. patent application Ser. No. 10/744,238 filed on Dec. 22, 2003 entitled "Multi Purpose Cleaning Product Including A Foam And A Web," the contents of which are incorporated by reference herein in their entirety for all purposes. Alternative exemplary embodiments exist in which the foam **24** and/or web **26** are made of any number of layers. The foam **24** may be laminated to the web **26** in order to effect attachment of these two components of the cleaning wipe **22**. The term "laminated" as used herein means the two components are united to one another by an adhesive optionally with the use of heat and/or pressure. However, in accordance with other exemplary embodiments of the present invention, the foam **24** may be attached to the web **26** in a variety of manners. For instance, these two components may be attached to one another by ultrasonic bonding, hot melts, pressure sensitive adhesives, thermal bonds, or by mechanical attachments such as sewing, mechanical fasteners, or a hook and loop type fastener in accordance with other exemplary embodiments. Hydroentangling can also be used to join a fibrous web to the foam. In one embodiment, a hotmelt is used comprising at least one polymer with a substantial number of carboxyl groups or salts thereof to provide good bonding with a fibrous cellulosic web when wet. For example, a hot melt suitable for the present invention may comprise ethylene vinyl acetate (EVA), and may have at least about 20 weight percent (wt %) EVA or at least about 50 wt % EVA. Hotmelts may be applied by meltblown nozzles, glue guns, other known adhesive nozzles, and the like. After hotmelt is

applied to one or both surfaces to be joined, the two surfaces can immediately be brought into contact and optionally pressed together with a compressive force, such as a force of about 0.03 psi or greater, or about 0.5 psi or greater, or about 5 psi or greater. The compressive force may be provided by a nip between two rollers, pressure between two flat plates, or other methods known in the art.

[0067] By way of example, a variety of melamine foam materials is marketed under the trademark BASOTECT® by BASF (Ludwigshafen, Germany). For example, BASOTECT® 2011, with a density of about 0.01 g/cm³, may be used. Blocks of melamine-based foam for cleaning are also marketed by Procter & Gamble (Cincinnati, Ohio) under the MR. CLEAN® brand name. Similar materials are marketed under the CLEENPRO™ name by LEC, Inc. of Tokyo, Japan. Melamine-based foam is also marketed for acoustic and thermal insulation by many companies such as American Micro Industries (Chambersburg, Pa.).

[0068] Principles for production of melamine-based foam are disclosed by H. Mahnke et al. in EP-B 071 671, published Dec. 17, 1979. U.S. Pat. No. 6,503,615, issued Jan. 7, 2003 to Horii et al., discloses a wiping cleaner made from an open-celled foam such as a melamine-based foam, the wiping cleaner having a density of 5 to 50 kg/m³ in accordance with JIS K 6401, a tensile strength of 0.6 to 1.6 kg/cm² in accordance with JIS K 6301, an elongation at break of 8 to 20% in accordance with JIS K 6301 and a cell number of 80 to 300 cells/25 mm as measured in accordance with JIS K 6402. Melamine-based foams having such mechanical properties can be used within the scope of the present invention.

[0069] Related foams are disclosed in U.S. Pat. No. 3,093,600 with agents present to improve the elasticity and tear strength of the foam. Melamine-based foams are also disclosed in British patent GB 1443024, issued Jul. 21, 1976.

[0070] Brittle foams can be made, as described in German publication DE-AS 12 97 331, from phenolic components, urea-based components, or melamine-based components, in aqueous solution with a blowing agent and a hardening catalyst.

[0071] Some components of the kit **10** may also include polyurethane foams or other known polymeric foams.

[0072] In some embodiments, a foam layer (e.g., a melamine foam or other polymeric foam) may be laminated to another melamine foam or other foam layer, to a sponge or sponge substitute, to a reinforcing web, or to other abrasive material.

[0073] The melamine foam or other foam may comprise organic or inorganic filler particles, such as from 5% to 30% by weight of a particulate material. Exemplary particulate materials include clays such as kaolin, talc, calcium oxide, calcium carbonate, silica, alumina, zeolites, carbides, quartz, and the like. The fillers can also be fibrous materials, such as wood fibers, papermaking fibers, coconut fibers, milkweed fibers, flax, kenaf, sisal, bagasse, and the like. The particles of fibers added to the foam may be heterogeneously distributed or may be distributed homogeneously.

[0074] Properties of the foams that may be altered to modify cleaning performance include cell size (pore size), chemical composition of the foam material (e.g., the pres-

ence of copolymers), the addition of fillers, density of the foam, post-treatments such as compression and thermal treatment, and so forth.

[0075] The cleaning wipe **22** may be configured such that the foam **24** is a relatively thin layer. For instance, the foam **24** may be on the order of from about 2 millimeters to about 8 millimeters in thickness. Other exemplary embodiments of the present invention exists in which the foam **24** may have a varying thickness, for instance being 1 millimeter thick at certain portions of the web **26**, and being 10 millimeters thick at other portions of the web **26**. As such, the present invention includes various embodiments in which the foam **24** has a uniform thickness throughout, and also a varying thickness throughout. Additionally, the present invention includes exemplary embodiments where the foam **24** is less than 20 millimeters in thickness. Still further exemplary embodiments exist in which the foam **24** is less than 15 millimeters in thickness, less than 10 millimeters in thickness, and less than 5 millimeters in thickness. Additional exemplary embodiments of the present invention exist in which the foam **24** is from about 1 millimeter to about 15 millimeters in thickness.

[0076] The foam **24** employed may be free from plastic deformation. In another aspect, the melamine-based foam **24** used in the present application may be capable of regaining a part of or all of its original shape and size after being subjected to some degree of deformation.

[0077] The lamination of the foam **24** to the web **26** may be done with the aid of hot melt adhesives in accordance with certain exemplary embodiments of the present invention. Here, the foam **24** is adhered to the web **26** through heat and pressure which aid in melting the hot melt adhesive and forming a bond between the foam **24** and the web **26**.

[0078] The web **26** used may have a flexibility of any degree. For instance, the web **26** may be a fairly flexible member or may be relatively rigid. The web **26** used may have the same flexibility as the foam **24** to which it is attached, or may have a flexibility that is greater than or less than the foam **24** attached thereto.

[0079] The web **26** may be made of a soft material so that it is capable of buffing or polishing a surface. Alternatively, the web **26** may be made of a coarse material such that the web **26** is more coarse or abrasive than the foam **24**. In this instance, the cleaning wipe **22** may be used so that the web **26** is capable of scrubbing coarse surfaces which would otherwise damage the foam **24**. In fact, the web **26** may be more capable of removing dried food substances or ground in dirt and some other unwanted elements from a surface to be cleaned in other exemplary embodiments. The web **26** may comprise abrasive grit or meltblown shot joined to a fibrous substrate, or abrasive fibers such as the multifilamentary aggregates disclosed in commonly owned U.S. patent Ser. No. 10/321,831, "Meltblown Scrubbing Product," filed Dec. 17, 2002 by Chen et al., herein incorporated by reference. A portion of the cleaning surface of the foam **24** itself may also be joined to materials such as meltblown shot or multifilamentary aggregates, in order to enhance cleaning or to strengthen the foam **24** and prevent the foam **24** from being damaged during cleaning.

[0080] In certain exemplary embodiments of the present invention, the web **26** may be configured so that it can help

provide water to the foam **24** during cleaning, should the cleaning wipe **22** be configured as a wet wipe and be used in a wet state during cleaning. The web **26** in addition to, or alternatively to, helping provide water to the foam **24** may also be used in order to wipe away particulates that are created by the foam **24**. These particulates are essentially tiny portions of the foam **24** that may be broken away during movement of the foam **24** across the surface that is being cleaned. Additionally, the particulates that are removed by the web **26** may also be particles of dirt or other unwanted objects that are detached from the surface by the foam **24**.

[0081] Web **26** may be a wet-resilient tissue. A wet-resilient tissue is one that still holds together for at least some amount of time when wetted. More specifically, a wet resilient web **26** can maintain a relatively high degree of bulk when wet after one or more compression cycles. For example, drawing upon the test methods for wet resilient webs described in U.S. Pat. No. 6,436,234, "Wet-Resilient Webs and Disposable Articles Made Therewith," issued Aug. 20, 2002 to Chen et al. and herein incorporated by reference, a wet resilient paper web suitable for the present invention can have a Wet Compressed Bulk of about 4 cc/g or greater, more specifically about 6 cc/g or greater; alternatively can have a Springback of about 0.6 or greater, more specifically about 0.7 or greater; and alternatively can have a Load Energy Ration (LER) of about 0.6 or greater, more specifically about 0.7 or greater. Any combination of the above-given values for Wet Compressed Bulk, Springback, and LER can also be provided in the fibrous web of the present invention, including selections for one, two, or all three of the parameters.

[0082] The web **26** may optionally include an abrasive material disposed therein, such as a coarse meltblown shot, an abrasive grit such as mineral particles, or a meltblown multifilamentary aggregate. Once the cleaning wipe **22** has been worn down to some degree, an abrasive layer may be exposed in order to assist in cleaning the surface to be cleaned.

[0083] The cleaning wipe **22** may also be made from alternating layers of foam **24** and web **26** joined together. The alternating layers of foam **24** and web **26** are configured into a stack. In such a configuration, use of the cleaning wipe **22** will eventually result in one of the layers of the foam **24** and/or the web **26** to be worn away. In such an instance, a fresh layer of foam **24** and/or web **26** will be exposed upon the wearing away of the preceding foam **24** and/or web **26**. Alternately or additionally, the stack may be configured such that the user may remove layers of foam **24** and web **26**. In this instance, the user can remove a worn or contaminated layer of foam **24** and/or web **26** in order to ensure the cleaning wipe **22** has a fresh layer of foam **24** and/or web **26** for a particular cleaning application.

[0084] FIG. 8 shows a perspective view of an exemplary embodiment of kit **10**. Foam **24** of first cleaning element **12** is provided with a visual indicating portion **64** which is a portion of foam **24** that is of a different color than the rest of foam **24**. For instance, the visual indicating portion **64** may be red, while the rest of foam **24** is white. Once a user uses cleaning wipe **22** to such a degree that a portion of foam **24** is worn away, the visual indicating portion **64** provides a visual indication that the cleaning wipe **22** is worn. In this instance, the visual indicating portion **64** may indicate to the

user that the cleaning wipe **22** has reached the end of its useful life and may be discarded. Alternatively, the visual indicating portion **64** may indicate to the user that the cleaning wipe **22** has been used to such a degree that only a limited amount of life remains in the cleaning wipe **22** before it must be discarded.

[0085] Although shown as extending across the entire web **26** of the cleaning wipe **22**, the visual indicating portion **64** may be configured differently in accordance with other exemplary embodiments of the present invention. For instance, the visual indicating portion **64** may be various smaller areas that are dispersed through the foam **24** instead of being a layer. The visual indicating portions **64** may be located in the central region of the foam **24**, or may be located on the outer edges of the foam **24**. In accordance with one exemplary embodiment of the present invention, the cleaning wipe **22** is provided with foam **24** that is eight millimeters in thickness, and is provided with a visual indicating portion **64** that is an oval of blue pigmented foam **24** that is located six millimeters away from the outer surface form **24**. In accordance with other exemplary embodiments, the visual indicating portion **64** is incorporated into a cleaning block **20**.

[0086] In a related embodiment (not shown), a colored layer of material other than foam **24** is disposed between the foam **24** and the web **26** to provide a visual indication of wear. The colored layer may be an apertured or unapertured film, a nonwoven web, a paper layer, and the like, or may comprise colored adhesive that joins the web **26** to the foam **24**. Alternatively, the colored layer may be a part of the web **26**, such as a layer comprising dyed fibers, or the entire web **26** itself may be colored.

[0087] In accordance with one exemplary embodiment of the present invention, the foam **24** and the web **26** are attached to one another due to the fact that the foam **24** and the web **26** are integrally formed with one another. The entire foam **24** or a layer or portion of the foam **24** may be integrally formed with a plurality of fibers. The plurality of fibers may be paper making fibers, mineral fibers, and/or polymeric fibers. The foam **24** may be integrally formed with the plurality of fibers which form the web **26** of the cleaning wipe by a method as set forth in U.S. Pat. No. 6,603,054 which is owned by the assignee of the present invention and is incorporated herein for all purposes in its entirety. In one such instance, the web **26** may be dispersed throughout the foam **24** and therefore integrally connected therewith. Here, about 10% or more of the weight of the cleaning wipe **22** may be from the plurality of fibers which are formed by blending loose fibers into a resin coupled with a blowing agent or other foam-producing means prior to curing the resin in order to form the foam.

[0088] In accordance with other exemplary embodiments of the present invention, the web **26** may be a scrim layer, a mesh, and/or an elastomeric network that is embedded in foam resin prior to curing in order to form a cleaning wipe **22** that has a foam **24** integrally formed with the web **26**. Various materials may be embedded into the foam resin which is used to form the foam **24**. For example, tow, woven fabrics, tissue layers, coform materials, nonwoven webs, milkweed fibers and natural or synthetic fibers may be used in order to form the web **26** of the present invention.

[0089] As stated, the web **26** of the cleaning wipe **22** may be used in order to act as a reinforcing layer to the foam **24**,

and/or may be configured in order to help clean the surface that is being cleaned by the cleaning wipe **22**. The web **26** may in other exemplary embodiments of the present invention be provided with an additional functionality. FIG. 7 shows an exemplary embodiment of the cleaning wipe **22** in which the web **26** is provided with a plurality of functional members **62** disposed therein. The functional members **62** may be cleaning agents in order to help aid the cleaning wipe **22** in cleaning a surface. For instance, the functional members **62** may be enzymes such as papain enzymes, or may be bleaching agents such as peroxide. Additionally, the functional members **62** may be abrasive compounds or may be detergents in accordance with other exemplary embodiments. The functional members **62** may also be configured such that they release an odor which may subsequently be transferred to the surface which is to be cleaned. Further, the functional members **62** may be skin wellness agents. The functional members **62** may be encapsulated in a polymeric or lipid shell capable of breaking during use in response to mechanical compression and shear, whereby ingredients in the functional members are released. Alternatively, the functional members **62** may be encased or encapsulated in a water soluble material such that solvation of the material when wet permits release of the functional components. The functional members **62** may be antimicrobial agents and/or natural plant based extracts or compounds in accordance with other exemplary embodiments.

[0090] The web **26** may also have an added functionality such that the web **26** and/or the functional members **62** act as a biosensor. In this instance, should the web **26** and/or the functional members **62** detect the presence of harmful bacteria, lead, mercury, or other agents, the web **26** and/or functional member **62** may change color in order to indicate the presence of such agents. Alternatively or additionally, the web **26** and/or functional members **62** may be heat generating agents, for instance the cleaning wipe **22** may employ thermal pad technology. In one instance, oxidation of iron may result in a heating of the web **26**. Alternatively, water activated technology may be used, such as calcium chloride pellets, in order to heat the web **26** such that the cleaning wipe **22** is also heated. Heating of the cleaning wipe **22** may be advantageous in that more effective cleaning of grease or other elements may be realized when employing the cleaning wipe **22**.

[0091] The functional members **62** may be odor control agents such as cyclodextrins, zeolites, clays, and/or activated carbon particles or fibers. The cleaning wipe **22** may also be configured to have a chemical agent in order to combat odor or to regulate the release of odor eliminating or odor providing compounds. Chemical agents which may be included are, for instance, chlorine dioxide, antimicrobial gases or liquids, time release antimicrobial compounds, silver ions embedded in the foam **24**, zeolites, and/or chitosan-related compounds. The chemical agents may be either impregnated or embedded in the first or second cleaning elements **12**, **14**.

[0092] The web **26** and/or functional members **62** may also be foaming agents. In these instances, the foaming agents may be activated when contacted by water in order to create a foam which may additionally be used in helping the cleaning wipe **22** clean a surface of dirt or other unwanted elements. Also, the functional members **62** and/or the web

26 may be made of a material or configured in order to help keep the foam **24** wet during use of the cleaning wipe **22**.

[0093] Although described as being incorporated into the web **26**, the functional members **62** may be incorporated into the foam of the cleaning wipe **22** in accordance with other various embodiments. Further, the functional members **62** may be on the outer surface, edges, or even separate from the web **26** and/or foam **24**.

[0094] The cleaning wipe **22** may also find utility as a dish cleaning tool. In this instance, it may be beneficial to provide the web **26** with functional members **62** that may be, for instance, detergents, heat generating agents, biosensors, and/or skin wellness agents.

[0095] An alternative use for the cleaning wipe **22** in accordance with the present invention is in conjunction with disposable gloves in which the cleaning wipe **22** may be configured onto the fingers, palm region or elsewhere on the glove. In this instance, the disposable glove may further protect the user's hands so that the user's hands are more isolated from the surface that is being cleaned or from detergents or other agents which may be employed.

[0096] The cleaning wipe **22** may be employed by a user in order to clean the face or other portions of the user's body. The cleaning wipe **22** may also be used as a make-up removal article. In this instance, the foam **24** may be provided with extra pore space in order to catch and hold make-up during wiping by the user across the surface of the skin. In such an instance, the foam **24** of the cleaning wipe **22** may provide a soft yet abrasive cleaning of the skin of the user. Such cleaning may be either wet or dry. Extra pore space may be provided by needling, drilling, laser drilling, punching, aperturing, or other means to provide wells or other depressions suitable for retaining removed material. In one embodiment, a textured three-dimensional molded foam layer with suitable topography can be used. Suitable topography can include molded wipes with depressions less than about 4 mm in diameter and with a peak-to-valley height of about 0.2 mm or greater. In a related embodiment, the elevated portions of a three-dimensional surface are substantially flat, with depressed regions occupying about 30% or less of the surface area of the foam layer.

[0097] The cleaning wipe **22** may also be configured as a patch, wrap, or bandage which may be applied against bunions, warts, or hardened skin of the user. In such an application, the foam **24** of the cleaning wipe **22** may be used to abrade the skin of the user and also deliver a health agent to the skin. Such a health agent may be provided by a functional member **22** and/or the web **26**. The health agent may be a wart treatment compound, a skin softening agent, and/or an antimicrobial agent.

[0098] The cleaning wipe **22** may be used as a toilet bowl cleaner. In one exemplary embodiment of the present invention, the foam **24** may be thin strips that are joined to a dispersible web **26**. The thin strips are connected to one another by a plurality of tabs spaced between a plurality of perforations. Such a configuration of the cleaning wipe **22** provides for a flushable product. In such an instance, the web **26** may disintegrate or break up after being contacted with either a certain amount of water, or water over a certain amount of time. The cleaning wipe **22** may break up when disposed of in a toilet bowl, and the foam strips may be small

enough so that both the web **26** and the foam strips are capable of being handled by a septic tank system.

[0099] Additional uses of the cleaning wipe **22** may be found by employing the cleaning wipe **22** as a furniture wipe for buffing and polishing wood furniture. The cleaning wipe **22** may also be configured as a buffing pad for automotive bodywork. The cleaning wipe **22** may also be configured as a waxing pad for use in maintaining an automotive body. In this instance, the foam **24** may have a wax additive impregnated therein in order to effect waxing of the automotive surface. Alternatively, a wax substrate may be attached to the foam **24** and/or the web **26** in other exemplary embodiments.

[0100] The cleaning wipe **22** may also be used in order to prepare a surface that is about to be painted. Still further, the cleaning wipe **22** may be used as a shoe shining wipe. The cleaning wipe **22** may also be used as a bathroom cleaning product. In this instance, the cleaning wipe **22** may be used in order to clean stiff grout from tile and porcelain found in bathrooms.

[0101] The cleaning wipe **22** may be used in order to clean a variety of objects. For instance, knives, golf balls, bowling balls, and various household objects may be cleaned by the cleaning wipe **22** of the present invention.

[0102] The cleaning wipe **22** may also be employed as an article useful for removing stains from the teeth of a user, or to brighten one's teeth. In this instance, the cleaning wipe **22** may be configured as a Q-tip like product or placed onto "finger gloves" which are small enough such that the user may wipe his or her teeth in order to remove calculus or stains therefrom. Lamination of a suitably thin section of a cleaning foam on a portion of such finger gloves can provide effective cleaning action, such that calculus and other deposits can be readily removed from dental surfaces.

[0103] The cleaning wipe **22** may further be used in dental and periodontal care products, for instance the cleaning wipe **22** may be used with dental floss, dental tape strips, and/or toothbrushes. In various exemplary embodiments of the present invention, the web **26** and/or the functional members **62** may be used in order to provide flavoring, cleaning compounds, polishing agents, antimicrobial compounds, mouthwash, oral care compounds, antiviral compounds, and healing agents when the cleaning wipe **22** is used for dental and periodontal care. As stated, the functional members **62** may be incorporated into either the web **26** and/or the foam **24** of the cleaning wipe **22**.

[0104] It is to be understood that the cleaning wipe **22** of the present invention is not limited to a particular shape. As such, the cleaning wipe **22** may be square, round, or cylindrical in accordance with various exemplary embodiments. Further, the cleaning wipe **22** may have hollow elements that are configured in order to receive fingers, hands, cleaning agents, handles, or inserts in accordance with various exemplary embodiments of the present invention.

[0105] One or more portions of the cleaning wipe **22**, for instance the foam **24** and/or the web **26**, may be charged in order to more effectively remove and retain bacteria. In accordance with one exemplary embodiment, the foam **24** and/or the web **26** have an electrostatic charge either chemically, or by the addition of electrets in order to help attract and retain bacteria by electrostatic means. A chemical electrostatic charge may be provided, for instance, by chitosan,

polyvinylamines, primary, secondary, tertiary, or quaternary amines, cationic polymers, and polyelectrolytes.

[0106] Any known method may be used for adding charged compounds to the surfaces of the struts in the foam 24 should charged surfaces be desired in the cleaning foam 24. For example, chemical additives may be attached to the surface of the polymeric struts by impregnating the foam 24 with a solution containing charged species that can be cross linked to each other or to the foam 24. Combinations of chemical, electrical, and other physical treatments may be used, such as plasma treatment, corona discharge treatment, electret generation, and the like. By way of example, chemical post-treatments of hydrophobic surface are disclosed in U.S. Pat. No. 6,537,614, issued Mar. 25, 2003 to N. Wei et al., and it is believed that such treatments can be adapted for the cleaning foams 24 of the present application. The Wei et al. patent discloses a hydrophobic polymer fiber having a cationically charged coating thereon, in which the coating includes a functionalized cationic polymer, such as an epichlorohydrin-functionalized polyamine or an epichlorohydrin-functionalized polyamido-amine, which has been crosslinked by heat. Such materials can be made by treating the fibrous filter with an aqueous solution of a functionalized cationic polymer cross linkable by heat under conditions sufficient to substantially coat the fibers with the functionalized cationic polymer, wherein the solution includes the functionalized cationic polymer, a poly(vinyl alcohol), a polar solvent for the poly(vinyl alcohol), and water; and treating the resulting coated fibrous filter with heat at a temperature and for a time sufficient to crosslink the functionalized cationic polymer present on the hydrophobic polymer fibers. As adapted for the present application, a solution of a functionalized cationic polymer cross linkable by heat can be used to impregnate or saturate all or a portion of a cleaning foam 24 layer to coat the struts of the foam 24. The resulting coated foam 24 can be treated with heat at a temperature and for a time sufficient to crosslink the functionalized cationic polymer present on the surfaces of the foam 24.

[0107] Cationic compounds that may be incorporated into cleaning wipe 22 effective for attracting bacteria are disclosed in commonly owned copending U.S. application Ser. No. 10/330,458, "Skin Cleansing Products Incorporating Cationic Compounds," filed Dec. 26, 2002, and Ser. No. 10/330,460, "Wound Management Products Incorporating Cationic Compounds," also filed Dec. 26, 2002, both of which are herein incorporated by reference herein in their entirety for all purposes. As disclosed therein, by providing a cleansing substrate comprising a sufficient amount of cationic compounds having an effective charge density of from about 0.1 microequivalents/g to about 8000 microequivalents/g or more, the product can be electrically altered such that it has an effective cationic charge density of more than about 2000 microequivalents/100 g and numerous contaminants can be electrostatically dislodged from the surface (e.g., from skin or other substrates) and captured and carried away. Cationic compounds such as octadecyldimethyltrimethoxysilpropylammonium chloride can be impregnated into the product, in either the foam 24 or web 26.

[0108] In general, cationic charge for retaining microbes and other contaminants can be provided in any of the cleaning foam 24, a layer or region within the cleaning foam

24, within the web 26 or a portion thereof, or within a wetting solution that can be added to the web 26 prior to or during use. Charged components can also be present in an adhesive used to join the web 26 to the cleaning foam 24.

[0109] In one embodiment, the cleaning foam 24 or the web 26 comprises negative charges (e.g., anionic groups), which interact with cationic elements in a cleaning solution or wetting solution that retain negatively charged contaminants and microbes, and also are electrostatically attracted to the cleaning foam 24 or web 26, such that negatively charged microbes and contaminants are effectively retained.

[0110] The cleaning wipe 22 may also be configured in some embodiments such that the "melamine-based foam" is a non-melamine foam that contains melamine powder.

[0111] Examples of various cleaning elements 12, 14 that may be employed in the kit 10 of the present invention may be found in U.S. patent application Ser. No. 10/744,238 filed on Dec. 22, 2003 entitled "Multi Purpose Cleaning Product Including A Foam And A Web" the contents of which are incorporated by reference herein in their entirety for all purposes.

[0112] The cleaning elements 12, 14 need not always include a melamine-based foam material, but may be made out of other foam material such as a micro porous open-celled foam. Various types of foam material that may be incorporated into the first and second cleaning elements 12, 14 may be found in U.S. patent application Ser. No. 10/744,238 filed on Dec. 22, 2003 entitled "Multi Purpose Cleaning Product Including A Foam and A Web." U.S. patent application Ser. No. 10/744,238 is incorporated by reference herein in its entirety for all purposes.

[0113] The first and second cleaning elements 12, 14 may be incorporated into a tissue-based sponge substitute material as set forth in U.S. patent application Ser. No. 10/036,736 filed on Dec. 21, 2001 entitled "Sponge-Like Pad Comprising Paper Layers And Method Of Manufacture." The entire contents of U.S. patent application Ser. No. 10/036,736 are incorporated by reference herein in their entirety for all purposes. Alternatively, a separate sponge-like pad as set forth in U.S. patent application Ser. No. 10/036,736 may be incorporated into kit 10 in addition to the cleaning elements 12, 14. Further, in accordance with other exemplary embodiments of the present invention the first and second cleaning elements 12, 13 may be incorporated into a scrubby tissue laminate as set forth in U.S. patent application Ser. No. 10/321,277 filed Dec. 17, 2000 entitled "Disposable Scrubbing Product." The entire contents of U.S. patent application Ser. No. 10/321,277 are incorporated by reference herein in their entirety for all purposes. Likewise, the first and second cleaning elements 12, 14 may be provided separate from an individual scrubby tissue laminate as set forth in U.S. patent application Ser. No. 10/321,277 in kit 10 in accordance with other exemplary embodiments.

[0114] It should be understood that the present invention includes various modifications that can be made to the embodiments of the kit 10 as described herein as come within the scope of the appended claims and their equivalents. Additionally, it is to be understood that all references,

applications, and patents incorporated herein are incorporated by reference in their entirety for all purposes.

1. A kit for use in cleaning, comprising:

a first cleaning element being made at least partially of foam, the first cleaning element configured for cleaning a surface, wherein the first cleaning element is identifiable as having a first cleaning property;

a second cleaning element being made at least partially of foam, the second cleaning element configured for cleaning a surface, wherein the second cleaning element is identifiable as having a second cleaning property, wherein the cleaning properties of the first and second cleaning elements are different; and

a body configured for holding the first cleaning element and the second cleaning element.

2. The kit as set forth in claim 1, wherein the cleaning properties of the first and second cleaning elements that are different are the aggressiveness of the first and second cleaning elements in cleaning a surface such that the first cleaning element is configured for cleaning more aggressively than the second cleaning element.

3. The kit as set forth in claim 2, wherein the aggressiveness of the first and second cleaning elements is determined by the dry plastic scratch test.

4. The kit as set forth in claim 2, wherein the aggressiveness of the first and second cleaning elements is determined by the panel test.

5. The kit as set forth in claim 1, further comprising a third cleaning element made at least partially of foam, the third cleaning element configured for cleaning a surface, wherein the third cleaning element is identifiable as having a third cleaning property, wherein the body is configured for holding the third cleaning element.

6. The kit as set forth in claim 5, wherein the cleaning properties of the first, second and third cleaning elements that are different are the aggressiveness of the first, second and third cleaning elements in cleaning a surface such that the first cleaning element is configured for cleaning more aggressively than the second and third cleaning elements, and wherein the third cleaning element is configured for cleaning more aggressively than the second cleaning element.

7. The kit as set forth in claim 1, wherein the cleaning properties of the first and second cleaning elements that are different are the cleaning state of the first and second cleaning elements in cleaning a surface such that the first cleaning element is configured for cleaning in a wet state and the second cleaning element is configured for cleaning in a dry state.

8. The kit as set forth in claim 1, wherein:

the first cleaning element is a cleaning wipe; and

the second cleaning element is a cleaning block.

9. The kit as set forth in claim 8, wherein:

the cleaning wipe comprising a melamine-based foam configured for contacting and cleaning a surface to be cleaned and a web attached to the melamine-based foam; and

the cleaning block is a block of melamine-based foam.

10. The kit as set forth in claim 1, further comprising indicia for identifying the cleaning properties of the first and

second cleaning elements, wherein the indicia is selected from the group consisting of embossments on the first and second cleaning elements, embossments on the body, labels on the first and second cleaning elements, and labels on the body.

11. The kit as set forth in claim 1, wherein the first and second cleaning properties are identifiable by a feature of the first and second cleaning elements selected from the group consisting of the color of the first and second cleaning elements, the size of the first and second cleaning elements, the shape of the first and second cleaning elements, the thickness of the first and second cleaning elements, and the tactile characteristics of the first and second cleaning elements.

12. The kit as set forth in claim 1, further comprising graphical symbols for identifying the cleaning properties of the first and second cleaning elements.

13. The kit as set forth in claim 1, further comprising a cleaning component held by the body, wherein the cleaning component is selected from the group consisting of a gripping element configured to hold the first and second cleaning elements, an abrasive pad, steel wool, a spray bottle holding a cleaning agent, a spray bottle holding a lotus-effect agent, plastic gloves, a plastic bag, a motorized gripping element configured to hold the first and second cleaning elements and provide vibration thereto, a cleaning fabric made of microfibers, a sponge, and a composite web.

14. The kit as set forth in claim 1, wherein at least one of the first and second cleaning elements has a functional member selected from the group consisting of a cleaning agent, a bleaching agent, an abrasive compound, a detergent, an odor releasing agent, a skin wellness agent, an odor control agent, a biosensing agent, a heat generation agent, an antimicrobial agent, a natural plant based extract or compound, and a foam generating agent.

15. The kit as set forth in claim 1, wherein at least one of the first and second cleaning elements has a visual indicating portion that is of a different color than the rest of the first and second cleaning element in order to indicate wear on the cleaning element.

16. The kit as set forth in claim 1, wherein at least one of the first and second cleaning elements is partially made of foam that is a melamine-based foam.

17. The kit as set forth in claim 1, wherein at least one of the first and second cleaning elements is a molded three-dimensional foam pad.

18. The kit as set forth in claim 1, wherein the body defines a first compartment into which the first cleaning element is located, and wherein the body defines a second compartment into which the second cleaning element is located.

19. The kit as set forth in claim 1, wherein the foam of the first cleaning element and the foam of the second cleaning element have a different chemical or physical property that is selected from the group consisting of density, pore size, chemical composition, and the presence of filler materials.

20. A kit for use in cleaning, comprising:

a first cleaning element made at least partially of foam, the first cleaning element configured for cleaning a surface, the first cleaning element having a first cleaning property;

a first identifying feature that identifies the first cleaning element as having the first cleaning property;

a second cleaning element made at least partially of foam, the second cleaning element configured for cleaning a surface, the second cleaning element having a second cleaning property; and

a second identifying feature that identifies the second cleaning element as having the second cleaning property;

wherein the cleaning properties of the first and second cleaning elements are different from one another.

21. The kit as set forth in claim 20, wherein the first cleaning property is a higher cleaning aggressiveness and the second cleaning property is a lower cleaning aggressiveness.

22. The kit as set forth in claim 20, wherein the first cleaning property is a wet cleaning ability and the second cleaning property is a dry cleaning ability.

23. The kit as set forth in claim 20, further comprising:

a third cleaning element made at least partially of foam, the third cleaning element configured for cleaning a surface, the third cleaning element having a third cleaning property; and

a third identifying feature that identifies the third cleaning element as having the third cleaning property;

wherein the third cleaning property is different than the first and second cleaning properties.

24. The kit as set forth in claim 23, wherein the first cleaning property is a higher cleaning aggressiveness and the second cleaning property is a lower cleaning aggressiveness and the third cleaning property is an intermediate cleaning aggressiveness.

25. The kit as set forth in claim 20, wherein:

the first cleaning element comprising a melamine-based foam configured for contacting and cleaning a surface to be cleaned and a web attached to the melamine-based foam; and

the second cleaning element is a block of melamine-based foam.

26. The kit as set forth in claim 20, wherein:

the first identifying feature is an embossment on the first cleaning element; and

the second identifying feature is an embossment on the second cleaning element.

27. The kit as set forth in claim 20, wherein:

the first identifying feature is a label on the first cleaning element; and

the second identifying feature is a label on the second cleaning element.

28. The kit as set forth in claim 20, wherein the first and second identifying features are selected from the group consisting of the color of the first and second cleaning elements, the size of the first and second cleaning elements, the shape of the first and second cleaning elements, the thickness of the first and second cleaning elements, and the tactile characteristics of the first and second cleaning elements.

29. The kit as set forth in claim 20, wherein the first and second identifying features are graphical symbols.

30. The kit as set forth in claim 20, further comprising a body configured for holding the first cleaning element and the second cleaning element.

31. The kit as set forth in claim 30, further comprising a cleaning component held by the body, wherein the cleaning component is selected from the group consisting of a gripping element configured to hold the first and second cleaning elements, an abrasive pad, steel wool, a spray bottle holding a cleaning agent, a spray bottle holding a lotus-effect agent, plastic gloves, a plastic bag, a motorized gripping element configured to hold the first and second cleaning elements and provide vibration thereto, a cleaning fabric made of microfibers, a sponge, and a composite web.

32. The kit as set forth in claim 20, wherein at least one of the first and second cleaning elements has a functional member selected from the group consisting of a cleaning agent, a bleaching agent, an abrasive compound, a detergent, an odor releasing agent, a skin wellness agent, an odor control agent, a biosensing agent, a heat generation agent, an antimicrobial agent, a natural plant based extract or compounds, and a foam generating agent.

33. The kit as set forth in claim 20, wherein at least one of the first and second cleaning elements has a visual indicating portion that is of a different color than the rest of the first and second cleaning element in order to indicate wear on the cleaning element.

34. The kit as set forth in claim 20, wherein at least one of the first and second cleaning elements is partially made of foam that is a melamine-based foam.

35. The kit as set forth in claim 20, wherein at least one of the first and second cleaning elements is a molded three-dimensional foam pad.

36. A kit for use in cleaning, comprising:

a first cleaning element being a block of melamine-based foam, the first cleaning element configured for cleaning a surface, wherein the first cleaning element has a particular level of cleaning aggressiveness;

a second cleaning element being a block of melamine-based foam, the second cleaning element configured for cleaning a surface, wherein the second cleaning element has a particular level of cleaning aggressiveness that is less than that of the first cleaning element;

a body configured for holding the first cleaning element and the second cleaning element;

a first identifying indicia located on the body, the first identifying indicia identifying the cleaning aggressiveness of the first cleaning element; and

a second identifying indicia located on the body, the second identifying indicia identifying the cleaning aggressiveness of the second cleaning element.